Intended for
The Hall School Charitable Trust

Document type
Construction Management Plan

Date
March 2019

CONSTRUCTION MANAGEMENT PLAN
PRO FORMA V2.1

RAMBOLL

TABLE OF CONTENTS

1.REVISIONS & ADDITIONAL MATERIAL

Please list all iterations here:

Date	Version	Produced by
25/02/2019	S73/A	Thaddaeus O'Higgins

Additional sheets

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

Date	Version	Produced by

2.INTRODUCTION

Note: This document has been prepared in support of a Section 73 minor material amendments application ('S73 application') by The Hall School Charitable Trust ('The Hall School/Client') for the proposed redevelopment and refurbishment at The Hall Senior School, 23 Crossfield Road, Belsize, London Borough of Camden ('the application site'). This S73 application relates to consented scheme 2016/6319/P. This document has been prepared using the Council (London Borough of Camden(LBC)) Construction Management Plan (CMP) template v2.1 and builds upon the CMP associated with consented scheme 2016/6319/P, which also used the LBC CMP template v2.1.

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 Cyclist 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.**"

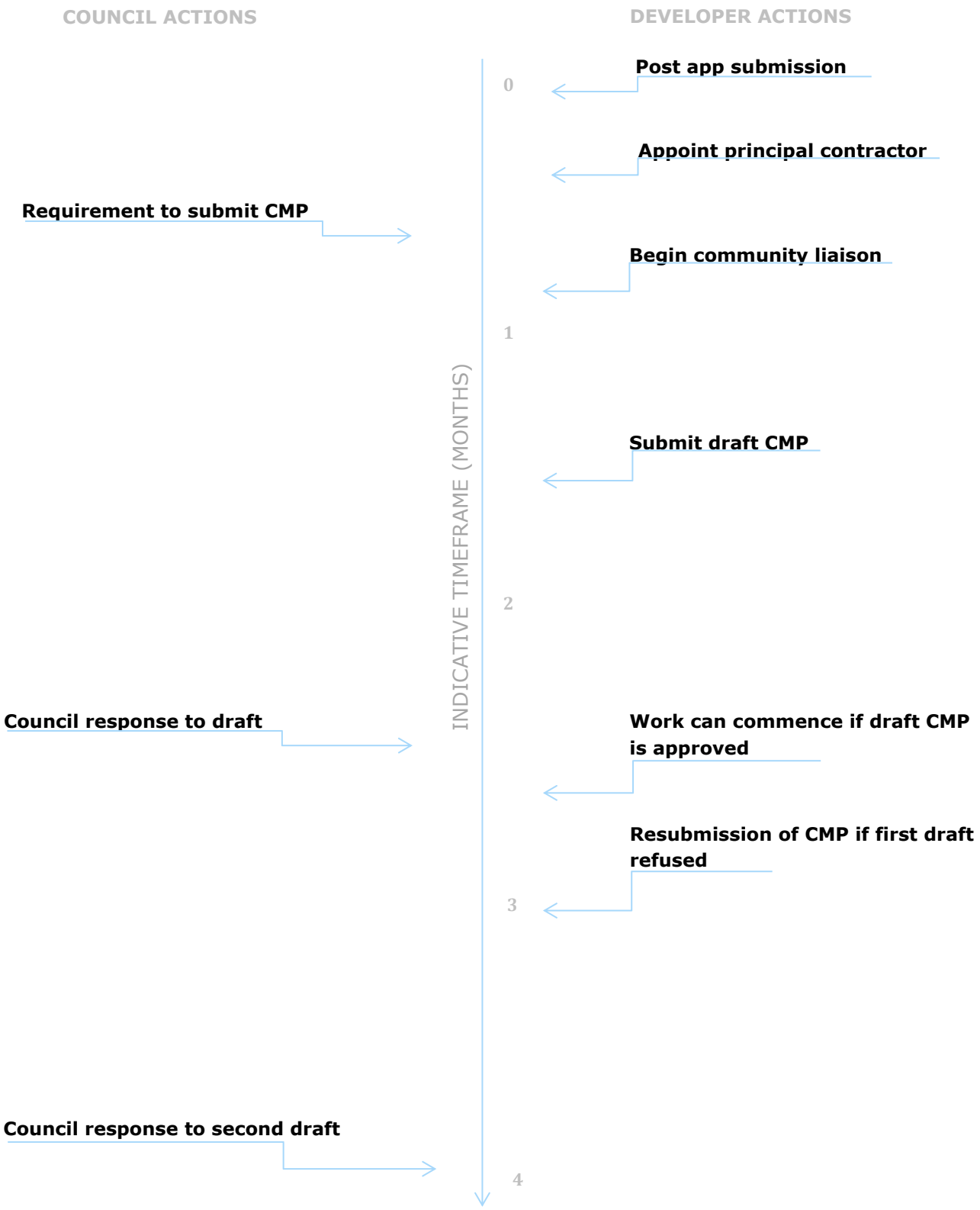
Please complete the questions below with additional sheets, drawings and plans as required. The boxes will expand to accommodate the information provided, so please provide as much information as is necessary. **It is preferable if this document, and all additional documents, are completed electronically 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.

3.TIMEFRAME


COUNCIL ACTIONS
DEVELOPER ACTIONS
INDICATIVE TIMEFRAME (MONTHS)
0
1
2
3
4
Post app submission
Appoint principal contractor
Requirement to submit CMP
Begin community liaison
Submit draft CMP
Council response to draft
Work can commence if draft CMP is approved
Resubmission of CMP if first draft refused
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: **The Hall School, 23 Crossfield Road, London NW3 4NU**
Planning ref: *TBC upon validation of S73 application, relating to extant permission 2016/6319/P*
Type of CMP - Section 106 planning obligation/Major sites framework: *S73 (S106 with extant permission 2016/6319/P)*

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

Name: Billy Pattison
Address: Boyer, 24 Southwark Bridge Road, London, SE1 9HF
Email: billypattison@boyerplanning.co.uk
Phone: 0203 268 2439

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: TBC upon appointment of contractor, post submission
Address:
Email:
Phone:

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.

Name: TBC upon appointment of contractor, post submission
Address:
Email:
Phone:

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: TBC upon appointment of contractor, post submission
Address:
Email:
Phone:

5.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 Hall School is located in Belsize ward within the London Borough of Camden. The application site fronts onto Crossfield Road and is bounded on the remaining sides by residential properties. The surrounding areas are predominantly residential and educational.
The proposed development is located approximately 400 m east of the A41 Finchley Road which provides access to the wider highway network.
The Hall Junior School is located in Belsize Park and The Hall Middle School is located across the road on Crossfield Road. Other nearby schools include Trevor Roberts School and Sarum Hall school located in Eton Avenue, and Hereward House School located in Strathray Gardens.

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 proposed development includes the redevelopment and refurbishment of the Hall Senior School buildings. The application site fronts onto Crossfield Road to the west, and is bounded on the remaining sides by residential properties. The highway frontage of The Hall Senior School is 48 m long and is regulated with single yellow lines (23.2 m), residential parking (14.8 m) and a school bus stop (10.0 m). The key elements of the proposed development works (compared to the consented scheme) include:

- A reduced basement extension to provide a new lift/staircore, changing room and WC, within the consented scheme;
- Retained Wathen Hall with a new single storey extension at Upper Ground level, within the same 'built envelope' as the consented scheme;
- Re-build of the Centenary Building, as per the consented scheme; and,
- Various internal works in the Old School building, as per the consented scheme.

Main challenges include close proximity to residential dwellings and other schools. The local on-street parking provision is mainly for Resident Permit Holders.

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 noise sensitive receptors are the rear of the residential properties on Strathray Gardens (nos 10, 12, 14), Eton Avenue and Crossfield Road (nos 20, 21A, 22, 24), and the rear of Hereward House School on Strathray Gardens.

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.

There are raised junctions at either end of Crossfield Road, and at the junction with Adamson Road. There is a footway on both sides of Crossfield Road.
The proposed development is located within a Controlled Parking Zone (CPZ), sub-area Belsize (CA-B), where restrictions apply Monday-Friday 09:00-18:30 and Saturday 09:30-13:30. The local on-street parking provision is mainly for Resident Permit Holders (RPH). Single yellow line restrictions are in place within Crossfield Road, meaning commercial vehicles and HGVs can load and unload for up to 40 minutes.
The nearest cycleway on the London Cycle Network is approx. 200-300 m away from the application site.
See Appendix 1.

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).

Demolition period TBC
Construction period TBC
Whole proposed development work period estimated as 68 weeks

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

As the proposed application site construction traffic routes will pass close to other schools, construction traffic will be restricted to between 09.30 and 15:00 on weekdays during term time. During school holiday periods, construction traffic will be restricted in accordance with standard working hours of between 08:00 and 18:00 on weekdays. Construction traffic will be restricted to standard working hours on Saturdays of between 08:00 and 13:00. No construction traffic or application site work on Sundays or Public Holidays. These construction traffic timings are in accordance with LBC policy and with regard to school pick up/drop off times at The Hall School.

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.

The requirement for changes to utilities/services is still under consideration, and details will be provided post submission.

6.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 grant 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.

Note on cumulative impact: Sites located within high concentrations of construction activity that will attract large numbers of vehicle movements should consider establishing contact with other sites in the vicinity in order to manage traffic routeing and volumes. Developers in the Tottenham Court Road area have done this to great effect. 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. Details of meetings including minutes, lists of attendees etc. must be included.
In response to the comments received, the CMP should then be amended where appropriate and, where not appropriate, a reason should be 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.

The following consultation was undertaken for the consented scheme 2016/6319/P, against which this S73 application falls within:

Development Management Forum: 13th September 2016
Public Exhibition: 12th and 15th October 2016
Developer Briefing: 2nd November 2016

On this basis, no further consultation has been undertaken for this S73 application.

