Construction Management Plan

for

Shurgard Hampton

For and on behalf of Shurgard UK Ltd

March 2024

Project Information

Title	**Construction Management Plan**
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1 Introduction

1.1 This Construction Management Plan (CMP) has been prepared by Appian Construction Limited on behalf of Shurgard UK to accompany the planning application for the proposed construction of a self storage facility at Oldfield Road, Hampton London, TW12 2HR.

1.2 The project comprises of the demolition of the existing building and redevelopment of the site to provide a self storage facility (Use Class B8), comprising a maximum of 5,264 sqm GEA. There will be a new shop/ front of house area located directly off the access road from Oldfield Road at ground floor, a demountable mezzanine and associated vehicle access, car and cycle parking and hard and soft landscaping. The project will be assessed as BREEAM 'Excellent'. Works are due to commence in the first quarter of 2025 for approx. 56 weeks

1.3 This CMP has been prepared in accordance with policies in the London Borough of Richmond Upon Thames adopted and draft Local Plan, which includes the London Plan, Strategic Policies DPD (2017 as amended with Alterations), the Development Management DPD (2017) and the West London Waste Plan DPD and Transport for London's (TfL) Construction Logistics Plan Guidance (2019).

1.4 Richmond Upon Thames LA and TfL will be consulted on any issues relating to any works affecting the public highway, maintenance and repair and any construction related activity, permissions or licences which may be required to deliver the CMP and construction projected and detailed herein.

1.5 The CMP Strategy for the project is designed to minimise the interface, wherever possible, in respect to materials delivery and storage, arrangements to minimise traffic disruption and reduce the impact of the works upon local transport provision and the local environment. The aim is to reduce the number of deliveries where practicable, including the staging of deliveries such that the volume of traffic is kept as even as possible avoiding peaks, and controlling vehicular movements on the project.

2 CMP Objectives

2.1 The purpose of this CMP is to control and mitigate the impact of construction and to ensure disruption is minimised as far as is practical during the construction activities. The overall objectives of this CMP are to:

- Lower emissions.
- Enhance safety-Improved vehicle and road user safety.
- Reduce congestion - Reduced trips overall, especially in peak periods.

2.2 To support the objectives above, the following sub-objectives are set out:

- Encouraging construction workers to travel to the site by non-car modes.
- Promote smarter operations that reduce the need for construction travel or that reduce or eliminate trips in peak periods.
- Encouraging greater use of sustainable freight modes.
- Encouraging the use of greener vehicles.

- Managing the on-going development and delivery of the CMP with construction contractors.
- Communication of site delivery and servicing facilities to workers and suppliers
- Encouraging the most efficient use of construction freight vehicles.

3 Back Ground

3.1 The site is located off Oldfield Road, Hampton, London. The site is currently in use by small businesses and a trade and distribution centre. The local area is characterised as residential.

3.2 The application site area is approximately 3,085 sqm (0.31 hectares), the site is flat and regular in shape, and addresses Oldfield Road to the south and the trainline to the north. Neighbouring sites are the Hampton Waitrose supermarket to the east boundary and a 3 storey residential block to the west. A Location Plan is at Appendix 1.

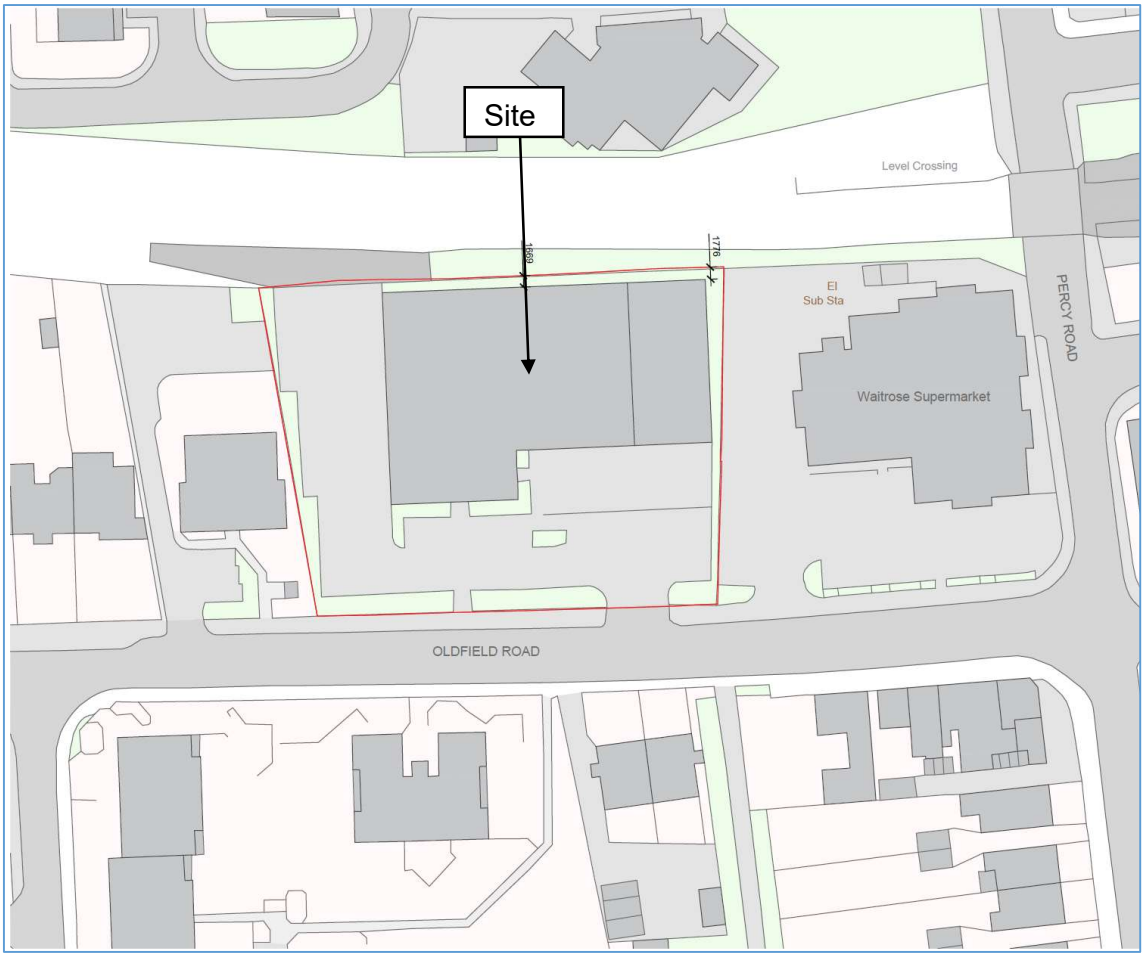


Figure 1. Site Location Plan

4 Normal Site Working Times

4.1 The proposed site operating hours are as follows:

- Monday to Friday 0800hrs – 1800hrs

- Saturday 0800hrs – 1300hrs

4.2 Appian Construction will endeavour so far as is reasonably practical to keep to these hours for the construction activities. Excessively noisy operations will be limited to periods not more than 2 hours' duration on an on/off basis.

4.3 A 24/7 contact number line will be provided and permanently displayed to deal ith any emergencies relating to the site activities.

4.4 Noisy works will not take place outside of these hours without prior permission (including Sundays and Bank Holidays). The core working hours detailed above must be adhered to by all staff on site when carrying out any works anticipated to cause a disturbance. There may be occasions when works outside these hours may be necessary. In this instance, the contractor (once appointed) will consult with HBC to reach agreement for approval of the variation. When applying for prior permission to work out-of-hours the contractor will provide the necessary details as to why the work cannot be done during normal hours will be provided.

5 Construction Vehicle Site Access & Egress Routes

5.1 Construction vehicles will access and egress the site from the North by utilising the following routes:

- Travel South on the M25 then onto the M3 or the A406 onto the A307
- Continue along the A306 onto the A308 (Upper Sunbury Rd), then onto Percy Rd and then turn into Oldfield Rd, the site is located on the right.

5.2 Construction vehicles will access and egress the site from the South by utilising the following routes:

- Traveling East or West along the M25 then North onto A243 (Leatherhead Rd).
- Continue along the A243 onto the A309 (Kingstone Bypass)
- From the A309 turn onto Hampton road then Percy Rd and then turn into Oldfield Rd, the site is located at number 74.

5.3 A detailed access/egress plan is at Appendix 2.

6 Control of Construction Traffic

6.1 The Site Management Team will implement a robust Delivery Management System, with the primary objective of ensuring that construction vehicles are able to be received directly into site on arrival.

6.2 Permitted hours for construction traffic, deliveries and collections, will be between 09:00 and 15:00 daily. All relevant personnel involved in deliveries, sub-contracting work, site visits, etc. will be briefed and made aware of the permitted contractors traffic hours. Attention will also be drawn to other relevant information, such as that contained in this document relating to vehicle routing.

6.3 The main elements of the Delivery Management System will be implemented as the site layout and scope of works permits/requires as follows:

6.3.1 Consideration will be given when placing orders to avoid “part loaded” vehicles and to best coordinate orders to reduce generated construction vehicle road trips.

6.3.2 Consolidating deliveries so fewer journeys are needed.

6.3.3 All contractors must inform the Site Management Team about all deliveries a minimum of 48 hours before attending site.

6.3.4 All deliveries will be recorded on a delivery schedule located within the project office and will be monitored and checked by the Site Management Team.

6.3.5 The delivery schedule will be arranged on an hour-to-hour basis.

6.3.6 All drivers will contact the Site Management Team a minimum of half an hour before attending site.

6.3.7 Gateman/Banksmen and the Site Management Team will manage and direct all construction vehicle site access and egress movements at all the times.

6.3.8 Gateman/Banksmen will wear appropriate high-vis clothing and PPE.

6.3.9 Gateman/Banksmen will use appropriate signage to forewarn public of construction vehicle movements.

6.3.10 Gateman/Banksmen will use expandable barriers to separate the public from construction vehicle movements, as required.

6.3.11 Gateman/Banksmen will have relevant training and appropriate qualifications and/or certification to undertake their daily tasks.

6.3.12 Deliveries will only be scheduled and accepted within the permitted delivery hours.

6.3.13 When expecting a delivery, and if required, the site will be made ready to accept vehicles directly into site, this includes banksmen being ready to supervise the construction vehicle manoeuvres into site and to ensure separation of construction vehicles and the public.

7 Construction Plant & Material Deliveries

7.1 All delivery drivers will be briefed to follow the site access routes, and be directed and effectively unloaded in a pre-arranged lay down area within the boundaries of the site. The proposed access routes to site are shown on the location plan at Appendix 2.

7.2 For the construction phases, vehicles will access the development directly from the main road as indicated on the attached Site Logistics Plan. All construction traffic entering and leaving the site via the existing highways crossover will be closely controlled by a full time Banksman. Vehicles making deliveries to site or removing waste will travel via carefully designated routes, using major arterial roads.

7.3 The Contractors will be encouraged to use shared transport arrangements and minibuses to transport the workforce to the site.

