Vincam Close

Construction Method Statement

August 2021

DOCUMENT CONTROL SHEET

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Report Prepared For:	NFC Homes
Author	Edward Coate
Signature	
Approved By	Ryan Thrower
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1. INTRODUCTION

NRG have been commissioned to undertake a Construction Management Statement (CMS) for the proposed development at 38-42 Vincam Close, Whitton, Richmond TW2 7AB.

The proposal is described as:

"The demolition of 3 existing houses with the erection of 8 houses".

The proposal follows the Richmond Validation Checklist for new developments. The elements of this checklist are highlighted below, with each solution/validation provided in conjunction with each element, as laid out within this report holistically.

The aims of this CMS are to satisfy the above checklist for planning for the development, and to set out the Code of Construction Conduct for the development, to prevent, reduce and mitigate potential significant environmental impacts and effects, and other potential impacts associated with construction and development.

Validation Checklist Element	Solution / Information
1. The size, number, routing and manoeuvring tracking of construction vehicles to and from the site, and holding areas for these on/off site.	The largest vehicle to be used on site will be an LRIGID vehicle. This has been used for SPA demonstration in Section 7. Section 4 details the construction programme which highlights the number of vehicles on site at one time and weekly deliveries. Manoeuvring of vehicles can also be seen in Section 7. There will be no holding areas for vehicles, no stacking of vehicles, and no simultaneous trips.
2. Site layout plan showing manoeuvring tracks for vehicles accessing the site to allow these to turn and exit in forward gear;	Site layouts for demolition and construction can be seen in Section 4 of this report via Figure 4.1 and 4.2. The SPA in Section 7 demonstrates the movements of vehicles into site in conjunction with the figures in section 4.
3. Details and location of parking for site operatives and visitor vehicles (including measures taken to ensure satisfactory access and movement for existing occupiers of neighbouring properties during construction);	Parking is very limited and there will be no dedicated parking for site operatives and/or visitor vehicles.
4. Details and location where plant and materials will be loaded and unloaded;	Loading/unloading locations can be seen on Figures 4.1 and 4.2. These are located inside the site's perimeter / hoarding area.
5. Details and location where plant and materials used in constructing the development will be stored, and the location of skips on the highway if required	Any plant location on site will be under the discretion of the site manager, these will be stored with material storage. Material storage on site can be seen on figures 4.1 and 4.2 and will be flexible based on the needs of the development. There are currently no plans or proposals for skips on the highway.
6. Details of any necessary suspension of pavement, road space, bus stops and/or parking bays;	There are currently no plans or proposals for the suspension of pavements, road space, bus stops and/or parking bays.

7. Details where security hoardings (including decorative displays and facilities for public viewing) will be installed, and the maintenance of such	Security hoardings will envelope the site to ensure protections of noise and dust as noted in Sections 6 and 8. These security hoardings can be seen on Figures 4.1 and 4.2.
8. Details of any wheel washing facilities;	Wheel washing facilities are not expected to be required as the loading/unloading area exists on hard surfacing. Section 7 describes the process for removal of any unexpected mud and/or debris onto the public highway.
9. Details of a scheme for recycling/disposing of waste resulting from demolition and construction works (including excavation, location and emptying of skips);	Section 8 details the proposals for recycling and disposing of waste on site. Due to the limited demolition at the development of only 3 properties, the extent of re-use of recycled material will be limited.
10. Details of measures that will be applied to control the emissions of noise, vibration and dust including working hours. This should follow best practice detailed within BS5228 : 2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites & Best Practice produced by the Greater London Authority.	Sections 6 and 8 detail the mitigation measures and pollution control practices for the purposes of reducing dust, noise and vibration emissions. Working hours can be found in Section 6.
11. Details of any highway licenses and traffic orders that may be required (such as for licenses for any structures / materials on the highway or pavement; or suspensions to allow for the routing of construction vehicles to the site);	There are currently no proposals for highways licenses and/or traffic orders, or other suspensions to allow for the routing of construction vehicles to the site.
12. Details of the phasing programming and timing of works;	The details of the construction programme, including phasing and the timings of these works, can be found in Table 4.1 in Section 4.
13. Where applicable, the Construction Management Statement should be written in conjunction with the Arboricultural Method Statement, and in accordance with British Statement 5837: 2012 'Trees in relation to design, demolition, and construction – recommendations, in particular section 5.5, 6.1, 6.2, 6.3 and 7;	An arboricultural method statement has been undertaken for this development. The results of this can be found in Section 4 of this report.
14. A construction programme including a 24-hour emergency contact number.	The construction programme can be found in Section 4 of this report. A 24 hour number will work as community liaison number, this can be found in Section 5 of this report.
15. See also TfL guidance on Construction Logistics Plans.	TfL guidance has been used throughout this report.

2. PLANNING POLICY & GUIDANCE

2.1 National Planning Policy & Guidance

2.1.1 National Planning Policy Framework

The updated National Planning Policy Framework (NPPF) for England, released in July 2021, is considered a key part of the Governments reforms to make the planning system less complex and more accessible, to protect the environment and to promote sustainable growth.

The NPPF promotes sustainable transport across the UK, especially at the early stages of planning. Promoting safe road design, and the efficient and sustainable delivery of goods and supplies. Specifically, it makes reference to:

"a) the potential impacts of development on transport networks can be addressed.

b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated.

c) opportunities to promote walking, cycling and public transport use are identified and pursued.

d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and

e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places."

2.1.2 Traffic Management Act (2004)

Managing traffic networks within a council's borough is the prerogative of that council. The Traffic Management Act Part 2 sets this responsibility as the councils to ensure that measures are taken to assess impacts and capabilities of road networks within areas of the UK. This is done to avoid issues relating to congestion and managing the overall road network.

2.2 Richmond Upon Thames Local Plan – July 2018

Policy LP 10

Local Environmental Impacts, Pollution and Land Contamination

A. The Council will seek to ensure that local environmental impacts of all development proposals do not lead to detrimental effects on the health, safety and the amenity of existing and new users or occupiers of the development site, or the surrounding land. These potential impacts can include, but are not limited to, air pollution, noise and vibration, light pollution, odours and fumes, solar glare and solar dazzle as well as land contamination.

Developers should follow any guidance provided by the Council on local environmental impacts and pollution as well as on noise generating and noise sensitive development. Where necessary, the Council will set planning conditions to reduce local environmental impacts on adjacent land uses to acceptable levels.

