THE 1827 S&DR BLACK BOY BRANCH LINE HERITAGE TRACK BED AUDIT

The Friends of the Stockton & Darlington Railway and Archaeo-Environment Ltd
July 2023

Funded by Historic England

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THE S&DR 1827 BLACK BOY BRANCH LINE

Summary

This historic environment audit, funded by Historic England, is about the 1827 Black Boy Branch Line of the S&DR and what survives today. It also makes recommendations on conserving, interpreting, and accessing the remains.

The Stockton & Darlington Railway had opened on the 27th September 1825. The 26-mile-long mainline was located in North-East England in the historic County of Durham. It ran from the coal mines near Witton Park to the River Tees at Stockton, via Darlington and Yarm where there were two branch lines. The next five years were a period of phenomenal growth and investment with the completion of an additional four branch lines at Black Boy, Croft, Haggerleases and Middlesbrough. Over the following decades, as railways spread across the world, the S&DR also expanded its network of tracks reaching as far as Barnard Castle, Tebay, Redcar, Saltburn and Weardale. It was amalgamated with the North Eastern Railway in 1863.

The S&DR between 1825-30 created the model for the modern-day railway network with a permanent, timetabled transport infrastructure, offering a successful combination of a mixed goods and passenger railway available to anyone to use in return for a fee. Its financial and technical success eventually inspired other railways to develop in the UK and across the world. The S&DR boosted local industries, changed the landscape and by promoting the railway as the new revolutionary form of transport, it helped to trigger a second wave of the industrial revolution.

The first branch line to open after 1825 was the Black Boy branch, but it took two years before adequate resources could be found. This was due to a national financial crash combined with the S&DR remaining in debt after the huge investment of building the railway network and the purchase of its first steam engines. The main economic motivator for the branch line was accessing the high-quality coal from the Black Boy collieries.

A number of long-established collieries were already located north of Shildon when the route of the proposed Stockton & Darlington Railway was surveyed by Overton between 1818-21. Colliery owners were keen to access the railway and so the branch line was authorised in the same Act of Parliament in 1821 as the mainline, but to a different route. A ridge of land separated the mainline at Shildon from these collieries so Overton's route, designed for horse power only, was more circuitous, avoiding the ridge. George Stephenson's alternative route, approved by Parliament in 1823, made use of a stationary winding engine powered by steam so that waggons could be hauled up and over the ridge on an incline instead of avoiding it. For the first few weeks after opening in 1827 the line was worked by horses because the stationary winding engine designed to haul the waggons up the incline from Eldon was not ready. The first winding engine installed in 1828 was replaced by another designed and built by Timothy Hackworth in 1835 and this remained in use, despite various attempts to sell it, until 1874.

The importance of the incline declined gradually once the Shildon Tunnel opened in 1842. The tunnel provided a more direct and efficient locomotive powered route into Weardale, but it remained open to locomotive hauled trains in the event of a blockage by derailment or collision

in the tunnel. It also continued in use by collieries in the Eldon Valley until the seams were worked out and the stationary engine sold.

Survival of the Black Boy branch is relatively good between its terminus near Spout Lane at Locomotion in Shildon and Eldon. Retaining walls can be seen, the occasional boundary wall survives in poor condition, the route is largely clear and accessible and the enginemen's houses at the top of the incline survive. Much more will survive below ground.

North of Eldon, the picture is not so clear. The route is well-defined as far as Dene Beck and low-lying walls may be original boundary walls. A culvert carrying the Dene Beck might be original, but was not viewed due to lack of public access.

To the north of the school the route consisted of many railway branch lines built by collieries and this landscape, once criss-crossed with branch lines, is either developed for housing or has returned to agricultural use. Small stretches of siding survive as woodland paths at Auckland Park. The industrialisation of this area is likely to have removed all traces of the early Black Boy branch.

Access to the Black Boy branch is good between Locomotion and Eldon, but surfaces are only suitable for walkers. North of Eldon, access is not available on the branch line, but circuitous routes through terraced housing and areas of wasteland, do provide opportunities to view the route. However, this area is blighted with evidence of anti-social behaviour and deprivation begging the question whether the Black Boy Branch could be at the heart of an economic and social regeneration scheme. North of the Prince Bishops Community Primary School, access is well away from the route and little is visible. It is only for the determined who wish to appreciate the wider post-industrial landscape of the Eldon Valley and Auckland Park.

Report authors: Caroline Hardie with considerable support from other Friends of the Stockton & Darlington Railway

Niall Hammond for creating the GIS project. Photographs have been taken by the report authors and numerous Friends of the S&DR. Our photographs are populated by people because this is a community project and the community like to be in them.

Acknowledgements

Maggie Pulle visited The National Archives and copied primary source material on the Black Boy Branch which other volunteers transcribed.

The following volunteers have transcribed the text from historic documents:

Trevor Horner, Ken Todd and Barbara M. Brown

Thank you to the following people for sharing their knowledge about the Black Boy branch and its people:

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CONTENTS

1.0 THE BLACK BOY BRANCH LINE – WHERE IS IT?

The branch of the Stockton & Darlington Railway was designed to serve long standing collieries spread between Shildon and Coundon ("near Howlish Lane"),[1] creating a link on to the 1825 mainline near East Thickley (NGR 423615 525691). From here, coal (and later, lime) was transported to a wider market in Darlington, Yarm and Stockton. At the terminus of the line in Stockton, the River Tees provided access to the sea and the growing capital city of London.

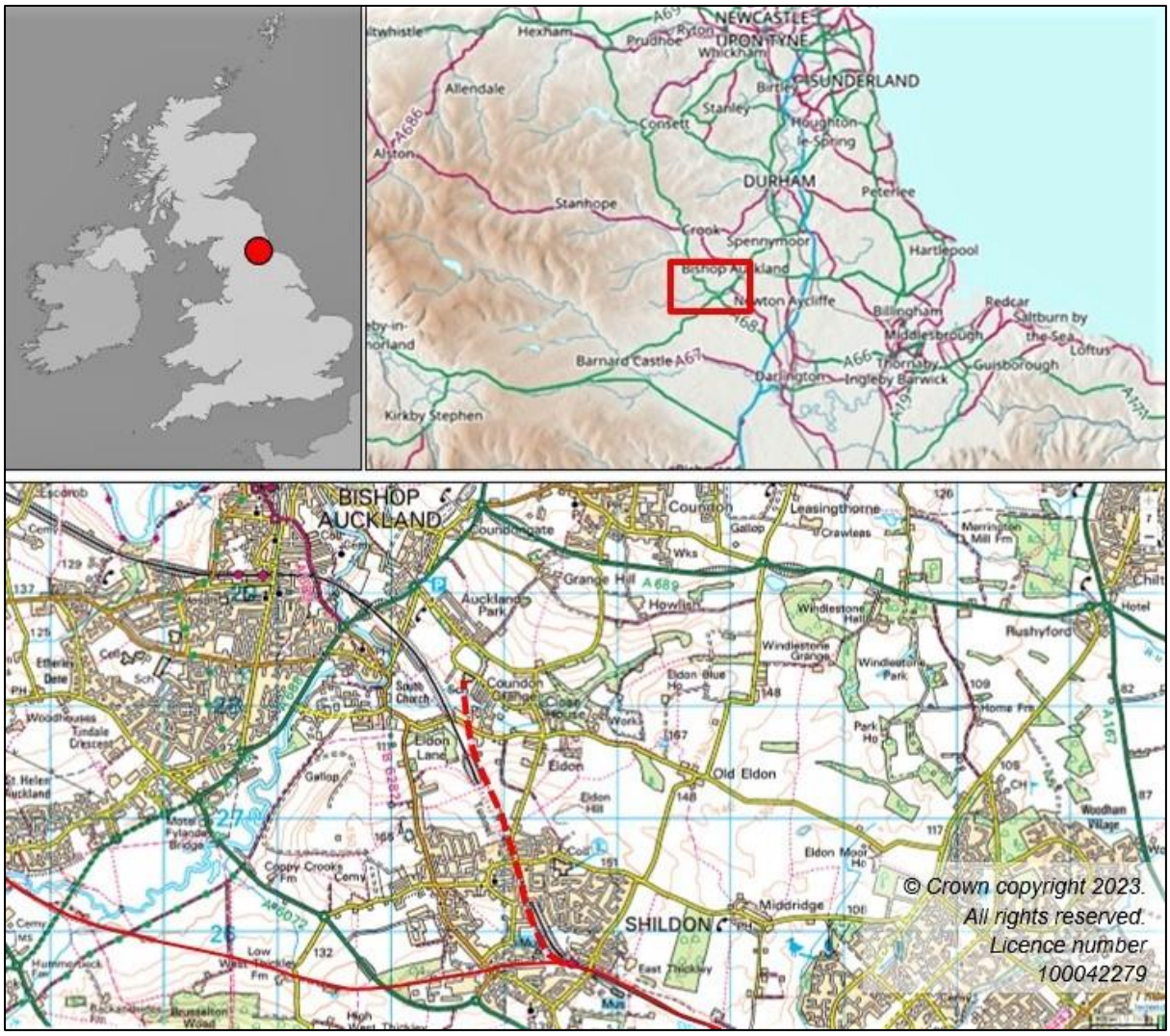


Figure 1. Location plan of the Black Boy branch (dashed line) in relation to the mainline of 1825 (solid red line). The red dashed line is the extent of the branch when it opened in 1827, but it was subsequently extended by various colliery owners.

[1] Holmes 1975, 23

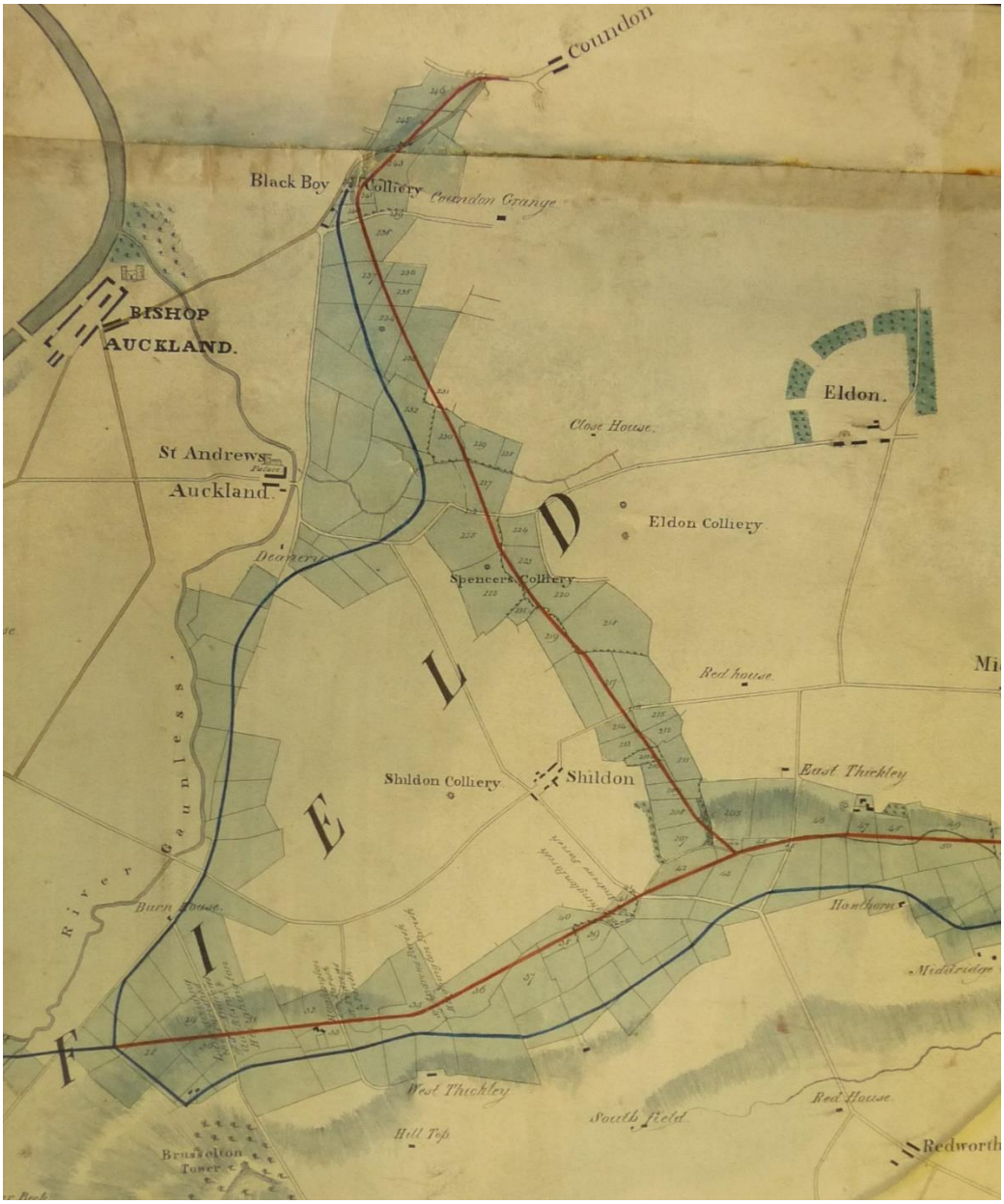


Figure 2. From the outset, the S&DR planned the Black Boy Branch Line and it featured on Stephenson's proposed route (surveyed in 1822) extending northwards from the mainline just east of Old Shildon, as shown here.. There were already three collieries in the area, Shildon, Spencer's and Eldon and the creation of the line would open more opportunities to extract coal and export it from this rural area. (DRO Q/D/P/8 deposited 28 September 1822, Geo IV, chp 33, 23rd May 1823)

Stephenson's amendments of 1822-3 to the route designed by Overton which obtained parliamentary approval in 1821, was a more direct route than originally proposed taking in land close to the existing collieries of Black Boy, Eldon, Spencer's and Shildon Collieries. Once the line opened, more collieries opened in the wider area and the colliery owners-built hundreds of houses for their workers in Eldon transforming an agricultural landscape with occasional pits into an industrial one.

2.0 POLICY BACKGROUND

Since 2014, the Friends of the S&DR have worked closely with the local planning authorities to ensure that there are planning policies in place to protect the remains of the Stockton & Darlington Railway. The Black Boy branch falls within Durham County Council local planning authority. The Durham County Plan was adopted in 2020 and includes an S&DR specific policy 46:

Development which impacts upon the historic route of the Stockton and Darlington Railway (S&DR) of 1825, the Black Boy and Haggerleases branch lines and the Surtees Railway, together with their associated structures, archaeological and physical remains and setting, will be permitted where the proposal:

a. seeks to reinstate a legible route or enhance any physical remains and their interpretation on the ground, and otherwise respects and interprets the route(s) where those remains no longer exist;

b. safeguards and enhances access (including walking and cycling) to, and alongside, the route, branch lines and associated structures, archaeological remains and their setting;

c. does not encroach upon or result in the loss of the original historic route(s), damage the trackbed excepting archaeological or preservation works, or prejudice the significance of the asset; and

d. does not prejudice the development of the S&DR as a visitor attraction or education resource.

Shildon Conservation Area.

The terminus of the line up to, but not including Spout Lane, falls within the Shildon Conservation Area. This includes the locomotive coaling stage and the lineside cabins, but excludes the rest of the branch line which has been largely reclaimed and landscaped. The special interest of the Conservation Area relates to the buildings with railway associations which are either domestic, public or industrial buildings. Those that are associated with the Black Boy branch are also listed buildings. The extent of the Conservation Area is currently being reviewed.

Listed Buildings

There are two groups of listed buildings on the Black Boy branch – the lineside cabins and the locomotive coaling stage. These have recently been reassessed as part of a listing review and are graded II and II* respectively. The aqueduct and south portal of the Shildon Tunnel, designed to bypass the Black Boy branch, are both listed grade II.

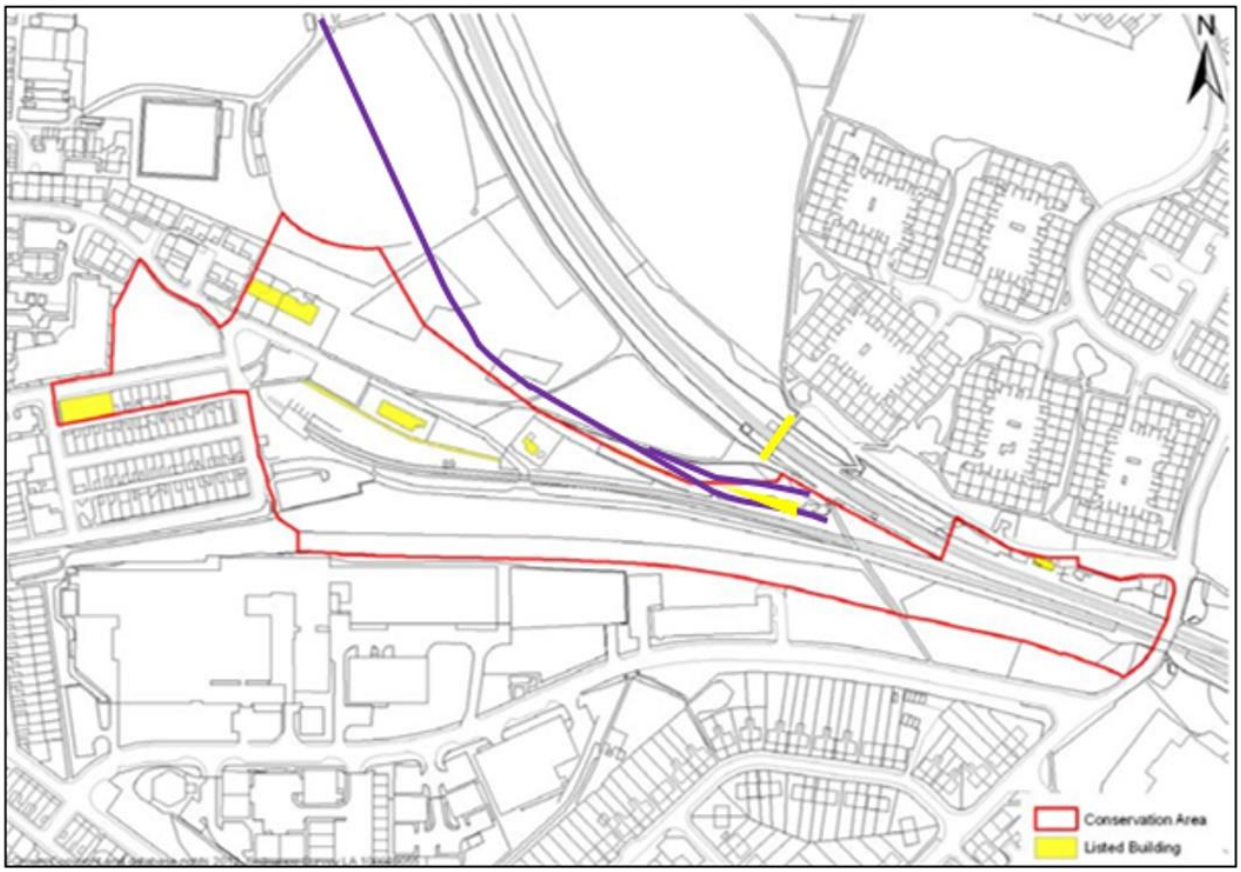


Figure 3. The extent of Shildon's Conservation Area and its listed buildings. The route of the Black Boy branch is also shown (in purple).

3.0 HISTORIC BACKGROUND

The Black Boy Branch Line (sometimes referred to as the Coundon branch in earlier contemporary reports) opened on the 10th July 1827.[2] It was the first branch to be opened after the S&DR's mainline and the branch lines at Darlington and Yarm opened in 1825.

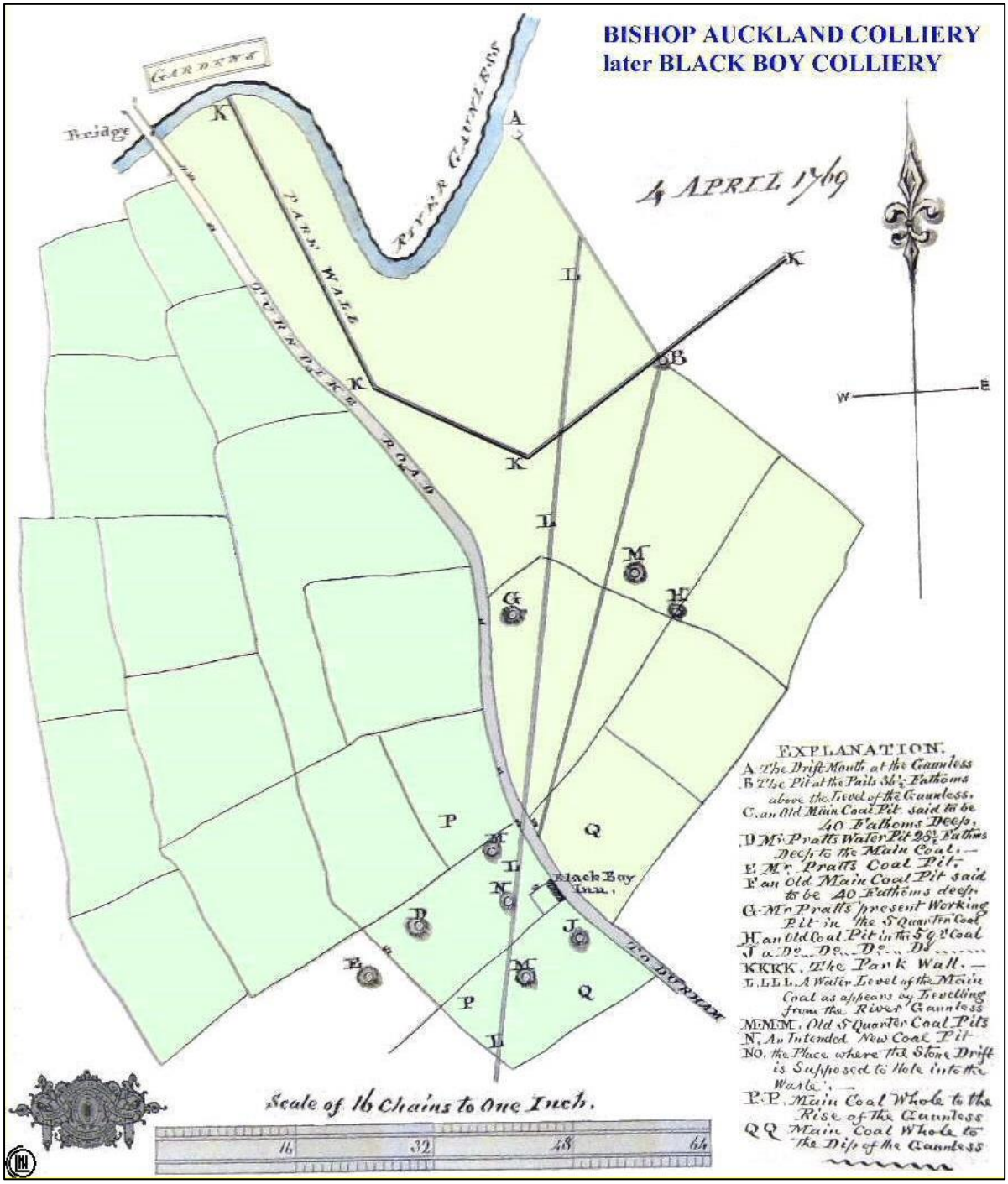


Figure 4. The collieries south of Auckland Park in 1769 including a Black Boy Inn. Survey by Jeremiah Dixon? Copy of map courtesy of Colin Turner, Eldon.

[2] Holmes 1975, 88; Proud 1998, 20

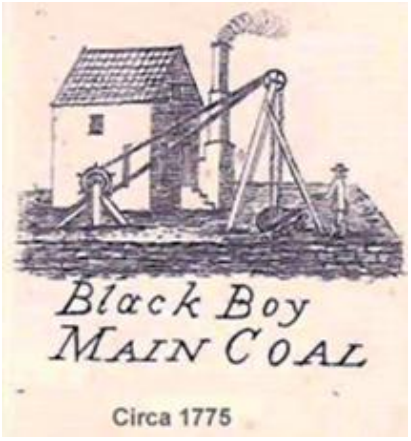


Figure 5.Sketch of a typical colliery building used to illustrate Black Boy Colliery. Sketch attributed to Jeremiah Dixon

The name 'Black Boy' was used for a number of coal pits in the Black Boy Royalty going back at least to the 18th century and is generally thought to refer to the state of the boys who went down the mines when they emerged after a day's toil.[3] The local inn at Canney Hill at the top of the Dene Valley also took its name from the collieries it served.

The Old Black Boy Colliery at Canney Hill (H48203[4]) pre-dated the S&DR Black Boy branch and was disused by the time the OS 1st ed map was surveyed in 1857 by which time it consisted of an air shaft and a few spoil heaps. Local historian Colin Turner has also raised the possibility that 'Boy' was a long standing surname in the area; a William Boy from North (Bishop) Auckland is mentioned in the Bolden Book of 1183.[5]

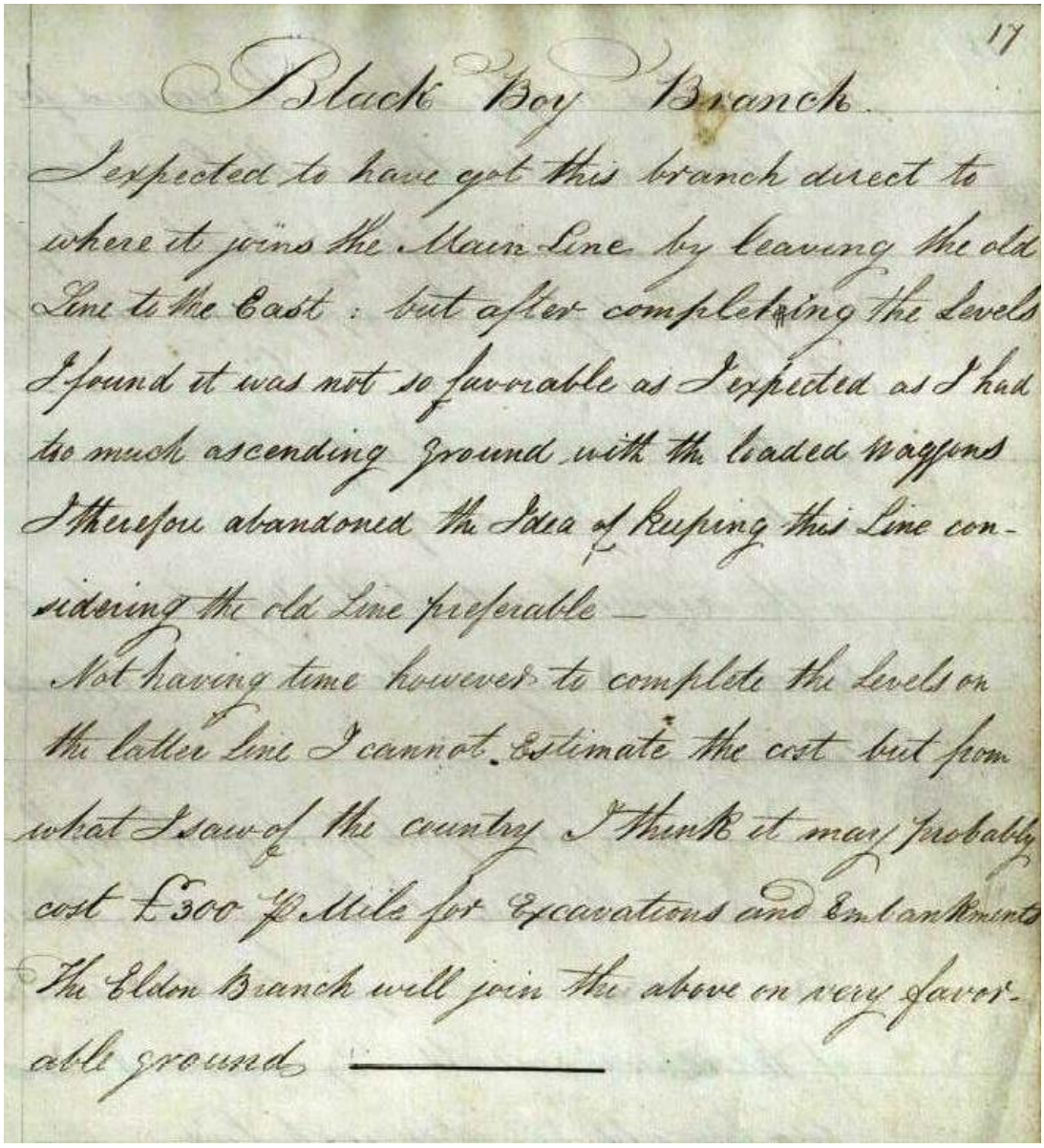
Black Boy coal had a reputation for being high quality, consequently, whenever a new pit was opened in the area, it often carried the name Black Boy as a sign of this quality.

