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Ms C Day
Orion Homes Ltd
5 Benton Office Park
Bennett Avenue
Benton Hill
Horbury
Wakefield WF4 5RA

BY EMAIL

Our Ref: ORH/20/L3a/OG

23rd July 2026

Dear Candy

Whitehall Road West, Birkenshaw
Planning application number 2025/92161.
Information in relation to Condition 5 and 6 covering Plots 1 to 23

As requested, we have prepared a letter to satisfy the requirements of Kirklees Council in relation to Condition 5 and 6 of the above-mentioned planning application. The required details of each condition are summarised below;

- **Condition 5** identifies potential remediation may be required, relating to foundation works, in the event coal is found.
- **Condition 6** requires that before occupation, a competent person must confirm that the required remediation has been undertaken.

Background

Multiple phases of site investigations have been undertaken across the site prior to the commencement of the development. The following documents relevant to discharge condition 5 and 6 have been reviewed by ARP;

- JNP Group Consulting Engineer – Letter Report NG7020.L004/WHI/NDT/kef, dated 08 September 2008. This investigation covered the southern end of the site and comprised 13 trial pits to between 0.5m and 1.6m depth. Logs in Appendix A.
- RSK Geoscience – Site Investigation reference 350520-R01 (00), dated November 2022. This investigation also covered the southern end of the site and comprised 8 window samples to between 0.75m and 2.42m depth. Logs in Appendix B.
- ARP Geotechnical – Combined Stage 1 /Stage 2 Geo Environmental Report, referenced ORH/20r1, dated August 2023. This investigation covered the northern end of the site and comprised 8 machine excavated trial pits to between 2.8m and 4.3m depth. Logs in Appendix C.
- ARP Geotechnical – Intrusive Coal Mining Investigation, reference ORH/20/AJjcl1. This



investigation comprised three rotary open hole boreholes to between 11m and 25m depth. Logs in Appendix C.

- Groundtech Consulting – Supplementary Investigation, reference GRO-24208-5483, dated 28th October 2024. This investigation comprised the excavation of 4 trial trenches to between 2.3m and 5.75m depth at the proposed site entrance in the northeastern corner of site. Logs in Appendix D.

Summary of Investigations

The extensive site investigations listed above have comprehensively evaluated the coal mining legacy across the entire development footprint. No evidence of shallow historical coal mining activity has been identified under the site and, as such, the site is not at risk from shallow coal mining activities. No drilling and grouting works were therefore required to allow development of the site.

The ARP Intrusive Investigation Report and the Groundtech Consulting Supplementary Investigation Report were both submitted to The Coal Authority (CA) in August 2025. Following a review of the reports the CA, in their letter referenced 2025/44/9216/E and dated 19th August 2025, had no objections to discharging condition 5 and 6 of the planning application.

Although no evidence of workings was encountered, shallow coal was identified within all exploratory holes in the northern end the site (Plot 1 and Plots 15 to 23). Coal was absent in the southern end of the site (Plots 2 to 14). A plan showing the coal depths beneath the northern end of site is attached and is summarised below.

The shallowest coal seam was encountered between 0.8m and 1.2m depth in TP6 (ARP investigation) in the southwestern corner of the site. The depth of coal gradually deepened towards the northeast with a maximum depth of 3.1m observed in TP8 in the northeast (ARP investigation).

The coal encountered within the ARP investigation was noted to be highly weathered and was encountered within the residual clay zone (weathering of insitu bedrock). Weathered coal presents a significantly lower combustible and spontaneous self-heating risk than fresh coal due to long term natural oxidation. Conversely, the deeper coal encountered within the Groundtech investigation in the northeast at between 1.95m and 3.2m depth was un-weathered and described as black anthracite with bituminous inclusions.

As built mitigation (Condition 6)

The foundations for all 23 plots have been excavated and completed. The status of each plot is summarised below.

Plots 2 to 14

No coal was encountered during the various phases of investigation in the southern end of the site which covers plot 2 to 14. Therefore, no mitigation measures were required.

Plot 15

As anticipated by the shallow coal encountered in TP6 (ARP) (coal at 0.8m to 1.2m) at the southwestern corner of the site, coal was encountered within the foundation excavation for Plot 15. The approved



engineered foundation detail, appendix F, was fully utilised by the groundworkers to isolate the seam. As built, the foundations cut through the seam into competent strata and were completed using a minimum 225mm Grade FND4 mass concrete pour to vertically seal the cut face, alongside a 250mm Grade FND2 horizontal concrete capping layer. It is understood that both building control and structural warranty have inspected and signed off the plot.

Plots 1 and Plots 16 to 23

The groundworkers did not report any coal within the founding depths of the excavations for any of these plots. This is consistent with findings of the intrusive investigations which confirmed that the depth of the coal seam got deeper towards the northeast. As coal was entirely absent from the active depth of the foundations standard foundation design depths were used. No engineering mitigation or deeper digging was necessary or undertaken for these plots.

Summary and Conclusion

Based on the extensive site investigations and completed as-built data, the geotechnical status of the development is concluded as follows:

Shallow Coal Mining Legacy and Site Stability: Widespread intrusive reporting proves the absolute absence of historical unrecorded mine workings, voids, or crop workings. The entire site footprint is stable and is not at risk from shallow coal mining activities. No ground stabilisation works were required anywhere on site. The Mine Remediation Authority (formerly the Coal Authority) are satisfied with this assessment.

Remediation of Plot 15: Where the natural coal seam interacted with structural excavations at Plot 15, the engineered foundation mitigation was successfully executed and signed off by building control. Progressing the foundations into competent strata and encapsulating the seam in mass concrete has permanently isolated the coal from oxygen and ignition pathways, fully protecting the structure and its occupants.

Remaining Plots: Across the rest of the development (Plot 1 to 14 and Plots 16 to 23), coal was entirely absent from active founding depths, meaning no structural mitigation was necessary.

Therefore, based on the above the whole site is considered to be safe and stable for the development and its occupiers in relation to coal mining legacy. It is considered that the requirements of Conditions 5 and 6 have been fully satisfied, and both conditions are requested to be formally discharged by the Local Planning Authority.

