WML CONSULTING
Civil, Structural and Geotechnical Engineers

No. 8 Oak Green
Earl Road
Stanley Green Business Park
Cheadle Hulme
Cheshire SK8 6QL

Tel 0161 482 0600
Fax 0161 486 9210
Email info@wlmconsulting.com
www.wmlconsulting.com

Michael Mercer
Lovell Partnerships
Nelson House
Park Road
Altrincham
Cheshire
WA14 5DL

Our Ref: 5956/G-02

1st March 2019

Dear Sir

RE:- Langley Site F, Middleton

This letter report has been compiled in order to support the re-submission of planning for 6no new low-rise residential structures for phased construction at the Lovell Partnerships site referred to as Langley Area F located north of Windermere Road, Middleton.

This letter includes the re-submission of Plots 111-113 and the addition of Plots 21-22 and 212-213 under planning Application Number 17/00094/FUL.

As part of the original planning application referenced 08/D51581 Capita Symonds Structures Ltd (CSS) were commissioned by Lovell Partnerships Ltd to compile the report.

- Geo-Environmental Assessment for site referred to as Langley Area F, referenced SS015173/GEIA/January 2006.

The CSS report comprised a combined Phase 1 Desk Study and a Phase 2 site investigation and assessment in accordance with relevant guidance applicable in 2006. As part of the redevelopment a number of houses were constructed adjacent to Castlerigg Crescent with the remaining 211 plots still to be developed.

Subsequently, as part of an additional Planning Application, namely 14/00361/FUL, WML Consulting were commissioned by Lovell Partnerships Ltd (Lovell) to undertake an updated Geo-environmental Investigation and Assessment and Remediation Strategy in the report.

- Geo-Environmental Investigation and Assessment and Remediation Strategy, Langley Area F, referenced 5956G/02, dated October 2014.

Therefore, the following paragraphs summarise the most relevant findings of the WML 2014 report. However, in consideration of the age of the report, where necessary, the information has been supplemented by a review of the following:

Directors
N. Garside BEng(Hons) CEng FIStructE
A.J.W. Leng BEng(Hons) CEng MIStructE
L.M. O'Gorman BSc(Eng) Hons CEng MIStructE

Associates
E.N. Hackney BEng(Hons) CEng MIStructE
P.G. Davies BSc(Hons) CGeol FGS
G.N. Booth BEng(Hons) CEng MIStructE MICE
A.C. Wildman MEng(Hons) CEng MIStructE
Kevin Sherratt

Consultants
T.J. Mottershaw CEng FIStructE
F.G.I. Wright BSc(Hons) MSc DIC CEng MICE MIStructE Dip. Law FCIArb QDR
C.R. Wallace Bsc(Hons) CEng FIStructE

WML Consulting Limited
Registered in England No. 3176267

- British Geological Survey (1:50,000) Sheet 85 Manchester (Solid and Drift Editions).
- British Geological Survey Digital Geological Map of Great Britain (DiGMapGB-50; available as a Web Map Service).
- Coal Authority interactive map viewer (available as a Web Map Service).
- Environment Agency 'What's in my back yard?' website.
- UKradon Indicative Atlas of radon in England and Wales as provided by Public Health England.
- BRE Publication 211 (2015) "Radon: Guidance on Protective Measures for New Buildings".

Updated Site Description

At the time of the WML 2014 investigation the subject area had been cleared of residential structures and was surfaced with a mixture of hardstanding, compacted hardcore and residual overgrown soft landscaping to the north-west of Latrigg Crescent.

Subsequently, by 2015 subject area had been cleared of topsoil and surfaced entirely with hardstanding foe use as the site compound. This includes site cabins to the east and central sections, parking for three to four cars in the south-east and localised storage of site materials in the west. The main site compound for storage of materials was located further east within a separately hoarded area.

The site topography remained relatively unchanged with the existing road network also still in evidence.

No invasive weeds have been noted during recent site visits, the last being December 2018.

In consideration of the nature of the subject are being in use as a site compound, no evidence of fly tipping was noted.

