

12 Parkhill Road

Structural and Civil Engineer's Report for Planning



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Job Number: **27638**

Date	Version	Notes/Amendments/Issue Purpose
March 2019	1	For planning

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1 The Site

12 Parkhill Road is a large, four-storey, semi-detached house with an existing, more modern, single storey side extension to its flank, southern, side. It is of traditional Victorian construction with solid brick external walls, and timber internal walls and floors; the roof is covered with concrete tiles. The upper ground floor is around 10 steps above the street level, while the lower ground floor is level with the rear garden. This garden is well kept and contains several mature and semi-mature trees. A silver birch is nearest to the house, about 7m away. There is a large lime tree in the front garden, about 8m away from the house.

2 Ground Conditions

The British geological survey shows the ground conditions to be London Clay below any made ground; this is confirmed by the publicly available borehole records.

3 Design Proposals

The existing single storey extension is to be replaced by a new, smaller building, so that a passage to serve the rear garden is created. The lower ground floor layout is altered to provide more open plan spaces; this requires removal of some walls and enlarging one opening in the rear façade at lower ground floor level.

Substructure

New foundations are simple concrete strip footings founded a minimum of 1m below ground level; the new floor of the extension is a concrete ground bearing slab.

Superstructure

The new extension has loadbearing masonry walls supporting a roof formed in timber with small timber beams supporting the changes in level required by the design. The large opening in the flank wall required to link the extension to the main house is created with a steel box frame; the Contractor will be required to provide temporary supports to support the wall while this structure is installed. The frame has been designed to limit the deflection of the wall to a more severe extent than required by British Standards.

Within the main house a number of openings are formed, or enlarged within the stud walls. Support over openings will be provided using timber lintels and beams where practical and steel beams where spans or loads are greater.

All the proposed structural work is shown on drawings 27638/sk1, sk2, sk3, sk4, sk5, sk10, sk11 & sk12.

Drainage

The house has an existing combined drainage system with a connection to the street sewer running under the front paved area. The existing drainage under the extension is to be abandoned and replaced with a new combined system with inspection chambers all within the new passage created to the rear next to number 10 Parkhill Road. Drainage is conventional clay pipework with plastic inspection chambers; details are shown on drawing 27638/sk-D1. Access covers are arranged to co-ordinate reasonably with the proposed paving.

4 Design Criteria

Codes and Standards

Detailed design will be carried out to appropriate British Standards:

BS6399	Loading
BS449	Steel
BS5268	Timber
CP111 & BS5628	Masonry
BS8119 & BS8500	Concrete
BS EN 752	Drainage

It is expected that the design life of the work is 50 years.

The overall stability of the building, with the new openings considered, is acceptable - by inspection; and there is requirement to design for disproportionate collapse as the house is four storey.