Yours sincerely
for ARP GEOTECHNICAL LTD

O Gwilym
MSc BSC FGS



Encs

Appendix A: JNP Investigation plan and Logs

Appendix B: RSK Investigation plan and Logs

Appendix C: ARP Investigation plan and Logs

Appendix D: Groundtech Investigation plan and Logs

Appendix E: Northern End Coal Depths Plan

Appendix F Foundation Schedule and Detail Drawing

APPENDIX A

JNP INVESTIGATION

WHITEHALL ROAD WEST

Proposed pedestrian refuge
traffic island



Resident

APPENDIX C

a forward thinking

a forward thinking
jnp group

Consulting Engineers

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Client	Conroy Brook Developments c/o Farrar Bamforth Associates
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Drawn By
RJW

Date 07/08/08

Job Whitehall Road, West Birkenshaw
BD11 2DS

Checked By
NDT

Scale

Title TRIAL PIT 3

Drawing No.
NG7020-TP3

Rev.

ALL WORKING DIMENSIONS TO BE CHECKED ON SITE - DO NOT SCALE

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[illegible]

Remarks

Hole Dry

Trial Pit Log

QA Ref: QD0190 Rev B

■ forward thinking

jnp group

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Client	Conroy Brook Developments c/o Farrar Bamforth Associates	Drawn By	RJW	Date	07/08/08
Job	Whitehall Road, West Birkenshaw BD11 2DS	Checked By	NDT	Scale	
Title	TRIAL PIT 5	Drawing No.	NG7020-TP5	Rev.	

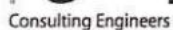
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[illegible]

Remarks

Hole Dry

Trial Pit Log



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Remarks

QA Ref: QD0190 Rev B

Client	Conroy Brook Developments c/o Farrar Bamforth Associates	Drawn By RJW	Date 07/08/08
Job	Whitehall Road, West Birkenshaw BD11 2DS	Checked By NDT	Scale
Title	TRIAL PIT7	Drawing No. NG7020-TP6	Rev.

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[illegible]

Remarks

Cable uncovered at shallow depth

Trial Pit Log



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[illegible]

Remarks

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Client	Conroy Brook developments c/o Farrar Bamforth Associates	Drawn By RJW	Date 07/08/08
Job	Whitehall Road, West Birkenshaw BD11 2DS	Checked By NDT	Scale
Title	TRIAL PIT 9	Drawing No. NG7020-TP9	Rev.

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Samples & Insitu Tests		Water Depth (m)	Depth (m)	Description of Strata	O.D. Level	Legend
Depth	Type					
			300mm	Top soil / roots 50mm Ø	Sample	9A
			1.3m	Broken stone		

Remarks

Trial Pit Log

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Job	Whitehall Road, West Birkenshaw BD11 2DS	Checked By NDT	Scale
Title	TRIAL PIT 10	Drawing No. NG7020-TP10	Rev.

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[illegible]

Remarks

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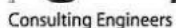
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Samples & Insitu Tests		Water Depth (m)	Depth (m)	Description of Strata	O.D. Level	Legend
Depth	Type					
			400mm	Top soil / roots 30mm Ø	Sample	11A
			1.2m	Light orange weathered sandstone		

Remarks

Trial Pit Log



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Client	Conroy Brook Development c/o Farrar Bamforth Associates
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Drawn By
RJW

Date 07/08/08

Job Whitehall Road, West Birkenshaw
BD11 2DS

Checked By
NDT

Scale

Title	TRIAL PIT12
-------	-------------

Drawing No.
NG7020-TP12

Rev.

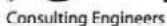
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[illegible]

Remarks

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Client	Conroy Brook Developments c/o Farrar Bamforth Associates	Drawn By R.JW	Date 07/08/08
Job	Whitehall Road, West Birkenshaw BD11 2DS	Checked By NDT	Scale
Title	TRIAL PIT 13	Drawing No. NG7020-TP13	Rev.

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[illegible]

Remarks

Trial Pit Log

APPENDIX B

RSK INVESTIGATION



C01	06.10.22	First Issue	AS	WH	WH
Rev	Date	Amendment	Drawn	Chkd	Appd

LEGEND

- Site boundary
- Window sample location



The Potteries
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Castleford
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Web: www.rsk.co.uk

Client
SJL (Wakefield) Ltd
Project Name
Birkenshaw Sit Investigation
Description
Borehole Location Plan

Dimension	Scale	Size	Project ID	Drawing no.	Revision	File name
m	NTS	A4	350520	22201	C01	350520-CS-222-SS-D-C-22201-C01

WINDOW SAMPLE LOG

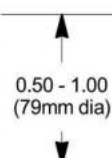
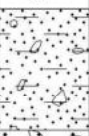
Contract: Birkenshaw		Client: JGC (1980) LTD		Window Sample: WS01
Contract Ref: 350520	Start: 28.07.22 End: 28.07.22	Ground Level (m AOD): ---	National Grid Co-ordinate: ---	Sheet: 1 of 1

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
 0.40 - 0.70 (59mm dia)	0.10	1	ES				Light brown gravelly slightly clayey fine to coarse SAND with abundant roots. Gravel is sub-angular fine to coarse of sandstone. (TOPSOIL)	0.10	
	0.40-0.70	1	SPT	11,13/21,29 for 75mm			Light brown gravelly fine to coarse SAND. Gravel is angular to sub-angular fine to coarse of sandstone. (WEATHERED SANDSTONE)	(0.65)	
							Inspection pit refused at 0.75m depth with smallest barrel.	0.75	

Drilling Progress and Water Observations						General Remarks			
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)				
						1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation. 2. Inspection pit hand dug to 0.40m depth. 3. No groundwater encountered.			
						All dimensions in metres		Scale:	1:25
Method Used:	Tracked window sampling		Plant Used:	Archway Dart 227		Drilled By:	Structural Soils	Logged By:	WHopkins
						Checked By:			

WINDOW SAMPLE LOG

Contract: Birkenshaw			Client: JGC (1980) LTD		Window Sample: WS02
Contract Ref: 350520	Start: 28.07.22 End: 28.07.22	Ground Level (m AOD): ---	National Grid Co-ordinate: ---		Sheet: 1 of 1

Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.30	1	ES	5,7/22,28 for 75mm			Light brown slightly clayey slightly gravelly fine to coarse SAND with rootlets. Gravel is sub-angular of sandstone. (TOPSOIL)	(0.40)	
	0.80	2	ES				Orangish brown and light brown sandy angular fine to coarse GRAVEL of sandstone. (WEATHERED BEDROCK)	(0.95)	
	1.00-1.30	1	SPT						
	1.00	3	SPTLS						
	1.25	3	SPTLS						
							Inspection pit refused at 1.35m depth.		