Air Quality

B. The Council promotes good air quality design and new technologies. Developers should secure at least 'Emissions Neutral' development. To consider the impact of introducing new developments in areas already subject to poor air quality, the following will be required:

1. an air quality impact assessment, including where necessary, modelled data;
2. mitigation measures to reduce the development's impact upon air quality, including the type of equipment installed, thermal insulation and ducting abatement technology;
3. measures to protect the occupiers of new developments from existing sources;
4. strict mitigation for developments to be used by sensitive receptors such as schools, hospitals and care homes in areas of existing poor air quality; this also applies to proposals close to developments used by sensitive receptors.

Noise and Vibration

C. The Council encourages good acoustic design to ensure occupiers of new and existing noise sensitive buildings are protected. The following will be required, where necessary:

1. a noise assessment of any new plant and equipment and its impact upon both receptors and the general background noise levels;
2. mitigation measures where noise needs to be controlled and managed;
3. time limits and restrictions for activities where noise cannot be sufficiently mitigated;
4. promotion of good acoustic design and use of new technologies;
5. measures to protect the occupiers of new developments from existing sources.

Light Pollution

D. The Council will seek to ensure that artificial lighting in new developments does not lead to unacceptable impacts by requiring the following, where necessary:

1. an assessment of any new lighting and its impact upon any receptors;
2. mitigation measures, including the type and positioning of light sources;
3. promotion of good lighting design and use of new technologies.

Odours and Fume Control

E. The Council will seek to ensure that any potential impacts relating to odour and fumes from commercial activities are adequately mitigated by requiring the following:

1. an impact assessment where necessary;
2. the type and nature of filtration to be used;
3. the height and position of any chimney or outlet;
4. promotion and use of new abatement technologies;

Land Contamination

F. The Council promotes, where necessary, the remediation of contaminated land where development comes forward. Potential contamination risks will need to be properly considered and adequately mitigated before development proceeds.

Construction and demolition

G. The Council will seek to manage and limit environmental disturbances during construction and demolition as well as during excavations and construction of basements and subterranean developments. To deliver this the Council requires the submission of Construction Management Statements (CMS) for the following types of developments:

1. all major developments;
2. any basement and subterranean developments;
3. developments of sites in confined locations or near sensitive receptors; or

if substantial demolition/excavation works are proposed.

Where applicable and considered necessary, the Council may seek a bespoke charge specific to the proposal to cover the cost of monitoring the CMS.

Policy LP 45

Parking Standards and Servicing

Parking standards

The Council will require new development to make provision for the accommodation of vehicles in order to provide for the needs of the development while minimising the impact of car based travel including on the operation of the road network and local environment, and ensuring making the best use of land. It will achieve this by:

1. Requiring new development to provide for car, cycle, 2 wheel and, where applicable, lorry parking and electric vehicle charging points, in accordance with the standards set out in Appendix 3. Opportunities to minimise car parking through its shared use will be encouraged.

2. Resisting the provision of front garden car parking unless it can be demonstrated that:

a. there would be no material impact on road or pedestrian safety;
b. there would be no harmful impact on the character of the area, including the streetscape or setting of the property, in line with the policies on Local Character and Design; and
c. the existing on-street demand is less than available capacity.

3. Car free housing developments may be appropriate in locations with high public transport accessibility, such as areas with a PTAL of 5 or 6, subject to:

a. the provision of disabled parking;
b. appropriate servicing arrangements; and
c. demonstrating that proper controls can be put in place to ensure that the proposal will not contribute to on-street parking stress in the locality.

All proposals for car free housing will need to be supported by the submission of a Travel Plan.

4. Managing the level of publicly available car parking to support the vitality and viability of town and local centres within the borough whilst limiting its impacts on the road network.

Freight and Servicing

New major development which involves freight movements and has servicing needs will be required to demonstrate through the submission of a Delivery and Servicing Plan and Construction and Logistics Plan that it creates no severe impacts on the efficient and safe operation of the road network and no material harm to the living conditions of nearby residents.

2.3 Regional Planning Guidance

2.3.1 Supplementary Planning Guidance (SPG)

Control of Dust and Emissions during Construction and Demolition SPG

The Greater London Authority (GLA) released the "Control of Dust and Emissions during Construction and Demolition" SPG in July 2014[1]. The guidance seeks to reduce emissions of dust and PM10 from construction and demolition activities in London. It also aims to manage emissions of nitrogen oxides (NOx) from construction and demolition machinery. The SPG:

- Provides more detailed guidance on the implementation of all relevant policies in the London Plan and the Mayor's Air Quality Strategy to neighbourhoods, boroughs, developers, architects, consultants and any other parties involved in any aspect of the demolition and construction process.
- Sets out the methodology for assessing the air quality impacts of construction and demolition in London; and
- Identifies good practice for mitigating and managing air quality impacts that is relevant and achievable, with the overarching aim of protecting public health and the environment.

The principles of the SPG apply to all developments in London as their associated construction and demolition activity may all contribute to poor air quality unless properly managed and mitigated.

2.3.2 Sustainable Design and Construction SPG

The Greater London Authority (GLA) released the "Sustainable Design and Construction" SPG in July 2014[2]. The SPG aims to support developers, local planning authorities and neighbourhoods to achieve sustainable development. It provides guidance on to how to achieve the London Plan objectives effectively, supporting the Mayor's aims for growth, including the delivery of housing and infrastructure

[1] The Control of Dust and Emissions during Construction and Demolition SPG. Greater London Authority, July 2014
[2] Sustainable Design and Construction SPG. Greater London Authority, July 2014

3. SITE DETAILS

3.1 Site Description

The proposed development is located within the London Borough of Richmond Upon Thames, within Whitton. It lies south of Hounslow and South-East of Heathrow Airport. It lies between two major road pathways, the A316 and the A4. The site is situated nearby to Whitton station, and Hounslow station.

