Construction Management Plan

pro forma v2.2

Camden

Contents

Revisions & additional material

Please list all iterations here:

Date	Version	Produced by
25/10/2017	V7	Paul Mew Associates
28/09/2018	V8	HEAT Architecture Limited
		Note: Changes in V8 are annotated in red

Additional sheets

Please note – the review process will be quicker if these are submitted as Word documents or searchable PDFs.

Date	Version	Produced by

Introduction

The purpose of the **Construction Management Plan (CMP)** is to help developers to minimise construction impacts, and relates to both on site activity and the transport arrangements for vehicles servicing the site.

It is intended to be a live document whereby different stages will be completed and submitted for application as the development progresses.

The completed and signed CMP must address the way in which any impacts associated with the proposed works, and any **cumulative impacts of other nearby construction sites**, will be mitigated and managed. The level of detail required in a CMP will depend on the scale and kind of development. Further policy guidance is set out in Camden Planning Guidance **(CPG)** 6: Amenity and **(CPG)** 8: Planning Obligations.

This CMP follows the best practice guidelines as described in Transport for London's (TfL's Standard for Construction Logistics and Community Safety (**CLOCS**) scheme) and Camden's Minimum Requirements for Building Construction **(CMRBC)**.

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

It should be noted that any agreed CMP does not prejudice or override the need to obtain any separate consents or approvals such as for road closures or hoarding licences.

If your scheme involves any demolition, you need to make an application to the Council's Building Control Service. Please complete the "**Demolition Notice.**"

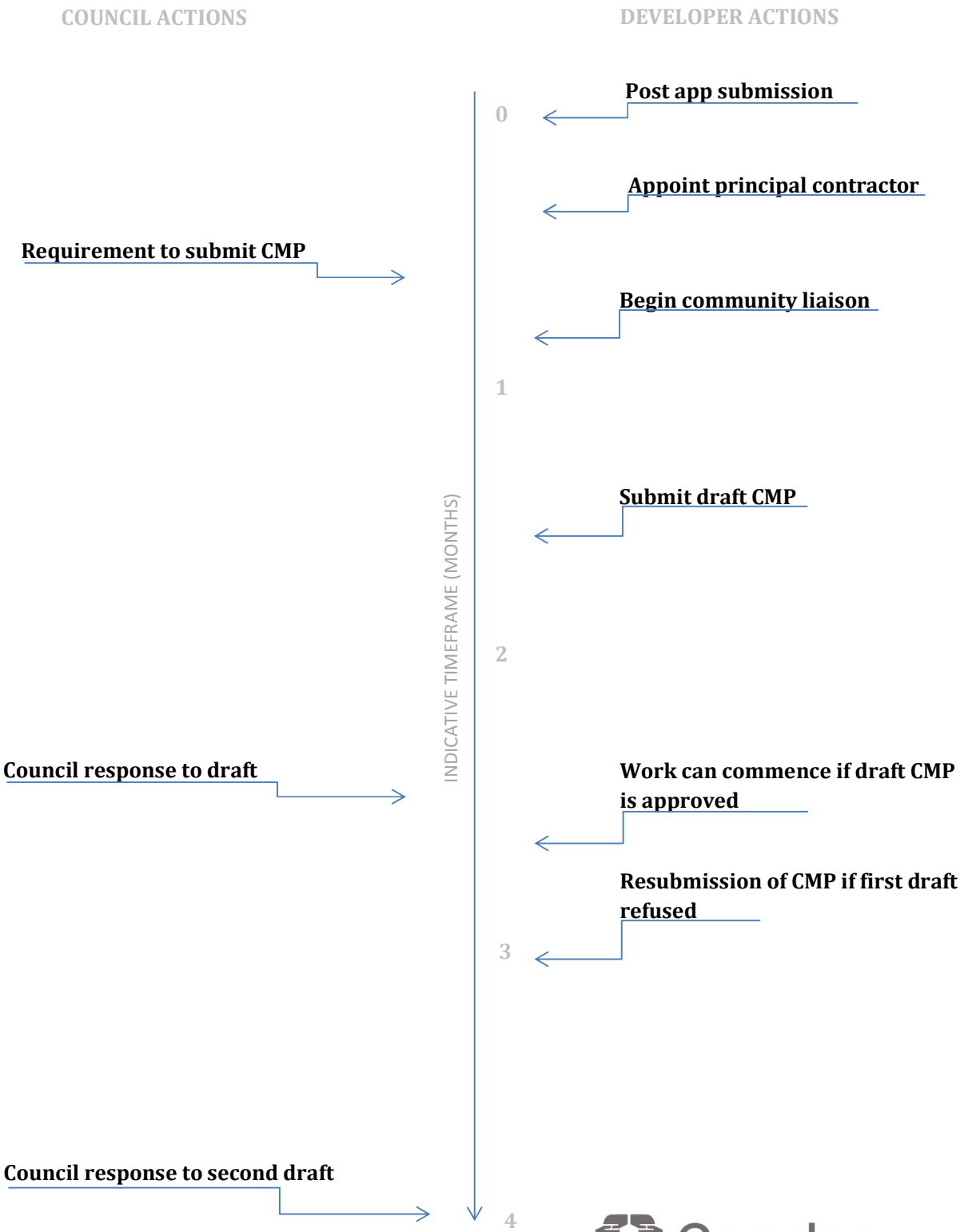
Please complete the questions below with additional sheets, drawings and plans as required. The boxes will expand to accommodate the information provided, so please provide as much information as is necessary. **It is preferable if this document, and all additional documents, are completed electronically and submitted as Word files to allow comments to be easily documented. These should be clearly referenced/linked to from the CMP.**

Please notify that council when you intend to start work on site. Please also notify the council when works are approximately **3 months from completion.**

(Note the term 'vehicles' used in this document refers to all vehicles associated with the implementation of the development, e.g. demolition, site clearance, delivery of plant & materials, construction, etc.)

Revisions to this document may take place periodically.

Timeframe


COUNCIL ACTIONS
DEVELOPER ACTIONS
Post app submission
0
Appoint principal contractor
Requirement to submit CMP
Begin community liaison
1
Submit draft CMP
INDICATIVE TIMEFRAME (MONTHS)
2
Council response to draft
Work can commence if draft CMP is approved
Resubmission of CMP if first draft refused
3
Council response to second draft
4

Contact

1. Please provide the full postal address of the site and the planning reference relating to the construction works.

Address*: Hillview, Vale of Health, Hampstead, NW3 1AN*

Planning ref: *2016/5613/P. The Council have granted permission for the application, subject to associated conditions and informatives, and "subject to the successful conclusion of a Section 106 Legal Agreement".*

Type of CMP: *Full CMP*

2. Please provide contact details for the person responsible for submitting the CMP.

Name: Charles Humphries on behalf of HEAT Architecture Ltd

Address: 135 Curtain Road, London EC2A 3BX

Email: mail@heat-architecture.com

Phone: 0207 837 2211

3. Please provide full contact details of the site project manager responsible for day-to-day management of the works and dealing with any complaints from local residents and businesses.

Name: Steve Clayton, Copues Construction Ltd

Telephone: 020 8363 3523

Email: info@copuesconstruction.co.uk

4. Please provide full contact details of the person responsible for community liaison and dealing with any complaints from local residents and businesses if different from question 3. In the case of **Community Investment Programme (CIP)**, please provide contact details of the Camden officer responsible.

Same as Question 3. The Site Project Manager will be responsible for daily liaison with local residents.

5. Please provide full contact details including the address where the main contractor accepts receipt of legal documents for the person responsible for the implementation of the CMP.

Name: Copues Construction Limited

Address: 32 Uplands Park Road, EN2 7PT

Email: info@copuesconstruction.co.uk

Site

6. Please provide a site location plan and a brief description of the site, surrounding area and development proposals for which the CMP applies.

The site location plan and map illustrating the site's location is shown in **Figure 1** of this report.

The site is located along Vale of Health, a residential road to the north of Hampstead and south of Hampstead Heath.

The site currently comprises a large terraced house which is currently in a state of disrepair. The property comprises lower ground floor plus three upper storeys. The proposed refurbishment seeks to sensitively reinstate the structural integrity and stability of the property whilst being sympathetic to the aesthetics and character of the conservation area.

7. Please provide a very brief description of the construction works including the size and nature of the development and details of the main issues and challenges (e.g. narrow streets, close proximity to residential dwellings etc).

The works comprise renovation of the property including replacement of the existing rear extension, re-roofing and underpinning and re-construction of the rear elevation and front steps which have structural defects resulting from movement.

The site is on a quiet residential street which is not a through-way and which has confined width. It is a terraced house and shares party walls with neighbours on either side.

8. Please identify the nearest potential receptors (dwellings, business, etc.) likely to be affected by the activities on site (i.e. noise, vibration, dust, fumes, lighting etc.).

The nearest potential receptors of any noise will be the nearby residential dwellings – Lakeview, Silverdale, Faircroft. The Vale of Health Society are also being consulted and informed.

Where possible construction methods will be employed which reduce noise generation in the first instance. Where it is necessary to carry out noisy activities, these will be identified well in advance and discussed prior to commencement with neighbours. The following measures will be implemented to reduce noise levels on the site.

- The contractor will screen the noise where possible through a combination of the hoarding, screens, material storage and existing structures.
- Where possible noisy stationary equipment will be located away from sensitive areas. Material handling areas will also be kept away from sensitive receptors.
- Drop heights of materials will also be kept to a minimum to avoid unnecessary extra noise. Where possible the contractor will use quiet or low noise equipment.
- Electrically operated plant will be used where practical.
- Operatives working in noisy areas will also be monitored to ensure they are wearing the necessary protective equipment and that they are not exceeding their permitted exposure periods.
- Efficient vehicle logistics ensure that vehicles arrive promptly, are off-loaded quickly and depart quickly meaning that there is less time when noise is generated. This will also prevent traffic build up noise being generated.

9. Please provide a scaled plan detailing the local highway network layout in the vicinity of the site. This should include details of on-street parking bay locations, cycle lanes, footway extents and proposed site access locations.

Figure 2 of this report sets out the local public transport accessibility of the site, whilst Figure 3A illustrates the local highway surrounding the site. A site-specific survey of the road markings and dropped kerb locations has not yet been conducted, as such the road markings are indicative at this stage and have been applied to provide context to vehicle tracking and swept-path analysis.

Regarding cycle lanes, Transport for London publishes cycling guides; with 14 guides in total covering the whole of London and cycle routes/conditions categorized by five colours. TfL's Local Cycle Guide 14 covers Hampstead, Camden, Tottenham and the surrounding area. A review of this guide demonstrates that Hampstead Heath to the north, and the B519 Spaniards Road are well-served by green and yellow routes respectively. However no route runs within immediately proximity of the Vale of Health and as such no cycle lanes will be compromised or affected by the proposed construction.

10. Please provide the proposed start and end dates for each phase of construction as well as an overall programme timescale. (A Gantt chart with key tasks, durations and milestones would be ideal).

Start Date: **1/11/2018**
Construction Phase: A detailed phasing plan for each stage of the development has been provided by the Lead Contractor and is attached in Appendix A of this CMP.
Site Setup and Demolition Phase: 1/11/18 - 15/3/2019
Structural Phase: 19/11/18 -15/5/19
First Fix Phase: 15/1/19 - 01/6/19
Second Fix Phase: 1/6/19 - 18/11/19
Decorations/Site Clean/Landsacping: 01/11/19 - 20/12/19

11. Please confirm the standard working hours for the site, noting that the standard working hours for construction sites in Camden are as follows:

- 8.00am to 6pm on Monday to Friday
- 8.00am to 1.00pm on Saturdays
- No working on Sundays or Public Holidays

The site working hours will be:

- 8.00am to 6pm on Monday to Friday
- 8.00am to 1.00pm on Saturdays
- No working on Sundays or Public Holidays

12. Please indicate if any changes to services are proposed to be carried out that would be linked to the site during the works (i.e. connections to public utilities and/or statutory undertakers' plant). Larger developments may require new utility services. If so, a strategy and programme for coordinating the connection of services will be required. If new utility services are required, please confirm which utility companies have been contacted (e.g. Thames Water, National Grid, EDF Energy, BT etc.) You must explore options for the utility companies to share the same excavations and traffic management proposals. Please supply details of your discussions.

At present, it is not anticipated that there will be any changes to the services being provided at the site.

If any works to utility services are required, the respective utility companies will be contacted to manage the provision / temporarily suspend their service.

Community Liaison

A neighbourhood consultation process must have been undertaken prior to submission of the CMP first draft. This consultation must relate to construction impacts, and should take place following the granting of planning permission in the lead up to the submission of the CMP. A consultation process specifically relating to construction impacts must take place regardless of any prior consultations relating to planning matters. This consultation must include all of those individuals that stand to be affected by the proposed construction works. These individuals should be provided with a copy of the draft CMP, or a link to an online document. They should be given adequate time with which to respond to the draft CMP, and any subsequent amended drafts. Contact details which include a phone number and email address of the site manager should also be provided.

Significant time savings can be made by running an effective neighbourhood consultation process. This must be undertaken in the spirit of cooperation rather than one that is dictatorial and unsympathetic to the wellbeing of local residents and businesses.

These are most effective when initiated as early as possible and conducted in a manner that involves the local community. Involving locals in the discussion and decision making process helps with their understanding of what is being proposed in terms of the development process. **The consultation and discussion process should have already started, with the results incorporated into the CMP first draft submitted to the Council for discussion and sign off.** This communication should then be ongoing during the works, with neighbours and any community liaison groups being regularly updated with programmed works and any changes that may occur due to unforeseen circumstances through newsletters, emails and meetings.

Please note that for larger sites, details of a construction working group may be required as a separate S106 obligation. If this is necessary, it will be set out in the S106 Agreement as a separate requirement on the developer.

Cumulative impact

Sites located within high concentrations of construction activity that will attract large numbers of vehicle movements and/or generate significant sustained noise levels should consider establishing contact with other sites in the vicinity in order to manage these impacts.

The Council can advise on this if necessary.

13. Consultation

The Council expects meaningful consultation. For large sites, this may mean two or more meetings with local residents **prior to submission of the first draft CMP**.

Evidence of who was consulted, how the consultation was conducted and a summary of the comments received in response to the consultation should be included. Details of meetings including minutes, lists of attendees etc. should be appended.

In response to the comments received, the CMP should then be amended where appropriate and, where not appropriate, a reason given. The revised CMP should also include a list of all the comments received. Developers are advised to check proposed approaches to consultation with the Council before carrying them out. If your site is on the boundary between boroughs then we would recommend contacting the relevant neighbouring planning authority.

Please provide details of consultation of draft CMP with local residents, businesses, local groups (e.g. residents/tenants and business associations) and Ward Councillors.

Consultation with local residents and stakeholders has been carried out as outlined above. With correspondence made between HEAT Architecture and Paul Mew Associates to respective queries made by local residents and the residents association.

For ease of reference, initial correspondence between both Charles Humphries of Heat Architecture and Paul Mew Associates with Ellen Solomons, Chair of the Vale of Health Society, is included in Appendix B. As indicated in the revised report, concerns or questions raised have been answered and dealt with accordingly, and as of 22nd June 2017 no further correspondence has been received.

Following the initial level of correspondence, Charles Humphries of HEAT Architecture attended the AGM of the Vale of Health Society, and met with Cllr Stark. Emails illustrating the positive correspondence following this meeting is illustrated in Appendix C for ease of reference.

Community liaison will continue to be an ongoing process, carried out during both the final planning and construction processes. Ahead of construction commencing onsite, an informational poster/newsletter including reference to the proposed development, the planning permission, and contract details for as a minimum the main contractor, would be displayed on the hoarding of the site so as to clearly be visible for the local community.

The developer will send an updated version of this CMP to the local residents association as part of ongoing consultation.

V6 of the CMP was sent to Councillors Currie, Stark and Cooper on 20/9/17. No response has been received.

14. Construction Working Group

Please provide details of community liaison proposals including any Construction Working Group that will be set up, addressing the concerns of the community affected by the works, the way in which the contact details of the person responsible for community liaison will be advertised to the local community, and how the community will be updated on the upcoming works i.e. in the form of a newsletter/letter drop, or weekly drop in sessions for residents.

The lead contractor will provide a detailed newsletter 14 days prior to construction work commencement on the site. The newsletter will include site specific details such as the contact details of the contractor and site management, enabling local stakeholders to raise any concerns while work is occurring on-site.

A Construction Working Group will be set up between the VOHS and the Lead Contractor to further ensure residents have the opportunity to consult throughout the process. This will be organised through the VOHS.

15. Schemes

Please provide details of your 'Considerate Constructors Scheme' registration, and details of any other similar relevant schemes as appropriate. Contractors will also be required to follow the "Guide for Contractors Working in Camden" also referred to as "Camden's Considerate Contractors Manual".

Q.14 response continued: We propose that the project managers and the contractor would attend, as well as any representatives of theVale of Health Society (VoHS).There has already been extensive consultation.The first meeting would be held once site facilities have been set up, during working hours at the convenience of the VoHS. Meetings should be monthly for the first three months, dropping back to bi-monthly thereafter.

The contractors will conform to the *Guide for Contractors Working in Camden* and *Camden's Considerate Contractors Manual.* Appropriate protection will be implemented to ensure that cyclists and pedestrians are safe during the construction process. Drivers will be made aware of their responsibilities and required to ensure that their vehicles are provided with all necessary safety aids such as Banksmen and that they have undertaken the necessary safety courses.

The scheme has been registered to the Considerate Contractors Scheme by the Lead Contractor, registration number – 105492. The full certificate is available to the Council upon request.

The contractor and any sub-contractors or other suppliers sending vehicles to and from the site will be members of the Fleet Operator Recognition Scheme (FORS). A brief introduction to FORS is presented below:

Fleet Operator Recognition Scheme (FORS)

FORS is a voluntary scheme set up by TfL. It aims to improve freight delivery in London by providing an industry quality and performance benchmark that encourages best practice. FORS increases professionalism among vehicle and fleet operators. Among the benefits are greater legal compliance, reduced supply chain disruption and improved occupational road safety.

Becoming FORS Bronze accredited means a contractor or subcontractor operating HGVs and/or fleets of vans has reached a set standard in the following areas:

- Drivers and driver management.
- Vehicle maintenance and fleet management.
- Transport operations.
- Supporting policies and procedures.

Main contractors to the development must show they and their suppliers are committed to safer and more efficient ways of working on site. This includes the use of vehicles. TfL recommends that within 90 days of an awarded contract, all contractors must have registered and gained FORS Bronze accreditation as a minimum standard. A list of FORS Bronze accredited companies can be found at www.fors-online.org.uk.

16. Neighbouring sites

Please provide a plan of existing or anticipated construction sites in the local area and please state how your CMP takes into consideration and mitigates the cumulative impacts of construction in the vicinity of the site. The council can advise on this if necessary.

Prior to commencing work, the Project Manager will request the Council to provide details of any other construction sites within close proximity to the site. This has already been progressed, with details of the nearby construction at 'The Garden House' being reviewed by the Hillview scheme architects, HEAT, who have carried out liaison with James Gorst Architects who are designing The Garden House. It was outlined at the VOHS meeting attended by HEAT that The Garden House project is not expected to commence until the end of the year. Nevertheless, prior consultation has already taken place.

