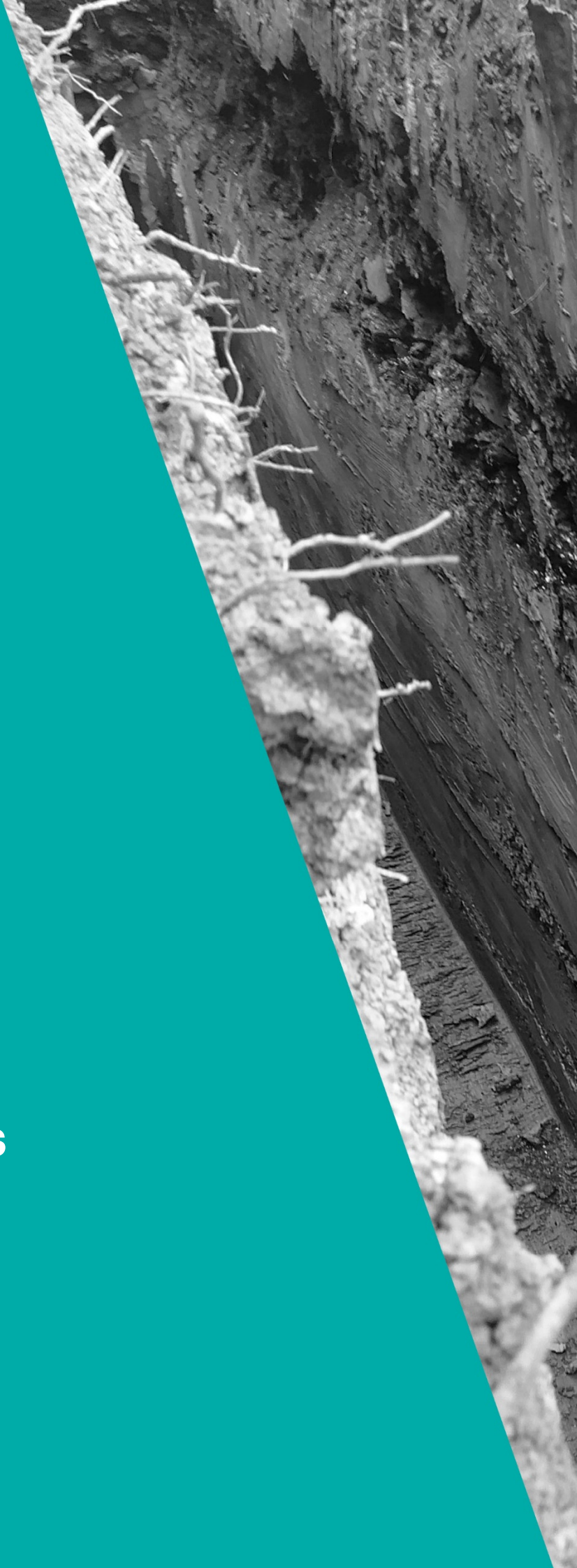


Remedial Measures Verification Report

Calder View, Lower Hopton

Gleeson Developments Ltd

12 February 2026



Max Thompson
Gleeson Developments Ltd
3 Europa Court
Sheffield Business Park
Sheffield S9 1XE

48808-ECE-XX-XX-CO-C-0004
KE/JB

12 February 2026

Dear Max,

Calder View, Lower Hopton

We write in response to Kirklees Council's Environmental Health Consultation Response dated 30 September 2024. The queries in the Consultation Response are addressed below.

We request that Eastwood & Partners confirm the 'respective residential assessment' criteria used for this report as it is missing from the text.

Please see attached.

Gas protection documents have been reviewed and we are satisfied with the information provided but information is missing for the following plots 205-208, 232-234, 247, 260, 280.

Verification of Ground Gas Protective Measures

ECE have been provided with two installation and validation of gas protection measures verification reports prepared by ASL Environmental Ltd. We understand ASL were requested by Prestige Air Technology Ltd to undertake an independent verification of the gas membranes installed by Prestige.

ASL's report referenced 147-18-292.2080 (dated 03 October 2018) relates to the gas protection measures for **Plots 205 to 208 and 221 to 224**. ASL note that the verification visits took place in April and May 2018, the membrane used was the Juta GP1 and the general standard of the installation works was high. ASL conclude '*we can confirm that the gas protection measures installed within the development meet the required standard*'.