Drilling Progress and Water Observations						General Remarks			
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation. 2. Inspection pit hand dug to 1.00m depth. 3. No groundwater encountered. 4. Backfilled with bentonite.			
All dimensions in metres						Scale:	1:25		
Method Used: Tracked window sampling	Plant Used: Archway Dart 227		Drilled By: Structural Soils		Logged By: WHopkins		Checked By:		

WINDOW SAMPLE LOG

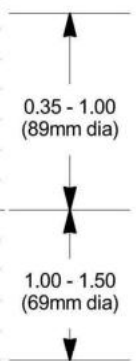
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Contract Ref: 350520	Start: 28.07.22 End: 28.07.22	Ground Level (m AOD): ---	National Grid Co-ordinate: ---		Sheet: 1 of 1

Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.20	1	ES	8,12/50 for 75mm			Light brown slightly gravelly fine to coarse SAND with rootlets. Gravel is sub-angular fine to coarse sandstone. (TOPSOIL)	(0.40)	
	0.40						Light brown sandy angular fine to coarse GRAVEL of sandstone. (WEATHERED BEDROCK)	0.40	
	0.80	2	ES					(0.78)	
	1.00-1.23	1	SPT					1.18	
	1.00	3	D				Inspection pit terminated at 1.18m depth in bedrock.		

Drilling Progress and Water Observations						General Remarks			
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation. 2. Inspection pit hand dug to 1.00m depth. 3. No groundwater encountered. 4. Backfilled with bentonite.			
All dimensions in metres						Scale:	1:25		
Method Used: Tracked window sampling	Plant Used: Archway Dart 227			Drilled By: Structural Soils	Logged By: WHopkins	Checked By:			

WINDOW SAMPLE LOG

Contract: Birkenshaw			Client: JGC (1980) LTD		Window Sample: WS04
Contract Ref: 350520	Start: 28.07.22 End: 28.07.22	Ground Level (m AOD): ---	National Grid Co-ordinate: ---		Sheet: 1 of 1

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10	1	ES				Light brown slightly gravelly slightly clayey fine to coarse SAND with rootlets. (TOPSOIL)	(0.35)	
	0.90	2	ES				Light brown sandy angular fine to coarse GRAVEL of sandstone. (WEATHERED BEDROCK)	(1.15)	
	1.00-1.45	1	SPT	N=49					
	1.20	3	D						
	1.50-1.50	2	SPT	NP					
	1.50	4	D				Inspection pit terminated at 1.50m depth in bedrock.		

Drilling Progress and Water Observations						General Remarks			
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation. 2. Inspection pit hand dug to 1.00m depth. 3. No groundwater encountered.			
All dimensions in metres						Scale:	1:25		
Method Used:	Tracked window sampling			Plant Used:	Archway Dart 227		Drilled By:	Structural Soils	Logged By: WHopkins Checked By: 

WINDOW SAMPLE LOG

Contract: Birkenshaw		Client: JGC (1980) LTD		Window Sample: WS05
Contract Ref: 350520	Start: 28.07.22 End: 28.07.22	Ground Level (m AOD): ---	National Grid Co-ordinate: ---	Sheet: 1 of 1

Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
0.50 - 0.70 (79mm dia)	0.20	1	ES	9,10/50 for 75mm			Light brown slightly gravelly slightly clayey SAND with rootlets. (TOPSOIL)	(0.30)	
							Light brown sandy angular fine to coarse GRAVEL of sandstone. (WEATHERED BEDROCK)	0.30	
	0.70-0.93	1	SPT					(0.53)	
							Inspection pit terminated at 0.83m depth in rock.	0.83	

Drilling Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)		
						1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation. 2. Inspection pit hand dug to 0.70m depth. 3. No groundwater encountered. 4. Backfilled with bentonite.	
All dimensions in metres						Scale:	1:25
Method Used:	Tracked window sampling		Plant Used:	Archway Dart 227		Drilled By:	Structural Soils
						Logged By:	WHopkins
						Checked By:	AGS

WINDOW SAMPLE LOG

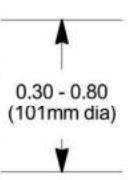
Contract:	Birkenshaw		Client:	JGC (1980) LTD		Window Sample:	WS06	
Contract Ref:	350520		Start: 28.07.22	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:	1 of 1	
			End: 28.07.22	---	---			

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10	1	ES				Brown slightly clayey slightly gravelly fine to coarse SAND with rootlets. Gravel is sub-angular fine to medium of sandstone and brick. (TOPSOIL)	(0.30)	
	0.30	2	ES				Light orangish brown sandy sub-angular fine to coarse GRAVEL of sandstone. (WEATHERED BEDROCK)	0.30	
	1.00-1.45	1	SPT	N=36					
	1.00	3	SPTLS						
	1.45	3	SPTLS				... At depth 1.50m-2.00m: Clayey.	(2.12)	
	1.60	4	D						
	2.00-2.41	2	SPT	5,6/6,10,14,20 for 30mm					
	2.00	4	D						
							Inspection pit terminated at 2.42m depth.	2.42	

Drilling Progress and Water Observations						General Remarks		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)			
						1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation. 2. Inspection pit hand dug to 1.00m depth. 3. No groundwater encountered.		
						All dimensions in metres Scale: 1:25		
Method Used:	Tracked window sampling		Plant Used:	Archway Dart 227		Drilled By:	Structural Soils	Logged By: WHopkins Checked By: 

WINDOW SAMPLE LOG

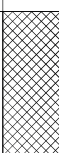
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Contract Ref: 350520	Start: 28.07.22 End: 28.07.22	Ground Level (m AOD): ---	National Grid Co-ordinate: ---		Sheet: 1 of 1

Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.30	1	ES	11,7/7,10,33 for 75mm			Brown slightly clayey gravelly fine to coarse SAND with rootlets. Gravel is sub-angular fine to coarse of sandstone. (TOPSOIL)	(0.30)	
	0.60	2	ES				Light orangish brown sandy angular fine to coarse GRAVEL of sandstone. (WEATHERED BEDROCK) ... At depth 0.30-0.60m: Clayey.	0.30	
	0.80-1.18	1	SPT					(0.90)	
	1.00	3	D					1.20	
							Inspection pit refused at 1.20m depth due to SPT on bedrock.		

