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3336

Imperial College London
Private Ground on Udney Park Road,
Teddington,
London, TW11 9BB

Basement Construction Strategy

For

Quantum Land and Property Ltd

REPORT REFERENCE

3336/S/1707/01

PROJECT NUMBER

JB 3336

PROJECT TITLE

Imperial College London
Private Ground on Udney Park Road,
Teddington,
London, TW11 9BB

CLIENT

Quantum Land and Property Ltd

Issue No:	1		
Prepared By:	Julian Calcinotto <i>Director</i>		
Date:	June/ July 2017		
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1 Executive Summary

- 1.1 Calcinotto have been appointed to prepare a Basement Ventilation Strategy in connection for the new apartment block (A) in with basement within the proposals for the redevelopment of the former ICL Private ground site off Udney Park Road, Teddington, in the London Borough Upon Thames, the nearest postcode is TW11 9BB.
- 1.2 The strategy discusses the intended construction techniques used to form the basement to Block A.
- 1.3 Any drawings and calculations prepared at this time are based upon the planning drawings and should not be relied upon as a detailed design for construction.
- 1.4 This document has been prepared for the sole use of Quantum Land and Property Ltd to support the Planning Application for the construction of an assortment of properties. The contents should not be relied upon by others without the written authority of Calcinotto Limited.

2 Introduction

2.1 Site Location

Calcinotto Consulting Engineers have been appointed by Quantum Land and Property Ltd to undertake a review for a drainage strategy for the development of a greenfield site in Teddington. The development comprises of no. residential properties with associated parking, access and landscaping. The site under development has an area of circa 5.2 ha approx. (12.8 acres). This site has a Post Code of TW11 9BB. The national grid reference for the site is TQ 16437 70857 (E = 516437, Y = 170857). The layout of the site is detailed on Quantum Homes Architects Dwg 900 SK-02 Appendix A.

For a general site location and the site boundary see figures 1 and 2 below.



Figure 1 – Site Location



Figure 2 – Site Location

2.2 This report is made in support of a Planning Submission for the proposed development.

3 Existing Site

3.1 Existing Use

3.1.1 The existing site is currently private land, designated as Other Open Land of Townscape Importance. There is 1 no. building on the plot which houses the old Club house.

3.1.2 The site is bounded by Fullerton Court to the north, Kingston Lane to the east, Udney Park Road to the west and Cromwell Road to the south.

4 Proposed Development

4.1 Development Proposals

The mixed use development within the creation of the Teddington Community Sports Ground Community Company establishes the following three main areas of the proposal:

1. Assisted living, extra care community with new GP Surgery
2. Open Parkland with community Orchard and outdoor gym
3. Community sports facilities

Proposed community sports facilities will comprise of the following:

- A full size Third Generation artificial grass pitch (3G AGP)
- Natural grass playing pitch provision
- Tennis Courts / MUGA
- Community pavilion containing changing rooms, kitchen, bar and server, flexible use community rooms and crèche

5 General Information required to construct a basement

A thorough desk study to include the site history, age of the property, site survey, geology, historic river courses and underground infrastructure, including utilities services, drains.

A site investigation which can be demonstrated to be relevant to the site together with trial pits to show the the underground material and If groundwater is present, the levels should be monitored for a period of time.

Details of the engineering design which should be advanced to detailed proposals stage. Relevant drawings should be provided to show how the designers have addressed the following:

Ground conditions and groundwater

Existing trees and infrastructure

Drainage

Flooding

Vertical and horizontal loading

Structural engineering general arrangement and details; drawing showing construction techniques should be developed for discussions.

If relevant an analysis of the Upper Aquifer (if it exists) and how the basement may impact on any groundwater flow.

If relevant details of flood risk, surface water flooding, critical drainage areas explaining how these are addressed in the design.

If relevant an assessment of movements expected and how these will affect adjoining or adjacent properties. This needs to include both short term and long term effects. The design and construction should aim to limit damage to all buildings to a maximum of Category 2 as set out in CIRIA Report 580.

Details of sequences of construction and temporary propping to demonstrate how the basement can be built to prevent movements exceeding those predicted. It should show how the horizontal and vertical loads are supported and balanced at all stages of construction and consider the interaction between permanent works and temporary works.

