

Development
at
Fitzroy Park
Structural and Civil Engineering
Design Statement

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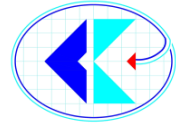
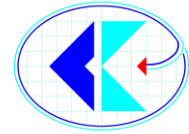


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Introduction

The project is located at Fitzroy Park, Highgate, London, N6 6JA. The site is bounded to the east by Fitzroy Park and to the south west by Millfield Lane. The site is bounded by a private site to the north.

The proposed development will consist of 5 residential units, there will be three on the east side of the site and two on the west side of the site.

Site Drainage

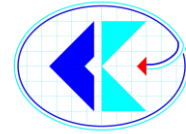
Following from the results of the geotechnical investigation, surface water generated on the site will be disposed of onsite using a sustainable drainage system otherwise known as SUDS. The system used will mimic the natural disposal of surface water for the majority of the site and only surface water from the trafficked paved areas will be discharged into the public system after passing through a petrol interceptor and being attenuated.

Foul water

Internal drain points penetrating the slabs will drain the various fittings and appliances located throughout the buildings which discharge foul effluent. The drain points will connect to the public sewer. The foul drains laid at falls no less than 1:80, and preferably between 1:40 and 1:60.

External Works

The external works will mainly consist of the sub structure elements of the properties, landscaped areas, and the new access path to the houses at the rear of the site. This pathway will be constructed in such a way that it will not have any affect the existing pond and will be drained independently



of the surrounding ground and will be discharged into the sewer after passing through a petrol interceptor and being attenuated.

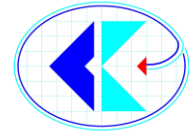
Cut material from the site will be used in the 'fill' areas of the site as to minimise the amount of material taken off site. This will reduce construction logistics on the road and reduce vehicle trips in accordance with the Transport for London publish guidance on the preparation of Construction Logistics Plans.

Sub-Structure

The partial substructure to the three houses on the east of the site will consist of reinforced concrete walls and slabs which will consist of a 300mm thick walls and a 300-400mm thick basement slab. The structure will be founded on piles which will be continuous flight augered piles. The arisings from these piles will be in the order of 10-20m³ of material per property estimated at approximately 70m³ overall. There will be a requirement for an anti-heave product under the foundation slab. This will protect the building against any heave that may occur. The basement structure will be waterproofed in accordance with the requirements of the Architects and Building Control. The waterproofing is likely to consist of a cavity drain and waterproof concrete. The backfill to the basement walls will consist of as dug material from the site with a free draining layer adjacent to the walls.

Temporary works

Temporary works will be required in front of the proposed residential unit (plot 3) on the south east side of the site. This will consist of a 30° batter and retaining using sheet piles cantilevered out of the ground. The other two units (plot 1 and 2) will not require any temporary works as there



is already a retaining wall and the ground is approximately 1.5m lower than the existing road (Fitzroy Park). On completion of the substructure, the whole area in front of all three units will be backfilled with stabilized material from the site up to the existing road level. This will greatly enhance the stability to Fitzroy Park road as it will eliminate the current retaining wall structure.

Temporary works to plots 4 and 5 will utilise trench sheets to retain the ground as required in the temporary state. These sheets will be cantilevered or propped depending on the amount of ground retained in the temporary state.

Super Structure

The super structure will be designed to suit a class 1 building in accordance with part A3 of the building regulations 'Reducing the sensitivity of the building to disproportionate collapse in the event of an accident'.

The structure of the three houses to the east of the site will consist of traditional build methods such as load bearing masonry or load bearing timber frame structures. The building will be stabilized laterally using masonry shear wall or timber racking panels. Where there are large openings in external walls, these elements may be stabilized from the effects of lateral loads using steel portal frames.

The two structures on the east side of the site are likely to utilize reinforced concrete frames as their form of structure. Again, these will be designed as class 1 building in accordance with part 3 of the building regulations. These buildings will be stabilized using concrete shear walls and moment action between the slabs and vertical elements. The roof structures will be designed to support a green roof.