7.4 Every day a list of all deliveries required will be pre-prepared on a daily delivery schedule. This information will then be reviewed and scheduled to eliminate continuous deliveries and delivery due times will also be carefully considered to avoid peak traffic times in the city. The number and level of deliveries will be constantly reviewed with the frequency and size of each delivery continually monitored to ensure that the minimum number of deliveries occurs. Deliveries will where practicable, be made by suppliers employing FORS and CLOCS principles

7.5 It is anticipated that the groundworks and drainage stages will be peak period for on-site traffic. This is likely due to frequent muck always and concrete deliveries as well other onsite deliveries.

7.6 The major deliveries anticipated for the project will be:

- Construction plant
- Aggregates & concrete
- Structural steel
- Cladding & roof panels
- Mezzanine steel, decking boards and fire protection boards
- Partitioning steel and doors
- Windows / Glazing
- Plasterboard / Partitions
- Construction Waste Skips
- General Supplies

7.7 Any timing of large-scale vehicle movements will be planned to avoid peak hours wherever possible.

7.8 The sub-contractors work package procurement strategy is to specify the minimum number of deliveries to complete their contracted works. Contractors will be encouraged to combine deliveries from different suppliers at all times and ensure their delivery schedules are coordinated with the site team. Furthermore, there should be no requirement for any contractor to fabricate items on site.

7.9 There is a good network of minor and major roads in the vicinity of the applicant site. It is anticipated that most delivery and site waste vehicles will be directed to approach the site using the existing main road network.

8 Estimated Number and Type of Vehicles

8.1 The programme for the project will be approx. 56 weeks starting in late Feb 2025. It is expected that there will be no more than 6 deliveries per day to the site, apart from the concrete delivery trucks which will be capped to a maximum of 8 deliveries and the tipper/muckaway vehicles which will also be capped at 8 collections per day, Table 1 below shows the estimated vehicle movements for the duration for the project:

Activity	Duration (Weeks)	Skip Lorry	HGV Flatbed	Articulated Lorry	Concrete Mixer	Tipper Lorry	Total Avg P/Day	Total Avg P/Wk
Site set-up and demolition works	6	8	1			14	4	8
Groundworks & sub-structure	18	4	2		16	60	8-10	24
Structural steel	10		1	8			1	2
Roof & cladding	10		2	10			2	3
Internal fit-out	12	4	6	12			2-3	6
Hard landscaping	2	2	4		2	8-10	2-3	8

Table 1 – Estimated Vehicle Movements

8.2 Table 2 below details the types, dimensions and dwell time of vehicles anticipated, however it is also unlikely that all construction vehicles will stay for the maximum dwell time outlined below:

Vehicle	Length	Width	Height	Dwell Time
Skip Lorry	6.3m	2.5m	3.65m	45 minutes
Heavy Goods Rigid Flatbed	10m	2.5m	3.65m	60 minutes
Articulated Lorry	16.5m	2.55m	4.2m	60 minutes
Concrete Mixer	8.4m	2.5m	4.0m	30 minutes
Tipper Lorry	12.0m	2.5m	3.93m	30 minutes

Table 2 – Construction Vehicles

8.3 Consideration will be given to the potential effect on the local area's parking provision during construction of the proposed development and the very limited, existing on street parking will be unaffected. There will also be no parking suspensions put in place as a result of the development. Existing bus stops and bus routes in the area will not be affected.

9 Pedestrian and Cyclist Safety

9.1 Construction traffic poses a potential risk to pedestrian and cyclist safety therefore protecting pedestrians and cyclists is of paramount importance. The use of banksmen during all periods of operation at the site will assist pedestrian and cyclist safety. During vehicle movements, the banksmen will pay attention to pedestrians, road users, and vulnerable road users, with particular attention being paid to cyclists, pushchair users and the disabled, during these instances all parties will be adequately forewarned of any blockages.

9.2 Hoarding around the site, where required, will protect the safety of pedestrians passed the site. Safety at the access will be considered, as vehicles will enter and leave the site, however, signs will be installed on Oldfield Road to inform the public/drivers/cyclists about construction works/construction vehicles nearby. The construction vehicle drivers and other HGV drivers in relation to this site will need to be aware of pedestrians and cyclists.

10 Site Parking

10.1 There is no parking on site and no parking within the Waitrose car park or surrounding streets, therefore all contractors are encouraged to always utilise public transport.

10.2 All vehicles associated with the planned works must only park / stop at permitted locations and within the time periods permitted by existing on-street restrictions. at no time will any construction traffic, visitors or site personnel lay up or park on the local road networks.

10.3 Consideration will be given to the potential effect on the local area's parking provision during construction of the proposed development and the very limited, existing on street parking will be unaffected. Existing bus stops and bus routes in the area will not be affected.

11 The Siting of Site Infrastructure and Site Hoardings

11.1 All site welfare and infrastructure will be contained within the site boundary, the site layout can be seen at Appendix 3.

11.2 The site will be bounded on all elevations by 18mm ply board hoarding 2.5m high, is painted white and encompasses the entire site. The hoarding will be inspected daily for damage/graffiti and will be repaired/re-painted as required.

11.3 The hoarding will feature lockable vehicle and pedestrian site entrances, the work site will be designed to ensure that:

11.3.1 The pedestrian passage is maintained at all times

11.3.2 There will be qualified and experienced banksmen present during all vehicle movements

11.3.3 Vehicular access to adjacent properties is maintained at all times

11.3.4 Vehicle drivers will remain with their vehicles at all times to ensure that vehicles can be immediately moved to allow access and egress to neighbouring properties as required

11.3.5 A banksman will be present during deliveries and removals to make sure that the vehicle is positioned in accordance with this document.

11.3.6 Emergency Access is always maintained.

11.3.7 During vehicle movements, the banksmen will pay attention to pedestrians, road users, and vulnerable road users, with particular attention being paid to cyclists, pushchair users and the disabled, during these instances all parties will be adequately forewarned of any blockages and

11.3.8 Trees and street furniture do not become damaged.

11.4 The site hoarding will be erected and maintained in accordance with the HSE guidelines as follows:

11.4.1 Hoarding checks will be carried out daily to ensure security, maintenance and the hoarding is clear of debris / obstructions.

11.4.2 Any access lighting will be suitably specified to avoid casting of significant shadows or glare.

11.4.3 Contact numbers will be clearly displayed on the outside of the hoarding, including the details of the Principle Contactor.

12 Liaison with other Sites to Manage Cumulative Impacts

12.1 Appian Construction will liaise with contractors completing work on other local sites with the aim of pro-actively managing the cumulative impacts of local construction projects.

12.2 A full table of applications for development of nearby sites can be found at Appendix 4.

12.3 Contact will be made with contractors operating these sites to ensure that communication between sites can take place to coordinate constriction activities (where possible) to minimise potential disruption to local residents and the local highway network.

13 Noise and Vibration

13.1 General guidance as to the control of noise and vibration from the construction process is found in BS5228 parts 1 and 2. This standard represents the generally accepted industry best practice for controlling noise and vibration from works of construction, excavation, piling and demolition. It also contains a methodology for estimating noise levels that can arise from various construction techniques as well as recognised methods of mitigating excessive noise levels.

13.2 The assessment of potential noise and vibration effects resulting from or impacting upon the Project will be based upon the following:

13.2.1 Identifying potentially sensitive existing and future noise receptors on the Site and within the surrounding area.

13.2.2 Establishing baseline noise conditions currently existing at the Site and nearby receptor locations through noise surveys.

13.2.3 Assessing the suitability of the Site for the Project in terms of the prevailing baseline noise conditions.

13.2.4 Assessing likely noise and vibration levels generated during the construction works associated with the Project.

13.2.5 Establishing design aims for plant and services to be located on, or within, the proposed new buildings at the Site.

13.2.6 Formulating proposals for mitigation, where appropriate; and assessing the significance of any residual effects.

13.2.7 A desk-based study and site walkover will be undertaken to identify existing and future noise sensitive receptors (NSRs) that could potentially be affected by noise arising from the construction works and the operation of the Project.

13.2.8 Baseline noise surveys will be undertaken prior to commencement of works on site with additional surveys being completed periodically. Monitoring locations are to be selected in consultation with Kingstone Council to represent both existing potentially sensitive receptors in the vicinity of the proposed Project and proposed potentially sensitive receptors within the Project.

13.2.9 As a minimum attended noise monitoring will be undertaken at the start of each new activity as identified in the Method Statement/Works Schedule and during out of hours work. Appian Construction will maintain a record of these noise monitoring results.

Proposals for Monitoring Noise and Vibration

13.3 Noise and vibration monitoring will be used by Appian Construction as a proactive tool to: improve work processes; identify and address issues as they arise; investigate complaints and check compliance with any noise predicted levels.

13.4 Noise monitoring shall be undertaken with a handheld or tripod mounted integrated sound level meter to determine noise levels at specified locations at known times during the working day. The monitoring equipment shall comply with BS 7580-2: 1997 Type 2 specification, as required by BS 5228-1:2009 “Code of practice for noise and vibration control on construction and open sites” Part 1: Noise.

13.5 Note: it is expected that vibration over 1mm/s measured as a peak particle velocity would constitute unreasonable vibration.

13.6 The Noise and Vibration Management procedures incorporates the measures proposed and procedures for the management of noise and vibration arising from the construction of the Project. This describes the noise and vibration control measures and monitoring proposals for all above and below ground works associated with the construction of the Proposed Development.

13.7 Compliance with BS 5228 Parts 1 and 2 'Code of practice for noise and vibration control on construction and open sites. In all instances where alternative working methods exist the minimisation of noise and vibration shall be a prime consideration in the choice of technique and equipment used.

13.8 This Noise and Vibration measures aims to protect noise and vibration sensitive receptors (NSVRs) including residential noise sensitive receptors NVSRs (both permanent and recreational); for the surrounding commercial businesses. The noise and vibration measures considers the impact of noise and vibration and the control measures that will be employed to mitigate the risks by reducing and minimising adverse effects. These will be supported through monitoring procedures to identify both elevated levels and review complaints should they arise. The complaints management procedure, including management responsibilities, is also addressed.

Activities Likely to Cause High Levels of Noise or Vibration

13.9 The following activities may potentially cause high levels of noise or vibration:

Stage of Works	Duration	
	From	To
Civils & Ground works	Feb/Mar 25	Jun 25
CHD/CFA piling	Apr 25	May 25
Steel erection	Jun 25	Aug 25
Cladding and roof installation	Aug 25	Oct 25
Power floating concrete slabs	Oct 25	Nov 25
External works, hard and soft landscaping	Nov 25	Mar 26

Table 3 - Activities likely to cause high levels of noise or vibration

Vibration Monitoring - Description of work to be undertaken

13.10 To install 4 units of vibration monitoring equipment at ground level on the site boundaries to the neighbouring commercial buildings during piling and groundworks. The vibration monitoring equipment is a remote vibration monitoring system and is specifically designed for construction, piling and demolition site work. These meters use geophones to directly measure PPV (peak particle velocity) and they also provide acceleration levels. The monitoring units will send out alarms via emails using the on-board GPRS modem.

