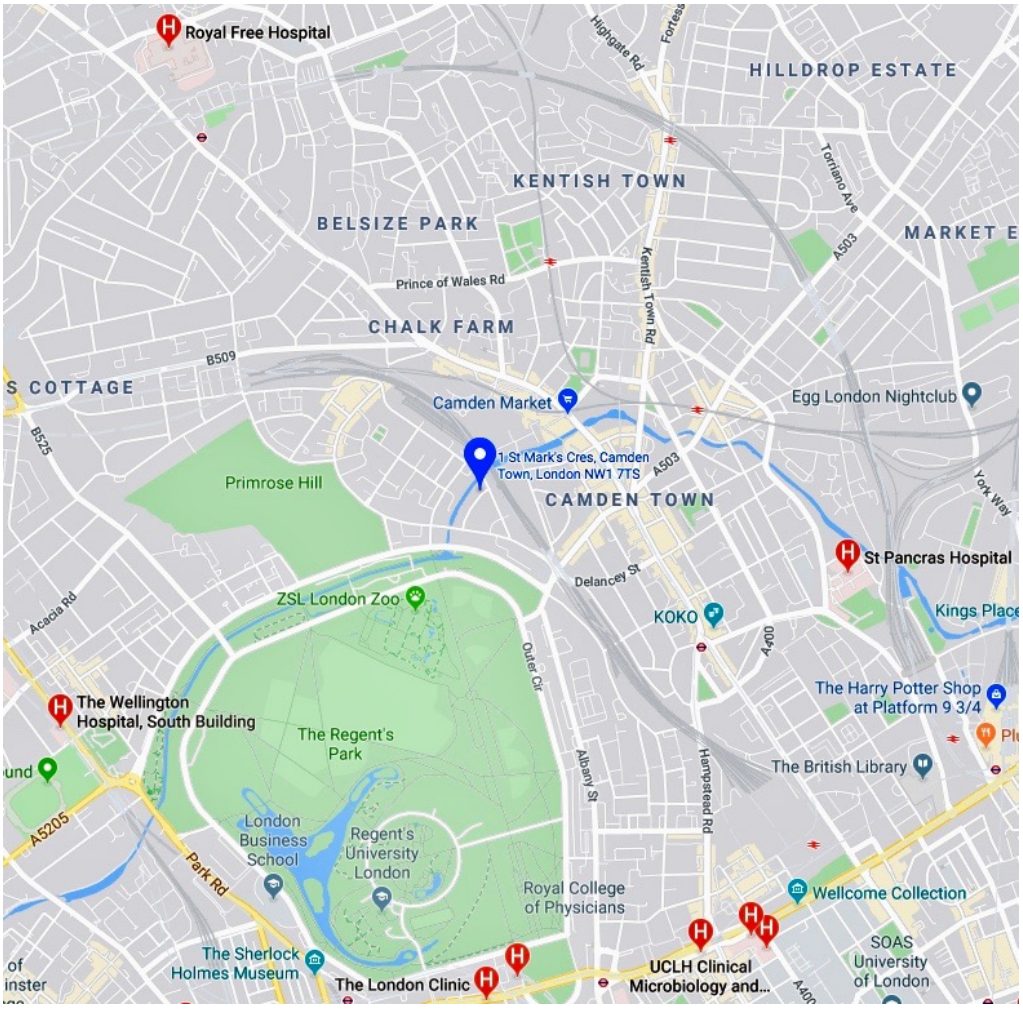
Regent's Canal Wall Survey

Revision B 7/5/2021 (projecting jetty removed)

1 St Mark's Crescent
London NW1 7TS



October 2020

Jonathan Freegard Architects

Introduction

This document provides a record of the condition of canal wall at the end of the rear garden at 1 St Mark's Crescent, London NW1 7TS, and also describes the proposed maintenance and repair works to the wall as required by Condition 2 of the planning consent granted by Camden Council under Ref. 2018/6105/P for the construction of a new basement.

Contacts

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Location plan

Site

1 St Mark's Crescent is an existing three-storey end of terrace house with an attic floor.
A new basement is to be formed with the spoil removed via a barge moored at the end of the garden. The construction is to be in two phases. The first phase will comprise a new basement excavation and include underpinning, underground drainage, tanking and a new lower ground floor structure with steels up to the present upper ground floor level. The second phase will involve the reinstatement of the finishes and built-in furniture on the lower ground floor and the fit-out of the new basement. The building will not be occupied during the works.