Any other construction schemes within the immediate vicinity will continue to be consulted with the aim to ensure any potential disruption to traffic flow or highway amenity is not exacerbated by additional construction programmes taking place.

Transport

This section must be completed in conjunction with your principal contractor. If one is not yet assigned, please leave the relevant sections blank until such time when one has been appointed.

Camden is a CLOCS Champion, and is committed to maximising road safety for Vulnerable Road Users (VRUs) as well as minimising negative environmental impacts created by motorised road traffic. As such, all vehicles and their drivers servicing construction sites within the borough are bound by the conditions laid out in the CLOCS Standard.

This section requires details of the way in which you intend to manage traffic servicing your site, including your road safety obligations with regard to VRU safety. It is your responsibility to ensure that your principal contractor is fully compliant with the terms laid out in the CLOCS Standard. It is your principal contractor's responsibility to ensure that all contractors and sub-contractors attending site are compliant with the terms laid out in the CLOCS Standard.

Checks of the proposed measures will be carried out by the council to ensure compliance. Please refer to the CLOCS Standard when completing this section. Guidance material which details CLOCS requirements can be accessed here, details of the monitoring process are available here.

Please contact CLOCS@camden.gov.uk for further advice or guidance on any aspect of this section.

Please refer to the CLOCS Overview and Monitoring Overview documents referenced above which give a breakdown of requirements.

CLOCS Contractual Considerations

17. Name of Principal contractor:

Copues Construction Ltd

18. Please submit the proposed method for checking operational, vehicle and driver compliance with the CLOCS Standard throughout the duration of the contract (please refer to our CLOCS Overview document and Q18 example response).

It will be the duty of the Principal/Lead Contractor to ensure that sub-contractors appointed are CLOCS compliant. Suppliers will be asked if they are CLOCS compliant before accepting work on the development.

FORS Bronze accreditation as a minimum will be a contractual requirement, whilst FORS Silver or Gold operators will be appointed where possible. Where FORS Bronze operators are appointed, written assurance will be sought from contractors that all vehicles over 3.5t are equipped with additional safety equipment (as per CLOCS Standard P13), and that all drivers servicing the site will have undertaken approved additional training such as:

- Safe Urban Driving + 1 x e-learning module OR
- Work Related Road Risk Vulnerable Road User training + oncycle hazard awareness course + 1 x e-learning module

CLOCS compliance will be included as a contractual requirement.

Desktop Checks

Where doubt exists, desktop checks will be made against the FORS database of trained drivers and accredited companies as outlined in the CLOCS Standard Managing Supplier Compliance guide.

Site Checks

A delivery booking system will be used which will require the entry of a FORS ID number in order for a delivery to be booked onto site. Where the contractors own vehicles and drivers are used the above approach will be modified accordingly.

Collision reporting data will be requested from operators and acted upon when necessary.

19. Please confirm that you as the client/developer and your principal contractor have read and understood the CLOCS Standard and included it in your contracts. Please sign-up to join

the CLOCS Community to receive up to date information on the standard by expressing an interest online.

I confirm that I have included the requirement to abide by the CLOCS Standard in my contracts to my contractors and suppliers:

The CLOCS standards have been read and understood. Both the developer and the Principal Contractor will adhere to the CLOCS community. CLOCS compliance will be a contractual agreement.

Please contact CLOCS@camden.gov.uk for further advice or guidance on any aspect of this section.

Site Traffic

Sections below shown in blue directly reference the CLOCS Standard requirements. The CLOCS Standard should be read in conjunction with this section.

20. Traffic routing: *"Clients shall ensure that a suitable, risk assessed vehicle route to the site is specified and that the route is communicated to all contractors and drivers. Clients shall make contractors and any other service suppliers aware that they are to use these routes at all times unless unavoidable diversions occur."* (P19, 3.4.5)

Routes should be carefully considered and risk assessed, taking into account the need to avoid where possible any major cycle routes and trip generators such as schools, offices, public buildings, museums etc. Where appropriate, on routes that use high risk junctions (i.e. those that attract high volumes of cycling traffic) installing Trixi mirrors to aid driver visibility should be considered.

Consideration should also be given to weight restrictions, low bridges and cumulative impacts of construction (including neighbouring construction sites) on the public highway network. The route(s) to and from the site should be suitable for the size of vehicles that are to be used.

a. Please indicate routes on a drawing or diagram showing the public highway network in the vicinity of the site including details of how vehicles will be routed to the Transport for London Road Network (TLRN) on approach and departure from the site.

A detailed map of the routing is shown in **Figure 4.**

Vehicles will approach the site from E Heath Road. Below is an outline of the approach vehicles will use to access and egress the site.

Vehicles approaching the site should follow:

1. Vehicles will approach the site from E Heath Road which runs east - west, south of the site;
2. Vehicles will turn northbound onto Vale of Health;
3. Vehicles will arrive at the site.

It is likely that construction vehicles travel to site along E Heath Road originating from the east due to the tight access width of the Vale of Health. This will be signposted to prospective delivery and collection drivers by the Lead Contractor ahead of commencing works.

Vehicles leaving the site should return back to E Heath Road in the opposite direction to the route outlined above.

b. Please confirm how contractors, delivery companies and visitors will be made aware of the route (to and from the site) and of any on-site restrictions, prior to undertaking journeys.

The site manager will have responsibility for supervising, controlling and monitoring vehicle movements to /from the site.

It is proposed that the following vehicle call-up procedures will be in place at the development;

- Deliveries will be given set times to arrive.
- Delivery instructions will be sent to all suppliers and contractors.
- Trained site staff will assist when delivery vehicles are visiting the site.
- Banks men will ensure the safe passage of pedestrians and vehicular traffic in the street when vehicles are being loaded or unloaded.
- Sub-contractors will be provided with maps showing the appropriate routes to and from the site.
- The site telephone number will be given to Suppliers who must confirm site arrival time at least 20 minutes prior to arrival and only to approach site once confirmation that site is clear is received.

Coordination of transport / deliveries and arrivals will be supervised by the site manager to ensure that the loading/collection area is clear of vehicles and materials before any subsequent lorry arrives.

21. Control of site traffic, particularly at peak hours: "*Clients shall consider other options to plan and control vehicles and reduce peak hour deliveries*" (P20, 3.4.6)

Construction vehicle movements are generally acceptable between 9.30am to 4.30pm on weekdays and between 8.00am and 1.00pm on Saturdays). If there is a school in the vicinity of the site or on the proposed access and/or egress routes, then deliveries must be restricted to between 9.30am and 3pm on weekdays during term time. (Refer to the *Guide for Contractors Working in Camden*).

A delivery plan should ensure that deliveries arrive at the correct part of site at the correct time. Instructions explaining such a plan should be sent to all suppliers and contractors**.** Consideration should be given to the location of any necessary holding areas for large sites with high volumes of traffic. Vehicles must not wait or circulate on the public highway. Whilst deliveries should be given set times to arrive, dwell and depart, no undue time pressures should be placed upon the driver at any time.

a. Please provide details of the typical sizes of all vehicles and the approximate frequency and times of day when they will need access to the site, for each phase of construction. You should estimate the average daily number of vehicles during each major phase of the work,

including their dwell time at the site. High numbers of vehicles per day and/or long dwell times may require vehicle holding procedures.

Construction vehicle movements to the site will generally be accepted between 9.30am to 4.30pm on weekdays and between 8.00am and 1.00pm on Saturdays. It is not considered by this assessment that there are schools within close vicinity of the site.

Demolition / Excavation

The number and type of construction vehicles accessing the site would be as follows:

1. Skip lorry: Length- 6.2m, Width - 2.5m. This is used to remove spoil from the site during the demolition phase.
   Average visits 2 per day 5 minutes dwell time.

2. 7.5t Panel Van / Delivery truck: Length – 7.2m, Width - 2.2m. These will be used for general deliveries of materials.
   Average visits 1 per day 15 minutes dwell time.

Construction

Materials will be stored primarily in the garden to the rear of the site with occasional temporary storage where necessary in the suspended parking bay in the absence of the skip. They will be dropped via telescopic arm to the bay aided by traffic marshalls and banksmen to organise traffic and safe manoeuvres to / from the site. .

1. 7.5t Panel Van / Delivery truck: Length – 7.2m, Width - 2.2m. These will be used for general deliveries of materials.
   1 visit per day 15 minutes dwell time.

2. 24-26t Hiab Truck with crane – Length 8m x 2.5m. These will be used for general deliveries of materials.
   1 visit per day 15 minutes dwell time.
   - *Hiab Vehicle & 7.5t truck used alternately in Construction, unlikely more than one trip required per day*

3. Concrete Mixer Truck – Length 8.4m x 2.4m. These will be used for general deliveries of materials.
   Maximum 1 visit per day 15 minutes dwell time.

b. Please provide details of other developments in the local area or on the route.

Any other construction schemes within the immediate vicinity will be consulted with the aim to ensure any potential disruption to traffic flow or highway amenity is not exacerbated by additional construction programmes taking place.

No deliveries will be allowed prior to 9.30am and after 3.00pm, in accordance with Council requests. Trained banksmen will be onsite at all times to supervise vehicles around the site and access road. All the engines of contractors vehicles will not be kept idling.

c. Please outline the system that is to be used to ensure that the correct vehicle attends the correct part of site at the correct time.

As mentioned previously, the site manager will have responsibility for supervising, controlling and monitoring vehicle movements to /from the site.

It is proposed that the following vehicle call-up procedures will be in place at the development;

All deliveries shall be pre-booked and allocated set arrival times.

- Delivery instructions shall be sent to all suppliers and contractors including the maximum dwell times specified above.
- Suppliers shall call the site a minimum of 20mins before their vehicle arrives at site to confirm that the loading area is available.
- If the loading area is unavailable construction vehicles shall not proceed to the site.
- Vehicles shall not wait or stack on any road.
- The loading/collection area shall be clear of vehicles and materials before the next lorry arrives.
- Contractors' vehicles shall not park in any suspended parking bays or on suspended waiting and loading restrictions.
- The engines of contractors' vehicles shall not be kept idling.

d. Please identify the locations of any off-site holding areas (an appropriate location outside the borough may need to be identified, particularly if a large number of delivery vehicles are expected) and any measures that will be taken to ensure the prompt admission of vehicles to site in light of time required for any vehicle/driver compliance checks. Please refer to question 24 if any parking bay suspensions will be required for the holding area.

It is suggested that the two residents parking bays and one motorcycle parking bay immediately adjacent to the front of the site be temporarily suspended to provide a temporary passing place for vehicles as illustrate in Figure 3B. One of the resident's bays would be used for a skip. This would be agreed with the Council in advance of the works taking place.

e. Please provide details of any other measures designed to reduce the impact of associated traffic (such as the use of construction material consolidation centres).

The use of Skip Lorries instead of Grab Lorries will prevent any vehicles waiting on the highway for any substantial length of time. This will prevent any lengthy congestion along the Vale of Health. Banksmen will be situated on either side of the lorry in order to direct traffic and ensure safe practice whilst loading or unloading the lorry.

22. Site access and egress: *"Clients shall ensure that access to and egress from the site is appropriately managed, clearly marked, understood and clear of obstacles."* (P18, 3.4.3)

Vehicles entering and leaving the site should be carefully managed, using gates that are clearly marked and free from obstacles. Traffic marshals must ensure the safe passage of all traffic on the public highway, in particular pedestrians and cyclists, when vehicles are entering and leaving site, particularly if reversing.

Traffic marshals, or site staff acting as traffic marshals, should hold the relevant qualifications required for directing large vehicles when reversing. Marshals should be equipped with 'STOP – WORKS' signs (not STOP/GO signs) if control of traffic on the public highway is required. Marshals should have radio contact with one another where necessary.

a. Please detail the proposed access and egress routes to and from the site

No Vehicles will enter the site, with vehicles expected to deliver adjacent to the site, allowing traffic to flow past the site along the section of suspended parking bays.

The wider vehicle routing plan is illustrated in Figure 4. The manoeuvres of a skip lorry and a Concrete Mixer (the largest vehicle to access the site) on the turn and egress within the Vale of Health are indicated through swept-path analysis in Figure 5. As indicated in Figure 5, there will be a requirement to suspend one further parking bay further north along the Vale of Health adjacent to Byron Villas. This is to ensure larger vehicles can access, egress and turn within the Vale of Health without compromising pedestrian safety or allowing wheel overrun onto the kerbside. This would be agreed with the Council and signposted to residents in advance of the works taking place.

b. Please describe how the access and egress arrangements for construction vehicles will be managed.

Vehicles will not enter the site, however banksmen (LANTRA or similarly qualified with a HSE certificate) will be provided to assist with stopping, deliveries and turning manoeuvres in the street.

c. Please provide swept path drawings for any tight manoeuvres on vehicle routes to and from the site including proposed access and egress arrangements at the site boundary (if necessary).

It is expected that the method of waste removal will involve the introduction of a skip onto the highway in a suspended parking bay immediately opposite the property.

The acceptable method of waste removal is to use a skip exchange as the dwell time of vehicles is shorter, meaning less inconvenience for other road users.

The skip exchange is more effective and a quicker way of removing spoil from the site compared to using a grab lorry, as the spoil will be ready for collection in the skip, and the skip will take less time to load onto the skip lorry (rather than picking up spoil from the highway with the use of a grab lorry). A skip exchange would also result in minimal disruption to the highway compared to using a grab lorry. In terms of the frequency of skip exchanges we expect there to be 2 to 3 a day during the demolition phase. A swept path of a skip lorry positioning itself to load and unload before exiting the site as shown in Figure 6.

Materials and equipment will be delivered and offloaded directly from vehicles parked in suspended bays directly opposite the property along the Vale of Health, before being brought onto the site for storage. There are no trees on the public highway that will impede deliveries.

d. Provision of wheel washing facilities should be considered if necessary. If so, please provide details of how this will be managed and any run-off controlled.

Vehicles will not be entering the site, as such spoil and debris from the construction zone would not dirty the wheels. However, if a wheel washing facility is required, this will be provided by the Lead Contractor

23. Vehicle loading and unloading: *"Clients shall ensure that vehicles are loaded and unloaded on-site as far as is practicable."* (P19, 3.4.4)

If this is not possible, Traffic Marshalls must ensure the safe passage of pedestrians, cyclists and motor traffic in the street when vehicles are being loaded or unloaded.

Please provide details of the parking and loading arrangements for construction vehicles with regard to servicing and deliveries associated with the site (e.g. delivery of materials and plant, removal of excavated material). This is required as a scaled site plan, showing all points of access and where materials, skips and plant will be stored, and how vehicles will access and egress the site. If loading is to take place off site, please identify where this is due to take place and outline the measures you will take to ensure that loading/unloading is carried out safely. Please outline in question 24 if any parking bay suspensions will be required.

Vehicles will be loaded and unloaded from the suspended bays opposite the site. If the contractors deem it necessary to accommodate a skip on-street, a skip exchange system will be operation during deliveries and collection. The pedestrian footway will not be affected while the exchange is occurring.

Safety: The Vale of Health is narrow, a dead end with very little traffic and good sightlines. We are advised that the proposed location of the skip has been carefully considered by our Contractors, and that this is the safest location for the skip.

Highway interventions

Please note that Temporary Traffic Orders (TTOs) and hoarding/scaffolding licenses may be applied for prior to CMP submission but won't be granted until the CMP is signed-off.

If the site is on or adjacent to the TLRN, please provide details of preliminary discussions with Transport for London in the relevant sections below.

24. Parking bay suspensions and temporary traffic orders

Please note, parking bay suspensions should only be requested where absolutely necessary. Parking bay suspensions are permitted for a maximum of 6 months, requirement of exclusive access to a bay for longer than 6 months you will be required to obtain Temporary Traffic Order (TTO) for which there is a separate cost.

Please provide details of any proposed parking bay suspensions and TTO's which would be required to facilitate construction. **Building materials and equipment must not cause obstructions on the highway as per your Considerate Contractors obligations unless the requisite permissions are secured.**

Information regarding parking suspensions can be found here.

The development is expected to require the suspension of the motorcycle parking bay adjacent to the site, and up to two additional parking bays to provide space a skip and also to allow for a safe temporary passing space whilst deliveries occur at the site. One further parking bay will need to be suspended north of the site adjacent to tree house, to ensure a turning head for larger vehicles (please refer to Figure 5).

The development would require the suspension of the parking bays in order to allow the lorry to reverse and the skip to be collected and therefore not block or compromise the flow of vehicle traffic along the Vale of Health. The suspension of the parking bay would be at a daily cost with an administration fee. A skip licence will also be applied for.

The parking bays would be suspended for as long as is required for the duration of the demolition / excavation phase. Parking bay suspensions would be kept to the minimum period to reduce inconvenience to neighbours.

25. Scaled drawings of highway works

Please note that use of the public highway for storage, site accommodation or welfare facilities is at the discretion of the Council and is generally not permitted. If you propose such use you must supply full justification, setting out why it is impossible to allocate space on-site. You must submit a detailed (to-scale) plan showing the impact on the public

highway that includes the extent of any hoarding, pedestrian routes, parking bay suspensions and remaining road width for vehicle movements. We prefer not to close footways but if this is unavoidable, you should submit a scaled plan of the proposed diversion route showing key dimensions.

- a. Please provide accurate scaled drawings of any highway works necessary to enable construction to take place (e.g. construction of temporary vehicular accesses).

No temporary vehicle access to the site will be required.

b. Please provide details of all safety signage, barriers and accessibility measures such as ramps and lighting etc.

All storage materials are expected to be accommodated where possible to the garden to the rear of the site so as not to impede the free flow of vehicle traffic along the Vale of Health. Appropriate hoarding, signage and lighting will be placed around the suspended bay during the hours of construction to ensure the safe passage of pedestrians and vehicles along the adjacent highway and footpath.

26. Diversions

Where applicable, please supply details of any diversion, disruption or other anticipated use of the public highway during the construction period (alternatively a plan may be submitted).

Please refer to the construction routing plan presented in Figure 4. We do not anticipate that there will be any significant disruption to the public highway. Storage will be primary to the rear of the site, with temporary storage in the adjacent parking bay and where possible within the front garden and boundary of the property means the amount of time there will be a restriction / disruption to the flow of traffic along the Vale of Health will be minimal.

27. VRU and pedestrian diversions, scaffolding and hoarding

Pedestrians and/or cyclist safety must be maintained if diversions are put in place. Vulnerable footway users should also be considered. These include wheelchair users, the elderly, those with walking difficulties, young children, those with prams, the blind and partially sighted. Appropriate ramping must be used if cables, hoses, etc. are run across the footway.

Any work above ground floor level may require a covered walkway adjacent to the site. A licence must be obtained for scaffolding and gantries. The adjoining public highway must be kept clean and free from obstructions. Lighting and signage should be used on temporary structures/skips/hoardings etc.

A secure hoarding will generally be required at the site boundary with a lockable access.

a. Please provide details describing how pedestrian and cyclist safety will be maintained, including any proposed alternative routes (if necessary), and any Traffic Marshall arrangements.