Installation and Monitoring

13.11 There will be 4 vibration units installed as shown in Figure 2 below.

13.12 The vibration equipment will be pre-programmed with event alarm warning levels set as per your specification or to the British Standard guidelines. They will generate an alarm if these levels are breached, allowing the Site Manager to be notified and construction works to be stopped and assessed.

13.13 Further to the initial agreed monitoring positions, the monitors can be moved to other locations of the building as works progress and/or additional units can be positioned when there are concerns at specific receptors, or from specific operations around the site.

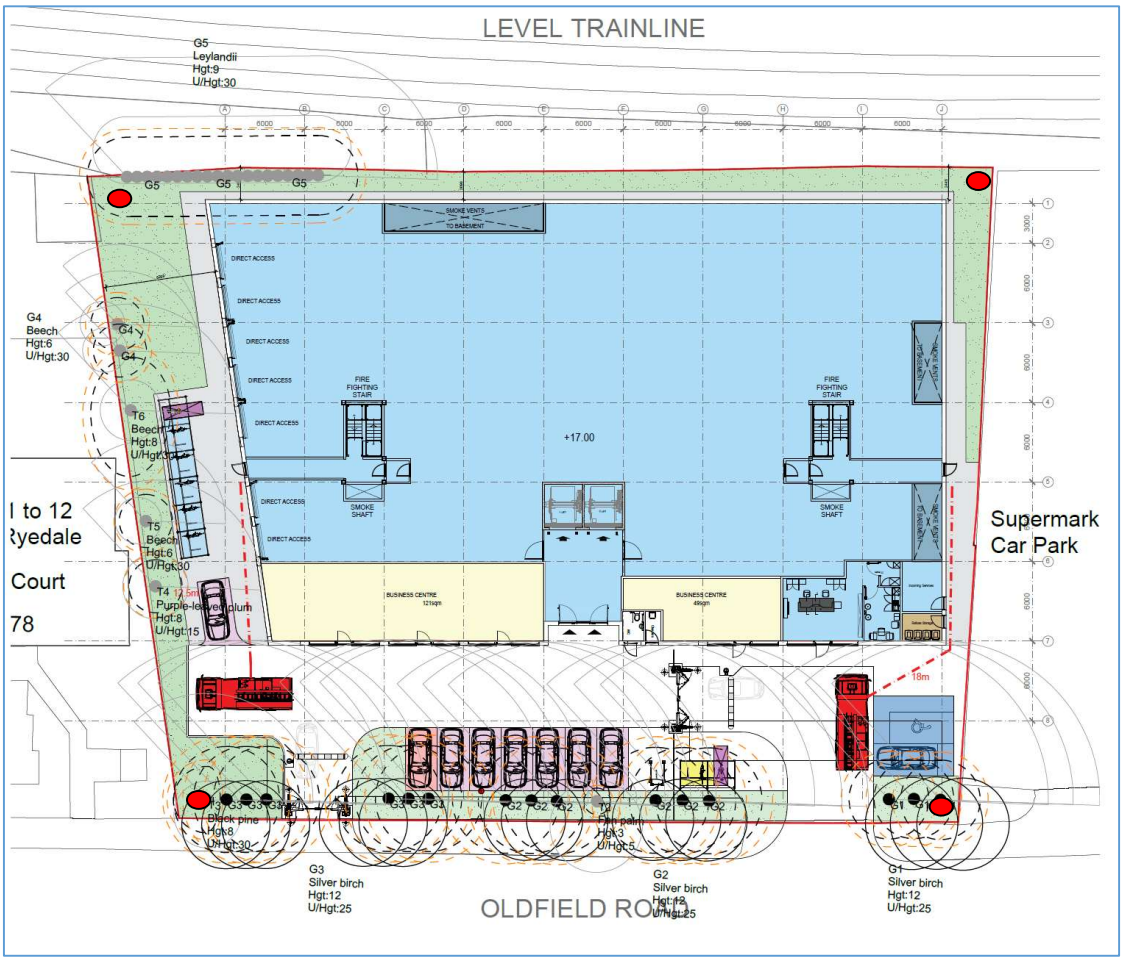


Figure 4 – Vibration monitoring equipment locations

13.14 The vibration units will be monitored continuously throughout the day by a dedicated Project Manager who will be our point of contact for the Contractor. If any alarm levels are breached Vibration Monitoring Services will contact the Site Manager by text for Amber levels and by phone and text for Red levels which advise them of the vibration level recorded. This will enable our Site Manager to investigate the cause and keep excessive vibration levels to a minimum.

Reports

13.15 Reports will be generated weekly during the monitoring period which will show all alarms generated from each unit and the date and time together with a trend of data, this will be emailed to the Site Manager and any other nominated contacts.

Vibration Threshold Limits

13.16 It is recommend the units be pre-programmed with Amber 10mm/s and Red 15mm/s event alarm warning levels as per guidance in BS 7385-2:1993 and BS ISO 4866:2010 Code of Practice for Elevation and Measurement for Vibration in Buildings. The measuring units will generate an alarm if these levels are breached, allowing the Site Manager to be notified and works to be stopped and assessed.

Noise Threshold Limits

13.17 Construction noise thresholds (limits) at noise and/or vibration sensitive receptors (NVSRs) have been identified based on the guidance contained within BS 5228-1:2009+A1:2014, as outlined in the ES Chapter 15 Construction Noise and Vibration (Document 5.15) and summarised in Table 1.1 below.

Threshold value period (L_{Aeq})	Threshold value, façade level in decibels (dB) *(Lower cut off value)*
Daytime (07:00 to 19:00 hrs) weekdays and Saturdays (07:00 to 13:00 hrs)	65 dB L_{Aeq} or >5 dB above baseline ambient noise level, whichever is the greater
Evenings (19:00 to 23:00 hrs weekdays). Weekends (13:00 to 23:00 hrs Saturdays and 07:00 to 23:00 hrs Sundays)	55 dB L_{Aeq} or >5 dB above baseline ambient noise level, whichever is the greater
Night-time (23:00 to 07:00 hrs)	45 dB L_{Aeq} or >5 dB above baseline ambient noise level, whichever is the greater

Table 4 – Noise Threshold Limits

Noise Limits and Exceedance Procedures

13.18 Construction noise levels may be permitted up to 75 dB LAeq, 1hr for specific works of shorter duration where BPM have been demonstrated through the S.61 process, agreed with the local authorities and local noise sensitive receptors have been informed at least 48 hours in advance.

13.19 Noise levels above 75 dB LAeq, 1hr may also be permitted where the above requirements are met and BPM measures are adopted.

13.20 Where measured noise levels exceed the agreed Construction Noise Thresholds outlined above, the contractor responsible for the works will investigate the cause of the exceedance and take appropriate measures to prevent further exceedances.

13.21 In addition to the Construction Noise Threshold, the contractors will also implement a Construction Noise Trigger Level which is proposed to be 3 dB lower than the Construction Noise Threshold for the corresponding working period. This will provide prior warning of a possible exceedance and allow action to be taken to moderate works prior to possible exceedance of the threshold.

13.22 Noise monitoring equipment will be deployed at locations around the perimeter of the site boundary, where this monitoring is considered to be necessary, to monitor noise from activities at the various work sites and corridors including access tracks. The trigger level exceedance represents a proactive means of informing the project team that noise emissions at NVSRs are approaching the Construction Noise Threshold and that the responsible contractor should immediately review the methods of working to ensure that noise exceedances do not occur.

Noise Monitoring - Description of work to be undertaken

13.23 There will be 2 noise monitoring at the front and the back of site during groundworks and piling works. he noise monitoring equipment is a wireless Class 1 environmental remote noise monitoring system and is specifically designed for long term environmental noise monitoring during demolition/construction work. The noise monitors will send out alarms via emails and text message using the on-board GPRS modem. They run on 110V power supply or long term batteries that will be changed every 3 weeks.

13.24 The noise equipment will be pre-programmed with an event alarm warning level set at the specified threshold and will generate an alarm if this hourly threshold is breached.

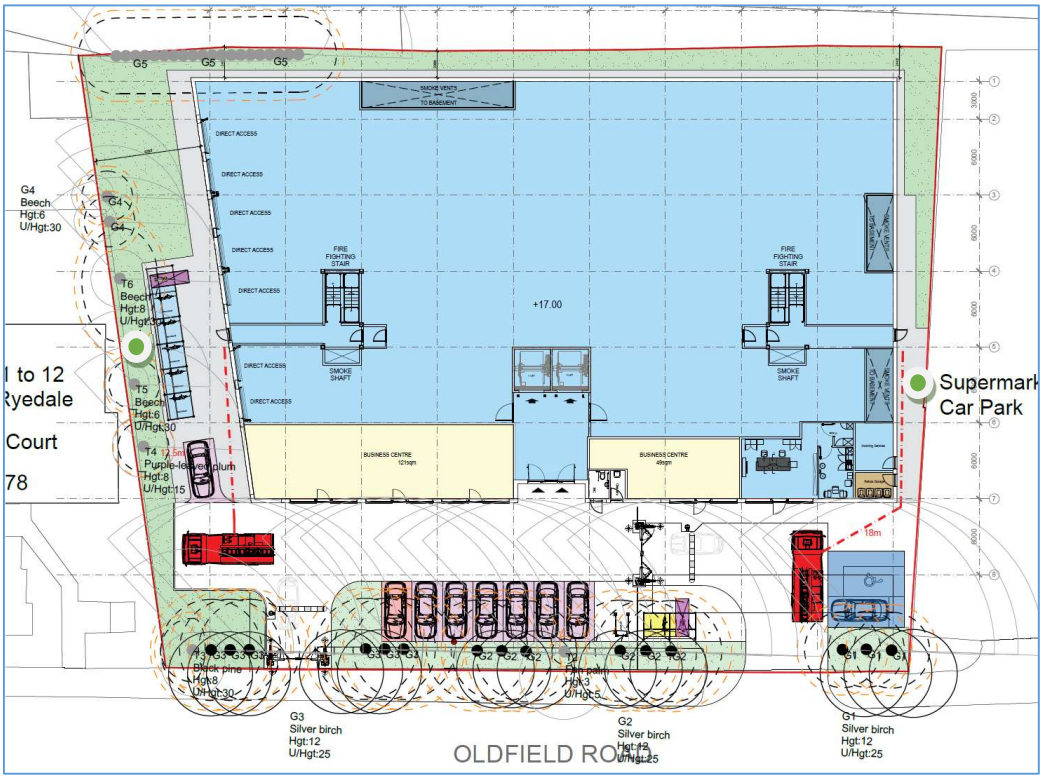


Figure 3 – Noise monitoring locations.

Monitoring

13.25 The noise equipment will be monitored continuously throughout the day and if any hourly alarm levels are breached, our monitoring consultants (Vibration Monitoring Services) will contact the Site Manager and advise them of the noise level recorded at the end of the hour of monitoring. This will enable our Site Manager to investigate the cause and keep excessive noise levels to a minimum.