Programme

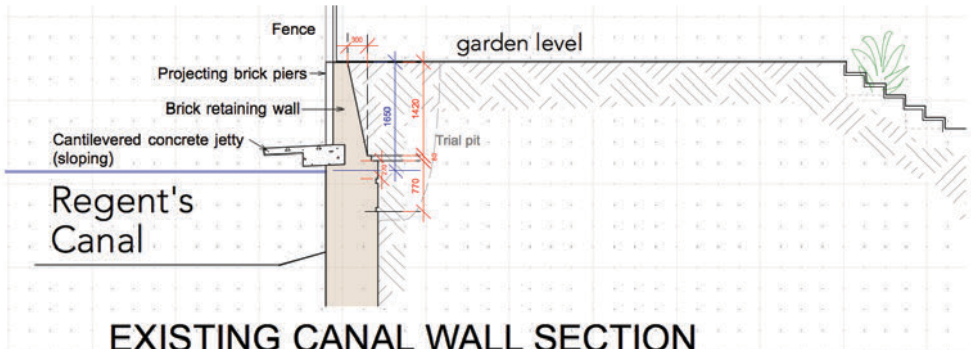
Phase 1 – Start on site February 2020 with an estimated duration of 26 weeks
Phase 2 – Start when phase 1 completed with an estimated duration of 14 weeks
Estimated completion date – November 2020.

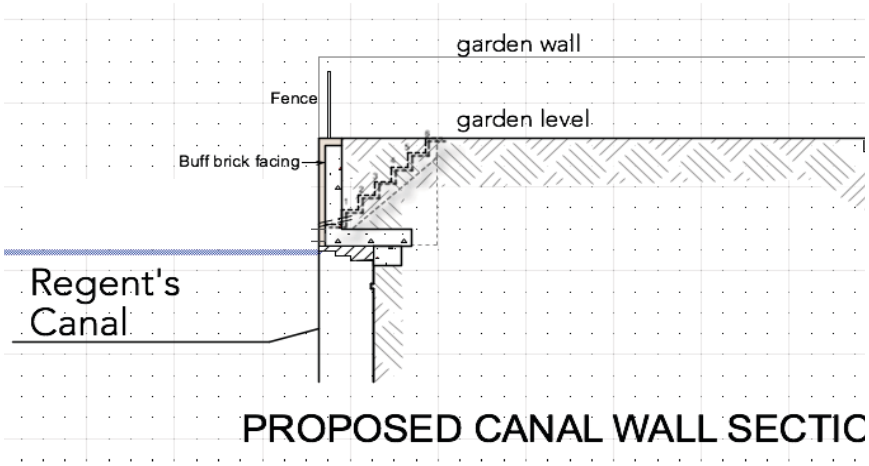
Description and condition of wall

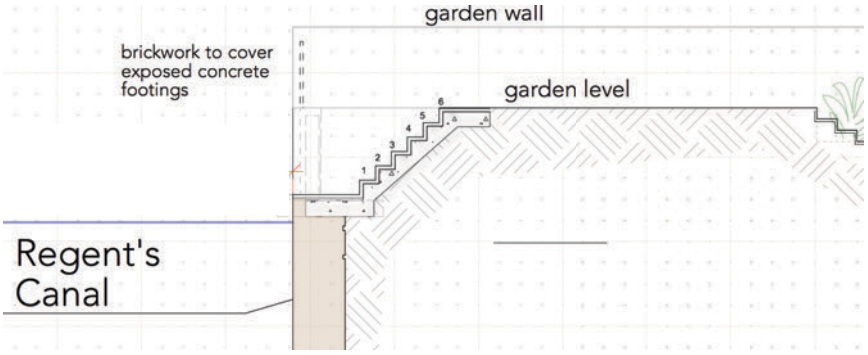
The canal wall is a 225mm – 750mm thick battered retaining brick wall. The width reaches 750mm thick at a depth of 1650mm with a three piers on the Canal side 340mm wide and projecting 110mm from the point just above water level where the wall steps. A trial pit carried out on 4/12/2019 showed the profile of the wall and is recorded with photos and an excavation log at the end of this survey report. There is a projecting 150mm thick concrete slab 300mm above water level forming a jetty. This slab was built pre-WWII and has rotated slightly over the last 80 years or so under its own weight. The jetty it forms matches the width of those at the properties on either side that are constructed of timber. The brickwork below the water line is firm and undisturbed by the slight rotation of the wall above.