The 1821 Act which approved the Stockton & Darlington Railway, also approved a Black Boy branch to a different route. Overton who had been commissioned to survey a route in 1819, selected a longer more circuitous one suitable for horse drawn carts or packhorses on rails. When George Stephenson was commissioned to resurvey the line in 1821-2, he chose a more direct route that would require a steam powered stationary engine to move waggons over the ridge in the landscape between Shildon and Eldon. This route was approved by another Act of Parliament in 1823.

The branch was designed to serve the Black Boy, Coundon, Eldon, Adelaide and Deanery Collieries [6] all important sources of high-quality coal. Estimates of the amount of coal that could be moved along the Black Boy branch annually were produced in 1818 and amounted to 10,000 tons to Darlington (confirming that the company at this time were thinking of a local domestic market, not export via the Tees).[7]

Previously, a canal linking Evenwood and Stockton had been considered as an option to extract coal from the area and in the feasibility study for the canal in 1818, it was estimated that the collieries between West Auckland, Black Boy and Bishop Auckland would produce 17,962,560 tons annually of Main coal (excluding waste) plus 16,632,000 tons from Black Boy to Ferryhill (also excluding waste). It also flagged up the large tracts of coal at Brusselton, Shildon and Eldon.[8] At the time of writing (1818), much of the coal near what would later become the west end of the S&DR around Etherley had not yet been opened.

[3] Read more at http://www.redorbit.com/news/business/796002/echo_memories_where_mighty_steam_trains_rumbled_far_below_the/#kvSddA74RaqQ4sic.99
[4] The HER information on the date of this pit is too late. It says it is Victorian, but it is Georgian.
[5] Bolden Book 1982, 71
[6] Kirby 1993, 70
[7] Holmes 1975, 53
[8] Further Report ... on the Stockton and Auckland Canal, with the Result of a Survey of the Working Collieries on the Line and Vicinity of the Canal, and an Estimate of the Qualities of the Coal, by Messrs. Buddle, Steel, & Fenwick by George Leather 1818, 7-8



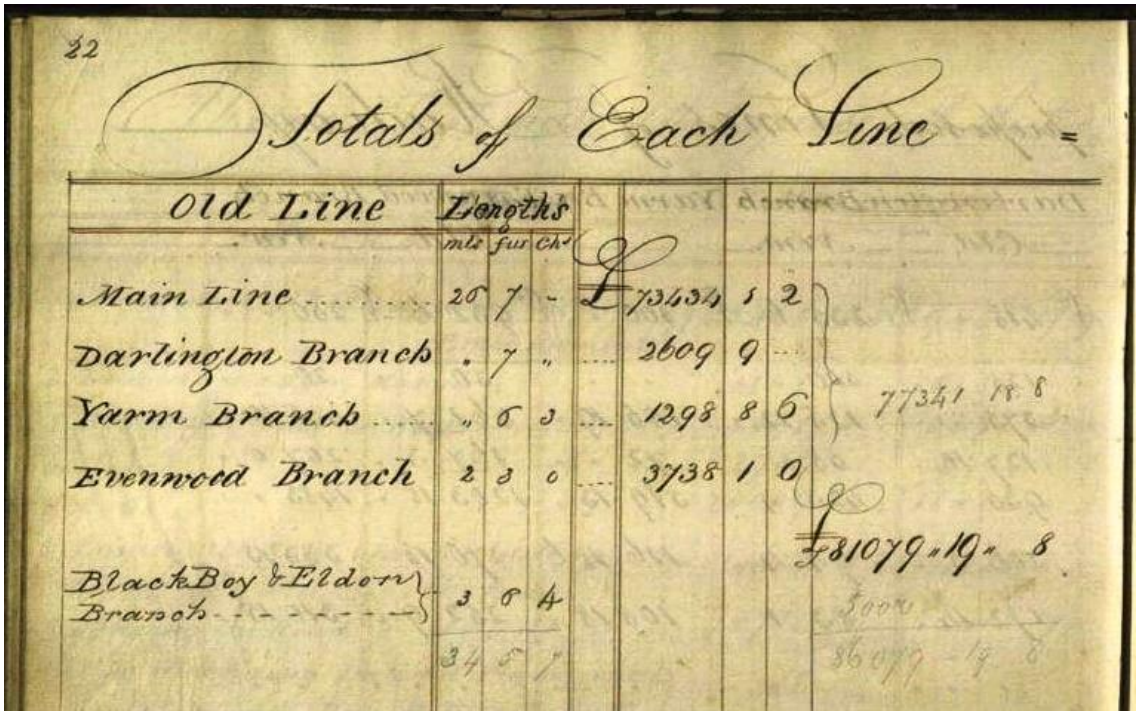
17

Black Boy Branch.

I expected to have got this branch direct to where it joins the Main Line by leaving the old Line to the East: but after completing the Levels I found it was not so favorable as I expected as I had so much ascending ground with the loaded waggons I therefore abandoned the Idea of keeping this Line considering the old Line preferable —

Not having time however to complete the Levels on the latter Line I cannot Estimate the cost but from what I saw of the country I think it may probably cost £300 ₱ Mile for Excavations and Embankments The Elden Branch will join the above on very favorable ground ———

Figure 6. An extract from Stephenson's notebook of 18th January 1822 covering Black Boy Branch. He hadn't had time to fully survey the line when he started to write in his notebook, but added the costs later, in time for the proposal to go to parliament. (Transcribed by Ken Todd, see Appendix B)



22

Totals of Each Line

Old Line	Lengths mls	fur	ch	£	s	d
Main Line	20	7	-	73434	1	2
Darlington Branch	.	7	"	2609	9	...
Yarm Branch	"	6	3	1298	8	6
Evenwood Branch	2	3	0	3738	1	0
Black Boy & Eldon Branch	3	6	4			
	34	5	7			

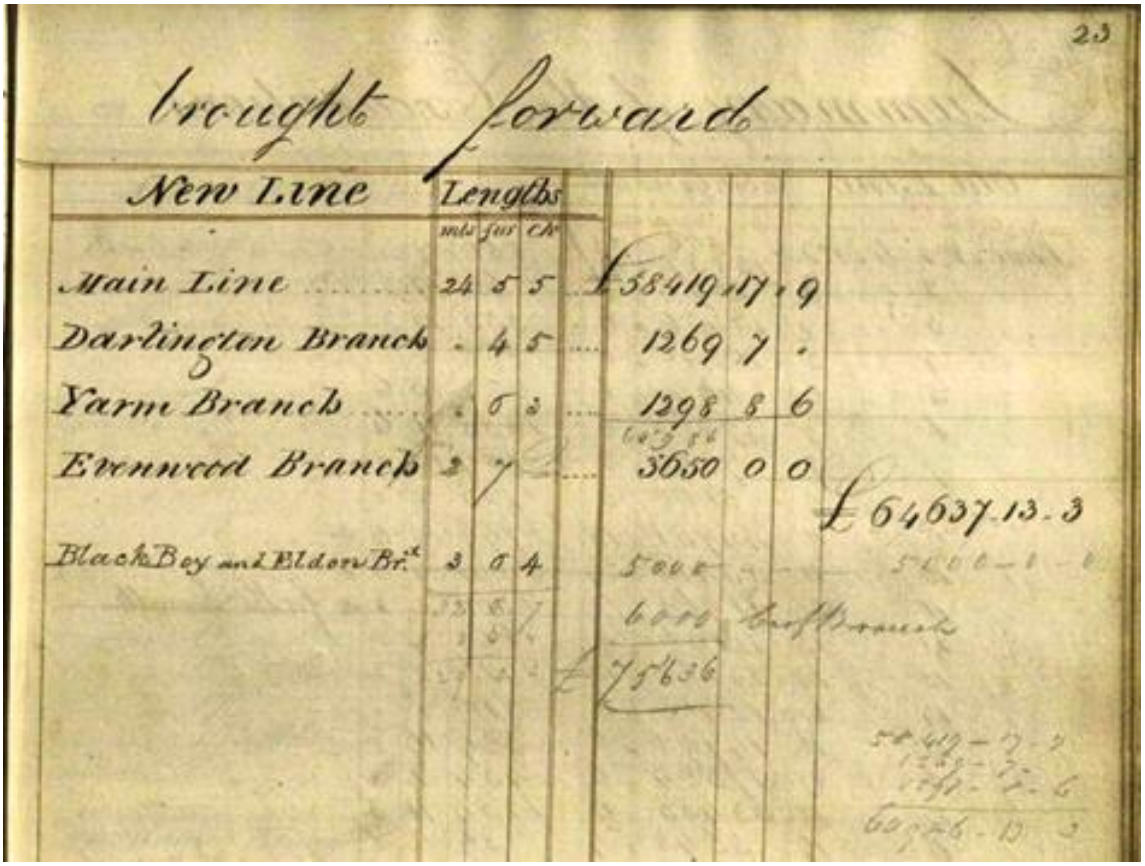
77341 18 8

£81079-19-8

5000

86079 - 19 8

Figure 7. Extract from Stephenson's notebook of 1822. His survey on the Black Boy branch was carried out a little later than the rest, so the details for Black Boy were added later. This extract sets out the distance (3 miles, 6 furlongs and 4 chains) and estimated costs (£5,000) for the branch.



23

brought forward

New Line	Lengths mls	fur	ch	£	s	d
Main Line	24	5	5	58419	17	9
Darlington Branch	.	4	5	1269	7	.
Yarm Branch	.	6	3	1298	8	6
Evenwood Branch	2	7		3650	0	0
Black Boy and Eldon Br.ch	3	6	4	5000		
	33	6	7	6000	Croft Branch	
	34	5	7	75636		

£64637-13-3

5000-1-6

5049-7-9

1269-7-6

1298-8-6

60926-10-3

Figure 8. Extract from Stephenson's notebook dated 18th January 1822 showing the distances and revised costs for his route (compared to Overton's). His survey on the Black Boy branch was carried out a little later than the rest, so the details for Black Boy (and Croft) were added later. This extract sets out the distance and estimated costs for the branch line as proposed by Stephenson.

In September 1825 when last minute preparations were being made to open the mainline line, the S&DR Company Committee report noted that the Black Boy Branch should:

'…terminate ..for the present at Denburn Beck, near Saint Andrews Auckland – Your Committee have purchased the whole of the Land between that place and the Main Line but they have not proceeded to lay any part of that Branch, as the state of the Company's Funds and their present Engagement would not allow of your Committee to undertake it.'[9]

In fact, no significant extensions to the line were possible immediately after the opening of the Stockton & Darlington Railway on the 27th September 1825 because of financial difficulties. Some of these difficulties were the sort one might expect from investing in a massive new piece of infrastructure which had not yet had the time to recoup its costs and evidence its economic success.

However, there was also a national 'monetary panic' in 1825 leading to a stock market crash which started in the Bank of England and arose from speculative investments in America (including in non-existent countries) resulting in the closure of twelve banks. The Bank of England had to be rescued by an infusion of gold from the Banque de France.[10] This was not the best time to be seeking additional funds to extend the railway.

The postponement of the intended expansion after 1825 also led to hardship for the company which needed the income the branch lines could generate, but it also led to demands for compensation from colliery owners who had expected to be able to access the railway from 1825. Until the branch line was built, coal had to be carted 2-3 miles by road to Thickley Spout[11] to access the mainline.[12] It was presumably this period that led to the road being named Spout Lane.

An un-named representative of Black Boy Colliery set out the losses in April 1826 that would be made to Black Boy Colliery if the branch line was not built. These losses, it was claimed, would amount to 1s $6^{1/2}$d per ton of coal.[13] Compensation was therefore paid to colliery owners by the railway company amounting to an allowance or rebate of 1s. 6d per ton, which with a further concession of £200 for the period preceding the rebate, amounted on the 30th June 1827 to £1,037 9s. 4d.[14] An allowance was also made to Mr William Lloyd Wharton, the lessee of Coundon Colliery, which on the same date amounted to £151 13s. [15]

It was no easy decision to decide which branch line should be constructed first after 1825. Indemnities would need to be paid to colliery owners who were disadvantaged in trade by one branch opening before another. However delaying the Black Boy branch would mean continuing to pay the colliery owners at Black Boy and Coundon compensation. The Croft branch had considerable support amongst the Peases as it would transport large quantities of goods and minerals into the North Riding of Yorkshire and much of the land necessary had already been purchased.[16] The fact that Jonathan Backhouse, the company treasurer, and his Quaker banking colleague Joshua Ianson both had colliery interests at Black Boy swung in its

[9] TNA RAIL 667/8 p54-5
[10] https://en.wikipedia.org/wiki/Panic_of_1825 [accessed 060123].
[11] Tomlinson 1914, 117
[12] Kirby 1993, 57
[13] TNA RAIL 667/477 transcribed by Ken Todd, see Appendix C
[14] Tomlinson 1914, 137 and Holmes 1975, 10
[15] Tomlinson 1914, 138 and Kirby 1993, 69; TNA RAIL 667/3
[16] Archaeo-Environment 2019, 9

favour.[17] In anticipation of coal being made more accessible by the railway company, Joseph Pease, the Company's Treasurer, had also set about acquiring various collieries, Black Boy included. By 1830 he owned more collieries than anyone else in SW Durham.[18]

Construction on the Black Boy branch started in the middle of March 1827 at the New Shildon end but before that it was the task of the company to source the materials required locally. In February, Thomas Storey, the S&DR's civil engineer from 1825, was in correspondence with Christopher Tennant who owned Thickley Quarry, and his foreman George Stephenson,[19] to obtain costs for stone sleeper blocks. Tennant priced the blocks at 8d each and 10d per ton for walling stone. Small stones and quarry waste were offered for free for the railway formation.[20]

By July 10th 1827 the branch reached just short of Deneburn Beck and was considered to be 'in a sufficient state of forwardness to be advantageously used by the owners of some adjacent coal-fields'.[21] This was only 385m short of the Machine Pit at Black Boy Colliery. It was anticipated that the rest of the branch to Coundon could be completed by 1st September.[22] Compensation payments of the aggrieved colliery proprietors were therefore terminated and the line opened.

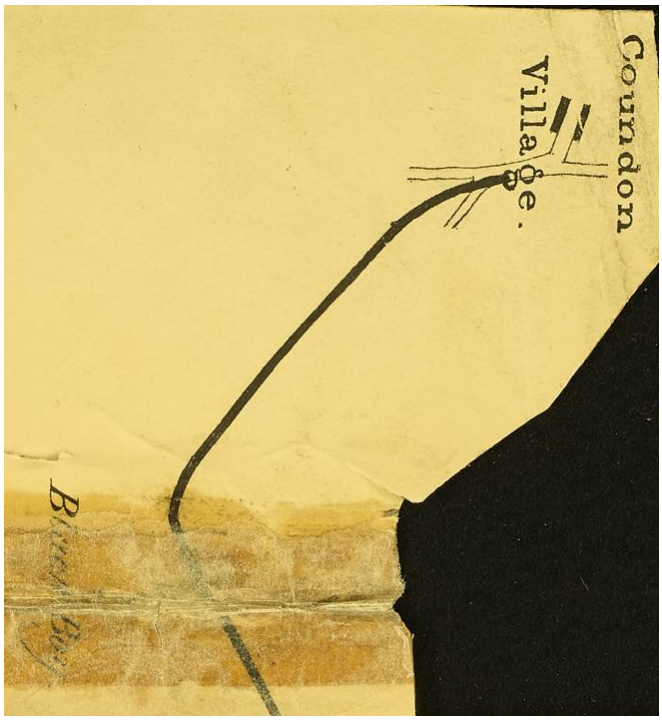


Figure 9. The proposed terminus of the Black Boy branch at Coundon Village as depicted on the 1823 plan of the S&DR mainline and proposed altered branches by Robert Stephenson and John Dixon (DRO QDP 0009/0001)

Unlike every other S&DR branch line to open after 1825, there is no evidence of any celebratory fanfare. The financial state of the railway entered into a new phase of prosperity with debts paid off and so the company was able to start works on the Croft and Haggerleases branches; the Croft branch affording access into the Yorkshire market for Black Boy coal.[23]

Collieries soon started to request sidings linking their colliery to the branch. It was not always clear to Thomas Storey who oversaw much of this development, who should pay in these circumstances. The 1821 Act of Parliament allowed businesses to link to the S&DR if they were located within 5 miles of the line, 'at their own Expence such Openings in the Ledges or Flanches of the said Railways or Tramroads as may be necessary and convenient for effecting such Communication' but it

[17] Tomlinson 1914, 139 and Holmes 1975, 53
[18] Friends of the S&DR 2021, 28
[19] Not THAT George Stephenson
[20] TNA RAIL 984, full transcription by Trevor Horner in Appendix D
[21] Tomlinson 1914, 140 quoting report of the Committee to the general meeting 10th July 1827
[22] TNA RAIL 667/8 S&DR Committee Minutes 10th July 1827
[23] Kirby 1993, 70

wasn't always clear who should pay for what.[24] Storey wrote in his notebook in August 1830 that Geo. Applegarth requested a siding to the Black Boy Incline near the summit for Eldon Colliery; it was not on S&DR land, so he needed guidance from the railway company on who should pay. Again in September, the lessees of the Shildon Colliery sought a land sale trunk, this time it was on railway company ground adjoining the incline. Storey wrote: 'Query is the Railway Co or the Owners of the Colliery to make it?'[25] Whoever paid, the Eldon Branch Railway was shown on Dixon's 1839 plan exactly where Mr Applegarth had asked for it.

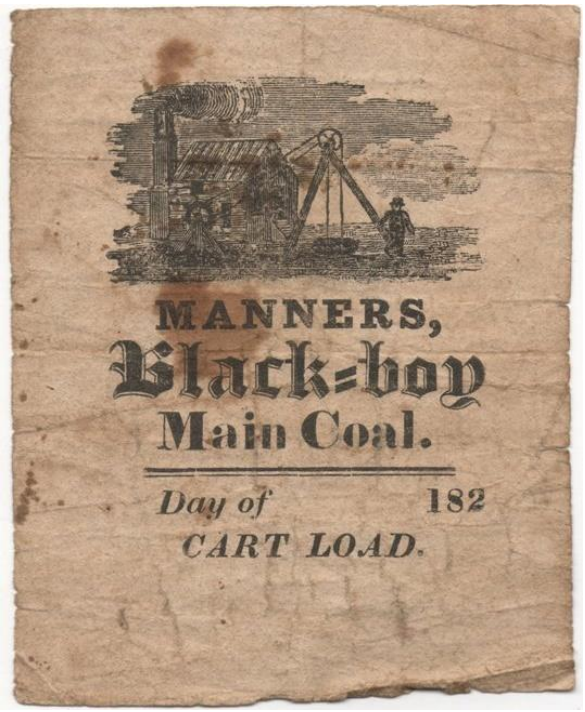


Figure 10. Receipt from Manners Colliery for Black Boy coal dating to the 1820s. Image courtesy of Colin Turner

The Black Boy branch as designed by Stephenson was, according to his notes, over 3 miles long. In 1826-7 two visiting Prussian engineers, Von Oeynhausen and Von Dechen, measured the incomplete Black Boy branch at 2 miles, 5 furlongs and 4 chains.[26] Based on the distribution of milestones and their noted measurements, it was only about 1 ¾ miles long to Black Boy Colliery (Machine Pit) [27] in 1839 when Thomas Dixon surveyed it.[28] The lack of any survey by Dixon beyond this point perhaps reflected that the S&DR did not consider that the branch was S&DR responsibility beyond Black Boy Colliery and that the rest of the line was a series of branch railways built by collieries for colliery use. When Whishaw described it in 1842 he stated that it was 3 miles long.[29] Based on the extent of the line reaching Machine Pit, (with additional private colliery branch railways linking to it by 1839), the S&DR Black Boy branch was just over 2 miles long (3.25km), much as measured by the Prussian engineers. The line was moved or extended on a number of occasions as coalfields closed and re-opened elsewhere. The Black Boy Colliery moved eastwards and the South Durham Branch Railway and worker's housing, called Gurney Villas was constucted. [30] Another substantial branch line and associated infrastructure such as a school and a church was to the South Durham Colliery and Auckland Park Colliery.

The waggons were horsedrawn between the collieries (or quarries) until they reached the incline which was designed to haul the waggons over the steep ridge between Shildon and Eldon using a stationary engine. This was not ready for the opening day; in fact it hadn't even been commissioned.[31] Consequently traffic was hauled by horses over the incline for the first few months and drivers were instructed not to take more than two waggons down the incline

[24] Act of Parliament 1821 LXXXVI
[25] Thomas Storey's notebook TNA 667/ 418
[26] The Newcomen Society 1971, 9
[27] H48201
[28] Dixon was commissioned by the S&DR to survey S&DR property only.
[29] Whishaw 1842, 414. Holmes 1975, 88, states it was 3 miles long too.
[30] S&DR 1220
[31] The contracts to build the engine house were advertised in the Durham Chronicle on the 29th September 1827, to be managed by Thomas Storey of St. Helen Auckland, the S&DR's engineer.

at a time. This was particulary important as waggons had primitive brakes. The incline north slope rose about 150 ft (45.72m) and the south slope about 80 ft (24.38m).

Adverts were placed in the local press to find contractors to build the engine house in September 1827, after the branch had opened.[32] One year later, by July 1828, the stationary engine was still not ready, the branch still extended no further than Denburn Beck and horses were still being used to haul waggons over the incline; nevertheless the incline was 'in active use'.[33]

The new stationary engine was installed one year after opening. It was commissioned from Newmarch & Co [34] and was described in the accounts as a Kenton engine costing £528 4s 6d.[35] It was replaced by an engine designed and built by Timothy Hackworth in 1835 and ordered by Joseph Pease.[36] Hackworth's 50 horsepower engine did not appear to be fitted with an overhead rope winding house as seen at Etherley and Brusselton suggesting a different method of working. The earliest map from 1839 by Thomas Dixon shows a structure on one side of the line only, but no overhead gantry. This may be because the engine hauled waggons up from Eldon, but the journey down to the terminus in New Shildon relied on gravity alone.

It is not known who the first engineman was, but the Greener family were running the incline from at least 1851 and possibly 1841. Nicholas Greener, engineman from at least 1851, was nephew to John Greener, the engineman at Etherley. His son John Greener took over the role after his death and was possibly the last engineman to be employed before the engine was disposed of in 1874. As with the other inclines, the engineman at Black Boy lived in an engineman's house with his family and in the case of Brusselton and Etherley, the fireman/blacksmith lived adjacent.[37] Rose Cottage at the top of the incline consisted of two semi-detached cottages, presumably these too were for the engineman and his family and the fireman/smith or assistant next door.[38] They were located on slightly higher ground than the engine and the incline so could keep an eye on operations from inside if necessary. Nicholas Greener also lived in another S&DR property, now demolished, further down the incline on what was called South Durham Place and is now called Fulton Terrace (see below).