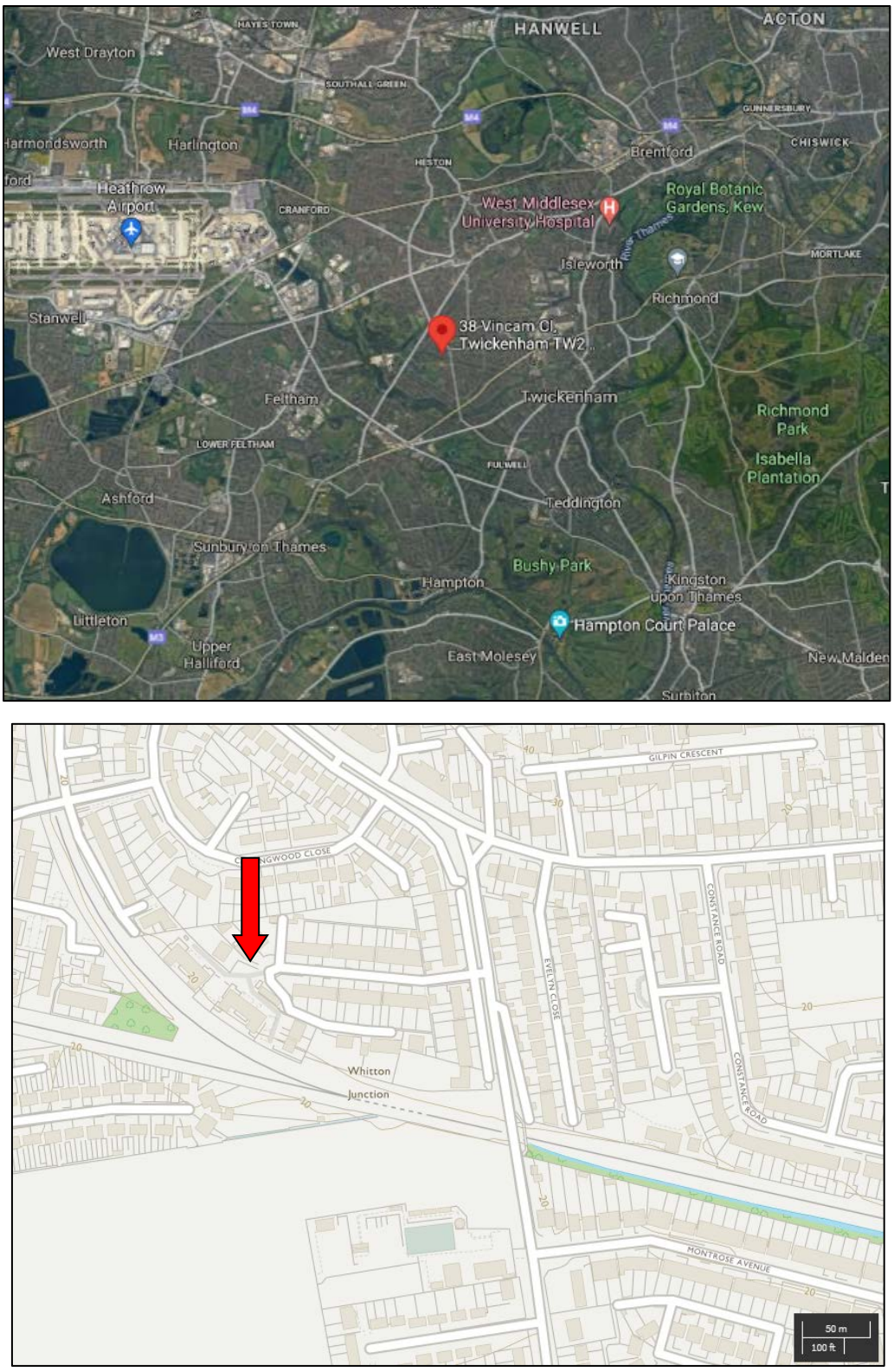


Figure 3.1: Site Location Map (Google Earth / OS MAPs– Accessed August 2021)

4. DEVELOPMENT PROGRAMME AND GENERAL ARRANGEMENTS

4.1 Development Programme

Table 4.1: Indicative Construction Programme

Indicative Construction Programme – 70 weeks				
Activity	Weeks	Staff	No. of Deliveries	Number of Vehicles on Site at One Time
Enabling Works	4	8	5 per week	1
Substructure and Service Works	8	12	8 per week	1
Superstructure	16	15	10 per week	1
Internal Works	14	20	12 per week	1
External Works	8	10	10 per week	1
Final Clean and Snagging	2	10	3 per week	1

Throughout the scope of construction the size of vehicles will vary depending upon the stage of the development and to suit the needs of the development. Currently, it is estimated that the largest vehicle to be used on site would be an LRIGID vehicle, of 18T in weight and 10m in length, this vehicle has been used for projection in the SPA Section of this report to demonstrate vehicular movements for the largest proposed vehicle on site.

