Our ref: JR/GML18246/VL6-9.17-20

Date: 22nd June 2020

EMAIL (SCANNED)
Luke Boekestyn
Burmor Projects Ltd
Burmor House
Sunderland Road
Northfields Industrial Estate
Market Deeping
Peterborough
PE6 8FD

For the attention of Luke Boekestyn

Dear Luke,

GML18246: Validation of Gardens at Plots 6-9 and 17-20 at the Site off Willow Walk, Spalding

Geo-Matters Ltd were recently instructed by Burmor Projects Ltd (hereafter referred to as 'the Client') to undertake capping validation works at their site off Willow Walk, Spalding.

The site is currently undergoing redevelopment for a residential end use, comprising traditional housing with private gardens. The development layout is shown on Drawing 001v (enclosed).

Relevant Reports which **must** be read in conjunction with this letter are referenced below:

- Ramboll Whitbybird Ltd – Law's Yard, Spalding – Environmental Factual & Interpretive Report for Leonard Cheshire (ref. 4926, dated November 2007);
- Geo-Matters Ltd - Site off Willow Walk, Spalding - Phase I and II Geo-Environmental Investigation for Minster Property Group Ltd (ref. GML18246/1/1, dated December 2018); and
- Geo-Matters Ltd - Site off Willow Walk, Spalding – Remedial Method Statement for Burmor Construction Ltd (ref. GML18246/4/1, dated February 2019).

This letter report provides information in relation to validation works for a proposed redevelopment of the site for a new residential build. It has been prepared for the sole use and reliance of Burmor Projects Ltd and their appointed agent, Geo-Matters Ltd. No other third-party may rely or reproduce the content of this report without the written approval of Geo-Matters Ltd. If any unauthorised third-party comes into possession of this report, they rely upon it entirely at their own risk and the authors do not owe them any warranty, duty of care or skill.

Background

Ground Conditions and Site Setting
A review of all available desk study information indicated that the site had supported various small buildings / outbuildings from first available mapping (dated 1888) until it was significantly redeveloped in the mid-1960s to support a carpentry business, glass business, two vehicle repair garages and car body shop.

The surrounding area is recorded to have been progressively developed from open fields to support residential areas with some commercial / light industrial premises.

The superficial geology across the site was recorded as Tidal Flat Deposits, which are recorded as soils comprising soft silty clays with occasional bands of sand, gravel and peat at shallow depths.

Made ground was encountered by Geo-Matters Ltd across the site to depths of between 0.40m begl (in WS01 in the southern part of the site) and 1.30m begl (in WS04 in the central part of the site). The made ground generally comprised reworked sands, gravels and clays which contained variable proportions of anthropogenic materials including cement, tarmac, glass, clinker and concrete fragments.

Across the site the natural strata beneath the made ground were generally recorded by Geo-Matters Ltd to comprise light brown and occasionally grey mottled fine sands with variable proportions of clay, silt and gravel to depths of between 0.65m below existing ground level (begl) (in WS05) and 2.00m begl (in WS04). These were further underlain by firm light brown and occasionally light grey mottled clays (with variable proportions of silt, sand and gravel) which ranged in thickness between 0.60m (in WS06) and 1.80m (in WS03).

Where fully penetrated, the light brown and grey mottled clays were further underlain by light brown and occasionally grey mottled fine sands (with variable proportions of clay, silt and gravel), from depths of between 2.00m begl (in WS07) and 3.00m begl (in WS04).

Soil Contamination (Conceptual Site Model 'Sources')
Investigations by Geo-Matters Ltd concluded that made ground across the site was considered to be contaminated based on the receptors likely to be present as part of the proposed residential development due to a number of elevated concentrations including PAHs (WS01, WS03, WS06, WS07 and HTP02), TPH (WS03, WS06 and WS08) and asbestos (HTP02).

Remediation Rationale
The RMS produced by Geo-Matters Ltd stated that "*The works undertaken at the site to date have identified site-wide issues relating to soil contamination in made ground relating to elevated PAHs, heavy metals, asbestos and TPH, as well as localised exceedances in natural soils around WS01 at 0.60m begl and WS06 at 1.70m begl*.".