The public footway will not be blocked as a result of the proposed construction works.

When vehicles are requiring access to the suspended bays, banksmen / traffic marshals will assist the vehicle to park, and will also manage any other traffic along the Vale of Health. Materials will be offloaded into the suspended bays and manually carried across the road into the site. Materials will bagged / packaged. No loose materials will be delivered.

The site will be kept secure with appropriate hoarding to prevent inappropriate access by pedestrians and to ensure pedestrian safety.

b. Please provide details of any temporary structures which would overhang the public highway (e.g. scaffolding, gantries, cranes etc.) and details of hoarding requirements or any other occupation of the public highway.

At this stage, it is not expected that any scaffolding, gantries, protracted conveyors or structures will overhang the highway.

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Environment

To answer these sections please refer to the relevant sections of **Camden's Minimum Requirements for Building Construction (CMRBC).**

28. Please list all noisy operations and the construction method used, and provide details of the times that each of these are due to be carried out.

A Noise, Vibration and Dust Management Plan has been prepared by KP Acoustics for the scheme, the final version of which was submitted to HEAT Architecture on 14th August 2017 (Report Ref. 16422.NVDMP.01). A full copy of this is included in Appendix D for ease of reference, with Tables 5.1 and 5.2 outlining a clear 'Description of Site Operations' and 'Predicted Noise Levels of Site Operations' respectively.

With regards to noise in the document, the BS5228:2009 Criterion for Noise is outlined:

"Noise from construction and demolition sites should not exceed the level at which conversation in the nearest building would be difficult with the windows shut. The noise can be measured with a simple sound level meter, as we hear it, in A-weighted decibels dB (A) see note below. Noise levels, between say 07.00 and 19.00 hours, outside the nearest window of the occupied room closest to the site boundary should not exceed:
· 70 decibels (dBA) in rural, suburban and urban areas away from main road traffic and industrial noise;
· 75 decibels (dBA) in urban areas near main roads in heavy industrial areas
Based on the above, the daily noise limit from all on-site operations should therefore not exceed 70dB (A) at the closest noise sensitive receiver." [sect. 3.1]

Projections for expected noise is then outlined in Table 5.2 of the Management Plan, 'Predicted Noise Level of Site Operations', with no activity predicted to record above 70 decibels, thus in accordance with the above standards of BS5228:2009.

As a general rule of compliance, all noisy work will be restricted as much as possible and will be conducted in areas within the construction site that will cause as little disturbance as possible to neighbours. A full list of all the significant noisy operations is provided in the Noise, Vibration and Dust Management Plan as referenced above.

29. Please confirm when the most recent noise survey was carried out (before any works were carried out) and provide a copy. If a noise survey has not taken place please indicate the date (before any works are being carried out) that the noise survey will be taking place, and agree to provide a copy.

A Noise, Dust and Vibration assessment has been carried out in July & August 2017, with the respective Management Plan produced on 14th August 2017 (Report Ref. 16422.NVDMP.01). A copy is included in **Appendix D** of this Construction Management Plan.

30. Please provide predictions for noise and vibration levels throughout the proposed works.

Noise and vibration predictions are outlined in the Noise, Dust and Vibration assessment, carried out in July & August 2017, with the respective Management Plan produced on 14th August 2017 (Report Ref. 16422.NVDMP.01). A copy is included in **Appendix D** of this Construction Management Plan and contains all expected and projected vibration analysis.

Operatives will be informed that as a general rule, if they need to raise their voice when standing 2 metres away from a noise source, it is too loud and hearing protection must be worn. Contractors are encouraged to purchase equipment that is advanced in technology and equipped with vibration absorbing features.

To ensure that operatives are aware of the effects of hand arm vibration they will be provided with adequate information on the hazard and controls and given information in order to reduce the risk.

31. Please provide details describing mitigation measures to be incorporated during the construction/demolition works to prevent noise and vibration disturbances from the activities on the site, including the actions to be taken in cases where these exceed the predicted levels.

The contractor will action and establish communication, environmental site aspects and emergencies controls.

The contractor will carry out a full pre-qualification check on all sub-contractors along with statements on their environmental policies to ensure compliance on maintaining noise levels and ensure mitigation measures are met.

32. Please provide evidence that staff have been trained on BS 5228:2009

The appointed contractor will provide evidence upon request that staff have been trained on BS5228:2009.

33. Please provide details on how dust nuisance arising from dusty activities, on site, will be prevented.

The emission of dust from the site, resulting from construction works will be managed with some or all of the following measures:

- Enclosed solid hoarding will be erected around the site, particularly to protect the neighbouring buildings and boundaries from dust.
- No waste materials will be burnt on site.
- Any dust creating activities will be conducted away from neighbouring properties and sensitive areas.
- Any demolition activities will use water as a dust suppressant. (This will include cutting and grinding work)
- If necessary, Vale of Health will be regularly swept and washed to be kept clean.
- Effective traffic management and well organised vehicle logistics will be applied resulting in less dust and mud being produced.
- All vehicles will switch off engines whilst in attendance – no idling vehicles. Skips will be securely covered.
- The contractor's site foremen will visually assess any dust emission on site and take further action to mitigate this if necessary

Within the Noise, Dust and Vibration Management Plan prepared by KP Acoustics, the following recommended dust measures were included, contrived in accordance with recommendations within the Mayor's SPG for 'Control of Dust and Emissions during Construction and Demolition':

- Dust generated by the construction process will be suppressed via a fine directional spray jet of water aimed at the source, and any material to be transport to be wetter down prior to transit.
- Skips and powder containers to be covered when not in use.
- Cutting equipment to be used with water suppressant and/or suitable extract system
- No burning of waste wood or other materials on site
- The stockpiling of dust generating materials on site will be minimised
- Wet brushing techniques will be used for cleaning
- Regular checks for visual observation of dust and soiling within 50m of site
- Screening to be erected surrounding site boundaries where possible

Regular monitoring may be necessary during the construction operations on site, in order to ensure that measured pollutants do not exceed safe levels, in positions agreed with the Local Authority. Furthermore, according to IAQM guidelines, it would be necessary to inspect the area in the local vicinity of the construction works to ensure that surfaces are not soiled by dust emissions from the site, with suitable cleaning offered if necessary. In order to minimise this, it would be recommended that screens are erected around the site boundaries as appropriate.

34. Please provide details describing how any significant amounts of dirt or dust that may be spread onto the public highway will be prevented and/or cleaned.

The public highway adjacent to the site will be regularly monitored and if necessary swept and washed down to clear the footpath of any dirt that may have been transferred from the construction site.

Any workers employed at the site will be provided with facilities to wash their boots before leaving the site.

35. Please provide details describing arrangements for monitoring of noise, vibration and dust levels.

Extensive detail on all 3 aspects is provided in the Noise, Dust and Vibration Management Plan produced on 14th August 2017 (Report Ref. 16422.NVDMP.01), please see **Appendix D.**

All reasonable steps will be taken to minimise any disruption to adjacent occupiers by noisy activities on site: Where possible the contractors will employ construction methods to avoid the amount of noise generated in the first instance. Where it is necessary to carry out noisy activities, these will be identified in advance.

The following measures will be implemented to reduce noise levels on the site.

- The contractor will screen the noise where possible through a combination of the hoarding, screens, material storage and existing structures.
- Where possible any noisy stationary equipment will be located away from sensitive areas.
- Drop heights of materials will also be kept to a minimum to avoid unnecessary extra noise.
- Where possible the contractor will use quiet or low noise equipment.
- Electrically operated plant will be used where practical.
- Operatives working in noisy areas will also be monitored to ensure they are wearing the necessary protective equipment and that they are not exceeding their permitted exposure periods.
- No radios or other audio equipment will be allowed on site.
- Efficient vehicle logistics ensure that vehicles arrive promptly, are off-loaded quickly and depart quickly meaning that there is less time when noise is generated and it will also prevent traffic build up noise being generated.
- All vehicles will switch off engines whilst in attendance.

36. Please confirm that a Risk Assessment has been undertaken at planning application stage in line with the GLA policy. The Control of Dust and Emissions During Demolition and Construction 2104 (SPG), that the risk level that has been identified, and that the appropriate measures within the GLA mitigation measures checklist have been applied. Please attach the risk assessment and mitigation checklist as an appendix.

No risk assessment was requested by Camden at the planning application stage. If a risk assessment needs to be completed before works are started on the development, the risk assessment will be undertaken in accordance with the GLA's control of dust and emissions supplementary guidance.

37. Please confirm that all of the GLA's 'highly recommended' measures from the SPG document relative to the level of risk identified in question 36 have been addressed by completing the GLA mitigation measures checklist.

The mitigation measures, emanating from the risk assessment, will be delivered on-site via communication, the August 2017 Noise, Vibration and Dust Management Plan, site management, waste management and monitoring and specific measures to earthworks, construction and track-out.

38. If the site is a 'High Risk Site', 4 real time dust monitors will be required. If the site is a 'Medium Risk Site', 2 real time dust monitors will be required. The risk assessment must take account of proximity to sensitive receptors (e.g. schools, care homes etc), as detailed in the SPG. Please confirm the location, number and specification of the monitors in line with the SPG and confirm that these will be installed 3 months prior to the commencement of works, and that real time data and quarterly reports will be provided to the Council detailing any exceedances of the threshold and measures that were implemented to address these.

The site is not a high-risk site; therefore the use of dust monitors is not expected.

39. Please provide details about how rodents, including rats, will be prevented from spreading out from the site. You are required to provide information about site inspections carried out and present copies of receipts (if work undertaken).

A pest control survey has been carried out by JG Pest Control, finding no rodent or rat activity on site. A copy of the pest report is included in Appendix E of the Construction Management Plan. JG Pest Control is a BPCA registered company as stated on their letterhead.

During the construction work, the site will be monitored for evidence of any pests returning, and measure will be taken to prevent the pest from returning and / or possible spreading to adjacent properties:

- No waste on site
- No eating or drinking on site other than designated lunch / site canteen area
- Capping of drains

JG Pest Control have provided evidence, after a careful inspection that there is no sign of rodents on the premises. They left 4no. external baited stations at the site. The evidence follows the requirements in the Template CMP. The existing drainage has been CCTV surveyed and jet-washed. Please see Appendix F attached. All existing drainage is temporarily capped off.

40. Please confirm when an asbestos survey was carried out at the site and include the key findings.

An asbestos / hazardous material survey will be conducted before any construction work begins. The results of the survey will be communicated to the Council.

41. Complaints often arise from the conduct of builders in an area. Please confirm steps being taken to minimise this e.g. provision of a suitable smoking area, tackling bad language and unnecessary shouting.

A 'yellow card / red card' (or similar) system will be in operation at the site. Any workers on site considered by the site manager to be acting inappropriately (e.g. smoking outside the designated smoking area, or using bad language where the public can hear) will be given a 'yellow card' and if the behaviour is repeated asked to leave the site immediately, possibly with additional financial consequences.

42. If you will be using non-road mobile machinery (NRMM) on site with net power between 37kW and 560kW it will be required to meet the standards set out below. The standards are applicable to both variable and constant speed engines and apply for both PM and NOx emissions.

From 1st September 2015

(i) Major Development Sites – NRMM used on the site of any major development will be required to meet Stage IIIA of EU Directive 97/68/EC
(ii) Any development site within the Central Activity Zone - NRMM used on any site within the Central Activity Zone will be required to meet Stage IIIB of EU Directive 97/68/EC

From 1st September 2020

(iii) Any development site - NRMM used on any site within Greater London will be required to meet Stage IIIB of EU Directive 97/68/EC
(iv) Any development site within the Central Activity Zone - NRMM used on any site within the Central Activity Zone will be required to meet Stage IV of EU Directive 97/68/EC

Please provide evidence demonstrating the above requirements will be met by answering the following questions:

a) Construction time period (mm/yy - mm/yy):
To be confirmed following planning consent. Estimated construction phase approximately 12 months

b) Is the development within the CAZ? (Y/N):
No

c) Will the NRMM with net power between 37kW and 560kW meet the standards outlined above? (Y/N):
N/A

d) Please provide evidence to demonstrate that all relevant machinery will be registered on the NRMM Register, including the site name under which it has been registered:
N/A

e) Please confirm that an inventory of all NRMM will be kept on site and that all machinery will be regularly serviced and service logs kept on site for inspection:
N/A

f) Please confirm that records will be kept on site which details proof of emission limits, including legible photographs of individual engine plates for all equipment, and that this documentation will be made available to local authority officers as required:

Documentation will be made available to local authority officers as required and relevant records kept.

SYMBOL IS FOR INTERNAL USE

Agreement

The agreed contents of this Construction Management Plan must be complied with unless otherwise agreed in writing by the Council. This may require the CMP to be revised by the Developer and reapproved by 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 in writing and complied with thereafter.

It should be noted that any agreed Construction Management Plan does not prejudice further agreements that may be required such as road closures or hoarding licences.

Please notify that council when you intend to start work on site. Please also notify the council when works are approximately 3 months from completion.

Signed: Charles Humphries

Date: 28 September 2018

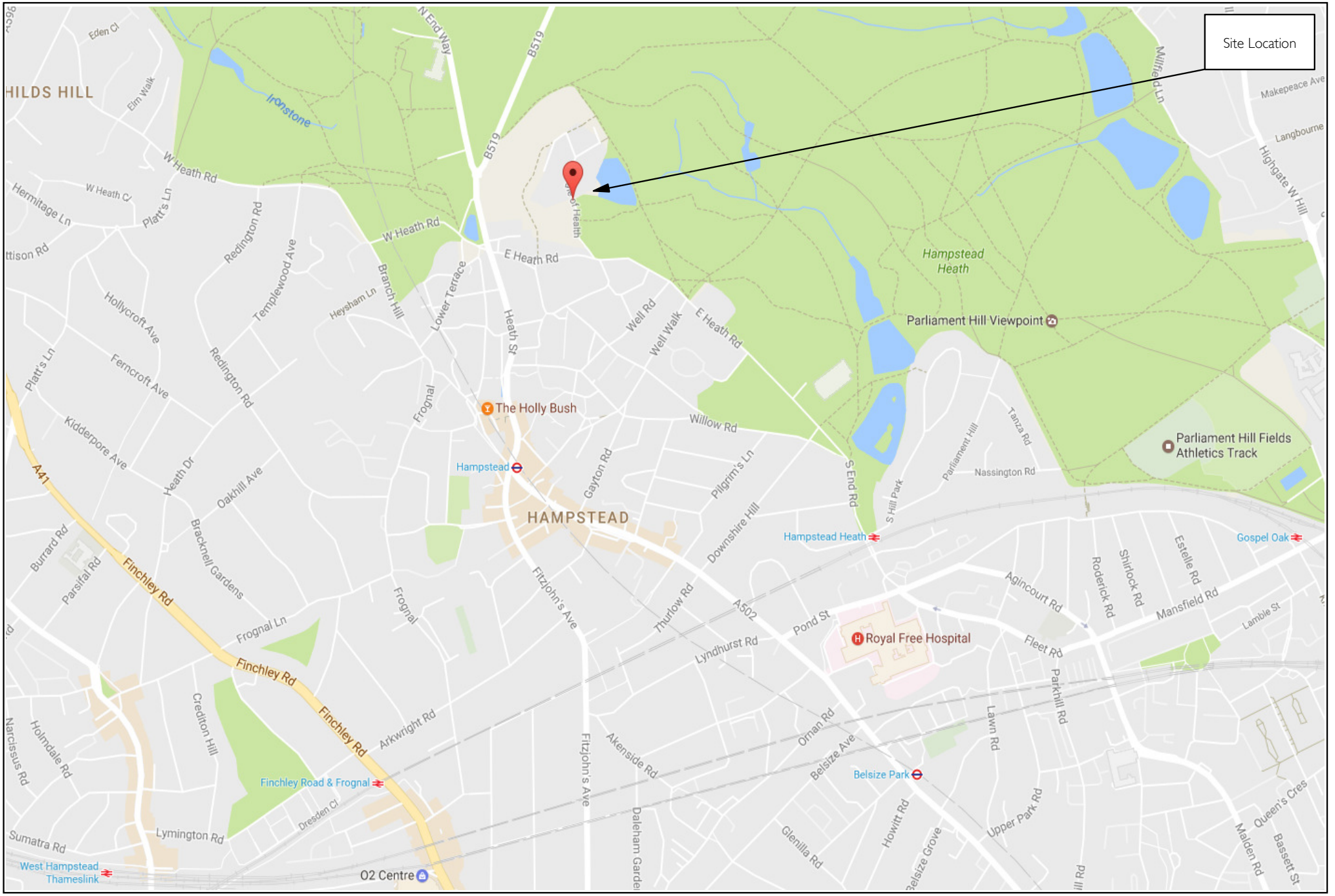
Print Name: Charles Humphries on behalf of HEAT

Architecture Ltd

Position: Director

Please submit to: planningobligations@camden.gov.uk

End of form.