Updated Site History and Potential Contamination Sources

The only significant changes to the subject area, since the issue of the 2014 report, relates to the current use as the main site office.

Therefore, it is not anticipated that any additional contamination sources that were not encountered during the previous investigations would be encountered.

It is considered that since the issues of the 2014 report no significant changes in potentially contaminative activities not already outlined in the previous reports are anticipated to exist at or within influencing distance of the site.

Radon
The 2015 report made reference to the Building Research Establishment publication referenced BR211:2007. This has since been updated to BR211:2015. Current guidance indicates that the site is not within a Radon Affected Area as defined by the Public Health England as less than 1% of properties are above the Action Level of exposure. No radon protection measures are therefore necessary for new structures.

Hydrology
The Westphalian A strata are classified by the Environment Agency as 'Secondary A' (formerly Minor Aquifer). The cohesive Glacial Till is classified as 'Unproductive' (former Non-Aquifer).

Ground Conditions

In the wider site area the ground conditions typically comprise variable Made Ground overlying interbedded cohesive and granular Glacial Till.
Within the subject site area, namely TP111 (2014 investigations) which was located within the footprint of Plots 111-112, a concrete obstruction considered to represent former foundations was encountered with the granular made ground extending to a depth to a 0.40mbgl. This was underlain by Glacial Sand to 1.00mbgl and then Stiff grey Glacial clay to depths in excess of 2.20mbgl.

No visual and/or olfactory evidence of significant ground contamination was identified within this area during the investigations.

Geo-Environmental Assessment

The preliminary risk assessment concluded that, due to the historic low contaminative use of the site, the potential for a significant pollution linkage to be present is unlikely with associated risks assessed as very low to low.

This was confirmed to a large degree by the findings of the CSS and WML investigations which concluded that the larger site did not contain any significant and / or widespread contamination sources that could present a risk to human health and / or controlled waters.

It was therefore concluded that contamination risks and liabilities relating to the site development remains low. In consideration of the current use of the subject site area, as a site compound, no significant new contamination sources are considered likely with any potential pollution pathways between the Made Ground and human receptors will be effectively removed by the introduction of hard surfaces to the buildings and/or external areas.

Notwithstanding the above, as a direct contact pollution pathway could occur in proposed garden areas, it is recommended that a nominal 600mm of clean sub-soil and Topsoil is incorporated in such areas as a precaution against future exposure.

Alternatively, where the Made Ground is relatively thin (that is less than 600mm) it could be completely removed from garden areas to expose natural soils with the garden areas subsequently capped with a minimum 150mm of clean Topsoil.

Ground Gas Risk Assessment

Since the issues of the 2014 investigation the guidance for the assessment of risk associated with the presence of methane and carbon dioxide within ground gas has been superceeded.

Therefore, the results of gas monitoring has been reassessed in accordance with current guidance for the assessment of risk associated with the presence of hazardous ground gases (principally methane and carbon dioxide) as provided in two key documents, namely:

- Code of practice for the Characterisation and remediation from Ground Gas in Affected Developments. British Standard Institution (BS 8485: 2015 + A1:2019); and
- Assessing Risks posed by Hazardous Ground Gases to Buildings CIRIA (C665, 2007).

Hazardous ground gas qualitative risk assessment is based on a conceptual model similar to that used for soil and groundwater contamination sources (i.e., source-pathway-receptor pollutant linkages). A semi-quantitative estimate of risk can be assessed based on knowledge of the conceptual model and a measure of hazardous gas concentration and gas flow at the site within monitoring standpipes.

Based on the measured flow rates and hazardous gas concentrations, individual "hazardous gas flow rates" (Qhg) can be derived for each monitoring point, from which the "site characteristic hazardous gas flow rate" (Qhgs), and then the "Characteristic Situation" (CS) can be determined.

BS8485 provides guidance on the level of gas protection requirements based upon the characteristic situation and the proposed development based on building type as outlined in Table 3.