Proposed repairs and alterations

It is proposed first to strengthen the wall from the rear garden side with a 250mm thick concrete retaining wall behind it, all hidden below ground level. This retaining wall will be secured from rotation by a 1m toe projecting beneath the garden and also by two transverse concrete walls containing in-set steps. This will spread the load over a greater width than at present thus reducing any load on the old brickwork beneath. The facing brickwork towards the Canal will be rebuilt in the existing or matching reclaimed buff-coloured London stock bricks with the central pier retained as a feature. The steps will be faced with yorkstone paving stones on the both the landing treads and step risers as the existing steps.
See also "repairs to the wall below the water line" and structural engineers sketch on the last page.







Satellite image of site

Underwater Survey of Canal Wall

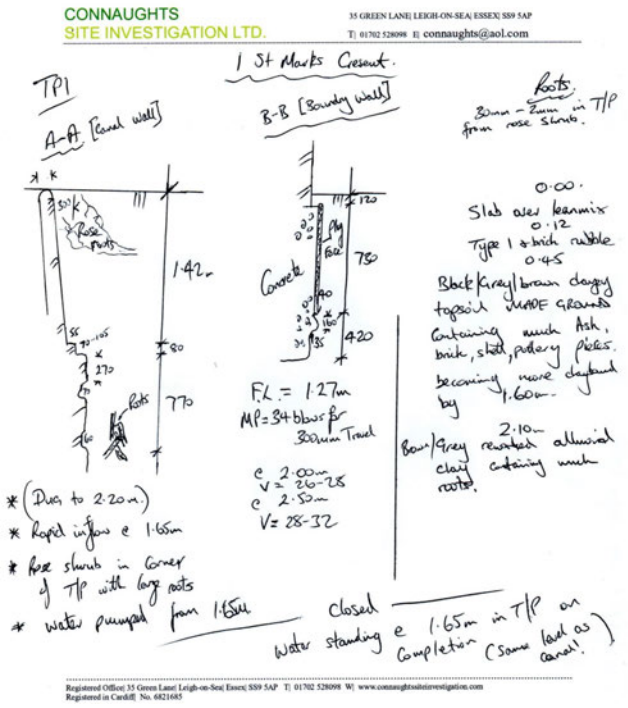
The survey on the last three pages of this report was carried out by specialists TexoDSI on 7/10/2020.

Canal Wall Photos

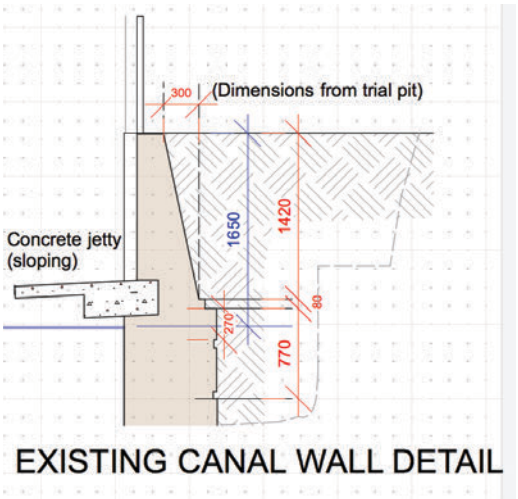
Trial Pit Photos



Trial Pit Log (4/12/2019)



Trial Pit 1 Section A-A



Repairs to canal wall below the water line

Repairs to the limited cracks found in the canal wall below the water line will be carried out by a specialist firm using Rockbond Underwater Super Accelerated Mortar (RB UWSAM) powder. This is a blend of special cement powders, high quality graded sands, water soluble polymers and an unique combination of accelerating agents. The powder, when mixed with water, produces a rapid early strength mortar for underwater void filling and concrete repairs at freezing temperatures, and to fast stop the flow of water through cementitious surfaces, masonry, brick and stone.

All necessary preparatory work such as scraping out the cracks to remove sludge and lose stone is to be completed before the mortar is mixed.
The powder is mixed with water in sufficient quantities to plug cracks or voids all in one go. This requires a quick and efficient mixing action. The mortar is then applied at the right consistency: stiff but not yet set. Using a gloved hand, the compound will be forced into the void to be plugged. If necessary, the material will be held in place until the compound develops sufficient strength to stop any flow. Alternatively, while the mortar begins to set, a hammer will be used to hit the compound and compact the material into place.
After filling and sealing any leaking joints, cracks and channels, the mortar will be built up to the profile of the surrounding stonework and form a bridge of mortar over the joint.

