Ashe Construction Limited

Letchworth Retail Park

Remediation Statement

MLM. Group

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1 Introduction

1.1 General

This Remediation Statement has been prepared by MLM Consulting Engineers Ltd (MLM) for Ashe Construction Ltd to support the discharge of contaminated land planning conditions.

1.2 Development Proposals

The proposed development is for three new commercial units and a three storey hotel, as well as associated car parking, infrastructure and landscaping.

1.3 Current Planning Status

The development has planning consent from North Hertfordshire District Council for the commercial development, reference 17/00477/1 and relating to Conditions 14 and 15 and Environment Agency Informative 1: Groundwater Protection.

1.4 Context and Objectives

The site is brownfield land previously developed with a warehouse and office building.

The following site investigation and assessment was undertaken in 2016, and submitted as part of the planning application. Details of this site investigation and assessment can be found in the following report:

- Ground Investigation and Piling Ltd (2016) Phase I and Phase II Ground Investigation and Test Report for the Construction of a Mixed Use Development at Sixth Avenue, Letchworth. Ref. DNB/23795 Revision 1

This report presents a Remediation Statement for the site based on the results of this investigation and assessment.

1.5 Legislative Framework

The legislation listed in Appendix A is considered to be relevant to the preparation of this Remediation Strategy and Verification Plan and to the implementation of remediation including measures for the control and prevention of pollution during works involving remediation.

1.6 Sustainable Remediation

In line with best practice, it is proposed to adopt where possible remediation that is compatible with sustainable development principles.

The key principles that are associated with sustainable remediation and which should be considered in the design, implementation and reporting of sustainable remediation schemes are listed in Appendix B.

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2 Site Background and Environmental Setting

2.1 Site Location

The site is located in the south of Letchworth Business Park at 1 Avenue One, approximately 1.25km from the centre of Letchworth Garden City in Hertfordshire. The National Grid Reference for the site is 523180, 232628.

The site location is presented as Figure 1.

2.2 Site Description

The site covers an area of approximately 1.82 hectares. At the time of GIP Ltd.'s site walkover in 2016, the site comprised a disused two storey, steel framed warehouse and two storey brick office building joined by two brick built corridors. A car parking area covered the northern third of the site.

The site was accessed from Sixth Avenue to the north and Avenue One to the east, though both access points were blocked by concrete blocks. An electricity substation was present in the north-western corner of the site. Along the south and west boundaries was a three to four metre high bank with trees along the crest.

2.3 Site History

Historical mapping obtained by GIP Ltd, showed that until 1922 the site and surrounding areas were occupied by agricultural land. In 1922 mapping a pumping station had been constructed off site directly east. From 1938 the site was labelled as a sports grounds and in 1967 a change in ground level is shown. From 1985, the site is no longer shown as a sports ground and electricity substations were present 19m to the north and 41m to the east. A Gas Governor was also present 19 - 20m to the east. From 1990, two structures were present on site and by 1992, the site appeared as it did when GIP undertook the site walkover in 2016.

Records show an unspecified pit and unspecified heap on site in 1978 and 1984.

2.4 Geology

Published geological information obtained by GIP showed the site was underlain by Holywell Nodular Chalk Formation and New Pit Chalk Formation (undifferentiated). Superficial deposits were shown overlaying the chalk in the south and north-western areas of the site, these were noted as Glaciofluvial Deposits. Elsewhere on site, no superficial deposits were shown.

2.5 Hydrogeology

The Environment Agency website provides the following hydrogeological information:

Aspect	Designation	Description
Groundwater Source Protection Zone	SPZ1	Inner protection zone. Defined as the 50 day travel time from any point below the water table to the source. This zone has a minimum radius of 50m.
Aquifer designation – superficial deposit	Secondary Aquifer (A)	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

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Aspect	Designation	Description
Aquifer designation – bedrock deposit	Principal Aquifer	These are deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

2.6 Hydrology

Records show the nearest potable Water Abstraction Licence is located 41m to the east. There are no records showing Surface Abstraction Licences within 2km of the site.