Drilling Progress and Water Observations						General Remarks			
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation. 2. Inspection pit hand dug to 0.80m depth. 3. No groundwater encountered. 4. Backfilled with bentonite.			
Method Used: Tracked window sampling						All dimensions in metres		Scale: 1:25	
Plant Used: Archway Dart 227			Drilled By: Structural Soils		Logged By: WHopkins		Checked By:		

WINDOW SAMPLE LOG

Contract: Birkenshaw			Client: JGC (1980) LTD		Window Sample: WS08
Contract Ref: 350520	Start: 28.07.22 End: 28.07.22	Ground Level (m AOD): ---	National Grid Co-ordinate: ---		Sheet: 1 of 1

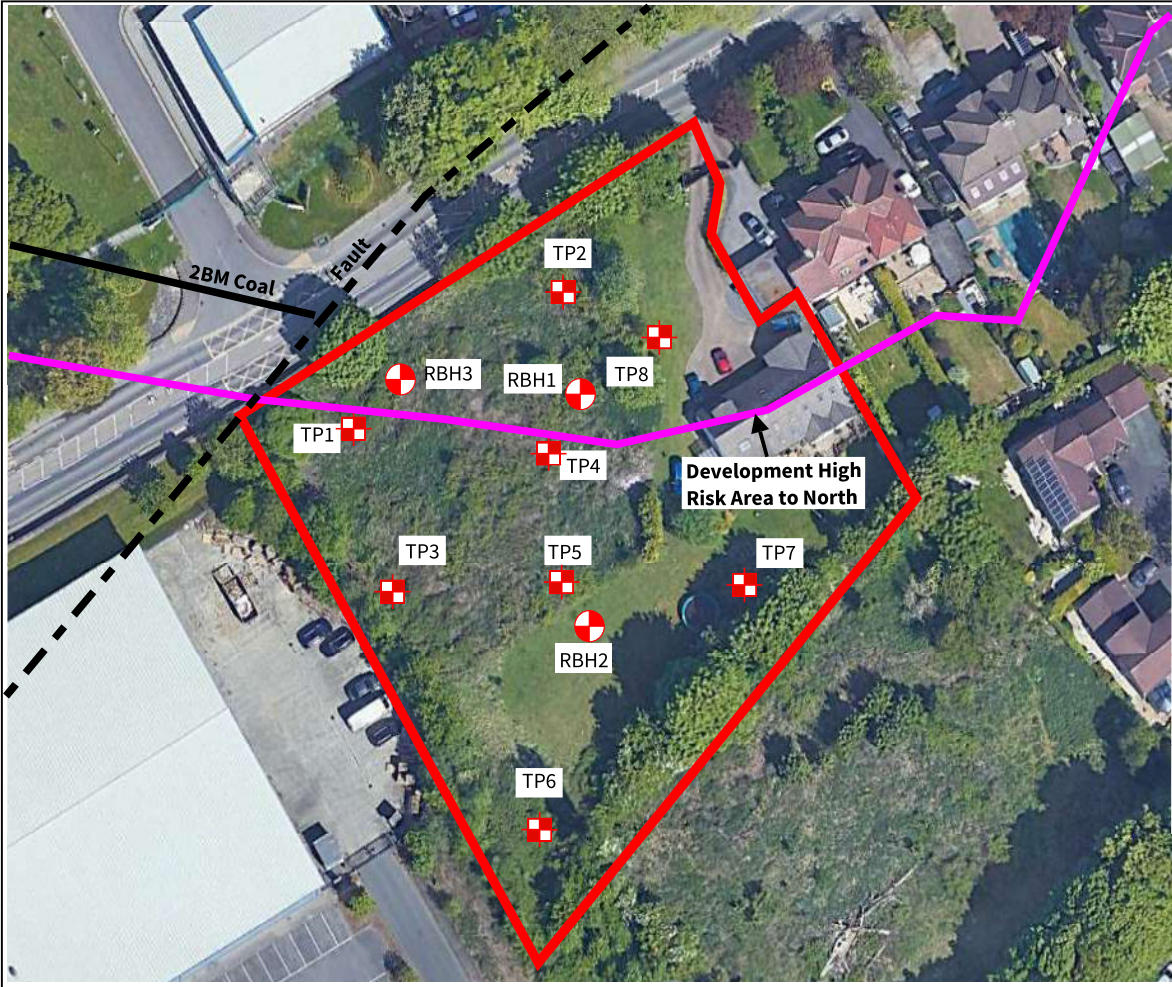
Progress	Samples / Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
0.30 - 1.00 (101mm dia)	0.20	1	ES	N=19			Soft dark brown sandy slightly gravelly CLAY with roots. Gravel is sub-angular fine to medium of sandstone and brick. (TOPSOIL)	(0.30)	
	0.30-0.75	1	SPT				0.30		
	0.80	2	ES	10,12/25,25 for 10mm			Light orangish brown slightly clayey sandy angular to sub-angular fine to coarse GRAVEL of sandstone.	(1.05)	
	1.00-1.24	2	SPT						
	1.00	3	D						
							Inspection pit refused at 1.35m depth due to bedrock.		

Drilling Progress and Water Observations						General Remarks			
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)				
						1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation. 2. Inspection pit hand dug to 0.30m depth. 3. No groundwater encountered. 4. Backfilled with bentonite. 5. ES2 no tub.			
						All dimensions in metres		Scale:	1:25
Method Used:	Tracked window sampling		Plant Used:	Archway Dart 227		Drilled By:	Structural Soils	Logged By:	WHopkins
						Checked By:			

APPENDIX E GROUND GAS MONITORING DATA AND SITE CONDITIONS

APPENDIX C

ARP INVESTIGATION




0m 20m
Approximate Scale

KEY
Trial Pit Location
Rotary Borehole Location

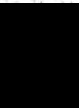

ARP GEOTECHNICAL LTD
CHARTERED CONSULTING ENGINEERS
Northwest House 5-6 North West Business Park Servia Hill Leeds LS6 2QH
Telephone : 0113 245 8488 Fax : 0113 244 3864 E-Mail : leeds@arpassociates.co.uk

Project	
WHITEHALL ROAD WEST BIRKENSCHAW	
Client	
ORION HOMES LTD	
Title	
COAL MINING SITE INVESTIGATION PLAN	
Date	
SEPTEMBER 2023	
Drawn	Scale
AMJ	AS SHOWN
Job No.	
ORH/20	