13.26 Further to the initial agreed monitoring positions, the monitors can be moved to other locations of the site footprint as works progress and/or additional units can be positioned when there are concerns at specific receptors, or from specific operations around the site.

Reports

13.27 Reports will be generated weekly which will show graphs of the sound levels recorded over a period and their date and time, this will be emailed to the Works Manager and will give a 'snapshot' of what is going on in that location.

Mitigation Measures

13.28 Appian Construction Ltd will comply with the recommendations set out in BS5228: 2009 and in particular with the following requirements:

13.28.1 Vehicles and mechanical plant will be maintained in a good and effective working order and

13.28.2 operated in a manner to minimise noise emissions. The contractor will ensure that all plant complies with the relevant statutory requirements.

13.28.3 HGV and site vehicles will be equipped with broadband, non-tonal reversing alarms.

13.28.4 Compressor, generator and engine compartment doors will be kept closed and plant turned off when not in use.

13.28.5 All pneumatic tools will be fitted with silencers/mufflers.

13.28.6 Care would be taken when unloading vehicles to avoid un-necessary noise.

13.28.7 The use of particularly noise plant will be limited, i.e. avoiding use of particularly noisy plant early in the morning.

13.28.8 Restrict the number of plant items in use at any one time.

13.28.9 Plant maintenance operations will be undertaken at distance from noise-sensitive receptors.

13.28.10 Reduce the speed of vehicle movements.

13.28.11 Ensure that operations are designed to be undertaken with any directional noise emissions pointing away from noise-sensitive receptors.

13.28.12 When replacing older plant, ensure that the quietest plant available is considered.

13.28.13 Drop heights will be minimised when loading vehicles with rubble.

13.28.14 Vehicles should be prohibited from waiting within the site with their engines running or alternatively, located in waiting areas away from sensitive receptors.

13.28.15 Local hoarding, screens or barriers should be erected to shield particularly noisy activities.

13.28.16 Piling will be carried out with the method that minimises both noise and the transmission of vibration to sensitive receptors.

13.28.17 Temporary noise screens will be used to reduce noise from particularly noisy activities and the height of perimeter hoarding will be extended where this would assist in reducing noise disturbance at sensitive receptors; and

13.28.18 Hours of operation should be strictly enforced and any deviations other than those previously identified will be with the consent of the local authority.

Notification

13.29 Occupiers of adjacent properties will be informed by the Contractor up to 2 weeks in advance of the works taking place, including the duration and likely noise and vibration effects. In the case of work required in response to an emergency, the Environment Agency and local businesses will be advised as soon as reasonably practicable that emergency work is taking place. Potentially affected businesses will also be notified of the helpline number for the contractor.

13.30 Appian Construction will be responsible for ensuring that all plant and equipment, including any which may be on hire, is well maintained, properly silenced and used in accordance with the manufacturer's instructions, as required by the above British Standard.

13.31 In all instances where alternative working methods exist the minimisation of noise and vibration shall be a prime consideration in the choice of technique and equipment used and in compliance with BS 5228 'Code of practice for noise and vibration control on construction and open sites.

14 Monitoring Emissions from Non-Road Mobile Machinery (NRMM)

14.1 Currently NRMM on major construction sites within Greater London are required to meet Stage IIIA of EU Directive 97/68/EC as a minimum; and NRMM on all sites within either the Central Activity Zone or Canary Wharf (CAZ/CW) are required to meet Stage IIIB of EU Directive 97/68/EC as a minimum.

14.2 The Greater London Authority Non-Road Mobile Machinery (NRMM) Practical Guide can be found at the following link:

http://nrmm.london/sites/default/files/NRMM-Practical-Guide.pdf

Management Procedures

14.3 Appian Construction will nominate a person to manage the NRMM requirements. It will be their responsibility to ensure that the site is compliant, which includes:

14.4 Ensuring that all relevant site workers are aware of the requirements, carrying out their roles and adequately equipped to do so.

14.5 Keeping all relevant machinery emissions information and documentation centralised on site.

14.6 Ensuring that the NRMM online register is kept up to date (http://nrmm.london/)

14.7 Each Sub-Contractor will nominate 1 person to be responsible for ensuring that the NRMM they are bringing to site is compliant and provide the Primary Contractor with the relevant details for each machine.

Sub-contractor checks

14.8 The maximum amount of time an item of non-compliant NRMM can stay on site without an exemption is 5 days, therefore NRMM should be checked by the sub-contractor, and Appian Construction notified within the first 5 days of its arrival.

14.9 Sites must additionally ensure that the online register is kept up to date.

Site NRMM inventory spreadsheet

14.10 After being checked by the sub-contractor, the NRMM emissions information should be passed to Appian Construction, who will keep the relevant information for all NRMM on site centralised on their own spreadsheets. It is optional for subcontractors to keep similar spreadsheets of their own.

Managing non-compliant NRMM

14.11 If during any of these checks an item of NRMM is found to be non-compliant, the contractor should remove it from site within 5 days of its arrival. If this is not possible Appian Construction will apply for a 30 day exemption, explaining why the item of NRMM cannot be removed within the 5 day deadline. The application should include your intentions for the machine, for example when you plan to remove it from site or install a retrofit (see Section 4.6 for more information regarding retrofits).
While the exemption request is awaiting approval the exemption is active but be aware that these applications may be refused and sites should be prepared to remove the machine as soon as possible in those cases.

14.12 It is also recommended that sites keep a record of actions taken to address any instances when non-compliant NRMM arrives on site.

15 Air Quality and Dust Management Plan

15.1 During the course of construction of the development, having regard to the Control of Pollution Act 1974, and the Mayor of London's 'Control of Dust and Emissions During Construction and Demolition' Supplementary Planning Guidance (July 2014). A risk assessment based on this guidance must be undertaken.

15.2 An Air Quality and Dust Management Plan (AQDMP) should be regarded as a 'living' document and thus should be modified accordingly during the life of the development site, in consultation with the relevant stakeholders. This AQDMP relates to a condition for planning consent. The following are included in the scope of works:

15.2.1 Construction Dust Risk Assessment (CORA) considering sensitive receptors off-site of the development, undertaken in compliance contained within GLA's 'The Control of Dust and Emissions during Construction and Demolifion';

15.2.2 Provide inventory and timetable of dust generating activities during demolition and construction; and

15.2.3 Provide site-specific dust mitigation and emission control measures;

15.3 The continuing effectiveness of this AQDMP should be reviewed in consultation with site management. The reviews will take into account the compliance records, complaints history, monitoring records and any recent sensitive developments on neighbouring land.

15.4 Reviews of the plan will also be undertaken in the event of continued exceedances of the dust risk criteria after mitigation measures have been established.

15.5 The plan should be amended as necessary, including any changes to the monitoring methods and control measures which may be agreed.

15.6 It is recommended that the AQDMP is reviewed three months from initial implementation. Following an initial review, it is recommended that the AQDMP should be reviewed if there are any significant changes to the proposed development or methods used on-site. Any updates to the AQDMP should be agreed in writing with LBH prior to implementation. In addition, if any dust complaints are received or if current controls are not considered to be adequate, the AQDMP should be reviewed and updated where applicable.

Programme of Potential Dust Generating Activities

15.7 The activities listed below in Table 6 have been highlighted as activities that have the potential to give rise to emissions or dust. Control measures identified will be implemented to mitigate any air quality impact of the contractor's demolition and construction activities as detailed below.

Activity	Dates	
	From	To
Site Setup	Mar 25	Jun 25
RL Excavations	May 25	Jun 25
Piling	Jun 25	Jul 25
Sub Structure Foundations	Jul 25	Aug 25
Super Structure	Aug 25	Oct 25
Internal Fit Out	Oct 25	Jan 26
Hard & Soft Landscaping	Jan 26	Feb/Mar 26

Table 5 - Potential Dust Generating Activities

Training

15.8 Procedures and practises relating to air quality and dust control will be incorporated into the site and employee inductions. Toolbox talks will be delivered to all site operatives weekly to ensure that all aspects of the AQDMP are understood and put into practice.

15.9 A management plan will be implemented alongside this AQDMP to ensure operatives are aware of the consequences of not following this plan and know how to respond to any potential incidents.

Managing Complaints

15.10 Managing complaints will be the responsibility of the Site Manager. Any complaints relating to dust or air quality issues will be reported and filed. Complainants will remain informed of site investigations and any action taken to mitigate the issue raised.

15.11 A record of all environmental incidents that result in air pollution will be recorded through the forms included in Appendices 5, 6 & 7. Information to be recorded and/or actioned includes:

15.11.1 Time, date, identity and contact details of the complainant.

15.11.2 The wind direction, strength and weather conditions.

15.11.3 If the complainant has been referred by the local authority.

15.11.4 Complainant description of the dust emission.

15.11.5 Duration of emission.

15.11.6 Cause of emission.

15.11.7 A site inspection will be carried out immediately and its findings recorded.

15.11.8 Dust mitigation methods will be employed immediately.

15.11.9 A visit to the site of complaint will be carried out as soon as possible to identify any ongoing problems.

15.11.10 The complainant will be contacted and advised of mitigation and response; and

15.11.11 The local Authority will be notified that a complaint has been received.

15.12 Records of all complaints and checks undertaken will be held at the site for the duration of the works and will be investigated by the Site Manager.

Dust Definitions, Generation and Propagation

15.13 'Dust' is generally regarded as particulate matter up to 75 µm (micron) diameter and can be considered in two categories. Fine dust, essentially particles up to 10 µm, is commonly referred to as PM_{10} and is measured to agreed standards and forms part of the Air Quality Objectives (AQO).

15.14 Coarser dust (essentially particles greater than 10 µm) is generally regarded as 'disamenity dust' (or 'nuisance') and can be associated with annoyance, although there are no official standards (such as AQO) for dust annoyance.

15.15 Dust is generally produced by mechanical action on materials and is carried by moving air when there is sufficient energy in the airstream. More energy is required for dust to become airborne than for tt to remain suspended. Dust is removed through gravitational settling (sedimentation), washout (for example during rainfall or by wetting) and by impaction on surfaces (e.g. on vegetative screening). Dust can be re-suspended where conditions allow, such as from bare ground.

15.16 Dust emissions from a construction site, its propagation and potential impacts can be considered in terms of 'source-pathway-receptor' relationships. Dust can arise from a variety of processes and locations within a site and can be difficult to quantify.

15.17 The common pathway for dust propagation is by air. Dust propagation depends on particle size, wind energy and disturbance activities. Large dust particles generally travel shorter distances than small particles.

15.18 It is often considered that particles greater than 30 µm will largely deposit within 100 metres of sources, those between 10 - 30 µm will travel up to 250 - 500 metres and particles less than 10 µm will travel up to 1 km from sources.

Construction Dust Risk Assessment

15.19 This Construction Dust Risk Assessment (CDRA) using the method in the Control of Dust and Emissions during Construction and Demolition SPG 2014, which follows the IAQM guidance.