In order to remove the existing cantilevered concrete jetty the wall above the jetty will need to be rebuilt. Our consulting structural engineers Conisbee have issued the following statement: -

It is proposed to rebuild the canal wall with a 200mm thick reinforced concrete retaining wall with brick facing, and with a 200mm thick reinforced concrete base leg projecting back 1m from the canal face (see drawing SK-S-010 attached). This will resist rotation better than a brick wall and result in only slightly greater loads (<10% assuming all loads are transferred vertically and evenly) on the old brick wall below. However, masonry is typically good in compression and a retaining wall is better under a certain amount of compression / loading, therefore any modest increase in loading will not be detrimental to the existing retaining wall below, and where there maybe areas of higher stress (i.e. at the edges /below new concrete), then bricks will be replaced with engineering bricks.
They attach the sketch on the next page. The alternative would be to rebuild the upper wall in solid masonry exactly as existing.

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Project: 1 ST. MARKS CRESCENT.

Title: CANAL WALL - REMEDIAL.

Project No: 18507-SK-S-010

Sheet No:

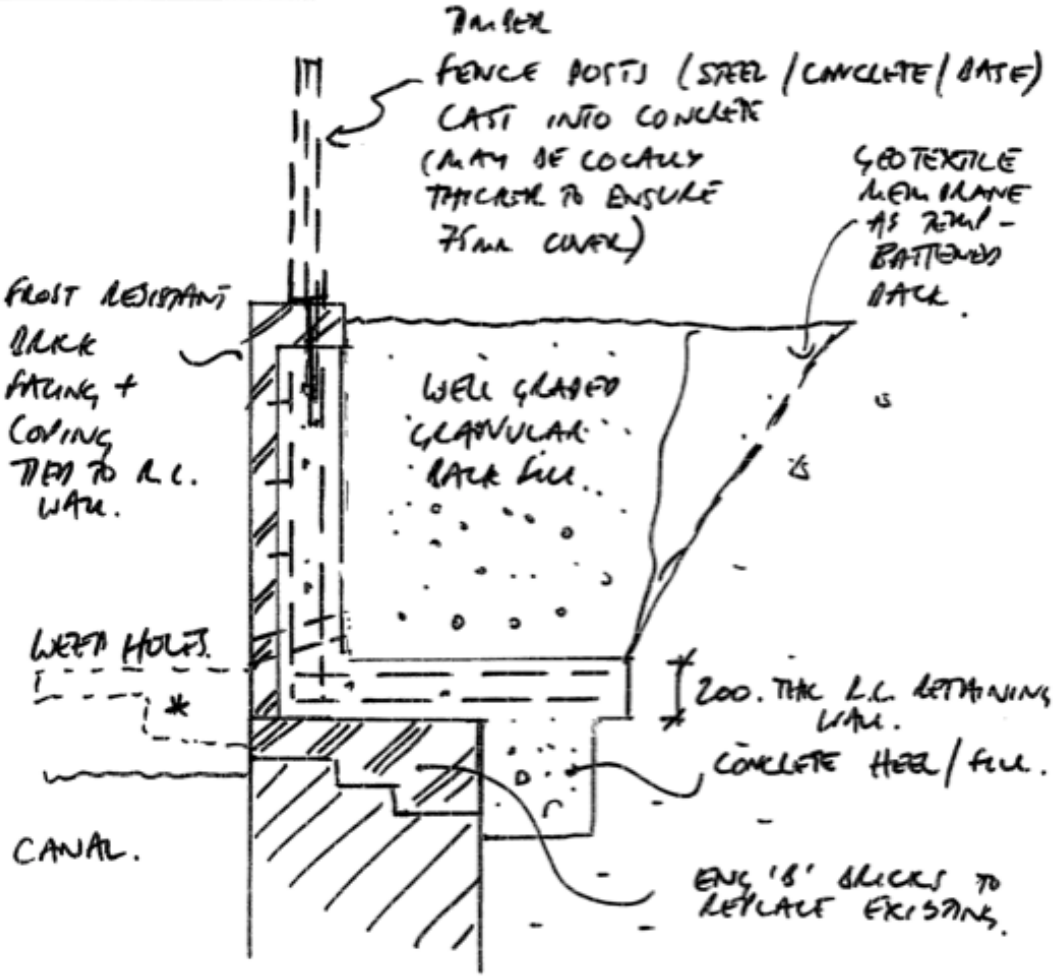
Date: 12/19.

Scale: 1:20

Engineer: HH.

Checked: NN

Rev	Date	Description



* OLD CONCRETE CANTILEVERED JETTY + DATE REMOVED.

- R.C. MIN. C35/40.
- HIGH YIELD REINFORCEMENT MESH 500 N/mm².