There are no surface water features listed within 250m of the site.

2.7 Ground Conditions

The ground conditions encountered in the investigation by GIP Ltd included the following general strata sequence:

Stratum	Depth range (m bgl)		Proven Thickness range (m)
	Top	Base	
Made Ground	GL	0.15 – 2.5	0.15 – 2.5
Glaciofluvial Deposits	0.3 – 2.3	0.5 – 2.3	0.35 – 1.8
Holywell Nodular Chalk Formation and New Pit Chalk Formation (undifferentiated)	0.5 – 4.1	3.45 – 20.0*	1.45 – 19.2*

* Base of stratum not proven

2.8 Groundwater

Groundwater seepage was encountered during the fieldwork by GIP Ltd in one borehole (CP1) in the northeast corner at a depth of 2.40m bgl. The rest of the boreholes remained dry during drilling.

Combined gas and groundwater monitoring standpipes were installed to depths of between 18m and 20m bgl in four boreholes (CP1, CP3, CP4 and CP5).

During post-fieldwork monitoring by GIP, groundwater was not encountered in any borehole, suggesting that the groundwater encountered during drilling in the northeast was perched water and not representative of the groundwater table.

2.9 Contamination Observations

Made ground containing fragments of concrete, brick, ash and rare slag was present across the site. No other visual or olfactory evidence of contamination was noted at the site.

2.10 Soil Contamination

Contamination was not identified in excess of screening values for risks to human health for a commercial development.

Asbestos fibres were not identified in any of the ten samples tested.

2.11 Groundwater Contamination

Groundwater testing was not undertaken.

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2.12 Ground Gas Conditions

Stratum	Description
Methane concentration (% max.)	0.3
Carbon dioxide concentration (% max.)	3.4
Gas flow rate (l hr^{-1} max.)	0.2
Ground gas regime	CIRIA Characteristic Situation CS1

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3 Remediation

3.1 Soil Remediation

Based on the ground investigation and laboratory testing of soil samples undertaken in 2016 by GIP Ltd, contamination in soil has not been identified and therefore soil remediation was not considered to be required.

3.2 Groundwater Remediation

Groundwater was not encountered during the monitoring carried out by GIP Ltd.

3.3 Gas and Organic Vapour Protection

The site is classified as CS1 and gas protection measures are not considered to be required.

3.4 Uncertainty

Some areas of uncertainty for which insufficient information is available are set out in the table below together with proposed course of action for dealing with that level of uncertainty.

Area of Uncertainty	Response and Action
No data for risks to controlled waters (EA informative)	Further investigation to retrieve soil samples for leachate analysis.
Pipework material selection	Contractor to obtain written confirmation from local water supply company.

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4 Unforeseen Contamination

No amount of previous investigation can completely identify all possible soil and contamination conditions across the site. There is the potential for unforeseen circumstances and contamination to be encountered during construction that have not previously been identified during previous ground investigations which will need to be dealt with during the site works.

The procedure below will be followed in the event that unforeseen contamination is encountered during remediation works:

- Take whatever action is required to prevent immediate harm to health and safety of site workers and the general public or environment
- Inform environmental consultant
- Notify regulators
- Identify source and extent of contamination
- Determine if there are impacts which require additional remediation
- Agree variation in course of action and undertake verification and reporting

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5 Water Supply Pipes

The potable water supply network will be installed in line with the design agreed with the local water supply company. The contractor will obtain written confirmation of the water supply design from the local water supply company.

The contractor will keep a record of water supply pipe construction for inclusion in the verification report and provide suitable documentation as proof of installation.

Suitable documents can include delivery notes or invoices provided they refer to materials/services that can only be attributed to work at the site.

Site visits will be undertaken to obtain a photographic record during pipe laying.

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6 Imported soils

All soil imported for use on site will be tested to confirm its suitability for use and ensure it is free from contamination. The quality of imported soils will be verified through soil sampling and testing once it has been brought on to site.

