Chevin Geoenviro Associates Ltd
Tarn House
77 High Street
Yeadon Leeds LS19 7SP

C/O Andrew Burrell

Janus Architecture Limited

Sent by email

12th May 2026

Ref: C0722-CMRA-02

Dear Sir/Madam,

COAL MINING RISK ASSESSMENT PHASE 2 GROUND INVESTIGATION: First Bus, Huddersfield.

Chevin Geoenviro Associates Ltd (CGA) were commissioned by Janus Architecture to carry out an investigation of ground conditions at First Bus, Old Fieldhouse Lane, Huddersfield, Kirklees, HD2 1AG.

The proposals will include electrification works at the existing depot with transformers and associated electric changing gantries. The study site area is predominantly flat and approximately centred on National Grid Reference: 415900,418700.

The purpose of the investigation was to establish the risks from historical coal mining via formation of rotary open hole drilling agreed by the Mining and Remediation Authority under permit number 31418.

Chevin Geoenviro Associates Ltd (CGA) accepts no liability for any adverse geotechnical or environmental impacts on the proposed development that result from ground not investigated as part of this project. Similarly, CGA is not liable for any adverse effects that arise as a result of conditions that exist on land adjacent to the subject.

Coal Mining Risk Assessment; A previous Coal Mining Risk Assessment (CMRA) for the site was produced by CGA and Dated 19th January 2026, report refence C0709-02 and should be read alongside this latest report. This CMRA was focused on the locations of the transforms and reported these to be a Low risk due to the low weight and use of a raft foundation. However, a High risk was reported for all other structures with a phase 2 ground investigation recommended should additional structures be proposed.

Information on the site geology reported in the CMRA noted that British Geological Survey (BGS), shows the site at the northwest edge of river alluvium, comprising riverine clay, and floodplain sand or gravel, that cover the majority of the site. The alluvial band runs from northeast to southwest over exposed mudstones of the Pennine Lower Coal Measures Formation extending to distances beyond 700m from the site.

This Pennine Lower Coal Measures are described by the BGS Lexicon as, "*Interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part.*"

A northwest to southeast trending fault enters the northwest site and connects with an outcropping coal seam that enters the west corner of the site, to continue southeast and approximately following the orientation of Old Fieldhouse Lane.

This is the 36 Yard Coal (36Y) and it is conformable above the Hard Bed (HB) (Locally named Halifax Hard) seam that outcrops within 1km west and beyond these are the conformable Middle Band (MB) and Soft Bed Coal (SB) suggesting an easterly dip and placing these seams below the study site.

The higher 80 Yard (80Y) Coal outcrops to the south of the site, potentially placing this and the underlying 48 Yard (48Y) coal below the study site at shallow depth, east of the 36 Yard Coal outcrop.

The nearest borehole record within the same geology as the study site (SE11NE9), was located at approximately 350m east of site, for the Leeds Fireclay Company at New Peace Pit, Fieldhouse Colliery, Huddersfield in 1917.

This records topsoil and sand, over river gravel to 5.33m below ground level (bgl), covering rockhead of shale to 5.99m bgl, over limestone to 9.30m bgl, covering deeper shale to 9.75m bgl. These cover "Bastard Coal" that was of just 0.20m in thickness, over shale to 21.85m bgl, covering the Hard Band Coal (Synonymous with the 36 Yard Coal) of 0.61m thickness to 22.45m bgl.

The log records that only 0.25m of this seam was clean coal and that it covered fireclay with iron nodules of 1.83m thickness to 24.28m bgl. Strong blue shale or shale like stone continued to 30.38m bgl, over deeper shales to 57.00m bgl, covering the Halifax Hard Bed Coal of 0.71m thickness to 57.71m bgl.

This geology was underlain by mixed thin beds of ganister (quartzite with roots often below coal seams) or poor fire clay to 59.74m bgl, over shale to 67.21, covering the Middle Band Coal of 0.20m thickness. This in turn was over sandstone of 1.83m thickness, covering shale of 0.61m thickness to 81.43m, over the Halifax Soft Bed Coal that was of 0.30m thickness and described as "clean." Fireclay of three inches (0.075m) was under this covering sandstone defined as the Soft Bed Flags to the base of the borehole at 81.99m bgl.

The groundwater depth was not recorded.

Ground Investigation Site Works; These most recent site investigation works were carried out on the 9th and 10th April 2026 and utilised a Competitor Dart rig to form five shallow boreholes and at the first four locations extended by rotary open hole drilling into shallow depths of the underlying rock. Boreholes BH1, BH2 and BH3 were located in the eastern site area in the location of proposed gantries and formed a triangle approximately 45m distance from each borehole. BH4 was located on the reverse side of the conjectured outcrop of coal in the western site area.