[32] Durham Chronicle 29 September 1827
[33] TNA RAIL 667/8
[34] They were colliery owners north of Newcastle by the 1840s
[35] TNA RAIL 667/8 Abstract of the Cash Account for the Year ending 30th June 1827
[36] Young 1975, 274
[37] Nicholas was married to Anne Studdy in 1812 at Newcastle. She was the daughter of a pitman at Hartley Additional family tree information from Tom Walker with grateful thanks.
[38] S&DR 1234

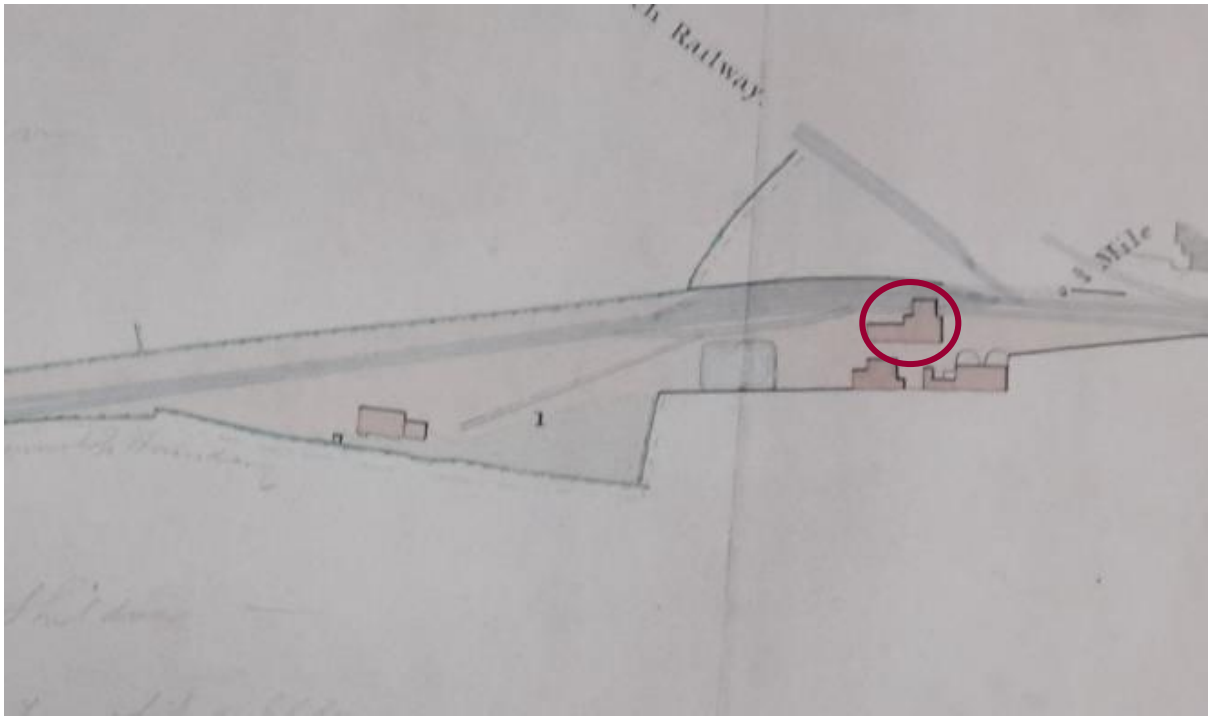


Figure 11. Dixon's plan of 1839 showing the arrangements of buildings and reservoir at the top of the incline. The engine house is circled in red (TNA RAIL 1037/453, plan photographed by Maggie Pulle)

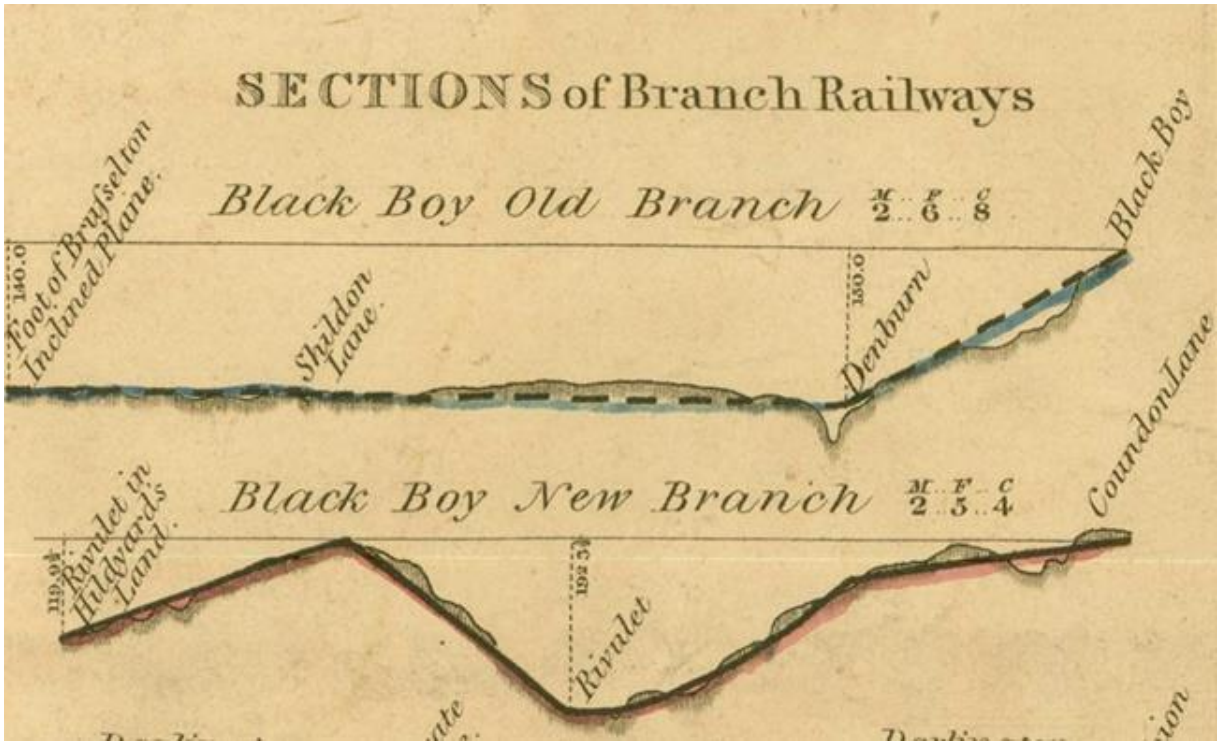


Figure 12. Cross section comparisons between Overton's proposed Black Boy Branch designed for horse haulage (top, in blue) and Stephenson's amended route using a steam powered incline to take traffic over the ridges in the landscape (below, in red). (Plan and section of the intended railway or tramroad from Stockton by Darlington to the collieries near West Auckland in the County of Durham and several branches ….1822. Extract from Stephenson's 1822 proposals. Also partly reproduced in Tomlinson (1914), p139 Image provided by Colin Turner.)

The branch line terminated in a series of sidings just east of the 19 ½ mile milestone on the 1825 mainline.[39] This was later surveyed by the Ordnance Survey in 1857 [40] by which time, one track joined the mainline west of Spout Lane and various sidings terminated near the reservoir above the Soho Works (built 1852), at Hackworth's Soho Works (buildings from 1833 and the 1840s), the gas works (built 1841) and on the top of the coal drops which were used for refuelling locomotives (built 1846-7). These sophisticated refuelling coal drops were replacements for simpler ones where coal was shovelled by hand from trackside cells into waiting tenders.[41]

Running the incline and the branch line

Prior to the branch line opening, collieries could bring coal down from the coalfields by road to join the mainline at Thickley Spout where there was a level crossing and sidings leading on to the main line. As the use of the line was paid for by weight, a weigh house was located here too. From May 1827 the weigh house was operated by Mr and Mrs Joseph Anderson.[42] The sidings on to the line from the road at Thickley Spout are shown on an 1840 map.[43] In 1828, the Coundon collieries chose to use (Thickley) Spout Lane rather than the branch line in the belief that it was cheaper than paying to use the Black Boy branch and incline.[44] Presumably waggoners had to report their load into the weigh house by the road before being directed towards sidings ready for departure eastwards.

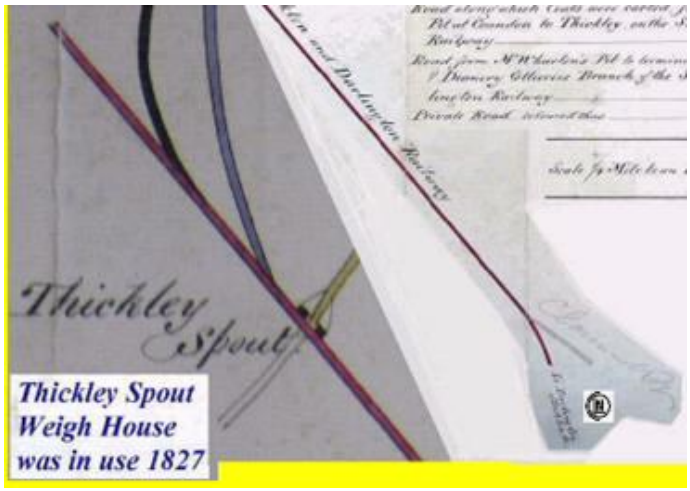


Figure 13. Extract from an 1840 plan showing the detail of the Thickley Spout level crossing. Extract provided by Colin Turner via Palace Green Special Collections (CCB MP/78b (7423) n.d. [c.1840].)

There were opportunities to avoid full payment too. Tickets could be purchased to bring coal from the collieries at Black Boy to Spout Lane, but in reality, the waggons could be taken further in the hope that nobody would notice. The fact that such incidents were recorded in John Graham's notebook means that in some instances it was noticed and action taken.[45]

The Black Boy Incline was let to collieries (and anyone else wishing to use it) at a rate of 47d per mile per ton which was cheaper than the longer Brusselton incline at 59d.[46] Like the rest of the S&DR, although Black Boy coal had been its main freight, it was designed to serve anyone who wished to pay to use it, therefore local lime was also exploited and exported from

[39] Dixon plan 1829 TNA RAIL 1037/453; S&DR 1241.
[40] Durham Sheet XLII. Surveyed: 1857, Published: 1859
[41] S&DR 1246
[42] Spout Lane presumably taking its name from coal spouts
[43] CCB MP/78b (7423) n.d. [c.1840]. Plan of Black Boy and Coundon royalties, the Eldon Colliery and railways and roads associated. "Church Commission Deposit Durham Bishopric Estates: Maps and Plans > Additional Maps, Plans and Photographs > County Durham > Darlington Ward, Including Teesdale." N.p. Print.
[44] Trade Directory Parsons &White 1828 Gazetteer
[45] GRA/1/3 John Graham's Notebook p30
[46] Tomlinson 1914, 377

the area by train, mostly for agricultural improvements. Limekilns (HER H16747) still survive at the aptly named and later Lime Terrace in Eldon, close to the Black Boy Incline.[47]

Bottle necks

The passage of waggons over the inclines was relatively slow and bottle necks formed. A westerly wind on the coast would prevent waggons emptying at the staithes on the river Tees at Stockton. A limited number of waggons could be sent down a siding until the weather improved, but siding space was insufficient at Stockton and if the self-acting inclines had no empty waggons to pull up while laden waggons travelled down, then they couldn't function at all. This affected the collieries which would need to stand down production for a day or two while awaiting the inclines to start moving again. The port facilities improved with the opening of the Middlesbrough branch in 1830 (the opening day featuring a 3.5 ton block of Black Boy coal to be shipped to London), but weather could still adversely affect loading.

Even by 1830, the S&DR was still having trouble acquiring enough locomotives in a timely manner to keep the railway running smoothly. The constant need to revert to horse traffic because there were not enough locomotives being made, was also causing blockages elsewhere on the line. [48]

While the inclines could run smoothly, there were many breakages and accidents that resulted in the incline stopping and bottle necks forming. The need to clear bottle necks necessitated night time working of the inclines, and indeed some night time driving of locomotives. Work had to be carried out by fire lamps and low ropes which increased the potential for accidents.

Sidings and signalling

Thomas Hall wrote a report in 1830 consisting of a series of recommendations to reduce blockages on the mainline and increase the efficiency of transporting coal towards Stockton. Amongst his recommendations was an increase in sidings at Stockton, allocated to specific collieries where waggons could be parked up until traffic flowed again, or parked up overnight.[49]

The problem of bottle necks continued and the need for more sidings where waggons could wait for processing remained a concern of John Graham's; in November 1835, he wrote:

"…more Standage for the wagons at Black Boy Branch is very much wanted, and as the Company has no Land below the Branch, J.G. would Recommend a Siding being made or rather the Present continued up from the water Station to Shildon Lane, this Could be done on the Company's Own Land by removing the Earth and Bulding [sic] a wall as has been done on the North Side; by doing this Standage could be got for about 150 waggons, J. Graham has pointed this out to the Company's Enginear."

This process of an increase in sidings at the terminus is recorded between Dixon's plan of 1839 and the 1st ed OS of 1857. These sidings would grow to become the largest area of marshalling yards in the world.

[47] Houses built to the rear were then named after trees giving the lime reference a more arboricultural theme.
[48] TNA RAIL 667/160 Report by Thomas Hall, Black Boy Colliery 20th November 1830 transcribed by Barbara Brown – see Appendix E
[49] TNA RAIL 667/160 Report by Thomas Hall, Black Boy Colliery 20th November 1830 transcribed by Barbara Brown – see Appendix E

The S&DR's other solution in 1832 to bottle necks caused by the staithes not being able to load coal onto brigs due to weather, was to set up a signalling system between the port at Middlesbrough and the collieries which would require stations at Middlesbrough, Great Stainton and Eldon. Signals would be sent along the line via these stations three times a day with weather updates and allow the company to better manage the flow of traffic and avoid bottle necks at the port. Lord Eldon objected to the erection of these stations on his estate and the plan was shelved.[50]

A more local form of signalling had been developed on the inclines where the engineman could rarely see the start or end of the incline, but needed to know when to start and stop the engine. At Etherley Incline, Thomas Greener the engineman, constructed a working scaled model of his incline complete with a waggon so he could predict where the waggons had got to in the dark.[51]

It is possible that a later structure, possibly originating as a shaft associated with the construction of the 1842 Shildon Tunnel, and called the Watch Tower on the OS 1st edition map of 1857, was a form of local signalling. This tower was positioned at the top of the incline above the engine house and within view of it and so a signalman posted there could signal to the enginemen when to start hauling waggons up the incline.[52] Other methods used and referred to by John Graham in his notebooks (14th June 1833) include rappers or bells so that the signal to start the engine could be sent by making a noise.[53]

"A Bell or Rapper is very much wanted at Busselton East Bank and Black Boy North Bank as there is a seareous [sic] Loss of time at Both places – referred for consideration" (signed by Henry Pease).

Runaway waggons

The other cause of accidents (and blockages), was runaway waggons. This might be caused by broken ropes – ropes had a fairly short shelf-life due to wear and tear; John Graham estimated that the average working life of a rope was 25-30 weeks.[54] Railway staff had to inspect the ropes regularly and make sure that new ones were ordered in plenty of time. Despite this, ropes broke unexpectedly and by 23rd November 1832, Pease suggested that if more care wasn't taken 'at this plane', another engine [?] would be required.[55]

Waggons 'running amain' was a constant hazard and the cost of the damage was considerable. On the 21st May 1832, the…

'Black Boy North Bank Roap [sic] broke when the Laden waggons was nearly at the top; and the Centre Bar of the Last waggon broke also; when the waggons came back against the Cowe; and 8 loaden waggons went A main and Broke and Injured the Rails very much; the 8 waggons was all broke less or more Damage don to the waggons is about £20 – tenders to be recd for repairing'.[56]

[50] Tomlinson 1914, 379
[51] Tomlinson 1914, 380, quoting Glass 1875 and Walker 2019, 10
[52] S&DR 1239
[53] GRA Book 2 p19
[54] GRA 1/ 3, book 4, p 114
[55] GRA 1/3 p151
[56] GRA 1/3 p93

Human error was a common cause of accidents too. For example, on the 1st October 1831, four waggons were broken by a bank rider joining the waggons 'too forcibly at the Black Boy North Bank foot resulting in damage worth 50 shillings'.[57] Disengaging waggons from the ropes before they had got over the 'kip' was another cause. At Black Boy, an incident was caused by waggoners failing to put scotches in the wheels and the waggons were blown back down the incline by the wind on the 23rd February 1832.[58]

When something went wrong it was up to the engineers from the S&DR to ascertain fault so that compensation or a fine be issued to cover the costs of damages. By the mid 1830s, the smooth running of the inclines was contracted out to third parties – in the case of Black Boy and Brusselton, that was Hackworth & Downing. If the fault was a lack of appropriate maintenance, the costs of putting it right was the contractor's. If the fault lay with a bank rider or engineman, the costs could come out of their salaries. If the damage was caused by youths, the parents were made to pay:

19th June 1835. On Wedensday [sic] last a waggon Loading with Stones was off down the Black Boy South Plain from the Companys Depots at Cheple [sic] Row one of the Byses [sic] Father is a Braksman [sic] at South Durham in the name of Matthews. Damage don [sic] to waggon about £4.7s 0d. Boys parents to pay for it.[59]

Water

The 1828 stationary engine was replaced by one designed and built by Timothy Hackworth for the incline in 1835.[60] It was designed on a new principle, called a Trunk or Ram Engine, later generally known as Penn's Trunk Engine. It was a 50 horse-power engine. The cylinder of this engine was 40ins. diameter and the stroke 30ins. It was supplied to the order of Joseph Pease.[61] This increase in power would improve the speed of the incline plane but it would not improve the ongoing need for more water.

'The trade has been very good all this week and we have been well suplied [sic] with Engine Power, But very Badly off for water' [62]

By the 1830s the whole S&DR network was suffering from a lack of water, especially in summer. This was vital to the running of all steam engines. John Graham frequently reported this to Committee and various solutions on the Black Boy were tried. On the 10th August 1832, he wrote,

"We are badly Suplied [sic] with warter [sic] for the Engines both at Darlington and Shildon; A Good Suply [sic] might be got Out of the Beek [sic] at the Black Boy Branch and by Feltering [sic] the warter [sic] that Comes from Mr. Surtesses [sic] Pit." [63]

[57] GRA/1/3 John Graham's Notebook p20
[58] Tomlinson 1914, 380
[59] Graham's Report Book 3, p25
[60] Holmes 1975, 140
[61] Young 1975, 274
[62] John Graham's notebook, book 2, p 108
[63] GRA 1/3 p123. The 'Surtesses' reference is to Shildon Lodge belonging to the Surtees family and located at the beginning of the Surtees branch line built in 1831 and which also terminated on the S&DR mainline near Spout Lane

Specifications and a design for a water cistern to supply locomotive engines water on the Black BB branch were put forward by the S&DR in 1833.[64] Only a few months later, it was reported that:

"….we are still very badly supplied with Water down the Line; There is not less than 24 Thousand Gallons of water Pumped out of the well at the Black Boy Branch End per day" [signed Joseph Pease Jnr, Chairman].

A water house was referred to in Graham's notebook in December 1833 where there had been a fatal accident and at the same time, it was reported that water was being pumped at nights at considerable expense. [65]

The shortage of water was across the whole network and it would appear that it was being pumped considerable distances:

"Gentlemen. We are very badly supplied with water at Darlington for the Locomotive Engines, which is causing the Pumping at Black Boy Branch to be very expensive,…". [66]

As a consequence, pumping apparatus was one of the many things to be found at the end of the branch line and the costs for a 12 horse power pumping engine were sought in July 1834.[67] The adjacent Phoenix Foundry owned by Nicholas Downing was also contracted to provide water to the stationary engine at the top of the incline. When the demand for water grew so great that the town of Shildon started to run out, an agreement with Hackworth & Downing for a water supply to be pumped to the engine was signed in June 1834.[68] Water was also sourced from Adelaide Colliery (and piped to the engine) but….

'the 'Engine man complained to me last Night of not getting a sufficient supply [sic] on account of the pipes being sludged up; and are obliged to Lead water from the Branch End to the Engine to Day.' [69]

One of the capital purchases of the railway company in 1834 was a tank at the Black Boy Branch 'with apparatus', presumably to improve the availability of water. [70] The incline engine was fed water via a metred cistern at the top of the incline.[71]. A rectangular structure of unknown function and shown on the Dixon plans of 1839 just south of the engine, may have been a water tank (S&DR 1253).[72] An historic photograph of a water tank at Black Boy Bank Top in 1962 may be the same structure (see figure 14). This no longer survives.

It was this lack of water that presumably led to the S&DR replacing the two circular reservoirs at Brusselton with a much larger rectangular one; this having been the best solution after Graham stalked the surrounding area looking for additional sources of water and finding none. The Black Boy reservoir, as depicted on Dixon's plan of 1839 and later was rectangular. Whether it was enlarged too at an earlier date is not clear.[73]

[64] TNA RAIL 667/296, probably next to the coal drops
[65] J G notebook GRA, book 2, p54-5
[66] GRA Book 2 pp18
[67] TNA RAIL 667/8 p147 and Graham's Report Book 2, p103
[68] Smith 2019, 91 and Graham's Report Book 2, p102
[69] Graham's Report Book 2 p88
[70] TNA RAIL 667/8 p162
[71] Smith 2019, 90
[72] S&DR 1253
[73] Dixon Plan 1839 TNA RAIL 1037/452

Figure 14. The water tank on Cheapside 1962. Photo courtesy of Head of Steam - Darlington Railway Museum, via Colin Turner. It is likely that this was the stone base which supported the metal water tank above.

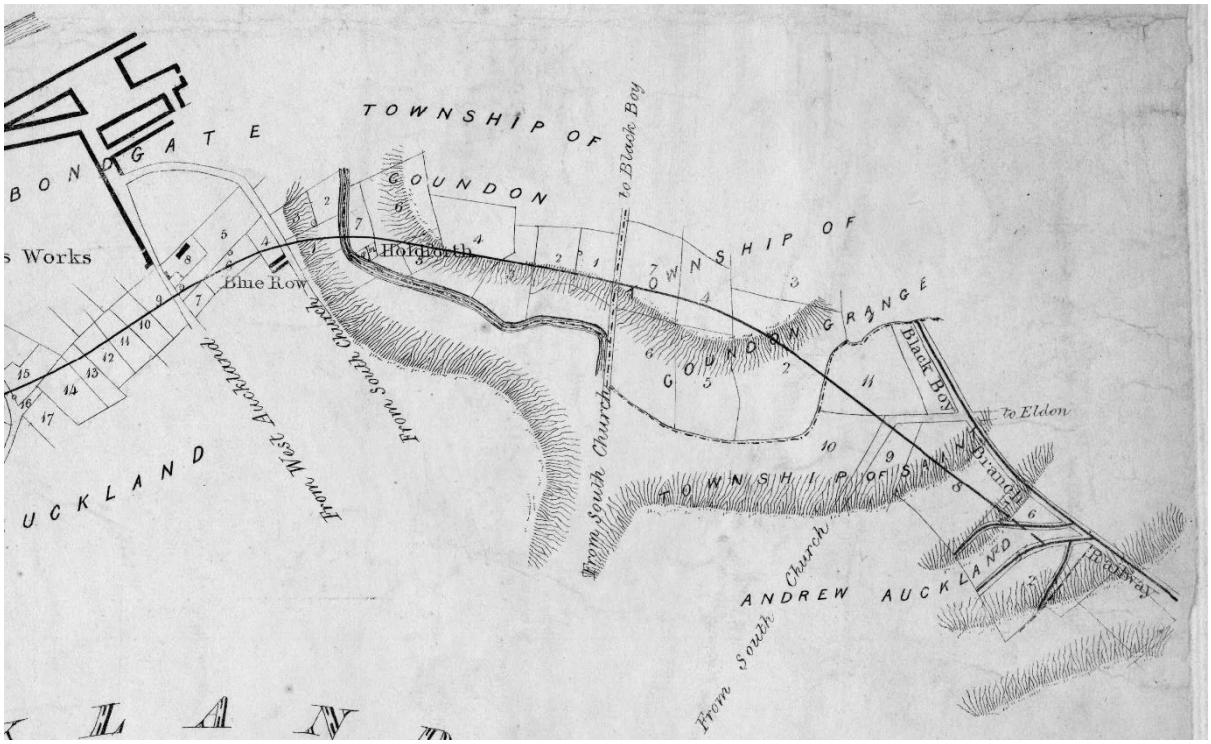


Figure 15. An extract from a plan by Thomas Storey (c.1839) showing a railway commencing from near the Black Boy branch of the Stockton and Darlington Railway; with a branch therefrom. To be called the Bishop Auckland & Weardale Railway, in the county of Durham. DUL NSR Planfile C 17/9/1-2

Expansion and the Tunnel

As more coal pits opened in the Wear Valley ('the wild district about Crook'),[74] improvements were required to get the coal rapidly to the Tees Valley. In 1839 the Shildon Tunnel Company was formed jointly by the S&DR and a new company, the Bishop Auckland and Weardale Railway. This was a process often repeated by the S&DR of creating new companies to lead on major capital projects, then once the works were complete (and the financial risks reduced), the S&DR would take the company over again. No Act of Parliament was required and the project was funded by Joseph Pease, Thomas Meynell and Henry Stobart who retained ownership of it until it was taken into the Wear Valley Railway in 1847. That railway was then leased to the S&DR for 999 years from 1st October 1847.

A 1200-foot bore was made through the ridge between New Shildon and Eldon to form the tunnel. The tunnel was 1,300 yards long/ 1.18km (or 1,217, 1,220 or 1,225 yards long depending on the source)[75], and ran under the Black Boy Branch Line and the town of Shildon, connecting the S&DR Railway with the coal field around Bishop Auckland, improving access to the minerals of the Crook basin and Weardale.

The Opening of the Shildon (Prince of Wales) Tunnel

At 10am on Monday, January 10, 1842 [76] a ceremonial procession set off from the Cross Keys Inn, in Cheapside (S&DR 1254). It was led by a Union flag, with the resident engineer, Luke Wandless, directly behind. On his right was Henry Booth, the principal contractor, and on his left, Thomas Dennies, the principal brickmaker. Accompanied by banners and a brass band, they went in through the southern entrance. *"The darkness was relieved by innumerable candles, and a platform had been erected at which a ceremony took place",* said the North Eastern Railway (NER) Magazine, in 1913. Mr Dennies ceremonially presented the last brick. Mr Booth ceremonially sprinkled it with wine. Mr Wandless ceremonially cemented it into place with a suitably inscribed silver trowel - that very same trowel is now on display in the nearby Locomotion Museum.

The gentlemen then ceremonially named it the 'Prince of Wales Tunnel' after Prince Albert Edward, Queen Victoria's first son, who had been born two months earlier and, in 60 years time, would become King Edward VII. *"Simultaneously cannon were fired in the open air, and the band struck up the favourite tune, Merrily Danced the Quaker's Wife",* said the NER Magazine.

The procession wandered on through the darkness to the northern end of the tunnel. Then dinner was laid on for the workmen in six pubs in Shildon and 50 VIPs tucked in at the Cross Keys. They were joined by engineer-in-chief Thomas Storey and the company secretary, Thomas MacNay. He said *"he hoped the time was not far distant when they would see locomotive engines and trains passing through the wild district about Crook where the people had never seen such a thing before"* (Taken from an article by Chris Lloyd of the Northern Echo written 10.1.2007).[77]

[74] Lloyd, Northern Echo written 10.1.2007
[75] Hoole 1986, 122
[76] Hoole 1986, 121
[77] Read more at: http://www.redorbit.com/news/business/796002/echo_memories_where_mighty_steam_trains_rumbled_far_below_the/#kvSddA74RaqQ4sic.99.

Irish navvies were brought to Shildon to carry out much of the work costing £50,000 to excavate. Seven shafts were sunk to a maximum depth of 36m, and in due course four of these shafts were made into ventilator shafts (and one may have been made into a watch tower for signalling purposes). Its ceiling was lined with seven million locally made bricks.[78]

By 1842 the annual coal tonnage of the Black Boy branch line was:

- Black Boy Colliery 92,641 tons
- Adelaide 65.622 tons
- Eldon 59,399 tons
- Deanery 49, 308 tons

The branch line should have been made redundant in 1842 when the Shildon Tunnel was opened, which offered a more efficient route to the Wear Valley, but it survived into the twentieth century (probably the 1920s). One of the reasons for its survival was as a relief route should the tunnel become blocked, which did indeed happen in 1880.[79] It remained useful for the nearby collieries to access the mainline using extended sidings which could be built as collieries moved. Soon the Black Boy had significant railway extensions heading towards the new Black Boy Colliery and around these routes, schools, houses and chapels were built and other industry such as brick and tile works grew. South Durham Colliery constructed a railway linking to the 1842 Tunnel branch and by the end of the 19th century the original Black Boy branch was reduced to the status of 'Old Railway' and only the Tunnel Branch was used (now the Darlington & Consett), linking to an extended Haggerleases Branch. The once agricultural landscape had significant pockets of industry by 1857 (see figure 17) and was fully industrialised by the end of the 19th century. It was through this railway-induced industrialisation, that Eldon, Close House, Gurney Valley and Coundon Grange were born.

The increasingly redundant stationary engine was first advertised for sale in 1859 but no seller was found.[80] It was advertised again in 1864, but again failed to sell so it continued in use until 1874[81] and the S&DR continued to employ enginemen to run it. However, from 1842, the day of the stationary engine was drawing to a close as new technology and improved locomotive power rendered the need for inclines increasingly redundant.

