



# Construction Management Plan

## The Powerhouse, Old Vinyl Factory



### Discharge of Planning Condition No 12

DATE: 08<sup>th</sup> November 2019

| Document Name                 | Rev No. | Prepared by  | Reviewed by     | Date       |
|-------------------------------|---------|--------------|-----------------|------------|
| Construction Method Statement | P3      | Claire Smith | Bradley Viglino | 08/11/2019 |



The Project Manager shall assign suitably competent personnel from the site management team to undertake monitoring and recording duties identified in this plan.

*Responsibilities shall be detailed on below.*

| <b>Name &amp; Mobile Telephone No.</b>  | <b>Role</b>                                         | <b>Responsibilities</b>                                 |
|-----------------------------------------|-----------------------------------------------------|---------------------------------------------------------|
| <i>Bradley Viglino<br/>0754 2239592</i> | <i>Projects Manager</i>                             | <i>Overall Responsibility for site</i>                  |
| <i>Claire Smith<br/>07415725579</i>     | <i>Quality and<br/>environmental<br/>management</i> | <i>Environmental inspections<br/>and management</i>     |
| <i>Edel Corrigan<br/>+353 861894345</i> | <i>Health and Safety<br/>manager</i>                | <i>Health and safety inspections<br/>and management</i> |

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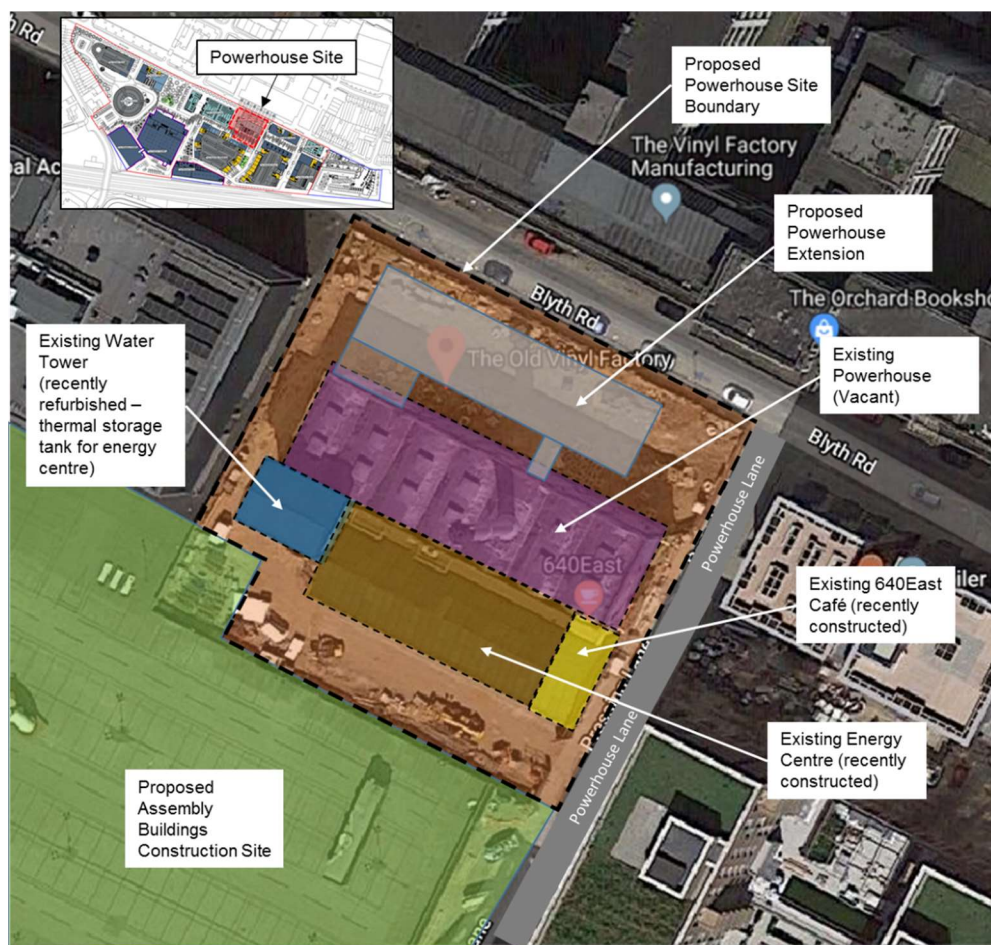
## 1 Condition No.12: Construction Management Plan

### 1.1 General

This Construction Management Plan (CMP) has been prepared to support the planning conditions (Planning Ref 59872/APP/2019/784) for the proposed development of the site known as The Power House, Old Vinyl Factory.

The CMP will be a live document throughout the life of the project and as such it will be developed and updated as the project progresses, the updating will be via the various method statements, logistics plans, site notices/administrative documentation etc. all of which will be available for inspection on site.

The site is situated in Hayes within the The Old Vinyl factory, central to the UTC, The Boiler House, The Material Store and the proposed Assembly Buildings.



## 1.2 Purpose & Scope of CMP

This CMP provides the procedures to be followed by the management, contractors and subcontractors and outline the intended methods of construction. This document is intended to complement Flynn associated documentation, including

- Construction Phase Health & Safety Plan;
- Construction Logistics Plan;
- Environmental Management Plan;
- Site Waste Management Plan.

The document will demonstrate how construction materials can be delivered, and waste removed in a safe, efficient and environmentally friendly way.

In addition, it will consider where deliveries could be reduced, re-timed or consolidated during busy periods. This will include considering the construction operations at other construction sites in The Old Vinyl Factory locality.

The document will assess the impact of the construction upon the surrounding location, including public roads, and explain the arrangements for ensuring that the workforce and public remain safe throughout the project. The document also presents the environmental and transport issues associated with the construction works.

It relates to the Powerhouse development only. A separate management plan will be prepared for the Vinyl Square development.

