Geotechnical Interpretation and Design Parameters Report – Executive Summary

The report, prepared for Anglesey Land Holdings, focuses on the geotechnical interpretation and design parameters for the proposed development at the former Anglesey Aluminium Ltd site at Penrhos, near Holyhead. The site spans approximately 800 meters in length and 220 meters in width, located southeast of Holyhead, bordered by multiple roads, a railway line, and natural features such as Penrhos Beach and Penrhos Coastal Park.

The proposed development, named Project Prosperity Parc, is expected to provide up to 238,000 square meters of employment space, featuring facilities like data centres, technology-based infrastructure, research and development centres, and office spaces. Additionally, the development will incorporate landscaping, habitat enhancement, drainage systems, and infrastructure for vehicle, cycling, and pedestrian access. The primary aim of this report is to summarize historical soil investigation results, derive key geotechnical design parameters, and evaluate the performance of typical, traditional shallow foundations to support the planning application and overall feasibility of the proposed development.

The site underwent several rounds of investigations from 2010 to 2015, leading to a collection of various geotechnical and geo-environmental reports. The findings from these investigations provide a solid understanding of the site's general ground conditions and geotechnical characteristics, establishing its suitability for redevelopment. Although the previous data may not comprehensively cover every part of the site, it offers substantial evidence to guide an efficient strategy for developing new buildings. Any potential gaps in the existing data will be addressed through further investigations before the start of construction, ensuring thorough assessment and planning.

Based on a careful analysis of the site, two distinct ground models have been established to support planning objectives: shallow bedrock and deep bedrock. The information gathered from previous studies has been instrumental in defining appropriate design parameters for the development.

Bearing capacity and settlement analyses were conducted using foundation dimensions typical for industrial buildings, specifically 2m x 2m and 4m x 4m, with a foundation depth of 1.5 meters. Standard loading conditions were assumed, with 150 kPa applied to the foundations and an additional 50 kPa slab loading. The analyses demonstrated that the site is suitable for the intended redevelopment and that shallow pad foundations and ground-bearing floor slabs can adequately support the proposed structures.

Furthermore, the Geotechnical Remediation Strategy indicated no significant obstacles that would hinder the redevelopment of the site. The combination of historical data analysis, geotechnical evaluations, and remediation strategies provides confidence in the feasibility of constructing new industrial facilities on the site. With suitable design considerations and further investigations as required, the project is expected to proceed successfully, meeting the needs of Anglesey Land Holdings while ensuring structural stability and environmental compliance.