78 http://www.redorbit.com/news/business/796002/echo_memories_where_mighty_steam_trains_rumbled_far_below_the/

79 The Northern Echo, 21.5.2016, p.31 and Smith 2019, 93-4

80 Darlington & Stockton Times 23/7/1859

81 Young 1975, 274 and Holmes 1975, 140

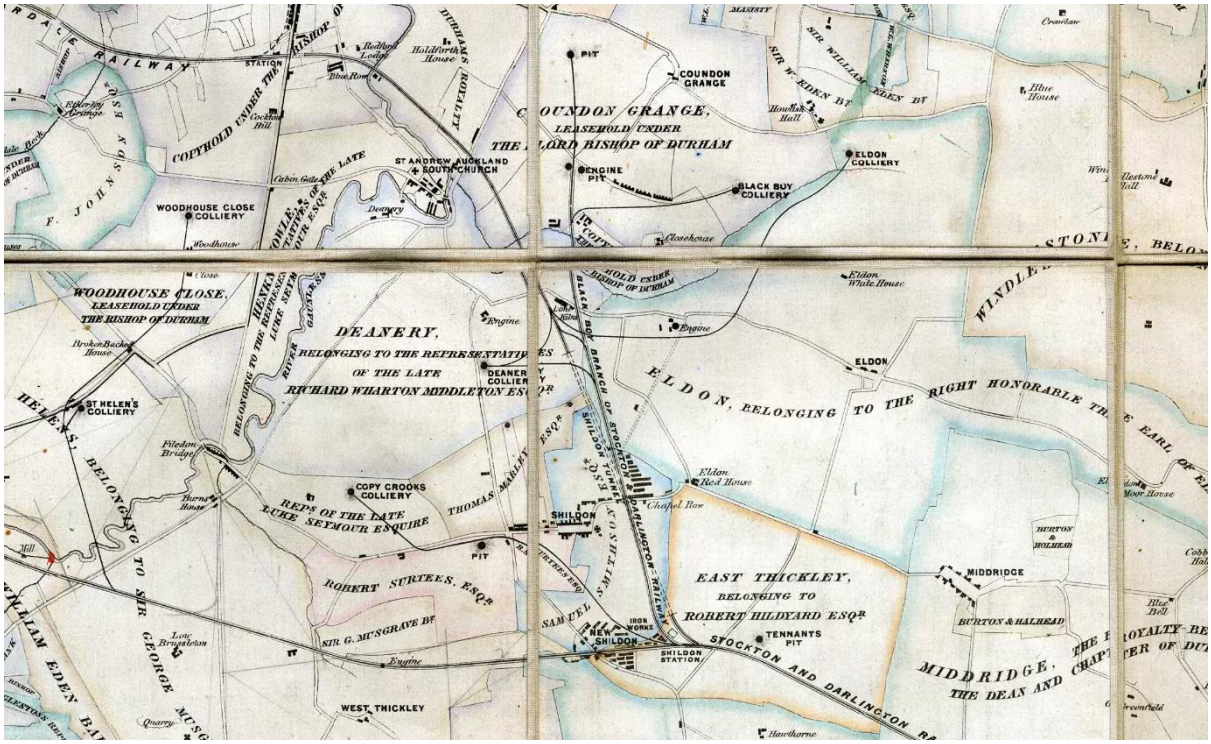


Figure 16. Extract of an 1852 Plan of the Auckland coals district, in the county of Durham, being the fifth of a series of plans of the great northern coal field. By John Thomas William Bell, civil engineer & surveyor, Newcastle upon Tyne. This shows the original Black Boy branch from the S&DR mainline and the later Tunnel branch, extended to become the Bishop Auckland and Weardale Railway. The coal pits, many of which pre-dated the railway (such as Tenants Pit) are also shown along with the various landowners. (DUL XL 553.2 BEL (accession 74,576))

In an attempt to obtain some of the north-south passenger traffic, the S&DR commenced a service to a temporary terminus at South Church. From 1 May 1842 a horse-bus service connected with the terminus of the Durham Junction Railway at Rainton Meadow and this in turn linked up (after a long journey) with railways to Gateshead via the Brandling Junction Railway and the Pontop & South Shields.[82] The distance it was possible to travel by train was increasing all the time, albeit with horse drawn linkages.

The Black Boy Collieries output was diminishing by the 1930s. Several seams were abandoned or exhausted by 1932. The colliery closed completely in 1939. Other collieries also previously served by the branch were also diminishing in their output (Auckland Park and South Durham Collieries). The rails were still in place along the route of the original branch until the 1930s and the route behind Windsor Terrace was made into a path in the 1960s. The four remaining ventilation shafts, including the one behind Windsor Terrace were demolished in 2008. Much of the rest of the route became an informal footpath linking Shildon and Eldon and was later designated as a public right of way. Land to the north of Eldon fell into private ownership; a chunk of the branch disappeared under Auckland Park Colliery by the end of the 19th century, then claypits and housing by the time the first World War broke out. Today the Prince Bishops Community Primary School occupies part of the site of the branch line north of Eldon, but surprisingly the route is intact and undeveloped, to the north of Eldon High Street as far as the school.

[82] Hoole 1986, 121-2

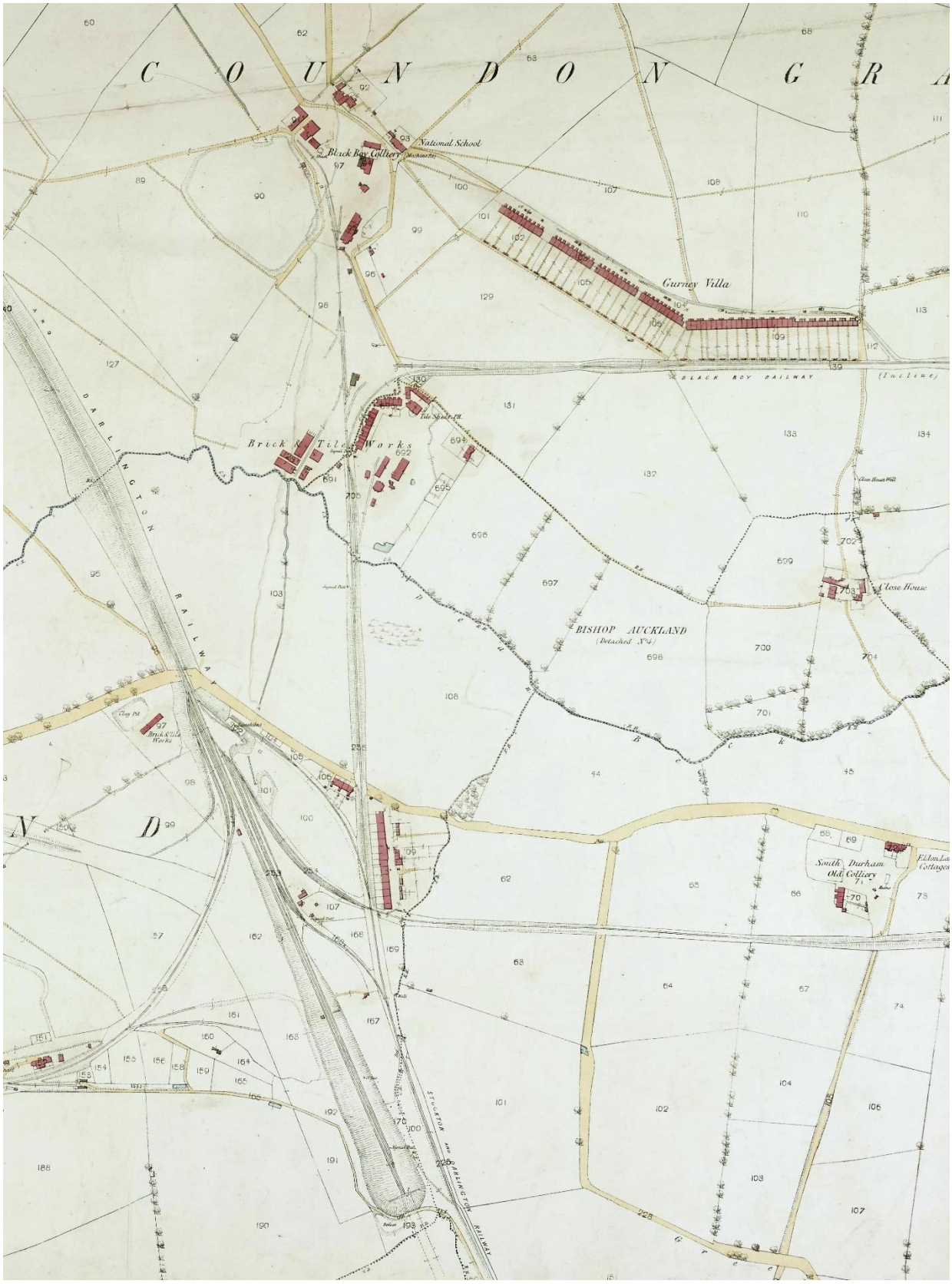


Figure 17. OS 1st ed Sheet XIII. (DT 4207 AJ A)

4.0 HERITAGE ASSETS OF THE BLACK BOY BRANCH

This section of the report lists what Black Boy related heritage assets are in evidence along the branch, starting at its terminus at the present day Shildon Station near Spout Lane and finishing at Dene Beck just south of Prince Bishop's School which was the limit of the branch line when it opened. These are assets which could be included in any future guided walks. Other heritage assets such as features shown on historic mapping, but no longer visible, or those associated with sidings joining the branch line to the collieries, are separately listed in the gazetteer which has been transferred to Durham County Council's Historic Environment Record (HER). The reference numbers allocated for each site relate to existing Historic Environment Records (these usually begin with 'H') or listed building records. Numbers allocated for newly identified assets, yet to be included in the HER, are pre-fixed with S&DR. There are 64 new records to be added to the HER as a result of this project.

Any management issues are flagged up after each description.

4.1 The Black Boy Terminus at New Shildon up to the Top of the Incline.

Thickley Spout Lane Level Crossing and Weigh House (S&DR 532)

Strictly speaking, the level crossing and weigh house were not part of the branch line. They were however located near its terminus and controlled access on to the mainline (as well as affording access over the top of the rails for road traffic crossing the track). Between 1825 and 1827 when the branch opened, this was the route that collieries had to use in order to access the line. On occasion, colliery owners (such as Jonathan Backhouse who owned Old Black Boy)[83] chose to continue to bring coal to the line via the road rather than the Black Boy Branch, in order to avoid paying the fee.

Thickley Spout Lane (previously called Eldon Lane) called as such, because of its association with coal spouts loading coal into locomotives or waggons here, was a level crossing when the line was opened in 1825. It was still a level crossing when the OS surveyed their plans in 1857. By the time the OS maps were revised in 1896, a bridge had been built over the mainline.[84] This required a substantial bank to be built on the south side in order to lift the road over the track at a sufficient height to allow locomotives to pass below.

The Dixon plan shows how carts travelling down the lane were funnelled on to the level crossing according to their destination. Any intending to join the railway would be weighed, tickets purchased, colliery waggons moved into sidings until sufficient were lined up ready to be attached to a locomotive, or horses if there were insufficient locomotives in the very early days. The person in charge of the weigh house (and living there) from the 14th May 1827 was Joseph Anderson,[85] although as his responsibilities extended over much of the first five miles of track, Mrs Anderson also covered his duties at Spout Lane.[86] His duties were '…to weigh and keep accounts there and make himself generally useful upon the line'. 'Making himself generally useful' included keeping an account of the time worked by the mechanics at New Shildon; attending at the foot of Brusselton East Bank to receive the tickets that came with the

[83] Trade Directory History, Directory & Gazetteer of Durham & Northumberland, 1827, p248
[84] Durham Sheet XLII.SE. Revised: 1896, Published: 1898
[85] Parsons & White 1828, 209
[86] Tomlinson 1914, 135 citing sub-committee minutes 22nd June 1827

waggons; inquiring into, and reporting upon, any breaches of the bye-laws occurring on the line, etc.[87]

By 1849, the S&DR employed 24 gatekeepers and they were part of the company's police force.[88] At Spout Lane the gatekeeper in 1849 was Edward Morgan who was paid 2/8d a day. Edward was the father of Ralph and John Morgan, engine drivers who lived in New Shildon and East Thickley respectively, along with parents Edward and Elizabeth Morgan only a few doors away in East Thickley.[89]

Despite the careful management of adjoining traffic, it was possible to defraud the railway company of income. John Graham's notebook records an allegation by Matthew Turnbull of two incidents where a platelayer Thomas Gibson ordered coal from Black Boy Colliery and had it ticketed as far as Spout Lane, however he had it carried as far as Aycliffe Lane without paying.[90] Although one of the incidents may not have been founded, it is clear that attempts were made by railway users to pay as little as possible, and the main gateway sites to the railway, such as Spout Lane, were potential weak points in the system. Worse still, collieries might use the S&DR's mainline to reach the Clarence Line at Simpasture Junction after it opened in 1830 and not only deprived the S&DR of their income, but also invariably left behind on the Clarence line waggon chains belonging to the S&DR. Frequent visits had to be made to the Clarence line to retrieve S&DR property and on occasion, officers were placed at the junction to ensure no waggons associated with the Clarence line could transfer to the S&DR, or vice versa, without appropriate payment. The S&DR may have been keen to expand the railway network nationally, but joining with the Clarence Railway was a step too far.

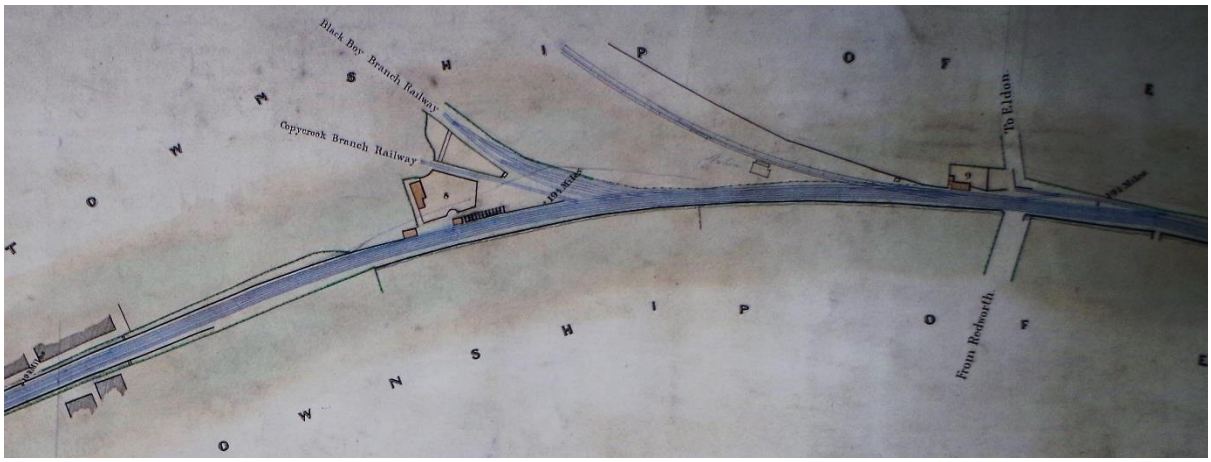


Figure 18. The junction of the Black Boy Branch with the S&DR main line as depicted by Thomas Dixon in 1839. The Coal Drops did not yet exist, but the line of small structures adjacent to the main line immediately south-east of '8' on plan may well be the lineside coal bunkers recorded as used for refuelling locomotives at this time. (Reproduced from TNA RAIL 1037/453, with permission)

Locomotive Coaling Stage (listed grade II*, H35606)

[87] ibid
[88] "That the Police of S&DR do consist of one Superintendent, 4 Registered Officers and as many Gate Keepers as circumstances may request" TNA RAIL 667/485 and SAD 15/9 (thank you to Maggie Pulle for providing copies of the archive material).
[89] Pulle 2023, 3 in The Globe July 2023
[90] GRA/1/3 John Graham's Notebook p30. Matthew Turnbull was the agent at the depot at Aycliffe Lane (Parsons & White Directory 1827, 212)

The Coaling Stage was constructed in early 1847 to a design by John Graham, S&DR Traffic Manager, under the supervision of William Bouch, foreman engineer of Shildon Works.[91] It remained in use until the closure of Shildon engine shed in 1935. It was designed to improve the re-fuelling and turn-round times of steam locomotives returning empty coal waggons to New Shildon before heading back east with their next train. A report dated 21 January 1848 made to the S&DR Board by John Dixon, Consulting Engineer, stated that:

'Shildon – a shed for four engines is wanted very much, and we think the old coal depots adjoining (on the east side of) the Water Tank is the fittest place. These old engine depots have been superseded by the new self-filling spouts'.[92]

The 'old coal depots' are shown on Dixon's plan of 1839 and consisted of a lineside bunker with 11 cells from which coal was presumably shovelled by hand. These 'old engine depots' were located west of the existing coaling stage [93] and west of the terminus of the Black Boy branch; it is unlikely therefore that they had any direct purpose associated with Black Boy.

The 'new self-filling spouts' referred to are the ones on site today, albeit extended, contracted again and altered. Their location was at the terminus of the Black Boy where previously the branch had extended from single track to four separate sidings which all joined the mainline.[94] The new drops had been designed and their construction approved by 4 December 1846:

'John Graham has submitted a plan for the Coal and Water Station at Shildon, and he is requested to confer with William Bouch and Oswald Gilkes and if they are all agreed upon the subject he is authorised to refer it to the Shildon Works Company for execution, with the exception of such part as they may require the Contractor's assistance for'. [95]

The new drops consisted of three timber hoppers or bunkers each with a spout or chute, arranged at regular intervals along the length of a stone stage elevated above normal track-level and approached via a ramp. Map evidence surveyed 1856 (Ordnance Survey 1857) suggests they were initially approached from the west via an earthwork ramp seemingly terraced in to the side of rising ground, and that at this date only the eastern end (corresponding to the extant, high-level horizontal section where the hoppers and spouts were located) was retained by stonework. The rail spur leading up the ramp branched off the single line down from Black Boy Colliery a few hundred metres before the latter's junction with the S&DR main line to Brusselton Incline that ran past the Shildon Works, meaning that coal waggons coming down the branch from the colliery could readily be diverted directly on to the line serving the Drops. Since the Black Boy Branch is known to have been worked using a combination of horses and steam-powered rope-incline,[96] the inference must be that coal waggons were hauled to the top of the Drops by horses or more likely were self-propelled up the ramp using momentum gained from descent of the incline, with 'bank-riders' regulating the speed of the waggons and bringing them to a halt by means of crude wooden brakes.[97] The OS map shows a short passing loop existed at this date towards the top of the ramp, leading

[91] Jecock 2022, 2
[92] TNA RAIL 667/18
[93] NGR NZ 23361 25723
[94] John Graham had suggested increasing the sidings to create more standage in 1835. (Graham's Report Book 3, p54, 6th November 1835)
[95] TNA RAIL 667/17.
[96] Smith 2019, 89
[97] ibid, 36-7

to a single head shunt running the length of the high-level section; the significance/purpose of the passing loop is unclear but may have been to accommodate empties.[98]

Coal waggons hauled up the ramp discharged their loads through doors in their base in to the hoppers accommodated in small bays within the stage, which in turn fed spouts that directed the coal in to the tenders of locomotives waiting on a short loop-line or coaling road that ran at the foot of the stage. The stage also included one simple raised timber platform (later increased to three in number), presumably on to which coal could be dropped and then shovelled by hand from a position near-level with the top of the tenders; these platforms seem to have been provided for the use of locomotives unable to re-coal at the gravity-fed chutes.[99]

However, when the OS revised the map in 1896 (Ordnance Survey 1897), by which time the S&DR had been absorbed in to the North Eastern Railway (NER), the Drops are shown as hard-line detail throughout suggesting the ramped section was later re-built in stone as well. Other new details depicted on the map includes two short, parallel sidings immediately north of the Drops, squeezed in between them and the Shildon Tunnel Branch Line (labelled as Consett Line on the map) which had opened in 1842. The sidings are shown departing from the Black Boy Branch just before the start of the ramp, implying both were for storage of loaded coal waggons and/or empties prior to/after they were needed at the Drops.

Figure 19. The coal drops in June 1932. They extended as far as the station waiting room but the easternmost extensions were now undecked and out of use. (Unknown Photographer © Ken Hoole Collection/Head of Steam – Darlington Railway Museum)

Furthermore, the map portrays the high-level section of the Drops now terminating almost cheek by jowl against the south-west corner of the waiting room on the down (southern)

[98] Jecock 2022, 7
[99] ibid

platform of Shildon Station on the Tunnel Branch Line, suggesting that in the years since 1856 the coaling stage had also been extended a distance to the east.

The passing loop shown in 1856 on the ramped approach to the Drops no longer existed, presumably superseded by the new storage sidings.

Later photographic evidence shows the extension comprising of a flat timber deck carried on two freestanding stone piers; neither deck nor piers now exists.[100] Subsequent depictions of the Drops on the OS map revisions of 1915 and 1939 (Ordnance Survey 1920; 1946a) portray them virtually unchanged apart from that of 1939 which shows the track along the top of the Drops terminating short of the extension. The extension is depicted as still present/in use on a plan of Shildon Station dated 1925 (NERA 1418-02-24), and demolished after 1932 but before the Drops closed in 1935, presumably because the structure had become increasingly unsafe (the photographs show it heavily braced) or because whatever function it originally served was by this time no longer needed.[101]

The Drops remained in use for the best part of a century, before closing in 1935 at the same time as the Shildon engine shed due to the working-out of large parts of the west Durham coalfield and the consequential reduction in coal-traffic carried by the railway. In that year, Shildon-based locomotives were transferred to duties at sheds elsewhere and, as a result, locomotive-coaling facilities were no longer required at Shildon. [102]

Management issues

The Coaling Stage structure is awaiting planned restoration.

Lineside Cabins (Listed grade II, H35933)

The Railway lineside cabins, commonly known as the Black Boy Stables, are a complex of four single-celled buildings sited between the former Black Boy Branch and the Surtees Railway (a private branchline); they are listed at Grade II.[103] They were restored for the 1975 celebrations but heavily damaged by fire in 1985; they were restored again in 2021. These events have caused the loss of much historic fabric and, to ensure their security, all window openings now contain shutters. Although a small structure is shown in their location on Dixon's 1839 survey, it has insufficient detail to establish this as one of the buildings now on the site. While commonly thought to have stabled horses working on the railway, none of the buildings appear to have been stables, though the largest building may have been a store for horse feed.[104]

This central building has coursed sandstone on its principal (south-west) elevation in contrast with the smaller rubble on its other elevations. The higher-quality elevation faces the main line and the Surtees Railway which suggests a closer relationship with them, rather than with the Black Boy Branch with which the structures are often associated. This cabin appears on the 1853 plan for the sale of Soho Works; however, the plan's level of detail is so low that the single building shown may represent more than one structure. The front elevation has three bays comprising a central door flanked by two windows with large stone lintels. The south-east elevation has an opening in the gable, serving an attic storey, and below this are a few

[100] KHSC 945/20
[101] Jecock 2022, 8
[102] ibid, 2
[103] NHLE 1322863
[104] NHLE 1322863.

straight joints in the masonry which may suggest a former opening on the ground floor. The north-west elevation has a small window opening adjacent to the join with another of the cabins.

Figure 20. The central building (facing the mainline and the Surtees branch) and the platelayers' cabin in 1974. The coal drops are in the distance (photo by John Proud courtesy of Win Proud).

Figure 21. The lineside buildings in 2023 (photo: Peter Bainbridge)

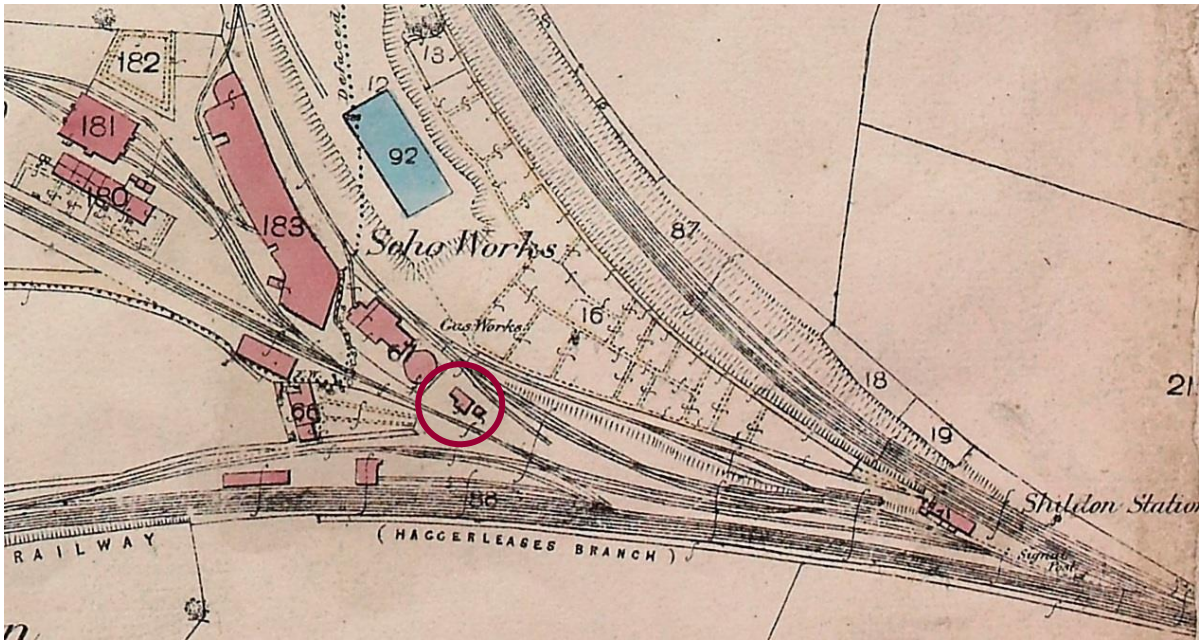


Figure 22. Two of the lineside buildings as shown on the 1st ed OS map 1856 – the platelayers' cabin on the E and the possible Banksmen's cabin adjacent

The smaller building to the west might have served as a tack room or a banksmen's cabin, used to supervise the bottom of the incline; it first appears on the OS map surveyed in 1856 (*see* Figure 22).[105] Its walls are of coursed sandstone, with some quoins at the corners and a mono-pitched roof with flat coping stones; its main face, as with the earlier structure, faces away from the Black Boy Branch. The south-east elevation has a door and small window, both with large stone lintels. To the side of the door is some brick infill at the corner of the building. Historic photographs show that this cabin was heated by a chimney stack in the south-east wall, abutting the provender store (for storing animal feed). Attached to the rear of this cabin is another stone-built single-cell cabin which appears between the date of a 1912 line diagram and the 1915 revision of the 1:2,500 OS map.[106] It is labelled on a 1925 LNER plan as a gas meter house.[107] It has a single opening on its north-east elevation, which contains a double door underneath an iron lintel.

The final building of this group is detached from the others, to the south-east. It also first appears on the 1856 (surveyed) OS map and overlooks where the two branches joined the main line, so may have been a base for staff who were supervising operations on the railway. It is polygonal in plan, with its south-east corner at an angle, built of coursed sandstone rubble, and has small window openings on the north-east and south-west walls with a doorway in the south-east wall. There are stout quoins on each corner; however, they tend to be only at lower levels, so they are perhaps a legacy of an earlier phase. The most prominent feature is the crenellated parapet, the present appearance of which is a product of the 2021 restoration based on depictions in early 20th-century photographs (see figure 20). The form of this building is similar to the platelayers' cabin at Simpasture, which also had a decorative

[105] Archaeo-Environment Ltd 2016b, 12.
[106] NERA WP797: Shildon/46 (diagram only). 1912-01-03.
[107] NERA 1418-02-24: Coloured plan of Shildon Station (showing disused Soho Works). Corrected to 16th May 1925.

crenellation, suggesting a conscious design choice for mid 19th-century lineside cabins by the S&DR.[108]

Management Issues

These lineside buildings have been recently restored, although no prior recording of the buildings took place and valuable archaeological information was lost. They are currently behind unsightly security fencing. A new use and removal of the fencing would enhance their appearance.