## 2 Site Development and Description

### 2.1 Construction Description

Consideration is being given to the development of this site address: The Powerhouse (formerly Neptune House), Blyth Road, Botwell, Hayes, Middlesex, UB3 1HA.

The project comprises the strip out and making good of the existing Powerhouse, demolishing and reconstructing the basement and ground floors then installing the internal frame and mezzanine upper floors to provide office space. The façade improvement will involve the installation of crittal style windows and refurbishment of the existing brickwork façade.

The Powerhouse will be extended with the provision of a new and linked premises on the northern side of the existing Powerhouse building.

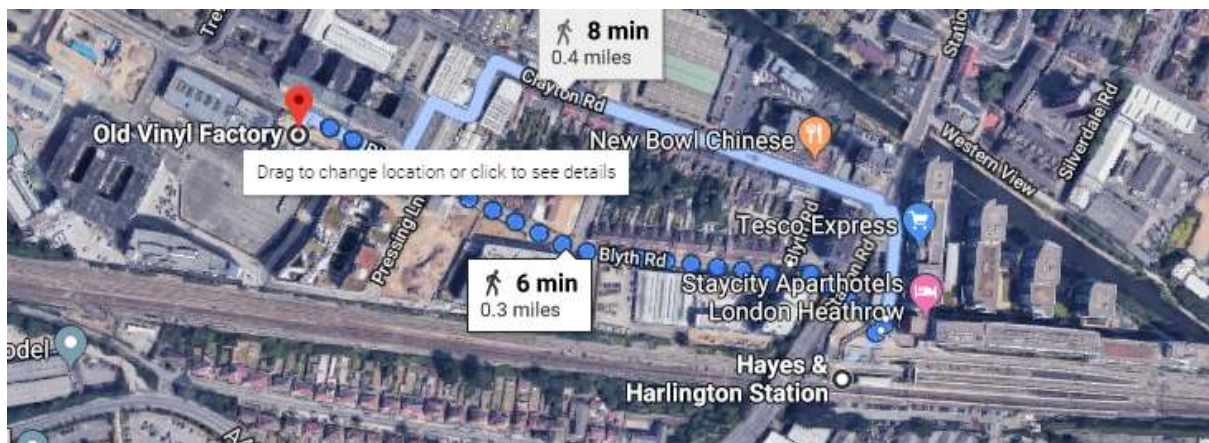
The construction comprises a timber clad, framed extension with extensive ground floor glazing to provide further office space.

There will also be provision for air handling equipment within the roof valley between the Powerhouse and the Energy Centre.

The former 640 East Café will be refurbished to provide additional offices and event centre and a new Café will be provided in the new extension.

The external works will include full hard and soft landscaping works to the surrounding areas and between the buildings.

Hayes and Harlington Main Rail station is situated 0.3 miles in an easterly direction and is a 6 minute walk from the proposed development.



## 2.2 Constraints

There are some established constraints to accessing the Site, notably the following:

- Due to the nature of the site, parking is limited. There will be no contractors parking allowed on site due to the limited space available as well as the surrounding residential area as this is permit parking only. There will be minimal parking on the Blyth road. Contractors will be encouraged to utilise public transport to site due to the good transport links. The use of shared scheme's such as car-pooling will also be encouraged and information will also be provided on bus and train links.

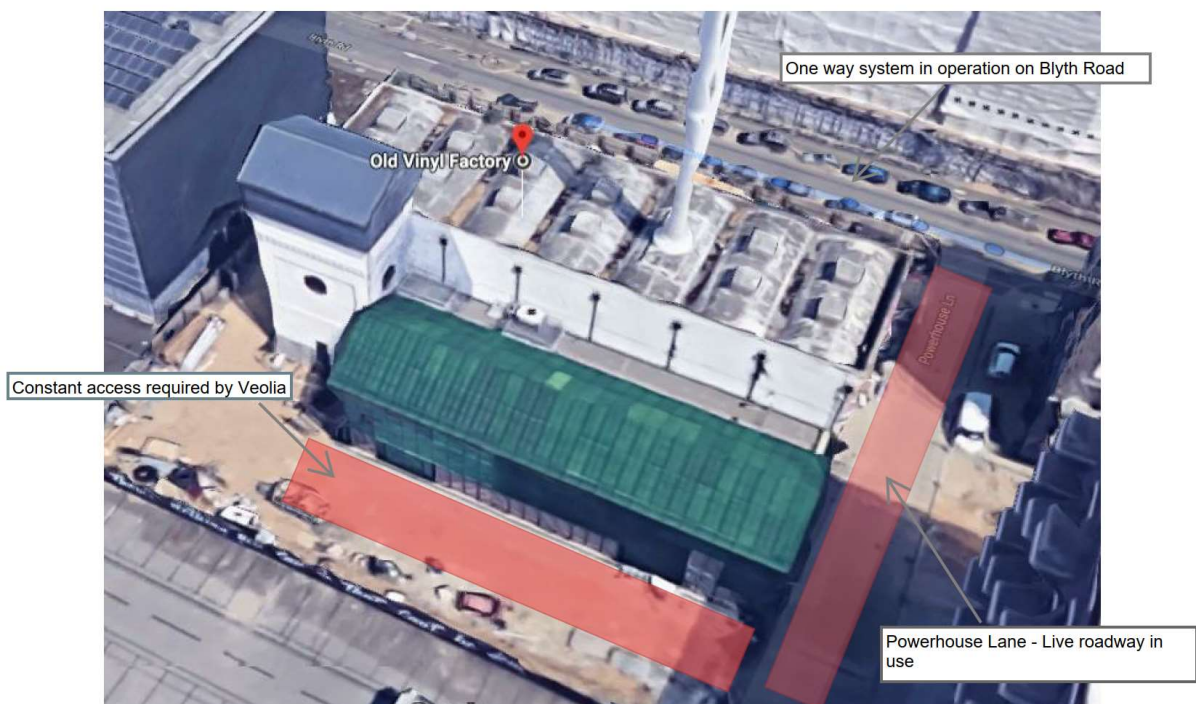
- General access to the site is via Blyth Road, which operates as a one-way system in a westerly direction. Deliveries of equipment and materials shall be planned to avoid school runs and other busy times.
- The site access road to the south of the Energy centre is to remain free at all times to allow access for Veolia to the Energy Centre. A special access arrangement will be established with them to provide access after-hours and weekends if the need arises.