TEXO DSI
SURVEY AND INSPECTION

Report

Scope – ROV Inspection

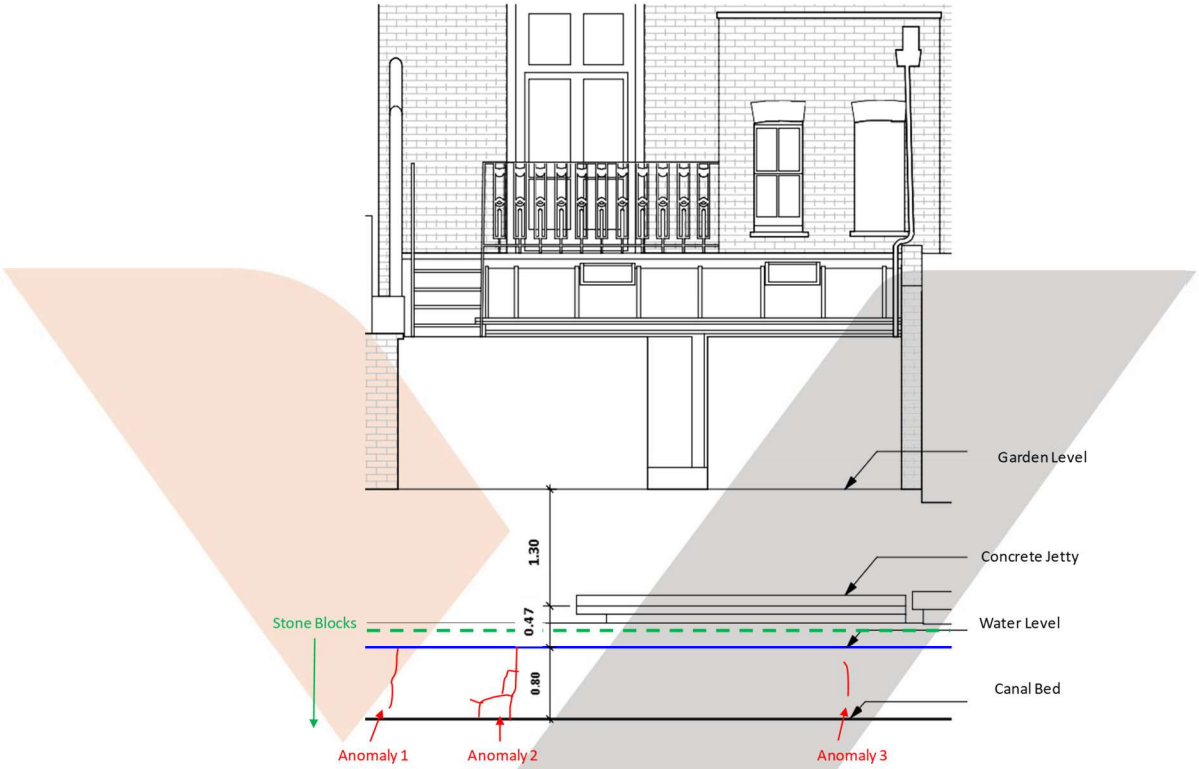
Client: Jonathan Freegard Architects

Site Address – 1 St Marks Crescent London

Quotation Number:	**TX0316**	
Date of survey:	**21/10/2020**	
Issued to:	**Jonathan Freegard**	
Time Frame:	**October 2020**	
Prepared By:	Jonathan McDaid Senior Surveyor Jonathan.mcdaid@texo.co.uk	
Checked and Approved By		James Arnott Head of UAV & Remote sensing Ops James.arnott@texo.co.uk

TEXO DSI
SURVEY AND INSPECTION

ROV INSPECTION AT 1 St Marks Crescent London 21/10/2020 (Regents Canal)



Anomaly 1

Anomaly 1 was located approximately 1.4 meters to the left of the outer edge of the jetty, this was a vertical crack approximately 5 to 10mm wide.

Anomaly 2

Anomaly 2 was the worst of the 3 anomalies, this was located approximately 1 meter to the left of the outer edge of the jetty, this crack has migrated across as seen in the diagram. The crack at its widest was at approximately 30mm.

Anomaly 3

Anomaly 3 was located approximately 875mm from the centre of the jetty, this was vertical and was approximately 20mm wide at is widest, this appears to be mortar that has come away from in between the brickwork.

TEXO DSI
SURVEY AND INSPECTION

Stone blocks above water

It was noticed that the stone block ended level with the start of the concrete jetty

Canal Bed

No scour noted.