The Aqueduct, off branch (listed grade II. H35637)

This 1839-1842 sandstone ashlar aqueduct was built to carry a watercourse over the Shildon Tunnel cutting. Alterations in ground levels *c*.1975 have resulted in the watercourse drying up. The stonework under the arches appears to be suffering from the use of cement mortar resulting in its erosion.

Management issues

The security fencing in place to prevent trespassers on to the live line is unsightly and makes it difficult to appreciate the aqueduct.

Figure 23. The aqueduct.

The Shildon Tunnel south entrance (listed grade II, H34677, H863)

The tunnel portal was constructed in 1842, using sandstone ashlar to the same design as the north portal.

Management Issues

The tunnel opening is difficult to see. The removal of a single self-seeded tree would allow photographs to be taken from behind the safety of the security fencing.

[108] Archaeo-Environment Ltd 2016b, 27.

Figure 24. The south portal of the Shildon Tunnel is difficult to see because of a single self-seeded tree

Wesley Crescent

This was the location of a Wesleyan chapel on mid-19th century mapping, since destroyed.[109]

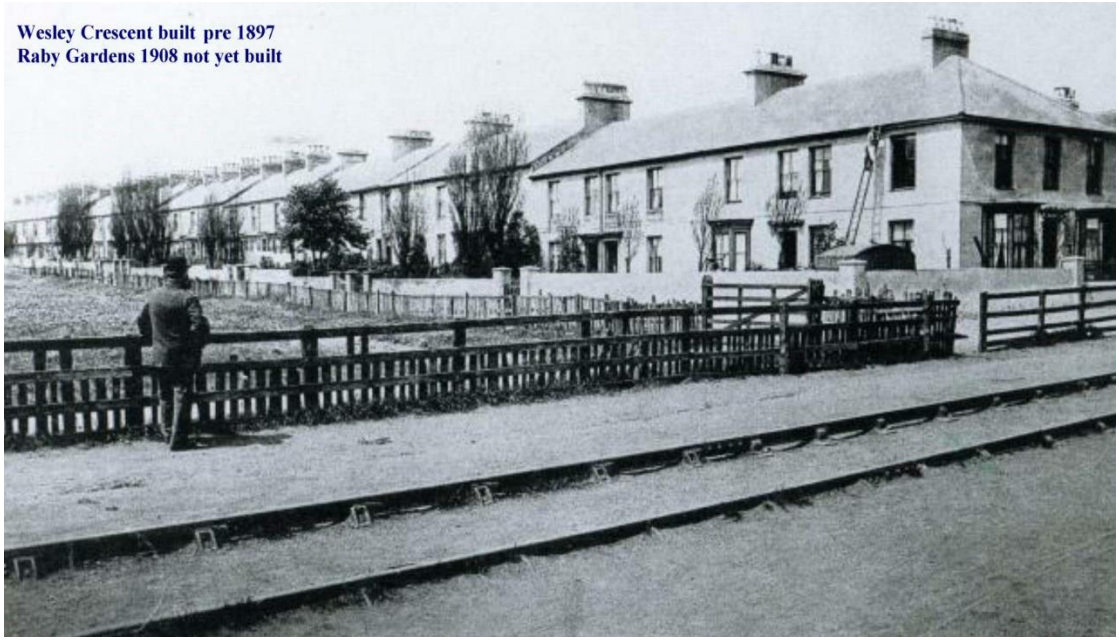


Figure 25. Wesley Crescent with the Black Boy branch in the foreground at the end of the 19th century or very early 20th century. (Photo courtesy of Colin Turner.)

[109] Durham Sheet XLII. Surveyed: 1857, Published: 1859

Ventilator shafts for the Shildon Tunnel (S&DR 1226, 1236,) and possible Incline Watchtower/ signal station (S&DR 1239)

The tunnel of 1842 was provided with ventilation shafts which started life as shafts to create below ground access in order to construct the tunnel. Once four of the shafts were adapted as ventilation shafts, they appeared above ground as cylindrical brick towers, all evenly spaced along the line of the tunnel.[110] They ensured a good airflow into the tunnel and allowed steam to escape. The last four were demolished as recently as 2008 by Network Rail.[111]

The most southerly ventilation shaft for the Shildon Tunnel was located just south of Wesley Crescent at NGR 423105 526529.

Figure 26. The last surviving tunnel ventilation shaft at Wesley Crescent (on the right beside the tree)

Next was the shaft inside the north end of the sandstone quarry, west of Cheapside and the site of S&DR worker's cottages at NGR 423025 526709.

The third tower was just north of the engine house and reservoir and so where the land starts to slope downhill towards Eldon.

The most northerly tower was located at NGR 422861 527081.

Another circular feature (S&DR 1239) above the tunnel is shown on the 1856 survey for the OS maps which looks like another ventilation shaft.[112] However it is not in the correct position for equidistant spacing of shafts along the tunnel. It was located on high ground visible to and

[110] All visible on the 1st edition OS map surveyed in 1857.
[111] The Northern Echo 10.4.2008.
[112] Durham XLII.11. Series: Ordnance Survey, 25 inch to the mile. Surveyed: ca. 1856. Published: ca. 1857

from the engine house at the top of the incline with views down both sides and was labelled as a watch house. This suggests that it was used for signalling along the incline to let the engineman know when the waggons were ready to be hauled up. It was not shown on Dixon's survey of S&DR property in 1839 so must date to between 1840 and 1857. Neither the watch house nor the engine house were shown on the OS maps by 1895, but the ventilator shafts were still depicted.[113] The watch house was located at NGR 422861 527081 but nothing is visible there today.

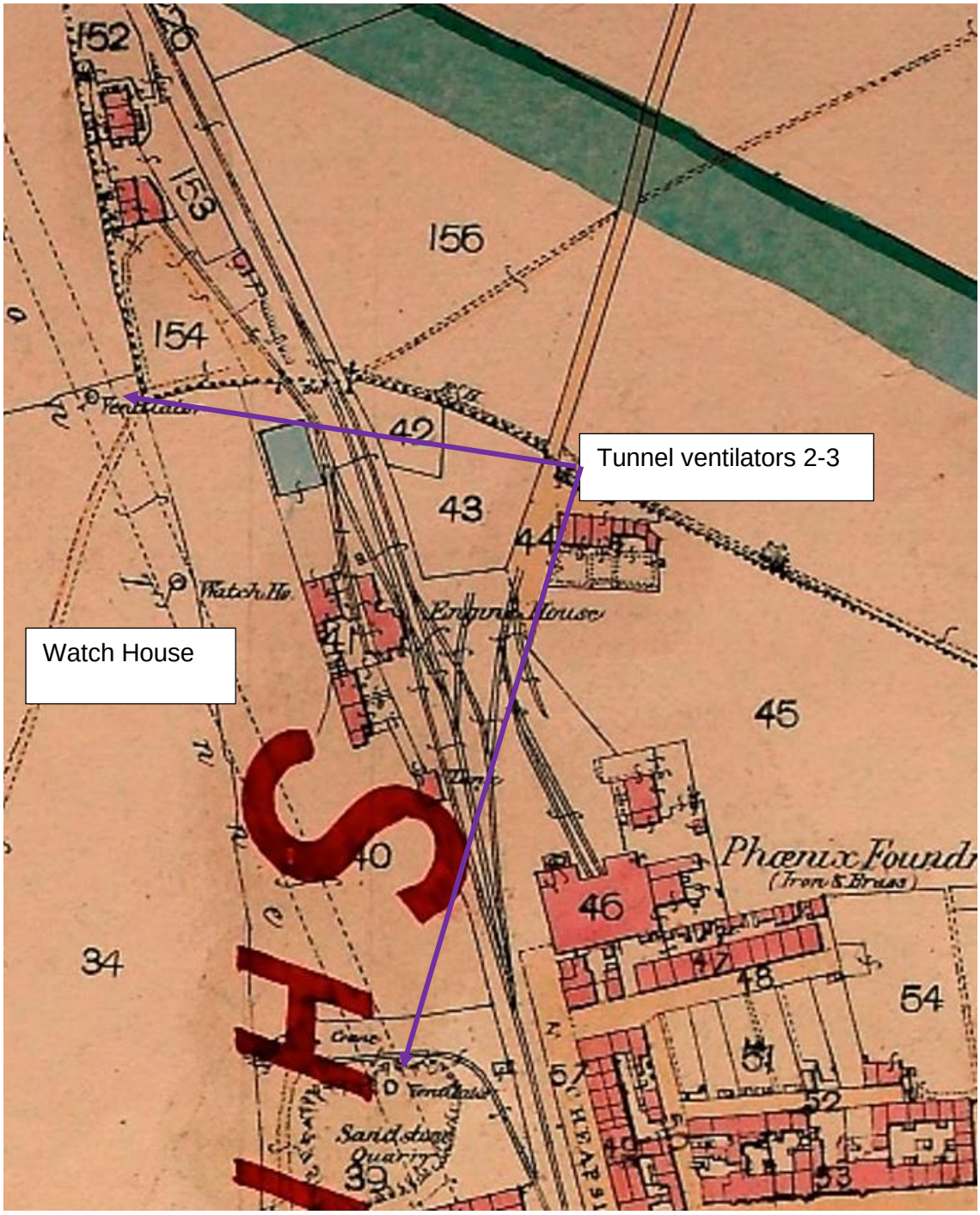


Figure 27. OS 25 inch map surveyed 1856 showing the second and third ventilators shafts and the watch house

[113] Durham XLII.11 Revised: 1895, Published: 1897

S&DR Buildings G10 and G11, (coal depot) and level crossing, Cheapside (site of) (NRHE 1375692)

What is now a crossroads where Cheapside and the Black Boy Incline (site of), Church Street and Albert Street meet, was a level crossing when the incline was still in use. This was where there were a number of structures associated with the running of the incline. In 1839 the level crossing was not gated, but it became so by 1855. Although the incline was built as a single track line, it had numerous sidings and passing places. Where it met the level crossing it was mid passing place and a siding to the sandstone quarry joined the line here, so two tracks crossed the road to Eldon.

Figure 28. Celebrations to mark the coronation of George V and Queen Mary at the crossroads of Cheapside, Albert Street and Church Street. The gate across the incline is just visible to the left (circled in red) in front of what was the King William IV inn. Photo courtesy of Colin Turner.

An early photograph of the King William IV inn shows that the incline had a stone boundary terminating in a pepperpot cope (see figure 31). This appears to date from after 1857 when it was not shown on the 1st edition OS 25-inch map, but a boundary wall was shown on the 2nd edition OS map surveyed in 1895. The need for a stone boundary wall had presumably arisen from accidents caused by people walking in front of waggons heading downhill towards Shildon.

The Dixon plan of 1839 shows a lineside coal depot with four cells and served by a siding in the SW corner of the crossroads but this had been replaced with the outside toilets of a row of terraced houses when the 1st ed OS map was surveyed in 1856. Presumably, like all other coal depots constructed on the line, these were designed to offer coal for local landsale.

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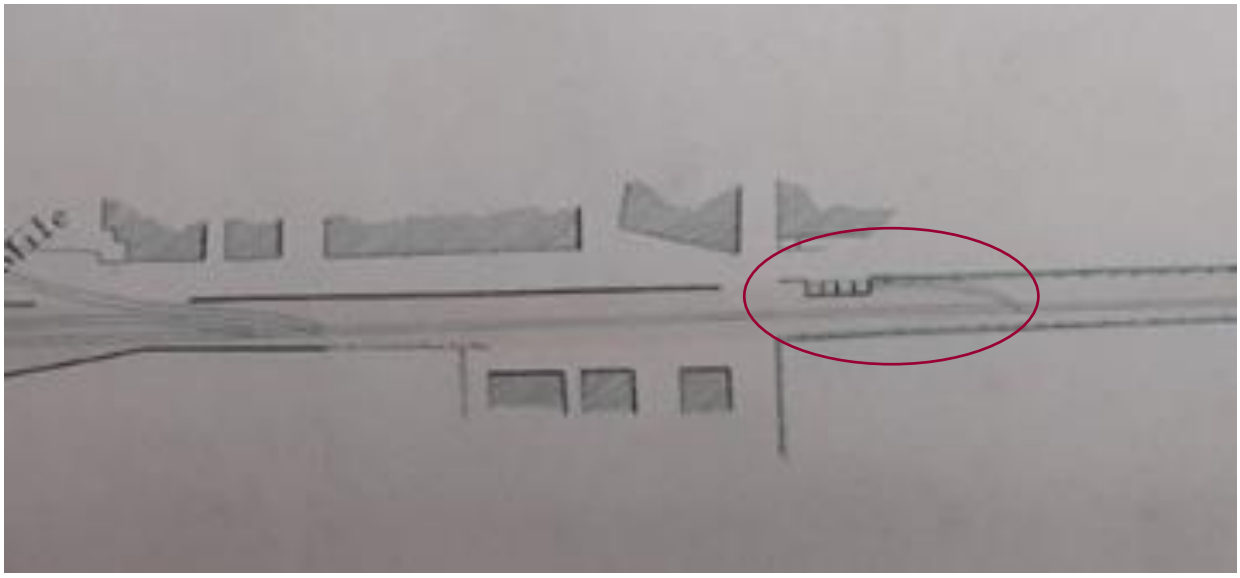

Figure 29. Lineside coal depot with four cells at the junction of Cheapside and what is now Church Street. It was served by a siding.

Where there is now a modern doctor's surgery on Fulton Terrace, was the location of a row of S&DR houses, now demolished, and which were given the number and plaque G11 by the S&DR in 1857. In 1851 Nicholas and Jane Greener were living in one of these buildings, then called South Durham Place. Nicholas had been recorded as an engineman in the 1841 census when he lodged at Toft Hill with brother and sister Joseph and Jane Maddison, so presumably he remained an engineman when living here.[114] By 1851, four of Nicholas and Jane's six children had been born, the eldest two being named after his uncles, Thomas and John (enginemen at the S&DR's Etherley Incline). By the middle of 1854, the family had grown to six children, five boys and one girl. [115]

Whether it was a growing family or a change of job, the Greener family had moved to Rose cottage next to the stationary engine by 1861 (see entry for Rose Cottage below).[116] On the census of 1871, Nicholas' son John had taken over as 'Railway Stationary Engineman' and he was back living in South Durham Place (G11) with his mother and brother, George. He died the following year at the age of 26 and is buried in the churchyard of St John's Shildon. His mother, Jane, died in Shildon in 1887.[117] It is interesting that the S&DR were still employing an engineman for a stationary engine in 1871 decades after having tried unsuccessfully to sell the engine and long after the incline was largely redundant.

Photographs from the 1970s (see figure 30) show a terrace of three matching two storey houses (and a later addition), suggesting that three families stayed here. Presumably their work was also directly related to the running of the incline.

Another S&DR building (G10), which accommodated railway workers who monitored the movement of rail traffic on the line, was located nearer the junction of Church Street and Fulton Terrace. It is not certain which building this was and none of the surviving historic buildings

[114] Nicholas was active with the Maddisons and his Greener uncles in the Methodist Movement. The Methodist records confirm he was Sunday School Superintendent of Etherley Chapel in 1840-41 and 1842-43. He married Jane Maddison on 22nd September, 1844 (Jane Hackworth-Young 2019, 13).
[115] Hackworth-Young 2019, 13
[116] ibid, 14
[117] ibid

here have an S&DR plaque. The building on the corner is rendered with modern replacement windows so it is not possible to identify any associations with possible S&DR buildings.

The plan of the branch line by Thomas Dixon dated 1839 showed no S&DR buildings on this stretch of Cheapside, only what is now called Rose Cottage (G12) adjacent to the engine house. It is possible that G10 and G11 were added to the company's portfolio after 1839 and before 1857 when the plaques were installed.

Figure 30. G11 Fulton Terrace in April 1968. Photo by John Proud courtesy of Win Proud. This was allegedly engineman's houses, now destroyed and replaced with the doctor's surgery

1 Cheapside (formerly The New King William IV, formerly the King William IV. H75410)

The King William Inn was opened in 1831, one year after William IV became King[118] and must have provided refreshments for railwaymen using the Black Boy line as well as the growing population of Shildon. It was also used for auctions and for coroner's inquests after accidents on the railway or at the collieries. The word 'New' appears to have been added to mark the addition of bay windows, an ornate wooden door surround and a corner doorway which made the frontage more fashionable in later Victorian times. The inn originally had iron railings on top of a dwarf wall facing Cheapside, but must have lost them to the war effort in the 1940s.

[118] Chapman 2005, 25

Figure 31. The King William IV inn on the right with coach arch further north. Note the stone pepper pot pillar opposite. This was the boundary of the incline. Despite being a style regularly used by the S&DR between 1825-30, it was not shown on the 1857 survey by the Ordnance Survey; the boundary walls may not have been added until the latter half of the 19th century. In the distance, the sign for the Cross Keys Inn can be seen (see below).

Figure 32. A similar view today (2023) with modern street railings including Hackworth's plugwheel design

Reproduction Chaldron Waggon, Cheapside (H75408)

Such waggons were used on the railway to transport coal to the depots for domestic markets or to Stockton for export. Their bottom opening function allowed them to be rapidly emptied at the depots or staithes. This waggon was lifted by Sheltee Industrial Maintenance Ltd and taken to Lee Harle Lee Ltd for conservation and rebuilding in August 2021. According to Paul Harle, the waggon is not a true replica but just a mismatch of parts – one set of wheels has the maker's mark 1894 Hurst Nelson & Co Ltd Motherwell – whilst the other is from Ashbury Ltd Manchester. The 'coal' on the top of the waggon is a fibreglass replica of coal.[119] It is located on the route of the incline which is marked out with cobbles on the ground.

Figure 33. The reproduction chaldron waggon back on its plinth after restoration by Paul Harle (with Peggy his dog) and Ian Richardson.

Cross Keys (site of) (S&DR 1254)

The current modern building replaces the Cross Keys which was the location of the opening day banquet for the Shildon Tunnel.

Taking you further (to the wild district of Crook)…Shildon Tunnel opens

At 10am on Monday, January 10, 1842, a ceremonial procession set off from the Cross Keys Inn, in Cheapside. It was led by a Union flag, with the resident engineer, Luke

[119] The Globe, December 2021, 27

Wandless, directly behind. On his right was Henry Booth, the principal contractor, and on his left, Thomas Dennies, the principal brickmaker. Accompanied by banners and a brass band, they went in through the southern entrance. *"The darkness was relieved by innumerable candles, and a platform had been erected at which a ceremony took place",* said the North Eastern Railway (NER) Magazine, in 1913. Mr Dennies ceremonially presented the last brick. Mr Booth ceremonially sprinkled it with wine. Mr Wandless ceremonially cemented it into place with a suitably inscribed silver trowel - that very same trowel is now on display in the nearby Locomotion Museum.

The gentlemen then ceremonially named it the 'Prince of Wales Tunnel' after Prince Albert Edward, Queen Victoria's first son, who had been born two months earlier and, in 60 years time, would become King Edward VII. *"Simultaneously cannon were fired in the open air, and the band struck up the favourite tune, Merrily Danced the Quaker's Wife",* said the NER Magazine.

The procession wandered on through the darkness to the northern end of the tunnel. Then dinner was laid on for the workmen in six pubs in Shildon and 50 VIPs tucked in at the Cross Keys. They were joined by engineer-in-chief Thomas Storey and the company secretary, Thomas MacNay. He said *"he hoped the time was not far distant when they would see locomotive engines and trains passing through the wild district about Crook where the people had never seen such a thing before"* (Taken from an article by Chris Lloyd of the Northern Echo written 10.1.2007).[120]

Place names - **Foundry Street** and **Phoenix Place** (associated with S&DR 1231, 1237)

These streets are both named after an iron and brass foundry called the Phoenix Foundry. It was owned by Nicholas Downing and opened in 1832 and had sidings linking it to the Black Boy Incline. The foundry occasionally undertook contract repair work and maintenance of rolling stock for the S&DR; it also featured in S&DR minutes in relation to water supplies for Shildon and access to the branch line. The foundry was disused and demolished by the end of the 19th century.

Downing funded a joint venture with Thomas Hackworth to create Hackworth & Downing and this became fully integrated with Timothy Hackworth's locomotive building business by 1834.[121] These became known as Soho Works and operated alongside the S&DR's New Shildon Works close to the terminus of the branch line.

Sandstone Quarry (site of), now Hackworth House (SDR 1232)

This quarry may have pre-dated the Shildon Tunnel which ran through (or rather, under) it. One of the tunnel's ventilator shafts was located on the north end of the quarry. The quarry was joined to the incline by a siding. It also had a crane on its north side. It was still in use in 1857 but had gone out of use by the end of the 19th century.

Water Tank, Cheapside (S&DR 1253)

[120] Read more at: http://www.redorbit.com/news/business/796002/echo_memories_where_mighty_steam_trains_rumbled_far_below_the/#kvSddA74RaqQ4sic.99.
[121] Smith 2015, 41-2

A tank was shown on the OS 1st edition 25 inch map dating to 1855.[122] This may be the water cistern referred to in 1833 when specifications and a design for a water cistern to supply locomotive engines with water on the Black Boy branch were put forward by the S&DR.[123] The remains of this were still visible in the 1960s (see figure 14). It was presumably fed with water from the reservoir by gravity. Its former location is just on the north corner of the access road to Fulton Court.

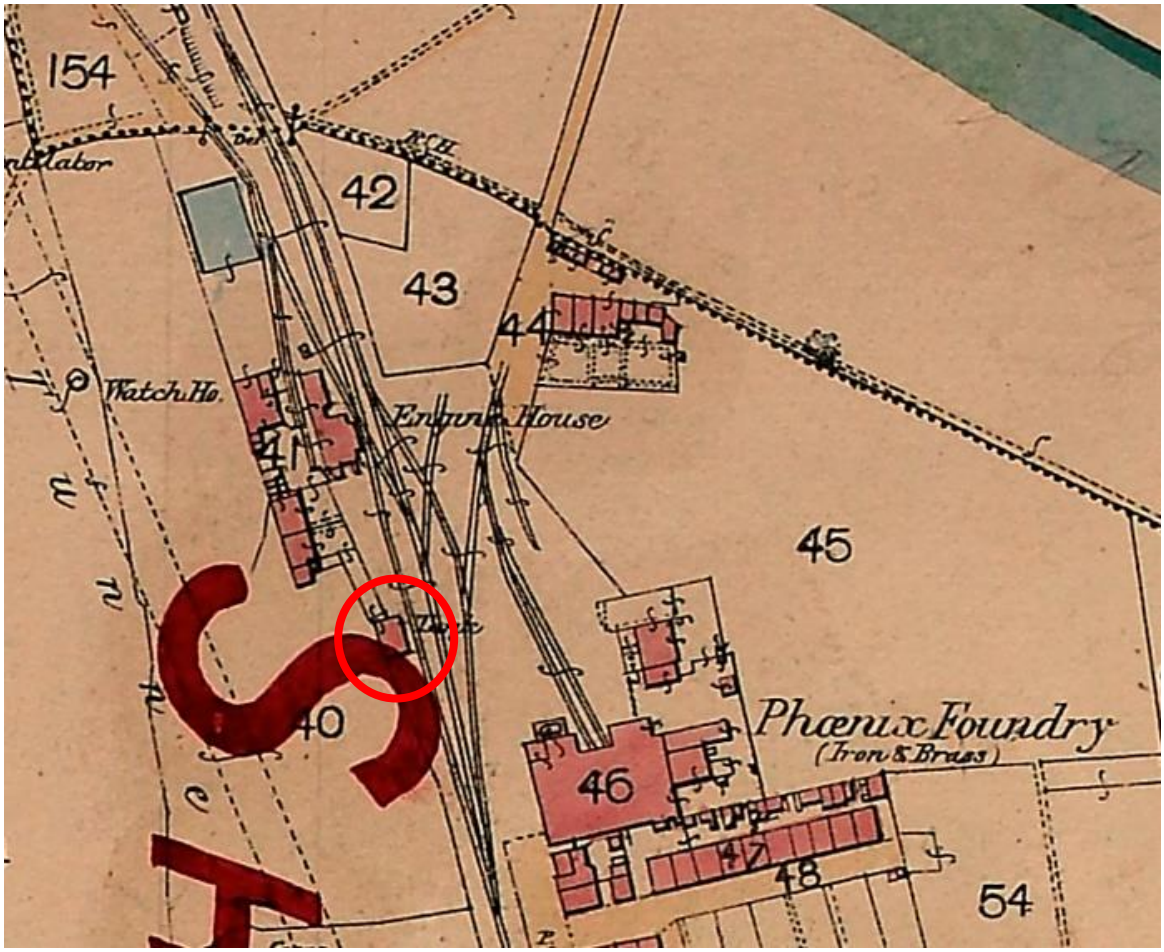

Figure 34. Extract from the OS 1st ed 25-inch dated 1855 showing the location of the Tank (circled) south of the engineman's cottage and adjacent to the track.

Eldon Branch Railway (SDR 1255)

Where Cheapside curves round to become Eldon Bank Top, the line of the road follows the route of sidings north of Phoenix Foundry in 1856.[124] This was also marked in pencil on the Dixon plan of 1839 as the Eldon Branch Railway. The branch line had been replaced with a road by the time the 2nd ed OS map was surveyed in 1896, but one siding remained which probably served a coal depot. [125]

[122] DT 42.11 (AJc2)
[123] TNA RAIL 667/296
[124] Durham Sheet XLII. Surveyed: 1857, Published: 1859
[125] Durham Sheet XLII.SE. Revised: 1896, Published: 1898

The Black Boy Engine House (site of), Rose Cottages (former Engineman's Houses, G12), Engine House Reservoir (S&DR 1233, 1234, 1235)

This is a row of single storey cottages on the west side of the incline track. These are now pebble dashed and so their historic interest is obscured. However, 'Rose Cottage'**,** on the left, still bears its S&DR plaque allocating the terrace number G12. Such ceramic plaques were added to all groups of S&DR residential properties in 1857. The 1839 survey by Thomas Dixon shows two buildings on a slightly different plan with the southern one (Rose Cottage today) having front gardens consisting of circular flower beds on either side of a door.

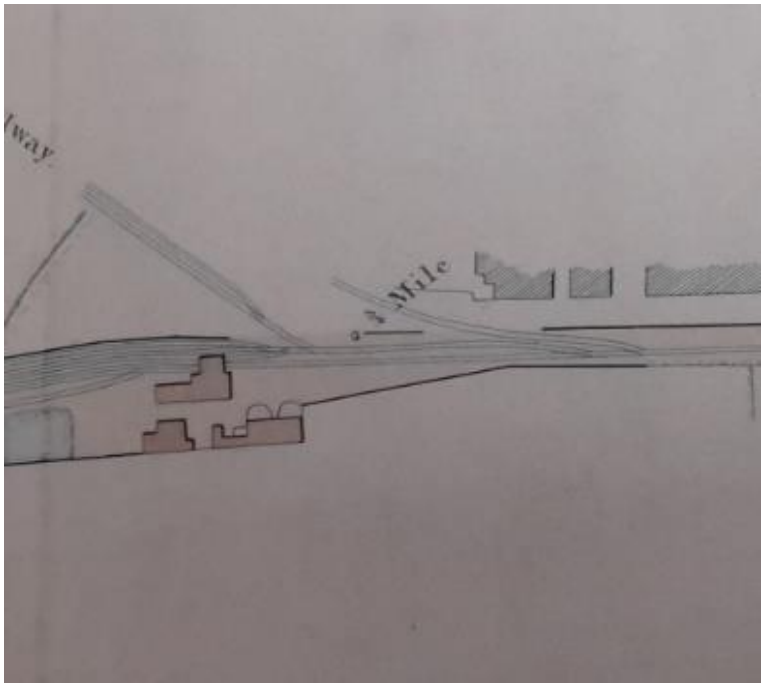

Figure 35. An extract from Thomas Dixon's plan of 1839 showing the enginemen's house(s), the engine house and another building, plus the reservoir. The main sidings heading off are linking Black Boy to the Eldon Branch Railway (TNA RAIL 1037/453)

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The layout of the buildings is different to the design of those at Etherley and Brusselton Inclines which had two semi-detached identical two storey houses at the summit.