## 2.3 Potential Receptors

Key potential receptors that could be affected during construction include:

- Residential properties to the east of the proposed development and along the Blythe Road.
- The University Technical College to the west of the proposed development

### Site Constraints

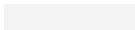




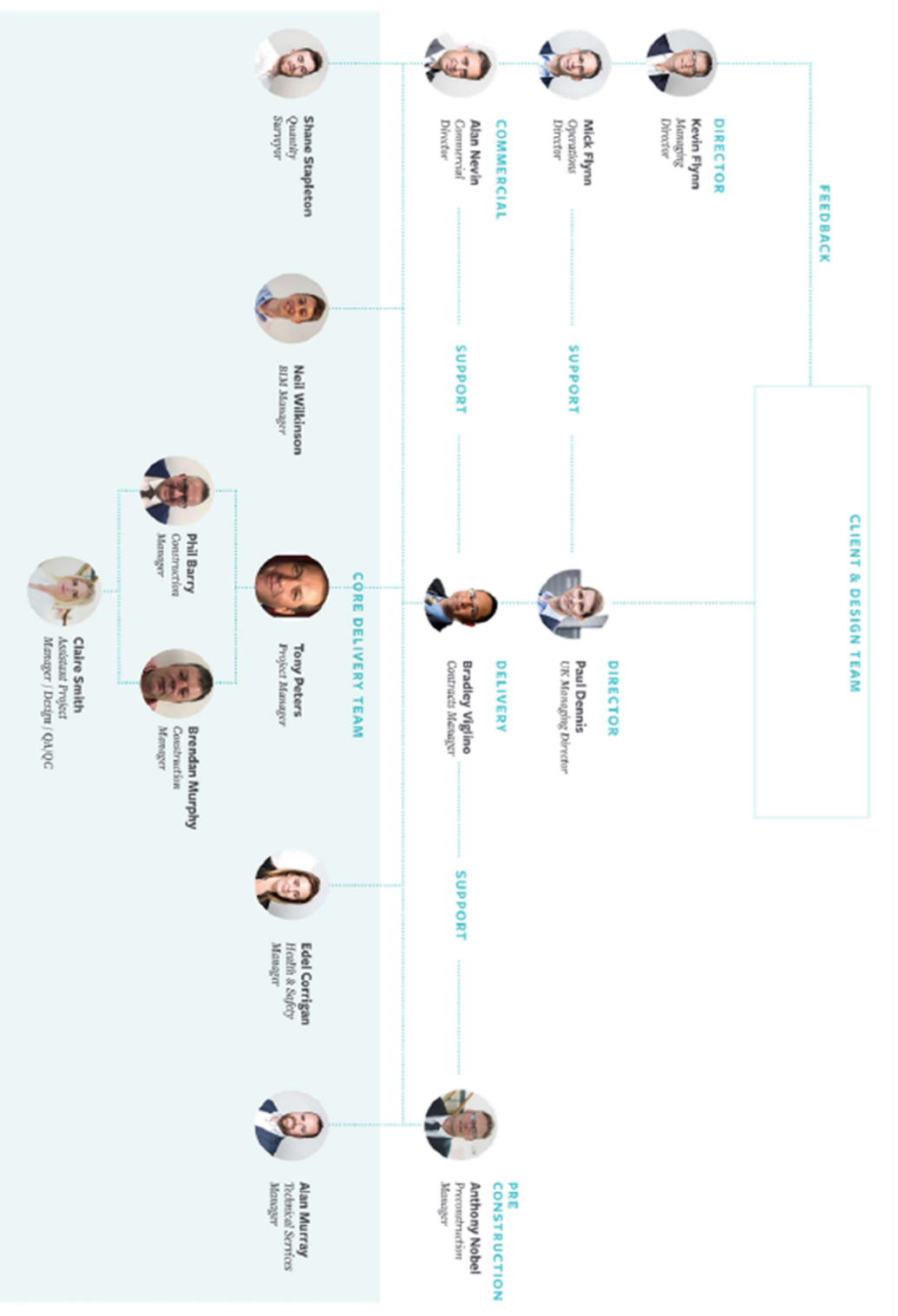
### **3 Construction Programme & Phasing of Works**

#### **3.1 Management Structure**

Flynn Management & Contractors will employ a full-time site team for the duration of the project. The overall delivery responsibility for the project will be Bradley Viglino and he will be assisted by the management team as outlined below. Each member of the team carries with the skills required to assist the safe and timely running of the scheme as a whole.



London  
Project  
Team



## 3.2 Proposed Working Hours

Our proposals are based on working hours between:

- 08.00 to 18.00 hours Monday to Friday and
- 08.00 to 13.00 on Saturdays, in accordance with the planning condition working hours' restrictions.

We do not envisage working outside these hours except for special circumstances which may include weekend erection and dismantling of protection scaffolds and services diversions. Site operations including deliveries will not take place outside of these hours without the prior agreement of the Council and will be conditional on the Principal Contractor informing local residents in advance of the proposed deliveries.

## 3.3 Construction Programme & Sequencing

The overall construction programme is anticipated to last for just over 9 months

- **Provisional Start Date:** January 2020
- **Anticipated End Date:** October 2020

The Construction Management Plan has been planned around the need to minimise impact on local residents and also to keep existing businesses operational. Flynn fully notes the sensitivities of the residential areas adjacent to the Site and the potential concerns arising due to the construction of the development.