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.

Details will be subject to the appointment of the contractor, post-submission. In principle, community liaison is expected to include:

1. Contact details clearly presented on the application site hoardings
2. Newsletter posted to local addresses including contact details
3. Web page including contact details

15. Schemes

Please provide details of any schemes such as the 'Considerate Constructors Scheme', such details should form part of the consultation and be notified to the Council. Contractors will also be required to follow the "Guide for Contractors Working in Camden" also referred to as "Camden's Considerate Contractors Manual".

The contractor will be required to sign up to the "Considerate Constructors Scheme" and the follow the "Guide for Contractors Working in Camden".

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.

Reference is made to the full review of permitted nearby developments, which was undertaken as part of the CMP for the extant permission 2016/6319/P, against which this S73 application falls within. On this basis it is considered that the reduced works will in principle fit alongside the current/anticipated CMPs for local development, subject to the Council's advice, and future detailed consultation by the Contractor.

7.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.

7.1 CLOCS Considerations

17. Name of Principal contractor:

To be confirmed once contractor appointed.

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 in the appendix and CLOCS Standard point 3.4.7).

To be confirmed once contractor appointed.

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:

To be confirmed once contractor appointed.
In principle, the client/developer (The Hall School) confirms the Principal Contractor and any sub-contractors will abide by the CLOCS standard, in accordance with construction industry best practice, in London.

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

7.2 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 links to the Transport for London Road Network (TLRN).

The proposed construction access routes to/from the application site have been defined with the aim of minimising disruption to the local pedestrian, cycle and highway network. In response the proposed construction access routes use the A41 (part of the TLRN) as far possible, with minimal use of local roads.
See Appendix 1, 1700003771-RAM-XX-00-SK-C-503: Road signage and delivery route.

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.

Copies of the access and egress routes and instructions will be issued to all contractors/delivery companies visiting the application site via email prior to undertaking the journey to the application site. The route will also be appended to all order confirmations sent to third parties delivering goods to the application site throughout the duration of the project.

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.

To be confirmed once contractor appointed, post-submission.

The approximate vehicle movements and types are estimated as follows.

Type	Average Load	Dimensions	Dwell Time
Large Tipper Lorry	$12m^3$	10.201m x 2.500m	30 mins
Concrete Lorry	$6m^3$	8.630m x 2.390m	45 mins
Articulated Lorry	10T	16.5000m x 2.500m	30 mins
Rigid Lorry	$8m^3$	10.000m x 2.500m	20 mins
Box Van	$4m^3$	8.010m x 2.100m	20 mins

An articulated lorry will be required for movement of larger loads (steelwork, beams etc). Vehicle frequency has been estimated based on volumes of demolition, excavated material, concrete, steel and other materials for building envelopes and fit out. Additionally, there will be vehicle movements for site hoardings, mobile crane, scaffolding and service trips. The frequency of these activities is estimated below and will be confirmed by the contractor.

Phase	Delivery Days	Vehicle Type	Vehicle Frequency
Demolition	TBC	Large Tipper Lorry	TBC per day for demolition
Excavation	Est. over 2 weeks	Large Tipper Lorry	6 per day for excavated material
Structure	Est. over 2 weeks	Concrete Lorry Articulated Lorry	Mobile crane installation (TBC) 2 per day for steel 2 per day for concrete
Envelope	Est. over 2 weeks	Rigid Lorry	Scaffolding (TBC) 2 per day for materials
Fit Out	TBC	Rigid Lorry Box Van	Mobile crane removal (TBC) TDC per day

Note: delivery days does not reflect the phase duration.

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

These details will be provided by the Contractor (once appointed) and when the construction works programme timing is finalised. It is noted that a full review was made of other developments in the local area or on the route was undertaken as part of the CMP for the consented scheme 2016/6319/P, against which this S73 application falls within. On this basis it is considered that the reduced works will in principle fit alongside other developments in the local area or on the route, subject to the Council's advice, and future detailed consultation by the Contractor.

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.

To be confirmed once contractor appointed, post-submission.
In line with industry best practice, in principle vehicles will arrive and depart in accordance with a construction schedule, with driver co-ordination through an on-site Construction Traffic Manager. The schedule and direct communications will ensure vehicles do not over-lap outside the site, and vehicles do not leave the holding area until the site is ready to receive them.

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.

The location of the holding area is to be confirmed once contractor appointed, post submission.
The maximum number of construction vehicles for any phase is estimated to be 6 per day during the excavation phase (Q21) which equates to approx. 1 vehicle every hour (based on 5.5 hours between 09.30 and 15:00 on weekdays during term time (Q11), with a dwell time of up to 30 minutes (Q21)). As a result, any holding area is expected to be modest in size.

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).

To be confirmed at a later stage / by Contractor, once appointed post submission.
Owing to the small number of vehicles estimated, the impact of associated traffic is expected to be minimal. Therefore, no further measures to reduce impact, beyond the holding area and driver-co-ordinator communications, are proposed.

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 Marshalls must ensure the safe passage of pedestrians, cyclists and other traffic when vehicles are entering and leaving site, particularly if reversing.

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

Access route: A41, College Crescent, Buckland Crescent, Lancaster Grove and Crossfield Road.
Egress route: Crossfield Road, Eton Avenue, Primrose Hill Road, Adelaide Road and A41.
Please find route in Appendix 1, 1700003771-RAM-XX-00-SK-C-503: Road signage and delivery route.

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

To be confirmed once contractor appointed, post-submission.

- 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.
- Suppliers shall call the site a minimum of 20 minutes before their vehicle arrives at the application site to confirm that the loading area is available.
- If the loading area is unavailable construction vehicles shall not proceed to the application site.
- Vehicles shall not wait or stack on any road within the Borough, or outside the application site.
- 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.

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).

Drawing illustrating swept path ploys are shown in Appendix 1.

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.

This is to be confirmed by the contractor, once appointed post submission.
In principle, it is not expected that wheel washing will be required at the application site, as the construction vehicles will remain on the highway adjacent to the application site boundary for loading/unloading, and not have to pass into the application site.

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.

The method for spoil removal and concrete supply will be confirmed by the contractor. The following methods have been suggested:

- Owing to the application site configuration/small size, no construction vehicles can enter the application site compound but will need to load/unload on the highway adjacent to the application site;
- Spoil removal will be carried out by the "wait and load" methodology, via an encased conveyor;
- A mobile concrete pump will be used to reduce onsite time;
- The concrete will be pumped via sealed pipes over the tunnel hoarding;
- The concrete mixer truck and mobile concrete pump will be positioned in the suspended parking bay on Crossfield Road adjacent to the application site; and,
- Traffic Marshalls will be on hand to assist passing traffic and pedestrians and ensure safe passage.

See Appendix 1.

7.3 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.

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.

To be confirmed once contractor appointed, post-submission.

Crossfield Road offers approximately 42 parking spaces for resident permit holders, one space for Blue Badge holders and one school bus stop.
There will be a request for Temporary Traffic Orders (duration longer than 6 months) for the duration of the works, adjacent to The Hall Senior School frontage for the temporary closure of the following residential parking spaces:

- Three residential parking spaces on Crossfield Road, east side. From a point 13.9 m north of the northern boundary wall of no. 24 Crossfield Road, northwards for a distance of 14.8 m.

There will be a request for Temporary Traffic Orders (duration longer than 6 months) for the duration of the works, adjacent to the Hall Senior School frontage for the temporary closure of the following school bus stop:

- From a point 3.9 m north of the northern boundary wall of no. 24 Crossfield Road, northwards for a distance of 10.0 m.

The above combined temporary closure of the three residential parking bays and one school bus stop will enable construction traffic loading/unloading during the works (subject to construction traffic times (Q11), and loading/unloading of any school shuttle buses between 08:00-09:00 and 15:00-17:00 during School term times).
Additionally, short term parking suspensions (number of days/hours to be confirmed) will be required adjacent to The Hall Middle School frontage, of the following residential parking spaces:

- 3 residential parking spaces on Crossfield Road, west side. From a point 6.5 m north of the northern kerb-line of Eton Avenue, northwards for a distance of 15.0 m.

These spaces are required to allow any 16.5 m long articulated lorries to turn left into Eton Avenue from Crossfield Road. The movement will require a Traffic Marshall since any articulated truck will need to use the entire width of Crossfield Road to make the turn.
See Appendix 1.
Additionally, short term parking suspensions (number of days/hours to be confirmed) will be required on Lancaster Grove, of the following residential parking spaces:

- 2 residential parking spaces on Lancaster Grove, north side, from the western extent of the parking bays eastwards for a distance of 15.0 m.

These spaces are required to allow any 16.5 m long articulated lorries to turn right into Lancaster Grove from Buckland Crescent. The movement will require a Traffic Marshall to advise any west-bound drivers on Lancaster Grove of the articulated truck turning.
See Appendix 1

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 highway works will be necessary to enable construction to take place. It will not be necessary to close any highway or footways. The only highway space required is the temporary closure and use of 3 residential parking spaces and one school bus stop located along the site frontage on Crossfield Road (Q24).

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

The detail of the layout of safety barriers, signage and other accessibility measures will be confirmed and agreed once the contractor has been appointed, post submission.

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).

No diversion, disruption or other anticipated use of the highway during the construction period is required.

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.

To be confirmed once contractor appointed, post-submission.

A pedestrian tunnel hoarding will ensure the protection of all pedestrians passing along the footway adjacent to The Hall Senior School site on Crossfield Road.
A designated Traffic Marshall will be in position during the transfer of materials to ensure safety is maintained giving all pedestrians right of way by halting the activity whilst the general public move past safely.