Date: 19-April-2017
Scale: NTS
Source: Google Maps
Drawing No: P1677/CMP/01

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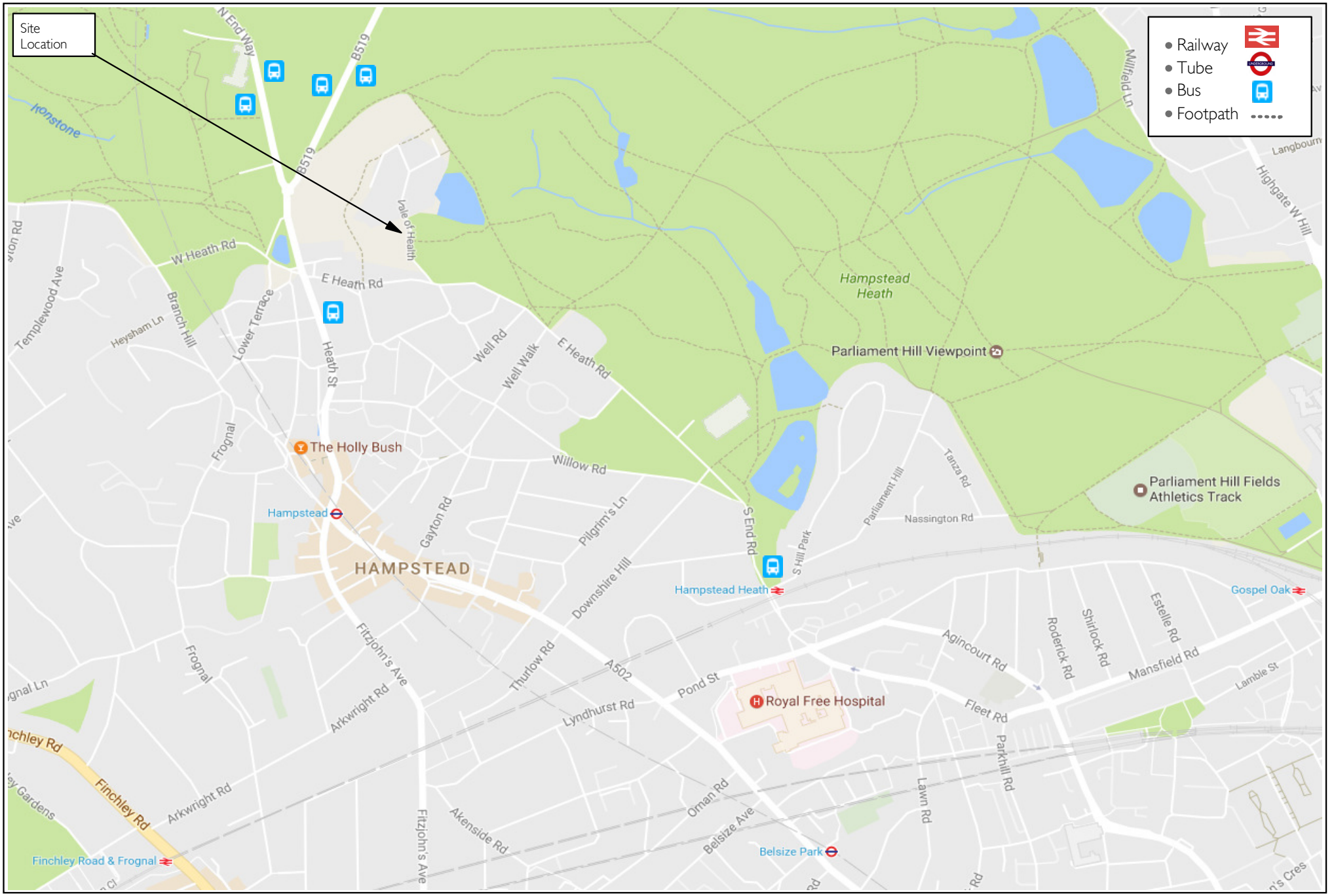
P1677: HILLVIEW, VALE OF HEALTH, HAMPSTEAD, NW3 1AN

Figure 1.
Site Location

PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS



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Scale: NTS
Source: Google Maps
Drawing No: P1677/CMP/03

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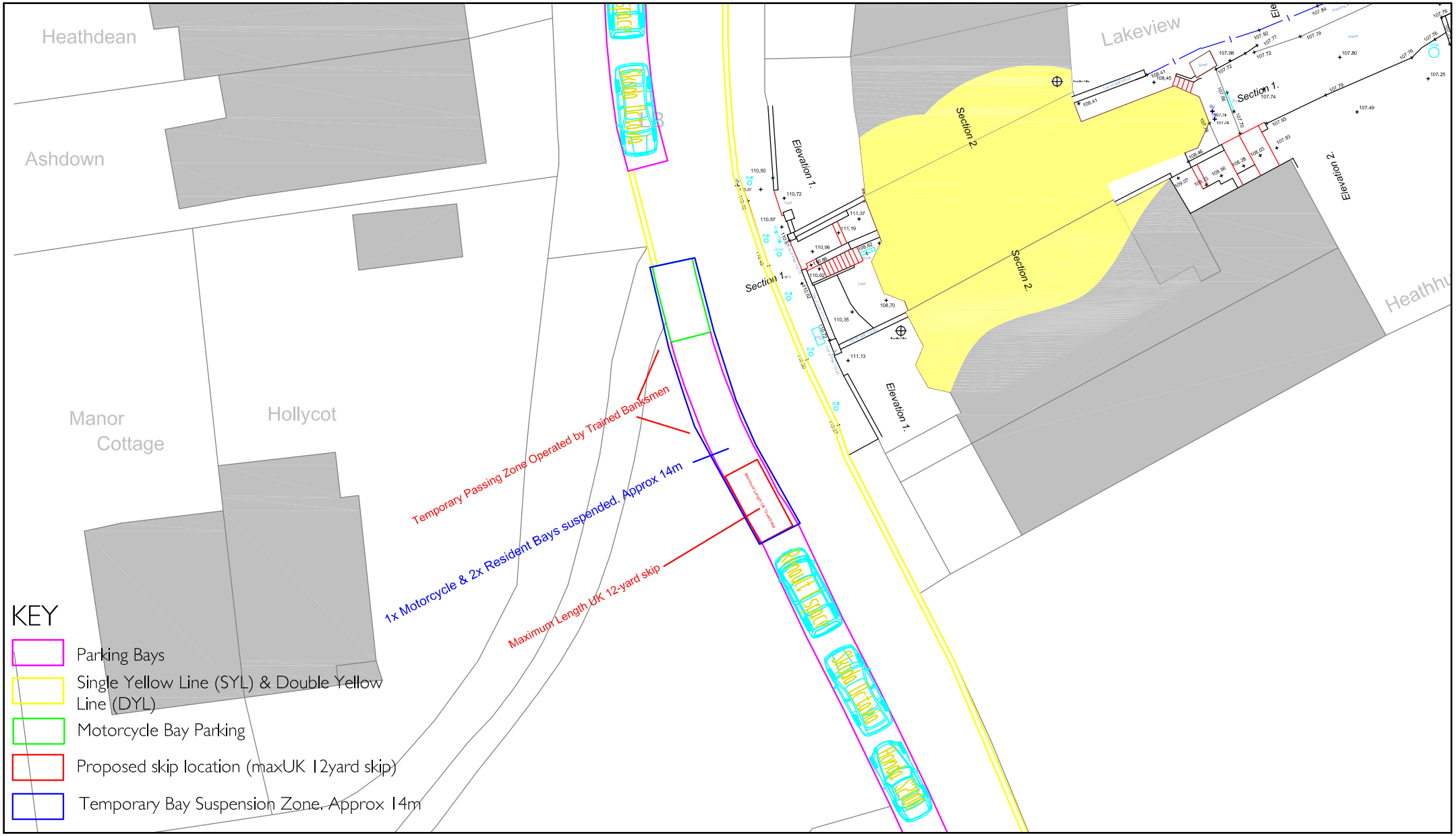
P1677: HILLVIEW, VALE OF HEALTH, HAMPSTEAD, NW3 1AN

Figure 2.
Site Accessibility

PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS



Date: 20-June-2017
Scale: 1:250@A4
Source: OS/PMA
Drawing No. P1677/CMP/3A

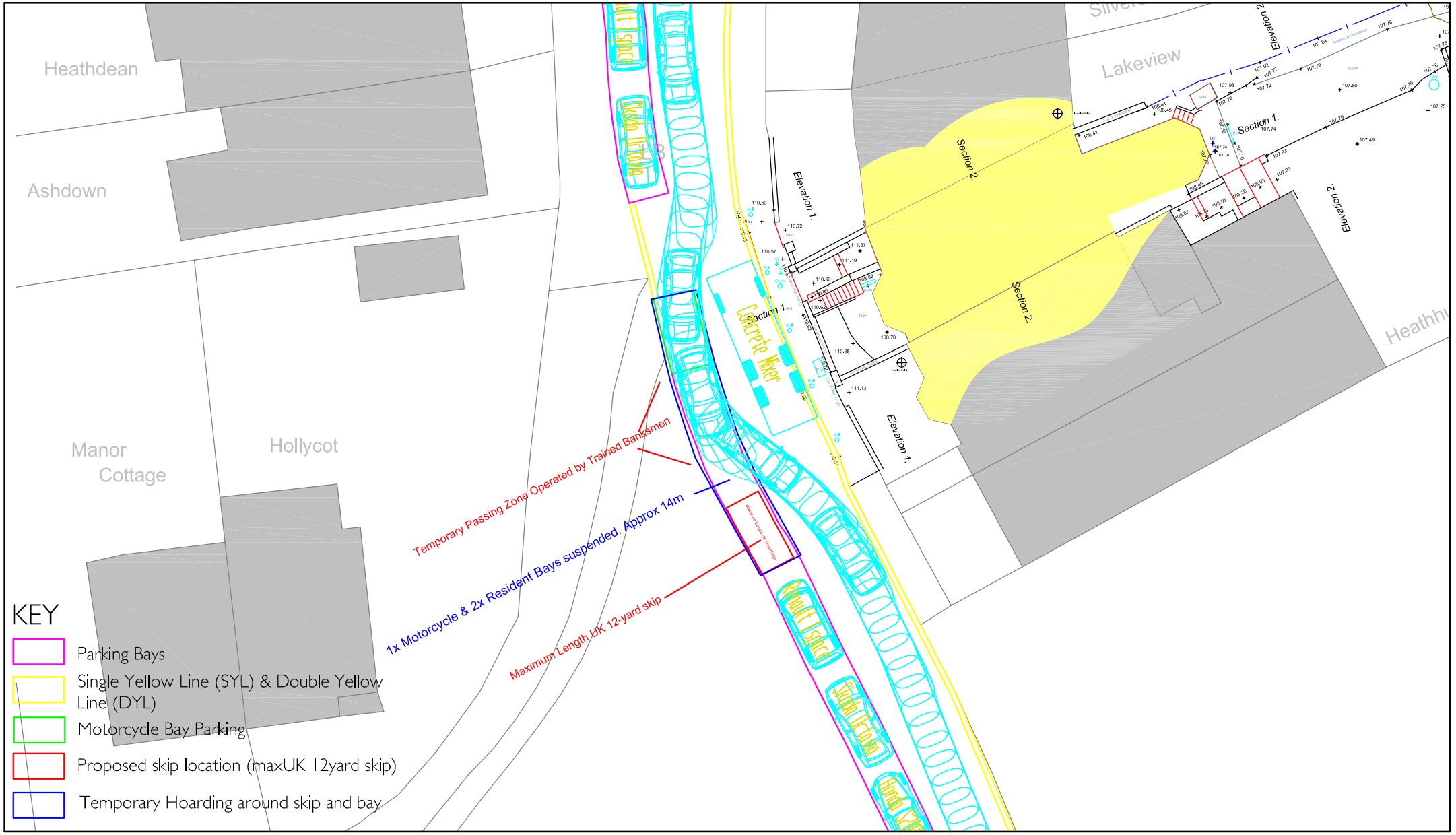
N

P1677: HILLVIEW, VALE OF HEALTH, HAMPSTEAD, NW3 1AN

Figure 3A.

Site and Highway Context (indicative / approximate kerbside measurements)

PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS
Unit 1, Plym House, 21 Enterprise Way, London SW18 1FZ
Tel: 0208 780 0426
E-mail: paul.mew@pma-traffic.co.uk Website: www.pma-traffic.co.uk



Date: 20-June-2017
Scale: 1:250@A4
Source: OS/PMA
Drawing No. P1677/CMP/3B

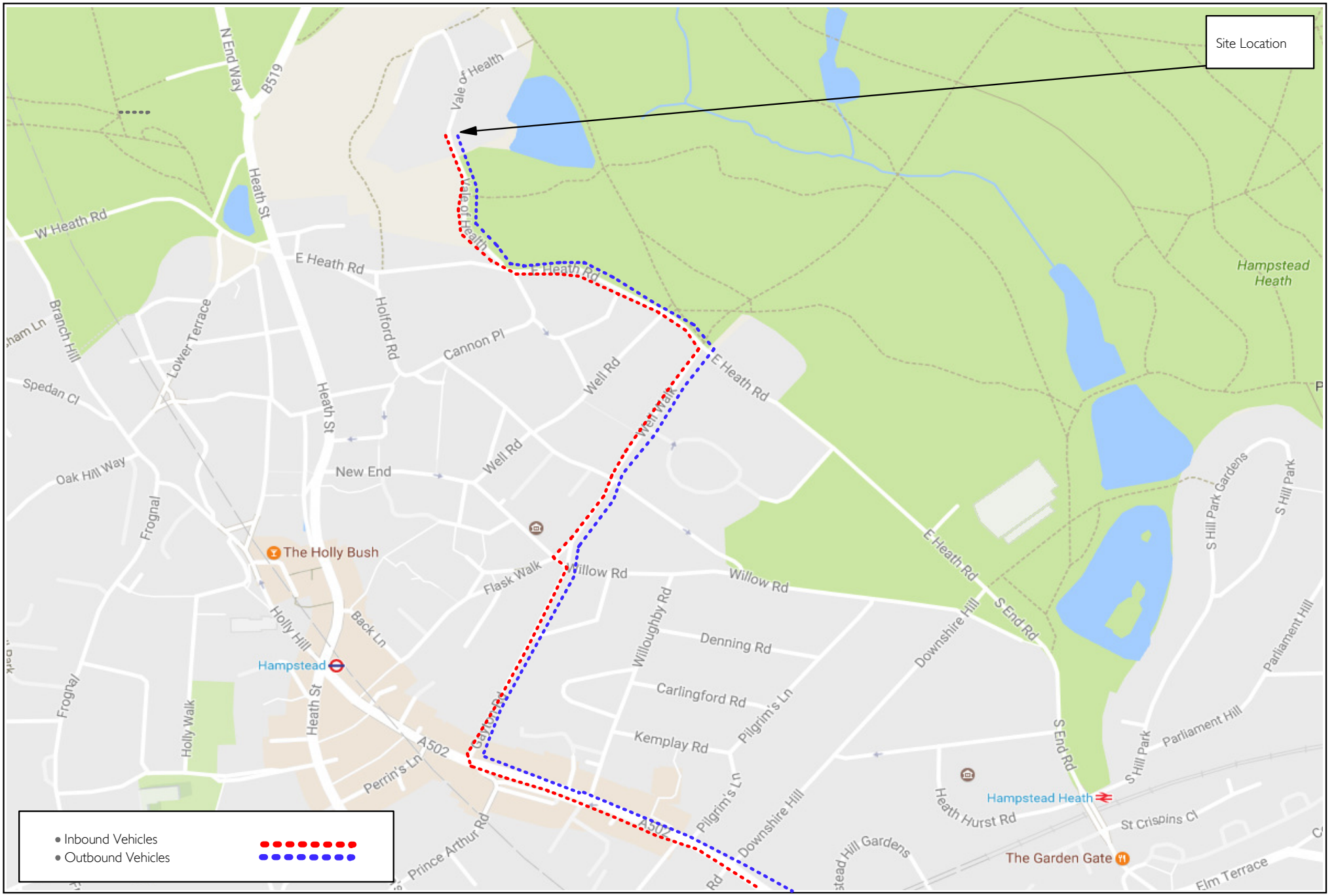
N

P1677: HILLVIEW, VALE OF HEALTH, HAMPSTEAD, NW3 1AN

Figure 3B.

Site Construction Traffic Flow (indicative / approximate kerbside measurements)

PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS
Unit 1, Plym House, 21 Enterprise Way, London SW18 1FZ
Tel: 0208 780 0426
E-mail: paul.mew@pma-traffic.co.uk Website: www.pma-traffic.co.uk



Date: 25-October-2017
Scale: NTS
Source: Google Maps
Drawing No: P1677/CMP/04

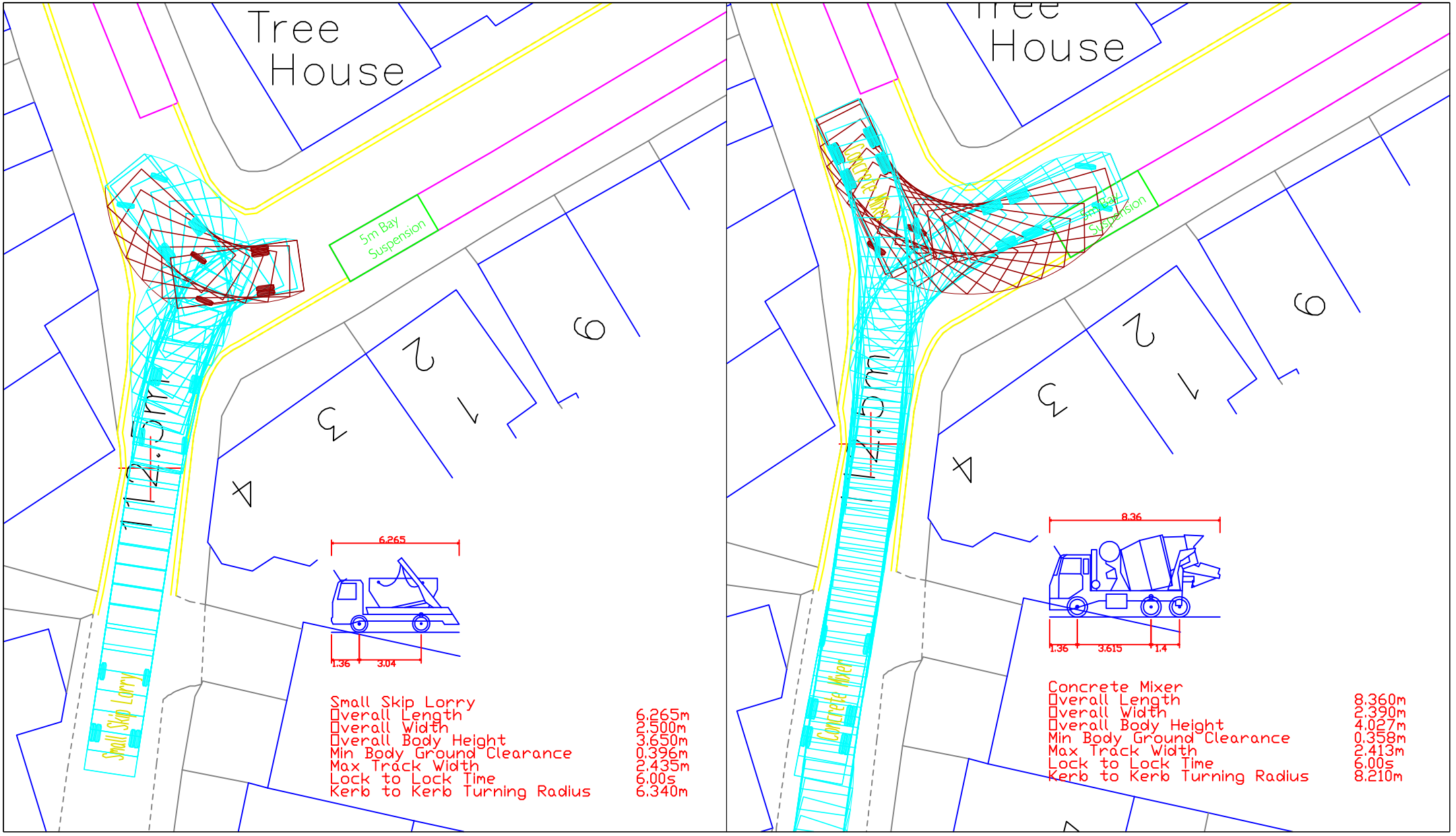
N

P1677: HILLVIEW, VALE OF HEALTH, HAMPSTEAD, NW3 1AN

Figure 4.