### 3.3.1 Programme Overview

Flynn Management & Contractors has prepared a robust and detailed set of programmes, schedules, site set-up and traffic management drawings for the Powerhouse project as follows.

Our sequence of working will generally follow that shown on our master programme, along with our programme, this document provides a detailed explanation of our approach and methodology to demonstrate the phasing of the works from pre-commencement activities, construction, testing, commissioning and handover of the completed project.

Furthermore, the following narrative demonstrates that our programme is very specific and fully integrates the management of preconstruction, design development, procurement and construction delivery. The detailed and specific programme outlines all activities and milestones, and are broken down as per the key specialists / trades.

### 3.3.2 Enabling Works (to be completed by Jan 20)

The client has appointed an enabling works contractor to carry out the following:

- Drainage diversion works
- New foundation works to the Extension Building
- New Basement and Ground floor enabling works to the existing Powerhouse
- Asbestos Removal
- Demolition works

Preparation of all documentation in relation to discharge of a planning conditions will be undertaken during this stage.

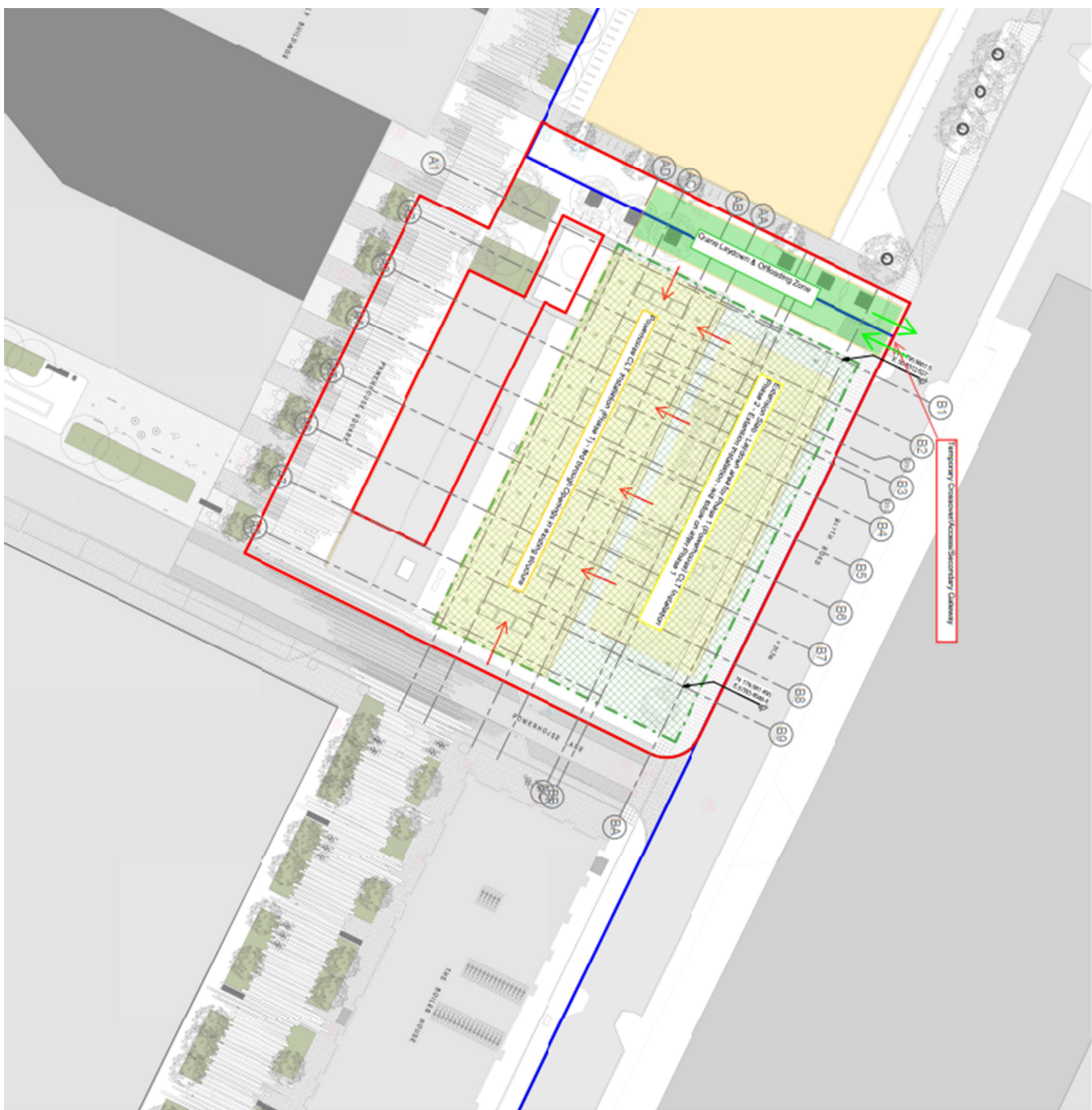
#### Programme of Reusable & Deleterious Materials:

- Asbestos removal will be completed by a specialist, Westland Environmental and will take the form of Quilling, which is very similar to sand blasting. Please refer to their detailed plan of works. This will be disposed of by the correct means as a licensed contractor.
- The removal of the existing concrete ground floors and basement slabs will be crushed off site for reuse as hard core in future hard standing areas. This will be processed/crushed off site due to the limited space availability and dust.
- Larger opening being created for the new windows will create surplus bricks which will be used for the façade repair works.
- All parapet copings will be removed prior to the new roofing works, cleaned and reused.
- Any glazed tiles internally will be saved, stored and reused
- The external façade will be cleaned, repointed and brought up to a good standard of quality that will retain the original character of the building

### 3.3.3 Structural Frame Works and new Internal Structure: (Feb 20 – March 20)

Once all the enabling works have been completed, the installation of the timber Glulam/CLT frame will commence.

The internal installation of the mezzanine floors to the Powerhouse will last approximately 3 weeks, thereafter, the extension building frame will then be installed with an approximate time scale 3 weeks.