Drivers will have undertaken cyclist safety awareness courses and construction vehicles will be provided with safety aids such as side mirrors.

In addition it is noted that construction traffic will be scheduled to occur in the period between the end of school drop-off and the beginning of school pick-up. No construction traffic will be permitted at the beginning and end of the school day. This is to avoid construction plant traffic and construction staff traffic mixing with school traffic; in particular pupils and parents walking or cycling to school, or pupils being dropped off/picked up by car/taxi. The precise timings are to be agreed with the school based on pre-construction "school gate" observations at the beginning and end of the day.

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.

To be confirmed once contractor appointed, post-submission.

A proposed pedestrian tunnel hoarding will be over the public footway with the required relevant licenses procured before construction commences. This tunnel will remain in place for the duration of the works. It is proposed that an enclosed conveyor will transport demolition and excavation material out of the application site, with a mobile crane to lift material into the application site.
The pedestrian tunnel will be lit and signs in place to notify the general public of the work activities being undertaken.
Further to, a temporary platform will be designed and constructed by the contractor to suit the loading of the piling rig. The design will likely be sub-contracted to a specialist temporary works engineer. The construction is assumed to be similar to a typical scaffold gantry. It is assumed that it will be supported at ground level either side of the existing hall and at basement / excavation level within the existing hall. The practicalities of the operation of the platform and detail of hoarding requirements or any other occupation or overhang of the public highway, will be developed further once the detailed design is finalised.

SYMBOL IS FOR INTERNAL USE

8.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.

The precise methodology for the construction / demolition stage is not known at this point. Therefore, it is not possible to say precisely what the noisy activities will be at this time. This detail will be provided once a contractor is appointed.
Noisy activities are likely to include those associated with demolition, excavation, breaking and / or piling.

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 survey was carried out on 06 September 2016, and a copy of this report is attached to this CMP (See Appendix 2).

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

The precise methodology for the construction stage is not known at this point. This assessment will be done once a contractor is appointed and the construction methodology has been agreed, post submission.

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 precise methodology for the construction / demolition stage is not known at this point. This assessment will be done once a contractor is appointed and the construction methodology has been agreed, post submission.
That said, in conducting the proposed development works, the contractor will employ Best Practicable Means (BPM) at all times, including the following general provisions:

- Appropriate selection of plant, construction methods and programming. Only plant conforming with, or better than, relevant national or international standards, directives or recommendations on noise and vibration emissions will be used;
- Equipment will be well-maintained and will be used in the mode of operation that minimises noise;
- Noisy activities will be staggered in time and space when feasible;
- Plant and equipment will be shut down when not in use;
- Semi-static equipment will be sited and orientated as far as is reasonably practicable away from occupied buildings and will be fitted with suitable enclosures where feasible;
- Mobile construction plant will be located, as far as is reasonably practicable, away from adjacent occupied buildings;
- Low noise attachments will be used for machinery, e.g. breakers, where available;
- Materials will be handled in a manner that minimises noise;
- Vehicles shall not wait or queue on the public highway with engines running; and,
- Noise from reversing alarms will be controlled and limited, incorporating one or more of the following features: highly directional sounders, use of broadband signals, self-adjusting output sounders or flashing warning lights, with reversing alarms set to the minimum output noise level required for health and safety compliance.

In addition:

- All personnel will be instructed on BPM measures to reduce noise and vibration as part of their induction training; and,
- Access to the sites will be facilitated at all reasonable times for inspection and noise measurements by the local authority environmental health personnel, following appropriate site specific induction and health and safety training.

The following site-specific measures have been considered or will be used:

- Equipment, such as generators, that may have to be operated continuously will be provided with acoustic shielding;
- Breakers will be fitted with low noise attachments; and,
- Mufflers will be used on pneumatic tools where practicable.

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

This will be confirmed by the contractor once appointed, post submission.

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

This will be confirmed by the contractor once appointed, post submission.

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.

This will be confirmed by the contractor once appointed, post submission.

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

Once the contractor has been appointed, post submission, a scheme for monitoring of noise, vibration and dust will be agreed with the LBC, and the assessment of potential impacts completed.
The footprint of the application site is small, therefore it is anticipated that up to one noise monitor and one vibration monitor placed in a location representative of one of the nearest noise sensitive receptors will be sufficient.

36. Please confirm that a Risk Assessment has been undertaken at planning application stage in line with the GLA's Control of Dust and Emissions Supplementary Planning Guidance (SPG), and the risk level that has been identified, with evidence. Please attach the risk assessment as an appendix if not completed at the planning application stage.

A risk assessment has not yet been undertaken as requires input from a contractor. This risk assessment will be undertaken once a contractor has been appointed, post submission.

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 mix of measures in response to the risk assessment (Q36) is yet to be defined as it requires input from a contractor. The mix of measures will be defined once a contractor has been appointed, post submission.

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 location, number and specification of dust monitors will be determined in accordance with the risk assessment (Q36) to be undertaken by a contractor once appointed, post submission.

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).

This will be confirmed by the contractor once appointed, post submission.

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

An asbestos survey is yet to be carried out and will be completed post submission.

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.

This will be confirmed by the contractor once appointed, post submission.
In principle the contractor will be instructed to provide a smoking area within the application site. Site personnel will not be permitted to loiter outside the application site. The contractor will be required to include within an updated CMP, a statement to be issued to all staff highlighting the standards of behaviour expected and that any unacceptable behaviour will not be tolerated.

42. If you will be using non-road mobile machinery (NRMM) on site with net power between 37 kW and 560 kW 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:

The following will be confirmed by the contractor once appointed, post submission:

a) Construction time period (mm/yy - mm/yy): TBC

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): TBC

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: TBC

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: TBC

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: TBC

9.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.

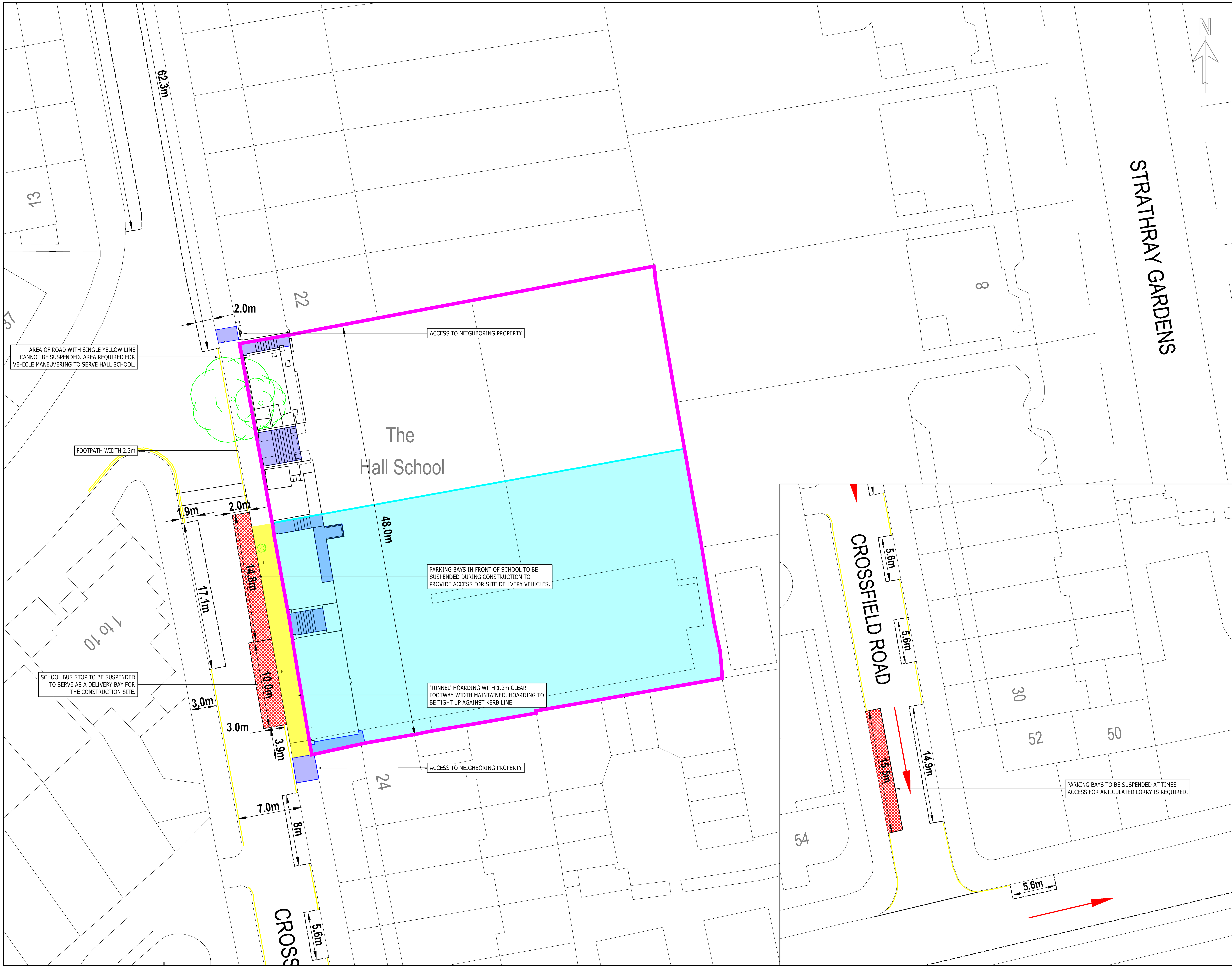
Signed: ……
Date: ……..

Print Name: ……
Position: ……

Please submit to: planningobligations@camden.gov.uk

End of form.