Table 3 - Building Types

	Type A	Type B	Type C	Type D
Ownership	Private	Private or commercial/ Public, possible multiple	Commercial / Public	Commercial / Industrial
Control (Change of use)	None	Some but not all	Full	Full
Room Sizes	Small	Small/ medium	Small to Large	Large Industrial/ Retail Park

The proposed development is indicated to comprise the construction of **Type A** buildings, the definition of which is provided in BS8485:2015 as:

- *Private ownership with no building management controls on alterations to the internal structure, the use of rooms, the ventilation of rooms or the structural fabric of the building. Some small rooms present.*

Initially CSS undertook a programme of ground gas monitoring on six occasions during January and February 2006 in eleven standpipes within the wider site area, for concentrations of methane and carbon dioxide, with associated flow rates. The results indicated a maximum concentration of methane of 0.1% v/v and carbon dioxide of 3.1% v/v.

Subsequently, WML undertook an additional five monitoring visits within 6no standpipes between 5th August and 9th October 2014.

The combined results from both investigations indicate concentrations of methane to be generally below detectable limits with a maximum measured concentration of 0.2% v/v in 2014. A maximum carbon dioxide concentration of 4.3%v/v was recorded within WS104 (2014). No positive gas flows were encountered during the monitoring visits.

Consequently, the site is indicated to classify as Characteristic Gas Situation (CGS) 1 –'Very low' hazard potential in accordance with BS8485:2015, with no specific gas protection measures required within proposed new structures.

Remediation / Validation

It is anticipated that Plots 21-22, 111-113 and 212-213 will be subject to the remediation measures and Validation requirements outlined within Sections 12 and 13 of the WML report referenced 5956G/02, dated October 2014.

We hope this provides you with the information required at this time.

Yours sincerely,

S. Seddon

S. C. Seddon
For WML CONSULTING

APPENDIX 01

DRAWINGS

HOUSING MIX

Main Site

Type A (2B) - 34 No
Type B/3a (2B) - 49 No.
Type F (3B) - 12 No.
Farnley (3B) - 27 No.
Type G (3B) - 52 No.
Type B (4B) - 9 No.
Beresford (4B) - 18 No.
Sub-total - 202

Sales Area

Type A (2B) - 2 No
Type B/3a (2B) - 3 No
Type F (3B) - 5 No
Farnley (3B) - 1 No
Type G (3B) - 1 No.
Type B (4B) - 1 No.
Beresford (4B) - 1 No.
Sub-total - 9

Total - 211

KEY

Existing Properties

Retaining Walls/Steps



WML CONSULTING

Project LANGLEY F
Job No 59566
Drg No SK-02 Rev
Scale NTS
Date 1/3/19

NOTE: FENCE TO BE SET BACK 100mm FROM EDGING OF ANY FOOTPATH.

Key	
level threshold	Minimum 1200 x 1200 clear level area to all front doors
	Grey Concrete Paving Flags 450x450x50mm to all private rear garden patio areas & footpaths in front gardens
	Bitmac drive with 50mm flush flat top edging to change of surface
	Shed 2000 x 2000mm
	Shed - 1800 x 900mm
	Retaining feature and steps please refer to engineers details

Key

Existing Properties

Previously approved development

112

111

213

212

22

21

Existing boundary treatment to be reviewed on site and replaced if required

1800mm close boarded timber privacy screen

1800mm close boarded timber fence

grass turf

wood chipping

bitmac

P

P*

G

G*

Fg

0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0

Ainsley Gommon Architects and Planners

DRAWING STATUS: FOR PLANNING

JOB: 1315 - Langley Site F for Lovell, 6 Units Application

DRAWING: 1315-EW-12 Proposed External Works Layout

SCALE: 1:100@A1 | DATE: Jan '17 | DRAWN: TM | CHKD: AP | REV: --

1 Place Street, Hamilton Square, Birkenhead, Merseyside, CH41 6JN. Tel: 0151 647 5511 Email: birkenhead@ainsleygommonarchitects.co.uk Fax: 0151 666 2155

Copyright of this drawing remains with Ainsley Gommon. Do not scale from this drawing, work to figured dimensions. Check all dimensions on site in the event of any discrepancy refer query to Ainsley Gommon.