### 3.3.4 Façade Works: (Feb 20 – June 20)

The Façade works will commence as soon as the frame has been constructed. This involves the following:

- Existing Powerhouse Brick Façade refurbishment works as soon as scaffolding is erected
- Curtain Walling installation to new Extension building at ground floor level
- SFS and Timber cladding to 1<sup>st</sup> floor level of new Extension Building
- Installation of Crittal Style windows to the existing Powerhouse

### 3.3.5 Internal Fit Out Works: (April 20 – September 20)

Internal fit out works will commence once we are weathertight, which will be reached sooner on the existing Powerhouse Building and will involve the following:

- Installation of staircases
- Drylining works
- M&E works
- Raised Access flooring
- Carpentry and Joinery Items
- WC cores fit out
- Metalwork and Balustrading

### 3.3.6 Landscaping works: (August 20 – Sep 20)

Landscaping works will be programmed in conjunction with the entire development phasing and will be completed in accordance with the planning conditions.

### 3.3.7 Commissioning Programme:

A detailed Commissioning Programme will be developed in line with our M&E design and works schedule.

### 3.3.8 Labour/Resource Programme:

Furthermore, Flynn Management & Contractors during pre-commencement stage, will compile a detailed labour and resource programme which is in line with the main programme where resources are uploaded to each task bar in the programme. Labour Histograms for the project have been can then extracted from the Resource Programme.



## 3.4 Quality Control

### 3.4.1 Quality Control:

Flynn Management & Contractors has a Quality Management System in place fully compliant to ISO 9001:2015. This ensures that our quality system, checking, documentation control and record keeping are in line with the highest standards within the industry. We are also registered with the International Certification Network. Measures for ensuring quality are met through our Quality and Procedures Manual which detail all our organisation systems responsibilities, inspection and test plan procedures, which are fully described to ensure that all essential inspection requirements are determined and satisfied throughout all phases of the works.

### 3.4.2 Check Sheets, Witnessing Sign Off

Flynn Management & Contractors has a full suite of check sheets to ensure that each element of the works is checked, signed off and is fully compliant with the Works Requirements, Specifications Drawings and all contract documents. For each and every activity there is a proforma quality control sheet that will be signed off by both our own personnel and those of the Subcontractors / Specialists. Each element of the works will be signed off and witnessed every step of the way by all relevant parties. This will safeguard and ensure that all works is fully compliant and fit for its intended purpose.

In terms of MEP, the Services Coordinator and Commissioning Manager will be responsible for inspecting, witnessing, testing and signing off all stages of the Building Services installation prior to following trades closing up or advancing their works. They will ensure that all installations are in accordance with the design and governing standards and regulations. Flynn Management & Contractors will keep and maintain a copy of all relevant check certificates. The Client Design Team will be provided with no less than 5 working days' notice prior to the performance of a test to allow them to witness the testing.

### 3.4.3 Samples Mock-Ups

Flynn will provide a range of Samples and Mock-Ups that have been identified in order to allow the Client Design Team to review the design, quality of proposals and establish compliance and quality control criteria and benchmarks for elements of the works. We will produce these items in good time for proper review and comments to be returned prior to manufacture / order / installation dates. All approved samples / mock-ups will be retained on site in a controlled environment for comparison with the products and materials used in the work throughout the entire contract.



## 4 Health & Safety

### 4.1 General

#### 4.1.1 Method Statements

Flynn Management & Contractors will ensure all subcontractors undertake a site-specific method statement. It is Flynn policy that it must be provided by the individual subcontractor for the execution of their works. These method statements will be signed off by Flynn prior to the work starting and must include all COSSH and risk assessments as required for the safe execution of the work. All method statements must be reviewed by the subcontractor every month and where amendments are made they must be issued by the subcontractor to Flynn suitably titled as such stating the exact amendment to the document. If at any point the subcontractor is deemed to be working outside of the controlling document his work will be stopped until the amendment is made and agreed by Flynn.

#### 4.1.2 Temporary Works

Flynn will ensure that all temporary works required for the works are to be timely approved by a qualified structural engineer who holds appropriate professional indemnity insurance cover and appointed by the subcontractor. Approval by the subcontractors engineer must be made / received prior to the subcontract works or phase of the subcontract works commencing on site.

#### 4.1.3 Site Operatives

Flynn will ensure all personnel will be competent and hold relevant CPCS / CSCS accreditations. The supervisor must as a minimum have obtained a Construction Skills Site Supervisors Safety Training Scheme Certificate (SSSTS) operatives that can understand English and simple instruction if not he must provide an interpreter at the induction and the non-English speaking operatives must be accompanied by an English-speaking operative whilst on site.

## 4.2 Site Compound

### 4.2.1 Site Inductions & Pedestrian Access Control

A security restricted turnstile access will be provided as the sole means of pedestrian entry to site. Before being permitted to work on site, all staff and operatives will attend a site-specific induction where they will be made aware of site facilities, site procedures and site rules.

### 4.2.2 Parking

There will be no on-site parking, apart from short duration site deliveries which will be coordinated with the site team to ensure minimum disruption to the surrounding area.

All personnel will be encouraged to use public transport where at all possible. The closest train station is Hayes and Harlington with an extensive bus network also in existence.

### 4.2.3 Security

We will adequately safeguard the site, the works, products, materials, plant, and any existing buildings affected by the Works from damage and theft. Issues such as noise, pollution and nuisance will be kept to an absolute minimum so as not to infringe on the rights of neighbouring owners/tenants.

Site entry will be restricted to personnel solely involved in the construction process during working hours and also to prevent unauthorised access out of hours. Site access for all personnel and visitors will be strictly controlled and all visitors will report to the site offices prior to entering the construction area.

All personnel and visitors entering the site will be required to sign-in and made aware of safety issues associated with the construction process and emergency procedures to evacuate the site as part of the site-specific induction.

