



PORTICO GP SURGERY
Linscott Road,
Hackney, London
E5 0RD

**STRUCTURAL REPORT – DEMOLITION
AND EXCAVATION**

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Portico GP Surgery, Linscott Road



Figure 1 – Existing Site



Figure 2 – Original Portico Building

1.0 Introduction

This report outlines structural proposals for constructing the new scheme in proximity to the existing Historical Colonnade and Crypt. As part of the planning conditions for a Listed Building Consent it has been requested that a Structural engineer's report for demolition and excavation should be provided – condition 16. The following information will be included in the report,

- Detailing the engineer's qualifications, relevant experience and supervisory role
- Explaining how the existing structure stands
- Detailing the method by which the existing structure is to be supported and protected during the works to ensure the structural stability and integrity of all the elements which are to be retained (the temporary works)
- Confirming how damage to the building or surrounding buildings and structures will be avoided and how the safety and stability of the historic building fabric will be ensured.
- Detailing the structural interventions to ensure that the building will stand in the future, including details (for example and not limited to) of any new foundation design, underpinning, steelwork and other strengthening and their locations and methods of fixing and installation, with sketches as necessary (the permanent works). All excavation and structural works shall be carried out strictly in accordance with the details so approved. All excavation and structural works shall be carried out by hand. No other excavation or structural works are authorised by this consent without prior approval of the details.

2.0 Engineer's Qualifications, Relevant Experience and Advisory Role

The works in proximity to the existing crypt/colonnade will be reviewed and supervised by Teodor Perfanov. Teodor is a chartered engineer with the Institution of Civil Engineers (ICE) and has a vast experience with existing buildings and refurbishments all around London. He has been involved in projects involving temporary propping of existing facades, refurbishment of listed buildings taking special care of the existing structure without changing the concept of it and providing temporary works for basements including underpinning and propping/shoring. The site will be visited during the critical stages highlighted within this report and the work reviewed.

3.0 Existing Buildings and Site

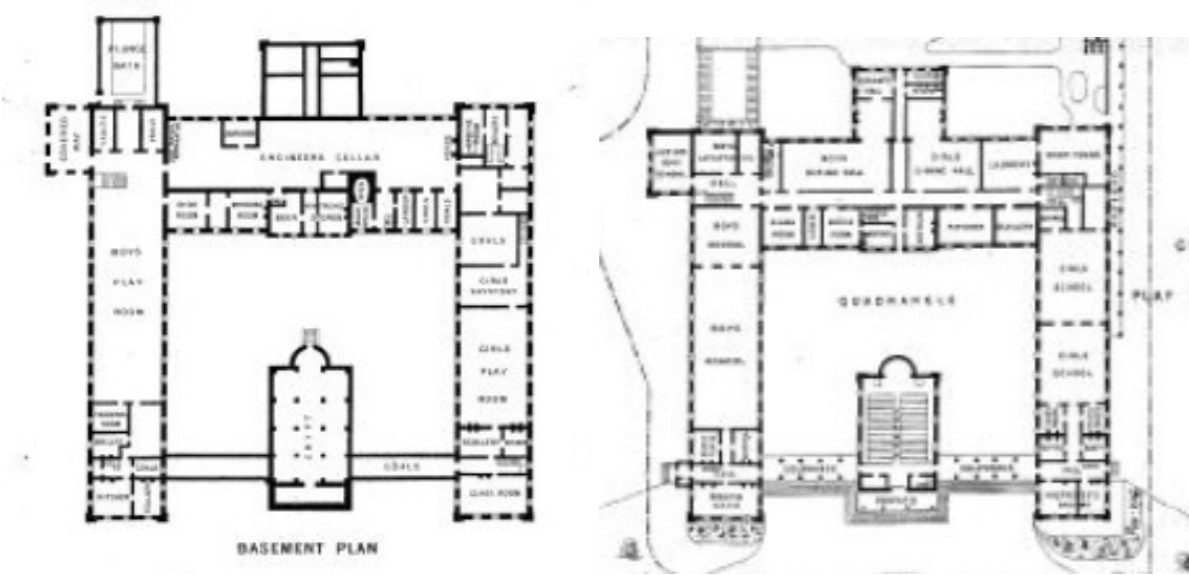
3.1 The Site

The site of the development occupies the site of Clapton Portico, which is located at the end of Linscott Road in Hackney London, E5 0RD. The main part of the current work will be adjacent to the South colonnade/crypt. Access to the site is through Linscott road and the front parking area.

3.2 Existing Structure

The original London Orphanage Asylum built in 1825 in the Greek Doric style. The Portico formed the main entrance to a large courtyard building. The original building comprised of the existing portico with a chapel directly behind and colonnades on either side. The chapel was the same height as the colonnades and three two-storey buildings surrounding the chapel and the colonnades. Reviewing the historical records, it appears that the portico and the chapel had below ground crypt, the colonnades had basements used to store coal and the two-storey buildings had basements used as cellars and playrooms.

In 1975 the majority of the building was demolished leaving the Portico and the colonnade wings as they remain today. It is a grade 2 listed historic structure. Currently the site is sloped away from the Portico towards the east and the west with the colonnades occupying the elevated position. The site has been re-graded in the past and appears to consist of the backfilled remains of the existing buildings.



Figures 3 and 4 – Basement and Ground Floor of the Original Building

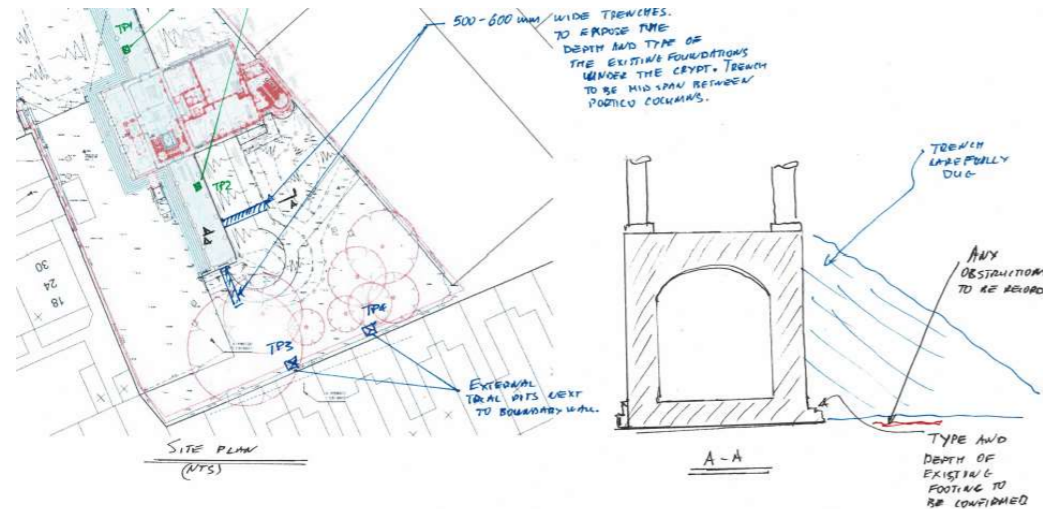
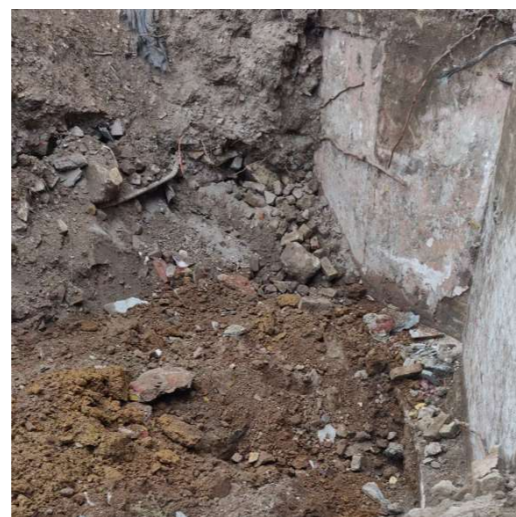


Figure 5 – Exposure Works Requested



Figures 6 and 7 – Exposure Works Findings

In 2006 listed buildings were restored and the rear extension was added to central portico structure. Some structural modifications to the original brick structure in the basement were also made to provide new lift and access stair.

The existing Portico and Colonnade including the basement/crypts underneath them are the only remaining parts of the existing structure. Load bearing masonry is forming the structural skeleton of the existing buildings. Considering the historical evidence, the foundations are at Basement level, and we would expect them to be typical for the period. We consider that the Listed buildings appear to be in reasonable structurally sound condition considering their age.

As part of the planning process a report has been produced by AKS Wards highlighting the existing conditions of the retained buildings. As part of the report remedial works have been specified to the external cladding and masonry. The remedial works specified should be assessed by masonry specialist and any work should be undertaken by a qualified masonry specialist.

4.0 New Building and Construction Methodology.

4.1 Additional Exploratory Works on Site and Findings

After review of the historical information for the building it was evident that in most of the areas a basement level has been present at some point during the previous developments of the site. The Portico, the colonnade and the two-storey buildings to the side of them have originally been constructed with basement/cellar levels. During the period when the Salvation Army has used the building additions were added behind the colonnade which appear to be at basement level as well.

With the external levels currently sloping away from the colonnade/portico the main consideration prior to excavation commencement in the area is whether the soil provides lateral support to the masonry structure forming the crypt. In order to confirm the assumption that the fill has been added later and the existing construction, KPT Design requested exposure works on site. A strip of the fill has been removed as per the provided sketch and the area reviewed on site. The following was observed on site:

- The regrading of the site has been done with made ground and most of it is containing debris from the removed buildings on site.
- Newer structure has been constructed in the internal courtyard at Basement level at some point. New masonry wall has been added next to the crypt walls and new concrete slab.
- The thickness of the original crypt wall has not been confirmed, but we assume that it projects around 150 mm further than the edge of the round/rectangular columns forming the colonnade.
- The strip on the south side of the crypt was not done due to site constraints at the time. Considering that the original building in the area was part of the original construction the wall forming the crypt was shared between the basement levels and we do not expect new structure in the area.

Based on the site findings and the reviewed information we consider that the excavation can continue in safe manner to the bottom of the existing footings. KPT Design should be informed immediately if anything different is found on site. With the additional information received the proposals in the new courtyard has been amended to avoid undermining the existing structure and to limit any potential damage. This is achievable as the new structure is located further back from the crypt. To the south side special consideration is given to constructing the new building.

4.2 Structural Proposals for the Areas next to the Original Structure

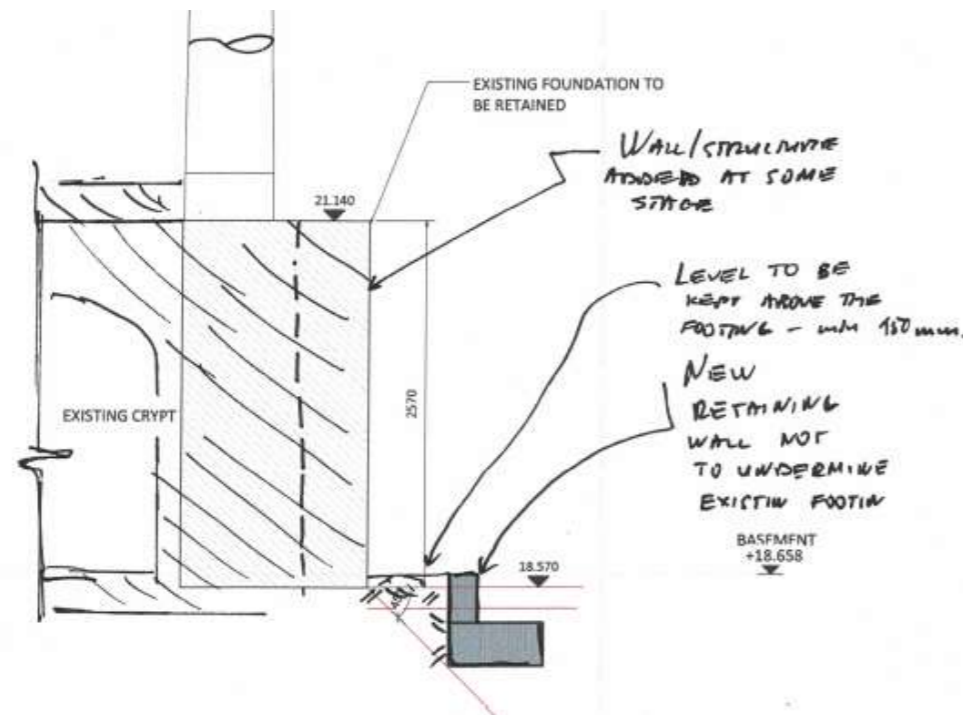


Figure 8 – Proposed Work in the Area to the West of the Colonnade

The two critical areas around the original listed colonnade and crypt are the areas to the west and the south.

For the area to the west of the crypt our proposal is that the courtyard size is emended to ensure that the existing foundations are not undermined, and that the structural integrity is not compromised. The existing back fill can be removed as the original structure is not reliant on it for lateral stability. Please refer to Figure 08 for the proposals

In the area to the south the proposed building is much closer to the existing crypt walls. The original crypt wall should be undermined to level min 100 mm below the new formation level of the reinforced concrete elements. The augured piles are located min 1m away from the structure to ensure that they can be safely installed. The existing structure will be propped at slab level prior to any excavation for the new structural/civil elements. We would suggest that formwork should be used on each during the concrete pouts with the one next to the crypt potentially being sacrificial. The gap between the crypt and the new RC wall should be carefully unfilled with lean mix concrete

In both areas the structure is designed to take any potential forces from the crypt, but the load paths or the original structural scheme of the listed building has not been changed.

5.0 Damage to the Existing Building

We consider that should the recommendations within the report are following no damage is expected to the existing buildings. Once the construction starts on site all existing elements should be exposed without undermining the foundations so KPT design can visit site and review the overall condition, levels and existing construction. If there are any discrepancies from the assumptions within this report KPT Design will amend the design to ensure that no consequences will be happening to the listed due to the new works on site.

The site will be attended at the critical stages of the construction in the areas close to the existing building to ensure that the details provided are followed.

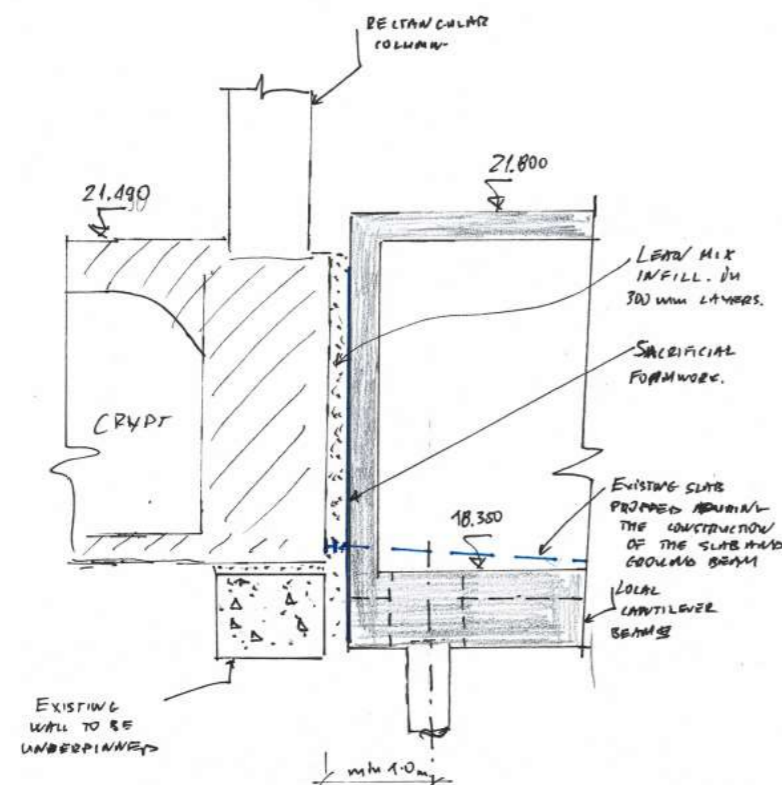


Figure 9 – Proposed Work in the Area to the South of the Colonnade