ASL's report referenced 147-18-292.2458 (dated 20 November 2020) relates to **Plots 78-81, 201-240, 242-245, 247-258, 260-264 and 268-295**. ASL appear to have incorporated the visits

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from their 2018 report (April & May 2018) into this 2020 report, as well as third visit undertaken in November 2020 to verify plots 229 to 231.

As with their 2018 report, ASL note the Juta GP1 membrane was installed to a 'high' standard. ASL also note 'ASL have inspected more than 1 in 20 plots meeting the requirements of CIRIA 735 based on NHBC Amber 1 Classification'. We expect that this is based on the ~65 plots the report 'covers' and the three visits undertaken by ASL.

As part of the report, ASL were provided with Prestige Air installation sheets, along with a selection of photographs of the various installations. ASL conclude 'the gas protection measures installed within the development meet the required standard'.

The following table notes the plot numbers for the site, whether ECE have been provided with Prestige's installation record, and whether the plot is covered by the ASL verification visits:

Plot	Prestige Installation Record Available?	Covered by ASL Verification Visit?
79-81	✓	
201 to 220	✓	Plots 205-208
221-224	X	Plots 221-224
225-228	✓	
229-234	X	Plots 229-231
235-240	✓	
241	X	
242-245	✓	
246-247	X	
248-258	✓	
259-260	X	
261-264	✓	
265-267	X	
268-279	✓	
280	X	
281-295	✓	

Following ASL's report in November 2020, ECE are unaware of any other independent checks on the gas membranes.

A number of plots across the site were not verified as part of ASL's validation reports and ECE have not been provided with a record of the installations:

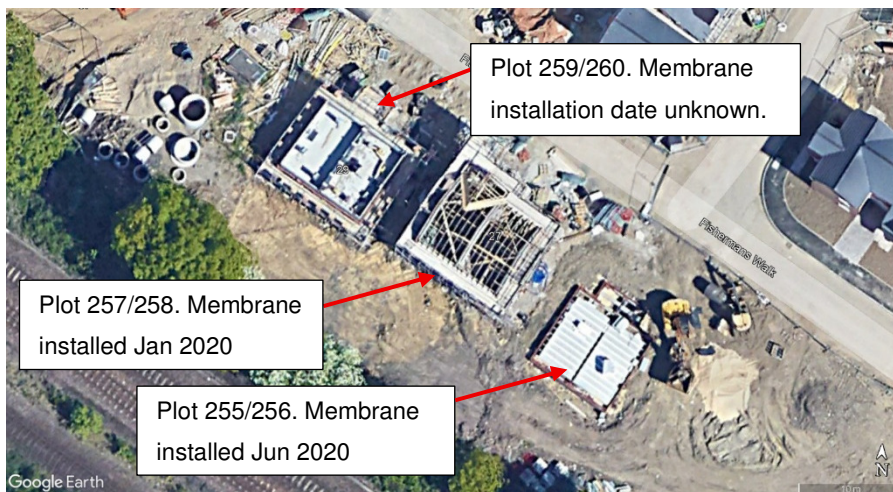
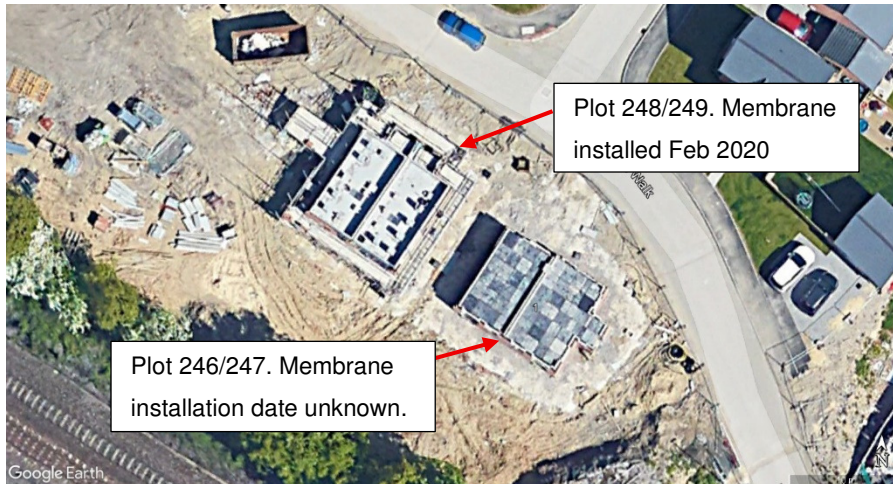
- Plot 241 – see below discussion;
- Plots 246/247 & 259/260 – Plots 247 and 260 are listed in the title of ASL's 2020 report but there is no associated Prestige installation record for these plots, or their adjoining plots;
- Plots 265-267;
- Plot 280 - listed in the title of ASL's 2020 report but there is no associated Prestige installation record for this plot. See below discussion.