All visitors will be issued with safety helmets and any other appropriate protective clothing will be escorted by a responsible member of the site team.

## 4.2.4 Welfare Facilities

We will provide fully functional and compliant temporary site accommodation arrangements as part of our site set-up.

We will provide sufficient facilities for all parties including all Employer's staff as required. These will include separate male/female and disabled toilets, drying rooms including lockers, fully resourced changing facilities and canteen in accordance with current regulations.

## 4.2.5 Compound

We will provide temporary hoardings/netting/screens around all work areas and maintain these to the highest standards for the duration of our work. This will ensure that construction works are always secure from unauthorised access and segregated from the public. We will agree the type, finish, extent, layout and decoration of all hoardings, nettings screens, with the Client prior to commencement on site.

Hoardings will be 2.4m high and comply with the HSE booklet HS (G) 151 "Protecting the Public" to the satisfaction of the Employer and the Local Authority. The hoarding design and erecting works will be carried out by a qualified hoarding contractor. Weekly inspections of the hoarding will be carried out by our Site Managers as part of the checks to all on site temporary works.

## 4.2.6 Fire Escapes

During the proposed works clear access will be maintained around the site to ensure access for any emergency personal.

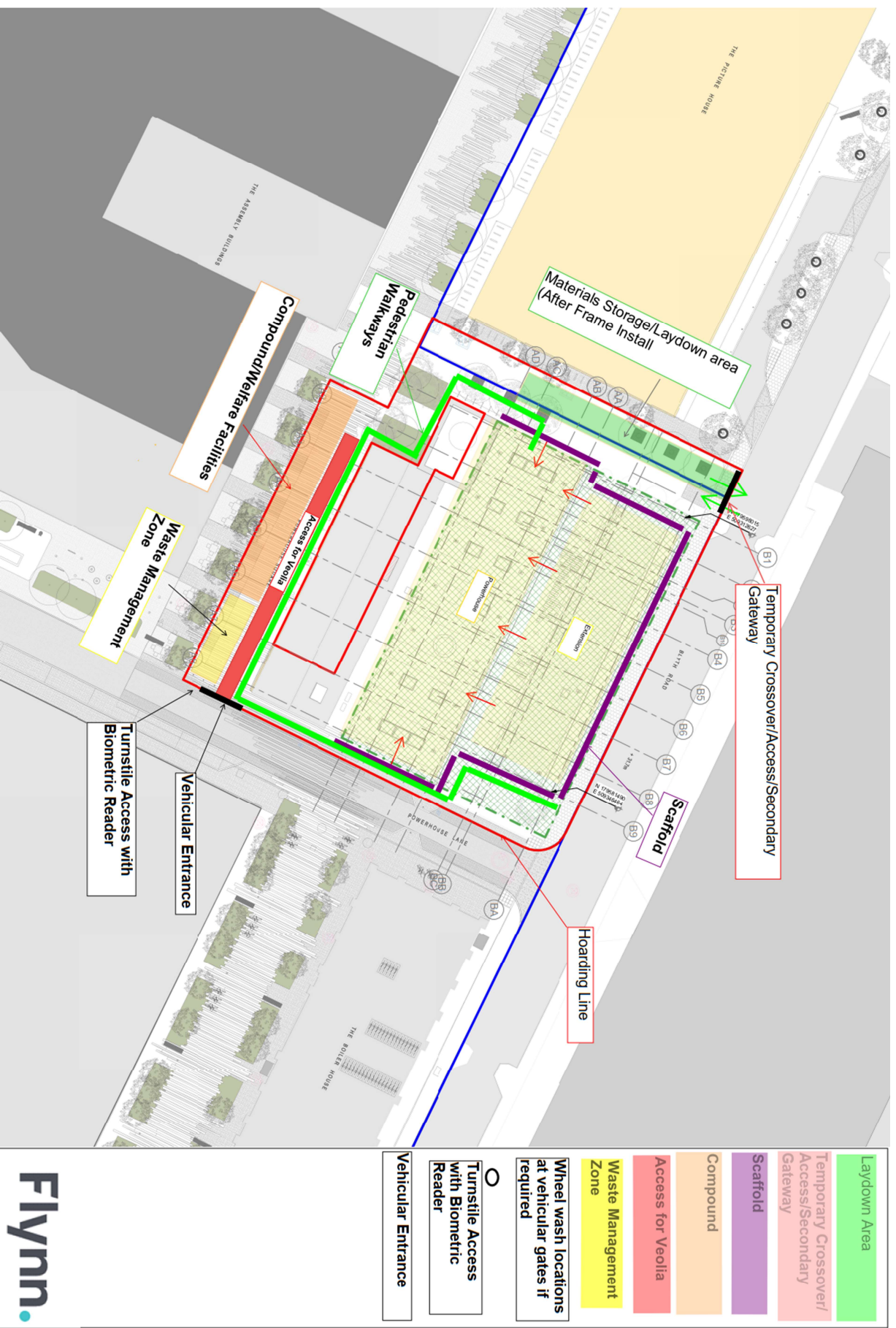
Throughout the works the Project Manager will ensure that the local Fire Brigade is kept up to date with the progress of the works and ensure that they are fully aware of site access arrangements.

The site will maintain a current Fire Risk assessment and Fire Plan and routine evacuation exercises will be carried out.

Specialist Fire precautions will be established as the building contains a Timber/CLT frame.

The site is self-contained and as such it is not anticipated that the construction activities will impact upon the access for emergency services to the site and surrounding properties.

We will at all time maintain 2 means of access from any floor within the building as per current regulations.



## 5 Neighbourly Liaison

We acknowledge that many parties will have an interest in this project throughout the duration of the contract. Our presence during the construction phase will have a direct impact on the local environment, particularly the following:

- Planning Authority
- Building Control
- Environmental Health
- Utilities providers
- Adjacent properties
- Residents committee
- Local law enforcement
- Fire service

Our Project Manager will be responsible for project strategic liaison whilst the Site Managers will be responsible for day to day liaison and logistics for all of the construction related activities. Both will be permanently based on site with the Managers as the first point of contact for all concerns, issues and complaints.

