Strip Footing

For the purpose of bearing capacity and settlement assessments, a depth of shallow foundations of 1m below ground level has been considered. On the basis of the ground and groundwater conditions identified in the exploratory holes, it is considered that a reinforced strip footing founded in firm Langley Silt or medium dense gravel will be suitable at the site. Subject to further classification across the site it is likely that the presumed bearing pressure will be in the order of 90kN/m^2. Potential differential settlement could occur between different footings. If strengths of less than firm are encountered when digging for these foundations, the bearing capacity quoted in this report will need to be revised. Further assessment of the bearing stratum across the site is required.

Pad Footing

It is considered that pad footings may be utilised in concentrated loading conditions. A pad footing founded in the firm clay comprising the Langley Silt or medium dense gravel at a depth of 1.0m would operate at an allowable bearing capacity in the order of 100kN/m^2. Further assessment of the bearing stratum across the site is required.

Raft Foundation

It is anticipated that a reinforced semi-raft foundation can be utilised if founded within the firm clay comprising the Langley Silt or the dense Lynch Hill gravels. A raft footing founded within this stratum would operate at an approximate allowable bearing capacity of 50kN/m^2 in firm clay. Further assessment of the bearing capacity of the ground for the case of raft foundations will be required.

For all shallow foundations, it is recommended that a suitably qualified engineer inspect the excavations prior to the casting of the foundation. It is also recommended that should any soft spots or made ground be encountered at the proposed foundation depth, they be removed and replaced with appropriately compacted granular engineered fill material or lean mix concrete, or the excavation be extended to a more competent horizon.

The London Clay at the site is recorded as having high plasticity. The Langley Silt commonly also has high plasticity. There is a possibility that the shallow soils may be prone to swelling and shrinkage, particularly in close proximity to large trees. Further assessment of the plasticity of the clays at the site is recommended.