APPENDIX 1
APPLICATION SITE CMP DIAGRAMS



Notes

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3. THIS IS NOT AN INSTALLATION DRAWING NOR A CO-ORDINATION DRAWING.
4. BASE MAPPING FROM OS MAP RECEIVED XX/XX/2016.
5. LOADING AND UNLOADING TO BE UNDERTAKEN FROM SUSPENDED PARKING BAYS ONLY.
6. CARRIAGEWAY MEASUREMENTS TAKEN ON SITE 08/08/2016.

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3. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM U.N.O.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.

KEY

- SITE BOUNDARY
- ACCESS POINTS
- PARKING BAYS / BUS STOP TO BE SUSPENDED
- YELLOW LINE ROAD MARKINGS
- AREA FOR DEVELOPMENT
- TUNNEL HOARDING

FRONTAGE OF HALL SCHOOL

TOTAL LENGTH OF FRONTAGE	48.0m
SINGLE YELLOW LINE	23.2m
PARKING	14.8m
SCHOOL BUS STOP	10.0m

Rev	Description	Date	By / Chk	App
I02	ISSUED FOR INFORMATION	28.02 2019	KT JW	TO
I01	ISSUED FOR INFORMATION	06.09 2016	JW DS	DS

ISSUED FOR INFORMATION

HALL SCHOOL

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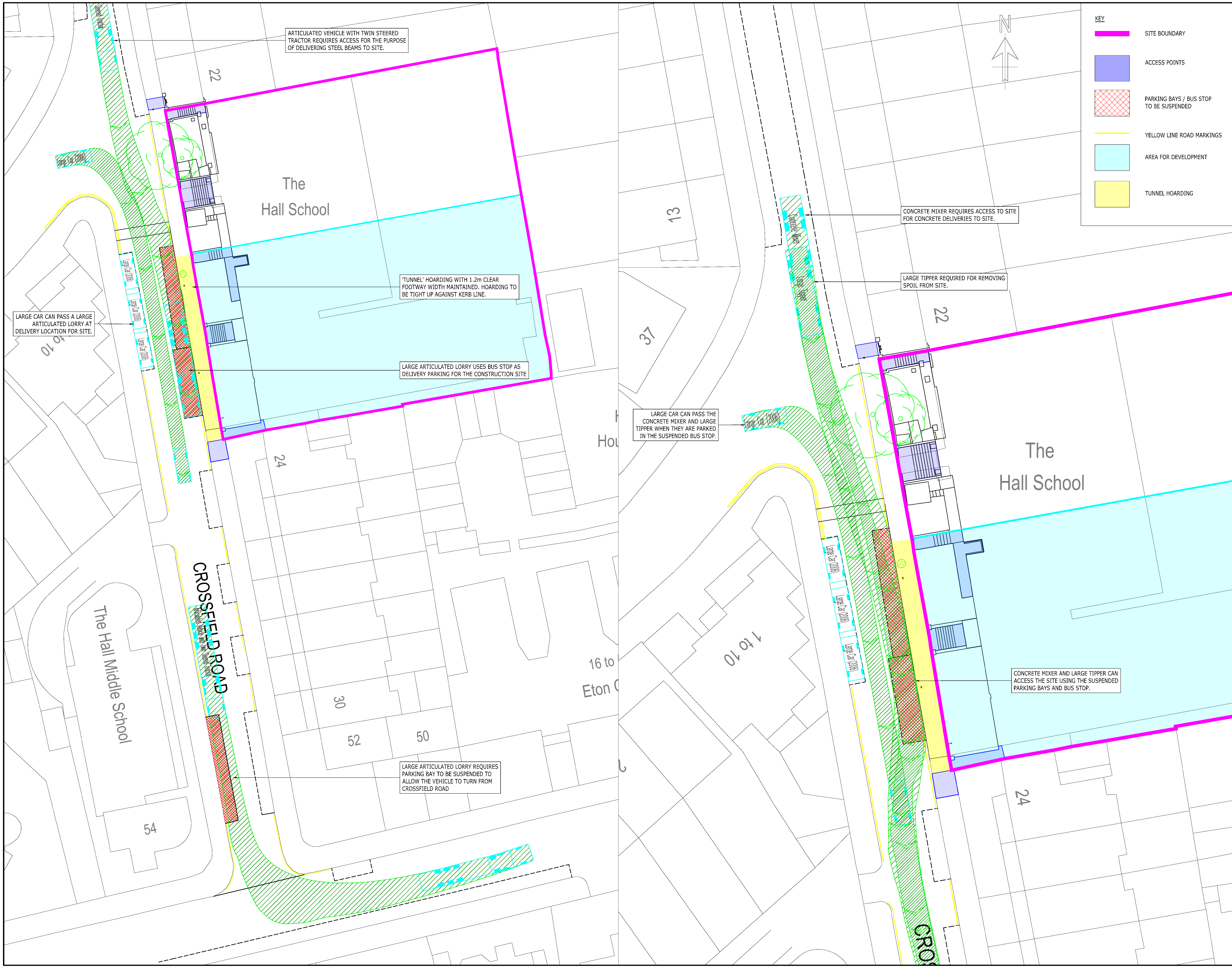
PARKING BAYS TO BE SUSPENDED DURING CONSTRUCTION

Project No:	Scale (@A1):	Drawn:	Date:
1700003771	1:200@A1	JW	SEPT 2016

Drawing No:	Rev:
1700003771-RAM-XX-00-SK-C-500	I02



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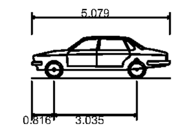
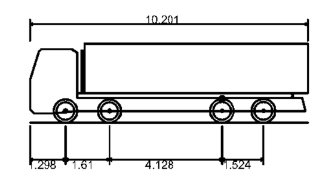
4. BASE MAPPING FROM OS MAP RECEIVED 10/08/2016
5. LOADING AND UNLOADING TO BE UNDERTAKEN FROM SUSPENDED PARKING BAYS ONLY.
6. CARRIAGEWAY WIDTH MEASUREMENTS TAKEN ON SITE 08/08/2016.
7. VEHICLE SWEPT PATHS WERE GENERATED USING AUTOTRACK 14.00 (BUILD 20131031).

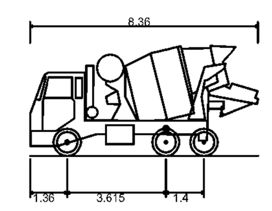
1. DO NOT SCALE FROM THIS DRAWING.
2. ALL DIMENSIONS ARE MILLIMETRES U.N.O.
3. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM U.N.O.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.



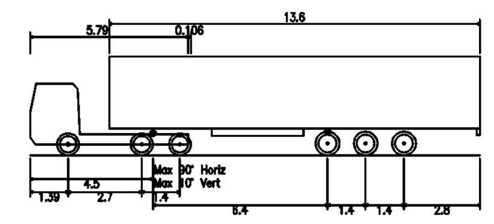
LARGE CAR (2006)	
OVERALL LENGTH	5.079m
OVERALL WIDTH	1.872m
OVERALL BODY HEIGHT	1.525m
MIN BODY GROUND CLEARANCE	0.310m
MAX TRACK WIDTH	1.831m
LOCK TO LOCK TIME	4.00 sec
KERB TO KERB TURNING RADIUS	5.900m



LARGE TIPPER	
OVERALL LENGTH	10.201m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	2.893m
MIN BODY GROUND CLEARANCE	0.343m
MAX TRACK WIDTH	2.500m
LOCK TO LOCK TIME	6.00 sec
KERB TO KERB TURNING RADIUS	11.550m



CONCRETE MIXER	
OVERALL LENGTH	8.360m
OVERALL WIDTH	2.390m
OVERALL BODY HEIGHT	4.027m
MIN BODY GROUND CLEARANCE	0.358m
MAX TRACK WIDTH	2.413m
LOCK TO LOCK TIME	6.00 sec
KERB TO KERB TURNING RADIUS	8.210m



MAX LEGAL ARTICULATED VEHICLE (16.5m)	
OVERALL LENGTH	16.500m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	3.632m
MIN BODY GROUND CLEARANCE	0.396m
MAX TRACK WIDTH	2.500m
LOCK TO LOCK TIME	6.00 sec
KERB TO KERB TURNING RADIUS	6.870m

Rev	Description	Date	By / Chk	App
I02	ISSUED FOR INFORMATION	28.02 2019	KT JW	TO
I01	ISSUED FOR INFORMATION	06.09 2016	JW DS	DS

ISSUED FOR INFORMATION

HALL SCHOOL

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CONSTRUCTION PHASE VEHICLE SWEPT PATH DIAGRAM

Project No:	Scale (@A1):	Drawn:	Date:
1700003771	1:1000@A1	JW	SEPT 2016
Drawing No: 1700003771-RAM-XX-00-SK-C-501			Rev: I02

UNLESS DRAWN WHERE NOT TO BE SCALED.
ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL, STRUCTURAL AND M&E DRAWINGS.

DO NOT SCALE FROM THIS DRAWING.

Notes

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3. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM U.N.O.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
5. LOADING AND UNLOADING TO BE UNDERTAKEN FROM SUSPENDED PARKING BAYS ONLY.
6. ALL DIMENSIONS AND LEVELS TO BE CHECKED ON SITE PRIOR TO CONSTRUCTION.
7. VEHICLE SWEPT PATHS WERE GENERATED USING AUTOTRACK 14.00 (BUILD 20131031).

KEY

- SITE BOUNDARY
- ACCESS POINTS
- PARKING BAYS / BUS STOP TO BE SUSPENDED
- YELLOW LINE ROAD MARKINGS
- AREA FOR DEVELOPMENT
- TUNNEL HOARDING

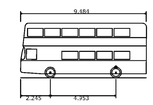
LARGE CAR CAN PASS THE BUSES WHEN BUSES ARE PARKED IN BUS STOP AND SUSPENDED PARKING BAYS.