15.20 The impacts from demolition, earthworks, construction and track out have been considered. To assess the worst-case scenario, it has been assumed that all activities will be carried out for the duration of the construction period.

15.21 Magnitude and sensitivity descriptors that have been applied to assess the overall impact of the construction phase.

15.22 The dust emission magnitude for demolition is expected to be 'Small', with the building volume well below 20,000m^3.

15.23 The dust emission magnitude for earthworks is expected to be 'Small', with the total site area being below 2,500m^2.

15.24 The dust emission magnitude for construction is expected to be 'Small', with the total building volume of the extension expected to be less than 25,000m^3.

15.25 It is anticipated that the outward daily peak HGV movements will be less than 8 HGV movements in a day, so the dust emission magnitude for trackout has been assigned as 'Small'.

15.26 There are no ecological receptors within 50m of the site, therefore the risk of construction dust impacts on ecological receptors are considered to be negligible and are not considered further within the construction dust risk assessment.

15.27 Using the Defra background maps, the 2020 PM_{10} background concentration at the site is below 18 µg/m^3. This results in a 'Low' sensitivity with regards to human health. *Estimated Background Air Pollution Maps (base year 2018), downloaded from https://uk-air.defra.gov.uk/data/laqm-background-home Total annual mean concentrations based on 1 km x 1 km grid squares*

15.28 Based upon the data in table 3 below, the risk associated with dust soiling from construction activities is classified as 'Low', with the exception of demolition. With respect to human health impacts the risk is no greater than 'Low'. Therefore, two real time indicative MCERTS PM10 monitors are required during the demolition works.

Sensitivity of Area	Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Medium Risk	Low Risk	Low Risk	Low Risk
Human Health	Low Risk	Low Risk	Low Risk	Low Risk

Table 6 – Dust Soiling Risk assessment

Dust and Emission Control Measures

15.29 Standard good practice on dust control is set out in IAQM's Guidance on Monitoring in the Vicinity of Demolition and Construction Sites and GLA's The Control of Dust and Emissions during Construction and Demolition which contain advice and recommendations regarding dust management at development sites.

16 Mitigation Measure

16.1 These guidance documents, together with guidance from other industries (including the minerals industry), have been drawn on in setting out the dust control measures for this site. The proposed mitigation measures also take into account the results of the AQDRA.

Site Management

16.2 A stakeholder communications plan, including community engagement, will be developed and implemented prior to work commencing on site.

16.3 An Air Quality Dust Management Plan will be implemented on-site.

16.4 The name and contact details of the individual accountable for air quality emissions and dust generated from the site will be displayed on the site boundary, along with the Principle Contractors office contact information.

16.5 A Site Records Database will be maintained to record complaints and outcomes of the site inspections, LEZ vehicles and NRMM Compliance in the forms contained within this report will be issued to LBH upon request by email.

16.6 The AQDMP will be reviewed and updated at least every six months, or if dust issues emerge, and will be issued to the council for approval.

Preparing and Maintaining the Site

16.7 A 2.4 metre minimum height fixed solid hoarding will be erected around the perimeter of the site boundaries prior to the start of any site clearance and demolition works.

16.8 The site layout will be planned so that Stockpiles, NRMM plant and dust-causing activities are located as remote as practically possible from off-site local business/residential receptors.

16.9 Solid screens or barriers will be erected around dust activities or the site boundary that are, at least, as high as any stockpiles on site.

16.10 Site or specific operations will be fully enclosed where there is a high potential for dust production and the site is active for an extensive period.

16.11 Site fencing, barriers and scaffolding will be kept clean using wet methods.

16.12 Stockpiles will be covered or fenced to prevent wind whipping.

16.13 Site runoff of water or mud will be avoided.

16.14 Training on how to control pollution emissions will be provided to all personnel expected to be present on site as part of the site induction. This will include reference to the benefits of reducing pollution, minimizing disruption from complaints, methods on minimizing pollution and what should be done if emissions breach any site thresholds

All business/residential properties within 50m of the site will be notified of the demolition and construction activities prior to works beginning on site. Sufficient notice (minimum of two weeks) will be provided to ensure that any concerns can be dealt with before works commence. Notification will be undertaken via flyers through letterboxes and notices displayed around the site, these will provide information on the planned scope of works programme detailing expected disruptions and direction to the Planning Portal and planning reference number. The information provided will aim to reassure residents that the works will be carefully planned, managed and supervised to ensure the project will affect them adversely.

Waste Management

16.15 Waste will be reused and recycled where possible to reduce dust from waste materials.

16.16 Waste Materials will be removed from the site on average 3 times per week, or more if required.

16.17 Bonfires and burning of waste materials will be prohibited.

Operations

16.18 Cutting, grinding or sawing equipment will only be used where fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction. e.g. suitable local exhaust ventilation systems.

16.19 Scabbling (roughening of concrete surfaces) will be avoided if possible.

16.20 Dry sweeping of large areas will be avoided.

16.21 An adequate water supply on the site for effective dust particulate matter suppression/mitigation will be ensured, using non-potable water where possible and appropriate. Handheld sprays will be used as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.

16.22 Enclosed chutes, conveyors and covered skips will be used.

16.23 Drop heights from loading shovels, hoppers and other loading or handling equipment will be minimized, and fine water sprays will be used on such equipment wherever appropriate.

16.24 Equipment will be readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

16.25 A change of shoes and clothes are required before going off-site to reduce transport of dust.

16.26 Fuel (diesel) if required will be stored safely in bunds on-site and will be located at a location remote as possible from the nearest off-site sensitive receptors.

Measures Specific to Earthworks

16.27 Earthworks and exposed areas/soil stockpiles will be covered or fenced to prevent wind whipping and will be re-vegetated to stabilize surfaces, as soon as practicable.

16.28 Hessian, mulches or tackifiers will be used where it is not possible to re-vegetate or cover with topsoil as soon as is practicable.

16.29 Secure covers only be removed in small areas during work and not all at once.

Measures Specific to Construction

16.30 Sand and other aggregates will be stored in bunded areas and will not be allowed to dry out, unless this is required for a particular process, in which case appropriate additional control measures will be put in place.

16.31 Only small supplies of fine powder materials will be used on site, and bags will be sealed after use and stored appropriately to prevent dust.

Measures Specific to Track Out

16.32 Access gates are to be located a minimum of 10m from sensitive off-site business/residential receptors where possible and apply dust suppressants to locations where a large volume of vehicles enter and exit the construction site.

16.33 A maximum-speed-limit of 5mph on surfaced and un-surfaced on -site haul routes and work areas within the site will be implemented and signposted.

16.34 Water-assisted dust sweeper(s) will be used on the access and local roads, to remove, any material tracked out of the site a minimum of three times a week and on a daily basis if required.

16.35 Vehicles entering and leaving the site will be covered to prevent escape of materials and dust during transport.

16.36 Vehicles leaving the site will be inspected and cleaned to ensure that any mud or other dust causing materials are removed from the vehicles prior to exiting the site on to the local roads.

16.37 A wheel washing system to dislodge accumulated dust and mud prior to leaving the site will be implemented and installed on site and minimise soil tracked out prior to leaving the site.

16.38 An adequate area of hard surfaced road will be installed between the wheel wash facility and the site exit.

Site Particulate (PM10) and Dust Monitoring

16.39 A minimum of two on-site MCERTS compliant particulate (PM_{10}) monitors will be installed and operated at the agreed locations on the site boundaries taking into account the nearest sensitive off-site business/residential receptors and the prevailing wind conditions.

16.40 All exceedances of the agreed PM_{10} alert trigger level of 250 µg/m> as a 15-minute mean will be recorded using the DETIC form (See Appendix 5) and issued to the Council by e-mail within 24 hours of the exceedance of the PM_{10} alert trigger level, or the next working day if it occurs at a weekend of bank holiday.

16.41 6-monthly ONOC audits will be undertaken of the installed real-time MCERTS particulate (PM_{10}) monitors shall be undertaken, and results issued to the Council within 28 days of the date of the AO/QC audit by email.

16.42 All complaints, dust events, exceptional incidents either on-site or off-site will be recorded using the DETIC Form (See Appendix 5) and issued to LBH within 24 hours of the occurrence of the complaint or Dust Event, or the next working day if it occurs at a weekend of bank holiday.

Operating On-Road Vehicles, Sustainable Travel and NRMM

16.43 Demolition Logistics Plans (DLP) and Construction Logistics Plan (CLP) will be implemented to minimize the impact of on-road vehicle emissions on local air Quality by restricting on-road vehicle trips to off peak hours (10:00 - 16:00 hrs). A monthly compliance audit shall be conducted and the results issued to LBH.

16.44 Contractors and suppliers that can provide non-diesel, hybrid and electric vehicles where possible will be encouraged at the procurement stage of the tender for these services.

16.45 There will be no vehicle engine idling, all on-road vehicles will have their engines switched off when stationary.

16.46 Information on public transport access to site will be provided in the form of noticeboards and toolbox talks.

16.47 A Travel Plan has been prepared by Ardent Consulting Engineers Ltd that supports and encourages sustainable travel e.g. public transport, cycling and walking.

16.48 The project team will be encouraged to use public transport to travel from the office to the site where possible.

16.49 Secure tool storage on site will be provided to avoid the need for contractors to travel by van every day.

16.50 All Non- Road Mobile Machinery (NRMM) for engines of 37kW-560kW will comply with the minimum Stage IV emission standards set in EU Directive 97/68/EC and its subsequent amendments unless it can be demonstrated that the machinery is not available or that a comprehensive retrofit to meet both PM and NOx emission standards is not feasible. All NRMM for engines of 37kW-560kW for demolition works will be registered on the NRMM register https://london.gov.uk/non-road-mobile-machinery-register prior to the commencement of demolition works.

16.51 The existing site mains electricity power supply will be utilized and the use of diesel- or petrol-powered generators will be avoided.

16.52 Hybrid power generators (e. g. diesel-electric) if required will be used.

17 Site particulate (PM_{10}) and Dust Monitoring

Fixed PM_{10} MCERTS compliant site monitoring

17.1 It is considered necessary to monitor for dust soiling and PM_{10} emissions, using real time automatic monitors, as recommended in Appendix 8 of the GLA's Supplementary Planning Guidance on the control of dust and emissions from construction & demolition and visual inspection at the site boundaries.

17.2 A minimum of two MCERTS compliant PM_{10} monitors accredited for PM_{10} measurements will be installed prior to any site clearance works. The installation and location of the PM_{10} monitors will be in accordance with the IAQM guidance on Air Quality Monitoring in the vicinity of demolition & construction sites. The PM_{10} monitors will be located along the transect of the prevailing wind and close to sensitive receptors. The exact locations will need to be taken into account for access, security and power supplies. Real-time PM_{10} monitoring locations may also be subject to change due to mitigating circumstances such as changes to sensitive receptors and access issues. Any amended PM_{10} particulate monitoring locations will be submitted to LBH for written agreement prior to change in the PM_{10} monitoring requirements in the development.