6 Description of works.

The operations referred to within this document comprise of the reduced level excavation and subsequent construction of single storey structural basement shell at Imperial College London Private Ground on Udney Park Road, Teddington, London, TW11 9BB. The basement will be built in conjunction with Calcinotto Ltd construction drawings and the drawings provided by the QDB Architects.

7 Method of Working

The contractor will obtain authorisation to commence work on site and will confirm the works area, compound and stockpile area together with any site specific health and safety rules, requirements and restrictions by way of attending the Principal Contractor's Site Safety Induction.

The contractor will ensure that the area is ready to accept scheduled deliveries by removing any obvious hazards and materials that may impede the safe placement of these materials. Where necessary deliveries will be escorted from the access point to the unloading areas by a competent person and reversing vehicles i.e. deliveries of loose aggregates will be directed during reversing manoeuvres by a competent person acting as traffic marshal (Banksman).

In addition, all suppliers have been notified of the requirements to implement suitable and sufficient control measures to eliminate or reduce the risks associated with working at height during loading and unloading operations.

All deliveries will be monitored by a nominated banksman to ensure the archway entrances at both ends of the mews will be protected from damage at all times.

8 Sequence of operations

Designated areas will be provided for the purpose of providing temporary loading out areas/laydown locations adjacent to the proposed location of the new basement area. Area's on site will be identified and designated as a suitable area for the offloading of necessary materials i.e. temporary shoring (sheet piles), steel reinforcement, timber shuttering, palletised building materials and imported clean crushed concrete.

All deliveries shall be checked to ensure that all necessary materials and equipment is present prior to the commencement of any excavation works.

The contractor shall then confirm the extent of the excavation works and confirm the presence of any services by checking any available service drawings. Consideration shall also be afforded where there is any foreseeable risk of hidden or buried services to scanning the area using a cable avoidance tool together with signal generator, operated by a competent person to identify the presence and route of any previously unidentified services. Once satisfied that all service locations have been identified and where necessary accurately marked out, the Site Foreman shall instruct the operatives to commence with the excavation.

If necessary prior to excavation either Sheet Piles or CFA contiguous bored piles will be installed around all straight faced excavations and they will be designed to be either cantilevered or propped back off the central mass to allow the excavations to be undertaken safely. All other areas will be battered back to allow safe working space.

The excavation will continue down to below basement level and a concrete blinding constructed. The foundations, waterproof floor membrane and drainage inc small pumps will be constructed prior to the basement floor being cast. The basement floor will be designed for uplift pressures and waterproofed as necessary and cast. The open sides that have been battered back will have sufficient room and working space to install the formwork. Where the ground may not allow the sides to be battered a contig piled wall will provide the back shutter to a new RC wall and therefore the formwork will only be one sided.