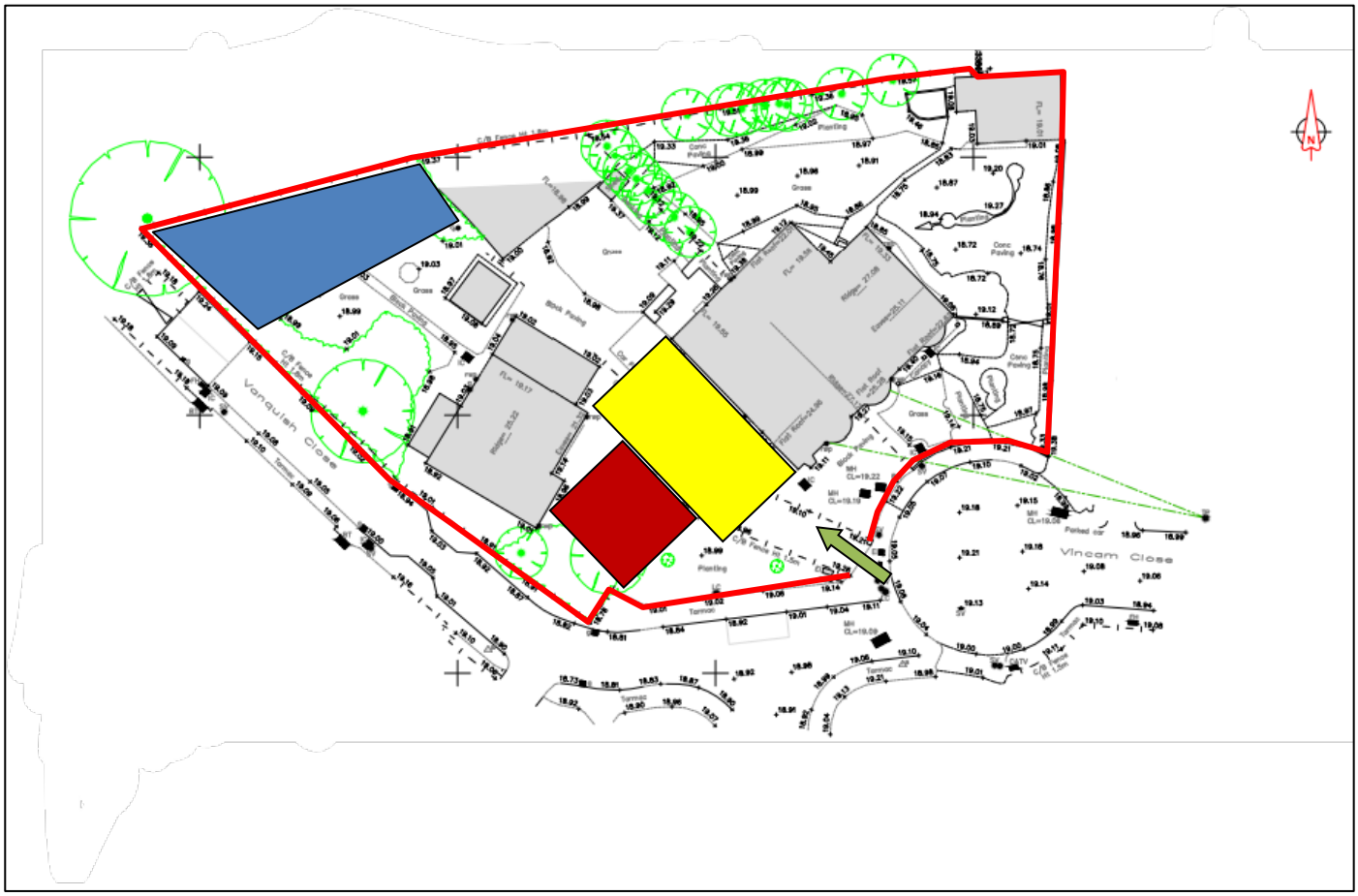
4.1.1 Site Set-up

The following will be completed prior to the commencement of ground works on site:

- Obtain appropriate hoarding licences;
- Site will be setup and hoarding erected;
- All relevant services will be disconnected;
- Soils to be tested/monitored if remediation is required.
- Materials will be stockpiled for processing and removed from site. Where possible, demolished materials will be recycled on-site.

4.2 Access Arrangements

The pedestrian and vehicle access and egress points for the site can be seen on Figure 4.1. This will be directly onto and from Vincam Close to the site. The vehicle transition from the highway to the site can be found in the SPA of this report.



KEY

- Welfare/Offices
- Loading/Unloading
- Material Storage
- Hoarding Line
- Access/Egress

Figure 4.1: Site Plan with key components highlighted – Demolition and Site Set Up

4.3 Materials Unloading/Storage

The loading/unloading point can be seen on Figure 4.1. This will take place just inside the site's perimeter by the main access gate/point. To assist in the safety of loading and unloading operations, as well as any reverse manoeuvres directly into the site's area, suitably qualified banksmen and traffic marshals will assist vehicles during loading and unloading of material. It is not foreseen that the length of stay of vehicles will inhibit the movement of any public or private local vehicles as these will be contained on site at all times.

The area demarcated on Figure 4.1 as 'Material Storage' will interchange dependent upon the needs of the site. It is not foreseen that any off-site storage area will be required.

4.4 Site Layout

- Construction vehicle trips will be coordinated to eliminate the need to make use of any off-site vehicle holding areas.
- The CPM would organise set delivery times for specific suppliers to mitigate simultaneous trips.
- There will be no toleration or planning for simultaneous trips to site.
- There will be no on-site provision for parking for operatives.

4.5 Diversion on the Public Highway

The expected volume and type of construction traffic required for the considered works will not lead to the requirement for diversion of traffic on the public highway. Site operatives will not be permitted to park on the public highway.

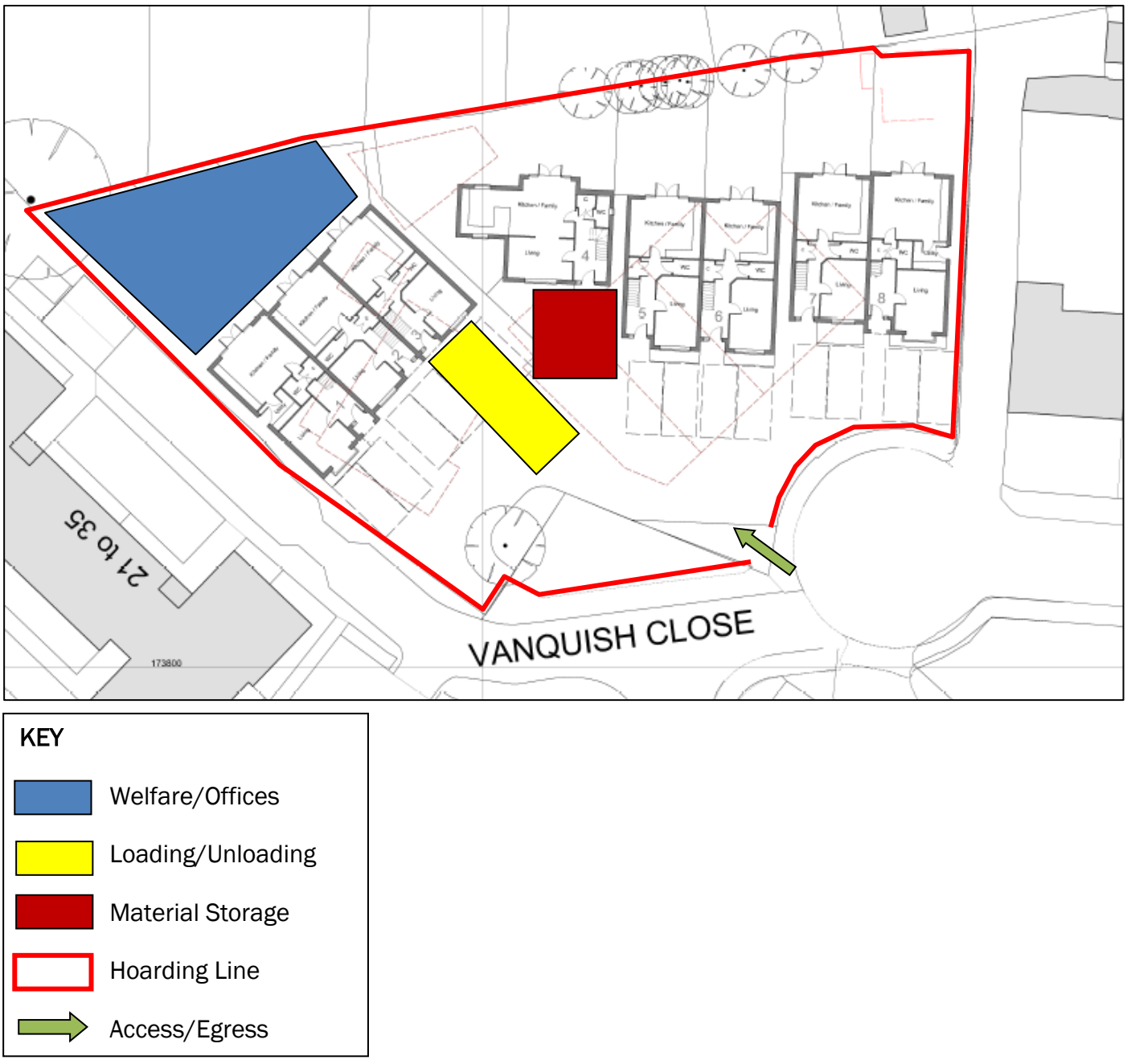


Figure 4.2: Site Plan – Construction / Developed Phase

4.6 Provision for Pedestrians/ Cyclists

There are currently no plans for the provision of alternate routes or closures for pedestrian and/or cycle footpaths or cycleways as these will not be impacted by the site's scope of construction works.