The ground conditions encountered during the site works are summarised below, with further details contained in the appended engineering logs.

All window sample locations encountered made ground to depths of between 0.80m bgl (WS05) in the southwest of the site, and 3.00m bgl (WS02), near the centre of the northeast site.

All of these locations encountered a surface layer of concrete to depths of either 0.16m bgl (WS03, WS04 and WS05) or 0.19m bgl (WS01 and WS02).

Below WS01, concrete hard standing covered a thin layer of black fine to medium gravel of bitumen covered stone, with a slight hydrocarbon odour to 0.50m bgl. This in turn covered a dark brown to black gravel of ash and clinker to 1.90m, over a thin (0.10m) layer of black fragments of oxidised timber and coal to 2.00m.

Made ground below the concrete surface in WS02, comprised a thin (0.10m) layer of blue sandy gravel of stone considered to be possible engineered fill to 0.29m bgl. This was over grey sandy gravel sized fragments of stone to 0.90m, covering brown to black gravel of ash, clinker, occasional glass or burnt timber, that continued to 3.00m bgl.

Made ground in WS03 comprised a thin (0.09m) layer of yellow gravel of sandstone, also considered to be possible engineered fill to 0.25m bgl. This directly overlay deeper made ground of the lowest description in WS02, in this case progressing to just 2.20m bgl. Made ground directly below concrete in both WS04 and WS05 was described as brown silty sandy gravel sized fragments of stone, brick, ash and clinker, that progressed to 1.90m and 0.80m bgl respectively.

In the first three locations, made ground covered natural layers of thin (0.10m - 0.25m) grey slightly gravelly silt in which the gravel was described as subrounded to rounded stone, over deeper brown mottled grey sandy, gravelly, clayey silt, in which the gravel was described as fine subrounded to rounded mudstone and occasional sandstone. This deeper silt was recorded directly below the made ground layers of WS04 and WS05, and across the site this layer progressed to depths of 4.50m in WS01, 4.20m bgl in WS02, 3.20m bgl in WS03, 3.10m in WS04 and 2.90m in WS05.

A lower band of brown silty fine sand was encountered in WS02 below 4.20m bgl to 5.00m bgl and in WS04 a deeper dark grey slightly sandy, gravelly silt, with rare fine rootlets was encountered between 3.10m bgl to 3.90m bgl.

All locations terminated in clay materials being described as two dominant types. In WS01 and WS02, this was a brown very gravelly clay, in which the gravel was fine to medium subrounded sandstone, and in WS03, WS04 and WS05, this was dark grey or brown, gravelly clay, with variable amounts of silt or sand, including a gravel of variable description being locally fine, medium and course, subangular to subrounded, locally tabular mudstone or sandstone.

This lower soil was progressed to a termination depth of 6.00m bgl in WS01, 5.45m bgl in WS02 and WS04, 4.45m bgl in WS03, and 3.35m bgl in WS05.

Groundwater was encountered at 4.50m bgl in WS01, 4.00m bgl in WS02, 4.45m bgl in WS03 and at the shallower depth of 1.90m bgl in WS04, where it corresponded to the base depth of the made ground. Competent rockhead was not encountered in the window sample locations but is described below from rotary drilling to greater depths.

Rockhead was encountered at depth from 6.20m to 6.70m in the eastern area and 7.30m in the west. Rock was described as mudstone with traces of coal above a coal seam recorded at depths from 7.20m to 7.80m with a seam

thickness of 0.80m to 1.10m. Blow the coal was a mudstone shale which was proven to a depth of 25m at the location of BH1.

A summary of the encountered rock depths is presented in table 1 below.

Table 1.0 Summary of Rotary Borehole Information.

Strata	BH01	BH02	BH03	BH04
Surface and Made Ground	2.0	3.50	2.20	1.80
Boulder Clay, Gravel or Cobbles	6.20	6.80	6.70	7.30
Mudstone	7.30	-	-	-
Mudstone with Coal Traces	7.80	7.50	7.20	-
Defined Coal	8.80	8.30	8.30	-
Mudstones grey shaley	13.20	10.30	10.30	12.00
Mudstone black shaley	25.00	-	-	-
Base depths recorded in metres.				

