

Nilkanth Estates Ltd.  
25 Old Gloucester Street  
Basement Impact Assessment  
Parmarbrook

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# 1 Executive Summary

## 1.1 Project Description

It is proposed to redevelop the existing building at 25 Old Gloucester Street. The site to be redeveloped is mainly occupied by a Grade II listed school, built in 1877-78. A single storey extension has been constructed to the rear of the building. The building is generally three-storeys in height, with a five storey section at the front of the site. There is an existing single level basement below the main building.

The proposal will involve the demolition of the existing extension and 2 storey commercial use building plus a single storey basement, all within the proposed building footprint. As the existing extension does not have a basement, the proposal will involve the excavation of a new single storey basement.

## 1.2 Report Content

The proposal complies with the Basement Impact Assessment requirements of Camden Planning Guidance *CPG4 – Basements and Lightwells* issued in July 2015. The information in this document and its appendices outlines the engineering and construction challenges specific to the site and proposal, which have been identified, carefully considered, and mitigated. This document includes:

1. A detailed Desk Study including site history, utilities, and existing buildings and structures.
2. Summary of the site-specific Site Investigation including geology, hydrogeology, and hydrology. The full Investigation report can be found in Appendix D.
3. Appraisal of the impact of underground structures with the locality.
4. Appraisal of the existing structure as it relates to the works and the final proposal.
5. Illustrative and quantitative details of the proposed structure to be further developed in the Detailed design phase.
6. Outline construction sequence to be further developed by the Contractor
7. Predicted ground movements, discussion of the implications, proposed monitoring regime, and movement trigger levels.
8. The Proposed Structural Drawings (Appendix A)
9. Results of the Thames Water Asset Search (Appendix B)
10. Below Ground Drainage Drawings (Appendix C)
11. GEA Site Investigation Report (Appendix D)

## 1.3 Summary Screening Results

A screening exercise was carried out in accordance with recommendation of CPG4 in respect of groundwater flow, land stability, and surface flow/flooding. Reference was made to the Camden Geological, Hydrogeology, and Hydrological Study and other data sources. The full Screening Assessment can be seen in Appendix D – Section 3 and a summary of relevant topics can be seen below.

### 1.3.1 Groundwater Flow

With regard to groundwater flow, criteria Q1a has been deemed relevant to the proposed scheme:

- Q1a. Is the site located directly above an aquifer?

### 1.3.2 Ground Stability

With regard to ground stability, criteria Q13 has been deemed relevant to the proposed scheme:

- Q13. The proposed basement significantly increase the differential depth of foundations relative to neighbouring properties.

### 1.3.3 Surface Flow and Flooding

With respect to the surface flow and flooding, no criteria have been identified as relevant to the proposal.

## 1.4 Summary Scoping Results

The scoping exercise has been carried out in accordance with CPG4 and has identified the primary risks to be mitigated in the design. The full Scoping Assessment can be seen in Appendix D – Section 4.

## 1.5 Impact Assessment

An assessment of the potential impacts identified during the scoping process has been made with mitigation measures where required. The below information is extracted from Appendix D – Part 4 – Basement Impact Assessment.

“The table below summarises the previously identified potential impacts and the additional information that is now available from the previous site investigation in consideration of each impact.

Potential Impact	Site Investigation Conclusions
The site is located directly above an aquifer	The site lies directly above a Secondary ‘A’ Aquifer but the investigation has indicated that the groundwater table is located 1 m below the proposed basement level. In addition, the investigation was carried out towards then end of winter when groundwater levels would be at their highest. No evidence of permeable contamination was recorded during the investigation and as a result, no additional engineering precautions should need to be made in this respect.
Founding depths relative to neighbours.	The retention system will ensure the stability of the excavation and neighbouring properties at all times.

The results of the site investigation have been used below to review the remaining potential impacts, to assess the likelihood of them occurring and the scope for reasonable engineering mitigation.

### The Site is Located Directly Above an Aquifer

There is a potential for groundwater to be present within the Secondary ‘A’ Aquifer beneath the site. This could arise to water ingress into the basement excavation and cause instabilities and difficulties during construction. Groundwater was not encountered during drilling and groundwater was subsequently measured at a depth of 4.50 m within one of the standpipes while the other standpipes were found to be dry. In addition, most of the site is already underlain by a basement extending to a similar depth as the proposed basement and the existing basement does not appear to have experienced any problems. As a result, it is deemed the proposed basement will not have any effect on groundwater flow, and that no significant perched groundwater inflows, that can’t be dealt with by standard sump pumping, will be encountered.

### Founding Depths Relative to Neighbours

At the time of writing this report the presence of neighbouring basements and founding levels is not known for all possibly affected buildings. To this extent and to remain conservative it has been assumed that any surrounding properties that do not clearly have a basement from observations made during the site walkover do not have basements and are founded on shallow foundations. Therefore the proposed basement will extend to a significant depth relative to the existing foundations of the neighbouring properties and will need to be designed to ensure the stability of the site and any potentially sensitive structures that are in close proximity to the site. The results of the Ground Movement Analysis and building damage assessment have indicated that the movements arising on adjacent structures as a result of the development can be maintained within tolerable limits by careful control of movements.”

## 1.6 Review of Decision Making

The design of the retaining walls was carried out in order to minimise disturbance to the surrounding area.

Measures which have been proposed to minimise disturbance are as follows:

1. Underpinning of Existing Partywalls
2. Propping of the retaining wall during construction to limit deflection and ground disturbance
3. Temporary works to ensure stability of existing structures and prescribed maximum displacements are adhered to.
4. Movement monitoring and trigger levels

GEA’s analysis has indicated that the result of movements on the adjoining structures has been shown to be Negligible (category zero) on all the walls.

## 2 Introduction

Parmarbrook Ltd. are appointed as the Consulting Civil and Structural Engineers by Nilkanth Estates Ltd. for the proposed refurbishment of the existing building at 25 Old Gloucester Street, London, WC1N 3AF (see aerial photo below). This report has been checked and approved by a Chartered Structural Engineer as a supporting document for the main planning application for the redevelopment of the property.

The proposal will involve the demolition of the existing rear building while retaining the partywalls, and construction of a 2 storey commercial building plus a single storey basement within the proposed building footprint. As the existing building does not have a basement the proposal will involve the excavation of a new single storey basement.

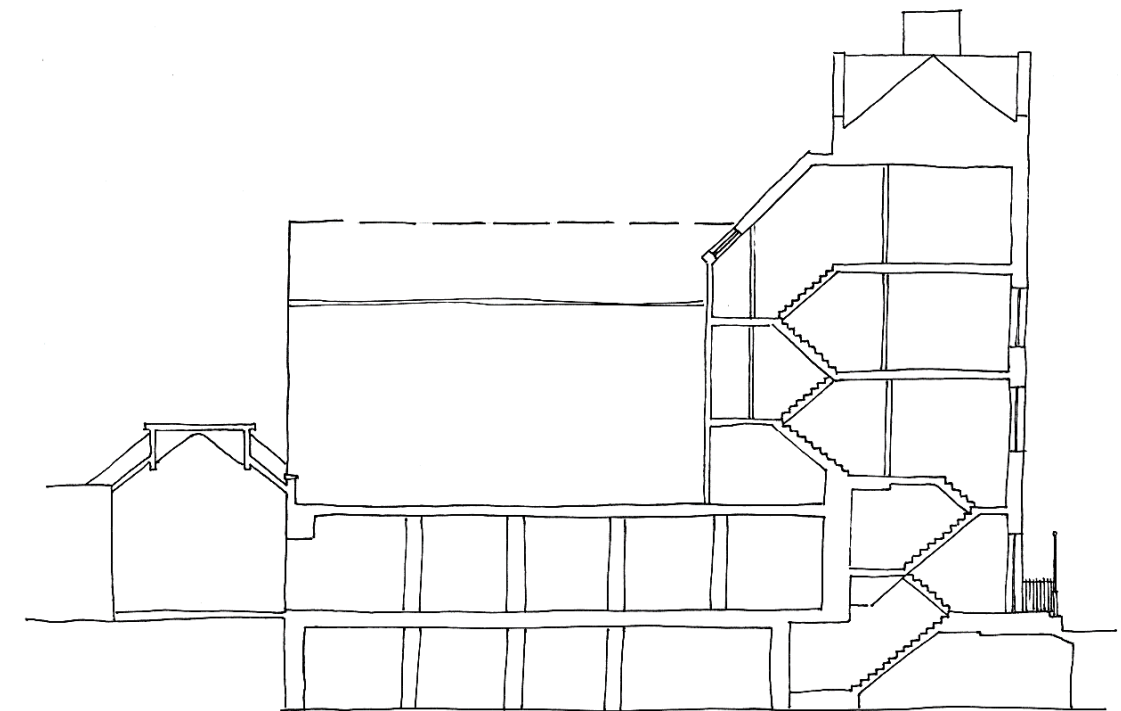
This document states the structural design philosophy for the proposed new building. It is intended to be a document to support the planning application, and act as a reference during the development of the project. It will be issued to all relevant parties including the Client, relevant authorities, and design team members. The Quantity Surveyor should also issue this document as part of the contractor's contract documentation.

Various assumptions have been made in the design, these are stated in relevant sections of text and until comments are received it is assumed that they are accepted by all members of the project team as a basis for the detailed design. The philosophy outlined in this document relates to the project as it stands at preplanning status design and should be read in conjunction with the drawings. Changes to the detail of this scheme will be highlighted in future revisions. This philosophy should also be read in conjunction with the architects, services engineers and relevant trade contractor's drawings, specifications and reports.

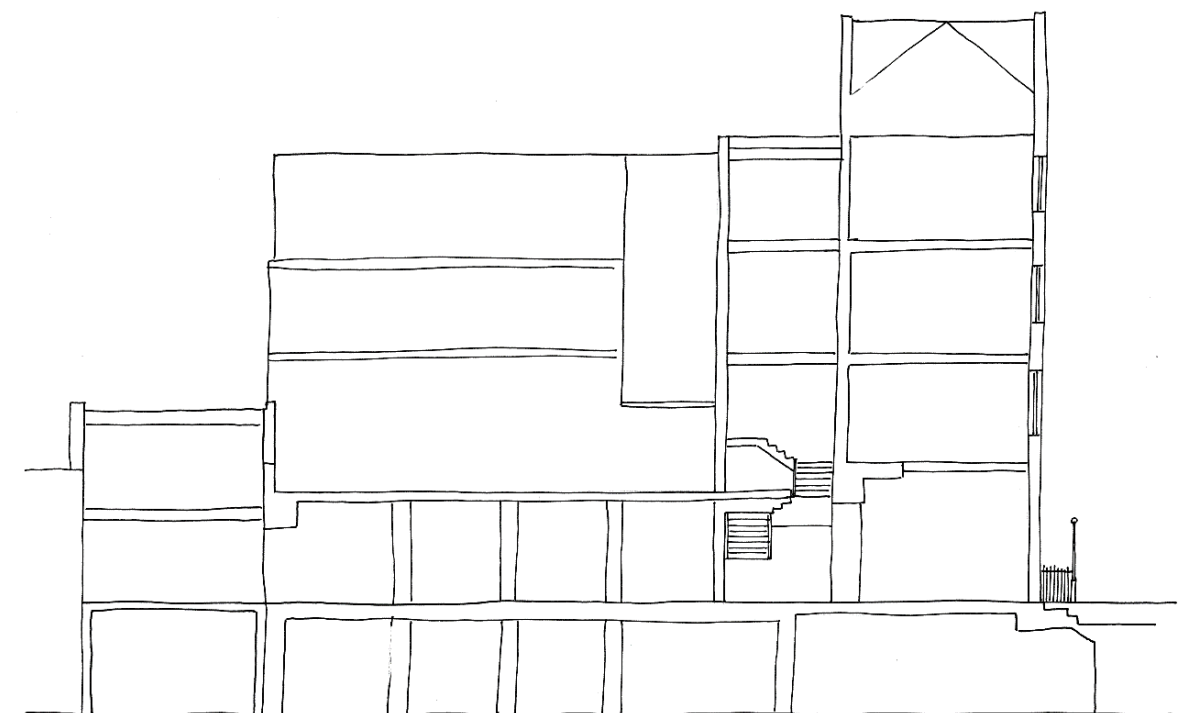
This document addresses the specific key issues in DPG4 as described in Camden Planning Guidance CPG4 (July 2015 edition).



Aerial Photo - Site



Existing Section X-X



Proposed Section X-X



## 3 Site Information

### 3.1 Site History

The main building on the site was constructed around 1877-78, the use of the site has remained unchanged over the last 150 years. The plots surrounding the site have remained largely unchanged during this same period.



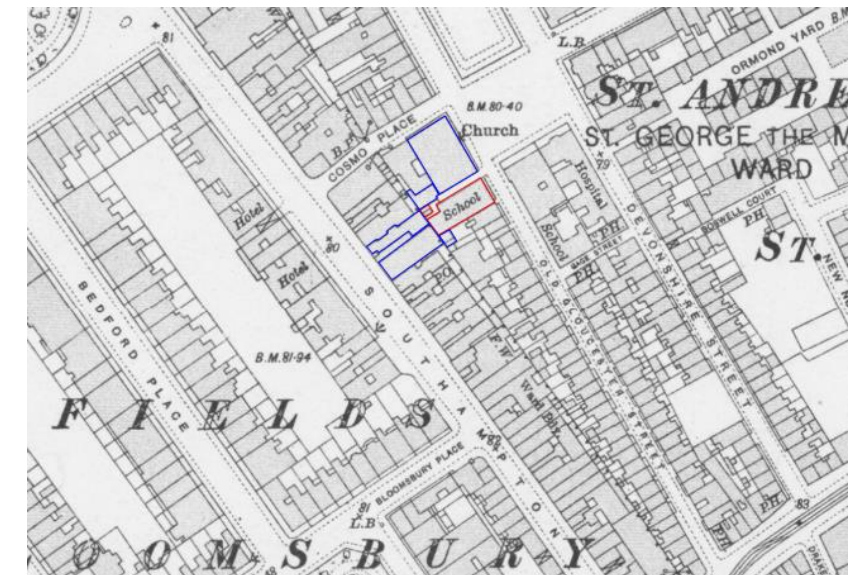
1863-73



1893-95

### 3.2 Site Location

The site is located on Old Gloucester Road, London, WC1N 9AF in the London Borough of Camden. The area is a mixed urban environment, with both residential and commercial properties in the immediate vicinity. The site is bordered on the North-West and South-East by a church and residential building respectively, both of which are Grade II listed. While the South-West abuts a mixed use residential and commercial building. The North-East is a public highway named Old Gloucester Street which is low-to-medium levels of traffic.



1916



1951