



## Proposal Adjacent to Jack Straw's Castle

# Structural Methodology Report

## Brief

This document is the structural methodology report carried out for the purposes of the planning application for the proposals adjacent to Jack Straw's Castle. It should be noted that this report outlines and suggests the assumed construction at this stage. It should also be noted that, as is standard for works of this type, the main contractor will be fully responsible for the design and erection of all temporary works.

The purpose of the report, with the Basement Impact Assessment prepared by GEA Ltd, is to demonstrate that a subterranean development can be constructed on this particular site having regard to the sites existing structural conditions and geology.

The Basement Impact Assessment prepared by GEA Ltd references to the stages set out in the CPG4 Basement & Lightwells planning document.

## Richard Tant Associates

Richard Tant Associates are consulting Civil and Structural Engineers comprising a number of chartered engineers. We have experience in post basement construction and have successfully carried out a number of basements in the Borough Camden from the Basement Impact Assessment stage through to construction on site.

## Description of Proposed Basement and Internal Works

The proposal is to build two four storey (including basement) semi-detached houses on the existing car park adjacent to the existing Jack Straw's Castle building. Refer to the Architects drawings 1370/1, 1370/2 and 1370/3. The proposed basement is approximately 2m deeper than the adjacent lower ground level and the excavation is expected to be approximately 3.3m deep from ground level. The lower ground floor to Jack Straw's Castle is no lower than the existing car park level. There is no basement adjacent. Jack Straw's Castle does not show any significant differential movement.

### Basement Works

A geotechnical report has been carried out by GEA Ltd; the bore hole confirms up to 1.8m of made ground overlying Clayey Sand. Water inflow was not recorded. Based on this geotechnical information the new basement construction is to comprise reinforced concrete retaining walls constructed in a hit and miss manners with mass concrete underpinning to the adjacent foundation with an internal cavity drain system. This will be described in more detail throughout this report. Please refer to our drawings 4423-SM01 and SM02A.

### Superstructure Works

The proposal is for the ground floor to be a reinforced concrete slab and the three storeys above to be constructed in a traditional manner of load bearing masonry with timber floors and roof.

## Supporting the Proposed Loads

The vertical and horizontal loads will be supported via reinforced concrete walls with the vertical loads from the internal floors and walls being supported by an internal strip footing. The adjacent buildings footings will be locally underpinned to transfer the load deeper. Refer to calculation sheets for justification: 4423-P1A et seq.



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### **Structural Integrity of Surrounding Structures and Utilities**

The application is informed and supplemented by the investigation report carried out by GEA Ltd confirming there are not expected to be any utilities, tunnels or infrastructure within the area of influence of the proposed basement works apart from the existing foundations mentioned above and therefore we do not expect any impact regarding the structural integrity to these items. However we do note the risk of U.X.O. (refer to GEA Ltd item 2.7) that GEA Ltd have raised.

### **Slope Instability**

The proposal is to construct the walls in stages that will be temporarily propped until the final base is constructed and cured. No battering back is proposed. We therefore confirm slope instability will not be initiated due to these works. Please refer to the proposed drawings, 4423-SM01, and SM02A.

### **Impact on Drainage and Surface Water**

We do not expect there to be any existing public drainage within the area of influence of the proposed basement works. With regards to surface water the basement is mainly below existing hard standing. Refer to the surface flow assessment in the GEA Ltd. basement impact assessment.

### **Geological & Hydrological Concerns**

The application is informed and supplemented by the hydrological section of the geotechnical report and flood risk assessment carried out by GEA Ltd and identified in their basement impact assessment.

### **Structural Stability of the Existing Buildings**

Where adjacent to an existing foundation the proposal is to underpin the footing, and construct a new internal reinforced concrete wall monolithic with the reinforced concrete base slab. Where not adjacent to an existing foundation a beam strip will be cast and then underpinned with reinforced concrete to form a monolithic reinforced concrete box. GEA Ltd have carried out a damage assessment and confirmed a damage category no greater than 0 (negligible) to Ciria C580 is to be expected with respect to adjacent structure.

### **Impact on Trees**

There are a number of trees near the proposed basement. RGS an Arboricultural consultancy, are involved and have recommended a number of actions to protect the healthy trees.



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### **Temporary Works**

Please refer to the proposed drawings, 4423-SM01 and SM02A for details of the temporary works. When the contractor is appointed he will be fully responsible for the temporary works including the design and erection.

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