



GROUND INVESTIGATION REPORT FOR NET WORLD SPORTS, WREXHAM

Project No : TE1456GIR1.2
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Engineer: Eve Rowland
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EXECUTIVE SUMMARY

Introduction	Tier Environmental was commissioned by Tier Consult Ltd on behalf of Net World Sports Ltd to undertake a Ground Investigation at land off Bryn Lane, Wrexham. The purpose of the investigation was to assess the nature of soil and groundwater beneath the Site for the purposes of environmental and geotechnical assessment.
Proposed land use	It is proposed that the site will be developed as a warehouse/storage unit with associated offices, parking, roadways and soft landscaped areas. Areas of proposed soft landscaping are located mainly in the northern and western areas of the Site; however smaller areas of soft landscaping are present across the site as a whole.
Site location and surrounding land uses	The site is located at Plot 3A, Bryn Lane, Wrexham Industrial Estate, Holt, Wrexham, LL13 9UT. The site is surrounded by agriculture fields to the north (beyond Ridley Wood Road), east and south of the Site. Wrexham Industrial estate is located to the west of Site beyond Bryn Lane. Trees are located immediately to the southern and eastern boundaries of the Site.
Site history	Historical maps and third party information states the Site has been historically undeveloped and has been used for agricultural purposes.
Potential contaminative features	No significant potentially contaminative features have been identified on the Site.
Mining and quarrying	The Site is not located within a mining area or an area subject to historic quarrying.
Previous investigations	A Geo-Environmental Desk Study was conducted for the Site by Shepherd Gilmour Environmental Ltd in October 2011. Conclusions of this desk study identified potential contamination sources associated with Made Ground within infilled ponds, potential ground gas associated with unknown Made Ground deposits and impacts on of Site from trade effluent discharges into the tertiary river adjacent to the southern Site boundary.
Fieldwork	Tier Environmental conducted 3 No. days fieldwork on 6 th , 9 th and 10 th April 2021 which comprised: • 1 No. day window sample drilling (WS1 to WS4 and WS6) to depths between 3.50m bgl and 5.45m bgl to determine the nature and extent of soil and groundwater and obtain samples for geo-environmental and geotechnical analysis. • 3 No. cable percussive boreholes (CP1 to CP3) to depths between 10.00m bgl and 10.45m bgl to determine the nature and extent of soil and groundwater and obtain samples for geo-environmental and geotechnical analysis. • Excavation of 6 No. hand dug pits (HDP1 to HDP6) to obtain shallow soil samples for geo-environmental analysis.
Laboratory testing	Samples of soil were submitted for analysis of a range of metal, other inorganic and organic components including asbestos. Geotechnical testing was scheduled on selected samples. All testing was undertaken at accredited laboratories.
Ground conditions	Topsoil was encountered at ground level in all exploratory hole locations to depths between 0.23m bgl to 0.38m bgl. Underlying the Topsoil was firm to stiff, locally very stiff clay (Till). Till was encountered in all exploratory hole locations to a maximum depth of 10.45m bgl, however the base of this unit was not encountered
Ground stability	The ground across the Site was stable.
Foundations and floor slabs	The preferred, most economic foundation solution is likely to be shallow spread foundations (pads or strip) within the Till and it is proposed that floor slabs are ground bearing.
Design Sulphate class	It is considered that a Design Sulphate Class of DS-1 and ACEC Class AC-1 is appropriate for buried concrete at the Site within the topsoil and a Design Sulphate Class of DS-2 and ACEC Class AC-2 is appropriate for buried concrete at the Site within the Till.
Human Health Risk Assessment	No measured soil concentrations of potential contaminants of concern have been reported in excess of Generic Assessment Criteria (GACs) protective of human health appropriate to commercial site end use
Ground Gas Risk Assessment	A Gas Screening Value of 0.0045 l/hr has been calculated, derived using the maximum recorded carbon dioxide concentration of 1.5 %v/v and the maximum peak flow rate of 0.3 l/hr. Assessment of this gas screening value alone places the Site in a Characteristic Situation 1 – Very Low risk scenario in accordance with CIRIA C665 for which ground gas protection measures are not required. The results of carbon monoxide and hydrogen sulphide monitoring has determined that neither gas has been detected.
Radon Requirements	Data from UKRadon.org indicates that the majority of the Site lies within an area where less than 1% of the properties lie above the action level, therefore no radon protection measures are required. However, the north-western corner of the Site falls into an area where 1% - 3% of the properties lie above the action level. This is most likely the result of the bedrock Salop Formation, which is shown on the BGS records to be overlain by approx. 30m to 40m of superficial Till, meaning radon is unlikely to affect this area. however, although unlikely, any proposed buildings with basement levels in the north-western corner of the Site which falls into the 1% to 3% action level, should have a Visqueen (or equivalent) barrier membrane installed.