The name of the engineman from 1828 has yet to be clarified, but in 1851, Nicholas Greener, the nephew of John Greener, engineman at Etherley Incline, lived at the S&DR property on Fulton Terrace (G11) and was listed as an engineman at that time.[126] He and his family were living in one of the properties at Rose Cottage by 1861. When Nicholas died on the 29th May 1864, he was succeeded as engineman by his son John Greener who moved back to the old family home on Fulton Terrace (G11). [127]

The stationary steam engine that hauled the waggons up the Black Boy Incline was located north of the cottages and on the south side of the track. There were several passing places or sidings where waggons could stand before being processed. Similar standage areas were located at the foot of each side of the incline. The engine hauled the laden waggons up the hill by rope from the foot of the incline at Eldon; the waggons were allowed to run downhill towards Shildon, without any rope attachment and a rather primitive form of brake applied as necessary by a brakesman. Only one drum for the rope was required as the incline was only steam powered on the N side.

However, in 1827, when the branch was opened, the engine was not ready and the hard work had to be carried out by horses until 1828. Like the other winding engines at Brusselton and

[126] Thank you to Tom Walker for the family tree, see also Walker 2019, 3 and to Jane Hackworth-Young for census information
[127] Hackworth-Young 2019, 14

Etherley, the engine proved troublesome and had to be replaced with another in 1835, designed by Timothy Hackworth.

To the south of the cottages and the track, amongst the trees and bushes, there is a sloping stone wall with triangular coping stones – this is a typical S&DR boundary wall. There are also a number of architectural fragments lying amongst the vegetation on the other side, which may be some of the remains of later buildings shown on maps dating to 1855 (see figure 37).

North of the cottages is a pony yard area set out with jumps – this is the site of the **reservoir** that fed the steam engine house.

Figure 36. Engine House Cottage (G12) in 1970. The incline track ran along the foreground. Photo by John Proud, courtesy of Win Proud.

Management issues:

The interpretation panel close to the site is in poor condition and needs replacing.

The buildings are not listed, but their historic significance is high and the survival of the S&DR house plaque is rare. Despite the use of modern materials externally, they should be considered for listing and if they do not meet the standard, then they should be included on the local list of historic buildings.

The use of a cementitious render on the cottages may be encouraging damp and if the owners request guidance it should be available from the Council's conservation officer.

The potential for below ground remains throughout his area is very high and any ground disturbance should first be tested with an archaeological evaluation. This includes the woodland area, the track, the land around the houses and as far as the entrance to Fulton Court.

Figure 37. Stonework at the top of the incline near the site of the engine house.

4.2 The Top of the Incline down to Eldon Lane

Hollins Hill Farm (also known as Holland House Farm S&DR 1216)

This was located on high ground a little north of the Black Boy engine house and when the S&DR had their property surveyed in 1839 by Thomas Dixon, this building was included. It consisted of one main building with bay windows facing W, away from the incline and another smaller building attached. The outside toilet was on the W side.

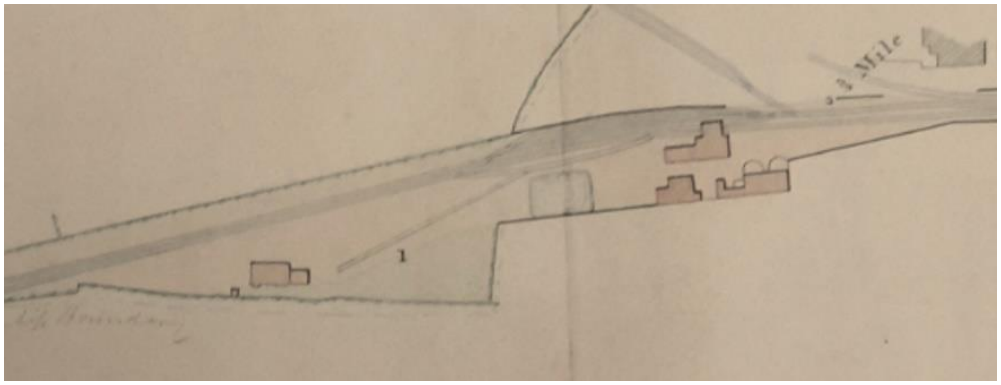

Figure 38. Hollins Hill Farm (on the left) in 1839 with a siding leading to another siding at the engine house reservoir. It was located within S&DR land and appears to be an S&DR building at that time. (TNA RAIL 1037/453, photographed by Maggie Pulle)

Figure 39. Hollins Hill Farm overlooking the Black Boy Incline c.1900

Dixon's plan shows the township boundary running to the rear (W) of the property and most notably the building had its own siding to the incline summit. It was destroyed in stages between 1948 and the 1970s but some demolition debris remains on site.

Management issues:

The building is now largely demolished but there are still people living locally who had family members living here. They may be able to provide more information about who lived here and when.

Figure 40. The site (on high ground above the fence) in 2023

Railway Revetment Wall (S&DR 1256)

Revetment walls to support the Black Boy incline where the ground naturally drops from E to W, still survive on the W side of the line. They have flat coping, with some graffito carved into it. Further north the wall curves and heads back to join a straight section. At this point, the 2nd ed OS marked 'Stone'. The walling continues wherever the ground drops significantly on the W side.

Management issues:

The walls still retain some supportive function by preventing soil slipping from the right of way. They therefore merit retention as part of maintaining the definitive right of way.

Railway Boundary Wall (S&DR 1257)

A stone boundary wall marking the edge of S&DR property still survives a little south of the Shildon Tunnel entrance. The wall survives to five courses high but is in poor condition. It has been replaced with a post and wire fence. Nearer the Tunnel the boundary consists of concrete posts and wire, typical of the 1920s boundaries used by LNER.

Management issues:

Retention and maintenance of traditional stone walling retains the railway character and supports some wildlife and is therefore preferable to replacement in modern materials.

Figure 41. Left: the top of the revetment wall which supports the Black Boy Incline embankment. Right: the remains of a boundary wall with the incline beyond

Shildon Tunnel north portal

The north portal exits the tunnel in a cutting. Its architectural style is identical to the south portal. Unlike the south portal, this identical one which is part of the same structure is not listed.

Management issues:

Although, arguably this portal is listed by association with the south portal, the listing of the South Portal should be amended to include this North Portal to avoid confusion.

Incline ditch (S&DR 1267)

A drainage ditch survives intermittently along the east side of the incline between the summit and the site of former terraced housing south of the South Durham branch.

Figure 42. Fieldworker Angela is standing in the remains of a drainage ditch which runs parallel to the incline. The ranging pole shows that the ditch is still 0.5m deep.

Management issues:

Retaining the drainage function of railway ditches, helps to keep paths well drained and therefore merit maintenance.

Junction with South Durham Branch and sidings to the Lime Kilns (S&DR 1251)

Just before the site of workers cottages (S&DR 1228) was a junction with the Black Boy Incline for the South Durham Branch (serving the South Durham Colliery) and a siding that led to the limekilns (H16747).

Site of railway workers housing, South Durham Cottages (S&DR 1228)

This irregularly shaped paddock formed by a minor watercourse, the Dene Beck, the Black Boy Incline and the South Durham branch, once held a row of workers houses; the gardens faced on to the incline and the outside toilets, coal houses and allotments faced E. They are visible on the 1st ed OS map of 1859 (surveyed in 1857). The field still retains some demolition debris but is used to graze a horse.

Railway Houses G13 Eldon Lane (S&DR 1259)

Railway Houses is a row of brick railway houses built to accommodate workers on the S&DR black boy branch. Their gardens backed on to the siding that linked the incline with the lime kilns.

The terrace was allocated the number G13 by the S&DR in 1857 and a ceramic plaque fixed above the central doorway (no.3 and 4 today). This was removed more recently. The gable end of no.5 abuts the Black Boy branch and a bay window overlooks it affording views up and down the track. However, this bay may have been added later as the brickwork is not coursed in; the window shown on a 1965 photograph is however of a type not used after the 1860s, and the stonework matches the rest of the building in size and coursing suggesting it is not a modern addition. The present-day window is a modern replacement. The bay is not shown on any historic mapping, even detailed mapping, but this might be a result of surveyor error. An arched window at first floor height may have afforded better views up the incline or might simply be a stair light. A photo from 1965 (see below) shows the window boarded (along with another first floor window and upper porch window to the street front). These windows remain blocked today. The terrace is not shown on Dixon's plan of 1839 which specifically included all S&DR properties; therefore the row must post date 1839.

The E end of the terrace looks like a later addition, cement rendered and with a shallower pitch of roof. While it fails to reflect the earlier materials, it has a quirky sign below the eaves (spectacles?). The window sill detailing matches the detailing on the rest of the terrace.

In the census' of 1841, 51 and 61 Adam Hackworth is listed as living in one of these houses. He was a colliery agent and engineman, but his name appears in no known family tree of Timothy Hackworth. More research is required. By 1871 Benjamin French, blacksmith was living there. [128]

Management issues:

The buildings still make an attractive contribution to the streetscape and while they have suffered from inappropriate modern window and door replacements the early brickwork, bargeboarding, chimneys, street name plaque and largely intact exteriors, suggest that they should be reviewed for listing. If they do not meet the required standard for listing, they should

[128] Hackworth-Young 2019, 14

certainly be included on the local listing of historic buildings. An interior inspection of No.5, as a minimum, would be valuable to look for features associated with monitoring the incline. The cement render to the base of the bay window on the gable end of no.5 may be trapping moisture internally leading to damp. This could be cured by removing the cement and repointing the brickwork in lime.

Research into Adam Hackworth and other early occupants of this row is desirable.

Figure 43. G13 Eldon Lane in December 1965. A later colour photo by John Proud from 1969 shows the windows painted in two colours of cream and green. Photo John Proud courtesy of Win Proud.

Figure 44. The same view in 2023

Lime Kilns, Eldon Lane (H16747)

The main freight transported along the Black Boy Branch Line was coal, but the area also had a ready supply of lime which was used primarily for agricultural improvements, and to a lesser extent, building works. These lime kilns must have fired locally quarried lime before sending it off in especially adapted (covered) waggons.

Figure 45. Eldon Lane Limekilns with a boundary wall in front [date unknown]

Figure 46. The tree covered limekilns today and surviving boundary wall

The limekilns are visible on the 1st edition OS maps surveyed in 1857 when they were served by a siding (S&DR 1251) leading from the Black Boy branch.[129] They appear to be disused by the late 19th century.

Today they are entirely obscured by trees. The terraced housing opposite is called Lime Terrace but this row of housing post-dates the limekilns.

Management issues:

The unmanaged growth of self-seeded trees on the remains of the limekilns will lead to further structural instability due to root damage. Local knowledge suggests that they were cut down relatively recently but with no ongoing maintenance to keep the trees from growing, any investment in felling the trees would be wasted. There is also a school of thought that the tree cover plus fencing, discourages anti-social behaviour which is a problem in this area.

However, the structures are close to a main road and a bus stop so there are also safety implications in having ruinous structures nearby. The removal of the trees is insufficient. The kilns themselves may need some conservation and this is likely to be costly. The extent of this cost could not be determined until the trees are felled and the site assessed.

Skew Bridge at Bridge Place (DAE 2/4 H 70096)

Railway bridge, now carrying the Darlington to Bishop Auckland Railway, originally built on the skew but subsequently widened with robust wing walls added. The wing walls are built in a rusticated stone finish and many of these are reused sleeper blocks, some split.

The first phase of the bridge presumably dates to 1842 when the Shildon Tunnel branch was extended to South Church. The line was still only one track wide when the OS surveyed the bridge for the 1st edition map of the area in 1857. [130] It had been widened by 1896.[131]

Management issues:

The bridge still carries live line and so is the responsibility of Network Rail. It will therefore be maintained in order to run the railway. The stone skew structure should only be pointed in lime, not cement. Most of the pointing appears to be lime based, but some patching has taken place in cement which will damage the stonework. When the pointing is reviewed in the future, the cementitious pointing should be removed.

[129] Durham Sheet XLII. Surveyed: 1857, Published: 1859
[130] Durham Sheet XLII. Surveyed: 1857, Published: 1859
[131] Durham Sheet XLII.NE. Revised: 1896, Published: 1899

Figure 47. The original skew stone bridge set within a widened bridge. Inset: the wing walls made of reused sleeper blocks (some split)

4.3 Surviving route of the branch N of Eldon (no public access)

The line between Eldon and its original terminus at the Dene Beck is on private land. Based on historic mapping, aerial photography and a site visit viewed from a distance, it is likely that there is good survival of the following features.

Railway boundary walls

The route which can still be discerned even at a distance, has low lying boundary walls which may be the 1827 walls in origin.

Culvert (S&DR 1269)

Where the Black Boy line crossed the Dene Beck, the beck had to be carried below the line. As the beck still flows today, a culvert must still exist below ground, although it may not be the original.

Small buildings

Just before the line meets the present-day school, there is a scattering of small buildings on the line which would have been placed here after it went out of use. Some of these are shown on late 19th century maps so may be of historic interest.

Historic hedgerows

The hedgerow around the E side of the school is on a 19th century boundary and so may be an ancient hedgerow which merits retention for its wildlife and landscape interest.

Management issues:

The surviving line merits retention as it is one of the few places where the 1827 route is readily visible from a distance and largely undeveloped since it went out of use. It may merit scheduling, but in the meantime, planning policy 46 of the Durham County Local Plan should apply. This will avoid encroachment on to the line and encourage better access.

Cumberland Arms (site of)

This 19th century pub has been demolished, but the low stone wall that curves around the roadside relates to the pub, not directly to the Black Boy.

NER Black Boy Branch

This later extension of the Black Boy Branch which terminated at Auckland Park and the Primitive Methodists' Chapel in the late 19th century, is now a tree covered footpath which runs parallel to the main road at Auckland Park. It links with footpath 105 to meet Gibson Street and the primary school built on the route of the Black Boy.

5.0 ACCESSING THE BLACK BOY BRANCH

There is good existing public access between Locomotion in Shildon and Eldon High Street.

At Locomotion and Shildon railway station there are paths through the museum complex and these link with public footpaths (no.38), then the urban area of Cheapside. The paths do not follow the exact route of the Black Boy branch as it has since been developed to create the cricket ground and as part of landscaping associated with the museum.

The walk is well-defined along part of Cheapside, although it is not obvious to the casual visitor that the route is marked out with setts or grass.

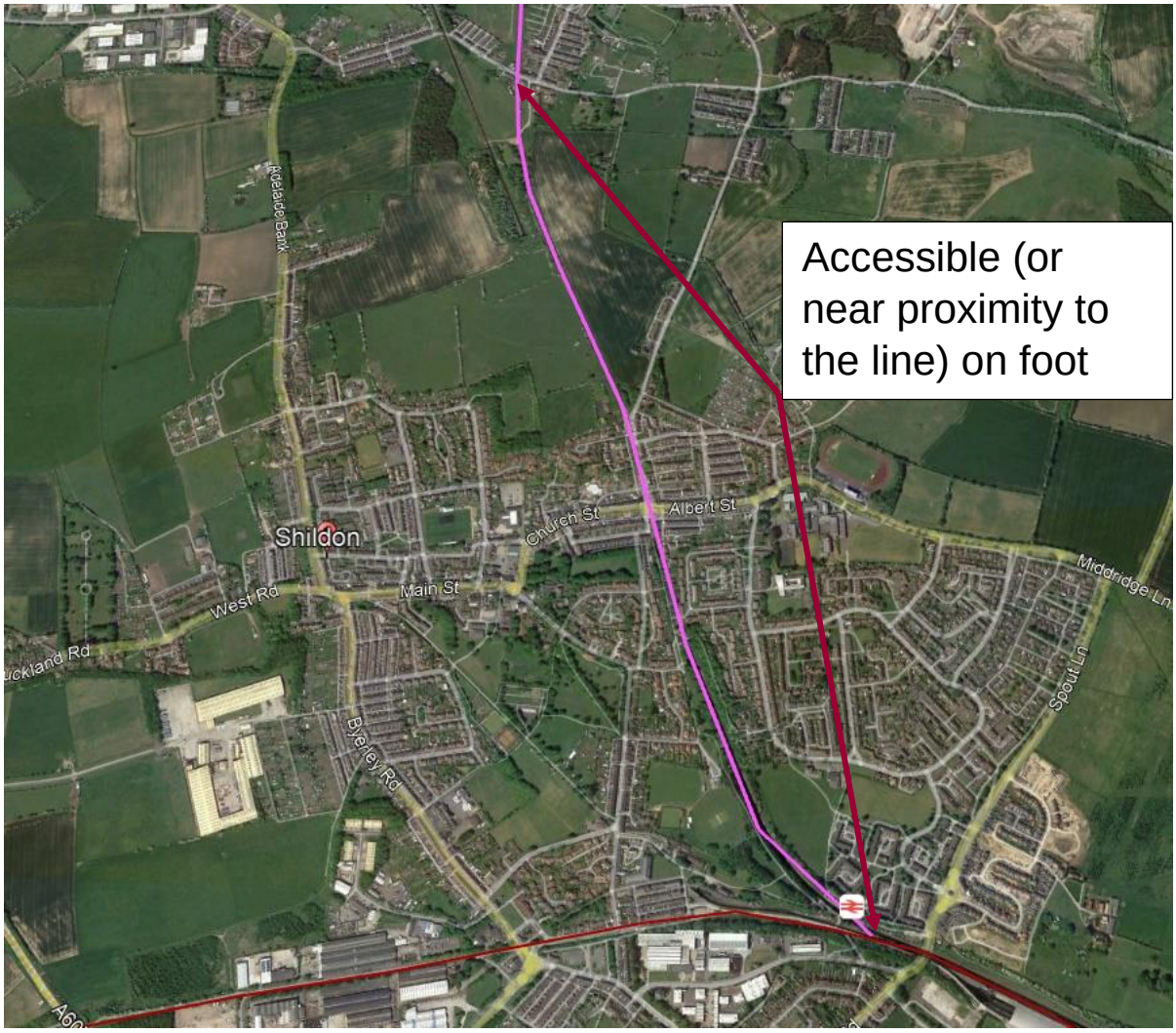

Figure 48. Accessible walking route to explore the Black Boy branch

The walk between Locomotion and the top of the incline at Rose Cottage is already included in the Friends' guided walk booklet the Shildon Circular.

At the top of the incline, public footpath 68 and 83 join Eldon High Street at the bottom of the incline. These last two rights of way are not accessible to all but are well used and provide adequate walking surfaces which can become muddy. Due to subsequent land uses it is not always obvious that a disused incline is underfoot.

There are links to a viewpoint looking towards the N portal of the Shildon Tunnel and another link which allows walkers to look down from the top of the Shildon Tunnel. These add considerable interest to the route.

North of Eldon High Street the walking experience is off line, and dispiriting as there is ample evidence of anti-social behaviour. The well-defined stretch of line between Eldon High Street and the primary school is in private land and used for horse grazing. It would offer a far more attractive walking environment than winding through housing, some of which is boarded up. It is much clearer here that the route is a former railway. It is nevertheless possible to walk through the site of demolished terraced housing and see the Black Boy route from a distance.

Figure 49. A view from the foot of the Black Boy Incline looking across Eldon High Street and N towards the intact but inaccessible branch line and the Prince Bishops Community Primary School beyond.

A route through more housing brings walkers to a chapel of some architectural interest on Addison Street, and the primary school which sits on the route of the Black Boy. Across the road, heading north there is a public footpath (105) which takes walkers on a route east of the line; the route of the line is not visible from here and nothing visible survives. This links to a path which follows a later extension of the Black Boy branch serving Auckland Park Colliery.

It is a pleasant woodland walk along a roadside; the colliery is now the site of a housing estate, but an altered chapel (H50598) can still be found at the end of the line.

The nearest car park to this end of the line is Auckland Way Carpark on the A688. Local advice was not to park cars in Eldon due to anti-social behaviour.

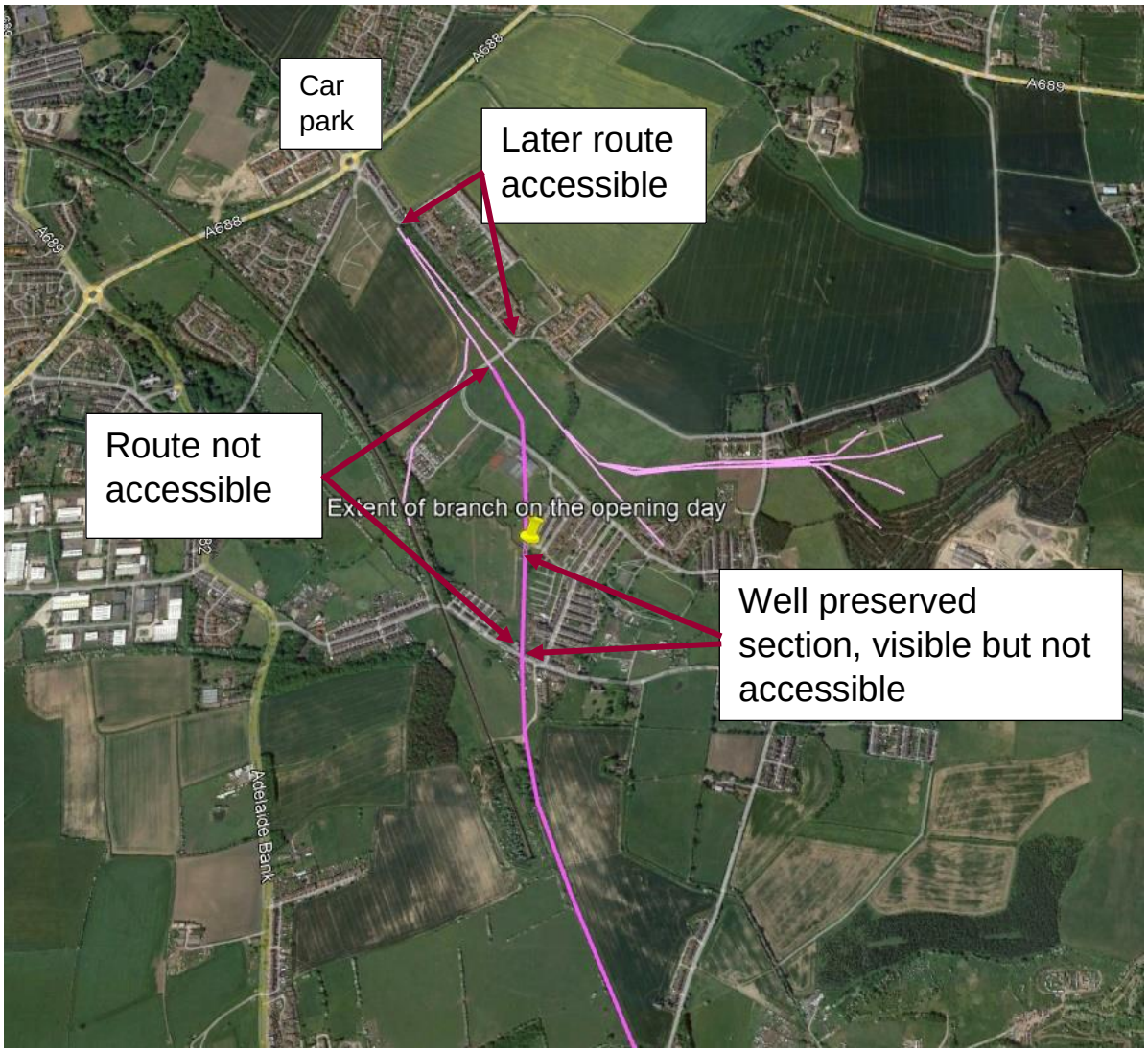

Figure 50. Accessibility on foot for the northern section of the former Black boy route and later sidings

Using the railway to access the line

The nearest railway station to the north end of the branch line is Bishop Auckland Railway Station about 1.7km from the later branch sidings at Auckland Park. There is a local campaign to create a halt at South Church which would bring railway access to the north end of the branch significantly closer and could be part of a wider economic regeneration of this struggling area.

The nearest railway station to the terminus of the branch is at Shildon which is located at the terminus to the branch.

Figure 51. Alternative walking routes for inaccessible land that the Black Boy branch ran along (yellow dashed line)

Figure 52. Walking the Incline towards Eldon

6.0 THE SIGNIFICANCE OF THE BLACK BOY BRANCH

Significance can be assessed under different themes; the National Planning Policy Framework suggests that significance is the value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. The setting of a heritage asset can also contribute towards its significance. Significance in this section is graded from Considerable at the highest level, to Some, Limited and None.

Archaeological interest

The branch is of some archaeological interest, although a lack of any ground testing means that the extent to which underground remains survive is unknown. It is safe to assume that evidence for the engine house foundations will survive at the top of the incline and that remains of the track may also survive below the grassy island along Cheapside. Evidence for the level crossings may also survive beneath the modern roads.

Figure 53. Volunteer fieldworkers explore the debris near the site of the engine house at the summit of the incline

The industrialisation of the Shildon and Eldon areas caused by the expansion of the railway network suggests that much will have been destroyed in the late 19th century onwards. Despite this, the survival of the route, plus some of its features (drainage ditches, retaining walls and boundary walls) is surprisingly good. It is unfortunate that some of the most destructive periods were associated with the tidying up of the Soho works area in preparation for the 150th anniversary celebrations of the S&DR in 1975.

Architectural interest

Few structures are directly related to the Black Boy but those that have survived have considerable architectural interest.

The Coal Locomotive Refuelling Drops at the terminus of the Black Boy are rare survivals and represent the earliest attempt to mechanise the process of locomotive coaling in Britain and, given Britain's primacy in railways, possibly the world.[132] Although they do need conservation and part of them has been demolished, they survive well.

The engineman's house (Rose Cottage) at the top of the incline appears to be mostly intact in terms of planform and scale, with only the addition of pebble dash, modern windows and some minor extensions to detract from the original building. The survival of the S&DR house plaque is also notable. Its interest is also enhanced by its proximity to other structures associated with operating the incline, even if those remains are only sub-surface.

The Railway Houses in Eldon are an under-appreciated heritage asset of considerable significance, located close to the branch and with a suggestion that the east one had the function of overlooking the line via a (possibly later) gable end bay window. More research is required to unpick the full extent of their significance, but they should be protected.

The Skew Bridge at Bridge Place is strictly speaking not on the Black Boy branch but merits a mention because of its engineering interest and the reuse of sleeper blocks which were almost certainly from the Black Boy branch.

Similarly, the aqueduct and portals associated with the Shildon Tunnel are not strictly speaking part of the 1827 Black Boy Branch, but were built instead to bypass it. Their architectural interest is considerable; this interest is recognised in their grade II listing status (although the north portal is not listed, but gets a mention in the listing description for the south portal). [133]

The historic buildings that provide the present-day backdrop to the branch line are important for the potential contribution they could make to the townscape. In an economy that is increasingly difficult for the hospitality sector to succeed in, there is a risk of losing buildings such as No.1 Cheapside and its neighbours.