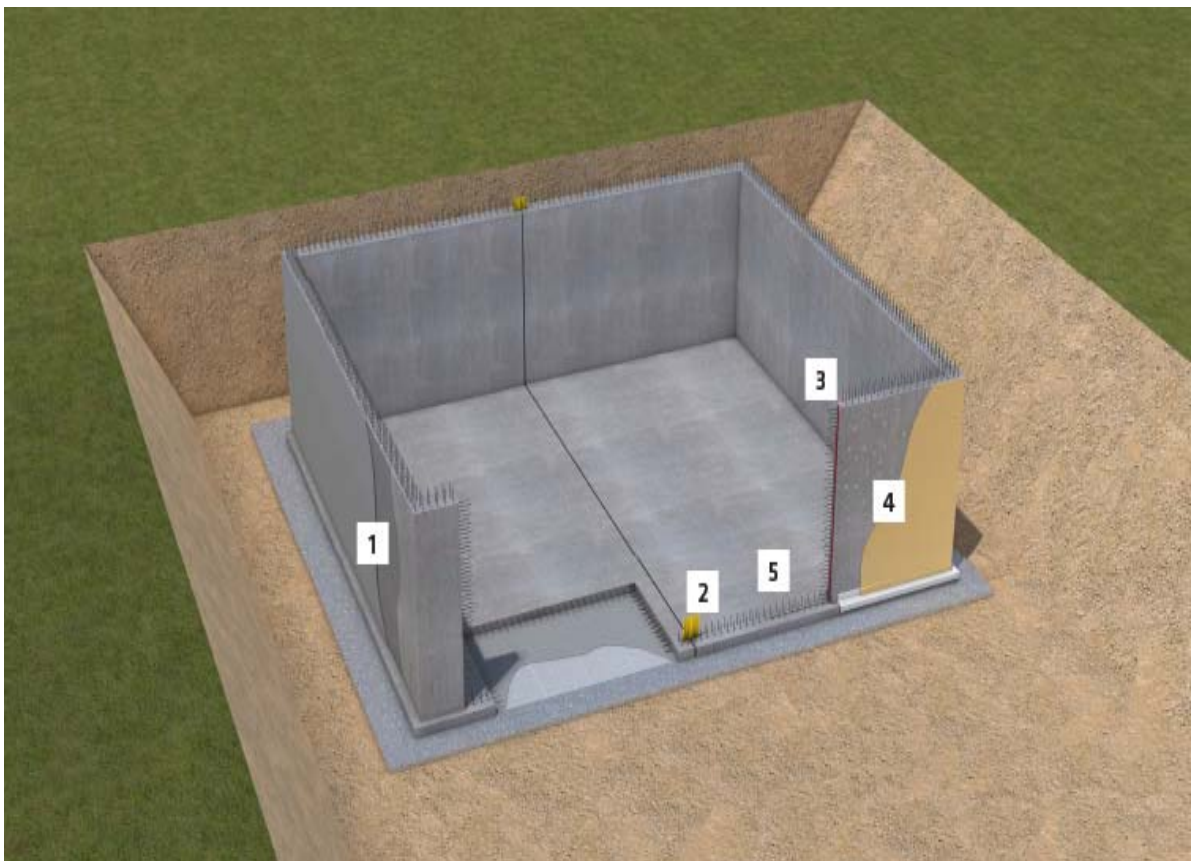


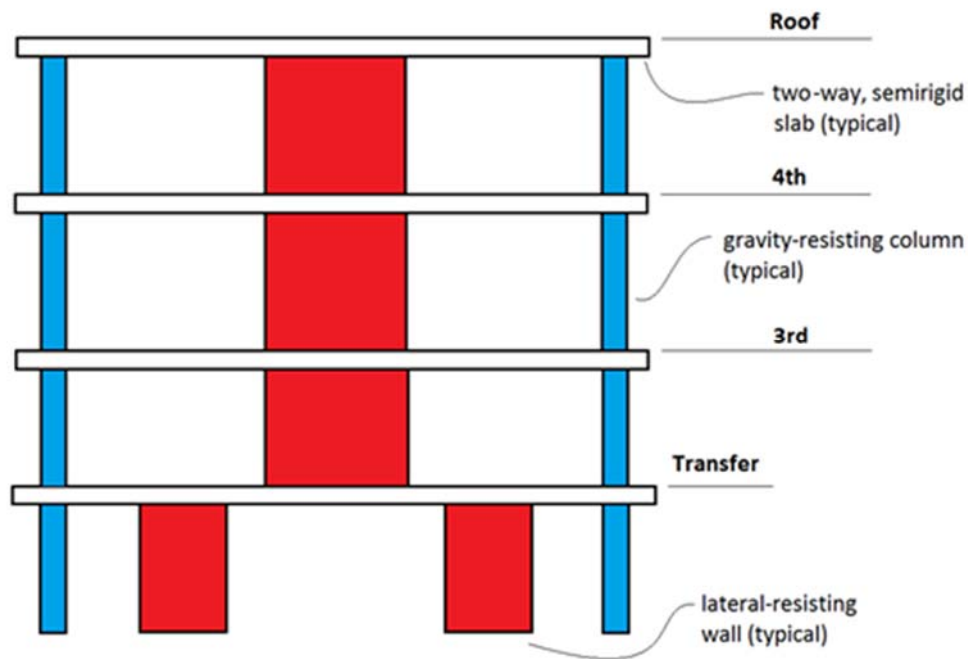
The next part of the process will be to secure the Steel reinforcement and close up the shutters using dividag tension bars and propping where one sided. Prior to the wall being cast note all waterbars will have been cast into either the kicker or the scabbled basement floor.