Publicly available satellite imagery dated April 2020 taken during construction shows a black membrane installed across Plots 241 and 280 as shown on the below image:



This membrane appears so be similar to the Juta GP1 installed on other plots.

Plot 246/247 and Plots 259/260 are understood to have been constructed at a similar time as Plots 248/249 and 255 to 258, as shown on the below satellite images, dated April 2020. It is likely that the gas protective measures for these plots would have been installed at the same time.



Plots 265 to 267 are understood to have been constructed later in the build programme between April 2020 and April 2021. Aerial imagery shows the area in April 2020 to comprise building materials but by April 2021 the plot outlines are clearly shown and construction has progressed to at least ground floor level. The following image is taken from April 2021:



Although the installation records are not a complete set, we do not expect this is due to a lack of gas measures being installed but instead, incomplete records being kept. Aerial photography has shown two plots to have a membrane which appears to be the Juta GP1 installed even though we have not seen a corresponding installation record. It is likely to be the same situation on other plots where no installation records are available.

Finally, a verification report detailing the combined remediation measures implemented should be submitted in accordance with the implementation plan.

Verification of Clean Capping Layer

ECE visited the site on numerous occasions between 20 July 2018 and 18 August 2020 to verify the capping thickness in rear gardens of Plots 80, 81, and 201 to 295. Details of the capping verifications are presented in ECE's Verification Reports (report references 42177-003 to 42177-006, 42177-008, 42177-009 Issue 2, 42177-11 to 42177-13, 42177-16 to 42177-024, 42177-026, and 42177-028 to 42177-045).

The topsoil and subsoil placed in the rear gardens of Plots 80, 81, 201 to 245, and 268 to 295 is considered suitable for use in a residential setting, and the thickness encountered complies with the recommendations of the Implementation Plan.

Natural ground was observed at the surface across the rear gardens of Plots 246 to 267, comprising orange/brown slightly gravelly sandy clay. No clean capping is therefore considered to be required, with only a topsoil growing medium required.

The front gardens of Plots 246 to 267 are underlain by a compacted crushed stone and 6F2-type material. Plot services are understood to be present beneath. The small area of soft landscaping is unlikely to be used for homegrown produce and a topsoil covering is considered suitable.

Conclusion

It can be considered that the remedial measures undertaken at Calder View, Lower Hopton have been installed broadly in accordance with Lithos' Implementation Plan.

We trust the above is satisfactory. Should you have any queries, please do not hesitate to contact us.

Yours sincerely,



Kate Edwards


Enc Table of Assessment Values – Residential with Home-grown Produce

Inorganic Compounds	Human Health - Residential with Homegrown Produce (mg/kg)
Arsenic	37
Cadmium	11
Chromium (III)	910
Chromium (VI)	6
Lead	200
Mercury	1.2
Nickel	180
Selenium	250
Copper	2400
Zinc	3700

Organic Compounds	Human Health - Residential with Homegrown Produce (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
Naphthalene	2.3	5.6	13
Acenaphthene	210	510	1100
Acenaphthylene	170	420	920
Fluorene	170	400	860
Phenanthrene	95	220	440
Anthracene	2400	5400	11000
Fluoranthene	280	560	890
Pyrene	620	1200	2000
Benzo(a)anthracene	7.2	11	13
Chrysene	15	22	27
Benzo(b)fluoranthene	2.6	3.3	3.7
Benzo(k)fluoranthene	77	93	100
Benzo(a)pyrene	2.2	2.7	3.0
Dibenz(a,h)anthracene	0.24	0.28	0.3
Indeno(1,2,3-cd)pyrene	27	36	41
Benzo(g,h,i)perylene	320	340	350
Benzene	0.087	0.17	0.37
Toluene	130	290	660
Ethylbenzene	47	110	260
o-Xylene	60	140	330
m-Xylene	59	140	320
p-Xylene	56	130	310