Imported natural soils will need to be tested for CLEA metals, speciated PAH (USEPA16) and organic matter.

Re-used, recycled or manufactured soils will need to be tested for CLEA metals, speciated PAH (USEPA16), TPHCWG and organic matter.

The frequency of sampling and testing required will be a minimum of 1 test per 100m^3 or 1 test per 150m^2.

Laboratory testing results will be compared against S4ULs for commercial land use. Imported soils failing the verification criteria will not be used in the development and will require removal off site.

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7 Further Investigations and Assessments

Further intrusive investigation is proposed to reduce the level of uncertainty in existing data (section 3.4) and to further evaluate the remediation options presented in the table above. The investigation proposed is as follows:

- Further soil sampling of the deeper made ground and natural soils below
- Leachate testing in line with the EA informative

As outlined in EA informative 1 in the planning approval document ref. 17/00477/1, it would be most practical to undertake soil sampling and testing during the demolition phase of works.

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Appendix A - Legislative Framework

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Key Legislation

Environmental Protection Act 1990 - defines the legal framework for duty of care for waste, contaminated land and statutory nuisance.

Environment Act 1995 – sets out a system to identify and repair contaminated land.

Contaminated Land (England) (Amendment) Regulations 2012 - sets out provisions relating to the identification and remediation of contaminated land.

Water Resources Act 1991 (as amended 2009) - sets up the regime to conserve, manage and control pollution of water resources.

Relevant Legislation

Environmental Damage (Prevention and Remediation) Regulations 2015 - brings into force rules to force polluters to prevent and repair damage to water systems, land quality, species and their habitats and protected sites.

Pollution Prevention and Control Act 1999 – sets out provisions for regulating activities which are capable of causing pollution and measures for preventing or controlling emissions capable of pollution.

Control of Pollution (Oil Storage) (England) Regulations 2001 - imposes general requirements for preventing pollution of controlled waters from oil storage, particularly fixed tanks or mobile bowsers.

The Controlled Waste (England and Wales) Regulations 2012 - defines waste types for waste management licensing purposes.

The Controlled Waste (Registration of Carriers and Seizure of Vehicles) (Amendment) Regulations 1998 - introduces a registration system for carriers of controlled waste.

The Environmental Protection (Duty of Care) Regulations 1991 (as amended 2003) - imposes a duty of care on any person who imports, produces, carries, keeps, treats or disposes of controlled waste to ensure there is no unauthorized or harmful depositing, treatment or disposal of the waste.

The Hazardous Waste (England and Wales) Regulations 2005 (as amended 2009) - details requirements for controlling and tracking the movement of hazardous waste and bans mixing different types of hazardous waste

Water Supply (Water Fittings) Regulations 1999 – sets out the requirements for the design and installation of service pipes and water mains underground to protect water consumers when laying unprotected water supply pipes in contaminated ground.

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Appendix B - Sustainable Development Principles

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Principle 1 - Protection of human health and the wider environment. Remediation should remove unacceptable risks to human health and protect the wider environment now and in the future for the agreed land use and give due consideration to the costs, benefits, effectiveness, durability and technical feasibility of available options.

Principle 2 - Safe working practices. Remediation works should be safe for all workers and for local communities and should minimise impacts on the environment.

Principle 3 - Consistent, clear and reproducible, evidence-based decision-making. Sustainable risk-based remediation decisions are made having regard to environmental, social and economic factors, and consider both current and likely future implications.

Principle 4 - Record keeping and transparent reporting. Remediation decisions, including the assumptions and supporting data used to reach them, should be documented in a clear and easily understood format in order to demonstrate to interested parties that a sustainable solution has been adopted.

Principle 5 - Good governance and stakeholder involvement. Remediation decisions should be made having regard to the views of stakeholders and following a clear process within which they can participate.

Principle 6 - Sound science. Decisions should be made on the basis of sound science, relevant and accurate data and clearly explained assumptions, uncertainties and professional judgement. This will ensure that decisions are based upon the best available information and are justifiable and reproducible.



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