 ARP Geotechnical Limited				Trial Pit Log				TrialPit No TP1 Sheet 1 of 1	
Project Name: Whitehall Road West, Birkenshaw				Project No. ORH/20		Co-ords: 420182.54 - 427737.49 Level:		Date 29/06/2023	
Location: Birkenshaw						Pit Dimensions (m) Length: 1.80 m Width: 0.60 m Depth: 2.80 m		Machine Type: JCB 3CX	
Client: Orion Homes Ltd								Scale 1:25 Logged: AMJ	
Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
Depth	Type	Results							
0.20 - 0.45	ES		0.20			Dark brown slightly sandy clayey TOPSOIL.			
			0.45			POSSIBLE MADE GROUND. Soft to firm dark brown slightly sandy silty CLAY (reworked natural ground).			
0.80		HSV=110				High strength (stiff) light brown slightly sandy silty CLAY.			
1.00		HSV=120	1.00			High strength (stiff) dull yellow/buff slightly sandy silty CLAY.			
1.20	D								
			1.80			Weathered Coal Seam.			
			2.10			Medium strength (firm to stiff) dull grey slightly sandy silty CLAY.			
2.50		HSV=70				Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).			
			2.70			End of Pit at 2.800m Bedrock encountered. Difficult to excavate any further.			
			2.80						
Groundwater: None Encountered. Backfill: Backfilled with arisings upon completion. Stability: Stable throughout. Remarks: None									

ARP Geotechnical Limited				Trial Pit Log				TrialPit No TP2 Sheet 1 of 1		
Project Name: Whitehall Road West, Birkenshaw				Project No. ORH/20		Co-ords: 420209.54 - 427752.79 Level:		Date 29/06/2023		
Location: Birkenshaw				Pit Dimensions (m) Length: 1.80 m Width: 0.60 m Depth: 3.60 m		Machine Type: JCB 3CX		Scale 1:25 Logged: AMJ		
Client: Orion Homes Ltd										
Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
Depth	Type	Results								
0.00 - 0.30	ES	HSV=70				Dark brown slightly sandy clayey TOPSOIL.				
			0.30			Soft to firm light brown slightly sandy silty CLAY.				
0.60			0.60			Medium strength (stiff) dull yellow/buff slightly sandy silty CLAY.				
			1.80			Medium strength (firm to stiff) dull grey slightly sandy silty CLAY.				2
			2.70			Weathered Coal Seam.				
			3.00			Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).				3
			3.60			End of Pit at 3.600m Bedrock encountered. Difficult to excavate any further.				4
										5
Groundwater: None Encountered.										
Backfill: Backfilled with arisings upon completion.										
Stability: Stable throughout.										
Remarks: None										
RrTP_v1.053										

ARP ARP Geotechnical Limited				Trial Pit Log				TrialPit No TP3 Sheet 1 of 1		
Project Name: Whitehall Road West, Birkenshaw				Project No. ORH/20		Co-ords: 420187.38 - 427721.98 Level:		Date 29/06/2023		
Location: Birkenshaw				Pit Dimensions (m) Length: 1.70 m Width: 0.70 m Depth: 2.90 m		Machine Type: JCB 3CX		Scale 1:25		
Client: Orion Homes Ltd								Logged: AMJ		
Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
Depth	Type	Results								
0.00 - 0.30	ES	HSV=76	0.30			Dark brown slightly sandy clayey TOPSOIL.				1
0.80						High strength (firm to stiff) dull yellow/buff slightly sandy silty CLAY.				
						Mudstone band.				
						High strength (stiff) dull yellow/buff slightly sandy silty CLAY.				
1.40	HSV=130	1.90			Weathered Coal Seam.				2	
					Stiff dull grey slightly sandy silty CLAY.					
					Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).					
					End of Pit at 2.900m Bedrock encountered. Difficult to excavate any further.					
			2.90							3
										4
										5
Groundwater: None Encountered.										
Backfill: Backfilled with arisings upon completion.										
Stability: Stable throughout.										
Remarks: None										
RrTP_v1.053										

ARP ARP Geotechnical Limited				Trial Pit Log				TrialPit No TP4 Sheet 1 of 1		
Project Name: Whitehall Road West, Birkenshaw				Project No. ORH/20		Co-ords: 420209.78 - 427737.43		Date 29/06/2023		
Location: Birkenshaw				Pit Dimensions (m) Length: 1.90 m Width: 0.70 m Depth: 3.10 m		Machine Type: JCB 3CX		Scale 1:25		
Client: Orion Homes Ltd								Logged: AMJ		
Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
Depth	Type	Results								
0.00 - 0.20	ES		0.20			Dark brown slightly sandy clayey TOPSOIL.				
0.80					HSV=76		High strength (stiff) dull yellow/buff slightly sandy silty CLAY.			
1.30					HSV=106					
	D		2.20			Weathered Coal Seam.				
			2.55			Firm to stiff dull grey slightly sandy silty CLAY (recovered as cobble and gravel sized pieces).				
2.70			2.90			Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).				
			3.10			End of Pit at 3.100m Bedrock encountered. Difficult to excavate any further.				
Groundwater: None Encountered. Backfill: Backfilled with arisings upon completion. Stability: Stable throughout. Remarks: None RrTP_v1.053										

ARP ARP Geotechnical Limited				Trial Pit Log				TrialPit No TP5 Sheet 1 of 1	
Project Name: Whitehall Road West, Birkenshaw				Project No. ORH/20		Co-ords: 420206.32 - 427719.42 Level:		Date 29/06/2023	
Location: Birkenshaw				Pit Dimensions (m) Length: 1.80 m Width: 0.60 m Depth: 3.10 m		Machine Type: JCB 3CX		Scale 1:25	
Client: Orion Homes Ltd								Logged: AMJ	
Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
Depth	Type	Results							
0.30	ES		0.25			Dark brown slightly sandy clayey TOPSOIL.			1
0.70		HSV=120			High strength (stiff) dull yellow/buff slightly sandy silty CLAY.				
1.20		HSV=124							
			2.30			Weathered Coal Seam.			2
			2.60			Firm to stiff dull grey slightly sandy silty CLAY (recovered as cobble and gravel sized pieces).			
			2.90			Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).			
			3.10			End of Pit at 3.100m Bedrock encountered. Difficult to excavate any further.			3
									4
									5
Groundwater: None Encountered.									
Backfill: Backfilled with arisings upon completion.									
Stability: Stable throughout.									
Remarks: None									
RrTP_v1.053									