2 BUSES CAN SAFELY PARK OUTSIDE THE FRONT OF HALL SCHOOL FOR THE PURPOSE OF TRANSPORTING PUPILS TO INTERIM SITE

The Hall School

Hereward House School

CROSSFIELD



Double Decker Bus	
Overall Length	9.484m
Overall Width	2.452m
Overall Body Height	4.129m
Min Body Ground Clearance	0.300m
Track Width	2.300m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	9.703m

Rev	Description	Date	By	Chk	App
I02	ISSUED FOR :NFORMATION	28.02 2019	KT	JW	TO
I01	ISSUED FOR :NFORMATION	06.09 2016	JW	DS	DS

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CONSTRUCTION PHASE TRANSPORT VEHICLE SWEPT PATH DIAGRAM

Project No:	Scale (@A1):	Drawn:	Date:
1700003771	1:1000@A1	JW	SEPT 2016

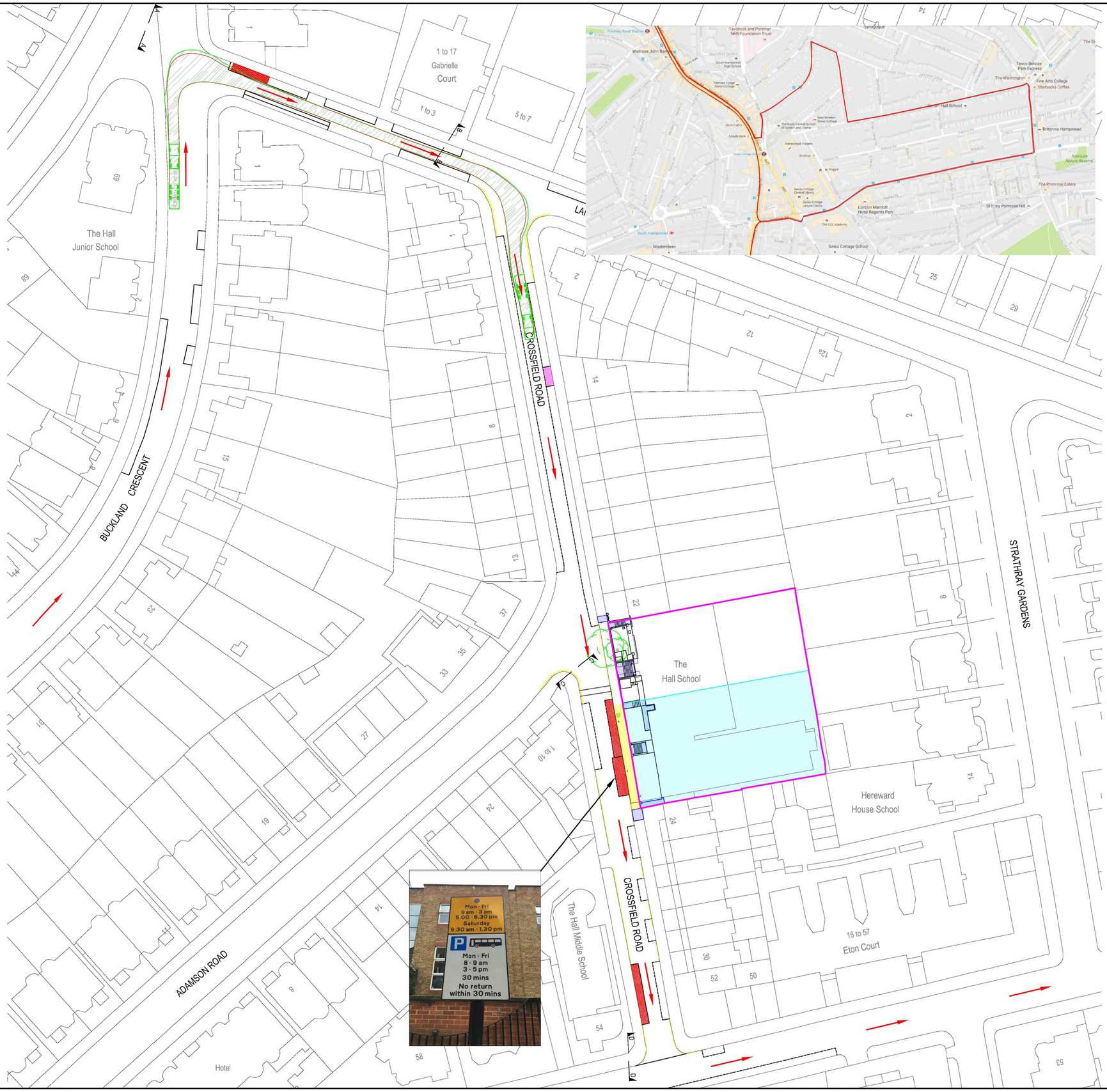
Drawing No: 1700003771-RAM-XX-00-SK-C-502 Rev: I02

A-A

B-B

C-C

D-D



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5. LOADING AND UNLOADING TO BE UNDERTAKEN FROM SUSPENDED PARKING BAYS ONLY.
6. CARRIAGEWAY WIDTH MEASUREMENTS TAKEN ON SITE 08/08/2016.
7. VEHICLE SWEPT PATHS WERE GENERATED USING AUTOTRACK 14.00 (BUILD 20131031).

N

KEY

- DIRECTION ARROW
- SITE BOUNDARY
- ACCESS POINTS
- PARKING BAYS / BUS STOP TO BE SUSPENDED
- YELLOW LINE ROAD MARKINGS
- AREA FOR DEVELOPMENT
- TUNNEL HOARDING
- DISABLED PARKING BAY

Rev	Description	Date	By / Chk	App
I02	ISSUED FOR INFORMATION	28.02 2019	KT JW	TO
I01	ISSUED FOR INFORMATION	06.09 2016	JW DS	DS

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CONSTRUCTION PHASE ROAD SIGNAGE AND DELIVERY INGRESS ROUTE

Project No:	Scale (@A1):	Drawn:	Date:
1700003771	NTS @ A1	JW	SEPT 2016

Drawing No:	Rev:
1620002527-RAM-XX-00-SK-C-503	I02

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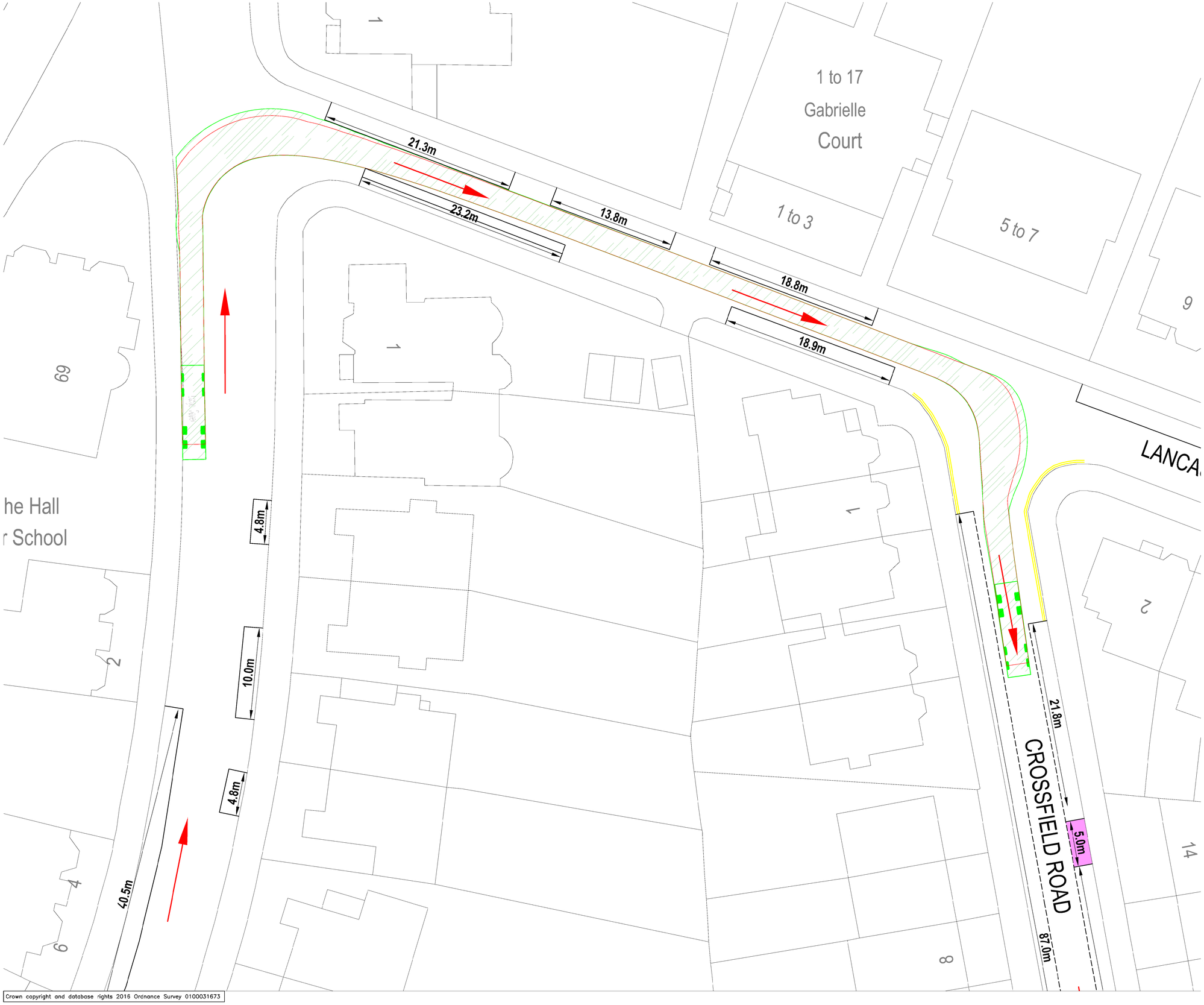
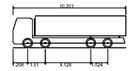
5. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM U.N.O.
6. THIS DRAWING IS TO SERVE AS A GUIDE ONLY. PARKING BAYS ARE INDICATIVE.
7. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
8. ACCURATE TOPOGRAPHIC SURVEY IS REQUIRED.