Any complaints received will be logged, assessed and appropriate action taken as soon as is practical. We will actively seek liaison with all parties throughout the pre-construction and construction periods. It will be critical to the success of the project that key issues are properly addressed from the outset to create a good working relationship and an integrated team approach to resolving potential issues before they arise.

Workshops and forums will be held on a regular basis to maintain open relationships and keep stakeholders up to date on construction progress and its impact on all third parties.

Newsletters, liaison meetings, progress photos, organised site visits are all methods we will use to communicate how we intend to carry out the works and keep people informed. This process is part of the Considerate Constructors scheme that we automatically register with, and by which we are independently monitored and assessed.

Contact details will be displayed as well as 24 hour out of hours contact for emergency purposes.

## 5.1 Considerate Constructors Approach

We are a Member of the Considerate Constructors scheme and have established a good reputation as a considerate constructor working on similar size developments in congested sites. We recognise the importance of interface between our construction sites and the public, and take into account safety, cleanliness, considerate behaviour, cooperation and care. This approach is applied to all our projects, which are registered with the Considerate Constructors scheme.

We confirm that the works shall comply with statutory and regulatory standards current at the time of financial close, unless specifically derogated. The applicable standards and regulations that shall apply include: relevant sections of the Building Regulations, relevant sections of the applicable British and/or European Standards, Equality Act 2010, relevant requirements of the Water Supply (Water Fittings) Regulations 1999, relevant Institute of Electrical Engineers (IEE) guidelines, relevant Institute of Plumbing and relevant HSE guidance.

Method statements, risk assessments, and similar guidelines will be produced and developed in accordance with our environmental and health and safety procedures. Prior to commencement of any works, an on-site survey will be carried out to establish and confirm the position and depth of all buried services and utilities.

We are aware of the impact of the construction works, restricted access and the combined potential nuisance factors of noise, dust and vibration may have on the surrounding environment. As such, we will actively seek to minimise this impact through the selection of sympathetic plant and methods. We will maintain a clean environment and keep public roads free from mud and debris, etc.

All site personnel, including delivery drivers, will be briefed to ensure that they respect the local environment and maintain a high level of conduct throughout all the construction works. This will include wearing acceptable clothing and courteous behaviour to the general public. They will be encouraged to use the welfare facilities provided by us for meals and to use public transport to minimise the use of private vehicles.

This plan will be reviewed through the on-going monitoring strategy, to ensure that it remains relevant to the identified matters as the project progresses. This will be in conjunction with the Council, local parties (businesses, schools, etc.) and local residents.

## 6 Transport Strategy & Delivery Management

### 6.1 General

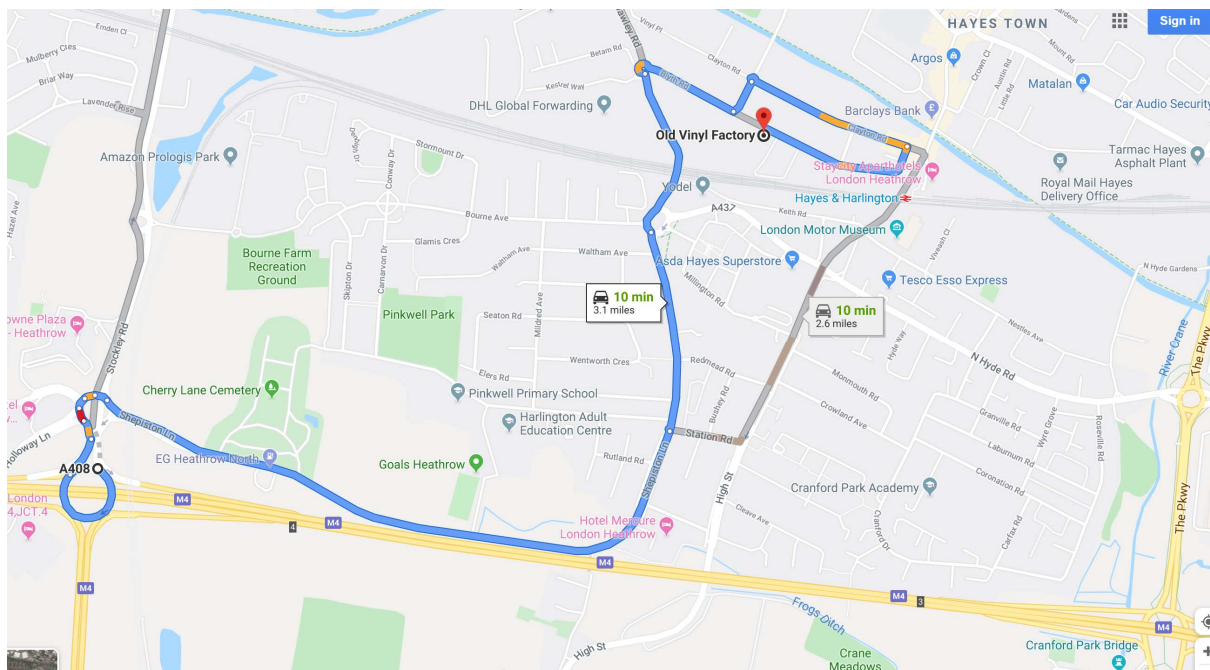
A traffic management plan will be implemented on the site. The plan will outline timings of deliveries and routes to be taken by hauliers to minimise disruption to local residents and businesses. This includes the potential risk for noise disturbance as well as minimising additional traffic during peak periods.