At the same time the wall shuttering and steelwork are being constructed the internal and external RC columns will have undergone the same process. After the all the columns and walls have been cast and shutters removed, the podium formwork can be assembled ready for the reinforcement to be laid and the concrete poured to provide the overall stability to the lower level structure.

Once satisfied that all necessary structural works to form the shell of the basement area has been successfully completed the contractor should wait until sufficient time has passed in order to allow the concrete time to cure prior to removing the temporary formwork.

The next process will be to introduce a waterproof membrane to the walls of basement (architect to advise) and to the podium deck and to Insulate in areas under the building and apply a sand and cement screed as specified. The basement will then be ready for the next phase of works which will be the basement fitout and the podium will provide a solid working base to build the 5 apartment blocks off along with being utilised as a working and loading out platform. It is assumed that a tower crane will erected through the centre of the basement structure to facilitate loading out and moving materials around the site.





9 Delivery of materials and equipment

Arrangements will be made to ensure that adequate time allowance is available for the movement and set down of materials. Materials will be brought to the work site by Lorry and will be parked in an area specifically dedicated to the delivery of materials.

Materials will not be stacked in any access and egress routes but will be stored temporarily within a designated area until the materials are required on site. In accordance with the Manual Handling Operations Regulations 1992, loads will be reduced and loads split between operatives.

A restriction will be placed on the amount of materials placed in one area at any one time on site to ensure that there is no overloading of the ground and trip hazards are reduced with access/ egress routes remaining clear.

All materials will be placed to as close to the work area as possible in the prevention of manual handling tasks.

10 Preparation.

Others within the work area will be advised of the works to be undertaken in the area and of any risks present e.g. slippery surfaces, uneven ground conditions or unstable ground conditions etc. Where excavation works are in progress, signage will be displayed upon barriers warning of dangers e.g. "Danger Construction Work in Progress", "No Unauthorised Admittance" etc.

Operatives will be involved in a pre-works talk to discuss this method statement and to ensure that they are familiar with the method of works specific to this particular document and site conditions. All personnel working for The contractor are familiar with the system of work to be used and use of tools and equipment required in their particular areas of work and have undertaken a history of tasks identical in all respects to the tasks required to be undertaken.

The contractor will however, highlight to operatives arriving on site additional hazards that may be present in their immediate environment.

11 Site Clearance

All debris and excess materials will be removed from the work area and taken away by a licensed waste removal contractor. Should materials and/or debris become a hazard due to the volume, fire risk or due to trip and slip hazards of wet materials it will be removed from the work area/site immediately.

At all times The contractor will take particular care to ensure that trip hazards are reduced or removed and access / egress routes remain clear.

12 Access and Egress

Access to the site will be via the front hoarding site access, with another site access to the rear of the property if necessary. Pedestrian walkways will be used where provided and operatives will ensure that they use only recognised and authorised routes of entry into site.

13 Permits to work.

It is envisaged that these operations fall within the scope of a permit to work system operated by The contractor. This will be checked with the Principal Contractor's Site Representative and any necessary permit requirements will be strictly adhered to, prior to commencing with any excavation of the area.

14 Emergency procedures.

Emergency procedures will be arranged on site and will be communicated to the persons undertaking the works during the site induction. The Site Foreman will be provided with a mobile telephone to ensure that emergency services can be contacted in the event of an emergency. Should an emergency occur on site, which may affect other occupants of the existing buildings or neighbouring premises they will be contacted and made aware at the first opportunity.

15 Environmental control.

Ensure all waste is correctly kept and disposed of in accordance with The Environmental Protection Act 1990. Prevent so far as is reasonably practicable, pollution of the atmosphere by the discharge of dusts, smoke or fumes and prevent the unauthorised discharge of substances harmful to the environment into adjacent sewers, run offs or nearby waterways.

A suitable area shall be designated on site to allow the washing down of the concrete delivery wagon, chute and associated equipment. This will take into account the position of any gullies or manholes so as to avoid any possible contamination of the existing drainage system and any necessary protection shall be afforded to watercourses, inspection chambers Etc.