LARGE TIPPER	
OVERALL LENGTH	10.201m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	2.895m
MIN BODY GROUND CLEARANCE	0.343m
MAX TRACK WIDTH	2.500m
LOCK TO LOCK TIME	6.00 sec
KERB TO KERB TURNING RADIUS	11.500m

Rev	Description	Date	By	App
I02	ISSUED FOR INFORMATION	28.02 2019	KT JW	TO
I01	ISSUED FOR INFORMATION	14.11 2016	KT HN	HN

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LARGE TIPPER SWEPT PATH ANALYSIS LANCASTER GROVE JUNCTIONS

Project No:	Scale (@A1):	Drawn:	Date:
1700003771	1:200@A1	KT	NOV 2016

Drawing No:	Rev:
1700003771-RAM-XX-00-SK-C-507	I02

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5. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM U.N.O.
6. THIS DRAWING IS TO SERVE AS A GUIDE ONLY. PARKING BAYS ARE INDICATIVE.
7. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
8. ~~DETAILED TOPOGRAPHIC SURVEY~~ PARKING BAYS ANALYSIS IS REQUIRED.

CONCRETE MIXER

OVERALL LENGTH	8.390m
OVERALL WIDTH	2.390m
OVERALL BODY HEIGHT	4.027m
MIN BODY GROUND CLEARANCE	0.358m
MAX TRACK WIDTH	2.413m
LOCK TO LOCK TIME	8.03 sec
KERB TO KERB TURNING RADIUS	8.210m

Rev	Description	Date	By Chk	App
I02	ISSUED FOR INFORMATION	28.02 2019	KT JW	TO
I01	ISSUED FOR INFORMATION	14.11 2016	KT HN	HN

ISSUED FOR INFORMATION

HALL SCHOOL

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CONCRETE MIXER SWEPT PATH ANALYSIS LANCASTER GROVE JUNCTIONS

Project No:	Scale (@A1):	Drawn:	Date:
1700003771	1:200@A1	KT	NOV 2016

Drawing No: 1700003771-RAM-XX-00-SK-C-508 Rev: I02

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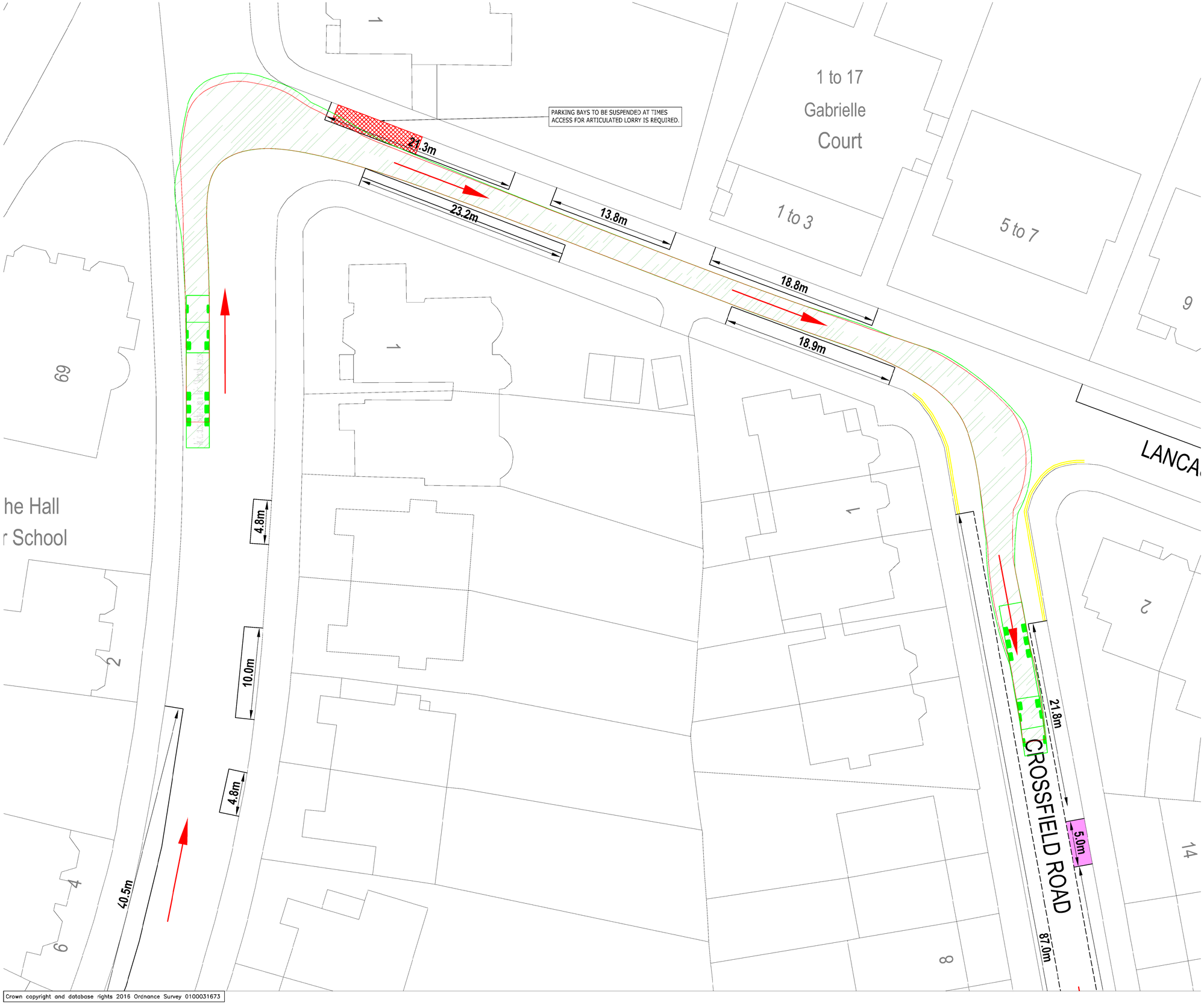
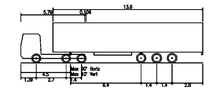
3. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM U.N.O.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.

- THIS IS NOT AN INSTALLATION DRAWING NOR A CO-ORDINATION DRAWING.
- BASE MAPPING FROM OS MAP RECEIVED 04/11/2016.
- THIS DRAWING IS TO SERVE AS A GUIDE ONLY. PARKING BAYS ARE INDICATIVE.
- DETAILED TOPOGRAPHIC SURVEY IS REQUIRED.





MAX LEGAL ARTICULATED VEHICLE (16.5m)

OVERALL LENGTH	16.500m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT*	3.633m
MIN BODY GROUND CLEARANCE	0.396m
MAX TRACK WIDTH	2.509m
LOCK TO LOCK TIME	6.00 sec
KERB TO KERB TURNING RADIUS	6.870m

Rev	Description	Date	By	App
I02	ISSUED FOR INFORMATION	28.02 2019	KT JW	TO
I01	ISSUED FOR INFORMATION	14.11 2016	KT HN	HN

ISSUED FOR INFORMATION

HALL SCHOOL

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ARTICULATED VEHICLE SWEPT PATH ANALYSIS LANCASTER GROVE JUNCTIONS

Project No:	Scale (@A1):	Drawn:	Date:
1700003771	1:200@A1	KT	NOV 2016

Drawing No: 1700003771-RAM-XX-00-SK-C-509

Rev: I01

APPENDIX 2
NOISE SURVEY REPORT

Intended for
The Hall School

Document type
Report

Reference
1620002708

Date
September 2016

NOISE SURVEY REPORT
THE HALL SCHOOL

RAMBOLL ENVIRON

Revision	
Date	**9/09/16**
Made by	**Tamasine Leighton-Crawford**
Checked by	**Simon Taylor**
Approved by	**Raf Orlowski**
Description	**R02 - Noise survey report**

Ref 1620002708-RAM-XX-XX-RP-YA-00002

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CONTENTS

APPENDICES

EXECUTIVE SUMMARY

Ramboll Environ was commissioned to provide a noise survey report in support of a planning application for an extension building at The Hall Senior School in Hampstead, London.

A baseline noise survey has been undertaken at the site of the proposed new building in order to determine the current noise levels around the site and at representative positions of the noise-sensitive receptors during the daytime and late evening. The methodology and results of this noise survey are summarised in this report.

An assessment of the noise levels affecting the proposed development has been made in relation to the internal ambient noise criteria provided in BB93:2015 'Acoustic design of schools: performance standards'[1]. The results have been used to inform the sound insulation requirement of the building envelope and the ventilation strategy. Natural ventilation is suitable for all teaching spaces with limited window openings.

Noise level limits have been recommended for building services plant associated with the development in accordance with BS 4142:2014[2]. It is anticipated that this target can be achieved with the provision of standard attenuation measures and no adverse impact is predicted at the nearest noise-sensitive receptors. Meeting these plant noise limits will mean that the requirements of BREEAM credit POL05 are also met.

Construction noise limits at nearby noise sensitive receptors have been recommended based on the methodologies within BS5228.