Preliminary Vehicle Routing Plan

PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS



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Scale: 1:250@A4
Source: OS/PMA
Drawing No. P1677/CMP/05

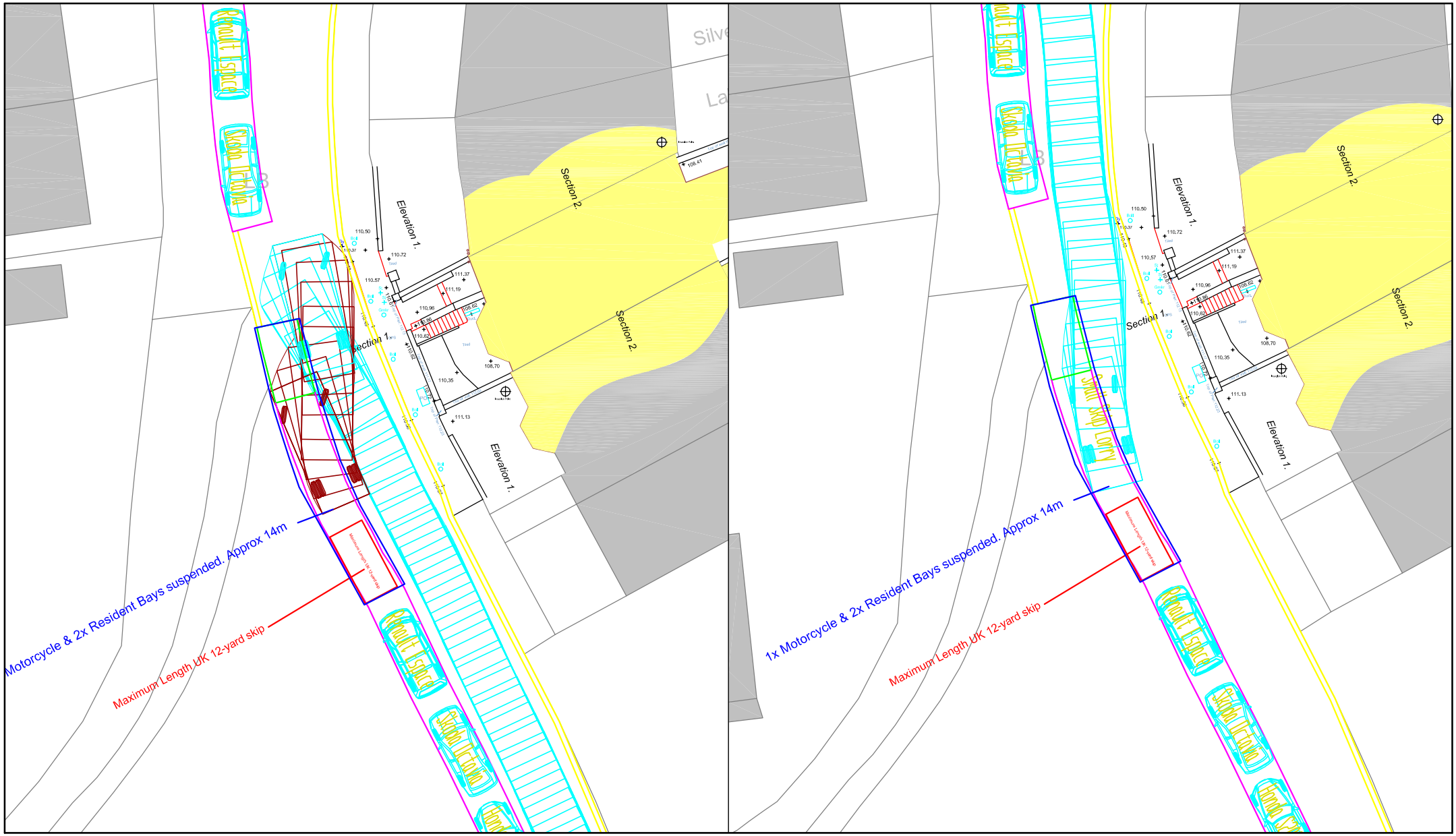
N

P1677: HILLVIEW, VALE OF HEALTH, HAMPSTEAD, NW3 1AN

Figure 5.

Skip Lorry (left) & Concrete Mixer (right) access, turn and egress Vale of Health

PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS
Unit 1, Plym House, 21 Enterprise Way, London SW18 1FZ
Tel: 0208 780 0426
E-mail: paul.mew@pma-traffic.co.uk Website: www.pma-traffic.co.uk



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Drawing No. P1677/CMP/06

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P1677: HILLVIEW, VALE OF HEALTH, HAMPSTEAD, NW3 1AN

Figure 6.

Skip Lorry Manoeuvre Access (left) and Egress (right) Skip Location

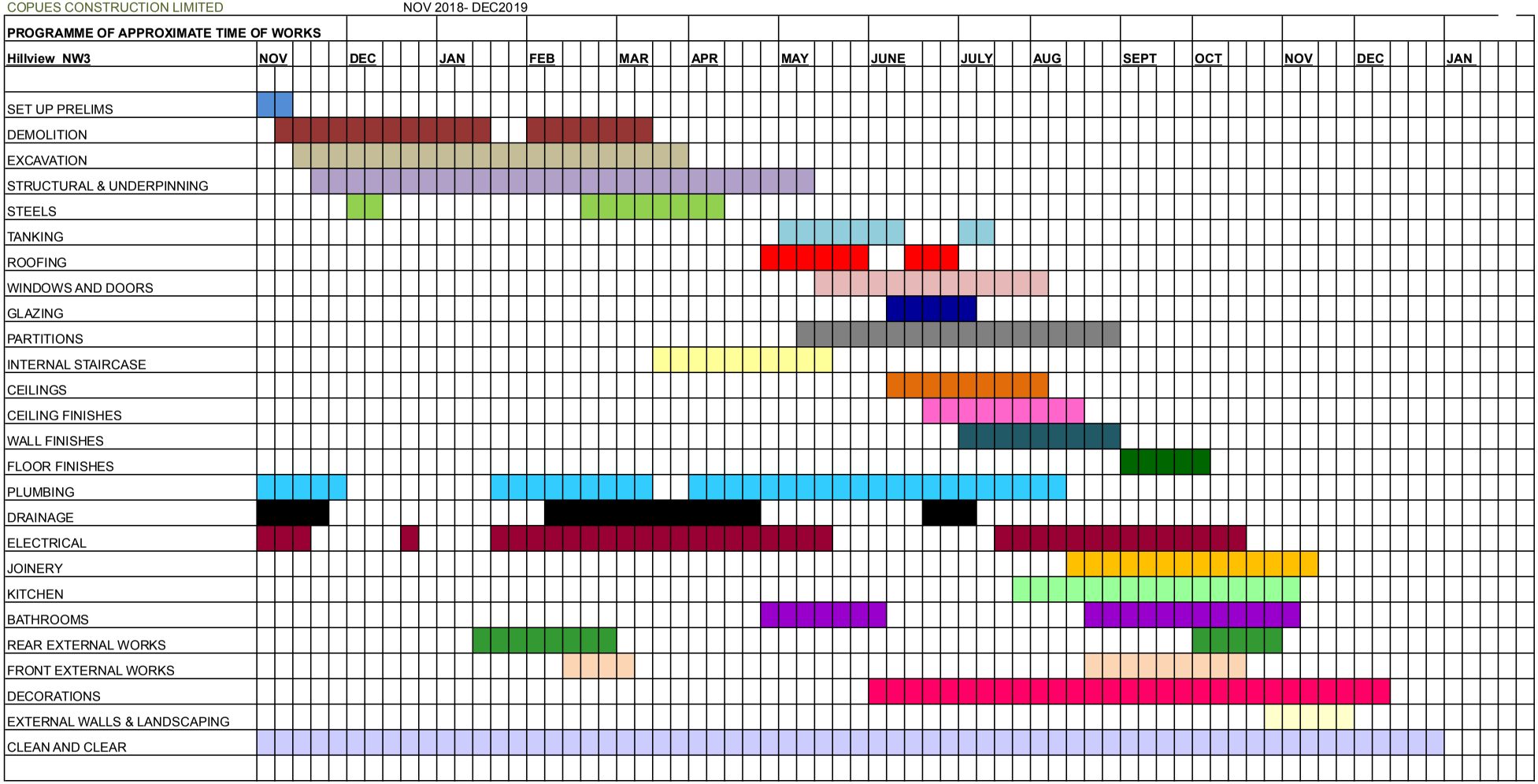
PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS
Unit 1, Plym House, 21 Enterprise Way, London SW18 1FZ
Tel: 0208 780 0426
E-mail: paul.mew@pma-traffic.co.uk Website: www.pma-traffic.co.uk

APPENDIX A
Contractor Detailed Phasing Plan

COPUES CONSTRUCTION LIMITED

NOV 2018- DEC2019

PROGRAMME OF APPROXIMATE TIME OF WORKS



APPENDIX B

Local Residents Consultation Correspondence – Paul Mew Associates

Thomas Edwards

From: Thomas Edwards
Sent: 15 May 2017 12:33
To: 'Ellen Solomons'
Cc: 'Brian Kavanagh'; 'Charles Humphries'; 'Michael Sanday-Ferrier'
Subject: RE: P1677 - Hillview, Vale of Health Construction Management Plan

Dear Mrs Solomons,

Many thanks for your email, and for outlining your queries below.

Regarding nearby developments, once formally appointed, Lead Contractors associated with the scheme at Hillview and any other nearby sites such as The Garden House would look to liaise on potential construction overlap issues in order to address the best options to work together in minimising impact.
We produce the guidance through our CMP document, and outline through our report that this element will become the jurisdiction of the Lead Contractor to manage, not just ahead of construction but throughout the development. Similarly, Lead Construction personnel from The Garden Centre development will be aware and will be obliged to liaise with other nearby developments as is required with construction programmes across London.

I have forwarded your response to the scheme architects and planning consultants.

Kind regards,

Thomas

Thomas Edwards
Paul Mew Associates
Traffic Consultants
Tel: 0208 780 0426
Email: thomas.edwards@pma-traffic.co.uk

From: Ellen Solomons [mailto:ellen.solomons@gmail.com]
Sent: 15 May 2017 12:23
To: Thomas Edwards <thomas.edwards@pma-traffic.co.uk>
Subject: Re: P1677 - Hillview, Vale of Health Construction Management Plan

Dear Mr Edwards
I have read the plan which you sent me. I believe that you accept that until you have instructed contractors it is in the nature of an interim document. As such I am giving you my preliminary observations. We are having a VOHS committee meeting Wednesday week and my committee may have further comments.
Your plan is based on the premise that there are no other major works being carried out. Have you liaised with the owners of The Garden House or their architects. I do not know when they are commencing works but it seems to me that if works overlapped we could face a very difficult situation. When will you know when your works are scheduled to start?. How long do you anticipate them taking?
Re some of the details in your report I have the following observation. There should only be quiet internal works on Saturday morning. I agree to your suggestion of using the motorcycle bays but if you need an additional bay for a skip it should be further up the hill. Finally we have endless experience of large vehicles attempting to turn in the Vale and getting stuck. Large dustbin and other vehicles overcome this by backing out. It may be that it would be sensible for contractors to have a dummy run.
Regards
Ellen Solomons

Chair VOHS

Sent from my iPad

On 27 Apr 2017, at 15:57, Thomas Edwards <thomas.edwards@pma-traffic.co.uk> wrot

> Dear Mrs Solomons,
>
> Hope all is well with you.
>
> We are Transport Consultants writing on behalf of our client who has outlined plans for renovation works at Hillview, Vale of Health.
>
> Given Hillview is within the boundaries of the Vale of Health Society, we considered it pertinent to signpost the development to yourselves, as detailed in the attached letter.
>
> Please find attached the completed Construction Management Plan for the proposed development, which we hope will outline the correct procedures, with due care and attention to pedestrian and neighbourhood safety and highway amenity in progressing the proposed application.
>
> Kind regards,
>
> Thomas

PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS

Unit 1, Plym House, 21 Enterprise Way, London, SW18 1FZ
Tel: 020 8780 0426 Web: http://www.pma-traffic.co.uk/

<P1677 - Hillview Construction Management Plan April 2017 v3.pdf>

<Residents Association Letter 27042017.pdf>

Thomas Edwards

From: Charles Humphries <ch@heat.design>
Sent: 31 May 2017 12:23
To: Ellen Solomons
Cc: Thomas Edwards; Brian Kavanagh; Michael Sanday-Ferrier
Subject: Fwd: P1677 - Hillview, Vale of Health Construction Management Plan

Dear Mrs Solomons,

Following the meeting of the VoHS committee last week, could you let me know whether there were any further comments or queries on the draft Construction Management Plan for Hillview.

With best regards,

Charles

--

heat

Charles Humphries
Director
HEAT Architecture Limited
135 Curtain Road
London
EC2A 3BX

t: 020 7837 2211
d: 020 3793 5684
m: 07970 934 576
ch@heat.design
www.heat.design

Begin forwarded message:

From: Charles Humphries <ch@heat.design>
Subject: Re: P1677 - Hillview, Vale of Health Construction Management Plan
Date: 23 May 2017 at 17:09:35 BST
To: Ellen Solomons <ellen.solomons@gmail.com>
Cc: Brian Kavanagh <bk@ntaplanning.co.uk>, Michael Sanday-Ferrier <msf@heat-architecture.com>, Thomas Edwards <thomas.edwards@pma-traffic.co.uk>

Dear Mrs Solomons,

In advance of your VoHS Committee meeting tomorrow, I wanted to update you on our progress with Hillview.

We have now chosen the main contractors for the project who are:

Sullivan Brothers Construction Ltd
139 Green Dragon Lane
London
N21 1EU

http://www.sullivanbrothers.co.uk

Sullivan Brothers are a family building firm that we have worked with on two previous projects. We chose them for this project on the basis that they would be careful and experienced builders who would be able to carry out liaison with the neighbours. We met with them last week to review the CMP with them in detail and their site agent has visited the site and provided comments. They have arranged for a trial run of a skip lorry and a HIAB; thank you for the suggestion. This is the kind of vehicle most often used by materials suppliers and has a flat bed with a lifting arm. It is likely that the parking bay suspensions will need to be in one block to provide space for vehicles to manoeuvre, but the multiple spaces will only be used for as short a period as necessary and will be returned to use when they are not needed.

On a day-to-day basis the contractor will use a transit sized van for small deliveries and moving people and equipment. Deliveries from suppliers are generally available on smaller vehicles and these will be specified and the access constraints will be made clear. Materials will be removed by using 8 cu yard skips.

With regards to timescale; we expect to start preliminary work in July, subject to satisfying any outstanding pre-commencement planning conditions and conclusion of party wall awards. The overall construction programme is 48 weeks. There will be a preliminary period of underpinning work, followed by re-construction of the rear elevation and the rear extension. When this is complete the interior fit-out will take place. We have reviewed the sequence to retain the external envelope as long as possible as this will help contain noise and dust from the site. When we have a finalised construction programme we will forward this to you. We have spoken to James Gorst Architects for the Garden House and discussed timescale and will co-ordinate with them going forward. It is likely that works will co-incide on site and in this event we will arrange for direct liaison between the contractors for each project to coordinate deliveries and collections.

Paul Mew Associates will update the draft CMP following any comments after your meeting and to include the above update and will re-issue it. If you have any concerns, or would like to discuss any of the above please do not hesitate to contact us.

With best regards,

Charles

--

heat

Charles Humphries
Director
HEAT Architecture Limited
135 Curtain Road
London

EC2A 3BX

t: 020 7837 2211
d: 020 3793 5684
ch@heat.design
www.heat.design

On 15 May 2017, at 12:33, Thomas Edwards <thomas.edwards@pma-traffic.co.uk> wrote:

Dear Mrs Solomons,

Many thanks for your email, and for outlining your queries below.

Regarding nearby developments, once formally appointed, Lead Contractors associated with the scheme at Hillview and any other nearby sites such as The Garden House would look to liaise on potential construction overlap issues in order to address the best options to work together in minimising impact. We produce the guidance through our CMP document, and outline through our report that this element will become the jurisdiction of the Lead Contractor to manage, not just ahead of construction but throughout the development. Similarly, Lead Construction personnel from The Garden Centre development will be aware and will be obliged to liaise with other nearby developments as is required with construction programmes across London.

I have forwarded your response to the scheme architects and planning consultants.

Kind regards,

Thomas

Thomas Edwards
Paul Mew Associates
Traffic Consultants
Tel: 0208 780 0426
Email: thomas.edwards@pma-traffic.co.uk

From: Ellen Solomons [mailto:ellen.solomons@gmail.com]
Sent: 15 May 2017 12:23
To: Thomas Edwards <thomas.edwards@pma-traffic.co.uk>
Subject: Re: P1677 - Hillview, Vale of Health Construction Management Plan

Dear Mr Edwards
I have read the plan which you sent me. I believe that you accept that until you have instructed contractors it is in the nature of an interim document. As such I am giving you my preliminary observations. We are having a VOHS committee meeting Wednesday week and my committee may have further comments.

Your plan is based on the premise that there are no other major works being carried out. Have you liaised with the owners of The Garden House or their architects. I do not know when they are commencing works but it seems to me that if works overlapped we could face a very difficult situation. When will you know when your works are scheduled to start?. How long do you anticipate them taking?
Re some of the details in your report I have the following observation. There should only be quiet internal works on Saturday morning. I agree to your suggestion of using the motorcycle bays but if you need an additional bay for a skip it should be further up the hill. Finally we have endless experience of large vehicles attempting to turn in the Vale and getting stuck. Large dustbin and other vehicles overcome this by backing out. It may be that it would be sensible for contractors to have a dummy run.
Regards
Ellen Solomons
Chair VOHS

Sent from my iPad

On 27 Apr 2017, at 15:57, Thomas Edwards <thomas.edwards@pma-traffic.co.uk> wrot

> Dear Mrs Solomons,
>
> Hope all is well with you.
>
> We are Transport Consultants writing on behalf of our client who has outlined plans for renovation works at Hillview, Vale of Health.
>
> Given Hillview is within the boundaries of the Vale of Health Society, we considered it pertinent to signpost the development to yourselves, as detailed in the attached letter.
>
> Please find attached the completed Construction Management Plan for the proposed development, which we hope will outline the correct procedures, with due care and attention to pedestrian and neighbourhood safety and highway amenity in progressing the proposed application.
>
> Kind regards,
>
> Thomas

PAUL MEW ASSOCIATES
TRAFFIC CONSULTANTS

Unit 1, Plym House, 21 Enterprise Way, London, SW18 1FZ
Tel: 020 8780 0426 Web: http://www.pma-traffic.co.uk/

<P1677 - Hillview Construction Management Plan April 2017 v3.pdf>

<Residents Association Letter 27042017.pdf>

APPENDIX C
Local Residents Consultation – HEAT Architecture

Thomas Edwards

From: Charles Humphries <ch@heat-architecture.com>
Sent: 20 July 2017 19:00
To: Ellen Solomons
Cc: msf@heat.design; Michael O'sullivan; stephen.stark@camden.gov.uk; tom.currie@camden.gov.uk; oliver.cooper@camden.gov.uk
Subject: Hillview, Vale of health

Thank you for inviting me along to your Vale of Health Society AGM to answer questions about the proposed refurbishment of Hillview, the terraced house in the Vale of Health.

I am writing to follow up on a couple of the questions that were raised.

Deliveries will be organised between 09:30 and 15:00 to avoid the school run. The contractor will liaise with Veolia regarding refuse collection timings.

Parking bay suspension will only be required during working hours and we will liaise with Camden to see how that can be handled as they will be responsible for the terms of the suspension. We will make sure that the bays are taken off suspension as soon as they are no longer required.

Noise Monitoring: We are obtaining quotes for noise monitoring on the site and will forward further details as they are finalised.