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Prepared	KDL	Checked	CAT	Date	09.08.16	Job No	42177
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 Eastwood & Partners <small>CONSULTING ENGINEERS</small> St Andrew's House 23 Kingfield Road Sheffield S11 9AS Tel: (0114) 255 4554 Fax: (0114) 255 4330	GLEESON DEVELOPMENTS CALDER VIEW ASSESSMENT CRITERIA – RESIDENTIAL WITH HOMEGROWN PRODUCE
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Contaminant	Phytotoxicity			
	pH	pH	pH	pH
	5.0 to 5.5	5.5 to 6.0	6.0 to 7.0	>7.0
Arsenic	50			
Cadmium	3			
Chromium	400			
Lead	300			
Mercury	1			
Nickel	50	60	75	110
Copper	80	100	135	200
Zinc	200	200	200	300


The assessment concentration for lead is the Category 4 Screening Level produced by Contaminated Land: Applications in Real Environments (CL:AIRE) and outlined in Appendix H of their report SP1010. The others have been taken from Nathanail, C. P., McCaffrey, C., Gillett, A., Ogden, R., and Nathanail, J., 2015, 'The LQM/CIEH S4ULs for Human Health Risk Assessment', Land Quality Press, Nottingham. The metals/metalloids are based on a sandy loam soil and 6% soil organic matter. The assessment values are not intended to be applied to individual sample results where materials are similar, as the levels of contaminants will have a natural variability across the site. Instead, the modified mean value should be compared with the assessment concentration.

The assessment values for phytotoxicity are the levels at which plant growth is thought to be affected. They are taken from the maximum permissible and advisable concentrations in soil after application of soil sludge given in the 'The Code of Good Agricultural Practice for the Protection of Soil', MAFF, 1998.

The assessment of sulphate, water soluble sulphate, elemental sulphur and sulphide is to determine the aggressive nature of the ground with respect to concrete and consequently the results are compared with BRE Special Digest 1:2005 'Concrete in Aggressive Ground'.

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TPH Fraction	Intended Land Use Residential (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
Aliphatic EC 5-6	42	78	160
Aliphatic EC >6-8	100	230	530
Aliphatic EC >8-10	27	65	150
Aliphatic EC >10-12	130 (48) ^{vap}	330 (118) ^{vap}	760 (283) ^{vap}
Aliphatic EC >12-16	1100 (24) ^{sol}	2400 (59) ^{sol}	4,300 (142) ^{sol}
Aliphatic EC >16-35	65,000 (8.48) ^{f, sol}	92,000 (21) ^{f, sol}	110,000 ^f
Aliphatic EC >35-44	65,000 (8.48) ^{f, sol}	92,000 (21) ^{f, sol}	110,000 ^f
Aromatic EC 5-7	70	140	300
Aromatic EC >7-8	130	290	660
Aromatic EC >8-10	34	83	190
Aromatic EC >10-12	74	180	380
Aromatic EC >12-16	140	330	660
Aromatic EC >16-21	260 ^f	540 ^f	930 ^f
Aromatic EC >21-35	1,100 ^f	1,500 ^f	1,700 ^f
Aromatic EC >35-44	1,100 ^f	1,500 ^f	1,700 ^f

^f oral, dermal, and inhalation exposure compared with oral HCV

^{sol} S4UL presented exceeds the solubility saturation limit, which is presented in brackets


^{vap} S4UL presented exceed the vapour saturation limit, which is presented in brackets

The assessment criteria for each of the petroleum hydrocarbon fractions have been taken from Nathanail, C. P., McCaffrey, C., Gillett, A., Ogden, R., and Nathanail, J., 2015, 'The LQM/CIEH S4ULs for Human Health Risk Assessment', Land Quality Press, Nottingham. These are also all based on a sandy loam soil.

Within the Environment Agency Science Report P5-080/TR3, Askari, K. & Pollard, S., 2005 'The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils' it is stated that the assessment values should not be considered individually; instead the potential additive effects should be calculated. This is achieved by calculating an individual Hazard Quotient (HQ) for each fraction. The HQ is the proportion of the assessment concentration represented by the recorded concentration. The HQs are then added together to form a Hazard Index (HI) and where this exceeds unity a potential significant risk to human health may exist.

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