16 Equipment.

All materials shall be checked before first use, following its delivery to site, so as to ensure that all materials are present and in good condition. All materials and equipment, when reasonably practicable will be taken to the work area via mechanical means, as this will reduce the requirement for excessive manual handling.

Lifting equipment and accessories shall be checked before use and kept clean, any damage to plant, tools or equipment shall be reported immediately to the Supervisor who shall then ensure that it is replaced or repaired as necessary. Tests of Certificates of Thorough Examination will be retained on site for all items of lifting equipment used on site i.e. Chains, slings, strops etc.

All Lifting equipment must have been tested within the last 12 months and lifting equipment for lifting persons, together with all lifting accessories, must have been tested within the last 6 months.

Any electrical equipment for use on site must be 110 Volt centre- tapped to Earth and must have been subjected to a Portable Appliance Test within the last 3 months.

17 Housekeeping

Due to the type of works undertaken, waste material will be produced however all debris will be removed from the works area to a storage place of safety until such time as this material can be removed by a licensed "Waste Carrier". At all times The contractor will take particular care to ensure that trip and slip hazards are reduced or removed and access / egress routes remain clear.

18 Safety of third parties.

The protection of third parties will be considered before the commencement of all tasks. Access and egress will be kept clear at all times. Should visitors be invited onto site by the Principal Contractor they will be required to wear all necessary Personal Protective Equipment.

19 Supervision.

Throughout the project the contractor shall ensure that a supervisor or competent person is available permanently to oversee the works being undertaken. Works will be supervised to ensure that risks identified by this method statement are controlled or are lowered so far as reasonably practicable and further controls are implemented as required.

20 Non-standard operations.

This method statement will be amended as necessary if the works fall outside the scope of this document or the sequence of work changes.

Appendix A
Architects Site Plan

PLANNING

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Do Not Scale, Use figure dimensions.
Check all dimensions on site before work proceeds, report discrepancies to Architect.
If In Doubt Ask!

NOTES:



Location Plan
Scale - 1:5000

Rev	Date	Description	Initials



Quantum House, 170 Charminster Road, Charminster, Bournemouth, BH8 9RL
Email: info@quantumhomes.co.uk | Web: www.quantumhomes.co.uk
Tel: 01202 531635 | Fax: 01202 531650

Project:

Former Imperial College
Private Ground, Udney Park
Road, Teddington

Drawing Title:

Proposed Site Plan

Discipline:

ARCHITECTURAL

Drawn by:

JC

Checked by:

SH

Scale:

1:500@A1

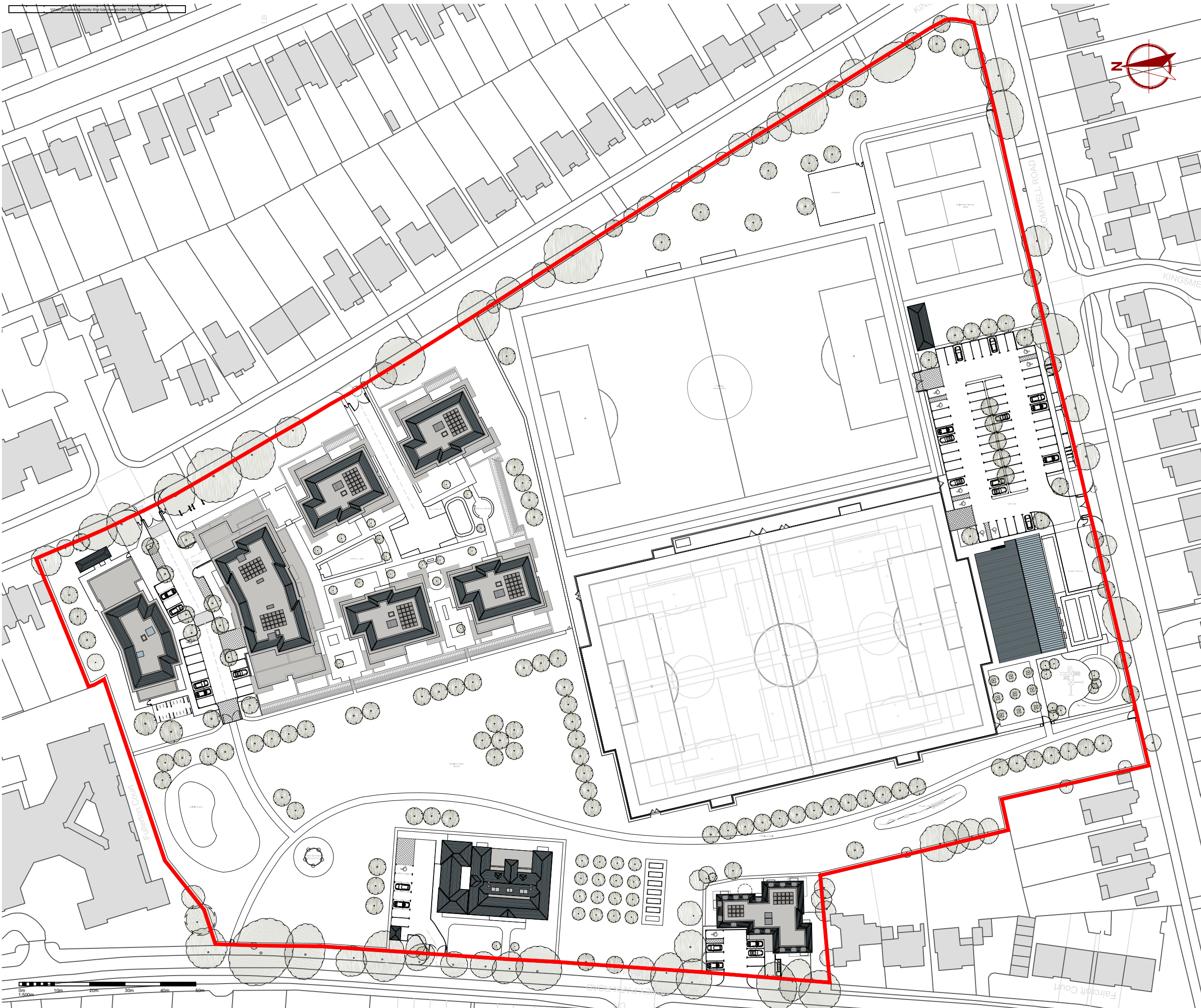
Date:

Aug 2017

Drawing Number:

900-P200

Revision:



Appendix B
Architects Basement Plan

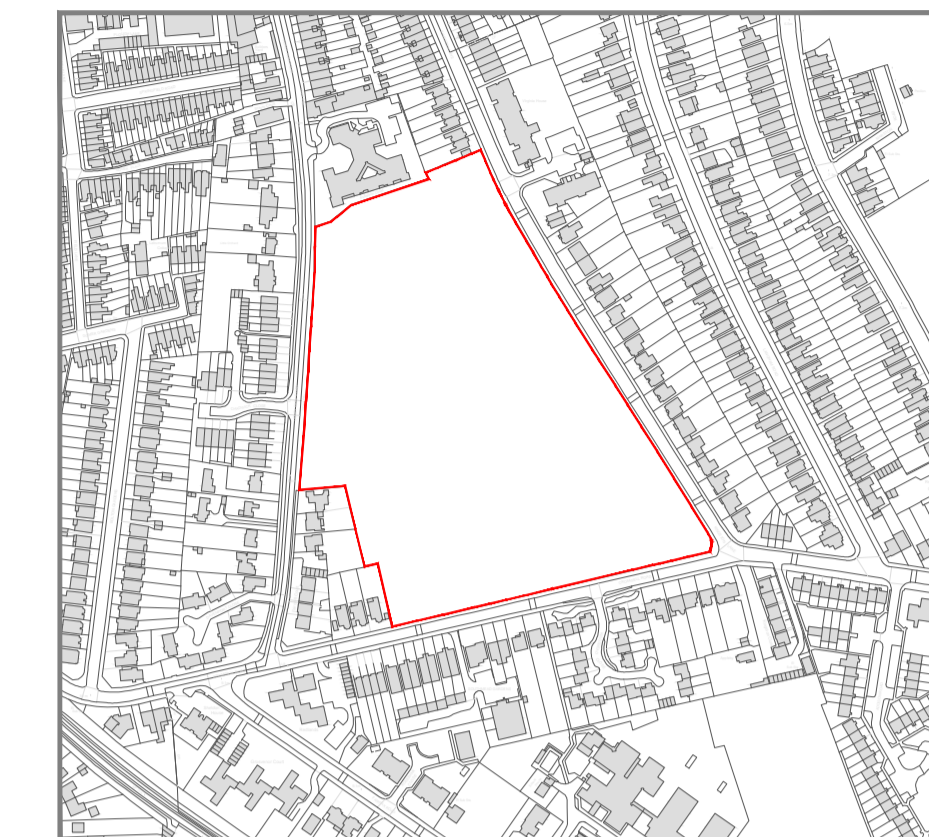
When Scaled correctly this bar measures 100mm.