Programme:

Phase I: Structural works and underpinning is planned to take 14 weeks.
Phase II: External envelope and first fix: 19 weeks
Phase II: Internal fit out and 2nd fix: 16 weeks

The CMP will be updated to reflect these points and comments received from Camden and will be re-issued. If there is a desire for a Working Group to be formed with local residents we are happy to facilitate that. Alternatively we would be happy to arrange ad hoc meetings with residents as the work progresses. In either event we will arrange for progress reports during phases I and II.

Please let me know if there are any other queries or comments that I have not covered.

With best regards,

Charles

--
Charles Humphries
Director
HEAT Architecture Ltd
135 Curtain Road
London
EC2A 3BX

020 7837 2211
07970 934 576
ch@heat.design
www.heat.design

With best regards,

Charles

--
Charles Humphries
Director
HEAT Architecture Ltd
135 Curtain Road
London
EC2A 3BX

020 7837 2211
07970 934 576
ch@heat.design
www.heat.design
On 20 Jul 2017, at 08:21, Ellen Solomons <ellen.solomons@gmail.com> wrote:

> Dear Mr. Humphries
> Thank you for coming to our AGM and dealing with the questions put to you.
> As was clear those immediately affected by the Hillview works and residents of the Vale generally are very concerned about the effect of the works on neighbouring properties and the level of disruption which is inevitable. We would certainly welcome as much information as possible concerning the various stages of the work as it progresses and of course implementation of the promises made in the CMP which we understand should include noise monitoring.
> No doubt we will be corresponding further in the next few months. It is in everyone's interests that the work once commenced proceeds as smoothly and rapidly as possible.
> Best wishes
> Ellen Solomons
> Chair Vale of Health Society
>
> Sent from my iPad

APPENDIX D
Acoustics Report

KP Acoustics Ltd
Britannia House
11 Glenthorne Road
London
W6 0LH

Tel: +44(0)208 222 8778
Fax: +44(0)208 222 8575
Email: info@kpacoustics.com
www.kpacoustics.com

HILLVIEW, VALE OF HEALTH, LONDON

Noise, Vibration and Dust Management Plan

Report 16422.NVDMP.01

Prepared on 14 August 2017

For

HEAT Architecture Limited

135 Curtain Road

London

EC2A 3BX

Contents

List of Attachments

1.0 INTRODUCTION

KP Acoustics has been commissioned by Heat Architecture Ltd, 135 Curtain Road, London, EC2A 3BX to compile a noise and vibration management plan for the project at Hillview, Vale of Health, London.

This report presents all information gathered from relevant documentation and the steps which should be adopted regarding noise, vibration and dust, in order to maintain the amenity of all sensitive receivers adjacent to the site.

2.0 NOISE, VIBRATION AND DUST ELEMENTS

2.1 Noise

The effects of noise on all neighbouring premises can be varied and complicated. In extreme cases they would be likely to include a sensation of loudness, potential interference with speech communication, disturbance of work or leisure, and disturbance of sleep. A complicating factor is that, in any neighbourhood, some individuals will be more sensitive to noise than others.

In order to assess instantaneous noise levels at any time, the instantaneous A-weighted sound pressure level, L_{pA} can be used. This will give an indication of the loudness and degree of speech interference from noise.

The most commonly used descriptor, however, is the equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$. The time period involved should always be stated as the figure is a mathematical average of the all individual contributions of various sources during the reference period T. When assessing noise from individual events that may not always be present during a longer period L_{Aeq}, it can be useful to use a short reference period (e.g. 5min). As an alternative descriptor, the maximum sound pressure level, $L_{A(max)}$,or the one percentile level, L_{A01}, may be used.

With regards to noise levels, it is proposed that the absolute limit would be determined in accordance with BS5228-1:2009 and would be subject to an overall daytime noise limit of 70dB L_{Aeq}.

2.2 Vibration

The assessment of sensitivity to vibration at different times of the day is far more complex than sensitivity to noise. The sensitivity of the human frame to vibration varies according to the axis of vibration relative to the human body (e.g. x, y or z axis) and to the frequency of vibration. In general, except at very low frequencies, sensitivity is greater in the z axis (i.e. head to foot). When setting vibration control targets it is reasonable to assume that people will normally be sitting or standing during the day and lying down during the night.

With an impulsive source of vibration, it is usual to measure the peak value attained from the beginning to the end of a drive. It is also usual to measure in terms of peak particle velocity (P.P.V) if the risk of damage to the building is the primary concern and there is also

an interest in human reaction. If the concern is purely for human tolerance, then acceleration is the preferred parameter.

Vibrations, even of very low magnitude, may be perceptible to people and can interfere with the satisfactory conduct of certain delicate activities, e.g. operating theatres, use of very sensitive laboratory weighing equipment etc.

Nuisance from vibration is frequently associated with the assumption that, if vibrations can be felt, then damage is consequently inevitable; however, considerably greater levels of vibration are required to cause damage to buildings and structures than to be perceived by the human body.

Vibrations from site activities to the neighbourhood may therefore cause anxiety as well as annoyance and can disturb sleep, work or leisure activities. As with noise, in any neighbourhood, some individuals will be more sensitive to vibration than others.

2.3 Dust

Dust from construction and demolition sites can have a negative effect on the amenity of neighbouring residents. As with noise and vibration, dust and other pollutants can have a range of effects, the severity of which can vary depending upon the on the recipient as referenced in the IAQM "*Guidance on the assessment of dust from demolition and construction*".

As such, it is important that a number of mitigation measures are applied in order to minimise dust emissions from the site, in accordance with the Mayor's SPG for Control of Dust and Emissions during Construction and Demolition. Furthermore, regular monitoring may be required in order to ensure that dust levels pose no threat to the amenity of nearby recipients.

3.0 CRITERIA FOR NOISE & VIBRATION

The following factors are typically used to assess the likelihood of disturbance caused by noise and vibration generating activities:

Site location

The relative location of a site in relation to noise or vibration sensitive receivers will be a determining factor. The closer a site is to sensitive premises, the higher the likelihood of complaints due to noise and vibration emanating from the site.

Duration of site operations

In general, the longer the duration of all on-site operations, the more likely it is that noise or vibration from the site will potentially be an issue. In this respect, good public relations are very important. Local residents may be willing to accept a new status of noise and vibration if they know and understand the source and the duration of all operations. It is then important that site operations are carried out according to a stated schedule.

Hours of work

For any noise sensitive premises some periods of the day will be more sensitive than others. For example levels of noise that would be intruding within a dwelling during the day would not be an issue during the night. For dwellings, times of site operation outside normal weekday working hours will need special consideration.

Noise control targets for the evening period in such cases will need to be stricter than those for the daytime and, when noise limits are set, the evening limit may have to be as low as 10 dB(A) below the daytime limit. Very strict noise control targets should be applied to any site which is to operate at night.

Attitude to the site operator

It is well established that "one's music is somebody else's noise" and vice-versa. People's attitudes to noise are always influenced by their attitudes to the noise source itself.

Noise and vibration generated from a site will tend to be accepted more willingly by local residents if they consider that the site operator is adopting best practicable means to avoid unnecessary noise.

Noise and vibration characteristics

In many cases the particular identity of noise and vibration will affect people's judgement and appreciation of the signal itself. For example, the presence of a high-amplitude impulsive noise, accompanied by a vibration sensation would render the overall assessment slightly more onerous as "penalties" would need to be employed. These would comprise weightings to signals (e.g. 5dB (A) to a highly tonal or intermittent noise source).

3.1 BS5228:2009 Criterion for Noise

The criterion of 70dB (A) at the closest noise sensitive receiver was raised from BS5228: 2009. This document states the following:

Noise from construction and demolition sites should not exceed the level at which conversation in the nearest building would be difficult with the windows shut. The noise can be measured with a simple sound level meter, as we hear it, in A-weighted decibels dB (A) see note below. Noise levels, between say 07.00 and 19.00 hours, outside the nearest window of the occupied room closest to the site boundary should not exceed:

- *70 decibels (dBA) in rural, suburban and urban areas away from main road traffic and industrial noise;*
- *75 decibels (dBA) in urban areas near main roads in heavy industrial areas*

Based on the above, the daily noise limit from all on-site operations should therefore not exceed 70dB (A) at the closest noise sensitive receiver.

4.0 NOISE, VIBRATION & DUST MANAGEMENT PLAN

Deviation from approved method statements will be permitted only with prior approval from relevant parties. This will be facilitated by formal review before any deviation is undertaken.

Site Personnel

All operatives on site will be trained to ensure that noise minimisation and best practicable means (BPM) are implemented at all times. Works will be checked regularly by Site Engineers to ensure that BPM are being undertaken and where necessary corrective actions implemented.

Employees must show consideration to the sensitive receptors, including residential neighbours, and must not generate unnecessary noise when walking to and from the site, or when leaving and arriving at work.

General Noise and Vibration Control Measures

The Best Practicable Means (BPM) (as defined in Section 72 of the Control of Pollution Act 1974) will be used to reduce noise and vibration levels at all times. Where practicable the control measures set out in BS 5228:2009 + A1:2014 Part 1, Section 8 will also be implemented.

Recommended noise and vibration control measures include:

- Choice of methodology/technique for operations (including site layout) will be considered in order to eliminate or reduce emissions at sensitive locations
- Fixed items of construction plant will be electrically powered in preference to diesel or petrol driven
- If any specialise fabrication is required, this will be undertaken off-site if possible
- Noisy plant will be kept as far away as possible from sensitive areas
- Each item of plant used will comply with the noise limits quoted in the relevant European Commission Directive 2000/14/EC/United Kingdom Statutory Instrument (SI) 2001/1701 [3] where reasonably available
- Equipment will be well-maintained and will be used in the mode of operation that minimises noise and shut down when not in use
- Vehicles shall not wait or queue on the public highway with engines running (unless the engine is required to power the operation of the vehicle e.g. concrete wagon)
- Where possible deliveries will be arranged on a just-in-time basis in order to prevent vehicles queuing outside site.
- All materials will be handled in a manner that minimises noise

Recommended dust control measures include:

General advice for all construction and demolition sites, as recommended within the Mayor's SPG for Control of Dust and Emissions during Construction and Demolition include the following:

- Dust generated by the construction process will be suppressed via a fine directional spray jet of water aimed at the source, and any material to be transported to be wetted down prior to transit.
- Skips and powder containers to be covered when not in use
- Cutting equipment to be used with water suppressant and/or suitable extract system
- No burning of waste wood or other materials on site
- The stockpiling of dust generating materials on site will be minimised
- Wet brushing techniques will be used for cleaning
- Regular checks for visual observation of dust and soiling within 50m of site
- Screening to be erected surrounding site boundaries where possible

Regular monitoring may be necessary during the construction operations on site, in order to ensure that measured pollutants do not exceed safe levels, in positions agreed with the Local Authority. Furthermore, according to IAQM guidelines, it would be necessary to inspect the area in the local vicinity of the construction works to ensure that surfaces are not soiled by dust emissions from the site, with suitable cleaning offered if necessary. In order to minimise this, it would be recommended that screens are erected around the site boundaries as appropriate.

5.0 NOISE ASSESSMENT

Overview of the programme is assumed to be as follows based upon information provided by Sullivan Bros (Construction) Ltd.

Schedule of Operations					
Operations	**Description**	**Equipment**	**Days**	**Hrs in day**	**Area**
Demolition and Temp works	Demolition of chimney breasts, installation of temp steels for support, demolition of rear masonry façade	Large and small breakers, drills for steelwork connections	35 days	4 hrs per day	Roof, party wall and rear facade
Groundworks and waterproofing	Breaking out of existing ground floor, excavation of underpins, pouring of underpinning	large breakers, shovels, wheelbarrows	50 days	4 hrs per day	Groundfloor, underpinning to party walls

Drainage	Excavation of drainage runs and installation of drainage	Shovels, wheelbarrows	10 days	6 hrs per day	Groundfloor
Steelwork including padstones	Break out pad stones in party wall, pour concrete pad stones and install steelwork	small breakers, drills for steel connections	25 days	2 hrs per day	Party walls
Masonry	Rear cavity wall	cement mixer, shovels	25 days	6 hrs per day	Rear facade
Carpentry	Timber joists and timber rafters	cordless drills, masonry drills for fixing into masonry	30 days	6 hrs per day	Roof
Roof coverings	Installation of slate tiles and lead works to roof.	cordless drills, hammers,	20 days	6 hrs per day	Front façade, rear façade, and roof
External Windows and Doors	Installation of external windows and doors	cordless drills, masonry drills for fixing into masonry	15 days	6 hrs per day	Internal, party wall side
Stairs	Installation of timber stairs	Cordless drills	15 days	6 hrs per day	Floor plans in general
Internal partitions 1st fix	Installation of internal partitions first fix	Cordless drills	15 days	6 hrs per day	Faircroft party wall side
Mechanical works	Installation of public health, bathrooms and kitchen and central heating	Cordless drills	30 days	6 hrs per day	All floor plans
Electrical works	Installation of lighting and power throughout property	Cordless drills	45 days	6 hrs per day	All floor plans
Plaster board and skim	Installation of plasterboard and skim plaster	Cordless drills	25 days	4 hrs per day	All floor plans
2nd fix carpentry	Installation of joinery items, doors etc	Cordless drills	40 days	6 hrs per day	Faircroft party wall side
Floor finishes	Installation of parquet flooring	Floor sander	20 days	2 hrs per day	All floor plans
External works	Installation of paving slabs	Shovels, wheelbarrows	20 days	6 hrs per day	Rear and front garden

Table 5.1: Description of site operations

Typical noise data has been sourced from the relevant manufacturers where possible, and levels stated in BS5228 have been used where no manufacturer's data is available.

Activity	Start date	End date	Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ (at the nearest sensitive facade)
Demolition and Temp works	TBC	TBC	70
Groundworks and waterproofing	TBC	TBC	69
Drainage	TBC	TBC	61
Steelwork including padstones	TBC	TBC	70
Masonry	TBC	TBC	67
Carpentry	TBC	TBC	64
Roof coverings	TBC	TBC	62
External Windows and Doors	TBC	TBC	70
Stairs	TBC	TBC	61
Internal partitions – 1st fix	TBC	TBC	70
Mechanical Works	TBC	TBC	61
Electrical Works	TBC	TBC	61
Plater board and skim	TBC	TBC	59
2nd fix carpentry	TBC	TBC	70
Floor finishes	TBC	TBC	65
External works	TBC	TBC	60

Table 5.2: Predicted noise levels of site operations

Note that all calculations as shown above and in Appendix B have been calculated using the method stipulated in BS5228. All resultant noise levels have been calculated taking into account the operating hours of the activity/operation/machinery in reference to a 10 hour working day.

As shown in Appendix B and Table 5.2, transmission of noise to the nearest residential windows due to the works on site would meet the noise emissions criterion outlined in BS5228.

6.0 VIBRATION ASSESSMENT

This section presents an assessment of the potential risk regarding vibration generated by the construction works detailed in this document, and the associated adverse effects on the surrounding area.

Guidance Vibration Limits

Estimated vibration levels have been evaluated against guidance presented in relevant British Standards in order to assess the likelihood of both structural damage to neighbouring buildings and the human response of the occupants.

Building Damage

According to BS 7385 Part 2 for residential or light commercial buildings, the threshold for the onset of potential cosmetic damage (i.e. formation of hairline cracks on drywall surfaces or the growth of existing cracks in plaster or drywall surfaces) to buildings varies with frequency. This ranges from a PPV of 15 mm/s at 4Hz, rising to 20mm/s at 15 Hz, and to 50 mm/s at and above 40Hz for transient vibration. BS 7385: Part 2 also states that the probability of building damage tends towards zero at 12.5 mm/s peak component particle velocity.

Line (see Figure 6.1)	Type of Building	Peak component particle velocity in frequency range of predominant pulse	
		4Hz to 15Hz	15Hz and above
1	Reinforced or framed structures. Industrial and heavy commercial buildings	50mm/s at 4Hz and above	
2	Unreinforced or light framed structures. Residential or light commercial type buildings	15mm/s at 4Hz increasing to 20mm/s at 15Hz	20mm/s at 15Hz increasing to 50mm/s at 40Hz and above
Note 1: Values referred to are at the base of the building			
Note 2: For Line 2, at frequencies below 4Hz, a maximum displacement of 0.6mm (zero to peak) should not be exceeded			

Table 6.1: Transient Vibration Guide Values for Cosmetic Damage (from BS 7385: Part 2:1993)

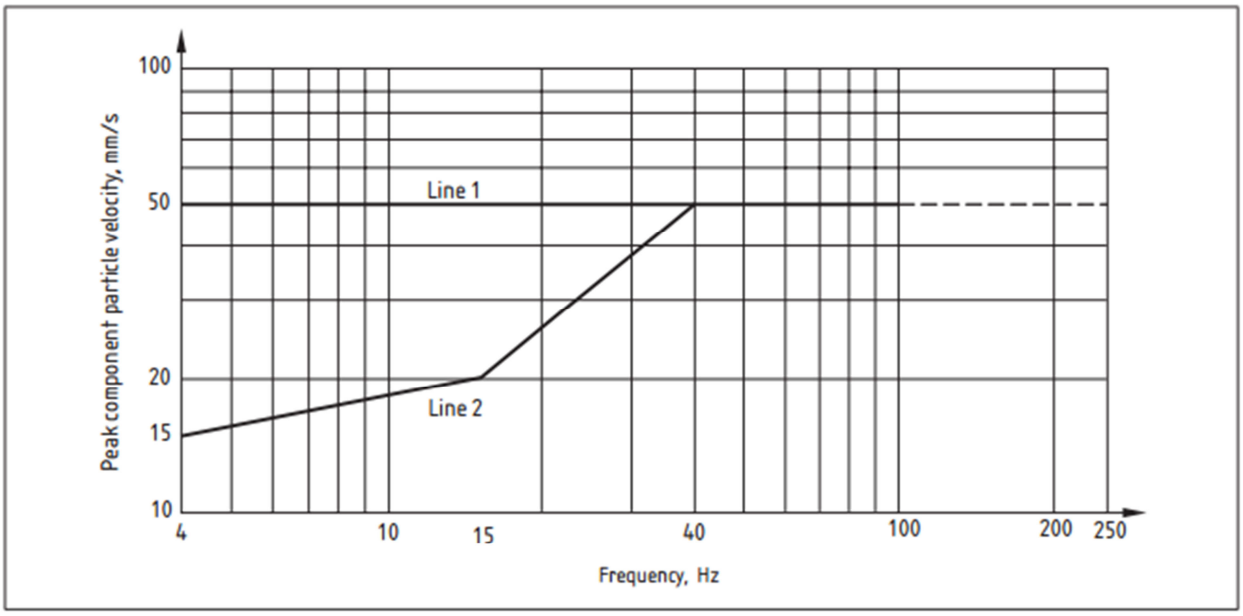


Figure 6.1: Summary of Damage Thresholds for Transient Vibration on Domestic Structures

Subjective Response

According to guidance provided in BS 5228 Part 2 , the threshold of vibration perceptible to humans lies around 0.14 to 0.3 mm/s. The Standard also indicates that a PPVs of around 1 mm/s in residential environments, as a first estimate, are likely to cause complaints, but can be tolerable provided prior warning and explanation of the works is given to residents; whilst, vibration magnitudes of around 10 mm/s are likely to be intolerable for more than a very brief exposure to this level.

