

ref: 2048-210412

For the attention of:
Prakash Sharma
Sunmit Homes Limited

12 April 2021

Dear Mr Sharma,

**Re: Evelyns Close, Uxbridge, UB8 3LR
Phase 2 Environmental Works - Ground Gas Monitoring**

Following completion of the final ground gas monitoring at your property, we report hereunder on the results obtained.

Three ground gas monitoring boreholes were installed at the above property for the purposes of gas monitoring, and three monitoring visits were undertaken on 18 March and 25 March and 7 April 2021.

The monitoring detected concentrations of Carbon Dioxide between 0.4% and 1.2% and concentrations of Oxygen between 17% and 18.6%. No methane was detected and no flow rate was recorded. The atmospheric air pressure ranged between 1013mb and 1023mb.

The results have been evaluated in accordance with the traffic light classification described in the National House-Building Council (NHBC) *Guidance on evaluation of development proposals on sites where methane and carbon dioxide are present* (2007).

As no detectable gas flow rate has been recorded, the instrument level of detection of 0.1l/hr has been used to calculate the GSV:

$$\begin{aligned}\text{GSV (l/hr)} &= \text{flow rate (l/hr)} * \text{maximum gas value (\%v/v)} \\ &(\text{l/hr}) = 0.1 * 1.2 \\ \text{GSV} &= 0.12\end{aligned}$$

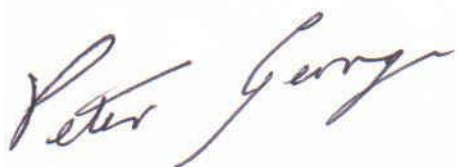
From Table 14.1, with a GSV of 0.12l/hr and a maximum concentration of Carbon Dioxide of 1.2%, the site will be classified as green and from Table 14.2 it can be seen that for this classification ground gas protection measures are not required.

Tabulated gas monitoring results and extracts showing Table 14.1 and 14.2 from the NHBC guidance, are attached for your reference and based upon the foregoing it is concluded that gas protection measures are not required for the proposed development and therefore no further monitoring is proposed.

This report should be provided to the EHO in order that the relevant planning condition can be discharged. Should you wish to discuss matters in the meantime please do not hesitate to contact either me.

Date	Borehole Ref.	Oxygen %v/v	Maximum Carbon Dioxide %v/v	Maximum Methane %v/v	Flow rate l/hr	Atmospheric Pressure mb
18/03/21	BH1	18.6	0.4	0.0	0.0	1023
	BH2	17.5	0.8	0.0	0.0	1023
25/03/21	BH1	17.5	0.5	0.0	0.0	1013
	BH2	17.6	1.2	0.0	0.0	1013
07/04/21	BH1	17.2	0.5	0.0	0.0	1018
	BH2	17.0	0.8	0.0	0.0	1018

Yours sincerely
For GO Contaminated Land Solutions Ltd.



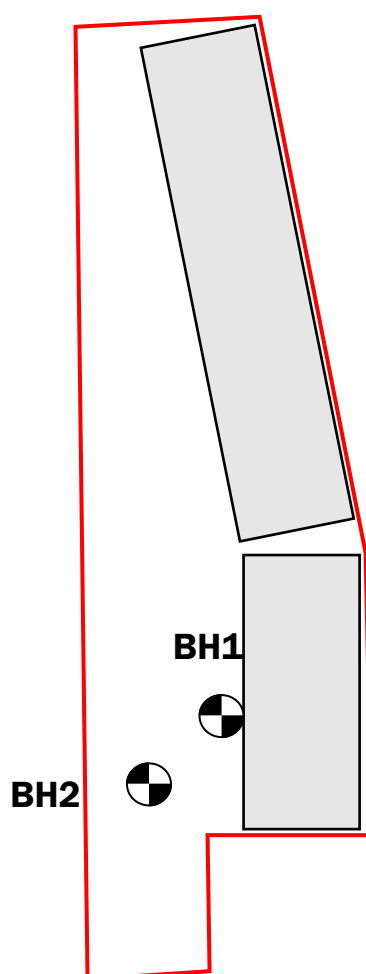
Eur.Ing. Peter D. George B.Eng., Dip.EM, C.Eng., MICE, MCMI, FRSPH



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Project	Evelyn's Close, Uxbridge					
Project No	2048	Reference:	SK/01	Date:	14/4/21	NTS
Title	Schematic Site Plan					



Schematic Site Plan

Table 14.1: Gas Risk Assessment - Traffic Lights with Typical Maximum Concentrations and Gas Screening Values

Traffic Light Classification	Methane ¹		Carbon Dioxide ¹	
	Typical Maximum Concentration ³ (%v/v)	Gas Screening Value ^{2,4} (l/hr)	Typical Maximum Concentration ³ (%v/v)	Gas Screening Value ^{2,4} (l/hr)
Green	1	0.16	5	0.78
Amber 1	5	0.63	10	1.56
Amber 2	20	1.56	30	3.10
Red				

Notes:

1. The worst-case ground gas regime identified on the site, either methane or carbon dioxide, at the worst-case temporal conditions that the site may be expected to encounter will be the decider as to what Traffic Light is allocated;
2. Gas Screening Value is the Borehole Gas Volume Flow Rate, in litres per hour, as defined in Wilson and Card (1999), which is the borehole flow rate multiplied by the concentration in the air stream of the particular gas being considered;
3. The Typical Maximum Concentrations can be exceeded in certain circumstances should the Conceptual Site Model indicate it is safe to do so;
4. The Gas Screening Value thresholds should not generally be exceeded without the completion of a detailed ground gas risk assessment taking into account site-specific conditions.

Table 14.2: Ground Gas Protection Measures Required for the Traffic Lights

Traffic Light	Ground Gas Protection Measures Required
Green	Ground gas protection measures are not required.
Amber 1	Low-level ground gas protection measures are required, using a membrane and ventilated sub-floor void that creates a permeability contrast to limit the ingress of gas into buildings. Gas protection measures are to be installed as prescribed in BRE 414. Ventilation of the sub-floor void should be designed to provide a minimum of one complete volume change per 24 hours.
Amber 2	High-level ground gas protection measures are required, creating a permeability contrast to prevent ingress of gas into buildings. Gas protection measures are to be installed as prescribed in BRE 414. Membranes used should always be fitted by a specialist contractor and should be fully certified (see Appendix E). As with Amber 1, ventilation of the sub-floor void should be designed to provide a minimum of one complete volume change per 24 hours.
Red	Standard residential housing is not normally acceptable without further Ground Gas Risk Assessment and/or possible remedial mitigation measures to reduce/remove the source of the ground gases. In certain circumstances, active protection methods could be applied, but only when there is a legal agreement assuring the management and maintenance of the system for the life of the property.