PLANNING



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Location Plan - 1:5000



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Tel: 01202 531635 | Fax: 01202 531650

Project:

Former Imperial College
Private Ground , Udney Park
Road, Teddington

Drawing Title:

Plot A - Apartments
Proposed Basement Floor
Plan

Discipline:

ARCHITECTURAL

Drawn by:

PL

Checked by:

SH

Scale:

1:200@A1

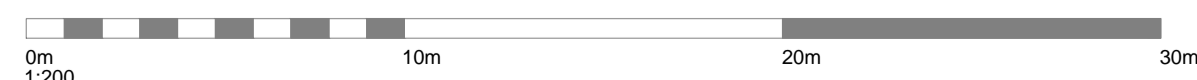
Date:

July 2017

Drawing Number:

900-SK05

Revision:



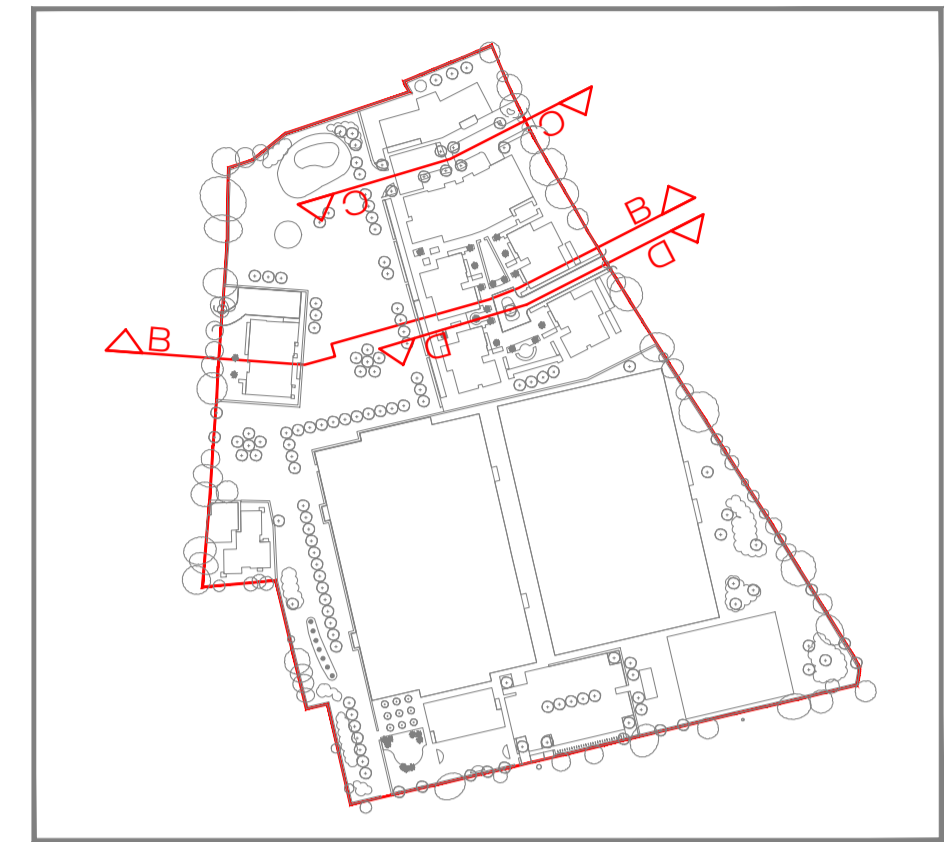
Appendix C

Architects Sections through buildings

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NOTES:



Site Plan - Section Line Positions

When Scaled correctly this bar measures 100mm.