Figure 54. Considerable architectural interest left to right: Railway Houses in Eldon, Skew Bridge in Bridge Place and the Locomotive Refuelling Drops in Shildon

Historic interest

The Black Boy branch line is of considerable historic interest. It was part of the Stockton & Darlington Railway whose opening triggered the growth of the modern railway network around

[132] Jecock et al 2022, 35
[133] Listing PRN 112183

the world. It falls within the pioneering days of the S&DR between 1825 and 1830 when it was ahead of all other companies and was testing and running a fully-fledged railway network complete with branch lines. The Black Boy was part of this pioneering network. It also marked the start of the post-1825 expansion of the S&DR, which by 1830 would cover in excess of 50 miles.

As a relatively short branch, built initially for single track and powered with a combination of stationary steam engine and horse, it hardly led the field in technological railway advances (but the 1847 locomotive refuelling drops may have been the exception to this). However, it conformed to the business plan of the 1825 mainline which was to carry anything for anyone for a set fee. In that respect it was part of our modern national railway network.

The line opened up access to the best coal from the Black Boy collieries and ultimately, when the Tunnel was built, improved access to the rich natural resources of Weardale. In doing so it led to a long period of coal (and other mineral) exploitation served by a railway which outlasted those areas first targeted by the S&DR such as Witton Park with consequent landscape and economic impacts.

The historic interest also includes some of the personalities associated with the railway. John Graham's notebook records many of the trials and tribulations of running a railway and the Black Boy branch in the early 1830s. This plus local newspapers record many of the accidents and the consequent impacts on families. This social history of the railway is largely an untapped resource and merits further research.

Thomas Hackworth and his brother Timothy, plus Nicholas Downing, all had roles in running the incline with varying success. Mr and Mrs Anderson at the weigh house on Spout Lane were also key to the smooth operating of the Black Boy branch incline and indeed the other inclines at Etherley and Brusselton. Little is known about Adam Hackworth at the Railway Cottages or the other residents. Did he have any connections to Timothy and Thomas Hackworth? The roles of these individuals and the many others railway workers who lived alongside the branch is still not well understood, especially before the 1860s; and neither is the detail of how the incline was operated, how (if) issues of water supply were resolved, where were horses stabled, who paid what, where and to whom.

Artistic interest

The Black Boy branch is of limited artistic interest. It is rarely the subject of artwork or photography. Modern day photography can be difficult because of uncontrolled vegetation growth at viewpoints such as the view of the Shildon Tunnel south portal. Unattractive security fencing which traps litter, also diminished appreciation of the lineside cabins, the aqueduct and the route generally between Locomotion and Cheapside. The view from the north side of the incline towards the branch line north of Eldon merits cherishing as it is one of the few long-distance views of the surviving route.

Figure 55. Peering through security fencing to appreciate the view of the aqueduct.

7.0 CONCLUSION

The Black Boy branch is perhaps less appreciated than some of the other early branches of the S&DR. However, the route of the 1827 branch survives well between Shildon and Prince Bishop's Community Primary School north of Eldon, with the exception of the route that is now occupied by Shildon Cricket Club and an area of 1975 landscaping around Soho Works at Locomotion. However, the stretch north of Eldon is largely inaccessible to the public.

Features directly associated with the branch line are more limited. Sixty four new records have been supplied to Durham County Council's Historic Environment Record (HER), but the majority of these are the locations of former sites, associated sites or below ground archaeology and may not have survived above ground. Those which are visible and were not already recorded on the HER, number about ten.

The survival of the engineman's houses at the top of the incline is of significance, although the buildings have been altered using modern materials that mask their historic interest. Other features may survive archaeologically such as the footings of the engine house and the below ground remains of the reservoir.

The formation of the incline is much altered but retaining walls and ditches are still to be found. The best surviving stretch of the branch is likely to be the inaccessible stretch between Eldon High Street and the Prince Bishop's Community Primary School. Here, low lying boundary walls can be seen from a distance and the route has largely avoided development as far as the school which sits in an area used for a brick and tile works when the branch went out of use. The culvert which carried the Dene Beck under the branch line may still be there.

The existence of the route is not obvious. In Shildon, the line is largely footpath but there is nothing to indicate that it is the Black Boy branch, nor is there any indication of the 1842 tunnel many metres below ground. The route has been marked out in parts of Cheapside and the replica chaldron waggon sits over the route, but there is very little to tell the casual passer-by that the route was here. Similarly, the incline runs under the grassy island that runs along the length of Cheapside, but the significance of this grassy area and the wide street is not obvious.

The incline remains well used by walkers joining the communities of Eldon and Shildon. However, to the north, anti-social behaviour is evident and the attraction of walking the line less clear. Perhaps a wider economic and social regeneration programme could include improved access and conservation of the Black Boy branch? Eldon itself has the well preserved and attractive brick S&DR Railway Houses and the later Skew Bridge – a stunning example of early railway engineering.

There are still gaps in our knowledge. Who were the early enginemen? Why did the S&DR continue to employ enginemen after they had tried to sell off the engine at least twice in twenty years? The management of water is still not clearly understood, but the S&DR themselves, had trouble working it out. What form did the engine house take? Does the house G11 lie beneath the render of the corner building on Fulton Terrace and Church Street?

There are some threats to the heritage assets. No.1 Cheapside, the former King William inn struggles to find a new use. The Railway Houses in Eldon are not listed and neither is the Engineman's Cottage at the summit of the incline. These are good rare survivals and merit protection.

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APPENDIX A Black Boy Branch Chronology

19th April 1821	Act of Parliament approved including a branch line to Howlish Lane, Coundon (Black Boy).	Holmes 1975, 87	
23rd May 1823	Act of Parliament approved permitting the use of steam engines and carrying passengers and an amended route for Black Boy.	Holmes 1975, 87	
9 September 1825	The Black Boy Branch should 'terminate ..for the present at Denburn Beck, near Saint Andrews Auckland – Your Committee have purchased the whole of the Land between that place and the Main Line but they have not proceeded to lay any part of that Branch, as the state of the Company's Funds and their present Engagement would not allow of your Committee to undertake it.	TNA RAIL 667/8 p54-5	
February 1827	Thomas Storey sought suppliers of stone for the incline. Costs were received from Christopher Tenants' quarry at Thickley for stone blocks for sleepers and stone waste would be provided free for the formation. Tenant's foreman was called George Stephenson.	TNA RAIL 984	Transcription by Trevor Horner available as Appendix D
March 1827	Construction of the Black Boy Branch commenced at Shildon	Proud 1998, 20	
10th July 1827	The Black Boy Branch opened	Holmes 1975, 88; Proud 1998, 20	
August 1827	Work commenced on the Croft branch which enables Black Boy coal to be carried into Yorkshire. The Middlesbrough branch proposed routes are surveyed	Proud 1998, 20	
29 September 1827	The building of the BB engine house contract was advertised in the Durham Chronicle	Durham Chronicle 29 September 1827	
29th March 1828	Contract for the building of an engine house at Old Black Boy Colliery was advertised. Tenders were	Durham County Advertiser 29th March 1828	is this for the colliery or the incline?

	being managed by Thomas Storey of St. Helen Auckland (the S&DR's engineer).		
July 1828	Ken Hoole states that the BB opens	Hoole 1975, 40-1	This presumably refers to the whole branch but the minutes say it opened since July 1828 and before July 1829.
8th July 1828	The BB branch still only operated as far as 'Deneburn' Beck and the 'machinery' was not yet complete or operational so horses were still being used.	TNA RAIL 667/8	
14th July 1829	The report to Committee reported that the engine and planes on the branch had been completed since the last annual report of July 1828 and were now in constant use.	TNA RAIL 667/8	
October 1829	Appeal against the non issuing of a licence to the S&DR inns at Heighington and Darlington. Archibald Knox of BB colliery is a witness in favour of the Heighington inn having a licence. He mentions that he regularly commutes on the railway for work	Durham Chronicle - Saturday 24 October 1829	
27th December 1830	The Middlesbrough branch is opened and a waggon carrying a huge lump of Black Boy coal is showcased as part of the ceremony. The coal was calculated, when broken up, to make two London chaldrons and was thought to be one of the largest coals ever hewn in the north of England	Jeans 1974, 107; Durham Chronicle - Saturday 08 January 1831	
7th August 1830	Geo. Applegarth requested a siding to the Black Boy Incline near the summit for Eldon Colliery. It was not on S&DR land.	Thomas Storey's notebook TNA 667/ 418a	
10th September 1830	The lessees of the Shildon Colliery sought a land sale trunk on railway co. ground adjoining the BB incline. TS not clear who should pay.	Thomas Storey's notebook TNA 667/ 418a	
1st October 1831	'4 waggons broke by the bank rider joining the Waggons to[sic] forcibly at the Black Boy North Bank foot damage 50 shillings'	GRA/1/3 John Graham's Notebook p20	https://collection. sciencemuseumgroup.org.uk/ documents/aa110136089# archive-block

19th October 1831	'Charles Hildrash driving for Joseph pease jnr Esq., left the bank foot waggons at the Black Boy branch; and loaded from there, instead of taking them up to brusselton bank foot and loading from there again.' Signed EP [presumably Edward Pease]	GRA/1/3 John Graham's Notebook p22	
18th November 1831	Robert Newkerm [Newhem?] for leaving A Waggon belonging the Black Boy standing at Aycliffe Lain[sic].	GRA/1/3 John Graham's Notebook p28	
24th November 1831	Thomas Gibson, one of the platelayers, has been in the habit of sending to the Black Boy Colliery for coals and ordering [sic] them to be ticketed to Spout Lain [sic] and bringing them down to Aycliffe Lain [sic] and depriving the Company of the tonage [sic] between Spout Lain [sic] and Aycliffe Lain [sic]; Reported by Mattw Turnbull and says that he can prove that he has don [sic] it twice – *see tickets against next week.*	GRA/1/3 John Graham's Notebook p30	
29th November 1831	I have been at Black Boy Colliery and got the Ticket Book examined and found that one of Gibsons Waggons has been ticketed to Spout Lain [sic] on the 12th Novbr last and the other to Aycliffe lane on the 29th July last.	GRA/1/3 John Graham's Notebook p31-2	
14th December 1831	A Waggon of bricks going away or having been set away by same person from below Joseph Anderson's [weigh house manager at Spout Lane] and stopped [sic] upon Simpasture untill [sic] the Engine ran up against her.	GRA/1/3 John Graham's Notebook p35-6	
14th December 1831	Wm Glass the Black Boy Bank Rider came down the Bank to[sic] fast with the loading Waggons and joined them against the Standing Waggons and Broke 6 Waggons and sent 6 or 7 of[sic] the Way. Damage 30 Shillings Fine 10 /	GRA/1/3 John Graham's Notebook p36	

	On account of the various Stops the Collierys [sic] over the Boy Plain [sic] has Raither been stoped [sic] but the Collierey[sic] over Brusselton has not been stoped [sic] at all		
26th January 1832	3 Waggons went A main down the Black Boy north Bank and Broke 2 Waggons and several Sheaves. Damages to the amount of 6 or 8 pounds. During alterations.	GRA/1/3 John Graham's Notebook p47	I've read up to p50 of Graham's notebook.
1832-3	In the annual accounts presented to Committee the following was listed: Repairs to the Enginemens Depots at Black Boy Branch. £8 1s 6d	TNA RAIL 667/8 p132	
21st May 1832	The Black Boy North Bank Roap [sic] broke when the Laden waggons was nearly at the top; and the Centre Bar of the Last waggon broke also; when the waggons came back against the Cowe; and 8 loaden [sic] waggons went A main and Broke and Injured the Rails very much; the 8 waggons was all broke less or more Damage don to the waggons is about £20 – tenders to be recd for repairing.	GRA 1/3 p93	
10th August 1832	"We are badly Suplied [sic] with warter [sic] for the Engines both at Darlington and Shildon; A Good Suply [sic] might be got Out of the Beek [sic] at the Black Boy Branch and by Feltering [sic] the warter [sic] that Comes from Mr. Surtesses [sic] Pit"	GRA 1/3 p123	
18th August 1832	18 loaded waggons broke away when descending the Black Boy South Bank and 11 were broken. Of the five estimates for repair Kitching's was the highest at £40.10s. and JAMES JACKSON and T. HACKWORTH'S the lowest at £21.	GRA 1/3 p128	
23rd November 1832	The Black Boy North Bank rope broke …..Pease's note states that "unless	GRA 1/3 p151	

	greater care is taken at this plane, another Engine [sic-man?] must be got"		
28th December 1832	Double accident to waggons on Black Boy plane	GRA 1/3 p 157	Check original for more info
1833-4	In the annual accounts presented to Committee the following was listed: Balance of carpenters work at Black Boy Engine house (and painting of Brusselton Engine) £74 12s 6d. Also pumping apparatus at Black Boy Branch End.	TNA RAIL 667/8 p147	
1833	Specifications and design for a water cistern to supply locomotive engines water on the BB branch put forward by the S&DR.	TNA RAIL 667/296	Water tank next to the coal drops because 667/18 says the new water tank is next to the drops
8th May 1833	Auction at the King William for property close to the BB branch at Whitfield Place, Old Shildon	Durham County Advertiser - Friday 03 May 1833	
7th June 1833	"Gentlemen. We are very badly supplied with water at Darlington for the Locomotive Engines, which is causing the Pumping at Black Boy Branch to be very expensive, and own [sic – owing] to the water at Bowesfield Lane not being good we are obliged to Pump A Great deal out of the Pond at Goos Pool which is Lowring very fast-…"	GRA Book 2 pp18	
14th June 1833	"A Bell or Rapper is very much wanted at Busselton East Bank and Black Boy North Bank as there is a seareous [sic] Loss of time at Both places – referred for consideration" [signed by HP]	GRA Book 2 pp19	
30th August 1833	"….we are still very badly supplied with Water down the Line; There is not less than 24 Thousand Gallons of water Pumped out of the well at the Black Boy Branch End per day" [signed JP Jnr Chairman].	GRA Book 2 p33	
15th November 1833	John Graham recommended (to make savings) that the Darlington and Middlesbrough	John Graham's notebook book 2 p 49-50	

	engines should use small instead of nut coals, that offers might be taken for the hauling of waggons at Brusselton East and West Banks and Black Boy Branch, and that the repairing of waggons damaged by the company's engines might be undertaken outside.		
28th November 1833	An accident occurred to the waggons…on the Black Boy North Bank		
7th December 1833	A fatal accident to Robert Hogg – a platelayer – when helping to stop some loaded waggons at the water house near Black Boy Branch. A verdict of accidental death was given at the Coroner's inquest and a Deodand of 1/- put on Mr Pattman's waggon. The water in the well at Black Boy Branch is reported to be very thick near the bottom and J.G recommends certain alterations which should prove economical to the company "as they are now paying 25s. per week for Pumping at Nights"	J G notebook, book 2, p54-5	
1834	The S&DR commission a water supply for Shildon from Hackworth and Downing's Foundry (Phoenix) after one of the town's wells dried up. The quality of the water is poor.	Smith 2019, 91	
1834-5	The S&DR company annual accounts list: Erecting a Tank at Black Boy Branch with apparatus	TNA RAIL 667/8 p162	
14th February 1834	Report referred to an accident the previous week at Black Boy to the waggons. Note says "Fined 1£ 10S between the two reduced to 2£. Report on Brusselton and BB engines by Graham who found that the ' Boy Engine has been very Judiciously let the Last year; the Company has been paying the men at the Rate of 5d per Day for finding Hemp Spun yarn Oil	Graham's Report Book 2 p 68-70	More online?

	& Tallow & White Lead, 2/- for Coals per Day 1/8d for Oil for waggons and sheaves per day, 8/10d for wages which is equal to 12/11 per day		
7th March 1834	Ralph Young and Brother has agreed to take the Black Boy Engine to Find Hemp Oil & Tallow &c, Oil for waggons, and Coals for Engine; for 13 Shillings per Day, Commenced on the 1st of the present Month.	Graham's Report Book 2 p 74	
19-20 March 1834	Accident on Black Boy South Bank and Brusselton West Bank.	Graham's Report Book 2 p 77	
4th April 1834	There has been a good many of Black Boy Coals gon[sic] down Clarence Railway this week for Exportation.	Graham's Report Book 2 p 81	
April 1834	Disputes between enginemen approaching Shildon with laden waggons from Brusselton (Henry Lanchester) and Black Boy (Wm Ridman). Lanchester deliberately blocked in Ridman's engine when it was getting coals and water so he couldn't leave and when taken to task by John Graham was insulting. Graham complained to Thomas Storey and to the committee who agreed that Lanchester should be fined 10/".	Graham's Report Book 2 p 88	
April 1834	The Permenent [sic] Engine on the Black Boy Plain [sic] is supplied [sic] with water from Adelaide Colliery which is conveayed [sic] in pipes from the Colliery to the Engine the Engine man complained to me last Night of not getting a sufficient supply [sic] on account of the pipes being sludged up; and are obliged to Lead water from the Branch End to the Engine to Day.	Graham's Report Book 2 p88	
23rd May 1834	John Coal who Fires for the Coach Engine has asked permission to leave the Company, and go to the	Graham's Report Book 2 p93	

	Shields and Stanhope Railway to work an Engine sent there by Hackworth & Downing, Coal is a very Steady active young man his equal for the above work will be bad to find, on those grounds I declined giving him an answer by Refared [sic] him to Commettee [sic] to Day.		
June 1834	Graham's report book refers to an agreement with Hackworth & Downing for Pumping the water at the Black Boy Branch.	Graham's Report Book 2, p102	
July 1834	The costs of a 12 horse power pumping engine were obtained for the Committee	Graham's Report Book 2, p103	Is this to help with water issues?
29th August 1834	New rope was required for Black Boy Plain [sic] measuring -1-700-do-6 ½ "	Graham's Report Book 2, p118	
1835	Hackworth designed and built an incline engine for the Black Boy incline on a new principle, called a Trunk or Ram Engine, later generally known as Penn's Trunk Engine. The cylinder of this engine was 40ins. Diameter and the stroke 30ins. It was 50hp. It was supplied to the order of Joseph Pease, and was in use for many years only being taken down in 1874.	Young 1975, 274	is this a replacement for the one installed in 1828? If so they tried to sell it in 1859 with no takers, then again in 1864, still no takers. The one up for sale had a 27 inch diameter cylinder and a stroke 6ft long which doesn't match the description here, but it was 50hp. Ask Jane if she has HACK 1/3/2/1 which is the only ref to BB in the Hackworth archive. No specific item ion the annual accounts for a new engine in 1835-6.
18th April 1835	Rope at Black Boy Plane and one of the ropes here was damaged owing to some of the sheaves being displaced	Graham's Report Book 3, p7, 8	
June 1835	Kilburn offers to deliver goods from his warehouse at the Black Boy Branch End to Auckland for 5 /- a ton and Labron to take them from St. Helen's to Bishop Auckland for 3/4d a ton. It appears that the Carryers by the Road Charges 15/- per Ton for Heavey Goods and Light Goods more.	Graham's Report Book 3, p23	
19th June 1835	On Wedensday [sic] last a waggon Loading with Stones was off down the Black Boy South Plain from the Companys Depots at	Graham's Report Book 3, p25	

	Cheple [sic] Row one of the Byses [sic] Father is a Braksman [sic] at South Durham in the name of Matthews. Damage don [sic] to waggon about £4.7s 0d. Boys parents to pay for it.		
10th July 1835	…the Switches at the Foot of Black Boy Plain was wedged wrong by William Hunter who had put an Empty waggon into the above Switches and had not adjusted them, the Adelaide Engine & Train Came down Shortly after and was throwing off the way.	Graham's Report Book 3, p29	
21st August 1835	Thomas Marley of East Thickley begs to inform the Company that his Cattle in the Fields on the North Side of the Railway are in great want of water.	Graham's Report Book 3, p38	
11th September 1835	Seven loaded waggons belonging to the Deanery Colliery went amain [sic] down the Black Boy North Bank. A good deal of damage done. Accident caused by one waggon having only one bolt in the centre bar "the other Sheth giving way, the weight was then throwing upon the Side Chains the drawing Straps also gave way". "The Collieries on the Boy Plain has latly [sic] frequently been Stoped [sic] by George Hunter who has the Empty waggons to Hall in going off to Drink during work Hours without giving any notice to any one on Wednesday Last he Left his work for the above purpose about 4 Hours during that time 3 of the Collieries got out of waggons and had plenty at the Branch End."	Graham's Report Book 3, p43	
September 1835	"One of the Black Boy waggon Axles Broke near Aycliffe Lane and has done considerable Damage to the Railway, Jno Graham is of the opinion that the Damage Ought to Come	Graham's Report Book 3, p44	

	upon the Colliery the Axle being wore down to only ½ the Size. – to charge to the Colliery".		
9th October 1835	Thomas Glass, the bank rider, could not stop his wagons when bringing them out of the South Durham Colliery Branch [joins Black Boy] owing to the rails being wet. The waggons ran into others standing at the foot of the plane. Damage nearly £5. The director's note says "Messrs. Hackworth & Downing liable to damage".	Graham's Report Book 3, p48	
6th November 1835	"…more Standage for the wagons at Black Boy Branch is very much wanted, and as the Company has no Land below the Branch, J.G. would Recommend a Siding being made or rather the Present continued up from the water Station to Shildon Lane, this Could be done on the Company's Own Land by removing the Earth and Bulding [sic] a wall as has been done on the North Side; by doing this Standage could be got for about 150 waggons, J. Graham has pointed this out to the Company's Enginear."	Graham's Report Book 3, p54	
4th December 1835	Bill of damages sent to John Graham by the agent of Deanery Colliery. Accident owing to one of the South Durham waggons having a losse wheel	Graham's Report Book 3, p59	
1836	Notice that an application is to be made to Parliament for a railway connecting BB and the S&DR to Stanhope via Weardale	Durham Chronicle - Friday 05 August 1836	
2nd January 1836	On Wednesday Last the Dog came off the Empty waggons when assending [sic] Black Boy South Bank, The Waggons came amain down the Bank and Broke 5 of the Boy waggons and one of Adelaids Damage	Graham's Report Book 3, p71	

	about 12£ Hackworth & Downing Liable.		
14th January 1836	The Contractors for Brusselton & Boy Plains has not attended to the Sheaves in the Banks as they ought to have done also the Pumping opperatis doe suplying the Locomotives with water which is under the Same Contractors is now in a very sluvinly State.	Graham's Report Book 3, p77	
29th January 1826	Tallygraphs on the incline planes blown over in the wind	Graham's Report Book 3, p80	
3rd March 1836	Several waggons that has been broke on the Black Boy and the Brusselton Plains has Stood an unreasonable Time	Graham's Report Book 3, p92	
6th May 1836	Old drum lying beside of the Black Boy engine is one that was taken of 5 or 6 years ago. All the middle arms inside the drum are broken and the outside ones.	Graham's Report Book 3, p97	
27th May 1836	Hackworth & Downing consider that they ought to be paid extra for lead brought over Brusselton Plane and for coals of the Adelaide Colliery hauled up the Black Boy North Plane.	Graham's Report Book 3, p98	
3rd June 1836	The rope on the Black Boy North plane broke with 9 loaded waggons near the top. The waggons went amain and the damage to waggons, sheaves, etc. about 40£. Note by Joseph Pease: H&D produce a written statement.	Graham's Report Book 3, p99	
17th June 1836	On Saturday a waggon loaded with mile boundary stones went amain down the Black Boy North Bank	Graham's Report Book 3, p102	
5th August 1836	Refers to the state of the "Sheeves & Rollers on Black Boy & Brusselton Plains for which Hackworth & Downing are Contractors; The Sheeves and Rolers in the above Plains since Hackworth & Downing Contracted for them has been kept in a most Sluvinly [sic] and bad State." JG then listed the	Graham's Report Book 3, p110	

	numbers of broken rollers and loose sheave stands. "The Guard Roler at the Black Boy Engine has been out a week and the Cleading above the Drum has also been off a Week, and on the 28th of Last month the Brusselton Engine had to Stand nearly 2 Houres for want of water."		
8th August 1836	The annual report to the Committee referred to the need to extend the railway to Bishop Auckland, Wolsingham and the whole valley of Weardale	TNA RAIL 667/8 p178	
2nd September 1836	Claims made by Hackworth & Downing for damages done to the planes include one from 30th July, damage to Black Boy Plain by Jno Robinson Bringing Waggons off the Chaple Row Depots inbefore the Train £2.8.9	TNA RAIL 667/8 p112	
15th September 1836	A horse belonging o Ralph Allcock was killed at Spout Lane by turning out before the Waggons.	TNA RAIL 667/8 p114	
30th December 1836	On Friday last George Wright one of the Plate Layers on the Black Boy Plain had his Leg Broke by the Rope Flying off the Sheeves. A subsequent report from January 1837 mentioned that the 'Famley are much destressed and have been releaved this week by the Oversear with 5 Shillings – J Graham to give him 20/- in small sums	Graham's Report Book 3, p125-7	
1837	Meeting to commence the Bishop Auckland and Weardale Railway from BB branch to Witton Park	Durham Chronicle - Friday 28 July 1837	
17th February 1837	On Monday last 8 Laden waggons belonging to South Durham Colliery came a main down the Black Boy Plain, Damages done to Waggons &c about 30£	Graham's Report Book 3, p133	
7th April 1837	On Monday last the Black Boy Engine Drum Broke and Stoped the Works on the North Side of the Plain until Wednesday afternoon	Graham's Report Book 3, p137	

19th May 1837	The Waggons halling into the Black Boy Branch has also been much neglected his Week. Thos. Hackworth is the Contractor for the above work. On Tuesday Last 8 Waggons Marked Charles Barrett Cockerton Norwood Colliery was brought to Thickley Weigh. Pay was demanded by J Glass for Tonage and & Haulage &c which was refused the waggons in concequence was Stoped and Halled back out of the way – and yet remain there [last note by H.P]	Graham's Report Book 3, p142-3	
2nd June 1837	The Collieries on the Boy Plain has also been put to great inconvenience by the men not commencing work at mornings according to directions given [Brusselton engine was instructed to start at 5am]	Graham's Report Book 3, p144-5	
16th June 1837	On Monday last the Adelaid and Deanery Collieries were Stoped for Want of Waggons on account of the men at the Black Boy Engine not commencing to work the Plain according to Orders – JG to see Hackworth & Downing.	Graham's Report Book 3, p147-8	
11th August 1837	Thomas Hackworth the contractor for the Incline Plains porforms [sic] the Work on the Boy Plain in a very dissatisfactory manner	Graham's Report Book 3, p154	
13th October 1837	The whole of the Water used by the Black Boy and Brusselton Engines is to Leade from the Watering Station at the Black Boy Branch – To be revived See Downing	Graham's Report Book 3, p161	
21st October 1837	JG has "seen N Downing respecting supplying the Black Boy Engine with Water ND Pumped his Well down and found that it did not flow so fast as he expected [also refers to looking for additional water sources in fields at Brusselton]	Graham's Report Book 3, p162-3	