Based on Local Authority requirements, vibration criteria are outlined below:

- 3mm/s p.p.v. Stop and review works and methodology; reduce work periods before recommencement.
- 5mm/s p.p.v. Stop works, review incident, look at work programme, and agree with Noise & Nuisance Team on a revised methodology where available before recommencing work.

7.0 CONCLUSION

KP Acoustics has been commissioned to undertake a preliminary assessment of noise levels from all site operations at Hillview, Vale of Health, London in order to provide initial advice on the control of noise, vibration and dust on site.

Information on good practice steps have been provided, while a realistic approach has been adopted regarding the maximum noise and vibration levels which should be met on site.

Noise predictions of on-site operations have been calculated as the closest noise sensitive receiver. Predictions indicate that noise levels meet the limits stipulated in London Borough of Camden guidance. Note that due to the nature of construction noise, levels could rise

above the threshold stipulated in BS5228 and therefore continuous noise monitoring may need to be undertaken to ensure operational periods of site activity are controlled.

Guidelines provided within this report are provided to ensure that any disturbance caused by noise or vibration will be minimised as much as is practically possible.

Report by

Aidan Tolkien AMIOA

KP Acoustics Ltd.

Checked by

Kyriakos Papanagiotou MIOA

KP Acoustics Ltd.

APPENDIX A

GENERAL ACOUSTIC TERMINOLOGY

Decibel scale - dB

In practice, when sound intensity or sound pressure is measured, a logarithmic scale is used in which the unit is the 'decibel', dB. This is derived from the human auditory system, where the dynamic range of human hearing is so large, in the order of 10^{13} units, that only a logarithmic scale is the sensible solution for displaying such a range.

Decibel scale, 'A' weighted - dB(A)

The human ear is less sensitive at frequency extremes, below 125Hz and above 16Khz. A sound level meter models the ears variable sensitivity to sound at different frequencies. This is achieved by building a filter into the Sound Level Meter with a similar frequency response to that of the ear, an A-weighted filter where the unit is dB(A).

L_{eq}

The sound from noise sources often fluctuates widely during a given period of time. An average value can be measured, the equivalent sound pressure level L_{eq}. The L_{eq} is the equivalent sound level which would deliver the same sound energy as the actual fluctuating sound measured in the same time period.

L_{10}

This is the level exceeded for no more than 10% of the time. This parameter is often used as a "not to exceed" criterion for noise.

L_{90}

This is the level exceeded for no more than 90% of the time. This parameter is often used as a descriptor of "background noise" for environmental impact studies.

L_{max}

This is the maximum sound pressure level that has been measured over a period.

Octave Bands

In order to completely determine the composition of a sound it is necessary to determine the sound level at each frequency individually. Usually, values are stated in octave bands. The audible frequency region is divided into 11 such octave bands whose centre frequencies are defined in accordance with international standards. These centre frequencies are: 16, 31.5, 63, 125, 250, 500, 1000, 2000, 4000, 8000 and 16000 Hertz.

Environmental noise terms are defined in BS7445, *Description and Measurement of Environmental Noise*.

APPENDIX A

APPLIED ACOUSTIC TERMINOLOGY

Addition of noise from several sources

Noise from different sound sources combines to produce a sound level higher than that from any individual source. Two equally intense sound sources operating together produce a sound level which is 3dB higher than a single source and 4 sources produce a 6dB higher sound level.

Attenuation by distance

Sound which propagates from a point source in free air attenuates by 6dB for each doubling of distance from the noise source. Sound energy from line sources (e.g. stream of cars) drops off by 3dB for each doubling of distance.

Subjective impression of noise

Hearing perception is highly individualised. Sensitivity to noise also depends on frequency content, time of occurrence, duration of sound and psychological factors such as emotion and expectations. The following table is a guide to explain increases or decreases in sound levels for many scenarios.

Change in sound level (dB)	Change in perceived loudness
1	Imperceptible
3	Just barely perceptible
6	Clearly noticeable
10	About twice as loud

Transmission path(s)

The transmission path is the path the sound takes from the source to the receiver. Where multiple paths exist in parallel, the reduction in each path should be calculated and summed at the receiving point. Outdoor barriers can block transmission paths, for example traffic noise. The effectiveness of barriers is dependent on factors such as its distance from the noise source and the receiver, its height and construction.

Ground-borne vibration

In addition to airborne noise levels caused by transportation, construction, and industrial sources there is also the generation of ground-borne vibration to consider. This can lead to structure-borne noise, perceptible vibration, or in rare cases, building damage.

Sound insulation - Absorption within porous materials

Upon encountering a porous material, sound energy is absorbed. Porous materials which are intended to absorb sound are known as absorbents, and usually absorb 50 to 90% of the energy and are frequency dependent. Some are designed to absorb low frequencies, some for high frequencies and more exotic designs being able to absorb very wide ranges of frequencies. The energy is converted into both mechanical movement and heat within the material; both the stiffness and mass of panels affect the sound insulation performance.

APPENDIX B

Hillview, Vale of Health, London

BS5228 CALCULATIONS OF ACTIVITY NOISE

Source: Demolition/Construction Site	*Frequency, Hz*								
Receiver: Nearest Noise Sensitive façade	***63***	***125***	***250***	***500***	***1k***	***2k***	***4k***	***8k***	***dB(A)***
Demolition and Temp Works : Start date unknown, approx. duration 5 weeks									
Large breaker at 10m	81	81	79	74	73	76	78	77	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (5m)	-14	-14	-14	-14	-14	-14	-14	-14	
Correction due to on- time (4hr per day)	-4	-4	-4	-4	-4	-4	-4	-4	
Attenuation provided by screening from building envelope (interal activity)	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***76***	***74***	***69***	***62***	***61***	***60***	***60***	***59***	**69**
Small breaker at 10m	73	73	69	70	67	64	58	51	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (5m)	-14	-14	-14	-14	-14	-14	-14	-14	
Correction due to on- time (4hr per day)	-4	-4	-4	-4	-4	-4	-4	-4	
Attenuation provided by screening from building envelope (interal activity)	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***68***	***66***	***59***	***58***	***55***	***48***	***40***	***33***	**60**
Drills for steelwork connections	67	72	74	72	72	72	68	61	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (5m)	-14	-14	-14	-14	-14	-14	-14	-14	
Correction due to on- time (4hr per day)	-4	-4	-4	-4	-4	-4	-4	-4	
Attenuation provided by screening from building envelope (interal activity)	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***62***	***65***	***64***	***60***	***60***	***56***	***50***	***43***	**64**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**70**
Groundworks and waterproofing : Start date unknown, approx. duration 7 weeks									
Large breaker at 10m	81	81	79	74	73	76	78	77	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (5m)	-14	-14	-14	-14	-14	-14	-14	-14	
Correction due to on- time (4hr per day)	-4	-4	-4	-4	-4	-4	-4	-4	
Attenuation provided by screening from building envelope (interal activity)	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***76***	***74***	***69***	***62***	***61***	***60***	***60***	***59***	**69**
Shovel at 10m	66	66	68	68	63	57	55	51	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (5m)	-14	-14	-14	-14	-14	-14	-14	-14	
Correction due to on- time (4hr per day)	-4	-4	-4	-4	-4	-4	-4	-4	
Attenuation provided by screening from building envelope (interal activity)	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***61***	***59***	***58***	***56***	***51***	***41***	***37***	***33***	**57**
Wheelbarrow at 10m	58	52	52	43	43	42	47	47	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (5m)	-14	-14	-14	-14	-14	-14	-14	-14	
Correction due to on- time (4hr per day)	-4	-4	-4	-4	-4	-4	-4	-4	
Attenuation provided by screening from building envelope (interal activity)	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***53***	***45***	***42***	***31***	***31***	***26***	***29***	***29***	**39**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**69**
Drainage : Start date unknown, approx. duration 1.5 weeks									
Shovel at 10m	66	66	68	68	63	57	55	51	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (5m)	-14	-14	-14	-14	-14	-14	-14	-14	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope (interal activity)	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***63***	***61***	***60***	***58***	***53***	***43***	***39***	***35***	**58**
Wheelbarrows at 10m	66	66	68	68	63	57	55	51	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (5m)	-14	-14	-14	-14	-14	-14	-14	-14	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope (interal activity)	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***63***	***61***	***60***	***58***	***53***	***43***	***39***	***35***	**58**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**61**

Steelwork and padstones : Start date unknown, approx. duration 4 weeks									
Small breaker at 10m	73	73	69	70	67	64	58	51	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (2m)	-6	-6	-6	-6	-6	-6	-6	-6	
Correction due to on- time (2hr per day)	-7	-7	-7	-7	-7	-7	-7	-7	
Attenuation provided by screening from building envelope (interal activity)	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***73***	***71***	***64***	***63***	***60***	***53***	***45***	***38***	**65**
Drills for steelwork connections	67	72	74	72	72	72	68	61	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (2m)	-6	-6	-6	-6	-6	-6	-6	-6	
Correction due to on- time (2hr per day)	-7	-7	-7	-7	-7	-7	-7	-7	
Attenuation provided by screening from building envelope (interal activity)	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***67***	***70***	***69***	***65***	***65***	***61***	***55***	***48***	**69**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**70**
Masonry : Start date unknown, approx. duration 4 weeks									
Cement mixer at 10m	61	65	58	58	57	53	51	49	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (2m)	-6	-6	-6	-6	-6	-6	-6	-6	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***66***	***68***	***58***	***56***	***55***	***47***	***43***	***41***	**59**
Shovel at 10m	66	66	68	68	63	57	55	51	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (2m)	-6	-6	-6	-6	-6	-6	-6	-6	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope (interal activity)	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***71***	***69***	***68***	***66***	***61***	***51***	***47***	***43***	**66**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**67**
Carpentry : Start date unknown, approx. duration 4 weeks									
Cordless drill at 10m	63	76	70	68	68	68	62	57	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (8m)	-18	-18	-18	-18	-18	-18	-18	-18	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***56***	***67***	***58***	***54***	***54***	***50***	***42***	***37***	**58**
Masony drill at 10m	67	80	74	72	72	72	68	61	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (8m)	-18	-18	-18	-18	-18	-18	-18	-18	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***60***	***71***	***62***	***58***	***58***	***54***	***48***	***41***	**63**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**64**
Roof coverings : Start date unknown, approx. duration 3 weeks									
Cordless drill at 10m	63	76	70	68	68	68	62	57	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (6m)	-16	-16	-16	-16	-16	-16	-16	-16	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***58***	***69***	***60***	***56***	***56***	***52***	***44***	***39***	**61**
Hammers at 10m	***66***	***66***	***68***	***68***	***63***	***57***	***55***	***51***	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (6m)	-16	-16	-16	-16	-16	-16	-16	-16	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***61***	***59***	***58***	***56***	***51***	***41***	***37***	***33***	**57**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**62**
External windows and doors : Start date unknown, approx. duration 2 weeks									
Cordless drill at 10m	63	76	70	68	68	68	62	57	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (4m)	-12	-12	-12	-12	-12	-12	-12	-12	

Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***62***	***73***	***64***	***60***	***60***	***56***	***48***	***43***	**64**
Masony drill at 10m	67	80	74	72	72	72	68	61	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (4m)	-12	-12	-12	-12	-12	-12	-12	-12	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***66***	***77***	***68***	***64***	***64***	***60***	***54***	***47***	**69**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**70**
Stairs: Start date unknown, approx. duration 2 weeks									
Cordless drill at 10m	63	76	70	68	68	68	62	57	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (8m)	-16	-16	-16	-16	-16	-16	-16	-16	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***58***	***69***	***60***	***56***	***56***	***52***	***44***	***39***	**61**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**61**
Internal partitions, 1st fix: Start date unknown, approx. duration 2 weeks									
Cordless drill at 10m	63	76	70	68	68	68	62	57	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (2m)	-6	-6	-6	-6	-6	-6	-6	-6	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***68***	***79***	***70***	***66***	***66***	***62***	***54***	***49***	**70**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**70**
Mechanical works: Start date unknown, approx. duration 4 weeks									
Cordless drill at 10m	63	76	70	68	68	68	62	57	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (8m)	-16	-16	-16	-16	-16	-16	-16	-16	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***58***	***69***	***60***	***56***	***56***	***52***	***44***	***39***	**61**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**61**
Electrical works: Start date unknown, approx. duration 6 weeks									
Cordless drill at 10m	63	76	70	68	68	68	62	57	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (8m)	-16	-16	-16	-16	-16	-16	-16	-16	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***58***	***69***	***60***	***56***	***56***	***52***	***44***	***39***	**61**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**61**
Plasterboard and skim: Start date unknown, approx. duration 3.5 weeks									
Cordless drill at 10m	63	76	70	68	68	68	62	57	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (8m)	-16	-16	-16	-16	-16	-16	-16	-16	
Correction due to on- time (4hr per day)	-4	-4	-4	-4	-4	-4	-4	-4	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***56***	***67***	***58***	***54***	***54***	***50***	***42***	***37***	**59**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**59**
2nd fix carpentry: Start date unknown, approx. duration 6 weeks									
Cordless drill at 10m	63	76	70	68	68	68	62	57	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (2m)	-6	-6	-6	-6	-6	-6	-6	-6	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***68***	***79***	***70***	***66***	***66***	***62***	***54***	***49***	**70**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**70**

Floor finishes: Start date unknown, approx. duration 3 weeks									
Floor sander at 10m	81	87	79	77	77	74	70	67	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (8m)	-16	-16	-16	-16	-16	-16	-16	-16	
Correction due to on- time (2hr per day)	-7	-7	-7	-7	-7	-7	-7	-7	
Attenuation provided by screening from building envelope	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***71***	***75***	***64***	***60***	***60***	***53***	***47***	***44***	**65**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**65**
Floor finishes: Start date unknown, approx. duration 3 weeks									
Shovel at 10m	66	66	68	68	63	57	55	51	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (4m)	-12	-12	-12	-12	-12	-12	-12	-12	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope (interal activity)	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***65***	***63***	***62***	***60***	***55***	***45***	***41***	***37***	**60**
Wheelbarrow at 10m	58	52	52	43	43	42	47	47	
Correction to 1m	20	20	20	20	20	20	20	20	
Minimum distance to receiver (4m)	-12	-12	-12	-12	-12	-12	-12	-12	
Correction due to on- time (6hr per day)	-2	-2	-2	-2	-2	-2	-2	-2	
Attenuation provided by screening from building envelope (interal activity)	-7	-9	-12	-14	-14	-18	-20	-20	
Total	***57***	***49***	***46***	***35***	***35***	***30***	***33***	***33***	**43**
Predicted Daily Airborne Noise Level, dB $L_{Aeq,10h}$ at the nearest sensitive façade									**60**

APPENDIX E
Pest Control

Job Report

P.: 0330 053 9003
E.: accounts@jgpest.co.uk
www.JGEnvironmental.co.uk

Sullivan Bros Construction Ltd
Hillview Vale of Health
London, England NW3 1AN, United Kingdom
P.: 0208 360 6798

E.: michael@Sullivanbrothers.co.uk

Date: 02-Aug-2017
Technician: Ryan Logan
Job #: 9217326
Type: Survey

Contact Person:
Account Type: No payment required

Service Booked	Pest Reported	Site Address
Rodent Survey		Hillview Vale of Health, England, London, NW3 1AN

Job Information and Observations:

Question	Technicians Answer
Risk Assessment- Presence of:	Employees
Evidence of infestation	N/A
Level of infestation inspected:	All Clear
Hygiene	Fine- No Comments
Additional Recommendations	None/ Not applicable
Job Report Further Notes:	
Initial treatment required? Explain	4 external baiting stations
Price quote for initial treatment & set up	400+vat

Completion Notes:
Have carried out a survey today

On inspection there is no trace of rodent activity

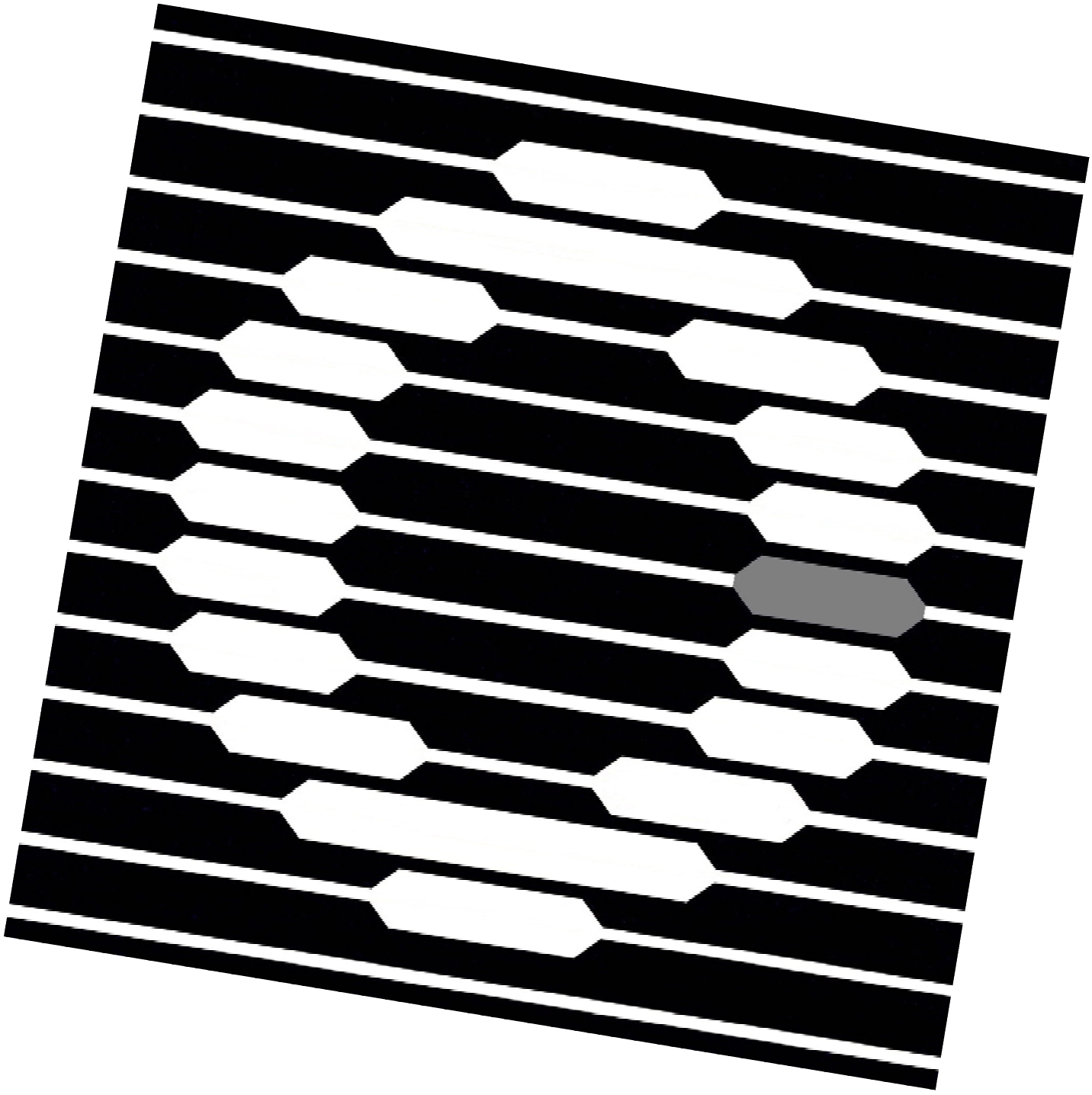
Job Card Accurate. Job Completed Successfully.