[1] Department for Education (2014), 'Acoustic design of schools: performance standards', Building Bulletin 93.

[2] BS 4142:2014 'Methods for rating and assessing industrial and commercial sound', BSI Standards Publication.

1. INTRODUCTION

A baseline noise survey has been conducted at the site of The Hall Senior School building on Tuesday 6 September 2016. The purpose of the survey is to assess the suitability of the site for an extension to the current building, and to set appropriate limits for building services plant noise emissions at nearest noise-sensitive receptors.

The methodology, survey results and assessment are given below.

Acoustic terminology used in this report is presented in Appendix 1.

2. SURVEY DETAILS

2.1 Site description

The site of the proposed new development is located on Crossfield Road, Hampstead, North London. The school is in a residential area and there is a preparatory school near the back of the proposed development. The A41 is approximately 300m to the south west of the site.

Figure 1 shows the site of the new development.

Figure 1 Site of the new development

2.2 Methodology

The daytime noise survey was conducted by Tamasine Leighton-Crawford AMIOA and the late evening noise survey was conducted by Eric Bustamante of Ramboll Acoustics. Noise measurements were taken at locations representative of the proposed facades of the building and representative of the nearest identified noise-sensitive receptors.

The survey comprised three sets of 10 minute measurements per location during the daytime and three sets of 10 minute measurements per location during the late evening periods. The measurement periods were 14:00 – 16:00 and 21:00 – 22:30.

Measurements were taken at approximately 1.2 metres above ground level and at a distance of at least 3 metres from the façade of any buildings and are considered representative of free-field measurements.

The sound level meter calibration was checked immediately before and after the measurement periods. No significant fluctuation in calibration was detected.

2.3 Weather

During the measurement period, weather conditions were noted as dry with 100% cloud cover. There was a light breeze at ground level; the wind speed was less than 5 m/s^{-1}.

2.4 Measurement locations

The measurement locations are shown in Figure 2.

Figure 2 Noise monitoring locations ST1 and ST2

2.4.1 Location ST1

The measurement location ST1 was 5m from the current building façade, chosen to be representative of the East façade of the proposed building and the nearest noise-sensitive receptors at the rear of Crossfield Road, Eton Avenue and Strathray Gardens.

Figure 3 Measurement location ST1

2.4.2 Location ST2

The measurement location ST2 was chosen to be representative of the West façade of the building and the nearest noise-sensitive receptors on Crossfield Road.

Figure 4 Measurement location ST2

2.5 Equipment

The following equipment was used to measure noise levels:

- Brüel and Kjær 2250 'Class 1' Sound Level Analyser
- Brüel and Kjær 4231 'Class 1' Sound Level Calibrator
- Rion NA 28 Sound Level Analyser
- Rion NC 74 Sound Level Calibrator

All noise measurement equipment is owned by Ramboll Environ and is subject to annual calibration checks traceable to national standards. Copies of calibration certificates are available on request.

3. NOISE CLIMATE

3.1 Daytime measurements

The dominant noise sources at measurement location ST1 were distant road traffic, voices coming from the school through open windows and birdsong.

The dominant noise sources at measurement location ST2 were road traffic noise on Crossfield Road, road traffic noise on Eton Avenue and voices coming from the school through open windows.

Aircraft noise was occasionally 'just' audible in gaps between the other noise sources.

3.2 Late evening measurements

The dominant noise sources at location ST1 were distant road traffic noise, leaves moving in the trees and voices from nearby residences.

The dominant noise sources at location ST2 were road traffic noise from Eton Avenue and plant noise from the residential building on the opposite side of the road.

4. SURVEY RESULTS

4.1 Noise survey results

A summary of the noise survey results is presented below in Figure 5.

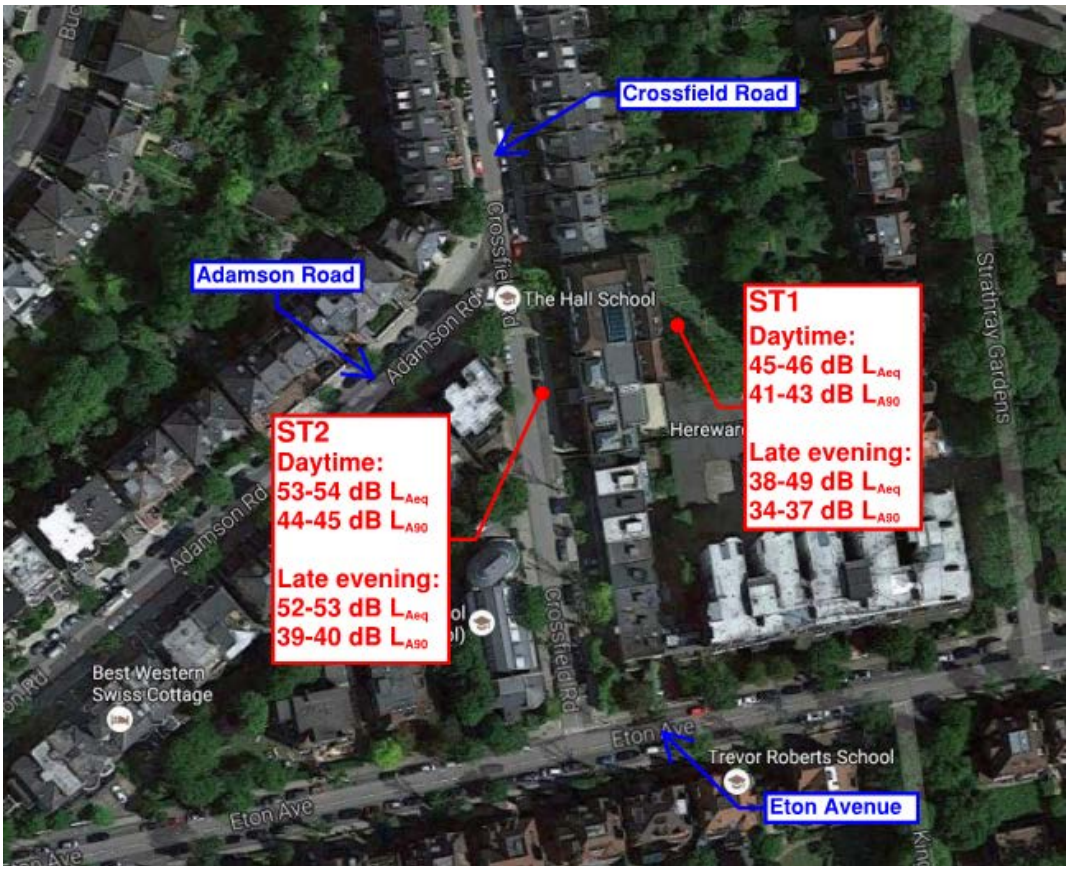

Figure 5 Summary of noise measurement results

Detailed measurement results are provided in Appendix 2.

5. ACOUSTIC DESIGN

The results of the noise survey inform three aspects of the acoustic design for the development:

- The highest measured ambient noise levels affecting the site determine the site suitability for school development, ventilation strategy and any sound insulation requirements for the external building envelope.
- The representative background noise levels provide a baseline which informs the plant noise emission criteria.
- The measured ambient noise levels at the nearby noise sensitive receptors inform the construction noise assessment.

5.1 Façade sound insulation and ventilation strategy

The building envelope must provide sufficient sound insulation from external noise sources in order to achieve suitable internal ambient noise levels. BB93 sets out indoor ambient noise level (IANL) criteria for different spaces. These include noise contributions from:

- External noise sources outside the school premises
- Building services noise

The maximum IANLs are summarised in Table 1:

Space	Target limit for internal ambient noise level $L_{Aeq,\ 30min}$ (dB)	Corresponding limit for building services noise (NR)
Teaching Spaces Main Hall / Multi-purpose hall	**35**	**30**
Meeting rooms Activity Studio Staff room, Offices	**40**	**35**
Dining room Circulation, Stairs Entrance, Reception, Cloak rooms	**45**	**40**
Toilets, Kitchen	**50**	**45**

Table 1 BB93 Indoor ambient noise level criteria

BB93 states that for spaces which are naturally ventilated, the noise level including external noise ingress may exceed the IANL limit by up to 5 dB.

A façade with an open window, limited to no more than 5% of the floor space, typically provides up to 15 dB attenuation from external noise. Accounting for this attenuation, levels inside the proposed classrooms will be approximately 39 dB L_{Aeq} on the Crossfield Road side of the proposed development and approximately 31 dB L_{Aeq} on the back of the development. Taking the BB93 allowance of +5 dB into account, these levels are within the maximum IANL limit of 40 dB L_{Aeq} for teaching spaces. The indoor ambient noise levels should be achievable with natural ventilation.

Most standard façade build-ups will be suitable in terms of achieving the indoor ambient noise level criteria. This includes standard thermal double-glazed windows and non-specified rating for cladding/external walls.

5.2 Plant noise emission

BS 4142:2014 'Methods for rating and assessing industrial and commercial sound' describes a method for assessing the impact of the sound levels from fixed plant installations, industrial and manufacturing processes and other activities, on nearby noise sensitive receptors.

The assessment procedure described in BS 4142:2014 is based on the comparison of rating a sound level from industrial sources with the prevailing background sound level at the assessment locations. The assessment of impact is determined using the categories shown in Table 2.

Difference between rating level and background noise level	Impact category
+10 dB or more	Significant adverse impact
+5 dB or more	Adverse impact
0 dB or less	Low impact

Table 2 Classification of industrial noise impacts

During normal school hours, a noise limit of 41 dB L_{Aeq} is proposed for plant noise emission at nearby residential receptors, based on measured background levels at a representative location, which will result in low impact.

