Draft Construction Management Plan

26 Rosecroft Avenue London

NW3 7QB

February 2016

For

Mr Vipul Panchal

Contents

1.0 Introduction

1.1 Description of development

The development proposals comprises the refurbishment of the existing raised ground floor and lower ground floor flat including a lateral extension of the lower ground floor, associated front and rear light wells, and the construction of small rear extension.

1.2 Purpose of the document

The purpose of this Construction Management Plan (CMP) is to ensure that the impact of demolition and construction work on the local residents and the immediate highway network is minimized. The CMP provides detail of all measures that are considered appropriate at this time; however, the CMP is a live document that will evolve as necessary to address issues that may be identified through on-going consultation with local residents as the project progresses.

The document has been produced on the instruction of the client, Mr Vipul Panchal. It has been prepared with inputs from structural and civil engineers; Hestia Developments (project architects); and the Client to ensure that the CMP can comprehensively address all issues that may arise during demolition and the construction of works.

1.2 Overall approach

The client's project brief stipulates that the environmental impact of the extension and refurbishment works should be minimized, both in the construction phase and when occupied. This philosophy has been a major factor in the selection of the materials and methodology for the construction of the extensions.

1.3 Responsibilities

The Contractor will be appointed following the grant of planning permission and prior to commencement of the permitted development.

The Contractor's Project Manager will be responsible for implementing measures contained in the CMP and will be the point of contact for local residents during the construction process. The Contractor's Project Managers name telephone number and email address will be added to the CMP upon appointment.

Prior to the appointment of the contractor, the implementation of any necessary pre-commencement measures will be managed by the Client's appointed Project Manager or directly the Client.

1.2 Insurance

The Client's Project Manager will ensure that the contractor holds public liability insurance cover in place prior to starting on site.

2.0 Project Background

2.1 Site Description

The application property is near to the western edge of Hampstead Heath and bounded by Platts Lane to the north, Hampstead Village to the south east and Finchley Road to the south and west. The local topography slopes down towards the northwest and west. The site generally slopes down to the southwest and there are a number of changes in ground level across the site to accommodate the change in slope.

The large plot is trapezoidal in shape ranging from 10 to 18m wide and typically 52m deep. It extends to some 750 sq.m/0.075 Ha. (0.18 acres). A two-storey detached brick house with roof accommodation and two single storey rear extensions occupy the site. A lower ground floor extending to a level of 47.56 m TBM is present beneath the north-western corner, measuring 10 m by 4 m in plan and extends to around 2.8 m below existing ground floor level, including basement floor slab. This was formerly a garage, prior to its conversion.

The house is divided into two self-contained flats; the lower ground floor and ground floor is owned by the client and the first floor and second floor forms 26A Rosecroft Avenue along with the driveway, northern passageway along the house and it has its own rear garden, located at a higher level.

2.2 Basement Impact Assessment

The proposals have been subject to Basement Impact Assessment (BIA) in accordance with Camden's adopted planning guidance for basements and light wells (DP27 and CPG4).

The BIA comprised three related documents.

- Ground Investigation Report ref J15226, GEA., December 2015
- Desk Study & Basement Impact Assessment Report, GEA Ref J15226 December 2015
- Ground Movement Assessment Report GEA. January 2016

Theses assessments provide the basis for the development of this draft CMP.

2.3 Structural Engineering

This CMP is founded upon the structural engineer's scheme (Quorum Associates) as described in the following drawings and attached at Appendix One.

- 15122 SO1
- 15122 SO2
- 15122 SO3
- 15122 SO4
- 15122 SO5
- 15122 SO6
- 15122 SO7

3.0 Proposed Site Works

3.1 BIA findings

The BIA concludes that groundwater is not anticipated to be encountered during the excavation of the basement and the most suitable method of support will probably therefore be to form the retaining walls by concrete underpinning of the existing foundations using a traditional 'hit and miss' approach. This is the method proposed.

The proposed technique will require the soils being underpinned to stand unsupported. Difficulties may be encountered with unsupported excavations, particularly if groundwater is encountered. The detailed construction methodology below therefore includes a contingency to manage such occurrences.

Trial excavations to the full-proposed basement depth will be carried out to determine the stability of the soil and the presence of groundwater. If trial excavations indicate traditional underpinning to be impractical, jet grouting will be considered or piled retaining walls will be required. Further details are provided below in relation to contingencies.

The BIA has indicates that the proposed development will not have an effect on the local hydrological and hydrogeological setting.

3.1 Construction Sequence

The proposed basement will be formed by means of traditional underpinning to a depth of 3.20 m below ground level, which includes the basement floor slab, with all new loadings assumed to be applied at the same depth.

In general, the sequence of works for basement construction will comprise the following stages.

1. Construct underpinned retaining walls. These are commonly formed in a 'hit and miss' sequence using a trench box excavation, commonly sheet lined, shored and strutted; all temporary shoring and propping to be inspected by a suitably qualified person; and

2. excavate new basement and temporarily retain and strengthen, with sufficient propping and walling beams, the new retaining walls. Construct new ground beams.

The underpins will be adequately laterally propped and sufficiently dowelled together, concrete cast and adequately cured prior to excavation of the basement and removal of the formwork and supports.

The structural engineer will agree a methodology with the underpinning contractor, once appointed, including the detail of the support provided to adjacent walls.

When the final excavation depths have been reached the permanent works will be formed, which are likely to comprise reinforced concrete walls with a drained cavity lining the inside of the underpinned walls. Reinforced concrete will be used for floor slabs and it is anticipated that heave protection will be installed beneath the basement slab. Following this, the floor will be constructed at basement depth and the temporary props will be removed.

3.2 Programme

The programme below provides an indication of the duration of each phase of the works. The programme will be updated with the dates envisaged for each phase of works once planning permission has been granted, a contractor has been appointed and the date for works to start on site has been determined.

It is currently anticipated that the overall construction period will be 44 weeks with a further period of 4 weeks for installation of furnishings, decant and occupation.

Work Phase	Duration	Typical labour levels (excluding management & supervision.)
Site set up and establishment	1 wks	
Demolition & Reclamation	1 wks	
Basement Excavation	12 wks	
Piles, Foundations & Basement Const'	10 wks	
Superstructure amendments	4 Wks	
Envelope	6 wks	
Internal finishes	3 wks	
Landscaping (overlapping with internals)	4 wks	
Commissioning final fit out	3 wks	
Overall works	44 wks	

3.3 Demolition

The existing building comprises predominantly brick, render and hanging plain tile, with plain tiled pitched roofs. The existing foundations are strip footing with a timber suspended ground floor. Landscaping is constructed in brick with render and brick paving.

Materials such as facing bricks will be reused wherever possible. Demolition materials will be separated on site with all recyclable material (timber, metals and glass) being taken for reprocessing, such that the volume of arisings to be sent to landfill with be minimized to that material such as plaster, which cannot be recycled. We currently estimate that these measures will significantly reduce the material taken to landfill. The reuse of the retained material will also save on deliveries of new materials and reduce volumes requiring removal from site.

The demolition process will be more akin to dismantling so that the maximum number of items can be reclaimed for use on site or on other projects if possible.

Any on site crushing will be carried out using a compact portable unit with integrated dust and noise suppression.

The minor demolition works will be carried out generally within the demise of the existing house and will not require any altered access or cause difficulties for the neighbours. These works will allow greater access to the under floor areas at ground floor level so that underpinning works can be carried out from within the property.

3.4 Excavation & foundations

The walls of the basement will be constructed with underpinned retaining walls formed in a ‘hit and miss’ sequence.

The underpin walls and basement edge thickening beneath the house will be constructed in traditional hit and miss lengths of not more than 1.2m with the top of the wall packed with sand / 10 mm pea shingle : cement 3 : 1, dry mix with non shrink additive, rammed hard into the 75 mm gap between the concrete underpin and the cleaned bottom of the spread brick footing. Adjacent lengths will be connected with high tensile steel dowel bars or reinforcement. Steel dowels will also be used to tie the concrete to the underside of the stepped down brick walls. It is anticipated that these walls will be cast against the face of the excavated soil or against a temporary " concrete plug following grouting.

The design parameters for pressure on the walls will be in accordance with those recommended values given in the Reinforced Concrete Designer's Handbook (by Charles E. Reynolds and James C. Steedman) for the relevant clay soil type. In addition it will be assumed that pressure from ground water could be present to a level of minus 0.75 metres below ground level as this could easily happen after backfilling with clay instead of sand to a depth of retained material. The walls will also be constructed to support a surcharge load of 2.5kN/m2 on the surface of the ground adjacent to the wall as well as the effects of pressure from any existing foundations (especially to the neighbours). Each wall section will be checked for overturning and sliding in the temporary case and the reinforcement adjusted as necessary to take the worst case loading.

The walls to the rear side boundaries will be of similar construction except that the upper parts in topsoil will require double shuttering. This procedure will maintain the stability of the ground and neighbouring properties at all times apart from minor disturbance of the soil at surface level.

The floor of the basement will be checked for uplift due to possible water pressure and designed to span between the walls. lt is likely that the slab will require reinforcing on each face and, depending on the ground conditions, it will probably be necessary to provide a layer of hardcore or MOT type 1 compacted stone and a layer of 50 mm blinding concrete before casting the basement slab on 1000 gauge polythene and 100 mm heavy duty insulation board.

The ground floor construction will be a combination of structural steel beams spanning between basement walls and timbered joists and infill "noise reduction" insulation and flooring. Please refer to the structural engineers drawings attached at Appendix One.

3.5 Contingency- ground water

Based on the groundwater observations to date, groundwater is not expected to be encountered within the 2.8 m deep excavation, given that monitored levels are approximately 4 m below the proposed excavation depth.

However, underpinning of the existing foundations using a traditional ‘hit and miss’ approach will require the soils being underpinned to stand unsupported. Difficulties may be encountered with unsupported excavations, particularly if groundwater is encountered.

The following methodology is proposed as a contingency in the event that trial excavations indicate soil instability and the presence of groundwater.

A set of six by 150 mm diameter wells will be drilled to approximately 6 metre depth and 100 mm diameter plastic pipe will be lowered into the dig with low capacity pump heads lowered into the bottom. Further drill holes around the site where the number, depth and sizing will be determined by a specialist grouting company, will be formed so that grout injections can be carried out into the sandy silty clayey material and a form of concrete prepared around the site to reduce the inflow of water at any one time.

Water arising from 6 wells will be pumped to a 1 metre by 1 metre by 1 metre deep soak-away formed in the middle of the back garden. i.e. at the top of the hill.

The soak-away will contain special plastic boxes from Drain Station specifically for this purpose. If any areas of underpin dig expose areas of virgin soil not stabilized with grout then we with include in the tender documents that the main Contractor shall use metal trench sheets or poling boards to stabilize the excavation prior to casting the concrete underpin.

3.6 Contingency- contiguous piling

In the unlikely event that it is found that the soil under the house is unstable and the grouting techniques have not been successful (although first indications are positive that grouting will be 100 % successful in this material) then, as a fall back, the Contractor may considers the use of contiguous piling to 6 metre depths to form a ring around the house.

This is a fall back situation only and is an insurance method and not a front line proposal.

3.7 Ground Movement Monitoring

The Ground Movement Assessment recommends that movement monitoring is carried out on all structures prior to and during the proposed basement construction.

The separate phases of work, including excavation of the proposed basement, will in practice be separated by a number of weeks during which time construction of permanent supports, basement slab and retaining wall curing will take place. This will provide an opportunity for the ground movements during and immediately after retaining wall construction to be measured and the data acquired can be fed back into the design and compared with the predicted values.

The ground model to be reviewed and the predicted wall movements reassessed prior to the main excavationtaking place, so that propping arrangements can be adjusted if required.

3.8 Ground floor

The lower-ground floor will be of new C24 suspended timber joists between primary steel beams, fitted once the basement construction is complete. Temporary support will only be removed once the basement sub-structure is complete and the new floor structure in place and works approved by the site's Structural Engineer.

3.9 Superstructure Frame & Envelope

The majority of the superstructure of the existing house will remain unaffected. Amendments will be made to three beams between ground / first floor level, to raise existing beams and provide extra support as necessary to remove existing downstands and create a levelled ceiling.

Modifications to structural timber at third floor level will involve the fitting and bracing of new timbers prior to any cuts being made in the existing joists.

As stated above, the use of reclaimed brick and tiles will help reduce the volume of material import. Mortar for the external brickwork will be supplied using an ultra quiet electric silo plant, so as to minimise waste, avoid open sand and cement storage, and reduce noise and dust nuisance. The block and render walling and new windows will be installed following completion of the main structure and be accessed together with the brick work, from a perimeter standing scaffold as required.

There will be scaffolding erected within the site boundary to give access to higher levels of the property to allow completion works to windows, doors and walls. This will include positively fixing the scaffolding to

the shell of the house by using drill fixings and non-ferrous expanded bolt combinations into the brickwork. With short scaffolding tubes and circular bolt connectors, these can be used as restraints to the scaffold and allow it to carry storage loads and access ways.

3.10 Internal finishes

The internal finishes for the building will use a high proportion of pre-fabricated and pre-finished materials, ranging from the main staircase amendments, to joinery (doors and panelling) and floor finishes. The finishes have been chosen to limit the volume of site works and the number of operatives required to complete the installation, as well as limiting the volumes of waste materials generated by the installation.

3.11 Landscaping

There will be minimal landscaping alterations to the front of the property, apart from the approved lightwell making up part of the basement construction. External walls of lightwells will be reinforced concrete retaining walls with French drainage systems behind at low level, faced with brickwork to match existing.

The sides of the property will remain hard standing, with new stone surfaces to match the surfaces at the front of the property.

Any alteration in level between the proposed levelling at 26 and neighbouring properties will be kept to a minimum, with any grounds supported appropriately with low level boarding, before new low level retaining concrete wall are set. These walls will be low level, remain on the property of 26 Rosecroft Avenue, and be concealed with soil and planting.

Due to the small size of the site, levelling work will be carried out by hand with soil arisings being transported by wheelbarrow via the side of the house to a skip located at the front of the property. Materials will be kept separated and removed from site as described in the demolitions chapter of this document. It is intended that no soil arisings are sent to landfill and will be reused on other sites by the contractor.

Landscaping will take place during the later stages of the project coinciding with internal works. Planting will be programmed according to growing season so as to aid establishment on site. The precise nature of this will depend on the types of plants chosen, which will occur later in the project stages. Any planting taking place after main works have finished will have no impact to neighbouring properties or residents.

4.0 Construction Access

The following sections outline the key elements for further consideration and demonstrate our commitment to manage and mitigate concerns identified in the risk analysis (see 6.0 Risk Analysis).

Some of the specific features outlined below are generic issues to be considered and mitigated on all developments, however others are more specific to this development and addressed accordingly. Many of the issues will be dealt with in our more detailed site based Method Statements developed in collaboration with the Main Contractor's Project Manager upon appointment.

4.1 Access

Direct access to the site will be through secure, gated hoarding from Rosecroft Avenue. All staff and visitors will be required to sign in at entry. There will be no other access point to the site.

4.2 Access Routes — Rosecroft Avenue

All demolition, construction and delivery vehicles will approach the site from Platt's Lane via Finchley Road. It is intended to have in place a 'one way' loop system to minimise turning in Rosecroft Avenue and avoid passing St Margaret's Primary School at all times. No deliveries will take place before loam, between 3 and 4pm, and after 5pm to avoid School pick up/drop off times and morning/evening resident movement.

26 Rosecroft Avenue site location, accessed via Platt's Lane and Hollycroft Road loop to avoid St Margaret's Primary School highlighted blue.

4.3 Vehicle sizes

The following list provides detail of the type of vehicles that will need to gain access to the site during the demolition and construction process.

Vehicle	Wheelbase	Weight
Skip Lorry	4 Wheel	17 Tonne, G.V.W
Plant delivery	4 Wheel	17 Tonne, G.V.
Concrete Delivery Vehicle	6 Wheel	24 Tonne, G.V.W
Building Panel Deliveries	4 Wheel	17 Tonne, G.V.W
Ballast and Loose Materials	4 Wheel,	17 Tonne, G.V.W
Tipper General Building Materials HIAB Flat Bed Tipper	4 Wheel,	17 Tonne, G.V.W,
Wheeled 360 Excavator		23 Tonne GVW

Demolition and ground works will require these HGVs to be driven onto site. The site hoarding will be adapted to allow for vehicle movements into site. All vehicle movements will be under the direction of a traffic marshal at all times, ensuring other road users and pedestrians are segregated from site vehicle movement.

Following demolition of the front boundary wall and driveway landscaping, there is space on site to enable all construction vehicles to reverse into the site in and then leave the site in forward gear.

Manoeuvres may require the suspension of the one on-street parking bay on the public highway directly in front of the property.

A Traffic Management system will be in place with only one 1 HGV on the site at any time and HGV Vehicles will be accompanied by a Banksman to the site from Platt's Lane. It should be noted that the site can also accommodate parking of light goods vehicles that with be needed by workers to transport tools and materials to and from the development. It is anticipated that a limited number of LGVs will park on Rosecroft Avenue during working hours only i.e. not overnight. The LGVs movements are included in the maximum movements per day.

4.4 Vehicle movements

Construction vehicle movements will not be permitted at weekends or during public holidays and will be scheduled to take place between the hours of 10:00 and 15:00 and 16:00 to 17:00 so as to avoid typical peak period vehicle movements along Rosecroft Avenue and School pick up/drop off periods. Heavy goods vehicle movements will also be scheduled so as to avoid more than one movement every 30 minutes. Table 2 on the next page provides a breakdown of the number of vehicle movements during each phase of the construction process.

Table 2 — Vehicle Movements

Work Phase	Duration	Total HGV movements	Average daily movements	Peak daily movements
Site set up & establishment	1 wks	6	1.2	Max 4 per day
Demolition & Reclamation	4 wks	55	2.75	Max 4 per day
Foundations	4 wks	78	3.9	Max 4 per day
Piles & Ground floor	4 wks	84	4.2	Max 4 per day
Superstructure	8 wks	82	2	Max 4 per day
Envelope	8 wks	40		Max 2 per day
Internal finishes & commissioning	26 wks	55	0.5	Max 2 per day
Landscape (phase 2) (overlaps with finishes)	3 wks	15	1	Max 2 per day
Total	51 wks	474	2.1	

A delivery will comprise of two movements, arrival and departure. The movement table will be updated to provide more specific detail of anticipated delivery times once planning conditions have been discharged and the date for works to start on site can be determined.

4.5 Interface with adjoining sites

The table above indicates typical daily vehicle movements and the maximum number that is predicted would occur. The range between average and maximum number of daily vehicle movements with provide an element of flexibility during each of the building phases.

In the event that construction works are taking place elsewhere on Rosecroft Avenue there is flexibility within each of the building phases to enable vehicle movements to be scheduled so as to limit the cumulative impact of construction vehicles associated with 26 Rosecroft Avenue and other development sites.

5.0 Considerate Contractor Scheme

5.1 The scheme

The Contractor will register and comply with the requirements of the Considerate Contractors Scheme for the duration of the project. A contact board will be displayed outside the site providing details of those to contact. This will include names and telephone numbers of key construction staff that neighbours and the general public can contact should they have cause to do so.

A book will be kept on site, which will be used to record details of any complaints. This will include the name of the person making the complaint. The complaints book will be regularly reviewed to ensure that any complaints are dealt with and resolved promptly (sample below).

TBC	**Project Complaints Register**

Contract No & Project: **26 Rosecroft Ave, London, NW3 7QB**						
Date Received	Name & Details of Caller	Complaint/ Comment] Compliment	TBC.	Action Taken	Date Actioned	Status Open/Closed

5.2 Consultation

It is proposed that a Construction Working Group will be formed by the client's on-site agent and the Construction Project Manager to ensure that residents are aware of how the construction works are progressing and provide them with the opportunity to raise any issues that may arise as they occur.

A direct dial number of the client's on site agent will also be provided so that any issues can be reported. Representatives of the local Residents Association will be invited to join the Construction Working Group as well as any other parties affected by the works and Council Officers. This will include residents of neighbouring properties, and properties that border the construction vehicle route on Rosecroft Avenue and Hollycroft Avenue.

The Site Project Manager will keep in regular contact with local residents, affected parties and the Council by sending a fortnightly update by email, and post if necessary. It is also proposed that fortnightly meetings will be held with local residents if all parties agree that they are required.

6.0 Hours of Work

6.1 Construction

The hours of construction, will be restricted as follows:

- Between 8am and 6pm, Mondays to Fridays inclusive
- Between 8am and 1pm, Saturdays (or as modified, STCA)
- No work on Sundays and public holidays

6.2 Deliveries

All deliveries, either from Builders Merchants, Rubbish/Soil Removal,Concrete, Steel etc. need to be restricted as follows:

- Between 9am and 4:30pm, Mondays to Fridays
- Only small deliveries on a Saturday between 9am and 1pm, no lorries

6.3 Noise and Vibration

Schedule for rock breaking, rock hammering, sheet piling, pile driving and similar activity only between the following hours unless approved otherwise:

- 9am to 12pm, Monday to Friday
- 1pm to 5pm, Monday to Friday
- 9am to 1pm, Saturdays

7.0 Environmental Issues

7.1 Contamination

The desk study has revealed that the site and surrounding area have not had a potentially contaminative history. However, the results of the contamination testing have revealed elevated concentrations of lead in the made ground. All other contaminants were found to be below their respective generic guideline value and of generally low concentrations.

Where contaminant concentrations are measured at concentrations below the generic screening value it is considered that they pose an acceptable level of risk and thus further consideration of these contaminant concentrations is not required.

However where concentrations are measured in excess of these generic screening values there is considered to be a potential that they could pose an unacceptable risk and thus further action will be required

Lead was elevated above the threshold level of 200 mg/kg at 900 mg/kg. The exact source of the contamination is unknown, however the made ground was noted as containing variable amounts of extraneous material and the metal compounds within the made ground are considered likely to be of low solubility and a risk to groundwater has not been identified.

The proposals do not include the alteration of the private garden area and therefore new pathways will not be created and remedial measures are not deemed necessary.

Site workers will be made aware of the metal contamination within the soils and a programme of working identified to protect workers handling any soil. The method of site working will be in accordance with guidelines set out by HSE[12] and CIRIA[13] and the requirements of the Local Authority Environmental Health Officer.

Further investigation will carried out and the risk assessment reviewed If, during ground works, any visual or olfactory evidence of contamination is identified.

7.2 Nuisance Control

A range of measures will be implemented to ensure that the potential impact of the works on local residents and neighbours will be minimised. These measures are discussed in turn below.

7.3 Dust Control

Water dampening measures will be used during any demolition process, which will significantly control dust generation. Dust screens will also be incorporated during this element of the project. The dust screen will be formed using a fully sheeted scaffold around the full perimeter and height of the rear parts of the existing building scheduled for demolition. This will form a cocoon within which to carry out the dismantling work to those areas. This scaffold will be dismantled once the deconstruction works is completed to allow for access to the new basement foundations.

Fully enclosed hoarding will be erected to the front elevation of the property at ground floor level to control dust, noise and protect the front excavation from rain.

Dust generation during the next phase of the work for the new extensions and substructure will be limited on a job by job basis controlled by the contractor using such means as water dampening and dust extraction units for electrical equipment. In addition the excavated spoil material is being retained on site so that there will be no dust generated by the movements of this material off site. It should be also be

noted that concrete is delivered wet, and that the superstructure is delivered as fabricated or modular elements pre-cut to size so that the potential for dust generation has been limited by the selection of materials and methods.

The internal nature of work to the basement, rear extensions and attic conversion allows a greater degree of dust control and prevention of dust escaping to the neighbouring environment. The construction of the new garage will mostly be wet work, with mortar premixed in the on site silo to avoid dust production. Walls are designed to brick and block dimensions to omit cutting requirements and thus reduce dust production. Dust produced from the cutting of timber will be collected by vacuum as cutting takes place.

7.4 Wheel Wash (If required)

Site vehicles will have wheels washed down prior to leaving the site so as to reduce unwanted debris spreading onto Rosecroft Avenue. A temporary concrete slab will be installed at the entrance to the site to form an impervious area that can be used as a wheel wash area. Waste water from the wheel wash, and also from general site operations such as damping down and concrete delivery washout, will be stored in temporary 'silt buster' holding and separation tank on site the level of which will be monitored by the Principle Contractor. When full, the tank will be emptied by a registered waste disposal contractor using a vacuum tanker and transported to a local depot for processing prior to disposal. A consignment note to allow full traceability of all material will control this operation removed from site.

7.5 Noise Control

Trees, hedges and watts that surround 26 Rosecroft Avenue will assist in acting as a noise barrier. Deliveries to the site will take place as described in section 4.4 and scheduled to distribute vehicle movements throughout these hours so as to avoid periods of intensive activity therefore limiting noise and vehicle emissions. The noise levels associated with particular materials has, and will continue to be taken in consideration as part of the design specification process and inline with the Noise Regulations 2006.

In the event that a complaint or concern is raised, an immediate review will be completed to remove the problem wherever possible and to establish what levels of noise and vibration have been emitted from the site. The interested parties will also be notified.

7.6 Site Security

All construction materials will be stored within the site. It is proposed that solid boarded 2.4 m hoardings will be erected along the site boundary with Rosecroft Avenue. Access gates will be formed in the fence to main entrances to the site on to Rosecroft Avenue. The site will be locked outside of working hours to ensure that alt materials and equipment are stored securely.

All hoardings will be regularly inspected to ensure that they remain secure. All windows and external doors will remain closed when the site is not operational and be securely boarded in between removal of old windows and fitting of new windows. An alarm system will be installed on the external scaffold. Protective boarded screens will be erected on the external scaffold at the end junction of each boarded lift that is adjacent to the neighbouring property.

All site personnel will have to sign in on arrival and sign out before leaving the site.

7.7 Tree protection

Trees at the front of property are to be protected with appropriate tree protection measures. Where necessary, this will comprise timber framing constructed around the base of the tree, wrapped in high

visibility tough plastic mesh 2.4m high Heras type fencing to protect the will be used where appropriate on larger trees.

Tree to be protected

Trees to the rear of the property to be retained are in locations away from the building construction and will remain unaffected. The lack of heavy equipment in these areas with the majority of labour being undertaken by hand significantly reduces to an absolute minimum any potential damage to any other trees.

7.8 Consultation with Local Residents

See Considerate Contractor Scheme chapter above.

7.9 Travel Plan

There will typically be a total of up to 6 construction workers on site, although this may increase to 14 during the later stages of the project when the internal finishes and landscaping phases are being undertaken. Workers will generally travel to site using public transport, however it is estimated that there will be in the order of 2 or 3 light vans needing to access 26 Rosecroft Avenue per day during these phases to enable workers to transport tools and materials to and from the site. These vehicles would park on site where possible, and on Rosecroft Avenue if necessary. It should be noted that this is a small development site with limited amount of site personnel therefore LGVs will be limited.

7.10 Groundwater & Surface water run-off

No water from site will be allowed to drain to any off site locations in order to militate against any adverse effects on neighbouring properties from water run off. Surface water flow from potential sources of contamination such a concrete delivery washout points, mortar silos and plaster mixing baths will be separately contained and will not be discharged into the land drainage system.

7.11 Pedestrian safety

There are strict speed limits in place already, which are monitored by local residents, and Heavy vehicles will be escorted both ways by a banksman to ensure a steady speed and safety.

7.12 Site Safety

A Site Fire Safety Co-ordinator will be appointed to assess the degree of fire risk and formulate a Site Fire Safety Plan, which with be updated as necessary as the works progress and will also include the following:

Hot Work Permit regime.

- Installation of the site fire fighting equipment e.g. establishing fire points and installing and maintaining fire extinguishers etc.
- Evacuation alarms.
- Material storage and waste control
- Fire Brigade access.

As a domestic householder project this project will be notifiable to the HSE if work is going to last more than 30 days and have more than 20 operatives on site at any one time or will exceed 500 person days under the CDM regulations 2015. The Contractor will prepare a Construction Phase Health and Safety Plan

for the works, including Risk Assessments that will be developed and agreed. Subcontractors detailed method statements will also be produced and safe methods of work established for the works overall. Site inductions will be held for all new site personnel and frequent visitors to establish the site rules and to enforce safety procedures; and all site personnel will be required to read the emergency procedures when signing in for the first time, and sign to the effect that they have read the procedures.

These will include any relevant neighbourhood issues. Also included will be a Health & Safety Injury Register (see sample below).

Health & Safety

Injury Register

Contract No & Project:- 26 Rosecroft Avenue, London, NW3 7QB

Name	Address	Time/Date of Injury	Occupation	Nature of Injury	Cause of Injury	Status OpenjClosed

7.13 Cycle storage

There is sufficient space on site to keep bicycles securely for workers and visitors that intend to travel to site by bike during construction. Post construction bicycle storage will be inside the secure new garage.

7.14 Site Waste Management plan

SWMP's aim to address three key issues:

1. Improving materials resource efficiency, by promoting the economic use of construction materials and methods so that waste is minimised and any waste that is produced can be re-used, recycled or recovered in other ways before disposal options are explored; and

2. Reducing fly-tipping, by restricting the opportunities available for illegal disposal of waste by ensuring compliance with existing legal controls and providing a full audit trail of any waste that is removed from the construction site.

3. Increase environmental awareness of your workforce and management, your environmental management performance is likely to improve the more your workers are aware of their responsibilities. Including Site Waste Management Plan information in induction training or as part of environmental awareness training can help with this aim

Although it is a legal requirement to write and implement a SWMP, the greatest cost savings are likely to be achieved as a result of the consideration of materials resource efficiency which will be a necessary part of the preparation, before the SWMP is completed.

8.0 Risk Analysis

We have identified the following hazards associated with the enabling and shell and core works:-

- Demolition works
- Soil Conditions
- Traffic management and off loading deliveries
- Scaffolding and temporary works
- Plant installation
- Working at height Truss / window installation
- Construction plant, access and movement on-site
- Noise, dust and vibration control

During the planning of the works these hazards will be assessed and preventative measures will be put in place to minimize the overall risks to as low as is reasonably practicable.

9.0 Contact Details

Role	Contact
Client	Vipul Panchal 26 Rosecroft Avenue, NW3 7QB
Architect	Hestia Developments 38 Netherhall Gardens, NW35TP
M&E Engineer	GEA Widbury Barn, Widbury Hill, Ware, SG12 7QE
Landscape Consultant	John Cromar John Cromars Arboricultural Co.Ltd 01582 808020
Quantity Surveyor	To be appointed
Contractor and Project Manager	To be appointed
Structural Engineer	Robert Teesdale Quorum Associates Ltd 07802 301074 017802 301074

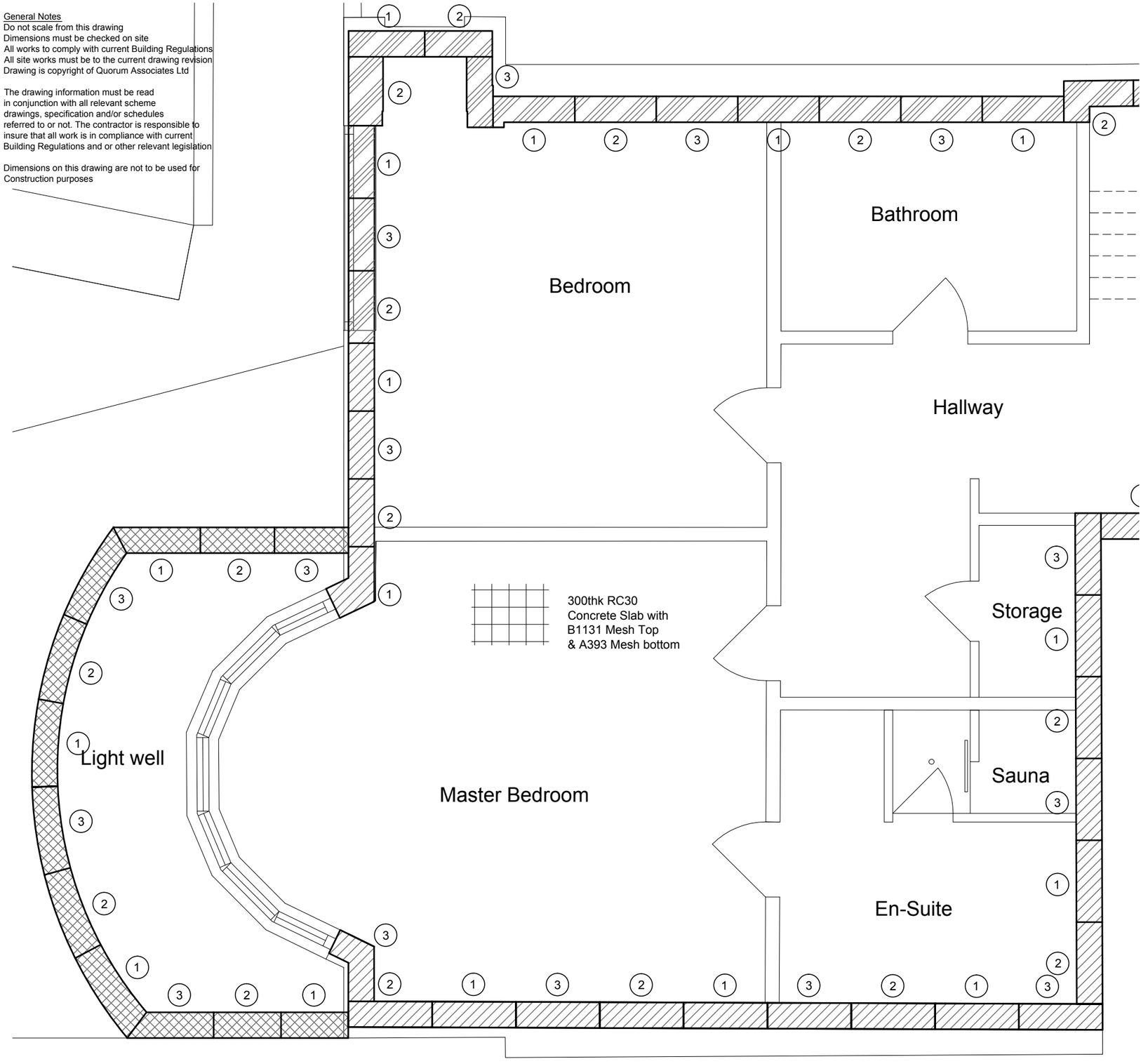
Appendix One

Structural Engineers Plans

General Notes
Do not scale from this drawing
Dimensions must be checked on site
All works to comply with current Building Regulations
All site works must be to the current drawing revision

The drawing information must be read in conjunction with all relevant scheme drawings, specification and/or schedules referred to or not. The contractor is responsible to insure that all work is in compliance with current Building Regulations and or other relevant legislation

Dimensions on this drawing are not to be used for Construction purposes



0 1m 2m 3m 4m

Scale 1:50 @ A3

UNDERPINNING

1. **The Contractor shall be responsible for ensuring that his operations do not in any way impair the safety or condition of the existing structure or the adjacent properties. He shall provide any temporary supports required for this purpose, and shall carefully inspect the condition of the structure both before and during the execution of the work and immediately inform the Engineer if he considers that any more stringent procedure than that specified is necessary.**

2. **Underpinning is to be carried out in short sections not exceeding 1200mm in length.**

   A minimum of two bays to be left between current excavations

3. **The underside of the footings are to be cleaned and hacked free of any dirt, soil or loose material before underpinning.**

4. **The body of the underpinning is to be constructed in concrete nominal 1:2:4 mix using sulphate resistant cement and 20mm max. aggregate, and is to be cast to the widths and depths shown on the drawings. As far as practicable, excavation and concreting of any section of underpinning shall be carried out on the same day. Unconcreted sections shall be kept covered and propped to prevent the ingress of water.**

5. **The mass concrete is to be stopped off approximately 75mm below the underside of the existing footing, and the final pinning up over the whole extent of the latter is to be carried out with a semi-dry fine concrete, well rammed in as soon as possible after the foundation has set hard. The pinning-up concrete is to consist of 1 part by volume of sulphate resistant cement to 3 parts of aggregate (well graded from 10mm maximum size down to fine sand) with a water/cement ratio by weight of 0.35. Expanding grout additive (to Manufacturer's instructions) to be used.**

6. **Excavation to any section of underpinning shall not be commenced until at least 36 hours after completion of any adjacent section of the work.**

7. **The joint between adjacent sections of underpinning is to be formed by creating a rough surface against which the first section is cast, or provide 4 No. T20 dowel bars between pins 800 long. Then, having thoroughly cleaned the exposed concrete face, the adjacent sections may be cast.**

8. **The Contractor shall provide for the maintenance of drainage services during the underpinning operation and for the reinstatement of any services interrupted or disturbed by the excavations.**

9. **The Contractor shall prepare a Sequence of work and submit it to the Engineer for his comments prior to the commencement of work.**

(1) (2) (3) DENOTES SEQUENCE OF UNDERPINNING WORKS

KEY:

New Underpinning work refer to Detail 1 on drawing S0

New Underpinning work refer to Detail 2 on drawing S0

New RC Retaining wall refer to Detail 3 on drawing S0

26 ROSECROFT AVENUE
LONDON
NW3 7QB

Drawing
BASEMENT AND FOUNDATION PLAN
1 of 2

Scale	Date	Drawn by
1:50 @ A3	NOV 2015	JM
		Chkd by

Drawing No.
15122/S01

Quorum Associates
104 Worple Rd, Isleworth, Middlesex TW7 7HU
Tel. 0208 891 4299
89, Eastgate, Cowbridge, Vale of Glamorgan CF717AA
Tel. 01446 774493
Fax. 01446 774871

General Notes
Do not scale from this drawing
Dimensions must be checked on site
All works to comply with current Building Regulations
All site works must be to the current drawing revision

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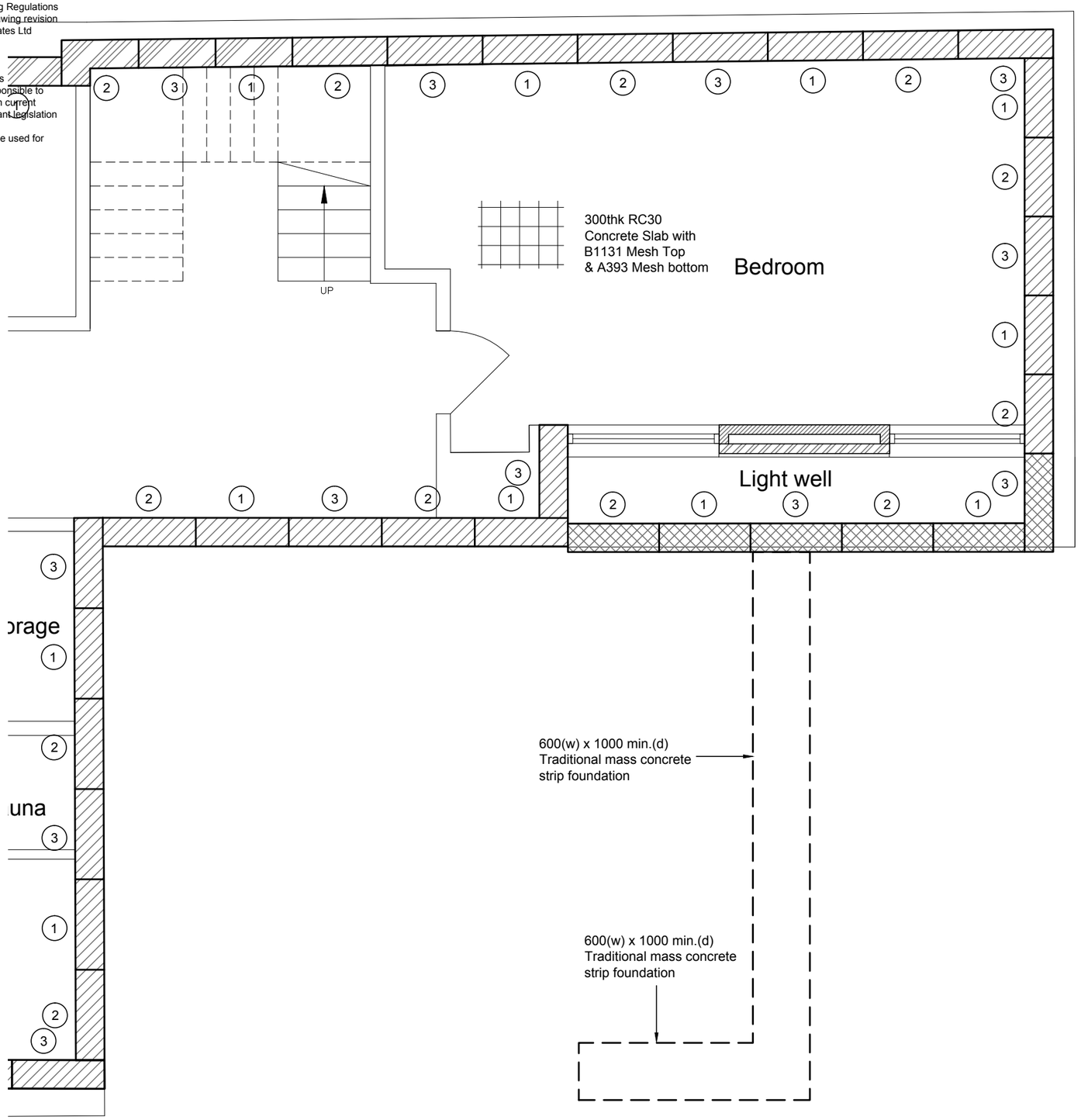

0 1m 2m 3m 4m

Scale 1:50 @ A3

UNDERPINNING

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5. **The mass concrete is to be stopped off approximately 75mm below the underside of the existing footing, and the final pinning up over the whole extent of the latter is to be carried out with a semi-dry fine concrete, well rammed in as soon as possible after the foundation has set hard. The pinning-up concrete is to consist of 1 part by volume of sulphate resistant cement to 3 parts of aggregate (well graded from 10mm maximum size down to fine sand) with a water/cement ratio by weight of 0.35. Expanding grout additive (to Manufacturer's instructions) to be used.**

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KEY:

- New Underpinning work refer to Detail 1 on drawing S0
- New Underpinning work refer to Detail 2 on drawing S0
- New RC Retaining wall refer to Detail 3 on drawing S0

26 ROSECROFT AVENUE
LONDON
NW3 7QB

Drawing
BASEMENT AND FOUNDATION PLAN
2 of 2

Scale	Date	Drawn by
1:50 @ A3	NOV 2015	JM
		Chkd by

Drawing No.
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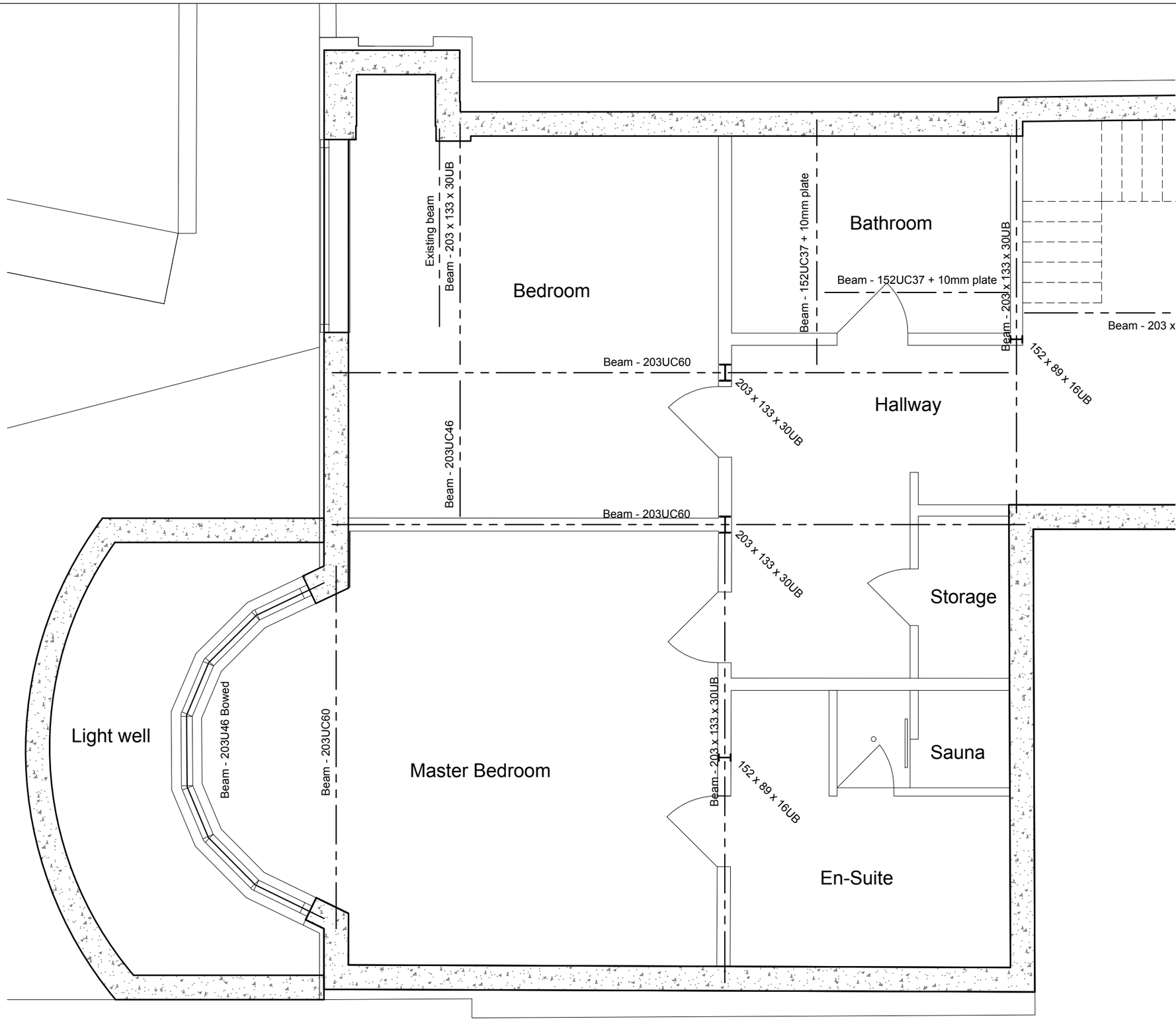

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Scale 1:50 @ A3

General Notes
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Dimensions on this drawing are not to be used for Construction purposes

26 ROSECROFT AVENUE
LONDON
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Drawing
GROUND FLOOR STRUCTURE
ON BASEMENT PLAN
1 of 2

Scale	Date	Drawn by
1:50 @ A3	NOV 2015	JM
		Chkd by

Drawing No.
15122/S03

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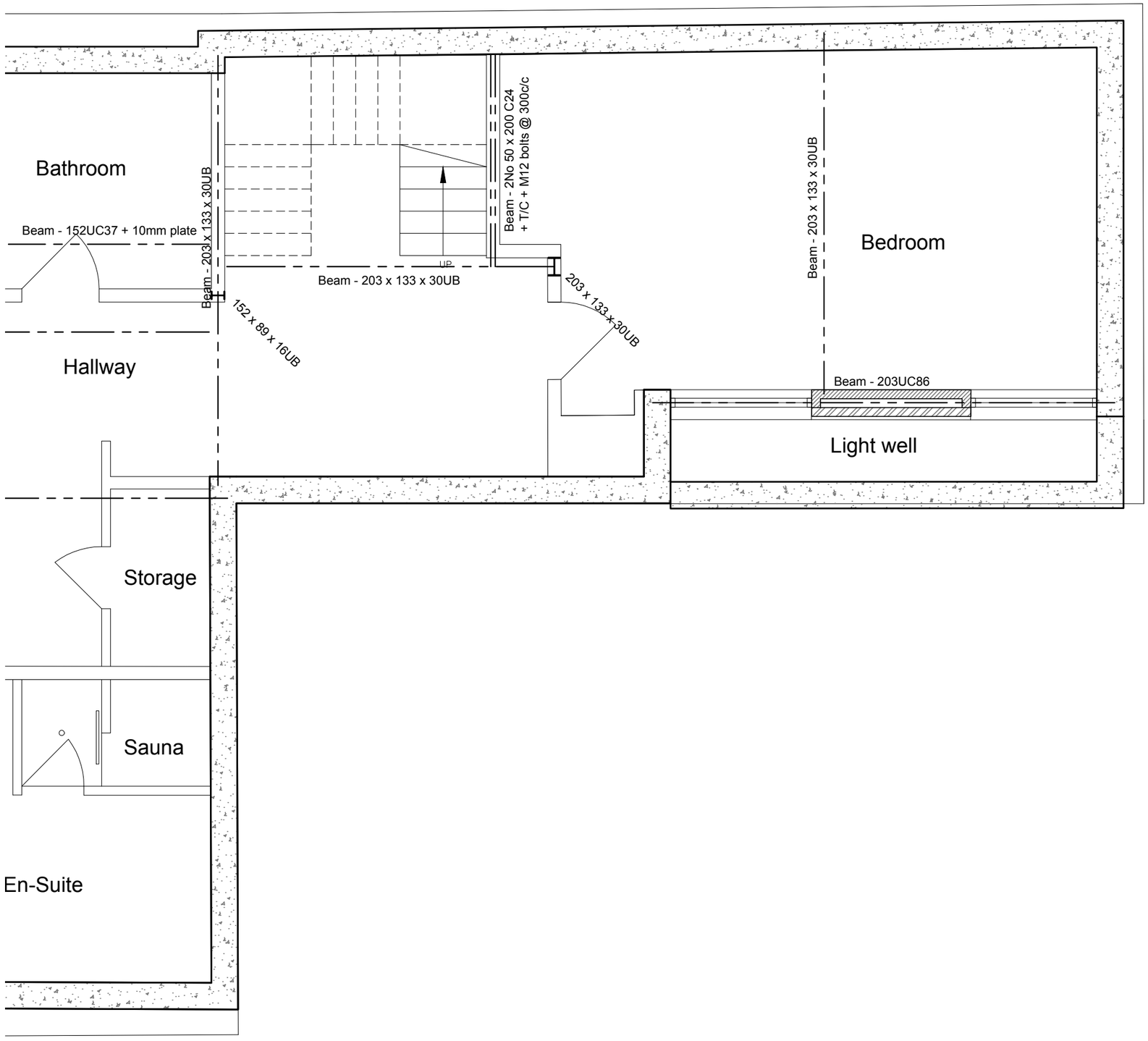

0 1m 2m 3m 4m

Scale 1:50 @ A3

General Notes
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All site works must be to the current drawing revision
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Dimensions on this drawing are not to be used for Construction purposes

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LONDON
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Drawing
GROUND FLOOR STRUCTURE
ON BASEMENT PLAN
2 of 2

Scale	Date	Drawn by
1:50 @ A3	NOV 2015	JM
		Chkd by

Drawing No.
15122/S04

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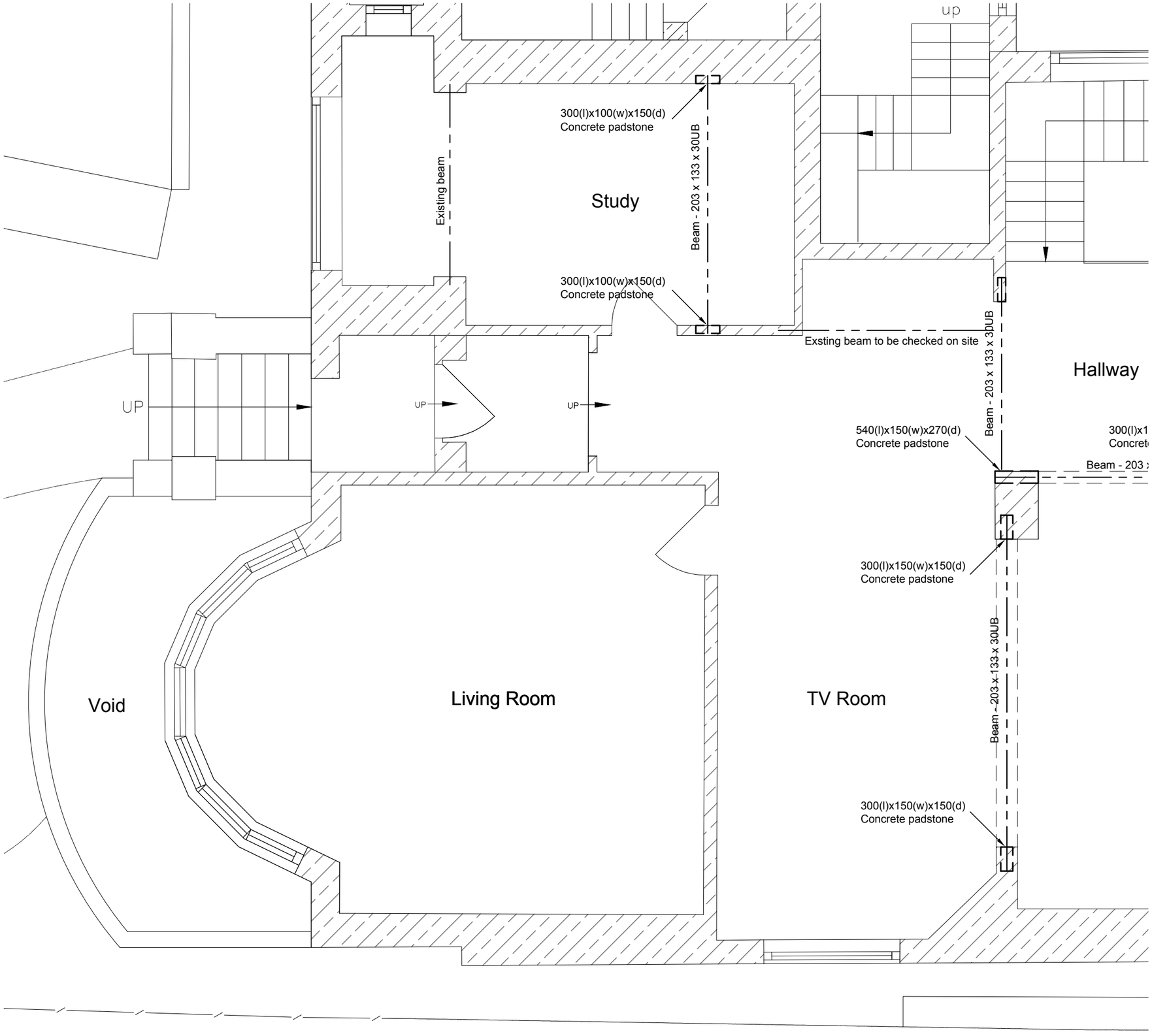

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26 ROSECROFT AVENUE
LONDON
NW3 7QB

Drawing
FIRST FLOOR STRUCTURE
ON GROUND FLOOR PLAN
1 of 2

Scale	Date	Drawn by
1:50 @ A3	NOV 2015	JM
		Chkd by

Drawing No.
15122/S05

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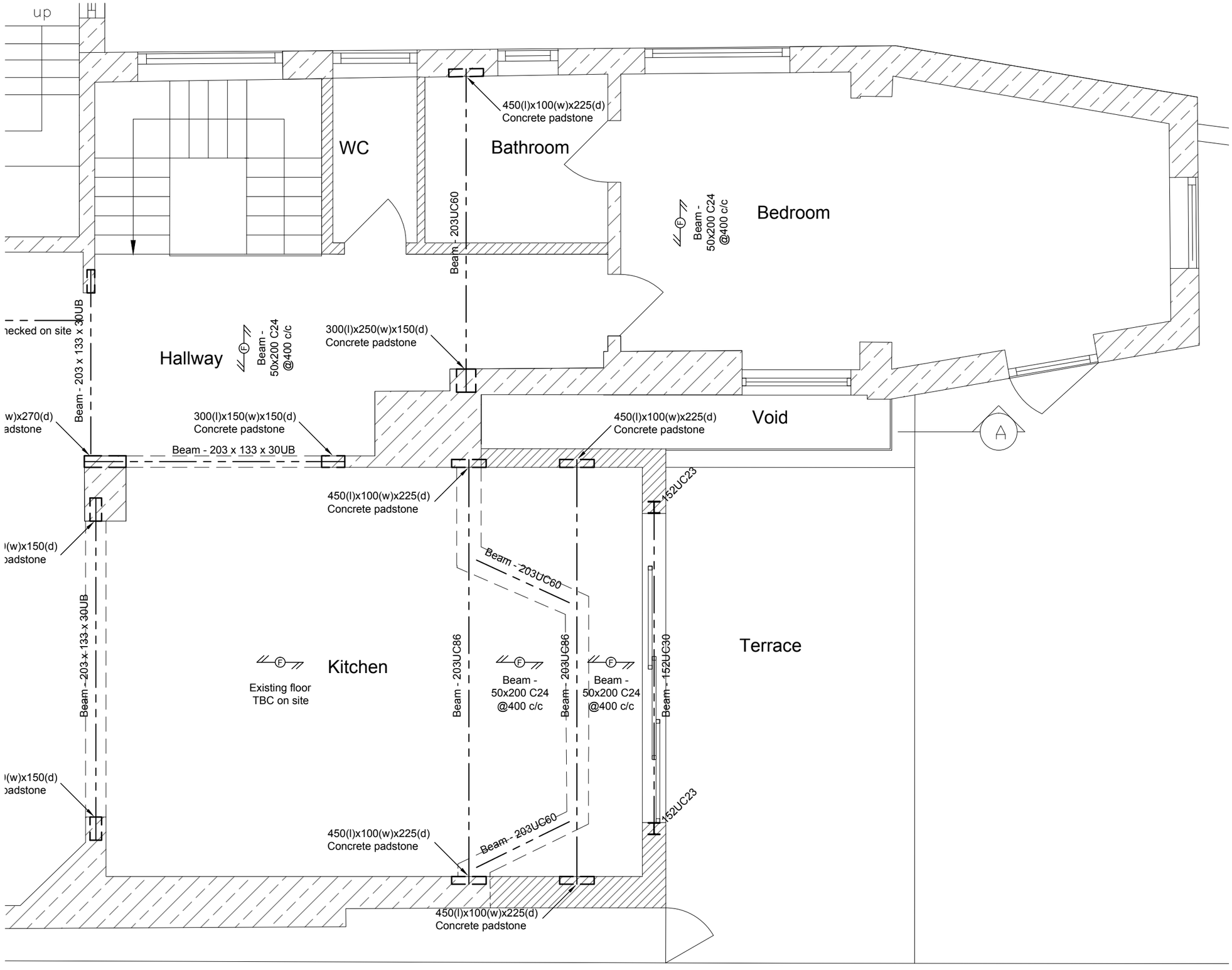

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NW3 7QB

Drawing
FIRST FLOOR STRUCTURE
ON GROUND FLOOR PLAN
2 of 2

Scale	Date	Drawn by
1:50 @ A3	NOV 2015	JM
		Chkd by

Drawing No.
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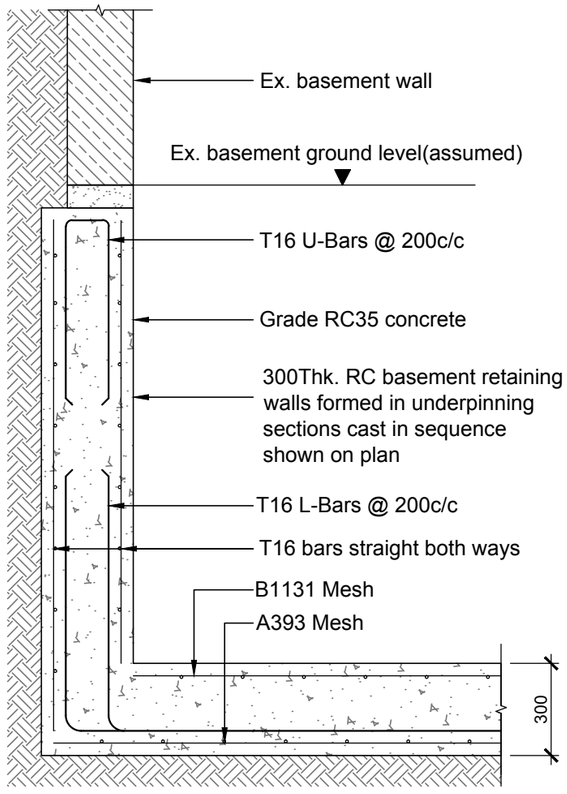
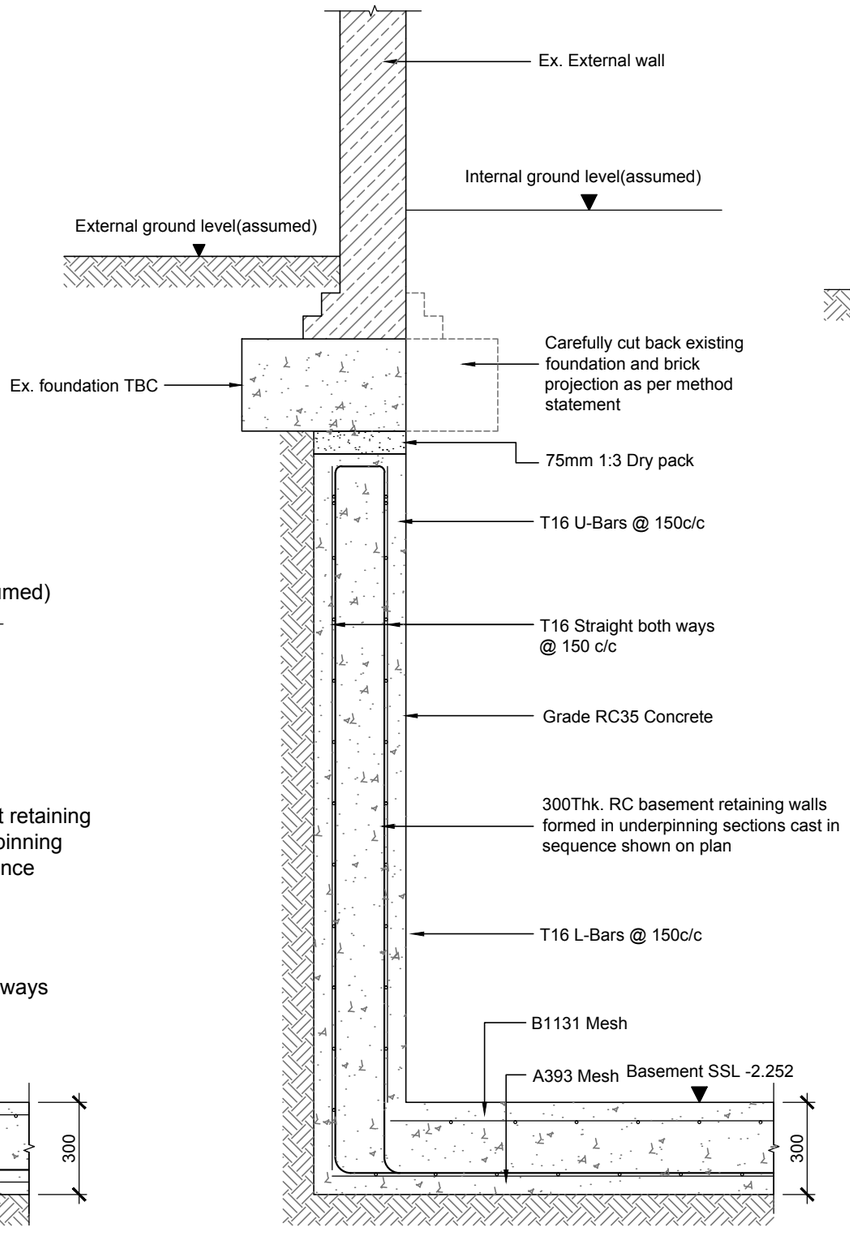