ARP ARP Geotechnical Limited				Trial Pit Log				TrialPit No TP6 Sheet 1 of 1	
Project Name: Whitehall Road West, Birkenshaw				Project No. ORH/20		Co-ords: 420206.09 - 427690.48 Level: 160.50		Date 29/06/2023	
Location: Birkenshaw						Pit Dimensions (m) Length: 1.80 m Width: 0.70 m Depth: 2.80 m		Machine Type: JCB 3CX	
Client: Orion Homes Ltd								Scale 1:25 Logged: AMJ	
Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
Depth	Type	Results							
0.00 - 0.30	ES	HSV=130	0.30	160.20		Dark brown slightly sandy clayey TOPSOIL.			
0.70			0.80	159.70		High strength (stiff) dull yellow/buff slightly sandy silty CLAY.			
			1.20	159.30		Weathered Coal Seam.			
			2.20 - 2.50	D	2.60	157.90		Firm to stiff dull grey slightly sandy silty CLAY (recovered as cobble and gravel sized pieces).	
	2.80	157.70			Extremely weak MUDSTONE (recovered as cobble and gravel sized pieces).				
	End of Pit at 2.800m Bedrock encountered. Difficult to excavate any further.								
Groundwater: None Encountered. Backfill: Backfilled with arisings upon completion. Stability: Stable throughout. Remarks: None									
RrTP_v1.053									

 ARP Geotechnical Limited				Trial Pit Log				TrialPit No TP7 Sheet 1 of 1		
Project Name: Whitehall Road West, Birkenshaw				Project No. ORH/20		Co-ords: 420227.05 - 427710.68 Level: 160.70		Date 29/06/2023		
Location: Birkenshaw						Pit Dimensions (m) Length: 1.90 m Width: 0.60 m Depth: 4.30 m		Machine Type: JCB 3CX		
Client: Orion Homes Ltd								Scale 1:25 Logged: AMJ		
Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
Depth	Type	Results								
0.00 - 0.20	ES	HSV=130				Dark brown slightly sandy clayey TOPSOIL.				1
			0.30	160.40		Stiff dull yellow/buff slightly sandy silty CLAY.				
			0.80	159.90		High strength (stiff) dull yellow/buff and grey slightly sandy silty CLAY.				2
1.30			2.20	158.50		Weathered Coal Seam.				
			2.50	158.20		Firm to stiff dull grey slightly sandy silty CLAY (recovered as cobble and gravel sized pieces).				
			4.10	156.60		Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).				
			4.30	156.40		End of Pit at 4.300m Bedrock encountered. Difficult to excavate any further.				4
Groundwater: None Encountered. Backfill: Backfilled with arisings upon completion. Stability: Stable throughout. Remarks: None										
RrTP_v1.053										

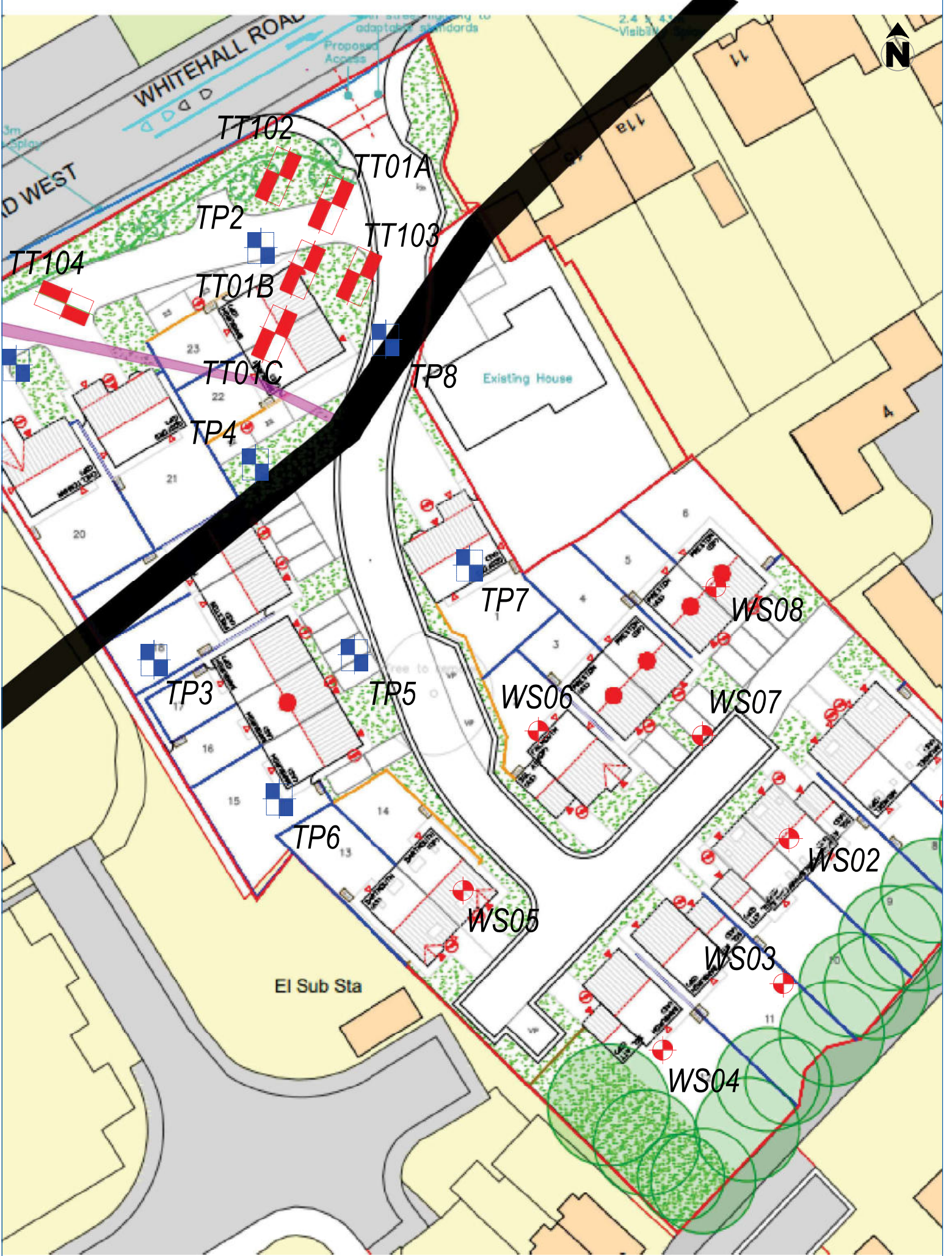
 ARP Geotechnical Limited				Trial Pit Log				TrialPit No TP8 Sheet 1 of 1	
Project Name: Whitehall Road West, Birkenshaw				Project No. ORH/20		Co-ords: 420226.55 - 427745.45 Level: 159.50		Date 29/06/2023	
Location: Birkenshaw						Pit Dimensions (m) Length: 1.90 m Width: 0.70 m Depth: 3.90 m		Machine Type: JCB 3CX	
Client: Orion Homes Ltd								Scale 1:25 Logged: AMJ	
Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
Depth	Type	Results							
0.00 - 0.30	ES		0.30	159.20		Dark brown slightly sandy clayey TOPSOIL.			
1.20 1.20	D	HSV=80				High strength (stiff) dull yellow/buff slightly sandy silty CLAY.			
1.50		HSV=130							
			3.10	156.40		Weathered Coal Seam.			
			3.40	156.10		Firm to stiff dull grey slightly sandy silty CLAY (recovered as cobble and gravel sized pieces).			
			3.70	155.80		Extremely weak SILTSTONE (recovered as cobble and gravel sized pieces).			
			3.90	155.60		End of Pit at 3.900m Bedrock encountered. Difficult to excavate any further.			
Groundwater: None Encountered. Backfill: Backfilled with arisings upon completion. Stability: Stable throughout. Remarks: None									

Casing / Water level details										
BH	Casing		Water			Totals	BH's	Drill	Case	Core
	Die	Depth	Strike	Rise	Sealed					
						Today	3	56		
						Previous	/	/	/	
						To date	3	56		

APPENDIX D

GROUNDTECH

INVESTIGATION



				Trial Pit Log			Trialpit No TT101A Sheet 1 of 2		
Project Name: BIRKENSHAW				Project No. GRO-24208		Co-ords: - Level:		Date 26/09/2024	
Location: WEST YORKSHIRE				Dimensions (m): Depth 5.75		20 1.6		Scale 1:25	
Client: ORION HOMES								Logged JOD	
Water Strike ▼	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.40			MADE GROUND: Firm brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick and sandstone. Sand is fine to coarse.		
							Firm light brown silty CLAY.		
				2.95 3.00 3.20			Extremely weak orange brown SILTSTONE residually weathered recovered as stiff gravelly clay. Gravel is subrounded to rounded fine to coarse of ironstone and siltstone. Black anthracite COAL with bituminous inclusions. Extremely weak light grey SILTSTONE residually weathered recovered as firm to stiff silty clay.		
				4.40			Very weak light grey SILTSTONE distinctly weathered recovered as angular fine to coarse gravel and cobbles.		
							Continued on next sheet		
Remarks: 1. Location cleared of services using hand held CAT scanner. 2. Perched groundwater encountered at 0.15m bgl. 3. Pit terminated at 5.75m bgl. 4. Pit backfilled with arisings.									
Stability: Stable.									

				Trial Pit Log			Trialpit No TT101A Sheet 2 of 2		
Project Name: BIRKENSHAW				Project No. GRO-24208		Co-ords: - Level:		Date 26/09/2024	
Location: WEST YORKSHIRE						Dimensions (m): Depth 5.75		Scale 1:25 Logged JOD	
Client: ORION HOMES						20			
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				5.75			End of pit at 5.75 m		
								6	
								7	
								8	
								9	
								10	
Remarks: 1. Location cleared of services using hand held CAT scanner. 2. Perched groundwater encountered at 0.15m bgl. 3. Pit terminated at 5.75m bgl. 4. Pit backfilled with arisings.									
Stability: Stable.									

				Trial Pit Log			Trialpit No TT101B Sheet 1 of 1		
Project Name: BIRKENSHAW				Project No. GRO-24208		Co-ords: - Level:		Date 26/09/2024	
Location: WEST YORKSHIRE				Dimensions (m): Depth 2.60		20 1.6		Scale 1:25	
Client: ORION HOMES								Logged JOD	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
▼				0.15			MADE GROUND: Firm brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick and sandstone. Sand is fine to coarse. Firm light brown silty CLAY.		
				1.80			Extremeley weak reddish brown SILTSTONE residually weathered recovered as stiff gravelly clay. Gravel is subrounded to rounded fine to coarse of ironstone and siltstone.		
				2.10			Black anthracite COAL with bituminous inclusions.		
				2.30			Extremely weak light grey SILTSTONE residually weathered recovered as firm to stiff silty clay.		
			2.60				----- End of pit at 2.60 m		
Remarks: 1. Location cleared of services using hand held CAT scanner. 2. Perched groundwater encountered at 0.20m bgl. 3. Pit terminated at 2.60m bgl. 4. Pit backfilled with arisings.									
Stability: Stable.									