The above conclusion led the refined conceptual site model (CSM) to the recommendation that remedial works to break the identified pollutant linkages were required, comprising the placement of a 600mm capping layer in all gardens / soft landscaping.

Source of Capping Soils

Geo-Matters Ltd have asked the Client about the source of soils which have been placed in the garden areas of Plots 6-9 and 17-20. We have been informed that the topsoil has been imported from British Sugar and that the subsoil has been selected by the Client from a known supplier and originates from an agricultural source.

It is understood that the Client has sought and retained testing records from the topsoil and subsoil and that these are available upon request.

Capping Validation Works

An Engineer from Geo-Matters Ltd was invited by the Client to the site on the 22nd June 2020 in order to undertake a visual inspection and validation of the thickness of the capping materials placed within the gardens of Plots 6-9 and Plots 17-20. The validation exercise involved the excavation of trial holes within the rear garden areas at the locations shown on Drawing 002v (enclosed).

The topsoil materials were described as comprising light brown slightly sandy slightly gravelly topsoil. The subsoil materials comprised a dark brown slightly silty slightly gravelly sand.

The following table summarises the findings of the inspection works:

Table 2.0: Summary of Validation Findings

Plot	Topsoil Thickness (mm)	Subsoil Thickness (mm)	Total (mm)	Plot Passed?
p6	250mm	350mm	>600	✓
7	250mm	350mm	>600	✓
8	200mm	400mm	>600	✓
9	200mm	400mm	>600	✓
17	250mm	350mm	>600	✓
18	250mm	350mm	>600	✓
19	150mm	450mm	>600	✓
20	150mm	450mm	>600	✓

A Photographic Record Plan (Drawing 003va and 003vb) is enclosed. It was evident from the validation exercise that private garden areas of Plots 6-9 and Plots 17 – 20 contained at least 600mm of capping material, which is considered to meet the requirements of the Geo-Matters Ltd Remedial Method Statement.

It was also noted that a membrane was present at the base of the validation holes inspected.

Conclusions

Based on the site visit made by Geo-Matters Ltd, it is considered that the remediation objectives as set out in our RMS have been satisfactorily undertaken in Plots 6-9 and Plots 17 – 20.

This letter report should be submitted by the Client to the Local Authority and the NHBC for their approval and to allow all relevant conditions to be discharged.

We hope that the attached is sufficient for your present requirements, but should you have any further queries then please do not hesitate to contact the undersigned.

Yours sincerely
for Geo-Matters Ltd.

Encs.
Drawing 001v – Proposed Site Layout Plan
Drawing 002v – Validation Hole Location Plan
Drawing 003va and Drawing 003vb – Photographic Record Plan



DO NOT SCALE

NOTES:

N

Approx. Site Boundary

GEOMATTERS
consulting engineers

www.geo-matters.com
info@geo-matters.com

CLIENT:

burmor projects

PROJECT:

Site off Willow Walk, Spalding

TITLE:

Validation Layout Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN:	DATE:
JR	June 2020
PROJECT No:	DRAWING No:
GML18246	001V

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Approx. Site Boundary

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info@geo-matters.com

CLIENT: burmor projects

PROJECT: Site off Willow Walk, Spalding

TITLE: Validation Plan
Plots 6 – 9 and Plots 17 - 20

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN:	DATE:
JR	June 2020
PROJECT No:	DRAWING No:
GML18246	002V

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CLIENT: burmor projects

PROJECT: Site off Willow Walk, Spalding

TITLE: Photographic Plan Plots 6 – 9

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN :	DATE:
JR	June 2020
PROJECT No:	DRAWING No:
GML18246	003Va

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CLIENT:

burmor projects

PROJECT:

Site off Willow Walk, Spalding

TITLE:

Photographic Plan
Plots 17 - 20

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN :	DATE:
JR	June 2020
PROJECT No:	DRAWING No:
GML18246	003Vb

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