24th November 1837	Two men and a Boy & Horse is found by the Contractor at the Foot of the Boy Plane to Haul and Remove all Waggons and Chain the Same and also to take Charge of the Tickets. …At the Boy Plane no alteration except taking awa the Boy and placing a Man differance of expence about 1/9 per day….On the Evening of Friday Last 15 Empty waggons came a main down the Boy Plane 12 Waggons were Broke.	Graham's Report Book 3, p169-70	
8th December 1837	On Saturday Last 8 Waggons came amain from the Top of the Boy Plane damage upwards of 20£ - Contractors Care. The Pump Rod that Cossed Mr. Surtees Railway was cut on Monday morning Last the North Star Engine was got to the Pump and set to work by 9OClock the same Night – very satisfactory.	Graham's Report Book 3, p172-3	
22nd December 1837	The Black Boy North Bank rope broke and that coupling chain bolts are very scarce.	Graham's Report Book 3, p175	
January 1838	The company has taken the Incline Plains and they are short of rope, sheaves, angle frames and side chains	Graham's Report Book 3, p178	
2nd March 1838	Yesterday afternoon the Fly Wheel Shaft of the Black Boy Incline Engine Broke	Graham's Report Book 3, p186	
1839	Jonathan Backhouse contemplated using the Clarence Railway for coal shipments instead of the S&DR's Black Boy branch and the mainline.	Kirby 1993, 139, quoting TNA RAIL 557/1122/1150	
23rd April 1839	Construction of the Shildon Tunnel commenced by the Shildon Tunnel Co. to bypass the Black Boy and Brusselton Inclines	Proud 1998, 25	
4th October 1839	Hemp increased in price and was set to increase further so new ropes ordered for the inclines	Graham's Report Book 4, p61	
27th March 1840	Water is much wanted for lack Boy Engine it beeing all to Lead from the Branch End at Presnt	Graham's Report Book 4, p72	

28th August 1840	On Saturday Last the Engineman at the Tunnell Engine was removing some Waggons at the Black Boy Engine it unfortunetly hapned that they got amain down the Plain Damage £11.14.8 Fine 20s/-. Same Day a Link Broke with the Waggons on the Boy Plain Damage about 22£	Graham's Report Book 4, p81	
September 1840	A new Black Boy pit commenced working.	Graham's Report Book 4, p121	
1841	Nicholas Greener was recorded as an engineman in the 1841 census when he lodged at Toft Hill with brother and sister Joseph and Jane Maddison. He was later engineman at Black Boy.	Hackworth-Young 2019, 13	
12th February 1841	On Tuesday last the Crank of the Black Boy Engine Broke	Graham's Report Book 4, p96	
19th February 1841	On Saturday Last the Crank Shaft of the North Star which is Pumping the Water at the B Boy Branch Broke. It is Temporley Repaired but not to depend upon Long, As the Company have Spare Cylinders a Crank & Shaft J G would Recommend the Old Engine to be taking away and Replaced by one of these Cylinders.	Graham's Report Book 4, p98	
10th September 1841	Claim made by the Managers of B Boy Colliery for the Expence incurred in keeping a man and Horse at the foot of the Plain JG Considers they have no claim upon the Company for Man or Horse so long as the Old Colliery continued as the Laden Waggons Run by their own Gravity from the Pit to the Rope from which point the Colliery Horses took Hold of the Empties And as it reguards the Lad oiling waggons He was not Sent to oil but to Chain Waggons which was agreed to by Mr Carter Previous to this the Side or	Graham's Report Book 4, p119-120 [see 1st October report for update]	

	protecting Chains were sent to the Colliery upon the Waggons and returned again but own to the great Loss of Chains by this method of working and the frequent occorance of Waggons beeing Sent off without any which was Obliged to pass the Plain without at considerable risk or was detained untill Chains were Sent from the Colliery The only claim they can have is from the Time the old Pit was Stoped untill the Company Imployed a Man & Horse.		
1st October 1841	…I waited upon the Managers of Black Boy Colliery at the foot of the Plain respecting the Claim made by them From their report it appeares that the New Pit Started work in September 1840 and that the waggons was to Haul by their Horses up to May 1841, which is about 30 Weeks at £1.16.0 per £54 – [signed by J Pease]	Graham's Report Book 4, p121	
10th January 1842	A formal ceremony marked the positioning of the last keystone in the entrance arch to the Prince of Wales Tunnel.	Holmes 1975, 30; Hoole 1986, 121	
29th January 1842	Reductions and alterations were made to the working of the permanent engines and incline plains resulting of savings between £5 10/- to £6 per week.	Graham's Report Book 4, p125	
4th February 1842	On Tuesday last the Black Boy South Rope Broke when the Laden waggons was Desendling Damages 30£ Other 6 Waggons was Broke on the Tunnell Line about 10 Days agoe Damages 24£ The Above has been all Sent to the Shildon works…Yesterday morning the Shaft of the Black Boy Engine Drums Broke	Graham's Report Book 4, p127	
19th April 1842	The line is extended from South Church to Crook as the Bishop Auckland & Weardale Railway	Proud 1998, 25	

19th April 1842	The Shildon Tunnel opened (properly called the Prince Albert Tunnel)		However the first coals from Black Boy and South Durham don't pass through until November 1843 (see 1st December 1843). Prince of Wales Tunnel according to other sources.
29th April 1842	3 ropes are in use upon Black Boy (also 2 in the Store House)	Graham's Report Book 4, p132	
11th November 1842	New rope is required for B Boy North Bank 680 Fathoms 6 5/8"	Graham's Report Book 4, p139	
2nd December 1842	the company reduce the wages of drivers and firemen because of the depressed state of trade. They also made considerable reductions in the pay for the men on the inclines amounting to 50/- per week	Graham's Report Book 4, p142-3	
24th February 1843	The clutch of the Black Boy Engine broke the day before – the Plane would be ready by Monday	Graham's Report Book 4, p147	
17th March 1843	On Tuesday last the clutch of the BB engine drums broke, it was relaced and commenced working at 11am the following day during which time collieries were supplied with empty waggons by horses so they were not prevented from working. The Shaft had got out of truth which had been the cause of breaking the clutch	Graham's Report Book 4, p148	
30th June 1843	On Friday last the rope broke on the BB plane with the Adelaide Colliery waggons near the top of the plain. The waggons ran loose down to the bottom of the bank. Damages about 20£	Graham's Report Book 4, p154	
1st December 1843	On Sunday Last the Black Boy & Sh Durham Coals commenced to come Through the Tennell….Several of the Arms in the Black Boy Engine Drums are Broke and must be replaced if the Engine id Likely to continue Long in the present position [signed J Pease Jr]	Graham's Report Book 4, p162	

22nd December 1843	A waggon laden with metal from Downing's Foundry ran loose down the Black Boy north bank resulting in damages of about £8.8.0	Graham's Report Book 4, p164 (29th December)	
25th August 1843	On Tuesday last 17 laden waggons and a large metal beam 'Came amain down the Black Boy Plain Damages about £35£	Graham's Report Book 4, p158	
1st March 1844	John Dixon, the company's consulting engineer, was asked about the working of the incline planes in relation to Deanery and Adelaide Collieries (so Black Boy). Dixon and Graham agreed that the small engine was preferable to a self acting plane.	Graham's Report Book 4, p169	
1846	Nicholas Downing bought the *Magnet* and *Lord Durham* from the S&DR for use in his Phoenix Foundry.	Smith 2019, 91	
1846	Works start in December on the new coal drops (referred to as a 'coal and water station') where the BB branch met the mainline to deliver coal into the locomotive tenders efficiently. However William Bouch and Joseph Pease were not convinced that they would save that much time in fuelling and watering engines compared to the financial outlay required.	TNA RAIL 667/1596 TNA RAIL 667/17 quoted in Jecock et al 2021, 5-6	
25th August 1847	A 6 year old boy, William Brown, drowned in the BB colliery engine house pond.	Durham Chronicle - Friday 03 September 1847	
21 January 1848	A report dated 21 January 1848 made to the S&DR Board by John Dixon, Consulting Engineer, stated that: 'Shildon – a shed for four engines is wanted very much, and we think the old coal depots adjoining (on the east side of) the Water Tank is the fittest place. These old engine depots	TNA RAIL 667/18.	

	have been superseded by the new self-filling spouts'		
May 1848	An inquest was held in the School-room, Black Boy Colliery, near Bishop Auckland, on the 23rd inst., before Wm. Trotter, Esq., on the body of William Finlay. It appeared that the deceased, who was employed on the Black Boy Branch Railway, on 22nd inst., was drawing some empty coal-waggons out of the sidings with horse, He had placed the waggons on the main line, and then went into the sidings to bring a third. When he had drawn this waggon near to the other two, he took the horse out, and as was coming out the waggon caught him, and crushed him between it and the others on the chest. The deceased was immediately taken home, and only survived a few minutes. He was about 26 years of age. The jury returned Verdict of Accidentally killed."	Durham Chronicle - Friday 26 May 1848	
October 1848	The Backhouse owned Black Boy Colliery ceased using the S&DR network due to excessive toll charges. Instead, they would ship from Hartlepool	Kirby 1993, 139	
December 1850	Plans were deposited for consultation for a proposed railway from BB branch to Coundon and Westerton	Durham Chronicle - Friday 06 December 1850	
1851	Nicholas Greener, the nephew of John Greener, engineman at Etherley Incline, lived at the S&DR property on Fulton Terrace (G11) and was listed as an engineman at that time. By then, four of Nicholas and Jane's six children had been born, the eldest two being named after his uncles, Thomas and John (enginemen at the S&DR's Etherley Incline). By the middle of 1854, the family had grown to six children, five boys and one girl and by 1861 they had moved to	Hackworth-Young 2019, 13	

	the engineman's house at the top of the incline (G12).		
January 1851	Robert Mcloud, aged about seven, was killed on the incline when he was run over by waggons heading towards the lime kilns.	Thomas 2016, 18	
14th January 1851	John Greener, a colliery overman, and William Hogg an 11 year old boy assisting him, were killed in an explosion at Black Boy Colliery.	Durham County Advertiser 24th January 1851	Is he related to Nicholas and John Greener the enginemen?
17th March 1854	Two waggons passing down the incline, the first laden with metal pipes. James Waite got on this waggon without permission from the bank rider so he could have a ride down the bank. He was thrown off the waggon and fell between the trucks and run over. One leg was amputated but he died from shock on the 19th.	Thomas 2016, 18	
3rd July 1854	An Act of Parliament approved a loop from the Shildon Tunnel to West Auckland	Holmes 1975, 88	
13th September 1856	The Tunnel branch opened (Shildon Tunnel North Junction to West Auckland) measuring 2 ¾ miles)	Holmes 1975, 88	
22ndJuly 1859	The 50 hp engine from the incline was advertised for sale, but not purchased	Durham Chronicle - Friday 22 July 1859	
23rd July 1859	The engine from the incline was advertised for sale, along with 6 others, but not purchased. This suggests that there was little demand for stationary engines by this time.	Darlington & Stockton Times 23/7/1859 Mountford 2015, 37	
June 1860	Death of William Stokeld who worked on the BB incline drawing waggons from the incline to the S&DR. On disengaging the rope from the waggons he slipped and fell across the rails where the waggons ran over his arm and body. A few minutes earlier he had been at his cottage near the incline with his wife having tea.	Durham Chronicle - Friday 22 June 1860	
1864	When Nicholas Greener, engineman, died on the	Hackworth-Young 2019, 14	

	29th May 1864, he was succeeded as engineman by his son John Greener who moved back to the old family home on Fulton Terrace (G11).		
25th May 1864	The engine from the incline was advertised for sale again by the NER (along with 5 others which didn't sell in 1859).	Darlington & Stockton Times 25.5.1864 and Mountford 2015, 37	
November 1864	A long train of coal waggons were passing through the Shildon tunnel when an axle snapped and the waggons were thrown off the line and the line torn up.	Thomas 2016, 26	
1866	Auckland Park Colliery at Coundon Grange was opened by the Black Boy Coal Co. on the site of the former BB Colliery's Machine Pit. This required a major reorganisation of the railway arrangements and the nearby BB Colliery. The former S&DR BB Branch was replaced by an NER BB branch ½ a mile long from a junction one mile S of BA station. The branch which formerly served the BB Colliery's Gurney Pit was rerouted at its western end to join the new system, traffic for BB having to reverse at Auckland Park. The locomotives formerly at BB Colliery were transferred to Auckland Park.		
1866	The ongoing shortage of water to run the locomotives resulted in a proposal to bring water to Shildon from the hills of Weardale. A survey was conducted, and a bill was promoted in Parliament. The Weardale and Shildon Waterworks Company was incorporated in 1866. The passing of the parliamentary bill was great cause for celebration.	Dave Reynolds pers comm	Due to be published in a forthcoming book on Shildon's Railway Institute.
March 1868	The body of a c.60 year old man was found in the Shildon Tunnel having	Thomas 2016, 29	

	been killed by a passing train.		
September 1868	A young woman, Hannah Lewis, was indecently assaulted by Patrick Garrity while on a train passing through Shildon tunnel. Garrity attempted to assault others on the same train. He was arrested when the train pulled into Middlesbrough.	Thomas 2016, 30	
1871	On the census of 1871 Nicholas Greener's son John had taken over as 'Railway Stationary Engineman' and he was back living in South Durham Place (G11) with his mother and brother, George. He died the following year at the age of 26 and is buried in the churchyard of St John's Shildon.	Hackworth-Young 2019, 14	Interesting that an engineman is still being appointed decades after the S&DR had tries to sell off the engine (twice)
August 1873	Thomas Spence, a ticket collector at Bishop Auckland and from Shildon, attempted to leap on to the van of a train at the north end of the tunnel. He missed his hold and fell. Mr Crawford the stationmaster sent him home to recover, but he died later that day. His home was North Terrace where he lived with his parents and sisters.	Thomas 2016, 34	
27 August 1880	The 7.30 eight coach passenger train from Bishop Auckland jumped the rails north of the Shildon tunnel. The coaches remained upright, but derailed and continued to travel into the tunnel. The resulting panic delayed rescue, but the guard, having been hurled from his van by the collision, walked everyone to safety receiving an official commendation. The tunnel remained blocked after the accident for a while so trains from Bishop Auckland were diverted over the Black Boy incline.	Smith 2019, 93-4	
December 1884	Driver Thomas Hutchinson had the top of his head	Northern Echo 1884, 4	

	taken off by one of the spouts in an accident at the coal drops. The inquest suggested that the spouts should be modified to make them safer.		
1897	In 1897, the Black Boy Branch was put up for sale.	Hackworth-Young 2019, 14	
1932-5	Production from the collieries was diminishing at this time, some seams were abandoned and collieries closed altogether.	Jecock et al 2021, 10	
8th July 1935	The Shildon coal drops went out of use	Jecock et al 2021, 10	

APPENDIX B

Extract from George Stephenson's report dated January 1822 on the proposed amendments to the route of the Stockton & Darlington Railway transcribed by Ken Todd.

Black Boy Branch

I expected to have got this branch direct to where it joins the Main Line by leaving the old Line to the East : but after completing the Levels I found it was not so favourable as I expected as I had too much ascending ground with the loaded waggons I therefore abandoned the Idea of keeping this Line considering the old Line preferable.

Not having time however to complete the Levels on the latter line I cannot Estimate the cost but from what I saw of the country I think it may probably cost £300 P. Mile for Excavations and Embankments. The Eldon Branch will join the above on very favourable grounds _____

APPENDIX C

TNA RAIL 667/477 Transcribed by Ken Todd 24th January 2023.

April 1826

Statement of the difference in Expence in Carting of leading coals by a Railway from Black Boy Colliery.

Considerations respecting the situation of Black Boy Colliery in the event of the Branch Railway not being late (laid?) to the same.

This Colliery must cease working, as a sale for the neighbourhood cannot be got to pay expenses of working, and Pumping Engines, and it is a certainty the coals cannot be led to the Railway to sell at the proportionate price of the coals but at a certain loss.

The expence [sic] of sending Coals down the Railway by leading them in Carts to New Shildon and to the Junction of the main line and Black Boy intended branch, are as below.

	s	d
Leading by Carts from the Pits to the Railway P. Ton	*3*	*0*
Expences [sic] of Man attending at Shildon (Shuton?) repairs to Do. are 30 Tons P.Day	*0*	*1 ½*
Railway Dues and Haulage to junction of B. Boy intended Branch being ¼ of a mile @ 2 p. Ton p. mile	*“*	*“ ½*
Per Ton	*3*	*2*

By the above method the Coals would be oftener turned over and consequently more broken to small, and the uncertainty of having a regular trade in Winter, owing to Bad Roads from South Church to Shildon.

The expences [sic] by the railway laid to the colliery where it is now won, would be as below.

	Per Ton s	d		
2¾ Miles of way at 2d per Ton p.Mile dues of Haulage	*0*	*5½*		*7 [pencil]*
A Selfacting Plane to Denburn Beck ---“---“---	*0*	*6*		*9*
Engine at Shildon Bank Top ---“---“----	*0*	*6*		*9*
Expence [sic] of getting onto the Branch from the present Pits, deterioration of the value of Road to Pit and Interest of Capital sunk therein during the time such may be wanted	*0*	*2½*	*1*	*7 ½*
			1	*6 ½*

It appears by the above, that the Owners of Black Boy Colliery would loose [sic] 1s 6 ½ d P. Ton by Carting the coals to the Railway, compared with the expence [sic] they would be subject to, on a Railway being laid to the Colliery.

APPENDIX D

TNA RAIL 984 Transcribed by Trevor Horner, Brusselton Incline Group of the Friends of the S&DR

Transcription 101227

Thickley Quarry July 24th 1827

In reply to your enquiry I will supply you with Stone Blocks of a proper size for the Stockton and Darlington Railway, properly holed at eight pence each, and with walling Stones at 10 (pence?) Ton and convey at 2 (pence?) but giving the Railway company the Small stone or Rubbish of the Quarry for nothing for the use of the Black Boy Branch the account to be adjusted and settled monthly.

I am Sir

Your humble servant

George Stephenson

For Christopher Tennant

Transcription 101246

A tender for the winning of stones for the Black Boy Branch

Proposal to supply Stones Blocks for the Black Boy Branch from C Tennant

Transcription 101313

London 28th February 1827

Dear Sir

My Brother informs me that you want to know the price I would supply Stone Blocks for the Branch Railways, my Foreman G Stephenson wrote me on that subject some time since, saying Mr Storey had made application to him. I replied to G Stephenson by return of post with a copy of the tender he was to make to Mr Storey.

Stone Blocks of the usual size properly holed 8 each. Walling Stones 10 (pence?) ton.

The small stone and other refuse of the Quarry for nothing or in other words for filling and leveling way.

Trusting that these terms will be satisfactory

I am

Dear Sir

Yours Truly

Christopher Tennant

Transcription 101327

28th February (?) 1827

Charles (? – probably Christopher) Tennant

Proposal for Blocks and Stones (Cannot make out the financial calculation)

(Addressed to)

Mr. Richard (?) Otley

Railway Office

Darlington

APPENDIX E

TNA RAIL 667/160 transcribed by Barbara M. Brown.

Black Boy Colliery 20th November 1830

To the Committee of the Stockton and Darlington Railway Co.

Gentlemen

It is with great diffidence I can prevail upon myself, in acceeding [sic] to the Request made by you on Saturday last; that is to commit to writing the particulars, of what I then stated, for in acquitting myself of that duty, I cannot but feel myself delicately circumstanced, not only, in Regard to the observations on the presant [sic] system of Management, but also, with respect to such suggestions as I shall feel it nessesary [sic] to make on the future conducting of the same.

From the serious loss which my Employer Mr Backhouse is sustaining, as well as the great, and general dissatisfaction evinced against the presant mode of conveying Passengers, Coals & other Commodities, along the Stockton and Darlington Railway, which mode, I have not the least doubt, is the principle [sic] cause of the serious loss felt by others, connected with the same, as well as my Employer, induces me to make the following observations.

It appears to me, that all goods passing along this line of way, are of such a nature as will Require a man of Complete Sciantific [sic] & Mechanical abilities, that will enable him to be competent in judgeing [sic]; ordering; conducting; and managing, all that is nessesary upon such a line of Road; providing the directors allow him what is needful

needful for conducting the same after laying down a rule for his instruction, to what extent they would wish to convey goods etc etc, he will then be enabled to form some Idea, what time and Expence [sic], it would Require, to make the alterations for accomplishing Its purpose; In the mean time the Committee, not to interfere, or have any comptrole over him, as long as he conducts himself, to the satisfaction of the proprietors, as well as the public at large.

It also appears to me, that the presant Committee, consists of a Dozen, or twenty, of the principal proprietors, as Directors of the Railway; assisted by nearly as many agents [..] under their Instructions; and those of the committee as proprietors, may be considered more or less connected, with other private interests, contiguous to the Railway, and the most active of such, will in all probability, have the agents most at command, and by employing them in other capacities, it may Influence them at times, to attend more to one Interest than another.

Therefore, by adopting a Chief Manager allowing him, to choose his own assistants, who should be wholely [sic] unconnected with any other parties, otherwise than upon the Rail Road, where he is transacting business solely for the benefit of the public; such as may be pointed out from time to time by such Manager; such I have no doubt will be the means of putting away all that unpleasant past of the Business, which the presant Committee and their Engineers, have now to contend with.

You mentioned to me that you have had Locomotive Engines, Rails, and other materials, ordered six or eight months ago, and which as yet you have not Recieved [sic], and that no Engine Builder, even at this time, will take in hand to make one, under four months [word missing]

(2)

Now it is my decided opinion, that an able Engineer, by giving such models, Drawings, and other instructions, to different Manufacturers of articles of that Description, it would enable him to complete Twenty in the time, and it is also my opinion that had ten, or twelve, extra labourers been employed, they might have completed 40 or 50 Sidings, or passing places, before this time, had a sufficient number of Manufacturers been employed, to supply them with cast and malleable Iron Rails etc etc, this I consider might have saved a great deal of confusion, and the Engineers and others from being verry [sic] much censured.

I concieve [sic] that in order to facilitate the work further, it will be found nescessary that one or two sidings be made for each colliery, at Stockton and Shildon, capable of holding nearly one half, or one third, of the shipping waggons, employed in conveying the coals from such Collieries; and when no ships are in for such coals, in that case the waggons either loaden [sic] or Empty, belonging to each Colliery, being put into their respective sidings, would not interfere one with another.

It also would be nescessary to have another extra siding, at most of the other sidings, or passing places, interveening [sic], between Stockton and Shildon, so that waggon may stand all night, or longer, should it so happen, without interfering with the main siding, or passing place, which would be nesscessary, even on a double way.

Should the double way, and sidings, already made between the new Bridge, and Stockton,

not be of sufficient length, to be converted into the whole of the Sidings, for the different collieries, as above mentioned.

I presume there is sufficient Room, at the North end of the said new Bridge, to make up the deficiency, or extra sidings; & which may be done in a very short space of time and answer a much better purpose, than stoping [sic] at Early Nook, 4 miles from Stockton, as is the case at presant, as it will then suit both Stockton, and Middlesbrough Staiths; This should also be the case, in regard to sidings at Shildon, and may be performed equally as soon.

In such case each Coal Owner, will know his own siding, at each end, and if so constructed, as to hold one half, or one third, of the waggons belonging to each Colliery, there would be no confusion whether ships were there or not, and as soon as any Colliery, was in want of Vessels to load Coals, a message should be sent to such Colliery, so that no more Waggons should be sent down, than were under way at the time, which may generally happen, to be as many as would fill the siding of such Colliery, at Stockton; the Remainder to be stopped at the proposed siding, at the other end near Shildon, either load [sic] or Empty as the Colliery Agent may see proper, untill [sic] a notice be sent that the waggons are unloading at Stockton, and on their return from the shipping department, then, the others standing at the last mentioned siding near Shildon, may be allowed to proceed in Regular succession, but not untill then, without Instructions from the Chief Manager;

In which case each Coal Owner, knowing his proper sidings at each end, would be able to keep a Regular System himself; without any instructions from any other quarter, except the notice sent when no Ships are loading for that Colliery, which might be very easily effected, without even sending a Special Messenger, as under the projected System, it may be fully expected that the engines will Travell, with double the speed, they are moving at, at presant.

It may be nesscessary to Remark, untill a better system can be adopted, and Horses done away with, that the engines might be Regulated in such manner, so as to accommodate the speed of the Horses in the day time, and by such Engines, working and accommodating, each other at night, the one half, or more of them, might perform two trips each day, and I have not the least doubt, that under such Regulation, coals etc might be led even now, with much greater facility, as the Engines then would go to Stockton, instead of stopping at Early nook, and Return back again to that place, which is a distance of Eight miles, in far less time than stopping there, and hauling waggons backwards & forwards, before they are Ready to set off again from such place, with empty waggons for their respective destinations.

Taking into consideration, the quantity of coals led for the last three months, by the seven Engines, and say 40 Horses, at presant is so very small that I am of opinion [sic], that with the assistence [sic] of two Engines

Engines, under the projected system, calculating them to travel at so moderate a Rate, as to make only one & a half trips daily, which is about two miles an hour, Inclusive of stops;- therefore 9 Engines performing $13\frac{1}{2}$ trips daily, with 20 Waggons each trip, and calculating upon 26 Working days in a month, will be equal to $715\frac{1}{2}$ Tons, daily, or 18603 Tons per month.

And should they perform two trips per day, which is quite possible, will be equal to 24804 Tons per month or double the Quantity led last month, with the aforesaid seven Engines, and say 40 Horses;

And further under such a projected system, should each, or any Colliery, not have ships for the coals, the Engines are then taking down, such coals, may then be put into the Respective sidings they belong to, out of the main line of way, and will cause no Interuption [sic], to other coals passing down such main line of Way, to vessels laying on for; and loading the same; and by a little practice, & perseverance, this mode of Regulation, would soon be got into, and Immediately shew to every one connected with the same, those who had no Ships on, as their coals would be standing back, in their own sidings, without any inconvenience to others;

In complyance (sic) with your Request, I have made the foregoing observations, Respecting the conducting, and managing, of the Stockton & Darlington Railway; which according to presant circumstances, I have briefly considered, and made remarks accordingly, but so much depends, upon unforeseen events, and other plans that may be adopted by a Skilfull [sic] manager, it now, only Remains for me to Remark and bring forward the principle heads of the foregoing suggestions;- Viz

Viz; In the first place, by doing away with the Interference of the presant Committee of Management, except in managing Money matters and at all events, do not allow those who are Manufacturers, Coal Owners, or that are otherwise Interested in the Railway, in any way than one, to interfere with the manager, for it is natural to suppose, every person will look more to his own interest, than to others.

Secondly By appointing Agents, that are no way interested in business, for any party, except that of the Engineer, for the purpose of getting Quick dispatch of Goods, and Merchandize; belonging the public [sic], which is also the only Remedy, to benefit the Railway Co.

Thirdly; By dividing the double way now laid, at each end, into sidings, (as already mentioned) Properly, for the convenience of accommodation of each Coal Owner, and not forgetting the sidings, in different places, for waggons, left all night, or longer to stand in, out of the way of the main line and also of the presant sidings, or passing places, Interveening between Stockton & Shildon.

Lastly; I scarcely deem it nescessary to say much more upon the subject, in Question, but I trust, that if an able Engineer, be appointed, as before proposed, he will not only be capable of judging upon, but also put in practice such other Improvements, as will constitute the projected system, for carrying on this concern for the future, in a complete, and satisfactory manner.

Thos. Y. Hall

Figure 56. Photo-bombing the Line between Eldon and Shildon