4.7 Demolition

The proposed demolition material will be transported by hand or wheelbarrow to the loading bay where vehicles will take material away from site.

4.8 Construction Hoarding and Scaffolding

- Hoarding will be constructed in accordance with the terms of the Temporary Structure License to be obtained by the Contractor. Hoarding will be erected and dismantled in a safe manner in conjunction with the current legislation (Section 172 of the Highways Act 1980 and Chapter 8 of the Traffic Signs Manual under the New Roads and Street Works Act 1991) and Health and Safety Executive guidelines.
- All site boundaries will be totally enclosed by clean, safe and well-maintained hoardings. These hoardings will be designed to allow the displaying of relevant signage and notice boards to ensure good communication with the neighbouring residents and local businesses.
- 110v bulkhead lights will be installed as part of the hoardings to ensure footpaths, signage and notice boards are well lit. A 2.4m high solid painted timber hoarding and gates will be erected around the site as appropriate.
- The hoardings will, on completion of the works to an appropriate degree, be dismantled.

A Site Safety Notice Board will be located in a prominent position and will be regularly updated. Hoarding and H&S notice boards will be clearly erected with the relevant information displayed. In managing any conflict that might occur between pedestrian and construction vehicles it is relevant to note that construction vehicle activity at the site will benefit from the direction of dedicated (suitably qualified) members of staff who will act as banksmen. The banksmen will ensure that any pedestrians and cyclists making use of the street are aware of the construction activity and associated vehicles at the site and will direct vehicles and pedestrians/cyclists as necessary.

4.9 Trees on Site

An arboricultural impact assessment report by Roberts Arboriculture Ltd (August 2021) has been commissioned for this development. It's conclusions have stated:

"Only small, low value trees are proposed to be removed to facilitate the development. All larger, higher value trees are to be retained and protected during the development."

4.10 Temporary Parking Restrictions

There are currently no plans or requirements to suspend any parking arrangements near the site. Nor suspend any public highways or footpaths.

5. PUBLIC LIAISON

5.1 Site Wide Liaison Strategy

The Developer will nominate a responsible person on site as Site Community Liaison Officer. This individual will be named at all Site entrances and contact details will be provided. The Officer will liaise with Site neighbours and relevant stakeholders on a regular basis to inform them of forthcoming construction activities and timings of abnormal loads, and to establish and maintain good relationships.

Site neighbours will be provided with details of the proposed construction programme and with regular updates on any changes, and specifically of any activities which have the potential to cause nuisance and generate complaints. The Developer will provide community liaison support as and when required. The site manager will be nominated as Edward Brading, who's details are below:

Community Liaison Details	
Name	Edward Brading
Role	Associate Director
Email	ebrading@nfchomes.co.uk
Telephone Number	020 3709 8000

5.2 Complaints Procedure

The Site Community Liaison Officer will make stakeholders aware of the complaints procedure as part of the site wide liaison strategy. The complaints procedure will include the following aspects:

- Providing the day-to-day Site contact details, including telephone and email contact details;
- Setting-up and maintaining a complaints register, which records all correspondence/telephone contact from the general public or stakeholders;
- Classifying the nature of correspondence (e.g. complaint, enquiry, comment);
- Assigning required action to an appropriate member of the Developer management team or site team;
- Ensuring close-out of actions and updating of the complaints register with a record of all actions and outcomes.

Where incidents are reported, and remedial actions are required or in the event of complaints, Richmond Borough Council Environmental Health Department will be copied into all correspondence as this will enable Richmond Borough Council to pinpoint areas for improvement in the future and also to highlight good practice to be carried forward in future projects.

6. SITE MANAGEMENT

The Principal Contractor will be requested to adhere to the management measures described in this section of the Plan. The Contractor will be a member of the Considerate Constructors Scheme. Table 6.1 below outlines the management measures. The principal contractor shall be *Kenny and Reynolds*

Table 6.1: Management Measures

Management Measures	Details
Construction Project Manager (CPM)	– CPM details will be displayed at the site should local residents/ members of the public have any concerns that they wish to raise. – Relevant Officers at Richmond Council will be issued with the above details after the contract is awarded. – Any issues raised relating to the construction works will be taken seriously and will be addressed promptly by the CPM. Safety signs and notices will be displayed at all access and egress points as well as at suitable locations across the site. Such boards will display: – the project particulars – contact details of relevant persons – site access and egress procedure – site rules – emergency procedures – health and safety information. The Principal Contractor will make sure that works vehicles cause minimal obstruction or inconvenience to the operation of the local public highway and local residents by strict adherence to the measures set out in this Plan. Site management will be responsible for seeing that all plant and materials are stored safely and securely after the workday ends. The Principle Contractor will also be responsible for implementing an effective procedure to deal with complaints from third parties to ensure issues are dealt with efficiently and quickly, via an advised and dedicated telephone number.
Site Working Hours	The Principal Contractor will adhere to conventional working hours which include: o Monday-Friday 8:00-18:00 o Saturdays 8:00-13:00 o Sunday and bank holidays- not permitted Unless otherwise instructed by Richmond Borough Council. Builders will be required to provide written justifications to Richmond Borough Council if any deviation from the above working hours is proposed. – The works outside normal hours will not commence until Richmond Borough Council confirms all agreed variations in writing, and further mitigation measures may be required for out-of-hours noise control. – All suppliers will be informed of the site's hours of operation and any contractor's arriving after the identified deadlines will be turned away.
Good Housekeeping	The Principal Contractor will follow a 'good housekeeping' policy at all times. This will include, but not necessarily be limited to the following: – Ensure considerate site behaviour of the Contractor's and all sub-contractor staff; – Prohibit open fires; – Ensure that appropriate provisions for dust control and road cleanliness are implemented; – Remove rubbish at frequent intervals; – Frequently inspect, repair and re-paint as necessary all site hoardings to comply with the conditions of the relevant Hoarding License. All flyposting and graffiti are to be removed as soon as reasonably practicable and within 24 hours of notice from Richmond Borough

	Council: – Maintain toilet facilities and other welfare facilities for staff; – Remove food waste; and – Prevent vermin and other infestations.
Induction / Site Rules / Consultation	Each person accessing the site will receive a project specific induction, which will provide an introduction to the project, a description of the project risks and a review of the individual's competency. Site access passes will only be distributed following the formal site induction from the CPM. All site operatives and visitors will be inducted prior to commencement on site in a clearly defined facility without exception. The induction process will include the following: – Expected behaviour toward others on site; – Drugs and alcohol policy; – Identification of smoking areas; – PPE and safety issues; – Welfare facilities and use thereof; – Security Issues; – Emergency procedures; and – Good and bad practice. The Principal Contractor will provide site inductions in languages other than English where appropriate and site signage in picture format to assist communications.
Health and Safety	To minimise risk and control exposure, the Principal Contractor will provide input at the early detailed design stage on all activities. The Principal Contractor will ensure that all the H&S procedures are diligently monitored throughout the project. Regular "tool-box talks" will be undertaken by the Principal Contractor and sub-contractors, highlighting relevant health and safety issues as the works progress. **First Aid** Sufficient numbers of qualified First Aiders will be in attendance on-site at all times. Sub-contractors will be required to provide First Aid trained staff, who will clearly be identified by badges.
Construction Activities	Construction will be carried out in accordance with details and risk assessments approved by the Principal Contractor's site management and in accordance with this CMS.
Site Security	**Lighting** – Construction lighting will be sited so as to minimise visual intrusion and light spillage / pollution at nearby residential units, in so far as is consistent with the site safety requirements. – The Principal Contractor will comply with the Institute of Lighting Engineers document 'Guidance notes on reduction of light pollution' (2000) to a degree that is practicable and applicable to the construction works. – Adequate security shall be implemented to prevent unauthorised entry or exit from the site. Site gates will be closed and locked when there is no site activity, whilst accesses will be manned during work periods. **Fire Escape Routes** Fire escape routes, fire-fighting stations, alarm points, muster points and practice drills within the works will be as per the Principal Contractor's standard health and safety procedures and agreed with the local fire officer, all operatives and sub-contractors. **Public Safety** The safety of the public and protection of pedestrians will be ensured at all times by having the construction area, materials storage areas and waste storage areas, either hoarded or fenced with lockable access. Relevant signage will be erected to ensure adequate warning/ information regarding the health and safety of the general public. **Emergency Access** Access for emergency services during the works will be via the same entrance/exit at the site as this is the only available access point. Local emergency services will be notified of the access points before work starts on site and in good time in the event that access arrangements are altered during the works.

	The emergency services will be carried out in accordance with on-site emergency procedures.
Asbestos	An Asbestos survey will be completed at the early detailed design stage. If any Asbestos is present, this will be removed by licensed contractors only, and only after submission of the 14-day notice (ASB5) to the relevant authorities. The Health and Safety Executive (HSE) will be notified of the works prior to implementation and subsequent to completion of asbestos removal method statements. All works areas will be sealed off from members of the public. The HSE will be notified on form NNLW1.
Management of Pollution/ Dust Control	The site will implement suitable measures to ensure minimal dust pollution, with the Principal Contractor overseeing the detailed measures to be implemented in this respect which include the following (discussed in detailed in Section 6.0): – Ensuring that all relevant materials transported to and from site are in enclosed containers or fully sheeted; – Ensuring stock piles of topsoil etc. are kept below hoarding heights and kept damp in dry windy – conditions; – Making sure all dust generating materials are adequately packaged; – Keeping the loading drop heights of soil into lorries as low as possible; and – Establish air quality procedures to minimise dust generation and control plant and vehicle dust emissions. Any environmental issues raised by local residents or members of the public will be addressed as a matter of priority.
Management of Noise/ Vibration	The Principal Contractor will adhere to the key legislation on noise and vibration as detailed in the following documents: – Control of Pollution Act 1974; – Environmental Protection Act 01990 (ss 79-82); – BS 5228:2009 Code of Practice on Construction and Open Site. Site operations will be controlled so that all plant and machinery noise emissions (including the provision of ventilation, heating and cooling) shall be designed, installed and operated at noise levels that do not cause nuisance to the nearest adjoining residential units. Specific construction management measures are discussed in Section 6.0.

7. CONSTRUCTION TRAFFIC MANAGEMENT MEASURES

The Construction Project Manager (CPM) will take ownership of the final/approved CMS and will ultimately be responsible for implementing the measures set out therein. The CPM will contact Highways Officers of Richmond Council prior to commencement of works to agree any final matters should any further concerns arise.

7.1 Vehicle Call Up Procedure

- Pre-arranged delivery times will be set by the CPM and will be strictly adhered to completely eliminate the possibility than one delivery vehicle will access the site at any one time.
- Drivers will be required to make contact with the site 30 minutes before arrival to ensure a clear space.
- The above requirement will form part of all contract documentation with suppliers.

7.2 Co-ordination with Domestic Waste Collections

- The Principal Contractor, all sub-contractors and suppliers will be made aware of the existing collection activity and will ensure that waste collection vehicles are not unduly obstructed by the construction works.
- Priority will be given by banksmen to waste collection vehicles where relevant.

7.3 Wheel Washing/ Highway Cleaning

Any mud or debris that might find their way onto the public highways will expeditiously be removed by a dedicated member of the Principal Contractor's staff.

7.4 General Traffic Management

The following general measures will be in place:

- All parties to sign In & Out (name / time) at main entrance;
- A daily record of visitors will be kept on site;
- Deliveries to site will be restricted between the hours of:
- 8.00am to 6.00pm Monday to Fridays;
- 8.00am – 1.00pm Saturdays and no other times, including Sundays and Public Holidays; and
- Trade Contractors are to submit material delivery requests to the Construction Project Manager a minimum of 24 hours in advance.
- The Principal Contractor, once appointed, is to liaise with all sub-contractors to inform them of the agreed vehicle routes to and from the site;
- The Contractor is to notify all suppliers that no waiting or queuing is permitted on local roads;
- No vehicles will be left unattended. No stacking of vehicles or parking within on-street parking bays is permitted. Vehicles not adhering to the above can and will be turned away by the Contractor;
- maintain safe control of traffic and deliveries on the public highway;
- A banksman will be provided to manage all loading activity. The banksman will additionally be tasked with ensuring that pedestrian/ cyclist access can be safely provided whilst works are taking place;
- Site operatives are not permitted to park on the public highway.

7.5 Swept Path Analysis

A swept path analysis was done for the site, projecting an LRIGID vehicle on site, this vehicle has been shown to have no issue entering the main area outside the site (Vincam Close) in forward gear, performing a turn manoeuvre, then reversing locally into the site's area, and leaving in forward gear again onto the main road. Figure 7.3 below demonstrates this vehicle movement.

This vehicle has been chosen for a swept path analysis as it is the estimated largest vehicle to be featured on site throughout each stage of construction during the project.

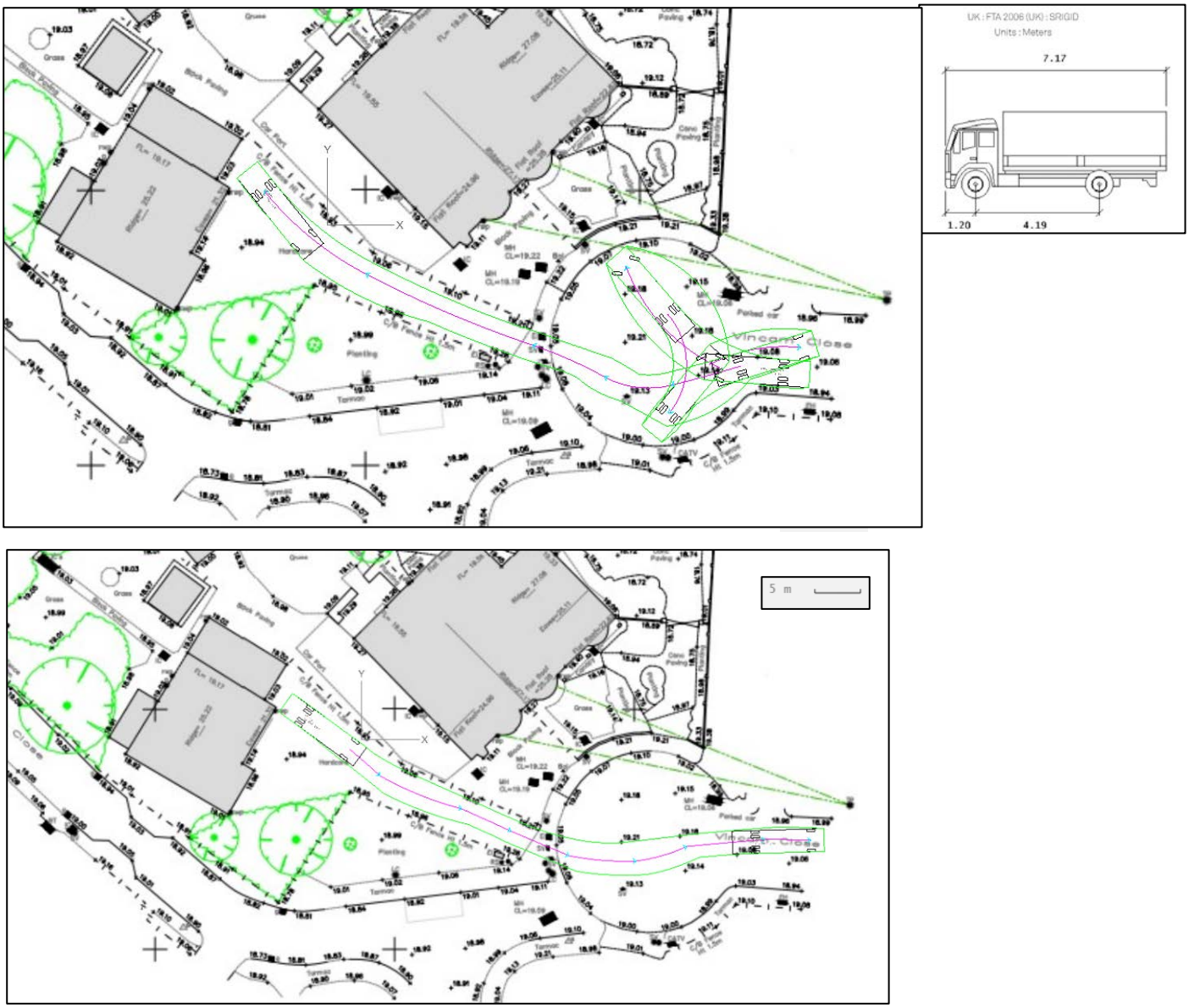


Figure 7.3: Swept Path Analysis (Access: Top. Egress: Bottom.)

8. POLLUTION AND WASTE MANAGEMENT MEASURES

8.1 Pollution and Dust Control

The Principal Contractor will be required to take all necessary measures to avoid creating a dust nuisance. The Contractor will in this respect adhere to relevant guidance relating to dust control set out in the following documents:

- 'The Control of Dust and Emissions from Construction and Demolition; Best Practice Guidance' (2006) - GLA;
- 'Controlling particles, vapour and noise pollution from construction sites' (2003) - Building Research Establishment.

The Contractor will strictly follow the dust controlling measures set out below:

- Water based dust suppression practice will be followed;
- No dry sweeping of large areas will be allowed;
- Public roads and access routes will be kept clean, using wet sweeping methods;
- No burning of waste materials will take place on site;
- All dust control equipment will be maintained in good condition;
- All vehicles carrying loose or potentially dusty material will be fully sheeted;
- Bulk cement and other fine powder materials are to be delivered in enclosed tankers and stored in silos;
- Any mixing of concrete (or similar) is to take place in designated areas (enclosed or shielded);
- Materials with the potential to produce dust will be stored away from site boundaries (where practicable);
- Sand and other aggregates will be stored in bunded areas;
- Material stockpiles will be sheeted, sealed or damped down;
- Water suppression will be used during demolition operations;
- Rubble chutes and conveyors will, where reasonably practicable, be enclosed;
- Drop heights from conveyors, loading shovels and hoppers will be minimised;
- The frequency of site inspections, when activities with a high potential to produce dust are being carried out, will be increased.

8.1.1 Vehicle and Non-Road Mobile Machinery Emissions

- The use of Ultra-Low Emission Vehicles (ULEV) (e.g. Euro VI (HGV), Electric, Hybrid (Electric-Petrol) will be considered by contractor; works will be with suppliers that can provide with Euro 6 vehicles, and preferably electric or hybrid vehicles where possible.
- Subcontractors will be required to comply with the use of ULEV where practicable. The contractor will contact suppliers to request that low emission and non-diesel vehicles, as well as hybrid or electric excavators be used on site where practicable.
- Emissions from non-road mobile machinery (NRMM) with net power between 37kW and 560kW used on site will meet the Stage IIIA of the EU Directive 97/68/EC and its subsequent amendments as a minimum. This will apply to both variable and constant speed engines for both NOx and PM.
- All eligible NRMM will meet the standards above 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. In this situation every effort will be made to use the least polluting equipment available including retrofitting technologies to reduce particulate matter emissions.
- An inventory of all NRMM will be kept on-site stating the emission limits for all equipment. All machinery should be regularly serviced and service logs kept on-site for inspection. This documentation should be made available to local authority officers as required.

8.2 Noise/ Vibration

The Principal Contractor will monitor and control levels of noise and vibration from the site as far as is reasonably practicable, so that residents and other sensitive receptors are protected from excessive noise and vibration levels arising from construction activities. The Principal Contractor will apply Best Practical Means (BPM), as defined under Section 72 of the Control of Pollution Act (COPA) 1974 to all activities.

Where applicable and possible, the following measures will be used to minimise the noise levels at the site, including:

- Coordinated delivery times and efficient traffic management to prevent queuing of traffic accessing the site;
- Limiting activities that may give rise to the highest noise levels, as well as HGV deliveries to the Site to the hours 08:00 to 18:00 Monday to Friday and 08:00 to 13:00 on Saturdays;
- Strict adherence to the site working hours;
- Planning all mass concreting operations for weekends whenever possible;
- Operating plant at low speeds where possible and incorporating automatic low speed idling;
- Undertaking breaking out of concrete structures, where possible, using low noise impact methods including using bursting and splitting rather than percussive breaking;
- Using 'silenced' plant and equipment wherever possible and maintaining plant on a regular basis;
- Using appropriate piling techniques and consulting with local residents as required;
- Switching off vehicle engines where vehicles are standing for an extended period of time;
- Minimising disturbance from reversing bleepers through measures such as site layout, provision of screening or use of broadband sound emitting reversing alarms;
- Utilisation of acoustic hoarding as appropriate;
- Implementing an action plan where noise levels exceed acceptable levels;
- Positioning plant away from properties;
- Machines not in use will be throttled down to a minimum;
- Cutting operations will be kept off site as much as possible by pre-fabrication; and
- Localised shrouding of plant in accordance with BS5228.

Periodical noise surveys will be carried out at perimeter of the site and the findings will be recorded.

Site construction measures will be designed and planned to avoid the generation of vibration, or where vibration is unavoidable, to control vibration at source. Any piling, which tends to be the greatest source of ground-borne vibrations, will use techniques that minimise vibration and noise.

As is the case for noise, contractors will be required to ensure that works are carried out in accordance with BPM as stipulated in the Control of Pollution Act 1974. Mitigation measures will include the following, where possible:

- Using continuous flight auger techniques;
- Undertaking compaction via vibrating rollers wherever possible;
- Replacing plant and/or work methods producing significant levels of vibration by less intrusive plant or techniques;
- Locating stationary plant, such as generators, pumps and compressors away from sensitive receivers and installed on resilient mountings;
- Locating vibrating equipment as far from sensitive receptors as possible;
- Providing cut-off trenches to interrupt the direct transmission path of vibrations between the source and receiver;
- Reducing the energy input of hammer-driven piles in order to reduce vibration caused;
- Using pre-boring and mudding to reduce the vibration levels from piling and to reduce the risk of collapse of the sides of the bore;
- Using bottom-driven techniques rather than top-driven ones to reduce the produced vibration levels (although this might result in a slower production rate);

- Certifying plant to meet any relevant EC Directive standards;
- Undertaking awareness training for all contractors in regards to BS 5228 (Parts 1 and 2) which will form a prerequisite of their appointment; and
- Maintaining a mitigation plan, to include justification for sitting of plant, types of plant selected, periods of use, working hours, access points, schedule of works likely to cause complaints (if not pre-notified), as and when required.

8.3 Waste Management

In addition to the above provisions, the following measures will be taken to reduce any further negative effects on the environment:

- Promoting reuse, recycling and recovery of waste, rather than disposal;
- Monitoring disposal, re-use and recycling of waste by keeping a full audit trail of waste removed from the site (in accordance with Waste Duty of Care regulations);
- Increase environmental awareness of the workforce and site management;
- Containers will be clearly labelled for segregated waste streams;
- Storage will take place in appropriate areas to prevent material spoilage and contamination;
- Volatile materials will be stored in appropriate containers within secure compounds in accordance with good site practice and regulatory guidelines;
- Waste generated will be taken to a local recycling centre/ outlet;
- A waste estimate template should be utilised to record estimates of the levels of re-use, recycling and recovery of waste at the site; and,

The Principal Contractor is to provide evidence of recycling by means of a waste data receipt/ form, which will be forwarded on to the Construction Project Manager.

The Construction Project Manager will deal with any complaints from local residents and businesses. To this end, contact details of the CPM will be displayed at the site.

The CPM will also review the CMS on a monthly basis and will update the plans/details in the CMS as required. This will take into account local residents, businesses and Council views on how the operation may be improved. Any significant changes to the CMS will be reported to Department of Planning at Richmond Borough Council by the Principal Contractor. It is highlighted that the Principal Contractor will be a member of the 'Considerate Constructors Scheme'.

8.3.1 Surface Water Discharges

Discharges to surface water will only be permitted with prior consent from the EA. Contractors will consult the developer and Richmond Borough Council prior to any activity resulting in discharges to the aquatic environment. As such:

- Detailed method statements for water management, which incorporates treatment and consents will be prepared.
- The Contractor will maintain a register of all discharge consents and contractors will be responsible for complying with discharge consent conditions.
- No sewage or trade effluent, including vehicle wash waters, steam cleaning, pressure wash or other effluents will be discharged to the surface water system.
- In the event that drainage and effluents from dewatering activities arise and require discharge, these will be treated in accordance with EA requirements e.g. through suitably sized settlement lagoons or tanks to remove the suspended solids.
- All contractors will be prohibited from washing out tools or equipment or disposing of surplus materials to surface water drains.

9. SUMMARY AND CONCLUSIONS

This CMS has considered the likely construction activity resultant from the development and has been prepared in accordance with and Richmond Council guidance.

This CMS has considered construction vehicle access to the site on local roads in the context of existing geometry. Such consideration has not relied on swept path analysis of relevant construction vehicles in informing the suitability of the site access and any requirements for parking bay suspension. These have concluded that large vehicles can enter the site, but will not be able to turn on site, and then leave site in reverse gear.

Loading/unloading will take place inside the development, with vehicles reversing onto the site and performing loading/unloading operations contained inside the development. It has been demonstrated that use of this area will not materially impact on existing 'through' traffic on Vincam Close.

Suitable measures have been identified in this Plan which will be implemented at the site with a view to reducing the traffic impact of the works on the public highway and to ensure the safety of other road users (both pedestrian and vehicular). Measures have also been outlined that will reduce the impact of the works on local residents and businesses with appropriate measures identified to reduce noise and dust impact.