IMPORTANT: Chemicals used in our insect treatments require several hours to dry. Do not re-enter the property until area is totally dry. If on return items are wet or damp to touch, open windows and doors to ventilate property and leave until totally dry.

Note: Chemical safety data sheets can be provided at request. Please call on 0330 053 9003 or email enquiries@jgenvironmental.co.uk

APPENDIX F
Drain Survey

G.O. DRAINAGE SERVICES LTD



CV.1047 HILLVIEW VALE OF HEALTH LONDON NW3

G.O. DRAINAGE SERVICES LTD

53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

CCTV SURVEY HEADER SHEET

CLIENT. HEAT ARCHITECTURE LTD

LOCATION. HILLVIEW
VALE OF HEALTH
LONDON
SW18

JOB NO. CV.1047

SEWER USE. COMBINED DRAINAGE

WEATHER. DRY

DATE. 07/05/16

OPERATOR. GO

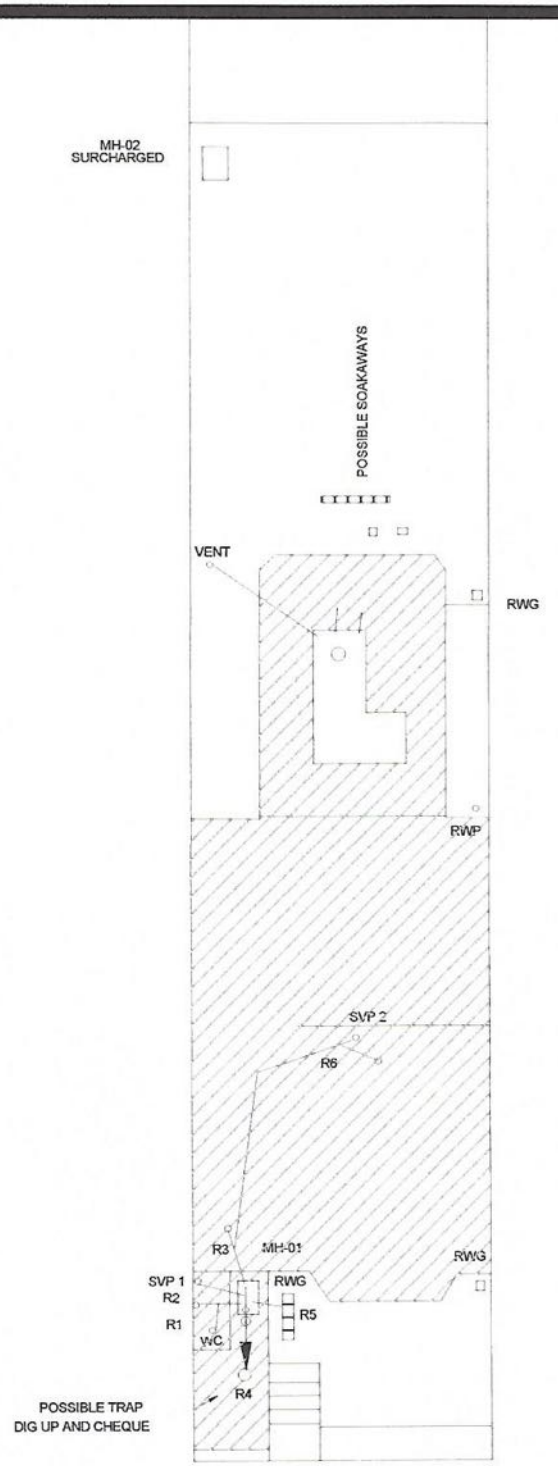
CLEANED. YES

ORDER NO. E-MAIL MICHAEL

TOTAL LENGTH SURVEYED. 13.2 metres

G.O. DRAINAGE SERVICES

DIAGRAMMATIC LAYOUT OF DRAINAGE SYSTEM
NOT TO SCALE



HILLVIEW VALE OF HEALTH LONDON NW3 1AN

MANHOLE DEPTH'S	OTHER INFORMATION	
MANHOLE NO,01 690mm	R = RUN NUMBER	WC = TOILET
	SVP = SOIL VENT PIPE	G = GULLY
	RWG = RAIN WATER GULLY	
	CV NO. 1047	DATE- 05/05/16

G.O. DRAINAGE SERVICES LTD

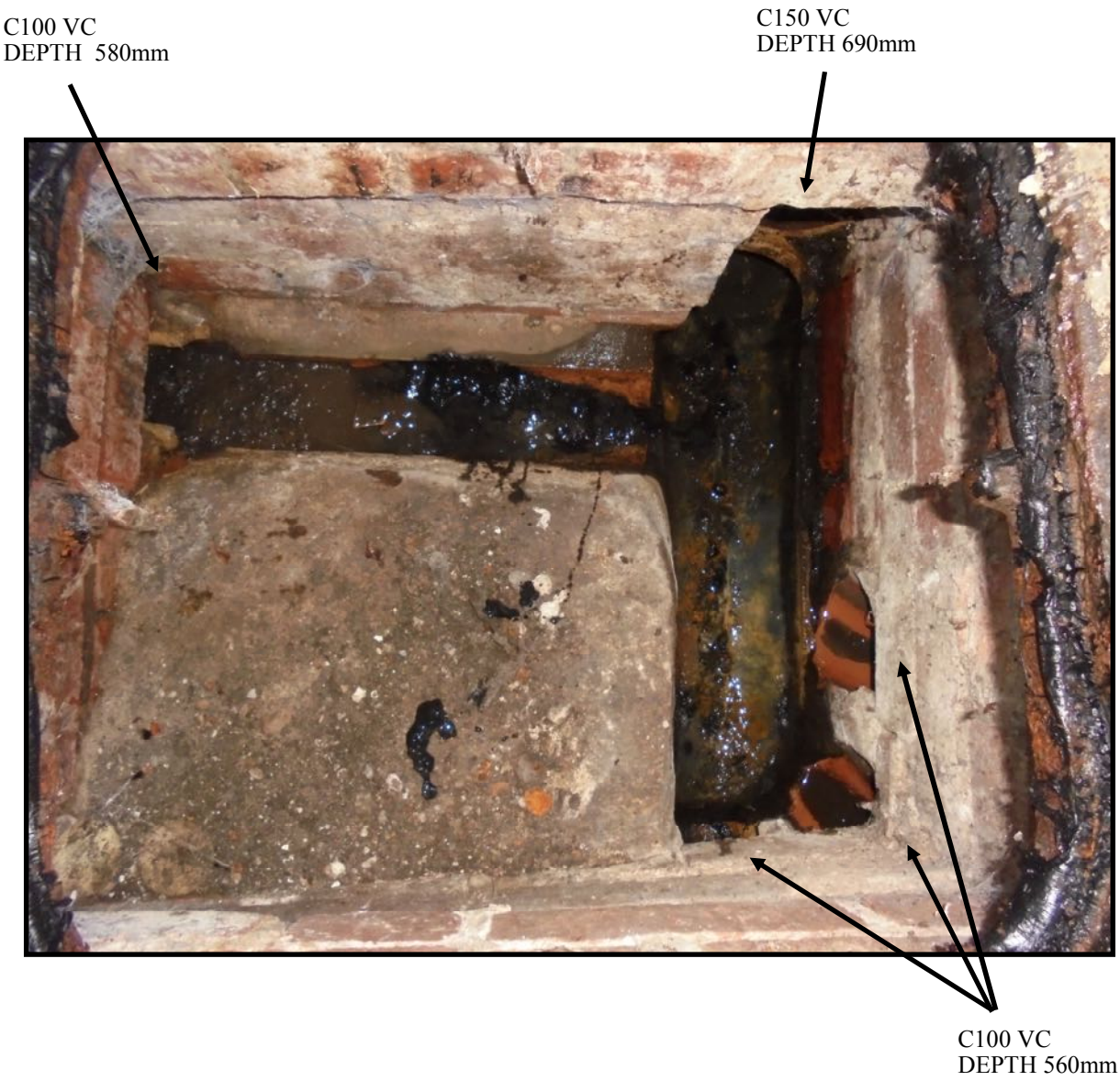
53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

MANHOLE SURVEY

CLIENT. HEAT ARCHITECTURE LTD	LOCATION. HILLVIEW VALE OF HEALTH NW3 1AN
DATE 05/05/16	JOB. **CV.1047**

MANHOLE NO.01

MANHHOLE COVER SIZE - 570X570mm	MANHOLE CHAMBER SIZE- 700X460mm
MANHOLE CONSTRUCTION- BRICK	MANHOLE COVER TYPE– CAST IRON
MANHOLE COVER CONDITION- GOOD	MANHOLE WALL CONDITION– GOOD
BENCHING/CHANNEL CONDITION- GOOD	USE– COMBINED



G.O. DRAINAGE SERVICES LTD

53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

INSPECTION REPORT

CLIENT.	LOCATION.
HEAT ARCHITECTURE LTD	HILLVIEW VALE OF HEALTH NW3 1AN

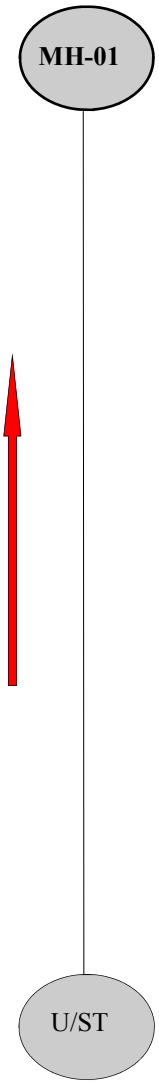
JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1047	01	05/05/16	COMBINED	560mm	UPSTREAM	100mm	V/CLAY	DRY	YES	GO	1

START

ST. MANHOLE No.01 CONNECTION- 1

FINISH

FH. UPSTREAM



CHAINAGE	CODE	OBSERVATION
000.0	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
000.3	MC	MATERIAL OF DRAIN CHANGES TO PVC AT THIS POINT
000.4	JN	JUNCTION AT 09 O'CLOCK,DIAMETER 100mm WC
000.7	SC	DIMENSION OF DRAIN CHANGES TO 50mm
000.7	FH	FINISH OF SURVEY

END OF RUN NO.01

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INSPECTION REPORT

CLIENT.	LOCATION.
HEAT ARCHITECTURE LTD	HILLVIEW VALE OF HEALTH NW3 1AN

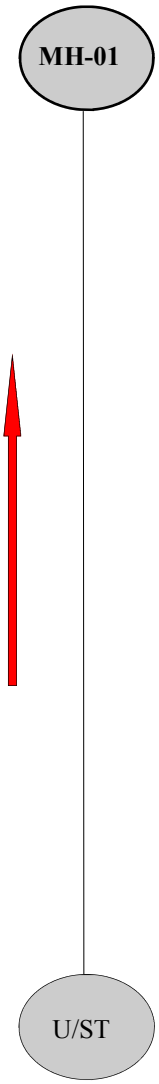
JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1047	02	05/05/16	COMBINED	560mm	UPSTREAM	100mm	V/CLAY	DRY	YES	GO	1

START

ST. MANHOLE No.01 CONNECTION- 2

FINISH

FH. SOIL VENT PIPE



CHAINAGE	CODE	OBSERVATION
000.0	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
000.3	MC	MATERIAL OF DRAIN CHANGES TO CAST IRON AT THIS POINT
000.3	LL	LINE OF DRAIN DEVIATES LEFT (SLIGHT)
000.8	LU	LINE OF DRAIN DEVIATES UP (SHARP)
000.8	FH	FINISH OF SURVEY (SOIL VENT PIPE)

END OF RUN NO.02

G.O. DRAINAGE SERVICES LTD

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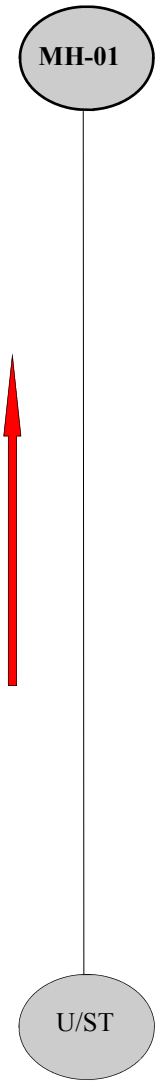
INSPECTION REPORT

CLIENT.	LOCATION.
HEAT ARCHITECTURE LTD	HILLVIEW VALE OF HEALTH NW3 1AN

JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1047	03	05/05/16	COMBINED	560mm	UPSTREAM	100mm	V/CLAY	DRY	YES	GO	1

START ST. MANHOLE No.01 CONNECTION– 3

FINISH FH. UPSTREAM



CHAINAGE	CODE	OBSERVATION
000.0	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
000.8	MC	MATERIAL OF DRAIN CHANGES TO PVC AT THIS POINT
001.0	JN	JUNCTION AT 09 O'CLOCK,DIAMETER 100mm WC
001.1	MC	MATERIAL OF DRAIN CHANGES TO V/CLAY AT THIS POINT
001.9	JDS	JOINT DISPLACED SLIGHT
002.8	SC	DIMENSION OF DRAIN CHANGES TO 50mm
002.8	FH	FINISH OF SURVEY

END OF RUN NO.03

G.O. DRAINAGE SERVICES LTD

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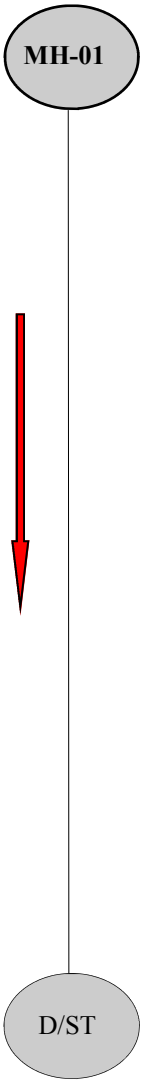
INSPECTION REPORT

CLIENT.	LOCATION.
HEAT ARCHITECTURE LTD	HILLVIEW VALE OF HEALTH NW3 1AN

JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1047	04	05/05/16	COMBINED	690mm	DOWNSTREAM	100mm	V/CLAY	DRY	YES	GO	1

START: ST. MANHOLE No.01 CONNECTION– X

FINISH: FH. DOWNSTREAM



CHAINAGE	CODE	OBSERVATION
000.0	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
000.4	JN	JUNCTION AT 06 O'CLOCK,DIAMETER 150mm TRAP
000.4	SC	DIMENSION OF DRAIN CHANGES TO mm
000.4	WL	WATER LEVEL 10%
000.6	LD	LINE OF DRAIN DEVIATES DOWN (SHARP)
000.6	FH	FINISH OF SURVEY (POSSIBLE TRAP)

END OF RUN NO.04

G.O. DRAINAGE SERVICES LTD

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INSPECTION REPORT

CLIENT. HEAT ARCHITECTURE LTD

LOCATION. HILLVIEW VALE OF HEALTH NW3 1AN

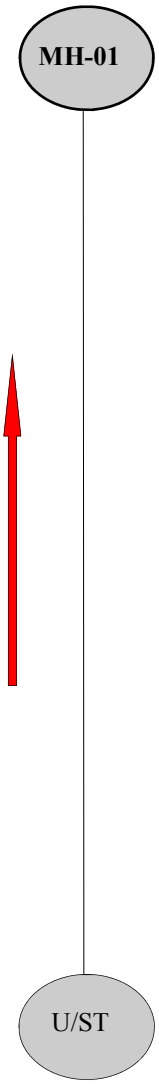
JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1047	05	05/05/16	COMBINED	580mm	UPSTREAM	100mm	V/CLAY	DRY	YES	GO	1

START

ST. MANHOLE No.01 CONNECTION- 5

FINISH

FH. UPSTREAM



CHAINAGE	CODE	OBSERVATION
000.0	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
000.3	LU	LINE OF DRAIN DEVIATES UP (SHARP)
000.3	FH	FINISH OF SURVEY

END OF RUN NO.05

G.O. DRAINAGE SERVICES LTD

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INSPECTION REPORT

CLIENT. HEAT ARCHITECTURE LTD

LOCATION. HILLVIEW VALE OF HEALTH NW3 1AN

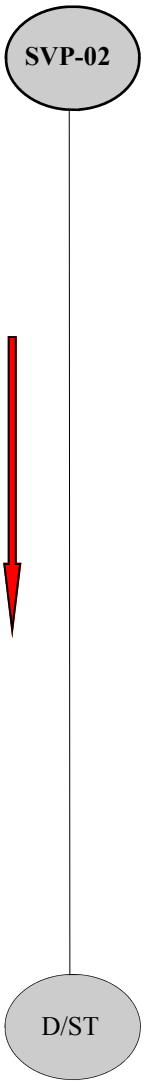
JOB NO.	RUN NUMBER	DATE	SEWER USE	DEPTH	DIRECTION	PIPE SIZE	MATERIAL	WEATHER	CLEANED	OPERATOR	PAGE
CV.1047	06	05/05/16	COMBINED	N/A	DOWNSTREAM	100mm	PVC	DRY	YES	GO	1

START

ST. SVP No.02 CONNECTION- X

FINISH

FH. DOWNSTREAM



CHAINAGE	CODE	OBSERVATION
000.0	ST	START OF SURVEY
000.0	WL	WATER LEVEL 05%
000.3	LD	LINE OF DRAIN DEVIATES DOWN (SHARP)
000.3	LR	LINE OF DRAIN DEVIATES RIGHT (SLIGHT)
000.4	LL	LINE OF DRAIN DEVIATES LEFT (SLIGHT)
000.4	JN	JUNCTION AT 09 O'CLOCK,DIAMETER 50mm
002.0	LL	LINE OF DRAIN DEVIATES LEFT (SLIGHT)
003.9	WL	WATER LEVEL 20%
005.5	WL	WATER LEVEL 05%
008.0	FH	FINISH OF SURVEY (JUNCTION WITH SEWER)

END OF RUN NO.06

G.O. DRAINAGE SERVICES LTD

53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

SUMMARY AND RECOMMENDATIONS

CLIENT.	HEAT ARCHITECTURE LTD	LOCATION.	HILLVIEW VALE OF HEALTH NW3 1AN
DATE	05/05 /16	JOB.	CV.1047

RUN NO.01 NO WORK NEEDED

RUN NO.02 NO WORK NEEDED

RUN NO.03 NO WORK NEEDED

RUN NO.04 DIG UP TRAP AFTER MANHOLE TO CHEQUE PIPE TO SEE REST OF PIPE WORK TO SEWER

RUN NO.05 NO WORK NEEDED

RUN NO.06 NO WORK NEEDED