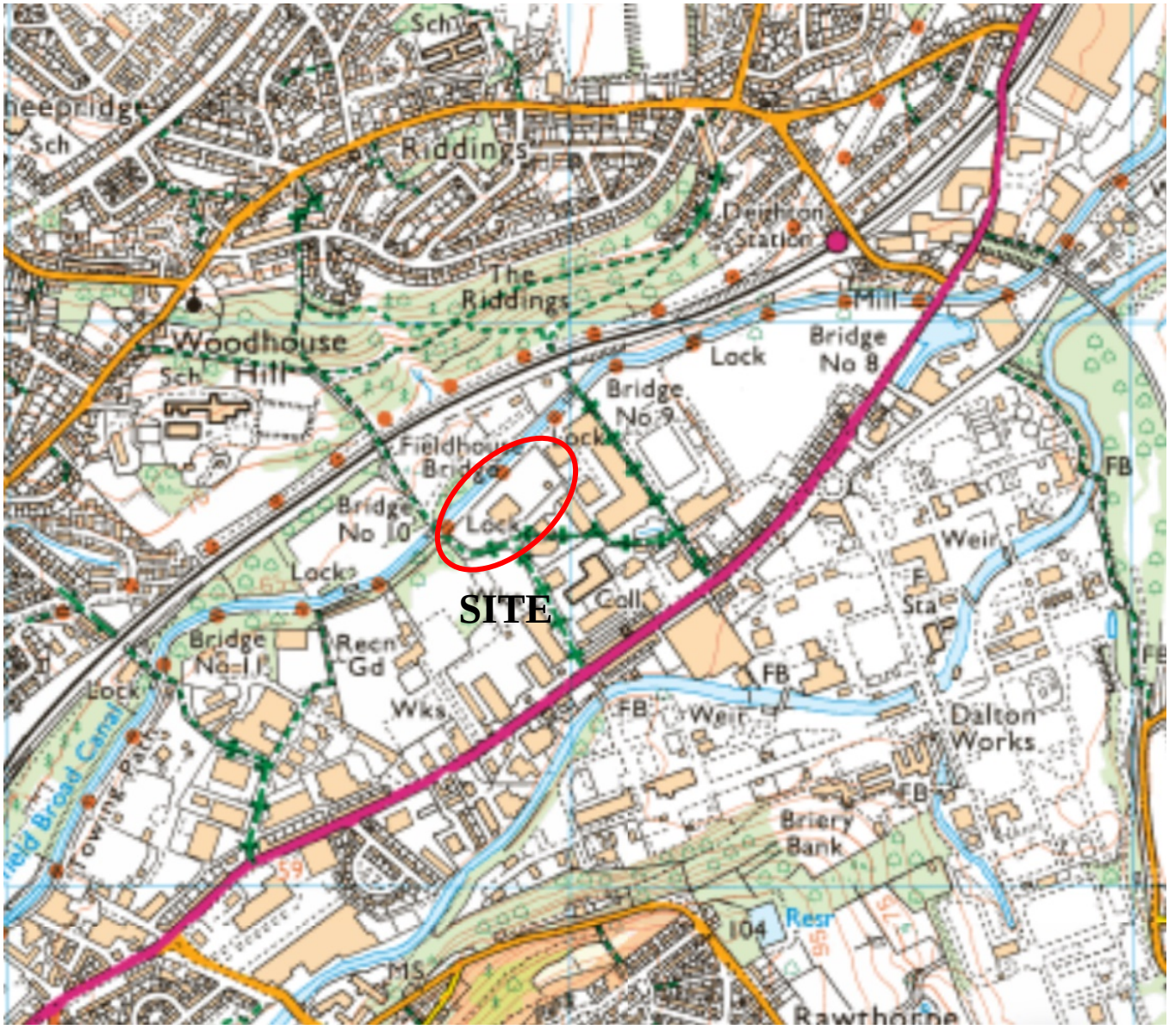
Conclusions; From the information in the previous CMRA and this investigation we can confirm unworked coal likely associated with the 36 Yard Coal was recorded in the eastern site area with no evidence of workings or coal recorded in the western area. From this we can conclude that the risks from past coal mining in the locations of proposed gantries and transforms is Very Low.

Yours Faithfully,

Christiaan Wilkinson BSc MRes FGS CSci SiLC
Director: Chevin Geoenviro Associates Ltd.