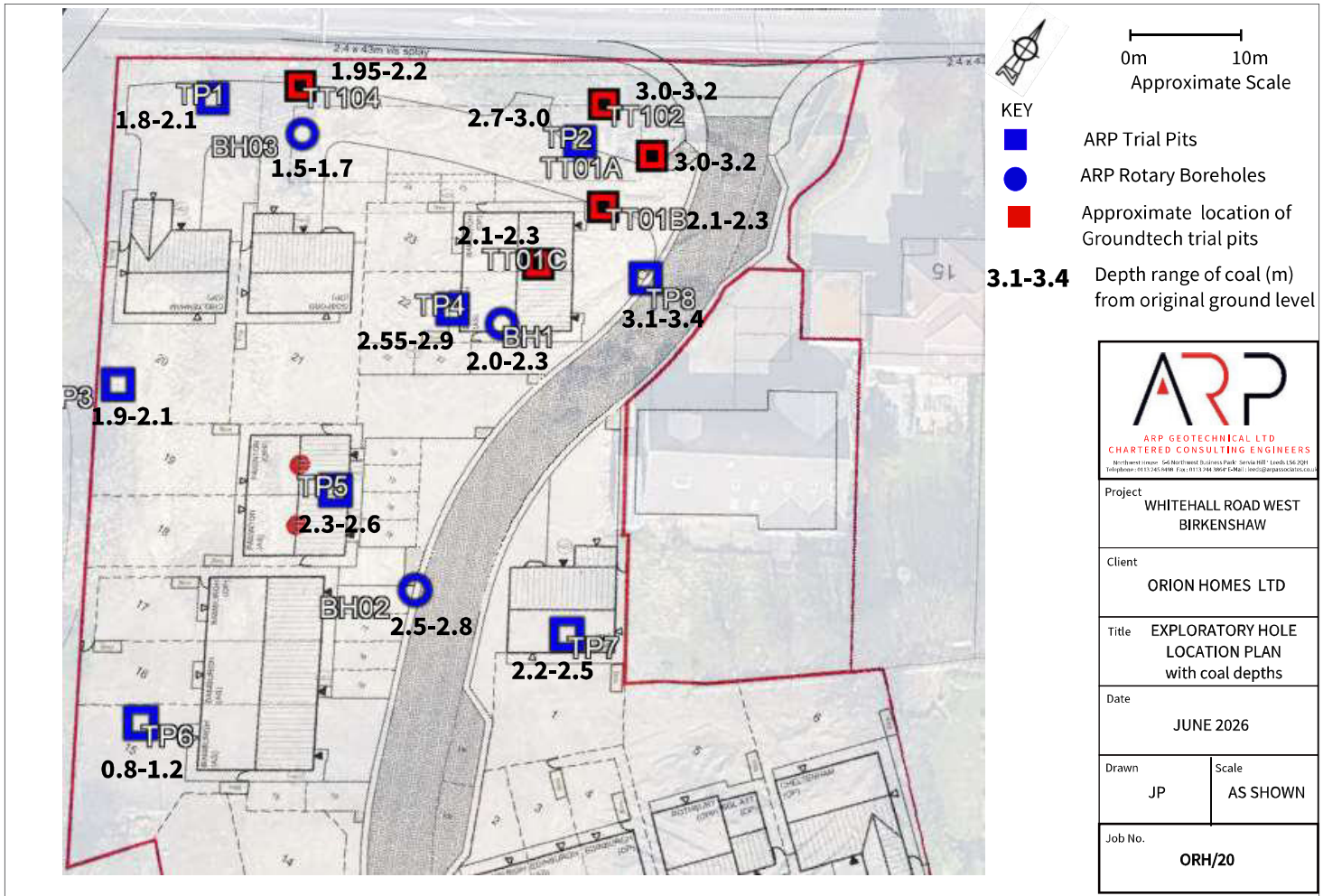
				Trial Pit Log			Trialpit No TT101C Sheet 1 of 1				
Project Name: BIRKENSHAW				Project No. GRO-24208		Co-ords: - Level:		Date 26/09/2024			
Location: WEST YORKSHIRE				Dimensions (m): Depth 2.60		20 1.6		Scale 1:25			
Client: ORION HOMES								Logged JOD			
Water Strike ▼	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
	Depth	Type	Results								
				0.15			MADE GROUND: Firm brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick and sandstone. Sand is fine to coarse. Firm light brown silty CLAY.				
				1.85			Extremely weak orange brown SILTSTONE residually weathered recovered as stiff gravelly clay. Gravel is subrounded to rounded fine to coarse of ironstone and siltstone.				
				2.10			Black anthracite COAL with bituminous inclusions.				
				2.30			Extremely weak light grey SILTSTONE residually weathered recovered as firm to stiff silty clay.				
				2.60			----- End of pit at 2.60 m				
Remarks: 1. Location cleared of services using hand held CAT scanner. 2. Perched groundwater encountered at 0.10m bgl. 3. Pit terminated at 2.60m bgl. 4. Pit backfilled with arisings.											
Stability: Stable.											

				Trial Pit Log				Trialpit No TT102 Sheet 1 of 1	
Project Name: BIRKENSHAW				Project No. GRO-24208		Co-ords: - Level:		Date 26/09/2024	
Location: WEST YORKSHIRE				Dimensions (m): Depth 3.80		4 1.6		Scale 1:25	
Client: ORION HOMES								Logged JOD	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
▼				0.40			MADE GROUND: Firm brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick and sandstone. Sand is fine to coarse.		
							Firm light brown silty CLAY.		
				2.90					
				3.00			Extremely weak orange brown SILTSTONE residually weathered recovered as stiff gravelly clay. Gravel is subrounded to rounded fine to coarse of ironstone and siltstone.		
				3.20			Black anthracite COAL with bituminous inclusions. Extremely weak light grey SILTSTONE residually weathered recovered as firm to stiff silty clay.		
				3.80			End of pit at 3.80 m		
Remarks: 1. Location cleared of services using hand held CAT scanner. 2. Perched groundwater encountered at 0.20m bgl. 3. Pit terminated at 3.80m bgl. 4. Pit backfilled with arisings.									
Stability: Stable.									

				Trial Pit Log			Trialpit No TT103 Sheet 1 of 1		
Project Name: BIRKENSHAW				Project No. GRO-24208		Co-ords: - Level:		Date 26/09/2024	
Location: WEST YORKSHIRE						Dimensions (m): Depth 3.20		Scale 1:25 Logged JOD	
Client: ORION HOMES						4 1.6			
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
▼				0.45			MADE GROUND: Firm brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick and sandstone. Sand is fine to coarse.		
							Firm light brown silty CLAY.		
				2.20 2.40 2.60			Extremely weak orange brown SILTSTONE residually weathered recovered as stiff gravelly clay. Gravel is subrounded to rounded fine to coarse of ironstone and siltstone.		
							Black anthracite COAL with bituminous inclusions.		
							Extremely weak light grey SILTSTONE residually weathered recovered as firm to stiff silty clay.		
				3.20			End of pit at 3.20 m		
Remarks: 1. Location cleared of services using hand held CAT scanner. 2. Perched groundwater encountered at 0.15m bgl. 3. Pit terminated at 3.20m bgl. 4. Pit backfilled with arisings.									
Stability: Stable.									

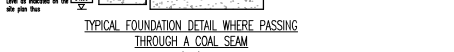
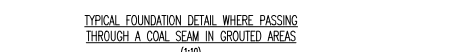
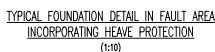
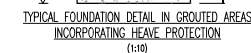
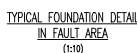
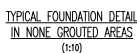
APPENDIX E

COAL DEPTH PLAN



APPENDIX F

FOUNDATION SCHEDULE



- | | | | |
|----------|------------|-----|---|
| Org. No. | 119/190/52 | Rev | A |
|----------|------------|-----|---|