Proposed North Elevation C:C
 (Section through vehicular entrance to surgery)



Proposed North Elevation / Section D:D
 (Section through main vehicular entrance)



Proposed Site Section B:B (continued)



Proposed Site Section B:B

Rev	Date	Description	Initials



Quantum House, 170 Charminster Road, Charminster, Bournemouth, BH8 9RL.
 Email: info@quantumhomes.co.uk | Web: www.quantumhomes.co.uk
 Tel: 01202 531635 | Fax: 01202 531650

Project:

Former Imperial College
 Private Ground, Udney Park
 Road, Teddington

Drawing Title:

Site Section B:B
 Proposed West Elevation,
 North Elevation C:C & D:D

Discipline:

ARCHITECTURAL

Drawn by:

PL

Checked by:

SH

Scale:

1:200@A1

Date:

July 2017

Drawing Number:

900-SK04

Revision:



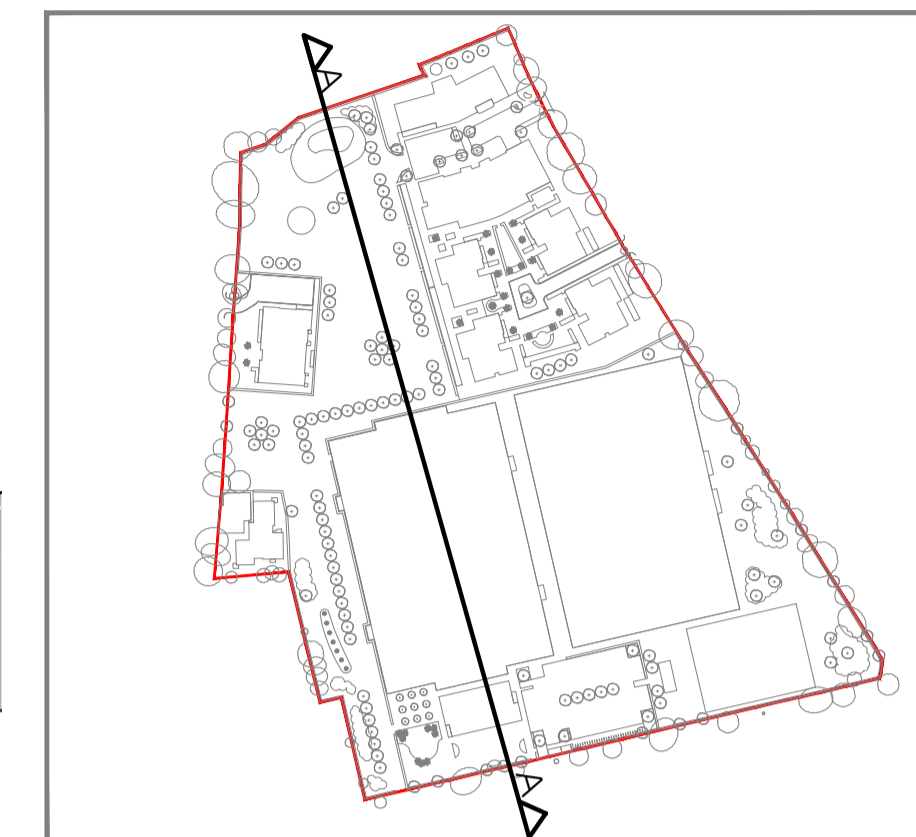
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NOTES:



Site Plan - Section Line Positions



Proposed West Elevation A:A (continued)



Proposed West Elevation A:A (continued)



Proposed West Elevation A:A



Rev	Date	Description	Initials



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 Tel: 01202 531635 | Fax: 01202 531650

Project:

Former Imperial College
 Private Ground, Udney Park
 Road, Teddington

Drawing Title:

Site Section A:A
 Proposed West Elevation

Discipline:

ARCHITECTURAL

Drawn by:

PL

Checked by:

SH

Scale:

1:200@A1

Date:

July 2017

Drawing Number:

900-SK03

Revision: