A&I CONSTRUCTION

Preliminary Construction Management Plan

The proposed residential development of
9 Templewood Avenue
London, NW3

September 2012

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Incorporated in England
Company Reg No. 4269014

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1.0 INTRODUCTION AND PROJECT DETAILS

A & I Construction Ltd has prepared this construction management plan (CMP) in relation to the proposed alteration at 9 Templewood Avenue, London NW3

The proposed development consists of extending the rear of the property at ground floor level creating an unobstructed glass frontage toward the garden spaces and extending the basement to fit the footprint of the existing building.

The purpose of the CMP is to ensure that the impact of alteration and construction work on the local residents and the immediate highway network is kept to an absolute minimum. The CMP provides details 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 ongoing consultation with local residents as the project progresses.

9 Templewood Avenue is a ground floor property and subsequently has neighbours living in flats above. This CMP and the procedures it puts in place are done to minimize the impact of the construction work on these neighbours.

The agreed contents of the construction management plan must be complied with unless otherwise agreed with the Council. The project manager shall work with the Council to review this construction management plan if problems arise in relation to the construction of the development. Any future revised plan must be approved by the Council and complied with thereafter.

The Construction Project Manager will be responsible for implementing measures contained in the CMP and will be the point of contact for local residents. They will ensure that all contractors working on site have valid public liability cover in place before starting on the site and that they are registered with the Considerate Constructors Scheme. The Project Managers name, telephone number and email address will be added to the CMP once he/she has been appointed.

This document has been prepared with input from the project architects, structural engineers and civil engineers to ensure that the CMP can comprehensively address all issues that may arise during demolition and construction works.

Project: 9 Templewood Avenue, London NW3

Architects: XUL Architecture, 102 Belsize Lane, London, NW3 5BB

Telephone: 0207 431 9014

CMP Prepared by	Authorised by
Sign: 	Sign:
Print: Natassja Norval Date: 31.08.12	Print: Date:

2.0 CONTACTS AND RESPONSIBILITIES

Contacts

Telephone numbers are available for the general public to contact the project team, most of these telephone numbers are manned 24-hours and are run by independent organisations.

Posters for these schemes are displayed in various locations around the property including the boundaries to the site. Notable numbers are:

- Considerate Constructors: 0800 783 1423
- Independent 24-hour care line: 0800 138 5479

Public relations exercises will also be undertaken to advise the public and authorities of current and future works, in conjunction with the above mentioned project.

Responsibilities

Noise incorporating vibration

Project Manager	Overall responsibility
Engineer	Records of Excavation operations
Site Manager	Day-to-day implantation of RAMS and mitigation measures

Construction lighting

Project Manager	Overall responsibility
Engineer	Visual monitoring (if required)
Site Manager	Light monitoring

Dust and general nuisance

Project Manager	Overall responsibility
Engineer	Visual dust monitoring
Site Manager	Day-to-day implantation of RAMS and mitigation measures

Construction traffic

Project Manager	Overall responsibility
Engineer	Visual traffic monitoring
Site Manager	Day-to-day implantation of RAMS and mitigation measures

Concrete pouring

Project Manager	Overall responsibility
Engineer	Visual inspections, water quality sampling (if required)
Site Manager	Ensuring RAMS are worked to and controls implemented

Pollution Control

Project Manager	Overall responsibility
Engineer	Inspections, sampling (if required)
Site Manager	Ensuring RAMS are worked to and controls implemented

3.0 PROGRAMME

As planning approval has yet to be granted, 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 and the date for works to start on site has been determined.

Activity	Weeks	Workers on Site
Site Preparation, building Regulations and Health & Safety Documentation	3	3
Demolition	5	6
Excavation	8	6-10
Concrete footing, Slab and Retaining Walls	8	6-10
Building Frame	3	8
Cladding	3	6
Roof	4	6
Ground works	5	5
Internal Finishes	20	6-10
External Landscaping	5	5

4.0 HOURS OF WORK

The hours of construction, including delivery of materials to and from the site, shall be restricted as follows:

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

Schedule for rock breaking, rock hammering, excavation, concrete pouring and similar activity only between the following hours unless approved otherwise:

a) 9am to 12pm, Monday to Friday
b) 1pm to 5pm, Monday to Friday
c) 9am to 12pm, Saturday

5.0 NOISE AND VIBRATION MANAGEMENT

Noise

Bureau Veritas will be employed to provide predicted noise levels for the specific construction phases and ensure that the monitoring stations are located in appropriate areas. A specific location plan showing monitoring points will be produced in association with the Local Authority EHO and Section 61 application.

They will also conduct noise monitoring and provide records to show compliance with set noise levels.

Bureau Veritas (www.bureauveritas.co.uk) excel at the provision of quality, health, safety, environmental and social accountability solutions.

Trees and walls that surround the property will assist in acting as a noise barrier.

Deliveries to the site will take place between the hours of 08:00am and 17.30pm and scheduled to distribute vehicle movements throughout these hours so as to avoid periods of intensive activity therefore limiting noise and vehicle emissions.

Noisy work on site will be carried out in accordance with guidance provided by Camden Council, e.g.

- Restricting the hours that noisy work is carried out from 08:00 until 18:00, Monday to Friday and 08:00 until 13:00 on Saturdays. No noisy works should be carried out on Sundays and Bank Holidays.

- Using well-maintained and silenced plant and equipment including compressors, generators and power tools.

The use of electrically powered modec vehicles has been considered but this had to be discounted as most materials requiring movement will be in bulk and heavy and no commercially available vehicles of the size needed are yet available. In addition, there will be no power supply high enough on site for safety reasons; therefore on site charging of electrical vehicles would not be possible.

The project shall not exceed the following noise levels: -

a) 70 dB LAeq 1 hr during the hours of 07:00 to 19:00 on Monday to Friday (excluding Bank Holidays)
b) 55 dB LAeq 1 hr during the hours of 19:00 to 23:00 on Monday to Friday (excluding bank holidays)
c) sd70 dB LAeq 1 hr during the hours of 07:00 to 13:00 on Saturdays; and
d) 50 dB LAeq 1 hr at all other times
Daytime free-field equivalent sound pressure levels

In the event that the noise levels prescribed are being exceeded, the complaint will be reviewed and discussions held with the third party to understand the problem further and evaluate whether the particular problem can be rectified or at least improved. Communication will be maintained in conjunction with the interested authorities.

Vibration

Bureau Veritas will be employed to monitor vibration levels from excavators and/or other construction activities. This will be assessed at the same time and locations as for noise monitoring.

Vibration levels shall not exceed:

- A peak particle velocity of 2mm/s as measured immediately adjacent to the nearest residential property or vibration sensitive structure and

- 12mm/s measured immediately adjacent to 9 Templewood Avenue.

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.

In the event that the limits have been exceeded the operation will be modified and the noise and/or vibration rechecked from that operation to verify that the corrective action has been effective. These actions may include reducing the operating hours, resetting the equipment, changing the method of working or temporary barriers.

6.0 CONSTRUCTION LIGHTING

The construction lighting will be limited and task specific to the specification in Appendix 1

All temporary lighting will be directed towards site and only put on when necessary, particularly during winter.

Procedures will be put in place for monitoring the lighting, and adjustments will be made to lighting to ensure minimal environmental and social impacts occur.

7.0 DUST MANAGEMENT

General Control Measures

The following measures will be employed to minimize dust and emissions being released into the surrounding area during construction.

Monitor weather reports to ensure appropriate dust suppression or road cleaning is available when required.

Mud on Roads

- Sweepers to be employed to clean roads where appropriate
- Banksman to clear large debris immediately

- Only designated routes are to be used – Suggested Route: **From A406 at Brent Cross** Take the A41 Hendon Way southbound to Finchley Road. Go south on Finchley road to Junction with Platt's Lane and turn left. At the end of Platt's Lane turn right into West Heath Road and then second right into Templewood Avenue. No 9 is approx 250m on your right.
- Wagons to be covered to prevent materials being blown into the road during transport.

Dust and Emissions

- Select suitable haul routes away from sensitive areas
- Good quality access track to be provided
- Set vehicle speed limits and enforce them
- Water dampening measures will be used during the demolition process, which will significantly control dust generation, however consideration must be given to proximity of drains
- Dust screens could also be incorporated during this element of the project.
- A Temporary garbage chute will be used in construction. At the base of the chute bulk bin will collect the waste. The chutes will be fitted with devices that hose down the garbage as it is dropped into the chutes
- Whenever possible, wet processes will be used during cutting, drilling and grinding to limit dust emissions

Materials handling and storage

- Locate stockpiles out of the wind where possible
- Keep stockpiles to a minimum practicable height and use gentle slopes
- Damp down stockpiles using water misting/sprays as appropriate
- Store materials away form the site boundaries and downwind of sensitive areas.
  Note: *Materials should not be stored in close proximity to drains or water*
- Minimise the height of all fall materials (demolition works)
- Waste will be stored in a designated area within the identified compound
- Use covered containers for waste whenever possible
- No burning of materials on site

Plant

- All plant to be maintained and checked on a daily basis
- Ensure exhausts do not discharge directly at the ground
- Ensure engines are switched off when not in use
- Keep refuelling areas away from public

Monitoring location points to be determined and detailed on a location plan.

The trigger values for the project have been confirmed with the EHO and are detailed below. The amount of dust and whether it will cause a nuisance to people or not will depend greatly on the site conditions, local authority interpretation and weather conditions.

- Open Areas less than 100mg/m2/day
- Residential areas less than 150mg/m2/day
- Urban areas less than 200mg/m2/day
  (Ref – London Best Practise Guide – Control of dust and emissions from Construction and Demolition)

Glass slides will be exposed for 7 days and analysed on a daily basis against trigger levels, the records of this to be held with this control plan.

8.0 TRAFFIC MANAGEMENT AND TRAVEL PLAN

The following traffic plan has been prepared for the delivery of construction materials and for the travel of contractors on site.

The travel plan and traffic management are designed to reduce the impact of the construction works on the existing road network. Traffic reduction measures are preferred to routing or increasing capacity. However some increase in traffic volumes will be inevitable and this plan details the specific measures to mitigate these effects.

Pedestrians

Jersey kerbs will be provided on work zones for pedestrian access in the event of public domain works. Signs and safety devices will be in place for those works.

Cyclists

The movement of cyclists will be managed as part of the traffic management relating to the project. During certain loading and unloading events, personnel will direct and halt traffic as required to ensure that these activities do not conflict with each other and that a safe environment is maintained.

Lorries

The average number of truck loads moving or delivering materials from/to the site is estimated to be 6 trucks a day during the main construction phase of the project and then reducing to 1-2 per week

The above estimated movement of the trucks will increase on the days when the large concrete slabs are proposed to be poured in one continuous operation. The number of extra trucks will also depend on the size of the structural elements poured at the time.

See the swept path drawing in Appendix 3 – Site Plan

In addition, the re-use of the demolition arisings (including internal soft stripping) will contribute to the reduction of vehicle movements.

It is proposed that vehicles will ingress and egress the site via a temporary driveway constructed at the site where major deliveries of construction materials will take place. If needed qualified traffic controllers will be used during these operations.

1. Trucks will be unloaded/loaded at the temporary entrance to the site on Templewood Avenue
2. Trucks will queue within the works zone area on Templewood Avenue (When necessary)
3. There will be signage placed at either end of the works
4. The signage will notify traffic of operations
5. Lorries would take the following route: **From A406 at Brent Cross** take the A41 Hendon Way southbound to Finchley road. Go south on Finchley road to Junction with Platt's Lane and turn left. At the end of Platt's lane turn right into West Heath road and then second right into Templewood Avenue. No 9 is approx 250m on your right
6. The turning circle of the lorries has been illustrated in Appendix 3
   Allowing for the allocated parking bays for the residents of the flats above, Lorries may also enter the site via the left hand gate and exit via the right

The following list provided details of the type of vehicles that will need to gain access to the site during the demolition construction process:

- 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 4 Wheel, 17 Tonnes, G.V.W, HIAB Flat Bed or 7.5 tonne Rigid Vehicle.
- Sundry Materials 4 Wheel, 3 Tonne, GVW, Van/Flatbed
- Wheeled 360 Excavator, 23 Tonne, G.V.W
- 3 Tonne Excavator with caterpillar tracks
- 1 Tonne 4 Wheel Dumper

Construction vehicle movements will not be permitted at weekends or during public holidays and will be scheduled to take place between the hours of 8am and 4pm.

Within the site, there are parking bays which need to be left free for the residence of the upper flats and no materials/vehicles should block access to the bin store for an extended period.

Travel Plan

There will typically be about 25 construction workers on site, although at times, this will increase to accommodate the work needed on site. To minimise the potential impact of construction workers travelling to the area, a Travel Plan will be implemented to promote and encourage the use of sustainable modes of travel to and from the site and minimise the use of private cars.

Construction workers will be instructed not to park directly outside No 9 Templewood Avenue and they will be required to move their vehicles during the parking restrictions implemented on this road.

The Travel Plan will take the form of a leaflet that will include details of local public transport services, promote walking and cycling and encourage car sharing. Consideration will be given to the operation of a shuttle bus service to and from the site from nearby public transport nodes.

9.0 CONSTRUCTION ZONES AND MATERIAL LOADING/STORAGE AREAS

The main loading areas include a proposed works zone and a dedicated area within the site controlled by the main contractor for loading and unloading materials.

Construction materials such as cement, oils and fuels for site plant etc have the potential to cause pollution. All fuel, oil and chemical storage must be sited on an impervious base within a secured bund of adequate storage capacity. The risk of fuel spillage is greatest during refuelling of plant. Mobile plant would be refuelled either off site or within a designated area on hard standing. All pumps, hoses etc would be checked regularly.

Provision would be made for the washing out of concrete and cement lorries and mixing plant. These washings would be disposed of to foul sewer. All waste materials created during construction would be stored in designated storage areas isolated from surface drains.

The material storage in the rear garden as shown in Appendix 6 may need to be re-located to a more convenient location during construction if any complaints arise from the upper residence, to avoid this as much as possible this area should be kept need and tidy.

The Arboriculture report from John Cromar's Arboricultural Company Limited should be consulted when executing the site setup, hoarding locations, material storage and site boundaries.

The CMP is a live document which includes a commitment to ongoing consultation with local residents. In the event that hazardous materials are present in the existing building, the materials and the appropriate procedures for their disposal will be detailed in the CMP and local residents advised accordingly.

10.0 EXCAVATION WORKS AND CONCRETE WORKS

Excavation

We have analysed what will be the busiest period of the project from the point of view of traffic movement. We have used the sequence of work put forward by the Engineer, Idce to calculate the likely traffic flow during the structural phase. See the Structural Stability Review in Appendix 8

The following assumptions were used for the calculation

1. Bulking of excavated earth: We have calculated that the volume of earth once extracted is on average 40% greater than when in the ground. This allows for a mix of soil types between wet clay (60%) and sandy soil (30%)
2. We have assumed none of the excavated soil will be re-used for landscaping etc
3. We have assumed excavated soil will be removed in 12m3 lorries as the weight permissible on one load is limited to 20 Tonnes
4. We have allowed for removal of the spoil for the concrete pins . Pin quantities have been taken from the engineer's plans in 1m sections.
5. Concrete deliveries are calculated on 4.5m3 per lorry

Material removed from the site will be loaded onto trucks efficiently within the site on a temporary staging area, thus not disrupting the local residents or the flow of traffic. Concrete delivery vehicles will also use this staging area. Concrete pouring and filling will be fully controlled to ensure that cement bound materials do not pose any pollution issues. Batching plant will be located as far north as possible, and therefore downwind of the nearest local residents.

11.0 POLLUTION CONTROL

Pollution control measures will be implemented on site to include the following:

- Drip trays to be used for all static equipment, including pumps to ensure no escape of oil and diesel into drains.

- Mobile plant shall be refuelled in a designated area on an impermeable surface away from drains and watercourses

- Spill kits to be available to contain spillages

Site vehicles will have wheels washed down prior to leaving the site so as to reduce unwanted debris spreading onto Templewood Avenue. A track mat will be used which can be easily cleaned and washed down to minimise the potential transfer of debris onto the road.

12.0 SOIL AND WATER MANAGEMENT PLAN

Welfare & Silty Water

- Welfare water will be discharged to the nearest sewer under permission from the sewerage undertaker or if a private sewer system the land owner.

- Water from excavations will also be discharged to the sewer system under the same permission. Treatment (settling) may be required to remove solids.

Chemicals/Substances etc

- The use of biodegradable oils will be considered wherever possible

- Leaky or empty drums shall be removed from site immediately

- All spills will be reported to the Site Manager regardless of extent or nature.

All pollution control devices will be regularly maintained. Any liquid wastes such as paints or similar chemicals will be retained for recycling and other liquids will be disposed.

Barriers will be installed where necessary to prevent the generation of erosion and sediment during the construction period.

13.0 SITE SECURITY

All construction materials will be stored on site. It is proposed that a full painted plywood hoarding will be erected along the site boundary with Templewood Avenue. This will be 2.4 metres high with access gates formed in the fence to serve the site.

The site will be locked outside of working hours to ensure that all materials and equipment are stored securely.

The Construction Project Manager will be responsible for site security and emergency procedures. Once the Construction Project Manager has been appointed, residents will be advised of appropriate procedures and contact information for out of hour's incidents.

All tools and valuable materials will be stored in lockable containers on site and sub-contractors will be required to either make use of these containers or take their tools of site at the end of each day.

Temporary alarm system will be installed with a phone number to one of the management.

14.0 PEDESTRIAN AND ROAD USER SAFETY

It is proposed to implement measures to ensure that pedestrian and road user safety is maintained throughout the construction process.

To enable consideration to be given to the types of measures appropriate, reference has been made to pedestrian and vehicle movement count data.

The following table provides a summary of results:

	Travel Mode				
Period	Pedestrian	Car	HGV	Cycle	Motorcycle
15 August 12:00 – 13:30	3	39	2	5	11
20 August 15:00 – 16:00	5	54	4	3	5
28 August 08.00-09.00	8	60	6	2	8

The survey shows that there is a relatively light, although steady flow of pedestrian and vehicle movement on this section of Templewood Avenue. To ensure that pedestrian and road user safety can be maintained, it is proposed to implement a banksman strategy, which will be managed by a Banksman Co-ordinator, the strategy will comprise of the following measures:

- The Banksman Co-ordinator will keep a log of all construction vehicle movements to and from the site in order to monitor them closely.
- No construction vehicles will be permitted to stop, be held or wait in the public highway (including Templewood Avenue). Vehicles will instead be waived on by a banksman stationed at the site and be told to go round the block if Templewood Avenue is occupied by an existing construction vehicle.
- Vehicle manoeuvres into and out of the site will be monitored and assisted by a banksman stationed outside the entrance to the site. This will allow vehicles to manoeuvre to and from site with minimal disruption to traffic on Templewood Avenue
- A banksman will be required to walk in front of, and monitor all Lorries along Templewood Avenue to ensure they only travel at walking speed (4mph) and to assist pedestrians, cyclists and other vulnerable road users that may need to pass the approaching construction vehicle.
- Temporary road signage will be positioned on Templewood Avenue at either end of the construction vehicle route warning road users of the presence of construction traffic.

Appendix 1
Construction Lighting Specification

Construction Lighting Specification

			
Mini POD 500W	Festoon Light 30M	Fluorescent Light 2FT	Fluorescent Light 5FT
The Faithfull Site lights will suit both commercial and domestic use. Each lamp is constructed from a die-cast body and is equipped with a metal grille to prevent accidental contact with the hot lens and to protect it against damage. The leads to all lamps are fitted with plugs. These Faithfull Lights are free standing, portable and come in 240 Volt, 110 Volt and with 150 or 500 watt lamp versions. Mounted on a strong tubular steel frame for added stability. A 'tilt and lock' facility, this allows the head to be adjusted to a variety of positions to optimise the powerful light output . 500 Watt 240 Volt	Festoon lighting strings meet the requirements of BS7375: 1996 abd are designed for 110V operation.	Built for demanding construction tasks. Assembled using low temperature cable (-30 to +70 degrees) and Defender plugs and sockets. IP65 rated. Tough polycarbonate lens. Fully powder coated stand.	Built for demanding construction tasks. Assembled using low temperature cable (-30 to +70 degrees) and Defender plugs and sockets. IP65 rated. Tough polycarbonate lens. Fully powder coated stand.

Appendix 2

Incident Response & Emergency Action Plan

Health, Safety and Environmental ('SHE')
Incident Response & Emergency Action Plan (incorporating fire)

Site Name: 9 Templewood Avenue

Site address with directions:

9 Templewood Avenue
Hampstead
London
NW3

Directions:

From A406 at Brent Cross Take the A41 Hendon Way southbound to Finchley Road. Go south on Finchley road to Junction with Platt's Lane and turn left.
At the end of Platt's Lane turn right into West Heath Road and then second right into Templewood Avenue. No 9 is approx 250m on your right.

From Hampstead Tube Station: From the top of Rosslyn Hill turn into Heath Street. Go to the top of the hill and turn left at Whitestone Pond into West Heath Road. Turn second left into Templewood Avenue. No 9 is approx 250m on your right.

Emergency Contact Details

In the event of an incident or a suspected incident, the Site Manager/Appropriate Person will assume control of the situation and direct the immediate response through delegation, if necessary**.**

Emergency Services: 999
Local Police: 101
Local Hospital: Royal Free Hospital, Pond Street NW3
HSE London: 0844 371 9173
Environmental Agency: 0800 807 060

	Contact Name	**Office Hours**	**Out of Hours**
Local authority	Camden Council	0207 974 4444	0207 974 4444
Gas	National Grid		
Water	Thames Water	0845 9200 800	0845 9200 800
Telephone	BT	0800 800 151	0800 800 151
Electrical	UK Power Network		
Specialist Clean Up Contractors	Rainbow	0208 902 1980	0208 902 1980

	Company Contacts		
	Contact Name	**Office Hours**	**Out of Hours**
Project Manager	Complete		
Site Manager			
Site SHE Advisor			
Client Contact			
Contractor			
Contractor			

The contact order will be:
First: Site Manager – Enter number
Second: Project Manager – Enter number

Control of Substances Hazardous to Health (COSHH) Inventory

Refer to Site Plan for Location of Stores and Spill Kits

Name of product	European Waste Code ('EWC')	Name of Waste	Waste Classification	Supplier	Name of sub-contractor
Complete					

Note: The information above is to be completed as applicable during the contract when detailed design and specifications are set.

Actions to be taken in the Event of a Health and Safety Emergency

THOSE DIRECTLY INVOLVED SHOULD:

- Make the area safe for themselves and others who may be exposed (where safe to do so)
- Raise the alarm and instigate Site Incident Response Plan/Fire Plan as necessary
- Apply First Aid to those who may need attention
- DO NOT make changes to the scene apart from those making the area safe – evidence will be required to aid investigation.

Taking command of the Situation

The following should occur:

1.0 IMMEDIATE REPORTING:

- To a member of Site Management

OR

- To your manager or supervisor who should then report to a member of Site Management

Site Management will then put into action the Incident Response Plan and report to the associated enforcing authorities and/or others as appropriate.

2.0 EVALUATE THE AREA FOLLOWING THE SITE DESIGNATED PROCEDURE

3.0 INSTIGATE THE ACCIDENT/INCIDENT REPORTING PROCEDURE TO ASCERTAIN WHY THE INCIDENT OCCURRED – THIS WILL NOT BE ASSIGN BLAME BUT TO PREVENT RECURRANCE

4.0 REVIEW RISK ASSESSMENTS AND METHOD STATEMENTS TO ENSURE THAT THE CINTENT STILL REFLECTS THE SITUATION ON SITE.

5.0 SITE MANAGEMENT MUST MONITOR THE SITUATION UNTIL SUCH TIME THAT THE INCIDENT IS PASSED AND THE SITE HAS RETURNED TO NORMAL WORKING CONDITIONS. THIS IS IN ADDITION TO THE CONTINOUS MONITORING OF ALL OTHER SITE ACTIVITIES.

6.0 A CLOSE-OUT MEETING SHOULD TAKE PLACE IN ORDER TO LEARN FROM THE EVENT AND ENABLE SUCH INFORMATION TO BE FED BACK INTO THE COMPANY TO AID CONTINUOUS IMPROVEMENT.

UNDER NO CIRCUMSTANCES SHOULD A MEMBER OF STAFF DISCUSS THE INCIDENT DURING OR AFTER EVENTS WITH THE PRESS OR OTHERS. ALL SUCH COMMUNICATIONS MUST BE DONE THROUGH THE MANAGEMENT.

Actions to be taken in the Event of an Emergency involving Excavation outside of allowed hours

The local authority shall be notified and details provided in writing within 48 hours of any event (see below) where excavation took place outside the permitted hours.

Events include:

a) In the case of an emergency or
b) Where excavation is required on the grounds of safety or environmental protection
c) In either case the situation would otherwise be dangerous to life or limb

Excavation cannot take place outside these permitted hours:-

a) 8:00 to 18:00, Monday to Friday and
b) 9:00 to 13:00, on Saturday or

At any time on a Sunday or a Bank/Public holiday

Actions to be taken in the Event of an Environmental Emergency

In the event of an actual or suspected pollution incident involving:

- Spillage of oils or chemicals or

- Discharge of silty water or other pollutant such as concrete (watercourse or land)
- Flood
- Fire (emissions to air); firewater runoff
- Discovery or potentially contaminated land

The following should occur:

1.0 REPORT IMMEDIATELY

- To a member of Site Management

OR

- To your manager or supervisor who should then report to a member of Site Management
- Site Management will then put into action the Incident Response Plan and report to the associated enforcing authorities and/or others as appropriate.

2.0 TRY TO IDENTIFY THE SOURCE OF THE POLLUTION AND STOP THE FLOW IMMEDIATELY

- Switch off sources of ignition
- Identify the material which may be burning and, if it can be done safely, extinguish with an appropriate fire extinguisher.

3.0 AVOID THE SPILLAGE OR FIRE WATER RUNOFF SPREADING

- Check the site drainage plan – where will the spillage go?
- Stop the flow if possible
- Dam the flow with earth/sand/polythene/absorbent materials
- Divert the flow from drains/watercourses where possible
- Use drain covers if available

4.0 GET A SPILL KIT

- Use absorbent material if appropriate
- Place a boom across watercourses if applicable

5.0 DO NOT WASH SPILLAGE OR FIREWATER RUNOFF INTO THE DRAINAGE SYSTEM – IT ONLY MAKES IT WORSE

- Never use detergents
- Use sand or absorbent pads to mop it up and dispose of as Special Waste.

6.0 IF THE SPILL HAS ALREADY ENTERED THE DRAINS – BLOCK THE DRAINS OFF IF AT ALL POSSIBLE

7.0 SEEK SPECIALIST ADVICE OR SEEK AUTHORISATION FROM THE ENVIRONMENTAL ADVOSOR BEFORE MOVING CONTAMINATED MATERIAL

8.0 AN INVESTIGATION WILL BE CARRIED OUT BY MANAGEMENT TO ASCERTAIN WHY THE INCIDENT OCCURRED.

Site Fire Safety Plan

Nominated Personnel:

The appointed Site Fire Safety Co-ordinator for the Project is: Enter Name

The appointed Fire Marshall is: Enter Name

DUTIES:

The Fire Safety Co-ordinator and Fire Marshall shall:

1. Ensure that all procedures and safety measures as defined in the Site Safety Plan are understood and complied with by all those on site.
2. Ensure that a HOT WORK Permit is established and monitor compliance.
3. Carry out daily/weekly checks on fire fighting equipment, alarms, detection devices, escape routes, emergency access and work areas.
4. Liaise with the local Fire Brigade, HSE, Police and site security
5. Maintain records of all checks, inspections, tests, fire patrols and fire drills. See attached Fire Log Book.
6. Execute the duties for the safe evacuation of the site and ensure that all staff, contractors and visitors report to the assembly points.
7. Ensure suitable and sufficient fire risk assessment is completed for all operations.
8. Ensure that the emergency services are provided with site drawings plans and all information required.

Fire Precautions – General Site Area

The following arrangements have been introduced:

- Fire extinguishers
  Site Stores Office - 1 x Dry Powder
  1 x Foam
  Fuel Storage Area - 1 x Dry Powder
  1 x Foam
  Geotech Office - 1 x Dry Powder
  1 x Foam
  Fire Point one - 1 x Dry Powder
  1 x Foam
  Fire Point two - 1 x Dry Powder
  1 x Foam
- Battery operated smoke detectors have been fitted.
- Test Certificates for permanent electrical installations.
- Test Certificates for temporary electrical supplies and distribution to each unit.

Fire Precautions – Existing building

The following measures have been introduced:

- Fire extinguishers have been located on each floor of the building
  Ground Floor - 1 x Foam
  1 x Water
  1 x CO2
  First Floor - 1 x Foam
  1 x Water

1 x CO2

- Battery operated smoke detectors have been fitted.
- Test Certificates for permanent electrical installations.
- Means of raising alarm in the event of fire is by sounding the air horn on the ground floor at the bottom of the staircase.
- Emergency fire precautions and means of escape are communicated to all site operatives means of':
    - Induction Training Sessions when they arrive on site.
    - The arrangements are indicated on the attached drawing.
    - In the event of fire, personnel will leave the building and report to the assembly point outside the main entrance next to the car park.

Hot Work Permits:

Before commencing work the operative shall fill in the form. This will detail the work and area where the work will be carried out.
The completed form is to be taken to the site office where it will be signed by a competent member of staff detailed in the Organisation Chart.
A copy will be taken and issued to the operative carrying out the work. The original will remain in the H & S file.

Upon completion of the work at least one hour will pass, whereupon the operative shall return to the area of 'hot work' and check for any signs of fire. Having completed the check the operative will return to the site office and the original form will be 'signed off'.
In addition, if the work continues through a break period, an operative has to be in attendance for at least 60 minutes after the cessation of the hot work.

Escape Routes:

The emergency plan for action in the event of fire (Section 1) will be part of the induction given to all site operatives. The Plan will be displayed at the Fire points adjacent to the landing of the escape staircase.
Escape route plans will be displayed at each Fire point. The plans will be changed as the demolition/construction continues. For the latest version of the escape routes, please see the fire points or copies displayed on site Notice Board.

A copy of the plans showing the position of gas bottles, fire fighting aids, fuel stores and areas of high risk (i.e. voids in slabs, danger of label etc) will be displayed in the security hut and will be issued to the Fire Brigade on arrival in the case of an emergency call.

The Site Fire Officer will keep and maintain a weekly register of inspections of fire extinguishers, alarm/detection devices, escape routes, fire brigade access and fire fighting facilities.

Fire Drills:

Regular fire drills will be instigated allied with the training in the use of fire fighting equipment (also to be organised for new trades as they start on site). A record should be kept.

SITE FIRE SAFETY PLAN SECTION 1

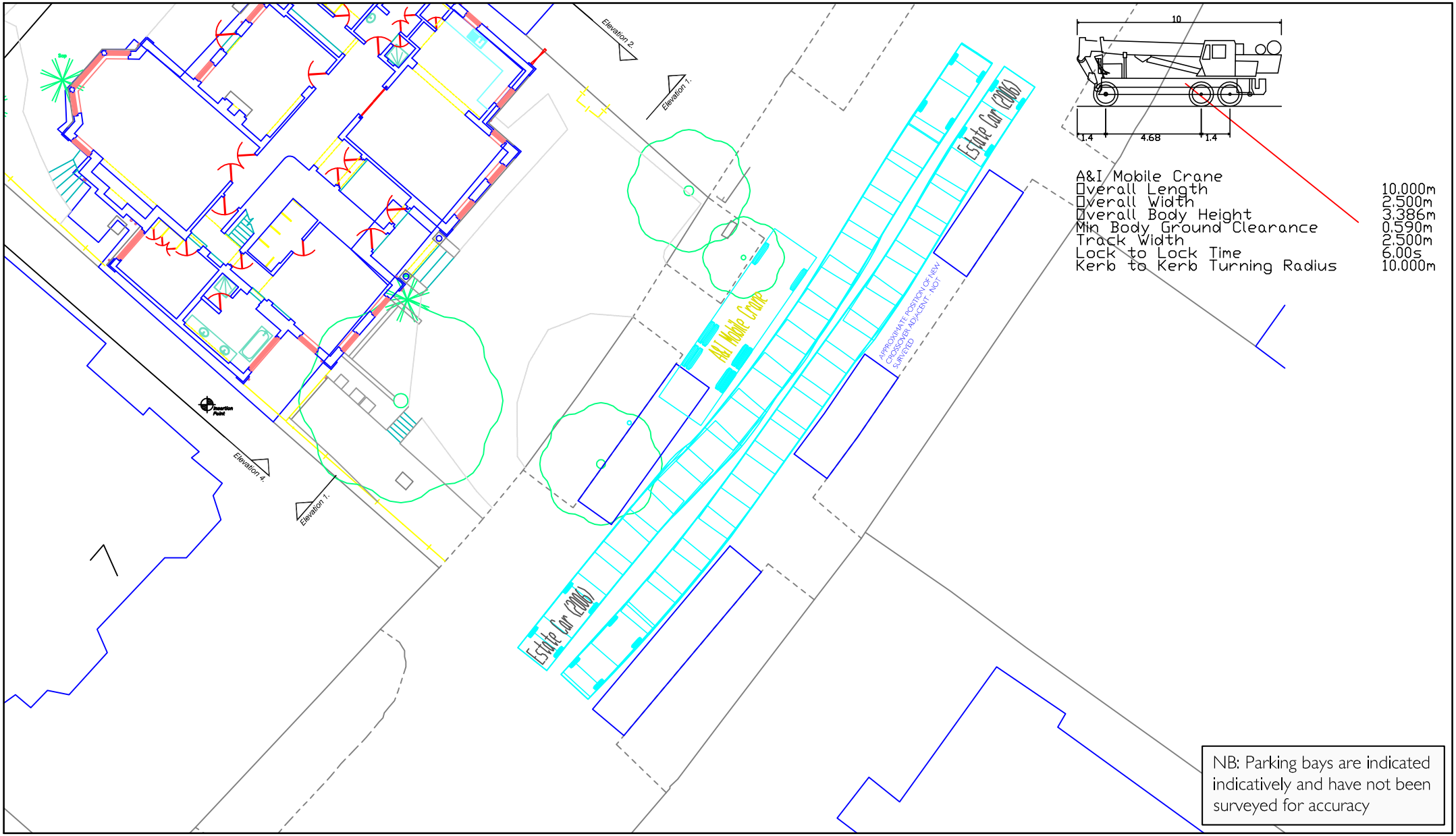
ACTION IN THE EVENT OF FIRE

1. **RAISE THE ALARM**
Use the air horns situated on the ground floor level in the building, positions as indicated on the Escape Route drawings.
Alert site management at site offices in the ground floor
Alert Security at the site entrance gate
or
Shout "Fire, Fire"

2. **CALL THE FIRE BRIGADE**
If site management have been contacted, tell them to call **999**

3. **ON HEARING THE SITE FIRE ALARM**
- All personnel to leave the site and assemble at the Muster Point
- Contractor's Site Managers to check off employees against labour register and report to the Fire Marshall with list of names.
- Do not stop to collect personal belongings
- Turn off generators, compressors and other powered equipment.
- Turn off heat producing equipment and shut cylinder valves.
- Report locations of any cylinders or fuel containers to site management/security.
- Attack fire with the equipment provided if it is safe to do so
- Obey instructions from the Site Fire Marshall or supervisory staff.
- Do not re-enter site until told it is safe to do so.

Appendix 3
Site Plan
Traffic Management & Swept Path



Date: 30-August-20012
Scale: 1:250@A4
Source: AutoTrack
Drawing No. P991/ATR/01

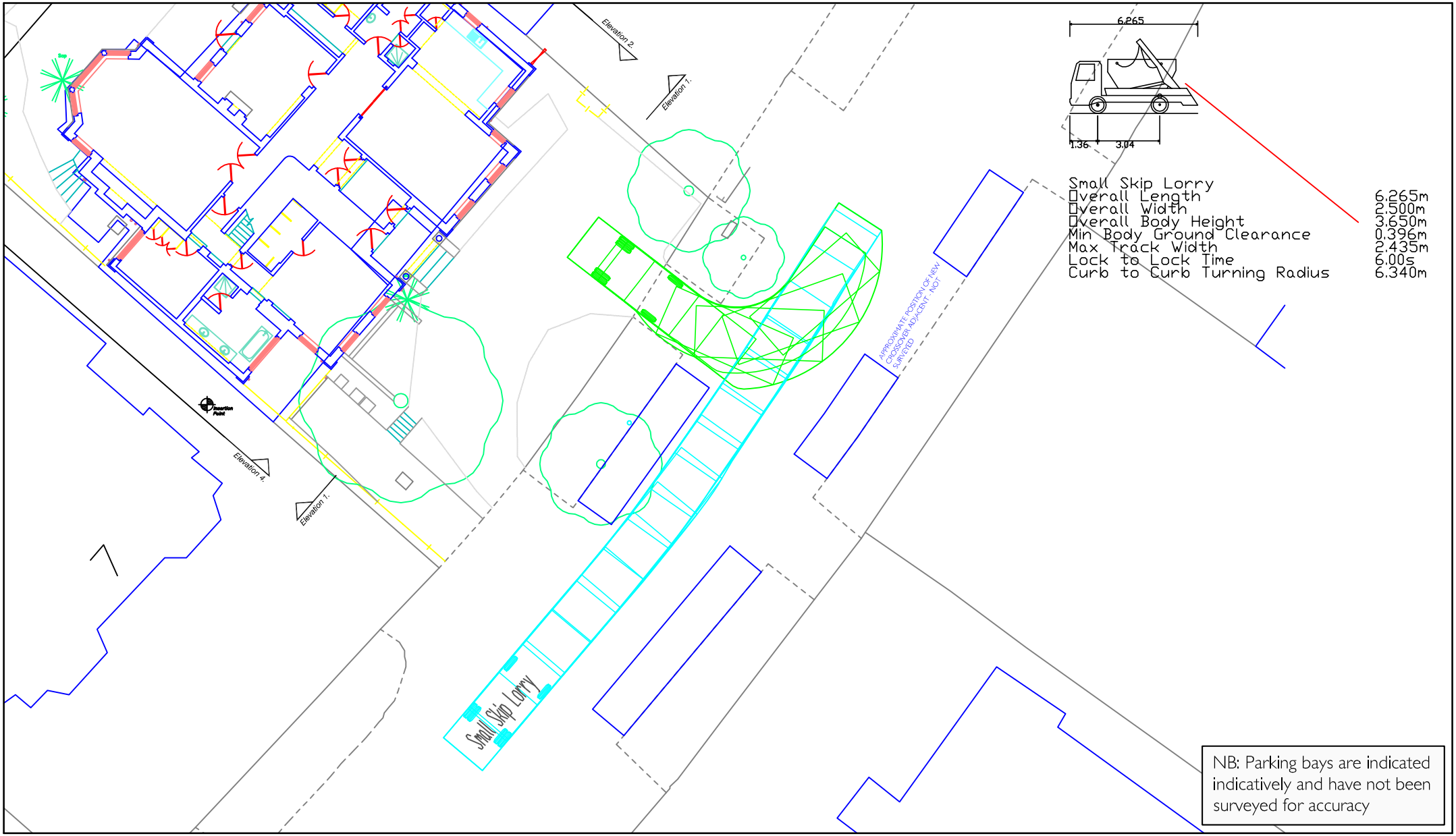
N

P991: 9 Templewood Avenue, London, NW3 7UY

Figure 1

Mobile Crane Lorry Parked on Templewood Avenue Adjacent to No.9;
Two Estate Cars Passing on the Carriageway.

PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS
The Mission Hall, Walkers Place, Putney, London SW15 1PP
Tel: 0208 780 0426 Fax: 0208 780 0428
E-mail: paul.mew@pma-traffic.co.uk Website: www.pma-traffic.co.uk



Date: 30-August-20012
Scale: 1:250@A4
Source: AutoTrack
Drawing No. P991/ATR/02

N

P991: 9 Templewood Avenue, London, NW3 7UY

Figure 2

Skip Lorry Reversing into the Driveway at 9 Templewood Avenue

PAUL MEW ASSOCIATES
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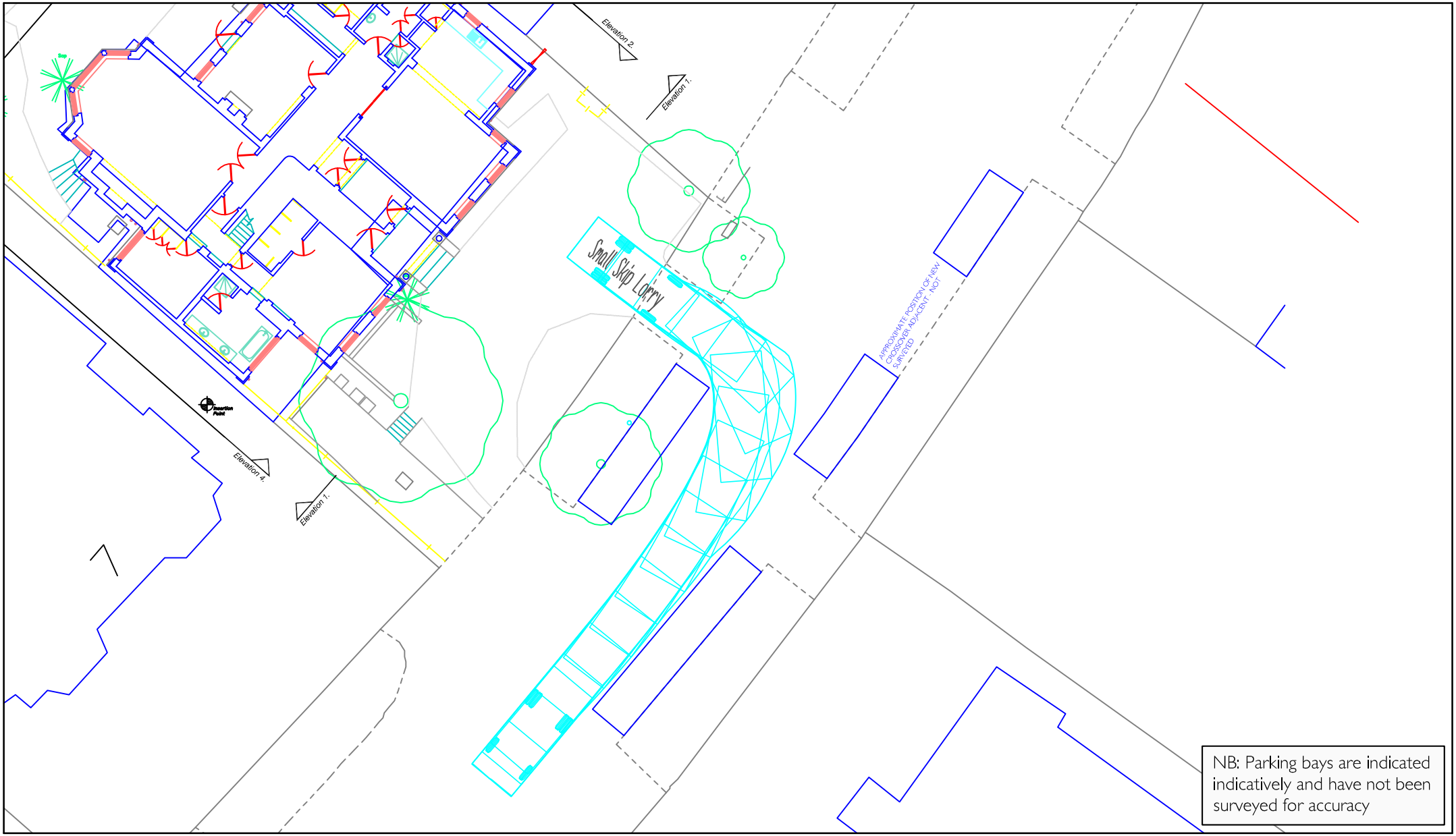
The Mission Hall, Walkers Place, Putney, London SW15 1PP
Tel: 0208 780 0426 Fax: 0208 780 0428
E-mail: paul.mew@pma-traffic.co.uk Website: www.pma-traffic.co.uk



Date: 30-August-20012
Scale: 1:250@A4
Source: AutoTrack
Drawing No. P991/ATR/03

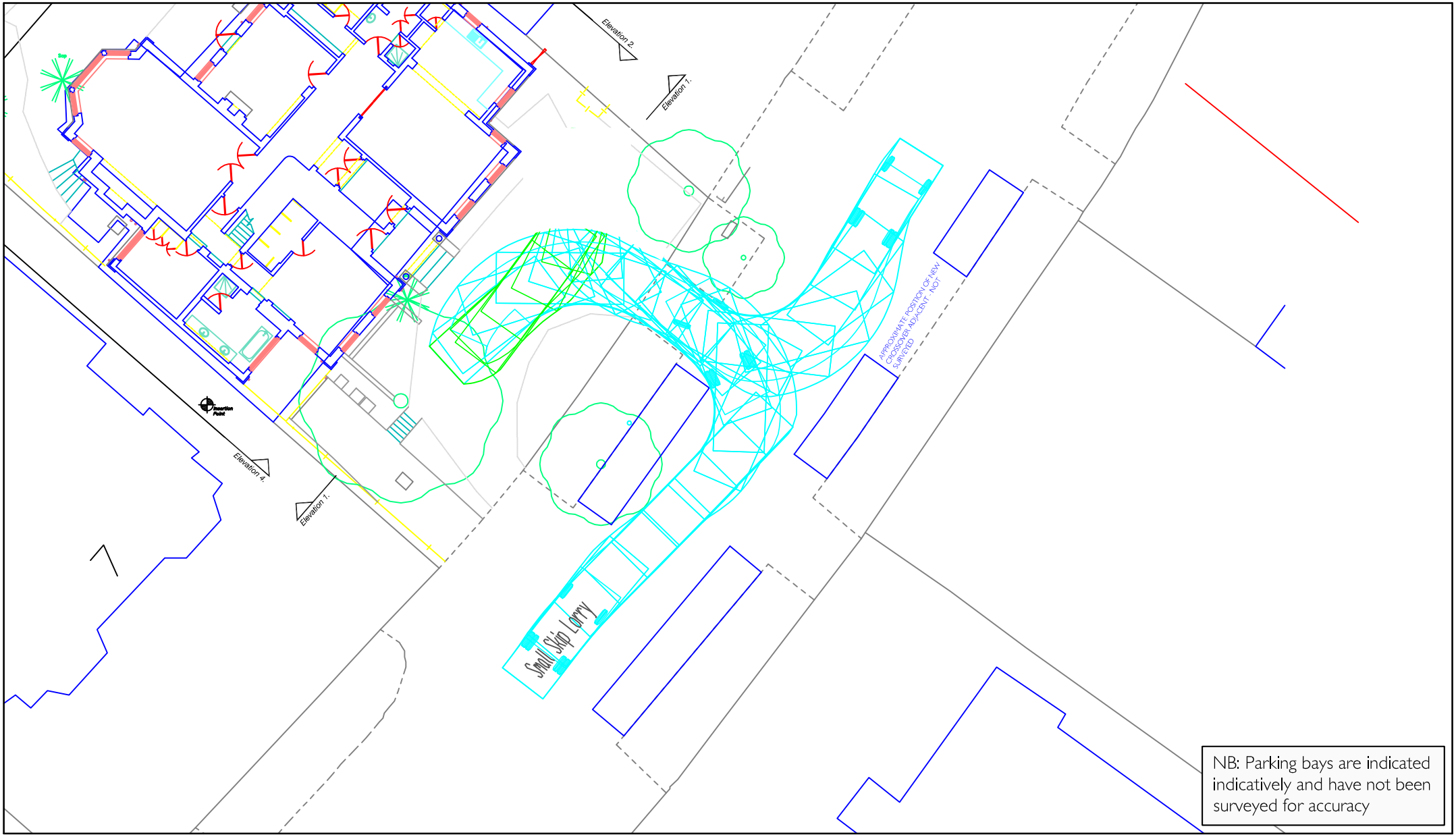
N

P991: 9 Templewood Avenue, London, NW3 7UY

Figure 3

Skip Lorry Exiting the Driveway at 9 Templewood Avenue in Forward Gear

PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS
The Mission Hall, Walkers Place, Putney, London SW15 1PP
Tel: 0208 780 0426 Fax: 0208 780 0428
E-mail: paul.mew@pma-traffic.co.uk Website: www.pma-traffic.co.uk



Date: 30-August-20012
Scale: 1:250@A4
Source: AutoTrack
Drawing No. P991/ATR/04

N

P991: 9 Templewood Avenue, London, NW3 7UY

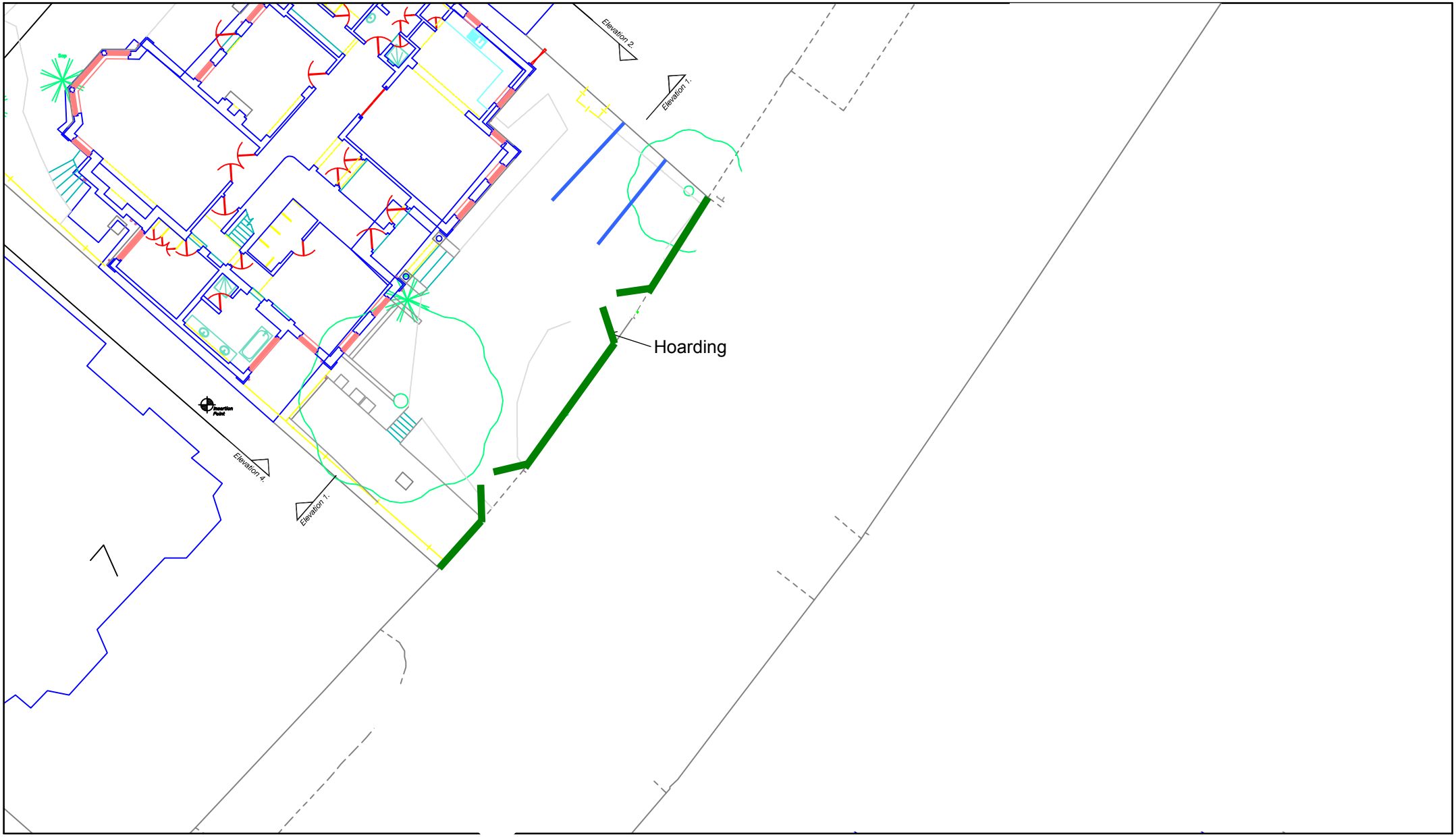
Figure 4

Skip Lorry Entering the Driveway at 9 Templewood Avenue, 3-Point-Turn to Exit the Site Also in Forward Gear

PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS
The Mission Hall, Walkers Place, Putney, London SW15 1PP
Tel: 0208 780 0426 Fax: 0208 780 0428
E-mail: paul.mew@pma-traffic.co.uk Website: www.pma-traffic.co.uk

Appendix 4
Site Plan
Access Routes & Hording


Top of Fence
107.45
Top of Fence
106.64
Sap
Gy
St
SP


Elevation 2
Elevation 1.
Hoarding
Elevation 4.
Elevation 1.

Appendix 5
Site Plan
Drainage

N

Building Survey Legend:

SHt 1.00 *HHt 2.12*	Sill Height from FFL. Head Height from FFL.
SL 51.03m *HL 52.82m*	Sill Level from defined datum. Head Level from defined datum.
Susp CHt: 2.00 *Struct CHt: 3.00*	Suspended Ceiling Height from FFL. Structural Ceiling Height from FFL.
Susp Ceil: 30.00m *Struct Ceil: 31.00m*	Suspended Ceiling Level from datum. Structural Ceiling Level from datum.
IFL: 100.00m *+100.00m*	Internal Floor Level (General). Internal Floor Level (Specific).
Insertion Point	Insertion Point for overlay drawings of other floors or details.

Topographical Legend:

Note:
Although O.S. Coordinates may be shown on this plan the grid is to be treated as arbitrary.
No scale factor has been applied to the survey therefore the any coordinates shown are not true O.S. Coordinates.
Please refer to Survey Station Coordinate Table above to enable correct establishment of the on-site grid used.

OS Buildings | Surveyed Buildings

Buildings / walls
Fence Line
Edge of surface
Canopy / Overhang
Line Marking
Centre Line
Barrier
Hedge
Boundary Fence
Postal Fence
Open Fence
Overhead Powerline
Chamber
Woodland
Station and Name
Station Level
Benchmark
Bowmark
Trial Hole
Tree / Bush / Sapling
Area of Undergrowth
Gate
Inspection chamber
Cover level
Invert level
Pipe Invert (diameter)
Gully
Back Gully
Manhole

Elec Electric
BT British Telecom
Fh Fire Hydrant
St Stop tap
Sv Stop valve
Wo Wash Out
Wm Water Meter
Mkr Service Marker
Rs Rodding eye
Av Air Valve
Cmp Cable Marker
Lp Lamp Post
Sp Sign Post
Ep Electricity Pole
Tp Telegraph Post
TL Traffic light
Bs Bus Stop
Fl Floodlight
Fp Flagpole
Pb Post box
Lb Litter Bin
Bo Bollard
TCB Telephone call box
Fa Flagstaff
WL Water level
Ht Height
IFL Internal floor level
THL Threshold level
Re Rodding Eye
Dis Drop kerb
Coa Coal
Ear Earth rod

Rev	Date	Description	Drawn	Q. Rev

greenhatch group
Topographical Surveys
Site Engineering
Measured Building Surveys
3D Laser Scanning
Rowan House
Duffield Road
Little Eaton
Derby
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admin@greenhatch-group.co.uk

CLIENT
Xul Architecture

PROJECT
9 Templewood Avenue
London
NW3 7UY

TITLE
Topographical Survey

SCALE	DATE	DRAWN	QUALITY REF.
1: 100	6.7.12	PG	B0412

Level datum	GPS
Grid orientation	GPS
Job number	17228

Drawing No. **17228_OGL** Rev.

Comments
This plan should only be used for its original purpose. GreenHatch Ltd accepts no responsibility for this plan if supplied to any party other than the original client.
All dimensions should be checked on site prior to design and construction.
Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.

Notes:

DO NOT SCALE

Appendix 6
Site Plan
Storage

N

Building Survey Legend:

SHt 1.00 *HHt 2.12*	Sill Height from FFL. Head Height from FFL.
SL 51.03m *HL 52.82m*	Sill Level from defined datum. Head Level from defined datum.
Susp CHt: 2.00 *Struct CHt: 3.00*	Suspended Ceiling Height from FFL. Structural Ceiling Height from FFL.
Susp Ceil: 30.00m *Struct Ceil: 31.00m*	Suspended Ceiling Level from datum. Structural Ceiling Level from datum.
IFL: 100.00m *+100.00m*	Internal Floor Level (General). Internal Floor Level (Specific).
Insertion Point	Insertion Point for overlay drawings of other floors or details.

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Please refer to Survey Station Coordinate Table above to enable correct establishment of the on-site grid used.

OS Buildings | Surveyed Buildings

	Buildings / walls		
	Edge of surface		
	Canopy / Overhang		
	Line Marking		
	Centre Line	Elec	Electric
	Barrier	BT	British Telecom
	Hedge	Fh	Fire Hydrant
	Boundary Fence	St	Stop tap
	Postal Fence	Sv	Stop valve
	Open Fence	Wo	Wash Out
	Overhead Powerline	Wm	Water Meter
	Chamber	Mkr	Service Marker
	Woodland	Rs	Rodding eye
		Av	Air Valve
	Station and Name	Cmp	Cable Marker
100.000	Station Level	Lp	Lamp Post
BM 100.00	Benchmark	Sp	Sign Post
BH 1	Borehole	Ep	Electricity Post
TH 1	Trial Hole	Tp	Telegraph Post
		TL	Traffic light
	Tree / Bush / Sapling	Bs	Bus Stop
		Fl	Floodlight
	Area of Undergrowth	Fp	Flagpole
		Pb	Post box
	Gate	Lb	Litter Bin
IC	Inspection chamber	Bo	Bollard
CL	Cover level	TCB	Telephone call box
IL	Invert level	Fs	Flagstaff
Pi inv -#0.25	Pipe invert (diameter)	WL	Water level
Gy	Gully	Ht	Height
Rg	Back Gully	IFL	Internal floor level
MH	Manhole	ThL	Threshold level
		Re	Rodding Eye
		Dk	Drop kerb
		Gra	Grip
		Ev	Kerb cut

Rev.	Date	Description	Drawn	Q. Ref.

greenhatch group
Topographical Surveys
Site Engineering
Measured Building Surveys
3D Laser Scanning
Rowan House
Duffield Road
Little Eaton
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CLIENT
Xul Architecture

PROJECT
9 Templewood Avenue London NW3 7UY

TITLE
Topographical Survey

SCALE	DATE	DRAWN	QUALITY REF
1: 100	6.7.12	PG	B0412

Level datum	GPS
Grid orientation	GPS
Job number	17228
Drawing No.	17228_OGL
Rev.	

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Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.

Notes:

DO NOT SCALE

Appendix 7
Site Plan
General Layout (Facilities, Office)

N

Building Survey Legend:

SHt 1.00 *HHt 2.12*	Sill Height from FFL. Head Height from FFL.
SL 51.03m *HL 52.82m*	Sill Level from defined datum. Head Level from defined datum.
Susp CHt: 2.00 *Struct CHt: 3.00*	Suspended Ceiling Height from FFL. Structural Ceilling Height from FFL.
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Buildings / walls
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Edge of surface
Canopy / Overhang
Line Marking
Centre Line
Barrier
Hedge
Retaining Fence
Postal Fence
Open Fence
Overhead Powerline
Chamber
Woodland
Station and Name
Station Level
Benchmark
Bowhole
Trial Hole
Tree / Bush / Sapling
Area of Undergrowth
Gate
Inspection chamber
Cover level
Invert level
Pipe Invert (diameter)
Gully
Back Gully
Manhole

Elec Electric
BT British Telecom
Fh Fire Hydrant
St Stop tap
Sv Stop valve
Wo Wash Out
Wm Water Meter
Mkr Service Marker
Rs Rodding eye
Av Air Valve
Cmp Cable Marker
Lp Lamp Post
Sp Sign Post
Ep Electricity Pole
Tp Telegraph Post
TL Traffic light
Bs Box Stop
Fl Floodlight
Fp Flagpole
Pb Post box
Lb Litter Bin
Bo Bollard
TCB Telephone call box
Fa Flagstaff
WL Water level
H Height
IFL Internal floor level
THL Threshold level
Re Rodding Eye
Dis Drop kerb
Goa Coal
Er Earth rod

Rev	Date	Description	Drawn	Q. Rev

greenhatch group
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CLIENT
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PROJECT
9 Templewood Avenue London NW3 7UY

TITLE
Topographical Survey

SCALE	DATE	DRAWN	QUALITY REF.
1: 100	6.7.12	PG	B0412

Level datum	GPS
Grid orientation	GPS
Job number	17228

Drawing No. **17228_OGL** Rev.

Comments
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Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.

Notes:

DO NOT SCALE

Appendix 8
Structural Stability Review
and Basement Impact Assessment

IAN DRUMMOND
Consulting Engineers

90 Cowcross Street ~ London EC1M 6BH
Tel 020 7253 6805 ~ Fax 020 7253 6806

9 TEMPLEWOOD AVENUE NW3

STRUCTURAL STABILITY REVIEW AND BASEMENT IMPACT ASSESSMENT

September 2012

Revision A

Director I G Drummond BScEng CEng MIStructE
Consultant John O Drummond BA FCCA

email ian@idce.co.uk
mobile 07780 995 458

Contents

1.0 Introduction

1.1 Proposed Development

This report is submitted in support of a planning application as prepared by Xul Architecture Ltd. pertaining to the property in accordance with the requirements of the London Borough of Camden. These requirements are set out within the Development Policy DP27 and the Camden Planning Guidance CPG4 – Basements and Lightwells

The report is to be read in conjunction with architectural drawings series 12_11, which form part of the planning application, together with structural drawings series 3344 appended to this report. The report should also be read in conjunction with the site specific Hydrogeological Review by GCG Ltd, The Site Investigation Report by HESI Ltd and the Report on the impact on Trees by John Cromar's Arboricultural Company Ltd.

This report deals specifically with the requirement under DP27 to maintain the structural stability of the building and neighbouring properties. In doing so this report reviews the constraints imposed by the existing structure, adjacent structures and surroundings and prevailing ground conditions to ascertain the most appropriate form of construction work to achieve the basement proposals indicated in the architectural drawings. Methods of working are selected on the basis of minimising the impact, both during the works and in the permanent condition, on the following aspects.

- The Existing Building
- Party walls and boundaries
- Adjacent structures

References to left and right are made viewing the property from the front.

1.2 Purpose of work

It is proposed to refurbish an existing basement and ground floor maisonette by extensively remodelling the inside of the ground floor, removing many of the internal load bearing walls and creating new rear bay windows with internal space between them.

In doing so, it is also proposed to enlarge the existing basement, which currently occupies the front and left side sections of the building, to extend under the full footprint of the rear half of the building and onwards into a full width light well along the rear elevation.

The double storey side extension is proposed to be reconstructed in an enlarged form.

1.3 Qualifications

This report has been prepared by Ian Drummond BSc(Eng) CEng MIStructE. Ian Drummond has been practicing as a consulting engineer in central London for the last 27 years and has extensive experience in subterranean developments. This report has been checked by Peter Lecheta MSc (Eng) who has practiced as a structural engineer involved in subterranean developments for the past 10 years.

1.4 References

Camden Development Policy DP27
Camden Planning Guidance CPG4
Camden Geological, Hydrogeological and Hydrological Study
HESI Ltd - Site Investigation Report
GCG Ltd - Hydrogeological Review
John Cromar's Arboricultural Company Ltd - Report on the impact on trees

1.5 Limitations of Report

The conclusions and recommendations made in this report are limited to those that can be made on the basis of the research carried out. The results of the research should be viewed in the context of the work that has been carried out and no liability can be accepted for matters outside the stated scope of the research. Any comments made on the basis of information obtained from third parties are given in good faith on the assumption that the information is accurate. No independent validation of third party information has been made by IDCE Ltd

2.0 SCREENING

2.1 Structural Stability Screening Assessment

1. Does the proposed basement involve propping and re-support of the existing building	Yes
2. Does the proposed basement extend lower than the party fence structure to the right	Yes
3. Does the proposed basement extend lower than the building structure to the right	No
4. Does the proposed basement extend lower than the party fence structure to the left	The existing side extension reaches the boundary and this wall is to be demolished and rebuilt
5. Does the proposed basement extend lower than the building structure to the right	Unable to establish
6. Does the proposed basement undermine the public highway?	No
7. Does the proposed basement undermine and structures in the rear garden?	No

2.2 Slope Stability Screening Assessment

1. Does the existing site include slopes, natural or manmade, greater than 7°?	No
2. Will the proposed re-profiling of landscaping at the site change slopes at the property boundary to more than 7°?	No
3. Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7°?	No
4. Is the site within a wider hillside setting in which the general slope is greater than 7°?	No
5. Is the London Clay the shallowest strata at the site?	Yes
6. Is there a history of seasonal shrinkage-swell subsidence in the local area and/or evidence of such effects on the site.	No
7. Is the site within an area of previously worked ground?	No
8. is the site within 5m of a highway or pedestrian right of way?	No
9. Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties.	No
10. Is the site over (or within the exclusive zone) of and tunnels eg railway lines?	No

3.0 Scoping and Site investigation

3.1 Existing Buildings and Surroundings

The existing building is a detached residential property, originally constructed as a single occupancy residential dwelling, but subdivided into smaller residential units at some point in the past. The subject property occupies the ground floor and partial basement while there are currently two residential units on the first floor and one on the second floor which fall outside the demise of the subject property.

Trees and vegetation exist at the front and rear of the property including mature trees in close proximity. However there are currently no indications of overall structural movement affecting any part of the building as a result of tree root activity in shrinkable clay sub soils.

The left wall of the property is situated on the boundary, forming the side wall of the current side extension which is at existing basement and ground floor level. Consequently the existing side wall is retaining land from the adjacent property to the left. The property to the left, No 7, is approximately 2.5 – 3.0m away from the boundary with the ground sloping slightly down towards the left.

The right wall of the property is set in by approximately 900mm from the right side boundary. Works are currently underway in the formation of a new full size basement in the property on the right, No 11, and from the planning documentation relating to the new basement works at No 11 the foundations of the proposed basement will extend to a very similar level to the foundations of No 11 on the right. Nonetheless, the boundary, side path and adjoining land will need to be retaining by the new basement wall on the right side of the property.

To the rear of the property, the existing garden extends approximately 24m and no trees of particular note exist in close proximity to the redevelopment. The variations in ground level are proposed to be rationalised by levelling across the width of the property and stepping up toward the rear which will involve low garden retaining walls to deal with the general fall of the ground from right to left and from rear to front.

3.2 Site investigation

A visual survey and measured survey have been carried out to the existing property and surroundings. These did not reveal anything prohibitive with respect to the proposals.

An intrusive ground investigation has been carried out by Herts & Essex Site investigation Ltd. in terms of two bore holes at the rear of the property in the vicinity of the basement extension to ascertain the nature of the ground and presence of ground water.

The full report forms part of the Basement Impact Assessment, however in general terms the natural ground was found to be firm sandy CLAY which will provide a typical bearing capacity for London Clay. Slow water seepage was found up to 2.75m BGL which would affect the bottom 250mm of excavations.

This ground will be suitable for re-support of the building on new foundations and for staged excavations. While temporary shoring of excavations is required as a matter of course, clay stands up well in the temporary condition and it will be possible to cut the ground to accurate lines to form the various ground works stages.

Tendency for the clay to heave due to removal of overburden pressure will be compensated by the bearing pressure of the new foundations. The basement slab between the foundation will need to be suspended to combat clay heave.

3.3 Potential Impacts

POTENTIAL IMPACT	POSSIBLE CONSEQUENCES
1. The existing building will need to be temporarily propped and re-supported on a new steel framework as part of the works.	Movement to superstructure during load transfer
2. The existing building will need to be underpinned as part of the works.	Movement to superstructure and upper floors as a result of underpinning works
3. The party fence structure to the right will be undermined as part of the works	Movement and structural damage to party fence structure
4. The adjacent land to the right will be undermined as part of the works	Subsidence of land and possible damage to hard landscaping

4.0 Proposed Construction

4.1 Proposed Structural Form

In view of the traditional ground bearing foundations to the existing basement areas, it is proposed to use ground bearing retaining walls (as opposed to piled) to maintain continuity of structural form and compatibility with the existing foundations with respect to seasonal movement in the bearing strata. Existing foundations, extended foundations, new foundations and new retaining walls are all proposed to be founded on the same bearing strata at very similar founding levels. The existing superstructure is to be re-supported on a new framework of steel beams and columns which can be installed in turn and brought to bear on the new foundation arrangement. The existing timber joisted ground floor structure would be replaced with a new precast floor with in-situ concrete build-up. Underpin retaining walls are proposed to be used to facilitate the ability to excavate and re-support only short sections at a time and limit the movement in the surrounding ground during the operation.

4.2 General Underpinning Method

Underpinning for basement creation below existing buildings is routinely carried out in London and can be successfully achieved by a system of sequenced excavations and construction of short lengths of concrete walls and foundations. These serve to provide new vertical support to the existing building, as well as retain the ground for the formation of the basements. Limited excavations of approximately one metre wide are carried out to ensure that a short length of building only is undermined at any point in the construction sequence. By the nature of the operation, the excavations are carried out in a confined working space and can require temporary shoring if sections of the ground are found to be insufficiently cohesive to be stable in the temporary condition. Once the short section of reinforced concrete has been cast and the building re-supported by pinning up tight off the new construction, the next section of excavation is commenced in a location remote from the first. This method of working ensures the temporary stability of the existing building. As the sequence progresses, more and more of the existing building is re-supported on new foundations, which are usually more rigorous than the original due to the increased founding depth.

No cumulative effects of this construction works have been identified.

4.3 Outline Method Statement

1) Strip out the ground floor ceilings to fully expose the existing structure supporting the first floor above.
2) Remove the ground floor structure to expose the under floor void.
3) Excavate locally in location of new column bases, propping locally as required.
4) Cast new column bases.
5) Chase out existing walls as required and install new steel columns between basement and ground floor level.
6) Install new steel beams at ground floor level.
7) Needle and prop existing walls supporting first floor structure and install new beams and posts supporting first floor above.
8) Demolish existing walls, ground to first.
9) Install new precast beam and block flooring at ground floor level which will also act as a temporary crash deck.
10) Commence with underpinning of existing basement walls to new founding level.
11) Simultaneously commence with non-structural fit out and finishing ground floor.
12) Demolish existing side extension and temporarily shore existing boundary retaining wall.
13) Cut out boundary retaining wall in short sections and cast new deeper retaining walls.
14) Access rear of property with machine and commence earth work at rear.
15) Excavate and cast retaining wall at the rear in short sections and in sequence to ensure stability of ground.
16) Cast the in-situ reinforced concrete bridging slab between the rear of the building and the light well retaining wall.
17) Complete the sequence of perimeter underpinned retailing walls and internall underpinning.
18) Construct the superstructure for the two storey side extension.
19) Continue with damp proofing, finishes and fit out.

4.4 General Method Statement

The fully detailed method of working would be specified in the consulting engineer's General Method Statement following detailed design and forming part of the contract documentation with wich the contractor is obliged to comply.

4.5 Contractor's Method Statement

Actual working practices on site would be subject to the Contractor's Method Statement which the contractor would be obliged to produce prior to start of works on site.

5.0 BASEMENT IMPACT ASSESSMENT

5.1 Impact on the Building

While there is a potential impact on the existing building in terms of differential movement during load transfer the risk is no greater than for any other typical alteration and refurbishment project. Care will need to be taken to sequence the ground works so that excavations are kept to short sections and re-supported immediately during the works. Pre-stressing techniques should be employed during installation of steelwork to minimise deflection during load transfer. Providing such measures are taken the impact on the building is anticipated to be small with category of damage under the Burland Scale being 0 or 1, Negligible or Very Slight.

5.2 Impact on Party Walls and Adjacent Buildings

The sequential nature of underpinning work carried out in short sections protects adjacent structures from undermining and subsequent ground movement, particularly in the case of cohesive clay. The impact on the party fence wall with No 11 is therefore anticipated to be small with category of damage under the Burland Scale being 0 or 1, Negligible or Very Slight.

Due to the similar founding level of the basement at No 11 currently under construction the impact on the works on No 11 are anticipated to be negligible with category of damage under the Burland Scale being 0.

Due distance of No 7 from the works the impact on the works on No 11 are anticipated to be negligible with category of damage under the Burland Scale being 0. In the event of the adjoining owner at No 7 wishing to form a basement to the same level in the future, this can be achieved by excavating to the top of the base level and then casting new construction against the wall stem.

5.3 Impact on Land Stability

It is anticipated that the development will have no impact on land stability.

5.4 Impact on Ground Water

A hydro-geological review has been carried out by the Geotechnical Consultancy Group which forms part of the basement impact assessment. The report concludes that the proposed development is believed to have no significant impact on the local groundwater.

5.5 Impact on Surface Water and Flooding

While the development is believed to have no significant impact on surface water and flooding the Geotechnical Consultancy Group report advises that measures should be implemented to adequately deal with surface water as part of the development works.

5.6 Impact on Trees

A report on the impact on trees of proposed development has been carried out by John Cromar's Arboricultural Company Limited and forms part of the impact assessment. The report concludes that the development will not be injurious to trees to be retained, nor will it require and trees of significant public amenity value to be removed.

6.0 MITIGATION

6.1 Pre-stressing

Pre-stressing of superstructure steelwork by means of flat jacking is recommended to minimise deflection during load transfer.

6.2 Monitoring

To ensure the ongoing temporary and permanent stability of party structures and adjacent buildings, precise level monitoring would be carried out to the neighbouring house side walls on both sides of the building prior to commencement of excavation work and at regular intervals during the course of excavation. A trigger level would be set to allow immediate notification of excessive deflections so that any shortfall in the effectiveness of working methods can be identified and rectified as work proceeds. This will ensure the protection of the adjacent building structures from any unexpected effect of the works.

6.3 Protection and de-watering

While only a small degree of ground water at the base of the excavations is anticipated, protection of excavated areas is recommended together with de-watering facilities to ensure that all excavations and reinstatement works are carried out in the dry.

7.0 Conclusion

The new basement construction as set out in the drawings and method statement gives due consideration to the building structures on and adjacent to the site and allows work to proceed in a way which can be monitored as it progresses, so that any variations in soil conditions or unforeseen anomalies can be dealt with as they arise.

The works can be constructed in such a way as to ensure the temporary and long-term stability of the boundary walls and adjacent structures.

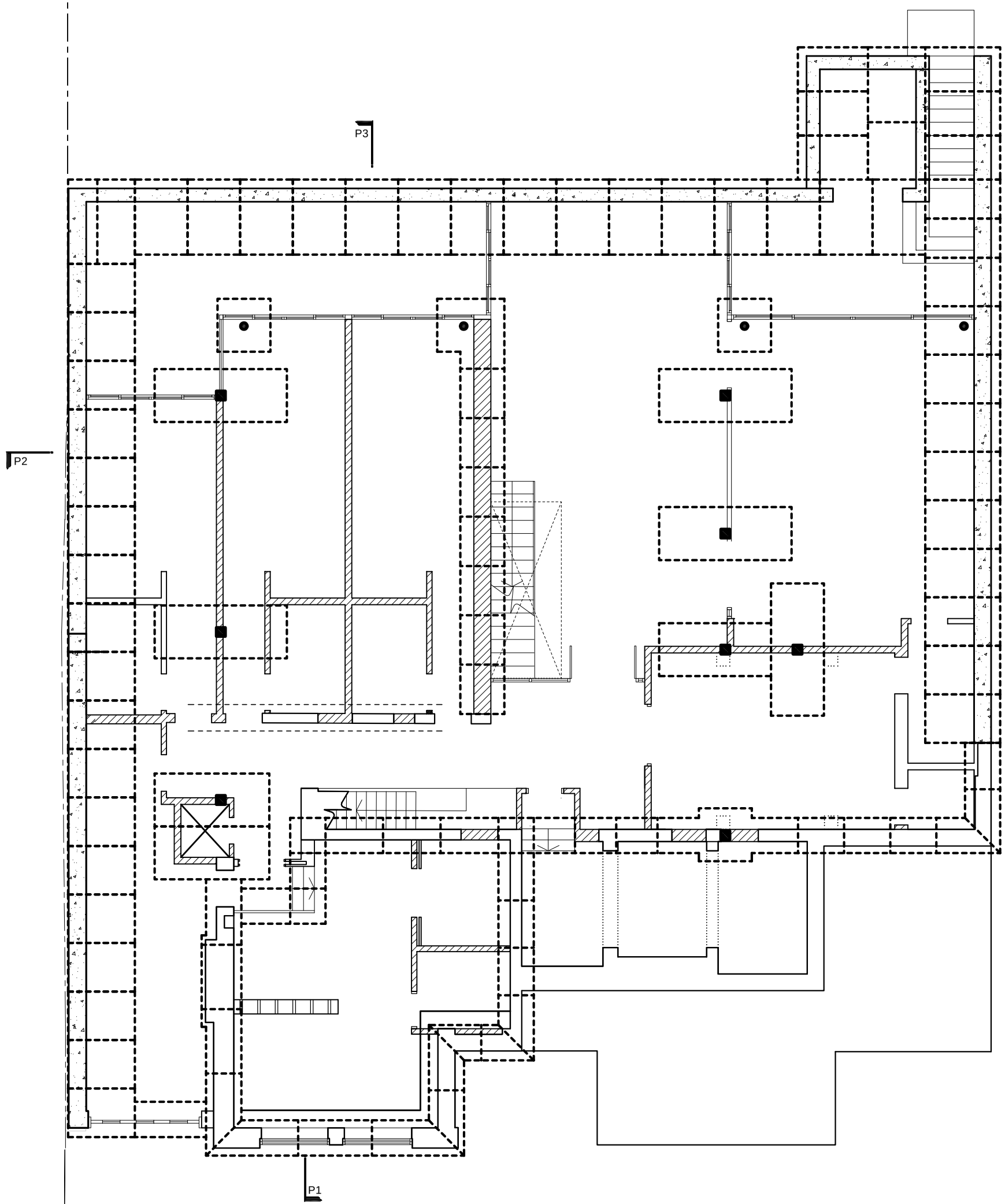
The works do not present a risk to surrounding trees or vegetation, either during the works or after completion.

The methods of working described in the proposals are common methods of construction, regularly employed and do not involve any unusual or experimental techniques.

The foregoing demonstrates that, using methodologies appropriate to the site, the proposed development can be carried out in such a way that maintains the structural stability of the building and neighbouring properties, avoids adversely affecting drainage and run-off or causing damage to the water environment and avoids cumulative impacts on structural stability or the water environment in the local area.

……..

I.G. DRUMMOND BScEng CEng MIStructE



KEY

- New Foundation
- Existing Foundation
- New Load Bearing Walls
- New Reinforced Concrete Walls
- Steel Post
- Steel Post Under
- New Steel Beam
- Existing Beams
- Precast Beam & Block Floor

THESE DRAWINGS ILLUSTRATE STRUCTURAL PRINCIPLES ONLY

Scale 1:50 @ A1

ABBREVIATIONS

T	Top
B	Bottom
GMS	galvanised mild steel
TPC	tooth plate connectors
LB	load bearing
c/c	centre to centre
extg	existing

Rev	Date	Detail
		ISSUED FOR PLANNING

BASEMENT PLAN

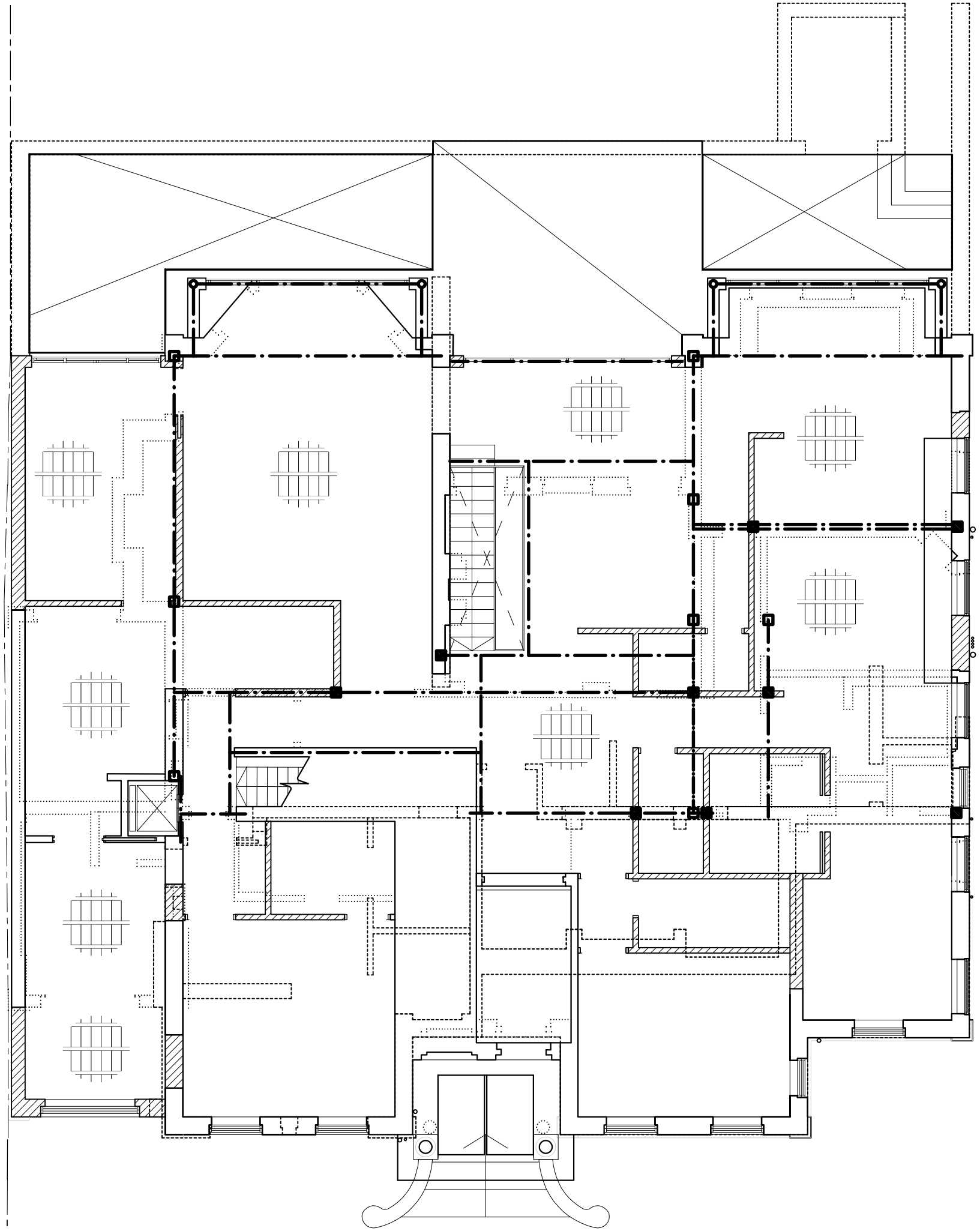
IAN DRUMMOND
Consulting Engineers

90 Cowcross Street ~ London EC1M 6BH
Tel 020 7253 6805 ~ Fax 020 7253 6806

9 TEMPLEWOOD AVE
LONDON NW3

Drawing Number 3344 / 1

Rev



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GROUND FLOOR

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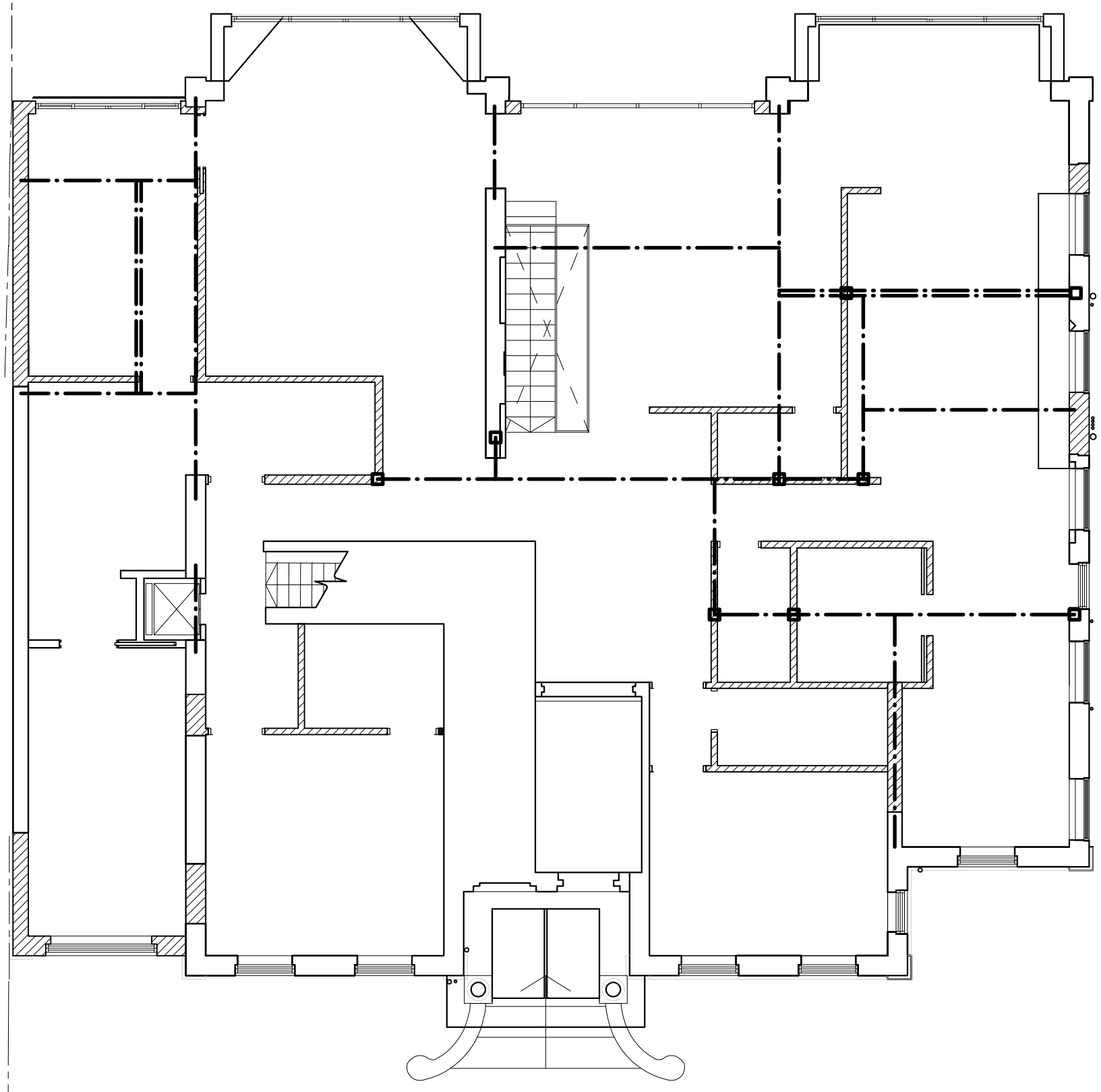
9 TEMPLEWOOD
LONODN NW3

Drawing Number 3344 / 2

Rev



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Rev	Date	Detail
		ISSUED FOR PLANNING

GROUND FLOOR CEILING

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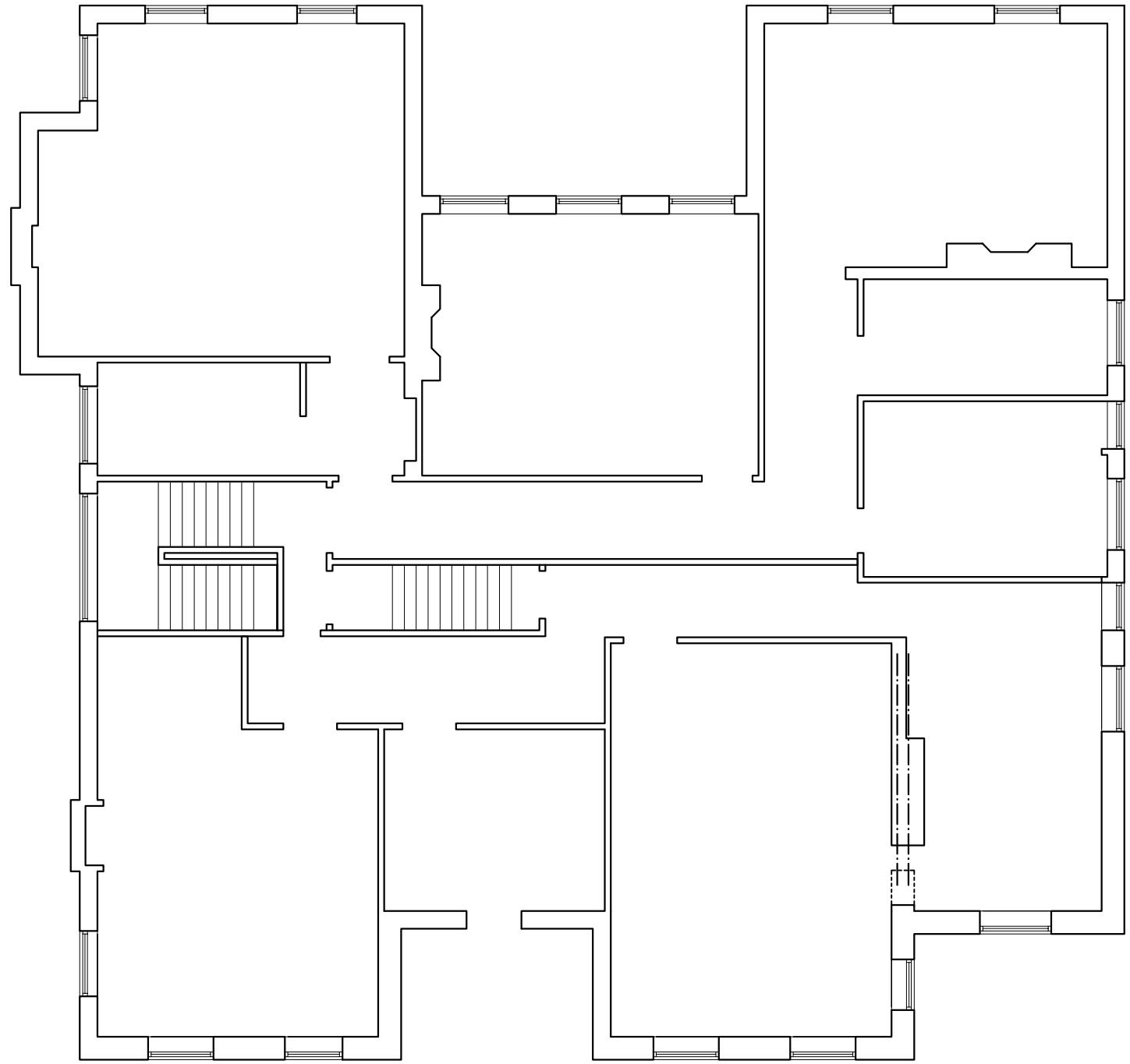
9 TEMPLEWOOD LONODN NW3

Drawing Number 3344 / 3

Rev

For information only



Scale 1:50 @ A1

ABBREVIATIONS

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B	Bottom
GMS	galvanised mild steel
TPC	tooth plate connectors
LB	load bearing
c/c	centre to centre
extg	existing

Rev	Date	Detail
		ISSUED FOR PLANNING

FIRST FLOOR

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9 TEMPLEWOOD
LONODN NW3

Drawing Number 3344 / 4

Rev

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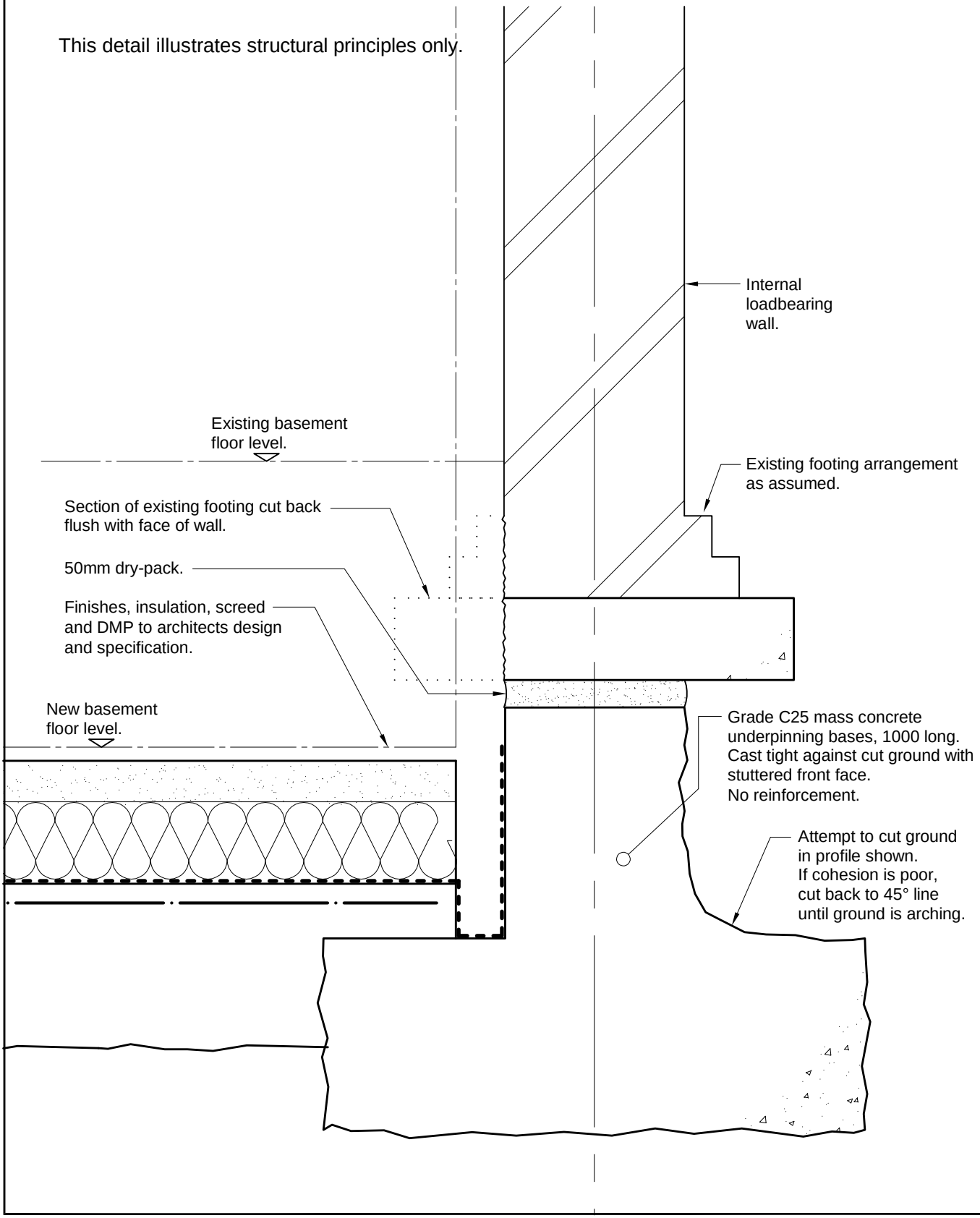
By	3344	P1	

Project

9 TEMPLEWOOD AVENUE
LONDON NW3

Internal Wall Underpinning

This detail illustrates structural principles only.



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9 TEMPLEWOOD AVENUE
LONDON NW3

Underpin Retaining Wall

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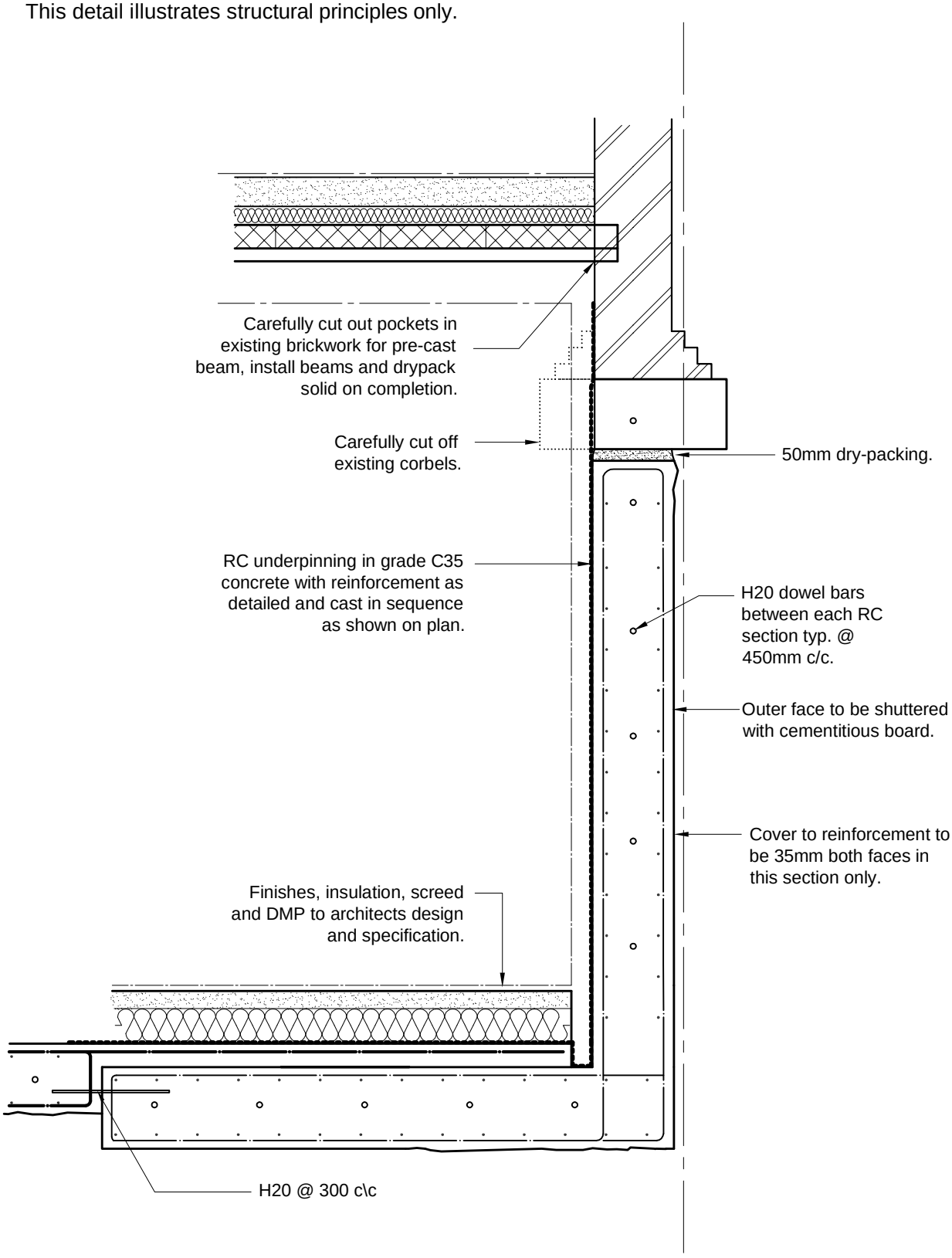

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Date	Job No	Sheet No	Rev
By	3344	P3	

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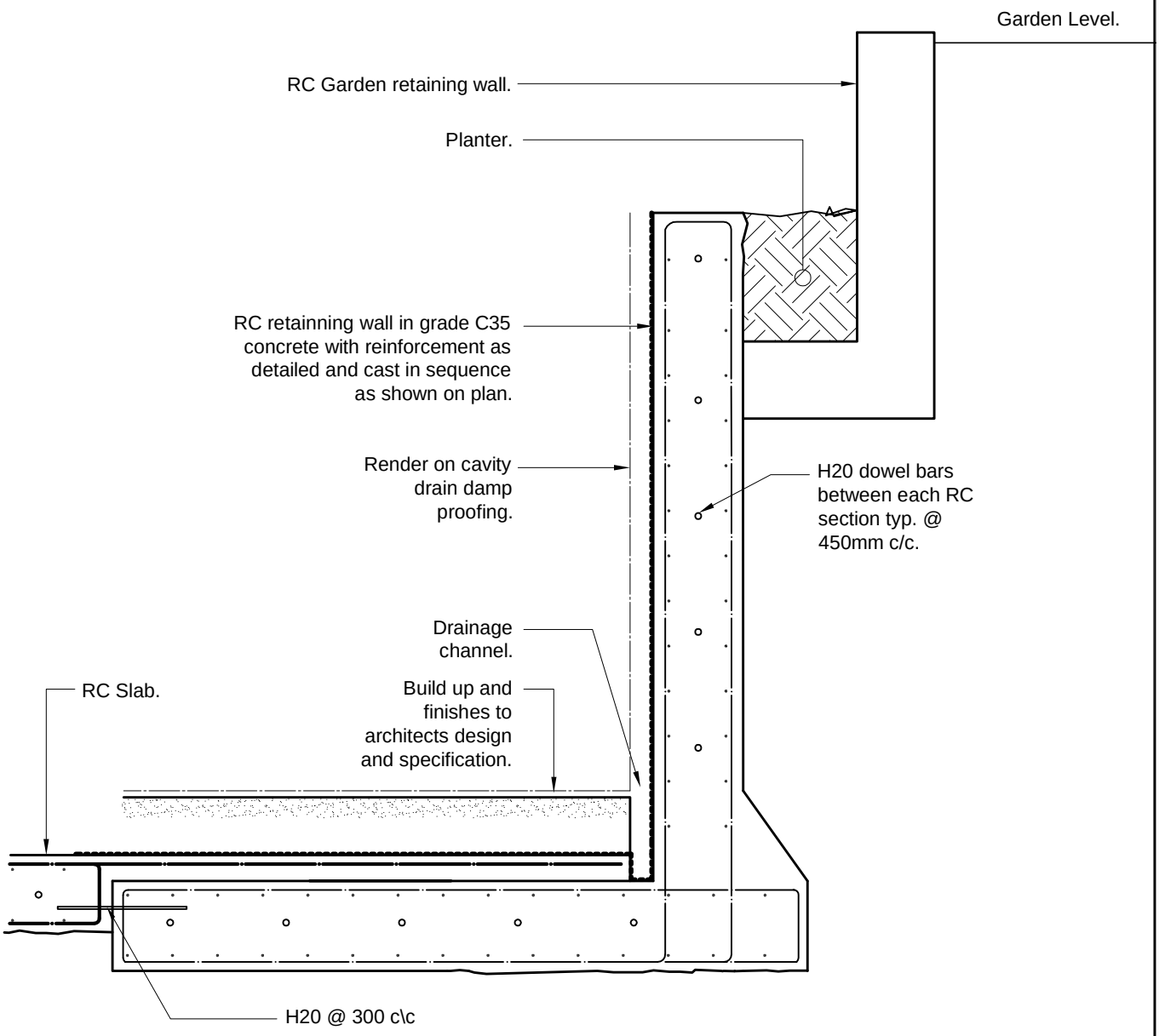
9 TEMPLEWOOD AVENUE
LONDON NW3

Lightwell Retaining Wall

This detail illustrates structural principles only.



GARDEN FENCE WALL (No. 11)

215 BRICKWORK

1 Brick	22.00 kN/m3	4.73	
2 coat plaster 2 sides		0.40	
Total DL		5.13	
Total LL		0.00	
Total DL+LL		5.13	kN/m2

UDL TAKEDOWN

				Load Fac 1.40	Load Fac 1.60		
	length (m)	x factor		DL	LL	Tot WKG	Tot UTL
215 Wall=	2.50	1.00	m @	5.13	0.00	12.83	17.96
					w1 =	12.83	17.96 kN/m
					DL =	12.83	kN/m
					LL =	0.00	kN/m

EXISTING FOOTING ASSESSMENT

Line Load = 12.83 kN/m run

Permissible Ground Bearing Stress taken as 100.00 kN/m2

Minimum strip width reqd = Load / Capacity = 0.13 metres

Assume existing footing width = 0.42 metres
(215mm wall with 2 corbels each side)

Factor of safety on load bearing capacity of existing footing = 3.20

EFFECT OF EXCAVATION OF BEARING CAPACITY

Ultimate bearing capacity = q ult = 0.5 B N + c Nc + DNq

Assume excavation of 3m in clay => q ult = 0 + 315 + 60 = 375 kPa pre-excavation

Assume excavation of 3m in clay => q ult = 0 + 315 + 0 = 315 kPa post excavation

Bearing capacity reduction = 16% post excavation

Therefore permissible ground bearing capacity = 84.00 kN/m2

Minimum strip width reqd = Load / Capacity = 0.15 metres

Assume existing footing width = 0.42 metres
(215mm wall with 2 corbels each side)

Acceptable