17.3 Continuous air quality monitoring for particulates originating from construction and demolition dust will be undertaken and will be recording data continuously for the duration of the project, and locations are shown in the monitoring plan. These will send real-time data to an online server where the site team will have access to the data. Real-time email alerts will also be sent to the site team. Site trigger levels will be utilised on-site, to ensure that any works causing abnormal or damaging dust levels can be stopped immediately. The units will be set up and installed in accordance with manufacturer's instructions and relevant guidance. The dust monitoring system used will be remote optical/long path analyzers in line with the mayor's control of dust and emissions during construction and demolition Supplementary Planning Guidance (SPG) 2014 Appendix 8, method 5.

17.4 The minimum of two MCERTS compliant PM_{10} monitoring units will be subjected to the following quality assurance procedure:

17.5 6-monthly QA/QC audits including servicing and annual calibration to a reference instrument in accordance with the requirements of the MCERTS certification, shall be conducted and results issued to the LBH.

Proposed Site Action Level (SAL)

17.6 The guidance recommends a site threshold trigger alert level of 250 µg/m^3 (15-minute mean) for concentrations of PM_{10} close to construction sites, and where the site threshold for PM_{10} is being significantly breached contractors should stop work immediately and ensure best practice measures are in place before restarting. An internal amber PM_{10} alert will be set at 150 ug/m^3 (15-minute mean). Action in the event of an alert occurs is as follows:

17.6.1 Amber alert (150 ug/m^3 for the 15-minute mean)- site manager or other appropriate person to review activities to identify any potential dust or particulate sources and if cause of alert relates to a site activity, mitigation will be put in place immediately to reduce impacts.

17.6.2 Red alert (250 µg/m^3 for the 15-minute mean) - site manager or other appropriate person to review activities to identify any potential dust or particulate sources:

- If cause of alert relates to a site activity, mitigation will be put in place immediately to reduce impacts.

- If the mitigation is identified as insufficient, then activities causing the elevated dust/particulate levels will cease.

17.6.3 Should the site action level be exceeded, automatic alerts will be sent via email and/or text message to nominated individuals. The alerts will include the following information:

- The location of the exceedance.
- The time of the exceedance; and,
- The recorded PM_{10} concentration.

17.7 Within 15 minutes of receiving an email alert, the site manager will investigate the exceedance, undertaking a visual inspection of construction activities to ensure mitigation measures are being employed. The site manager will then take corrective measures if required according to the protocol detailed below in 13.9 (it is noted that trigger exceedances could occur due to unrelated activities e.g. Saharan dust episodes).

17.8 Any identified causes will be rectified. Actions will be recorded in the DETIC Form (see Appendix 5) and will detail reasons for the exceedance and any steps taken to prevent reoccurrence.

Procedures for Investigating and Reporting Site Action Limit Breaches

17.9 The following actions will be carried out in the event of an exceedance of the agreed thresholds, or obvious high levels of observed dust:

17.9.1 On-site activities will be immediately inspected to identify and record likely sources.

17.9.2 If on-site sources are identified as triggering the agreed thresholds the relevant activities will be halted until remedial measures can be implemented (e.g. wetting down, road sweeping, sheeting up).

17.9.3 Once mitigation measures are implemented, site activities will continue whilst being monitored to ensure that the mitigation has been effective. The operations director and project director will be notified of the exceedance as soon as practical, along with details of any corrective and preventative actions.

Procedures for collecting, interpreting, and reporting PM_{10} data

17.10 Air quality monitoring data will be collected from the air quality monitors for the duration of demolition and construction works and will be issued on a monthly basis (within 4 weeks of month-end) to the council by e-mail. The monthly summaries will include mean concentrations, alert level exceedances and data capture rates and explanations for any exceedances and data loss for each month assuming continuous operation and will provide explanations for any exceedances and data loss. Any photographic records taken will be kept, recorded, and maintained alongside monitoring records. The report will also highlight any exceedance of the site action level and actions taken in response to the exceedance communicated by the site staff. Exceedances of the 24-hour $PM_{,10}$ standard (50 µg/m3) will also be recorded.

18 On-road vehicle & Non-Road Mobile Machinery (NRMM) Emissions

On-road vehicles

18.1 All on-road vehicles will comply with the Low Emission Zone (LEZ) vehicle emission as a minimum. Evidence that contractors and suppliers have been contacted and their responses to the applicant in respect to the use of LEZ compliant vehicle can be found in Appendix 6. A LEZ vehicle compliance form for the demolition and construction works (see Appendix 6) will be issued to the council on a monthly basis by e-mail.

18.2 The use of Ultra-Low Emission Vehicles (ULEV) (e.g. Electric, Hybrid (Electric-Petrol) where possible will be encouraged at the procurement stage of the tender for these services. The Applicant will actively work with suppliers that can provide electric or hybrid vehicles where practicable and details included in the monthly LEZ compliance Form (See Appendix 6).

18.3 Construction site workers will use sustainable means of travel (public transport, walking and car-sharing). Information on public transport access to site will be provided in the form of noticeboards and toolbox talks. Car-sharing for contractors will be encouraged on-site by putting in place a notice board, in order for people to register and request lifts.

Non-Road Mobile Machinery (NRMM)

18.4 All NRMM will comply with Stage IV Emission Standards (or the latest standard if the GLA requirements change) as a minimum if equal to or over 37kW. Where compliance with Stage IV requirements is not achievable or practical, an exemption will be sought from the GLA prior to arrival of the equipment on site and the details recorded in the NRMM compliance Form (See Appendix 7).

18.5 Use of NRMM will be minimised as much as possible and electric or battery powered alternatives will be used as a preference. If NRMM under 37kW is to be used, use of the equipment will be minimised and kept as far away from sensitive receptors as is practicable.

18.6 For NRMM under 37kW, the contractor will endeavour to use equipment fitted with after treatment devices where practicable.

18.7 NRMM where the power output is less than 37kW will be fitted with an after-treatment device (DPF) stated on the approved list managed by the Energy Saving Trust; the ongoing conformity of plant retrofitted with suitable after treatment devices, to a defined performance standard, should be ensured through a programme of on-site checks

18.8 All NRMM for engines of 37kW-560kW for the demolition works will be registered on the NRMM register https://london.gov.uk/non-road-mobile-machinery-register prior to the commencement of demolition works. A NRMM compliance log (See Appendix 7) will be issued to the council on a monthly basis by e-mail. All relevant machinery emissions information and documentation will be stored and summarised within our electronic filing system. The project will record the plant details on a spreadsheet, or similar, and the NRMM online register (https://london.gov.uk/non-road-mobile-machinery-register) will be completed and maintained by the project administrative support and overseen by the site manager. The project team will co-operate with local authority inspections and provide the requisite information as required.

18.8.1 Dust migration to adjoining properties to be restricted by the use of debris netting fixed to all the perimeter fences.

18.8.2 Store materials as far away as possible from adjoining properties and sensitive boundaries, whenever possible.

19 Operating vehicle/machinery and sustainable travel

19.1 Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone; plant & machinery to be modern, not more than 5 years old.

19.2 Ensure all non-road mobile machinery (NRMM) comply with the standards set within this guidance. The Greater London Authority Non-Road Mobile Machinery (NRMM) Practical Guide can be found at the following link: http://nrmm.london/sites/default/files/NRMM-Practical-Guide.pdf

19.3 Ensure all vehicles switch off engines when stationary - no idling vehicles.

19.4 Avoid the use of diesel/petrol powered generators and use mains electricity or battery powered equipment where possible.

19.5 Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing); provision of parking arrangements on site.

19.6 Understand and avoid (where possible) busy periods on the local roads; delivery to be outside of peak activity and phased to be just in time.

Operations

19.7 Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.

19.8 Ensure an adequate water supply on the site for effective dust/particulate matter mitigation (using recycled water where possible); keep areas damped down and provide debris netting to perimeter scaffolding or fencing.

19.9 Use enclosed chutes, conveyors and covered skips.

19.10 Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment where appropriate.

19.11 Plant and equipment to be selected to minimise the generation of dust.

19.12 Dust migration to adjoining properties to be restricted by the use of debris netting fixed to all the perimeter fences.

19.13 Store materials as far away as possible from adjoining properties and sensitive boundaries, whenever possible.

19.14 Haul routes to be located away from sensitive areas, if possible.

19.15 Traffic speed on site to be lowered to prevent the generation of dust.

Site Management

19.16 Site working hours and strict enforcement of site shut periods to comply with planning conditions and technical guidance.

19.17 Advance notification to all those affected by key site activities.

19.18 Carry out regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results, and make an inspection log available to the local authority when asked.

19.19 Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary.

19.20 Display the head or regional office contact information.

19.21 Appropriate and discreet placement of site accommodation, welfare and storage areas.

19.22 Record and respond to all dust and air quality pollutant emissions complaints.

19.23 Make a complaint's log available to the local authority when asked.

19.24 Carry out regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results, and make an inspection log available to the local authority when asked.

19.25 Increase the frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust and emissions and dust (sic) are being carried out, and during prolonged dry or windy conditions.

19.26 Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and action taken to resolve the situation is recorded in the logbook.

19.27 Plan site layout: ensure machinery and dust causing activities are located away from receptors.

19.28 Erect solid screens or barriers around dust activities or the site boundary that are, at least, as high as any stockpiles on site.

19.29 Avoid site runoff of water or mud.

19.30 Fully enclosure site or specific operations where there is a high potential for dust production and the site is active for an extensive period.

19.31 Keep site fencing, barriers and scaffolding clean using wet methods.

19.32 Remove materials from site as soon as possible.

19.33 Maintenance of public footpaths with all pedestrian routes to be kept clear at all times.

19.34 Access and egress for vehicles and operatives from the site will be via secure, access-controlled gates.

Preparing and maintaining the site

19.35 Plan site layout: machinery and dust causing activities should be located away from receptors.

19.36 Erect solid screens or barriers around dust activities or the site boundary that are, at least, as high as any stockpiles on site.

19.37 Avoid site runoff of water or mud.

19.38 Fully enclosure site or specific operations where there is a high potential for dust production and the site is active for an extensive period.

19.39 Keep site fencing, barriers and scaffolding clean using wet methods.

19.40 Remove materials from site as soon as possible.

19.41 Maintenance of public footpaths with all pedestrian routes to be kept clear at all times.

19.42 Access and egress for vehicles and operatives from the site will be via secure, access-controlled gates.

Waste Management

19.43 Reuse and recycle waste to reduce dust from waste materials.

19.44 Avoid bonfires and burning of waste materials.

Maintaining Surrounding Roads

19.45 Regularly use a water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of the site.

19.46 Avoid dry sweeping of large areas.

19.47 Ensure vehicles entering and leaving sites are securely covered to prevent escape of materials during transport.

19.48 Implement a wheel washing system.

Storage of Plant and Materials

19.49 Due to the nature and the restricted constraints of this site, there will be very little materials stored within the site, and certainly no materials stored outside of the hoarding line. Materials will only be procured and delivered to site if they can be stored for a short period of time prior to being installed as part of the works programme. These materials will be securely stored on clean, hard-core surfacing within, and below the hoarding line.

19.50 Materials are not to be stored randomly around the site, all storage locations are to be agreed with the Site Manager Contractors are to present to Appian Construction's Site Manager all relevant data sheets and COSHH Risk Assessments for those substances used on site for which assessment is required under COSHH Regulations 2012 where possible they are to be identified and submitted in advance. All COSHH Assessments and safety data sheets will be copied and placed in the site Health and Safety Files.

19.51 COSHH. The instruction on safe handling of hazardous substances will be given to all staff working with them; this is the responsibility of the contractor(s). All hazardous substances will be stored in a suitable fireproof COSHH cabinet, individual Contractors' to supply.

19.52 There will be elements of plant that will be parked within the confines of the site, but only for the duration of the works that they are associated with.

19.53 At all times, the site access from Oldfields Road will be kept free from the storage of any plant or materials.

Best practice for material storage includes:

19.54 **Storage Areas.** Designate storage areas for plant, materials, waste, flammable substances e.g., foam plastics, flammable liquids and gases such as propane and hazardous substances e.g., pesticides and timber treatment chemicals.

19.55 **Pedestrian Routes.** Do not allow storage to 'spread' in an uncontrolled manner on to footpaths and other walkways. Do not store materials where they obstruct access routes or where they could interfere with emergency escape.

19.56 **Flammable Materials.** Will usually need to be stored away from other materials and protected from accidental ignition.

19.57 **Storage at Height.** If materials are stored at height e.g., on top of a container, make sure necessary guard rails are in place if people could fall when stacking or collecting materials or equipment.

19.58 **Tidiness.** Keep all storage areas tidy, whether in the main compound or on the site itself.

19.59 **Deliveries.** Plan deliveries to keep the amount of materials on site to a minimum.

20 Considerate Constructor Scheme

20.1 Appian Construction Ltd will register the site with the Considerate Constructor Scheme. This nationally recognised Charter encourages "Best Practice" in managing the interface between the building operations and the immediate neighbourhood. This includes providing residents, the council and key stakeholders with written communication prior to works commencing on site to include contact details for the Site/Environmental Manager, a brief description of the works, the anticipated duration and who to contact to make any complaints.

20.2 Appian Construction will be independently monitored and audited during the course of the building works to ensure compliance with their Code of Practice in the hope of improving the image of the Construction Industry. Appian Construction will target a score of 42, above the national average of 36 and will endeavour to exceed expectations in a number of key sections.

20.3 The lighting to the construction site will be provided with sufficient illumination for safe demolition and construction works, in addition to the safety and comfort of the passing public. The lighting will be installed to minimise nuisance to residents or adjacent properties and to reduce distraction or confusion to passing traffic on adjoining public highways.

21 Site Security Arrangements

21.1 The site and individual working areas will be kept secure at all times, including out of hours, by 24/7 security guards to prevent unauthorised personnel from gaining access to site. As the works progress in accordance with the program, hoardings and fencing will be removed or relocated as appropriate, to facilitate the external hard landscaping works.

21.2 A secure site boundary fence (timber framed painted 18mm plywood hoarding) will be erected for the duration of the proposed construction activities to protect members of the public from the dangers of the ongoing construction works. This is to be located along the current boundary line. The site will be made sufficiently secure and robust to deter and prevent entry to the site by unauthorised persons and to prevent removal of materials or goods from the site. This will be achieved by installing a perimeter hoarding with a limited number of secure access and egress points. A dedicated security guard will be allocated to the access point to ensure that unauthorised entry is not permitted and to control traffic movement into and out of the development.

21.3 Materials, tools, site equipment and plant shall be stored within the site boundary. Proposed hoarding lines and access gates are indicated on the attached Site Plan.

21.4 Appian Construction will develop the detail of our secure fencing alongside the public footpath with the aim of providing a viewing gallery and key information notice boards (regularly updated) to reinforce our commitment to engage with the community.

21.5 During open times, access to the site will be by a manned secure access system. Security gates or barriers will be used to control entry into the work area and all personnel attending site will be made aware of the procedure for obtaining access to site. There will be no provision for the on-site parking of operatives, visitors and construction vehicles.

21.6 All site personnel will be briefed on Public awareness during a compulsory site induction. All access and egress routes to the site will be clearly identified and controlled as per the site layout plan.

22 Site Waste Management Proposals

22.1 Appian Construction will work closely with the Client, Design Team and Subcontractors to ensure that maximum resource efficiency and minimal waste production are achieved for the project. They will develop the Refuse & Recycling Strategy prior to construction commencing and ensure all Principal Contractor responsibilities are met.

22.2 Appian Construction will ensure decisions made during the design stages will reduce the amount of waste produced on site by utilising standardisation of materials, fixtures, fittings and off-site manufacture. The waste hierarchy will be applied to all stages of the project to prevent, reduce, reuse, and recycle to ensure maximum resource efficiency.

22.3 It is our company policy to develop a high level of awareness in relation to waste minimisation and recycling within our business operations. It is our intention to develop this policy by minimising the production of waste, through effective purchasing practice of materials used throughout the business and reuse and recycle materials whenever practical to do so.

22.4 In line with industry technical guidance on best practice, the development will take the following approach:

22.4.1 Avoid the creation of waste in the first place.

22.4.2 Re-use waste that is created as much as possible.

22.4.3 Allow left-over waste to be recycled elsewhere as much as possible, minimising the waste that ends up in landfill.

22.5 We will endeavour to appoint suppliers who remove packaging as part of their supply contract and who operate according to sound environmental practices and principles.

22.6 To help ensure we give proper consideration to our environmental and waste management responsibilities and to assist in the minimisation of waste and the recycling of materials wherever practicable, systems and procedures will be implemented to encourage the recycling of material with a view to minimizing the overall levels of waste we produce. All staff are expected to abide by the following procedures and co-operate with management in the execution of this policy:

22.6.1 Cultivate a work ethic with a high level of awareness of waste management, waste minimisation and a desire to recycle and reuse materials when practical.

22.6.2 Encourage the use of recycled/reclaimed materials; materials form sustainable sources and those that are suitable for disposal by recycling.

22.6.3 Favour suppliers who actively operate according to sound environmental principles.

22.6.4 Minimise waste by encouraging the exchange and reuse of equipment and materials amongst departments and on our construction sites.

22.6.5 Develop waste management strategies that include recycling procedures and schemes.

22.6.6 Encourage employees in our office and on our sites to promote and establish recycling schemes that are relevant to their individual activities.

22.7 Appian Construction will produce a SWMP and will only use local, specialist licensed waste management partners. Initiatives will be established early in the project cycle in order to establish full commitment from all parties in the reduction of waste.

22.8 The site waste management plan will clearly identify ways in which we can minimise and reuse waste, whilst challenging our supply chain partners in minimising packaging and focusing on real delivery opportunities to assist in reducing waste produced on site. In addition to this, a focus on excellent material storage on site is proven in reducing waste produced on site.

22.9 Burning of waste arising on site will not be permitted at any time.

22.10 All waste arising from demolition works will be removed from site for recycling as appropriate. Where practicable, hard materials will be crushed on site for reuse, as general fill or as part of the external service yard.

Waste Management Targets

22.11 Appian Constructions waste management targets and Key Performance Indicators we will endeavour to achieve are as follows:

22.11.1 A minimum of 95% (tonnage) construction waste will be diverted from landfill.

22.11.2 At least 90% (tonnage) of construction waste will either be recycled or processed for re-use.

22.11.3 90% (tonnage) of general demolition waste will be reused. Specialist hazardous or notifiable waste to be sent to a licensed facility. Inert material retrieved from any deep excavations will be re-used locally or recycled rather than sent to landfill

22.11.4 At least 10% (tonnage) of demolition waste to be reclaimed or processed for re-use

Sustainability Targets

22.11.5 Measurement of the emissions as a result of transportation of materials to site and put in place actions to reduce emissions.

22.11.6 To achieve a 30% (tonnage) overall recycled content for the development.

22.11.7 Waste will be segregated into categories on site to maximise the opportunity to recycle appropriate waste streams as follows:

- Inert
- Mixed
- Wood
- Gypsum; Plasterboard
- Packaging
- Canteen Waste
- Hazardous/Notifiable

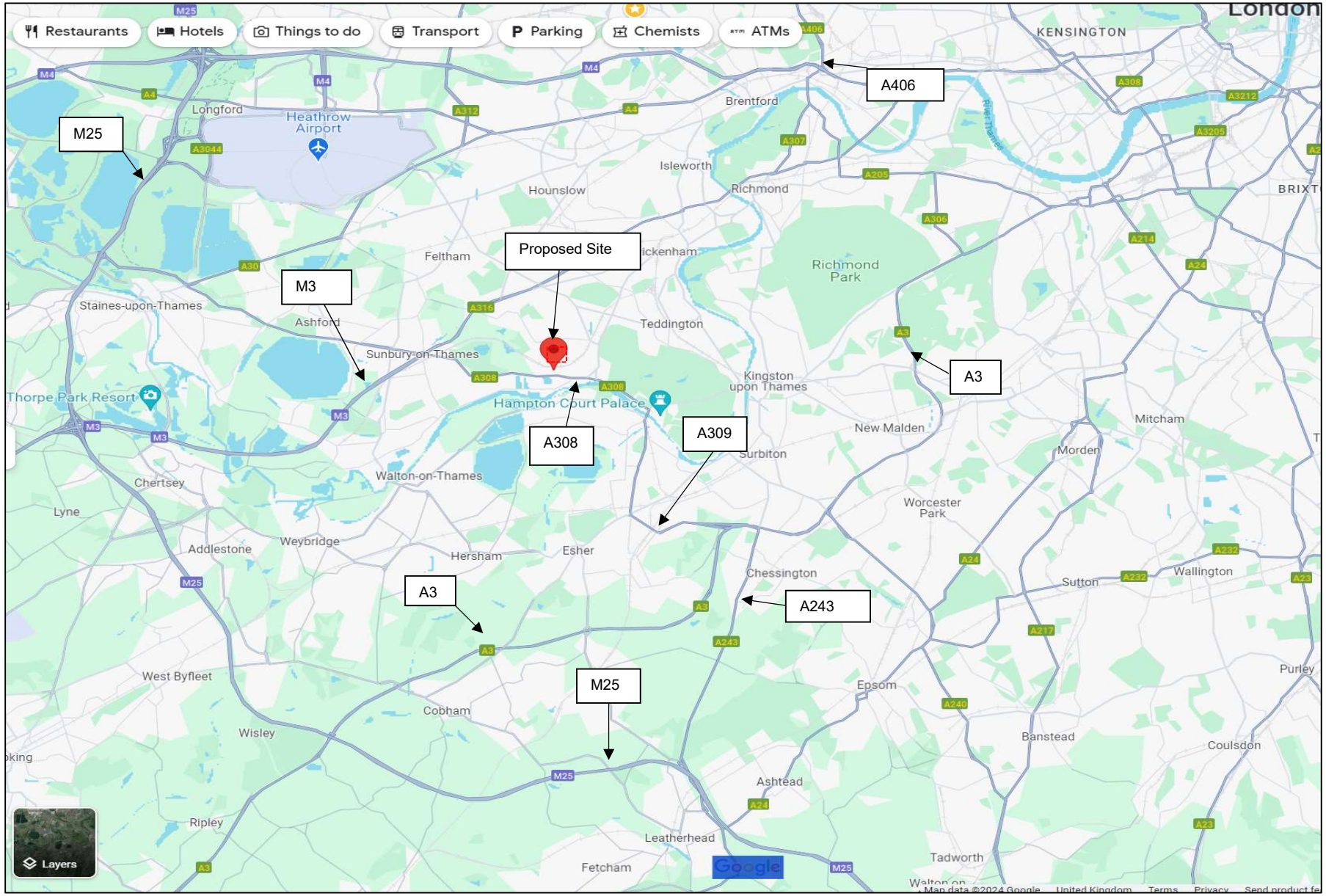
22.12 Colour coded skips will be provided for each of these waste streams.

22.13 Skips provided for the collection of waste will be emptied on a regular basis to ensure that waste is safely and securely contained at all times, to reduce the risk of dust contamination and ensure that waste is not allowed to be stored on the ground. Where there is a risk of dust the skips will be dampened down with water to control and remove any migration of dust.

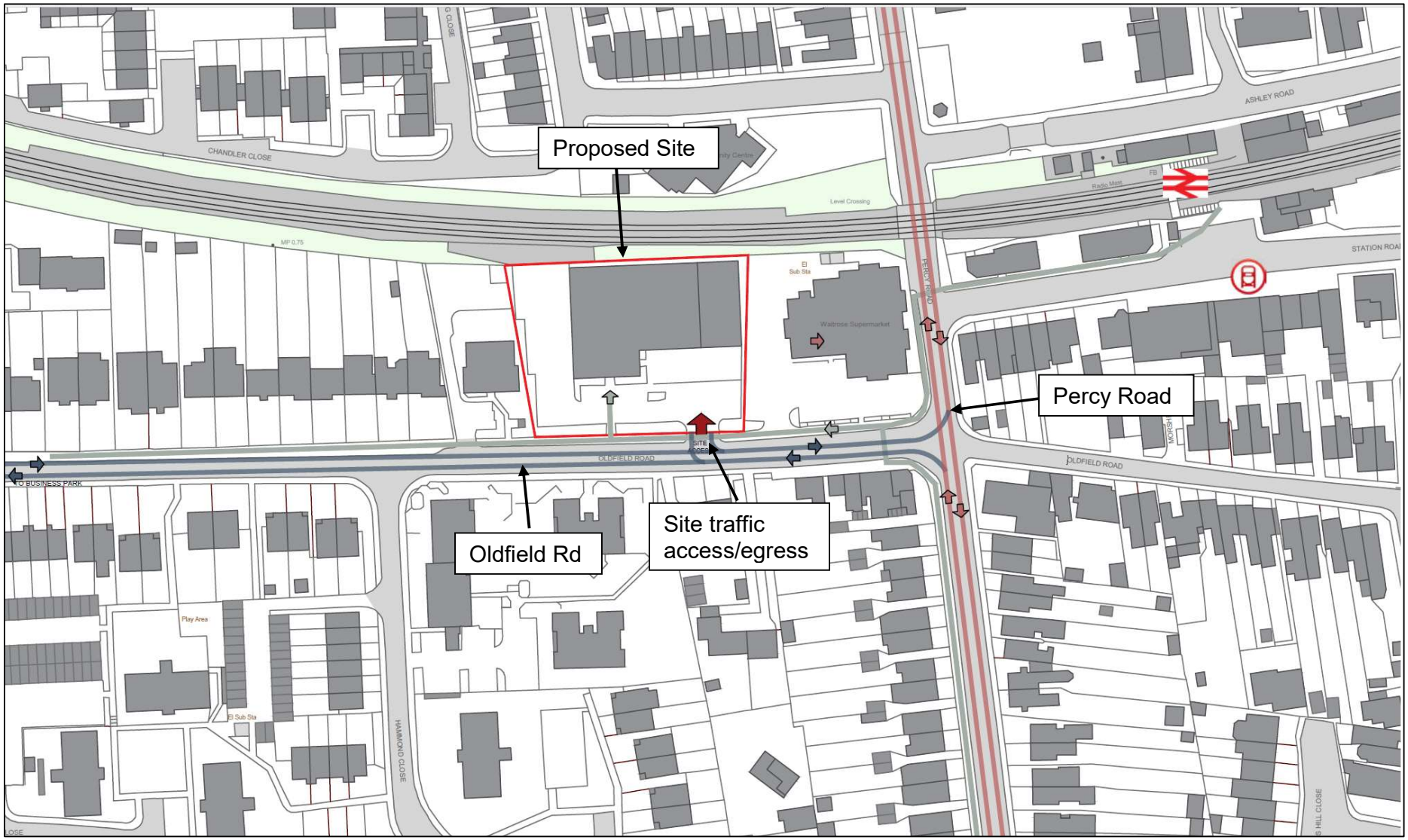
22.14 The waste carrier for this project will ensure that all skips and lorries transporting excavated materials are covered when removing waste from site to control dust pollution. Bins will be stored at ground level and there will be a flat route between the storage area and the point where they will be collected from.

22.15 Concrete foundations/masonry arisings will be crushed on site and reused to form temporary hard standings and pile mats.

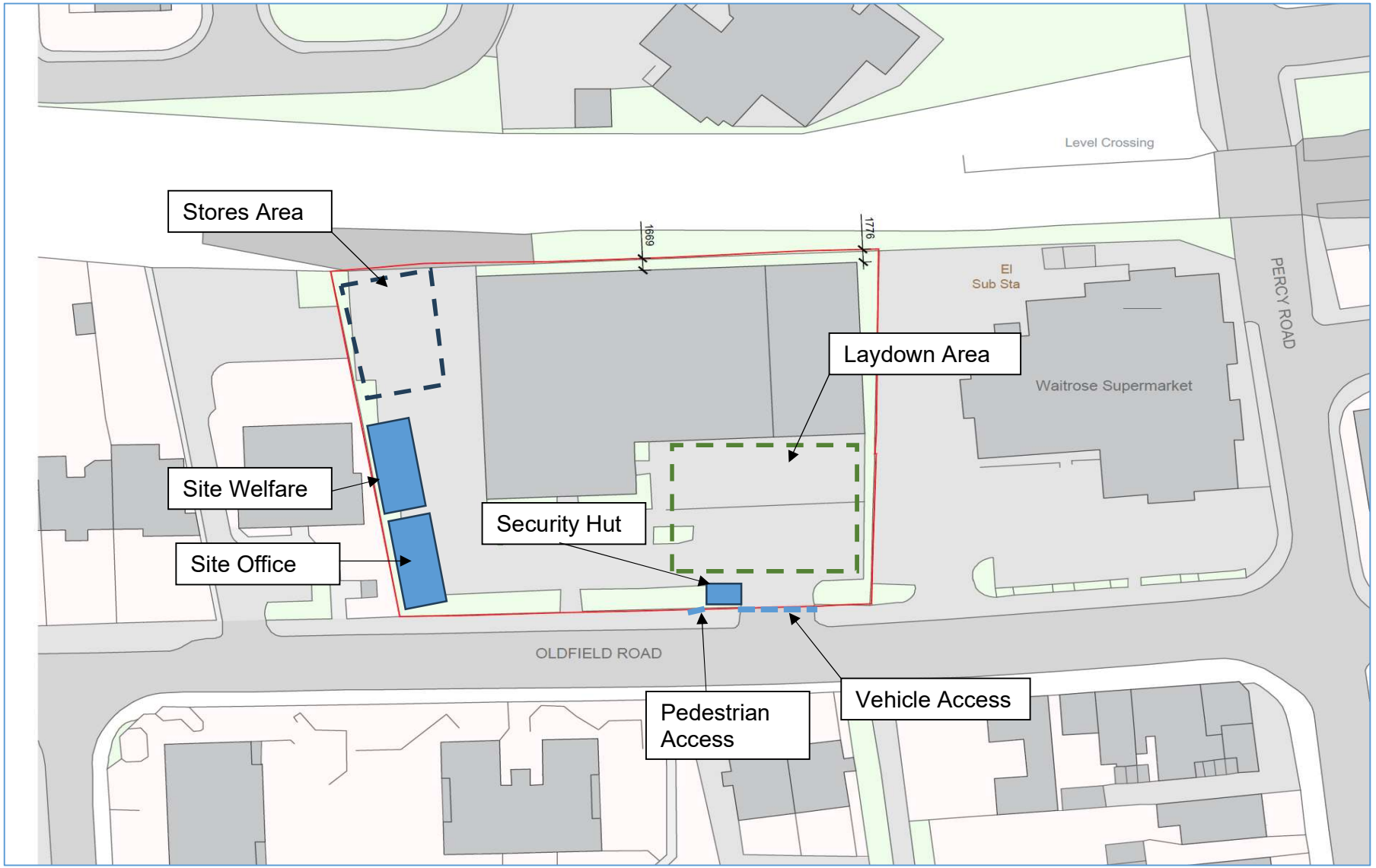
Appendix 1 - Location Plan



Appendix 2 - Detailed Access/Egress Plan



Appendix 3 – Site Layout



Appendix 4 – Projected Major Building Works

Application Reference	Proposal	Application Status	Site Address	Date Valid	Decision	Decision Notice Sent Date

Appendix 5 - Dust Exceedance Trigger, Incident and Complaint (DETIC) forms

Dust Exceedance Trigger, Incident and Complaint (DETIC) Forms					
Ref No		**Date**		**Time**	
Monitor Location					
Trigger					
Levels of Exceedance					

Complaint Details	
Name	
Address **Post Code**	
Contact Details	
Tel	
Email	
Date	
Complaint Ref No	
Complaint Details	
Investigation Details	
Investigatiion Carried Out By	
Position	
Date & Time	
Weather Conditions	
Wind Direction & Speed	
Investigation Findings	
Feedback given to LA	
Date	
Feedback Given to Public	
Date	
Review & Improve	
Improvements need to prevent reoccurrence	
Proposed date for completion	
Actual Date	

Reason for delay if different	
DMP Update Required?	
Date of DMP Update	
Closure	
Site Manager Review Date	
Site Manager Signature	

Appendix 6 - LEZ Vehicle Compliance Form

Date & Time	Contractor/Supplier Name	Type of Vehicle HGV,LGV,Car	Vehicle Registration Number	Fuel Type	LEZ Compliant Y/N	Name of Assessor	Signature of Assessor

Appendix 7 - NRMM Compliance Form

Contractor	Machine Type	Equipment ID	kW	Engine Manufacturer	Type Approval Number	EU Stage	Retrofit Information