If the school is used in the evening, a noise limit of 34 dB L_{Aeq} is proposed for plant noise emission at nearby residential receptors, based on measured background levels at a representative location, which will result in low impact.

In addition plant noise must be controlled to no higher than 50 dB L_{Aeq} in external teaching areas and to no more than 45 dB L_{Aeq} outside any windows or facade openings where the ventilation strategy relies on them being open. This is the total level of plant noise with all plant running outside any openable window or rooflight.

5.2.1 Mitigation

Plant noise will be controlled by provision of attenuation, acoustic screens and other measures, as required, to achieve the above noise emission limit. Full plant specifications are not available at this stage; therefore it is not possible to specify the exact mitigation measures required.

5.2.2 BREEAM Credit POL05

BREEAM credit POL05 states:

"*The noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development, is a difference no greater than +5dB during the day (07:00 to 23:00) and +3dB at night (23:00 to 07:00) compared to the background noise level.*"

Meeting a plant noise limit of a noise limit of 41 dB L_{Aeq} during normal school hours and 34 dB L_{Aeq} in the evening (as specified in Section 5.2) at the nearby residential receptors will mean that the BREEAM POL05 credit can be awarded by default.

6. CONSTRUCTION NOISE

The exact working methodology and plant to be employed during construction has not been established at this stage in the design.

6.1 Residential receptors

The significance criteria for construction noise levels at residential receptors have been established by reference to ABC method described in BS 5228. The thresholds are determined relative to the pre-existing ambient noise levels at the assessment locations.

Table 6.1 Significance Criteria from ABC Method in BS5228

Assessment Period	Threshold Value dB $L_{Aeq,T}$		
	Category A	Category B	Category C
Daytime (07:00-19:00) Saturday (07:00-13:00)	65	70	75
Evening (19:00-23:00) Weekend	55	60	65
Night-time (23:00-07:00)	45	50	55

6.1.1 A potential significant noise effect is indicated when the construction noise exceeds the threshold level for the category appropriate to the ambient noise level:

- Threshold values of Category A for construction noise should be used when the pre-existing ambient noise level, when rounded to the nearest 5 dB, is less than those values;
- Threshold values of Category B should be used when pre-existing ambient noise level, when rounded to the nearest 5 dB, is equal to the values in Category A;
- Threshold values of Category C should be used when the pre-existing ambient noise level, when rounded to the nearest 5 dB, is more than the values in Category A.

6.1.2 The ambient noise levels measured around the site are below 65 dBA, therefore construction noise levels exceeding 65 dBA at the nearest residential receptors would constitute a significant adverse impact.

6.2 Non-residential receptors

Hereward House School, a non-residential receptor is located at the rear of the site, on Strathray Gardens. The significance criteria for construction noise levels at non-residential receptors have been established by reference to "2 – 5 dB(A) change" method described in BS 5228.

6.2.1 Example method 2 – 5 dB(A) change from BS 5228

Noise levels generated by site activities are deemed to be potentially significant if the total noise (pre-construction ambient plus site noise) exceeds the pre-construction ambient noise by 5 dB or more, subject to lower cut-off values of 65 dB, 55 dB and 45 dB $L_{Aeq, T}$ from site noise alone, for the daytime, evening and night-time periods, respectively; and a duration of one month or more, unless works of a shorter duration are likely to result in significant effect. These evaluative criteria are generally applicable to the following resources:

- residential buildings;
- hotels and hostels;
- buildings in religious use;
- buildings in educational use;
- buildings in health and/or community use.

6.2.2 The ambient noise levels measured around the site are below 65 dBA, therefore construction noise levels exceeding 65 dBA at the nearest non-residential receptors would constitute a significant adverse impact.

7. CONCLUSION

A noise survey was undertaken at the site of the proposed new development at The Hall Senior School, Hampstead, North London to establish the existing noise climate. The results of the noise survey have been used to set the sound insulation of the building envelope and noise emission limits.

The measurements have been used to inform the design of the building envelope of the proposed new building to ensure the internal ambient noise level requirements are achieved. The measurements show that the internal ambient noise levels as specified in BB93 can be achieved with natural ventilation.

Background noise levels were measured at representative positions of the nearest noise-sensitive receptors. The results of these measurements are considered suitable to set noise emission limits from any plant associated with the new building at these locations. A noise emission limit of the existing background noise level is considered suitable with a resultant level of 41 dB L_{Aeq} during normal school hours and 34 dB L_{Aeq} in the evening. If noise emission limits are adhered to, no adverse impact is anticipated and BREEAM credit POL05 can be awarded.

APPENDIX 1
ACOUSTIC TERMINOLOGY

A.1 DECIBEL

The ratio of sound pressures which we can hear is a ratio of 10^6 (one million:one). For convenience, therefore, a logarithmic measurement scale is used. The resulting parameter is called the 'sound pressure level' (L_p) and the associated measurement unit is the decibel (dB). As the decibel is a logarithmic ratio, the laws of logarithmic addition and subtraction apply.

A.2 A-WEIGHTED DECIBEL

The unit generally used for measuring environmental, traffic or industrial noise is the A-weighted sound pressure level in decibels, denoted dB(A). An A-weighting network can be built into a sound level measuring instrument such that sound levels in dB(A) can be read directly from a meter. The weighting is based on the frequency response of the human ear and has been found to correlate well with human subjective reactions to various sounds. It is worth noting that an increase or decrease of approximately 10 dB corresponds to a subjective doubling or halving of the loudness of a noise, and a change of 2 to 3 dB is subjectively barely perceptible.

A.3 EQUIVALENT CONTINUOUS SOUND LEVEL

Another index for assessment for overall noise exposure is the equivalent continuous sound level, L_{eq}. This is a notional steady level which would, over a given period of time, deliver the same sound energy as the actual time-varying sound over the same period. Hence fluctuating levels can be described in terms of a single figure level.

A.4 FREQUENCY

The rate of repetition of a sound wave. The subjective equivalent in music is pitch. The unit of frequency is the Hertz (Hz), which is identical to cycles per second. A thousand hertz is often denoted kHz, e.g. 2 kHz = 2000 Hz. Human hearing ranges approximately from 20 Hz to 20 kHz. For design purposes, the octave bands between 63 Hz to 8 kHz are generally used. The most commonly used frequency bands are octave bands, in which the mid frequency of each band is twice that of the band below it. For more detailed analysis, each octave band may be split into three one-third octave bands or in some cases, narrow frequency bands.

A.5 MAXIMUM NOISE LEVEL

The maximum noise level identified during a measurement period. Experimental data has shown that the human ear does not generally register the full loudness of transient sound events of less than 125 ms in duration. Fast time weighting has an exponential time constant of 125 ms which reflects the ear's response. The maximum level measured with fast time weighting is denoted as $L_{AMax,f}$. Slow time weighting (S) with an exponential time constant of 1s is used to allow more accurate estimation of the average sound level on a visual display.

Impulse (I) time weighting has a fast rise (35ms) and a slow decay and is intended to mimic the ear's response to impulsive sounds.

A.6 STATISTICAL NOISE LEVELS

For levels of noise that vary widely with time, for example road traffic noise, it is necessary to employ an index which allows for this variation. The L_{10}, the level exceeded for ten per cent of the time period under consideration, has historically been adopted in the UK for the assessment of road traffic noise. The L_{90}, the level exceeded for ninety per cent of the time, has been adopted to represent the background noise level. The L_1, the level exceeded for one per cent of the time, is representative of the maximum levels recorded during the sample period. A weighted statistical noise levels are denoted L_{A10},dB L_{A90} etc. The reference time period (T) is normally included, e.g. dB $L_{A10, 5min}$ or dB $L_{A90, 8hr}$.

A.7 TYPICAL NOISE LEVELS

Some typical noise levels are given in the following table.

Noise Level dB(A)	Example
130	Threshold of pain
120	Jet aircraft take-off at 100 m
110	Chain saw at 1 m
100	Inside disco
90	Heavy lorries at 5 m
80	Kerbside of busy street
70	Loud radio (in typical domestic room)
60	Office or restaurant
50	Domestic fan heater at 1m
40	Living room
30	Ventilation Noise in Theatre
20	Remote countryside on still night
10	Sound insulated test chamber
0	Threshold of hearing

Table of Typical Noise Levels

APPENDIX 2
NOISE SURVEY RESULTS

NOISE SURVEY RESULTS

Measurement location	Start time	Duration	L_{Amax}	L_{A90}	L_{A10}	L_{Aeq}	Comments
ST1	14:11	10:00	56	41	49	46	Birdsong, voices from school, aircraft
	14:47	10:00	61	41	47	45	Birdsong, voices from school, aircraft
	15:18	10:00	58	43	48	46	Birdsong, children playing outside at school nearby, aircraft
	21:12	10:00	66	36	49	49	Distant road traffic noise, aircraft
	21:40	10:00	58	34	41	38	Distant traffic noise, leaves in trees, voices, aircraft
	22:10	10:00	61	37	45	43	Distant traffic noise, leaves in trees, aircraft
ST2	14:26	10:00	74	45	53	53	Voices from school, traffic noise Crossfield Rd/Adamson Rd
	15:02	10:00	74	44	54	54	Voices from school, hoover in flat opposite, traffic noise Crossfield Rd/Adamson Rd
	15:29	10:00	76	45	55	54	Voices, traffic noise Crossfield Rd/Adamson Rd
	21:00	10:00	77	39	49	53	Traffic noise Eton Ave, plant noise building opposite, aircraft noise
	21:25	10:00	70	40	52	53	Voices, road traffic noise Eton Ave, leaves in trees, aircraft noise
	21:55	10:00	74	39	50	52	Traffic noise Eton Ave, leaves in trees, aircraft noise