DETAIL 1



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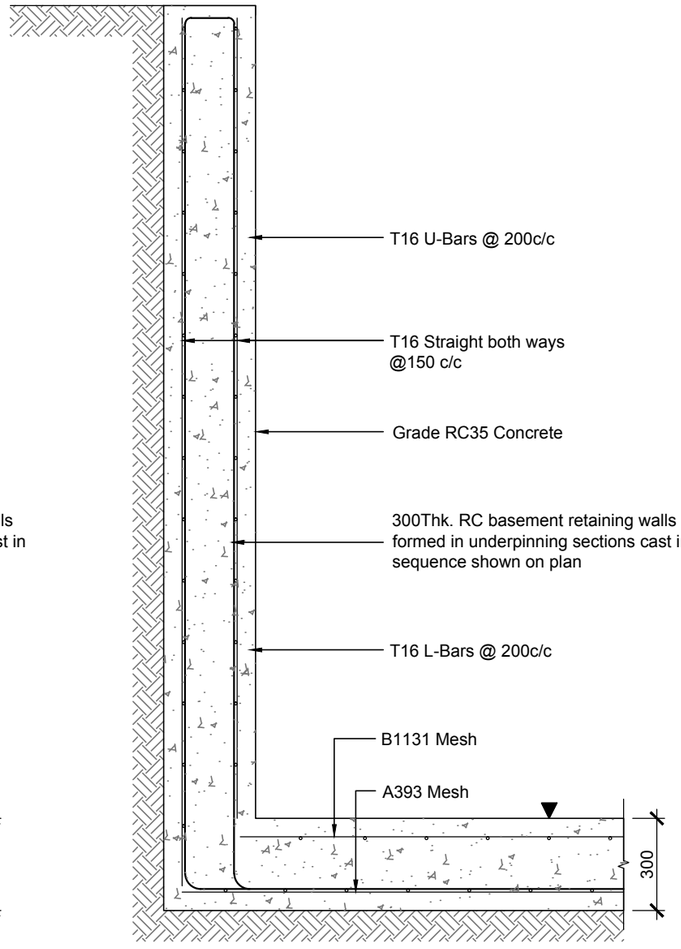

DETAIL 3

Scale 1:20 @ A3

26 ROSECROFT AVENUE
LONDON
NW3 7QB

Drawing
TYPICAL DETAILS

Scale	Date	Drawn by
1:20 @ A3	NOV 2015	JM
		Chkd by

Drawing No.
15122/S07

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89, Eastgate, Cowbridge, Vale of Glamorgan CF717AA
Tel. 01446 774493
Fax. 01446 774871

Appendix Two

GLA Mitigation Measures Checklist

Appendix to Question 10 – Dust mitigation measures

26 Rosecroft Avenue

Applicants must complete the table below (extracted from the Mayors 'control of dust and emissions during construction and demolition' SPG).

Applicants should include all 'highly recommended measures' as a minimum.

XX Highly Recommended
X Desirable

MEASURES RELEVANT FOR DEMOLITION, EARTHWORKS, CONSTRUCTION AND TRACKOUT

	CIRCLE RISK LEVEL IDENTIFIED FOR SITE			TICK TO CONFIRM MITIGATION MEASURE WILL BE IMPLEMENTED
MITIGATION MEASURE	**LOW RISK**	**MEDIUM RISK**	**HIGH RISK**	
Site management				
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	O	XX	XX	None
Develop a Dust Management Plan.	O	XX	XX	None
Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary.	O XX	XX	XX	✔
Display the head or regional office contact information.	O XX	XX	XX	✔
Record and respond to all dust and air quality pollutant emissions complaints.	O XX	XX	XX	✔
Make a complaints log available to the local authority when asked.	O XX	XX	XX	✔
Carry out regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results, and make an inspection log available to the local authority when asked.	O XX	XX	XX	✔

Increase the frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust and emissions and dust are being carried out, and during prolonged dry or windy conditions.	O XX	XX	XX	✔
Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and the action taken to resolve the situation is recorded in the log book.	O XX	XX	XX	✔
Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised.	O		XX	None
Preparing and maintaining the site				
Plan site layout: machinery and dust causing activities should be located away from receptors.	O XX	XX	XX	✔
Erect solid screens or barriers around dust activities or the site boundary that are, at least, as high as any stockpiles on site.	O XX	XX	XX	✔
Fully enclosure site or specific operations where there is a high potential for dust production and the site is active for an extensive period.	O X	XX	XX	None
Install green walls, screens or other green infrastructure to minimise the impact of dust and pollution.	O	X	X	None
Avoid site runoff of water or mud.	O XX	XX	XX	✔
Keep site fencing, barriers and scaffolding clean using wet methods.	O X	XX	XX	None
Remove materials from site as soon as possible.	O X	XX	XX	None
Cover, seed or fence stockpiles to prevent wind whipping.		XX	XX	None

Carry out regular dust soiling checks of buildings within 100m of site boundary and cleaning to be provided if necessary.	O	X	XX	None
Provide showers and ensure a change of shoes and clothes are required before going off-site to reduce transport of dust.	O		X	None
Agree monitoring locations with the Local Authority.	O	X	XX	None
Where possible, commence baseline monitoring at least three months before phase begins.	O	X	XX	None
Put in place real-time dust and air quality pollutant monitors across the site and ensure they are checked regularly.	O	X	XX	None
Operations				
Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.	O XX	XX	XX	✔
Ensure an adequate water supply on the site for effective dust/particulate matter mitigation (using recycled water where possible).	O XX	XX	XX	✔
Use enclosed chutes, conveyors and covered skips.	O XX	XX	XX	✔
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	O XX	XX	XX	✔
Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	O	XX	XX	None
Waste management				
Reuse and recycle waste to reduce dust from waste materials	O XX	XX	XX	✔
Avoid bonfires and burning of waste materials.	O XX	XX	XX	✔

MEASURES SPECIFIC TO DEMOLITION

MITIGATION MEASURE	LOW RISK	MEDIUM RISK	HIGH RISK	TICK BELOW WHERE MITIGATION MEASURE WILL BE IMPLEMENTED
Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).	O X	X	XX	None
Ensure water suppression is used during demolition operations.	O XX	XX	XX	✔
Avoid explosive blasting, using appropriate manual or mechanical alternatives.	O XX	XX	XX	✔
Bag and remove any biological debris or damp down such material before demolition.	O XX	XX	XX	✔

MEASURES SPECIFIC TO EARTHWORKS

MITIGATION MEASURE	LOW RISK	MEDIUM RISK	HIGH RISK	TICK BELOW WHERE MITIGATION MEASURE WILL BE IMPLEMENTED
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces.	O	X	XX	None
Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil.	O	X	XX	None
Only remove secure covers in small areas during work and not all at once.	O	X	XX	None

MEASURES SPECIFIC TO CONSTRUCTION

MITIGATION MEASURE	LOW RISK	MEDIUM RISK	HIGH RISK	TICK BELOW WHERE MITIGATION MEASURE WILL BE IMPLEMENTED
Avoid scabbling (roughening of concrete surfaces) if possible	O X	X	XX	None
Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place	O X	X X	XX	None
Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.	O	X	XX	None
For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.	O	X	X	None

MEASURES SPECIFIC TO TRACKOUT

MITIGATION MEASURE	LOW RISK	MEDIUM RISK	HIGH RISK	TICK BELOW WHERE MITIGATION MEASURE WILL BE IMPLEMENTED
Regularly use a water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of the site.	O X	XX	XX	None
Ensure vehicles entering and leaving sites are securely covered to prevent escape of materials during transport.	O X	XX	XX	None
Record all inspections of haul routes and any subsequent action in a site log book.	O	XX	XX	None
Install hard surfaced haul routes,	O	XX	XX	None

which are regularly damped down with fixed or mobile sprinkler systems and regularly cleaned.				
Inspect haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;	O	XX	XX	None
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	O X	XX	XX	None
Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.	O	XX	XX	None
Access gates to be located at least 10m from receptors where possible.	O	XX	XX	None
Apply dust suppressants to locations where a large volume of vehicles enter and exit the construction site	O	X	XX	None