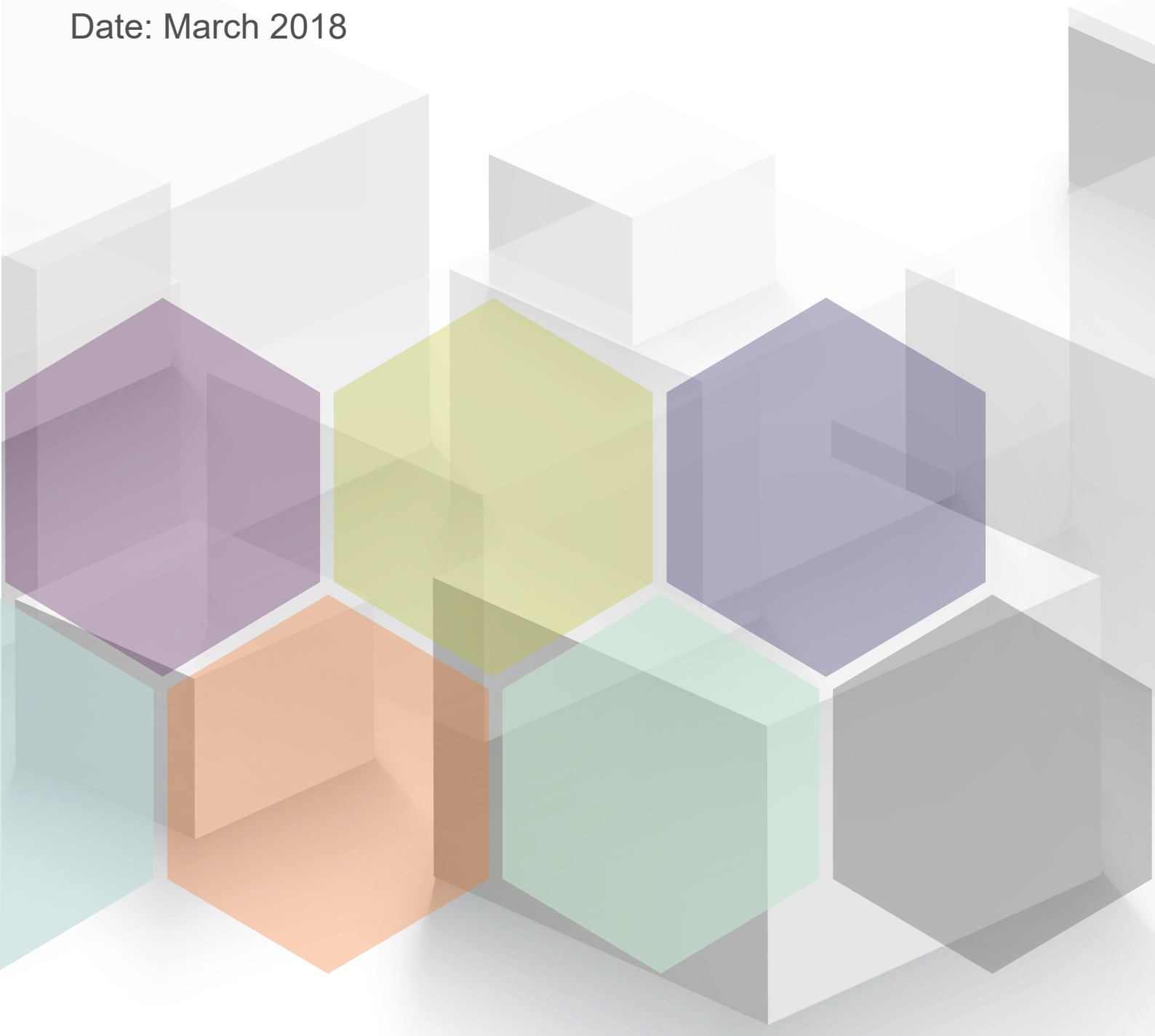
# 28 Fitzroy Square, London, W1

## Screening Report on Excavation of Existing Pavement Vaults.

Ref: C12496

Date: March 2018



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| Revision | Date | Written by | Checked by |
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## 1. Description of Works

It is proposed to refurbish the existing 5 storey mid-terrace property, which comprises basement, ground, 1st 2nd and 3rd floors.

The property is of traditional construction with timber floors supported on load-bearing masonry walls. On the front elevations of the property there is a light well with staircase giving access to the basement and also the vault that extend beneath the pavement. There are two large and one smaller vault.

As part of the refurbishment works it is proposed to increase the headroom within the vaults by breaking out the existing floor slab, excavating the area to a depth of 500mm below existing formation level and constructing a new floor slab at the lower level.

The existing and proposed basement floor plan is shown on SKK Designs drawings SKK2131/101.

## 2. Construction Methodology

The foundations to the existing perimeter walls to the vaults and separating wall between the vaults to the vaults will be established by carrying out trial hole excavations.

Given the age of the property it is likely the foundations comprise of little more than brick stepped foundations at a shallow depth.

Therefore it is likely that the perimeter walls and separately wall will require underpinning using traditional sequential underpinning techniques.

The depth of the underpinning is likely to be approximately 1m below the soffit of the existing foundation as this is the minimum depth practically allowing safe access.

The underpinning will be designed for vertical and lateral loads and checked for sliding resistance to ensure the vaults remain stable in both the temporary and permanent conditions.

Following completion of the underpinning the floor slab will be reinstated at the lower level.

The final design will be developed once the trial hole investigations works are complete.

## 3. Potential impacts of the Development

The site has been assed using the flow charts prepared by Arup contained within the London Borough of Camden's report. "Guidance for subterranean developments".

### Surface Flow and Flooding

The proposed works do not affect surface flow and flooding.

### Slope Stability

The proposed works do not affect slope stability.

### Subterranean Flow

Although the site is located directly above an aquifer, the excavation of new footing with a soffit approximately 1m below the soffit of the existing foundation will have no effect on the underlying aquifer.

## 4. Discussion

As part of the works it will be necessary to liaise with a party wall surveyor and if applicable party wall awards obtained before the works commence. This will include preparing a detailed procedure of works to ensure the stability of the vault is not compromised.

## 5. Conclusion

The proposed lowering of the floor slab in the two large pavement vaults will not adversely affect:

- Surface flow and flooding
- Subterranean Flow
- Slope Stability

Further investigations are required before the final design can be prepared, these comprise:

- Trial hole excavations to determine the existing foundation arrangement and ground condition.

Once these have been completed the detailed design for the necessary structural works can be prepared. If it is found the existing foundation extend to an adequate depth it may not be necessary to carry out underpinning.

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