Site Location Plan

Drawing:C0722-01





Chevin Geoenviro Associates LTD

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Geo-environmental Consultancy
Ground Technologies & Investigation & Remediation

Project:

Land At:
First Bus Huddersfield, Old Fieldhouse Lane

Client: Janus Architecture Limited

Project No. C0722

Date: 12/05/2026

Exploratory Hole Location Plan

Drawing:C0722-02



KEY

Rotary & Window Sample Borehole Locations

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Date: 12/05/2026

Chevin Geoenviro Associates LTD

Borehole Log

Borehole No. **WS01**

Sheet 1 of 1

Project Name: First Huddersfield	Project No. C0722	Co-ords: -	Hole Type WS
Location: Old Fieldhouse Lane, Huddersfield, HD2 1AG		Level:	Scale 1:40
Client: Janus Architecture		Dates: 09/04/2026 - 09/04/2026	Logged By CW

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.19			CONCRETE.
		0.45	ES		0.50			MADE GROUND; Black fine to medium gravel size fragments of bitumen/tar covered stone. (Very slight hydrocarbon odour)
		1.00		N=2 (1,1/0,0,1,1)				MADE GROUND; Dark brown to black gravel size fragments of ash and clinker.
					1.90			MADE GROUND; Black fragments of oxidised black timber and coal.
					2.00			Grey slightly gravelly SILT gravel is fine subrounded to rounded stone.
					2.10			Brown mottled grey sandy, gravelly, clayey SILT gravel is fine subrounded to rounded mudstone and occasional sandstone.
		2.50 - 2.60	D					
		3.00		N=30 (4,4/6,7,7,10)				
		3.10 - 4.00	B					
		4.00		N=31 (5,5/7,8,8,8)				
	▼				4.50			Brown very gravelly CLAY gravel is fine to medium subrounded sandstone.
		5.00		N=31 (2,3/5,8,9,9)				
		5.60		N=47 (8,9/9,12,13,13)				
					6.00			End of borehole at 6.00 m

Remarks

Groundwater at 4.5m. Rotary openhole follow on. Backfilled with bentonite cement grout and concrete reinstated.

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Borehole Log

Borehole No. **WS02**

Sheet 1 of 1

Project Name: First Huddersfield	Project No. C0722	Co-ords: -	Hole Type WS
Location: Old Fieldhouse Lane, Huddersfield, HD2 1AG		Level:	Scale 1:40
Client: Janus Architecture		Dates: 09/04/2026 - 09/04/2026	Logged By CW

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.19			CONCRETE.
					0.29			MADE GROUND; Blue sandy gravel size fragments of stone. (Possible engineering fill)
								MADE GROUND; Grey sandy gravel size fragments of stone.
		1.00		N=3 (1,2/1,0,1,1)	0.90			MADE GROUND; Brown to black gravel size fragments of ash, clinker with occasional glass and burnt timber.
		2.50	ES					
					3.00			Grey slightly gravelly SILT gravel is fine subrounded to rounded stone.
					3.10			Brown mottled grey sandy, gravelly, clayey SILT gravel is fine subrounded to rounded mudstone and occasional sandstone.
	▼	4.00		N=9 (1,2/2,2,3,2)				
					4.20			Brown silty fine SAND.
		4.80 - 4.90	D					
		5.00		N=24 (4,4/4,5,7,8)	5.00			Brown very gravelly CLAY gravel is fine to medium subrounded sandstone.
					5.45			End of borehole at 5.45 m

Remarks

Groundwater at 4.0m. Rotary openhole follow on. Backfilled with bentonite cement grout and concrete reinstated.

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Borehole Log

Borehole No. **WS03**

Sheet 1 of 1

Project Name: First Huddersfield	Project No. C0722	Co-ords: -	Hole Type WS
Location: Old Fieldhouse Lane, Huddersfield, HD2 1AG		Level:	Scale 1:40
Client: Janus Architecture		Dates: 09/04/2026 - 09/04/2026	Logged By CW

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.16			CONCRETE.
					0.25			MADE GROUND; Yellow gravel of sandstone. (Possible engineering fill)
		1.00		N=3 (1,1/0,1,1,1)				MADE GROUND; Brown to black gravel size fragments of ash, clinker with occasional glass and burnt timber.
		1.50	ES					
					2.20			Grey slightly gravelly SILT gravel is fine subrounded to rounded stone.
					2.45			Brown mottled grey sandy, gravelly, clayey SILT gravel is fine subrounded to rounded mudstone and occasional sandstone.
		3.00		N=23 (2,3/4,6,6,7)				
					3.20			Dark grey slightly sandy gravelly CLAY gravel is medium to coarse tabular mudstone and subrounded sandstone.
		3.80 - 3.90	D					
	▼	4.00		N=28 (4,5/6,7,7,8)				
					4.45			End of borehole at 4.45 m

1 2 3 4 5 6 7 8

Remarks

Groundwater at 4.45m. Rotary openhole follow on. Backfilled with bentonite cement grout and concrete reinstated.

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Chevin Geoenviro Associates LTD

Borehole Log

Borehole No. **WS04**

Sheet 1 of 1

Project Name: First Huddersfield	Project No. C0722	Co-ords: -	Hole Type WS
Location: Old Fieldhouse Lane, Huddersfield, HD2 1AG		Level:	Scale 1:40
Client: Janus Architecture		Dates: 09/04/2026 - 09/04/2026	Logged By CW

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.16			CONCRETE.
		1.00 1.10	ES	N=5 (1,2/1,1,2,1)				MADE GROUND; Brown silty sandy gravel size fragments of stone, brick, ash and clinker.
	▼				1.90			Brown mottled grey sandy, gravelly, clayey SILT gravel is fine subrounded to rounded mudstone and occasional sandstone.
		2.50 - 2.60	D					
		3.00		N=13 (2,2/3,4,4,2)	3.10			Dark grey slightly sandy gravelly SILT gravel is fine subangular to subrounded with rare fine rootlets.
					3.90			Grey mottled brown silty gravelly CLAY gravel is fine subangular to subrounded mudstone.
		5.00		N=44 (1,2/10,10,12,12)				
					5.45			End of borehole at 5.45 m

Remarks

Groundwater at 1.90m. Rotary openhole follow on. Backfilled with bentonite cement grout and concrete reinstated.

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Borehole Log

Borehole No. **WS05**

Sheet 1 of 1

Project Name: First Huddersfield	Project No. C0722	Co-ords: -	Hole Type WS
Location: Old Fieldhouse Lane, Huddersfield, HD2 1AG		Level:	Scale 1:40
Client: Janus Architecture		Dates: 09/04/2026 - 09/04/2026	Logged By CW

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.16			CONCRETE.
					0.80			MADE GROUND; Brown silty sandy gravel size fragments of stone, brick, ash and clinker.
		1.00		N=4 (1,1/1,1,1,1)				Brown mottled grey sandy, gravelly, clayey SILT gravel is fine subrounded to rounded mudstone and occasional sandstone.
		1.50 - 1.60	D					
		2.00		N=13 (2,2/2,3,4,4)				
		3.00		N=50 (2,8/50 for 290mm)	2.90			Dark brown slightly silty slightly gravelly CLAY gravel is fine angular to subangular mudstone.
					3.35			End of borehole at 3.35 m

Remarks

No groundwater encountered, backfilled with Bentonite cement grout and concrete reinstated.

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Client: Chevin GEO	**Site: Huddersfield First Bus depot, Old Fieldhouse Lane, HD2 1AG**	**Cape Site Services unit 2, rear of Castle Buildings Carlton Road, Barnsley, S71 3HX**	
Date: 13/04/2026	**Method:Rotary water flush**	**Permit No: 31418**	
Driller: Simon Fish		**Driller Assistant: Richard Hawkins, Ian Wiles**	
		Page No: 1	

Measurements In Meters

BH No:	FROM	TO	THICKNESS	DESCRIPTION
1				
	0	0.25	0.25	concrete
	0.25	6.2	5.95	Boulder clay with cobbles to base
	6.2	7.3	1.1	Mudstone light brown
	7.3	7.8	0.5	mudstone black with coal traces
	7.8	8.8	1	coal
	8.8	13.2	4.4	mudstone grey silty shelley
	13.2	25	11.8	mudstone black shelley
				Borehole sealed upon completion
				negative gas readings recorded
2				
	0	0.2	0.2	concrete
	0.2	1.2	1	crush fill
	1.2	3.5	2.3	made ground black ash
	3.5	6.8	3.2	Boulder clay with gravels
	6.8	7.5	0.7	Mudstone black with coal traces
	7.5	8.3	0.8	coal
	8.3	10.3	2	Mudstone grey silty shelley
				Borehole sealed upon completion, negatine gas readings
3				
	0	0.2	0.2	concrete
	0.2	2.2	2	made ground
	2.2	6.7	4.5	Boulder clay with gravels
	6.7	7.2	0.5	mudstone black with coal traces
	7.2	8.3	1.1	coal
	8.3	10.3	2	Mudstone grey silty shelley
				Borehole sealed upon completion, negatine gas readings
4				
	0	0.2	0.2	concrete
	0.2	1.8	1.6	made ground
	1.8	7.3	5.5	Boulder clay with gravels
	7.3	12	4.7	Mudstone grey silty shelley
				Borehole sealed upon completion, negatine gas readings