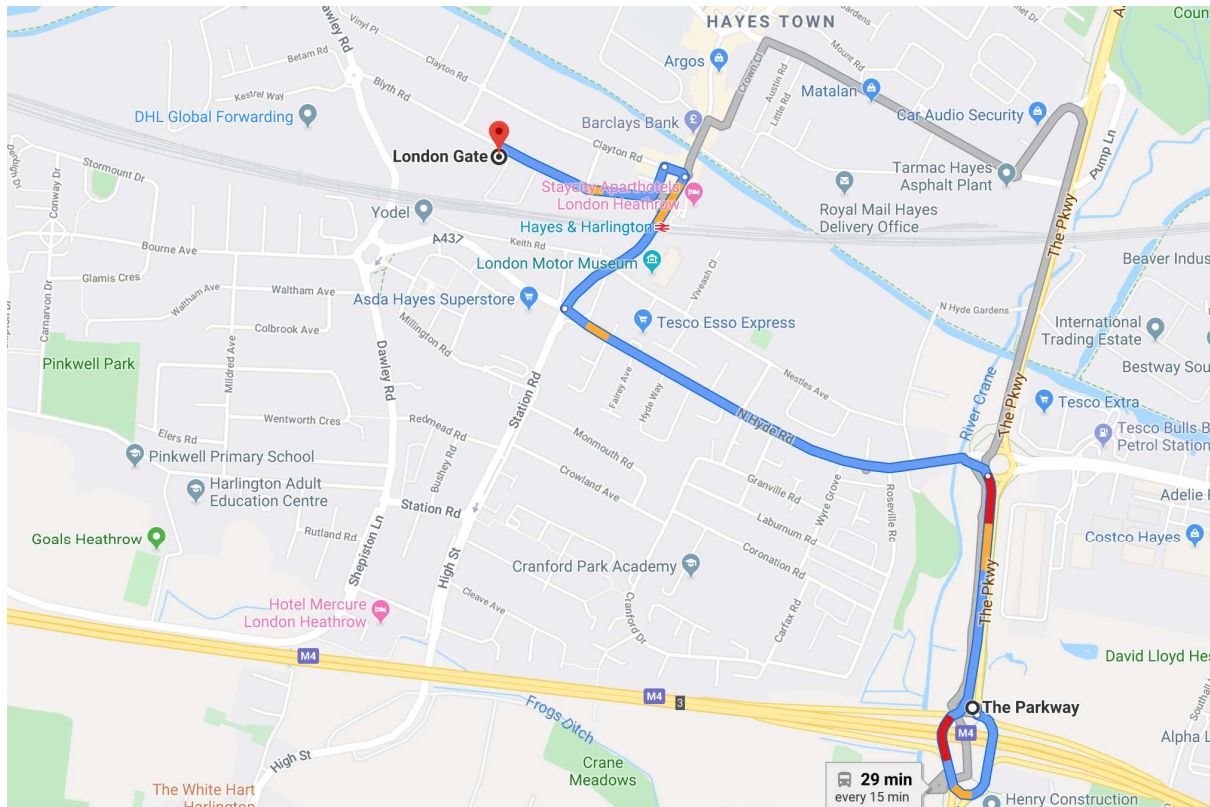
In an attempt to reduce vehicles attending site the Principal Contractor will target the following items:

- Procurement of local sub-contractors and labour.
- Procurement of local suppliers.
- Combined deliveries.
- Cycle parking on-site for staff.
- Encourage and reward car sharing.
- Encourage the use of public transport, timetables and routes available in the site off notice boards.
- Any site meetings to commence outside peak hours.

#### Construction Routes:

The site is easily accessible from Junctions 3 & 4 of the M4 motorway.





## 6.2 Vulnerable Road Users

### 6.2.1 Construction Logistics and Cyclist Safety (CLOCS)

The operation of the construction site will comply with the CLOCS initiative. This will extend beyond the Site boundary to include, where possible, supply chain vehicles etc. Flynn will ensure all deliveries made through our supply chain for this project are Fleet Operator Recognition Scheme (FORs) accredited.

### 6.2.2 Cyclists

Cyclist activity on the surrounding highway network and private access roads will be unhindered, but traffic management measures will need to be adhered to as with any other highway user. During normal deliveries Banksman will be able to ensure cyclist safety in conjunction with other vehicles.

It is not anticipated that cycle movements will be disrupted as all necessary storage and works are expected to take place within the Site boundary.

## 6.2.3 Pedestrians

At this stage it is proposed that a hoarding would be provided at the Site boundary.

Deliveries will be restricted to the period between 08:00 and 18:00.

Pedestrian routes will not be blocked during deliveries and collections, unless a temporary road or footway closure is in operation. In such circumstances appropriate alternative routes and signage will be provided.

Site management will conduct routine daily and weekly checks to ensure the safety and security of pedestrians around the Site are maintained. This will form part of the overall monitoring strategy, reporting to the Council and local parties as necessary.

## 6.3 Control of Site Traffic

In the interests of public safety, and avoiding disruption to the local area, the method and route of deliveries to the site will be controlled in agreement with the relevant authorities.

The plan will outline timings of deliveries and routes to be taken by hauliers to ensure minimal disruption to local residents and businesses. This will include potential risk for noise disturbance as well as minimising additional traffic during peak periods.

The CMP will be reviewed and the formal monitoring regime established to ensure all appropriate measures are put in place. Risks will be identified, scheduled, assessed and managed. The complaints procedure will be formalised and circulated to local parties and the Council, reinforced (if required) through a local working group.

Consideration will be given to other developments with regard to potential coordination of deliveries and sustainable travel arrangements for staff.

This will be regularly reviewed as part of the Site Manager's responsibility. Details will be made available to the Council and local parties as required. Wherever possible, and especially for vehicles over 3.5 tonnes, drivers will be required to be accredited with the Fleet Operator Recognition Scheme (FORS). Drivers will have undertaken cycle awareness training and vehicles associated with the development will:

- Need to have sideguards fitted (unless demonstrably unable to do so);
- Have close proximity warning systems fitted, external warning devices, rear facing CCTV camera (or Fresnel Lens); o Have a Class VI mirror; and

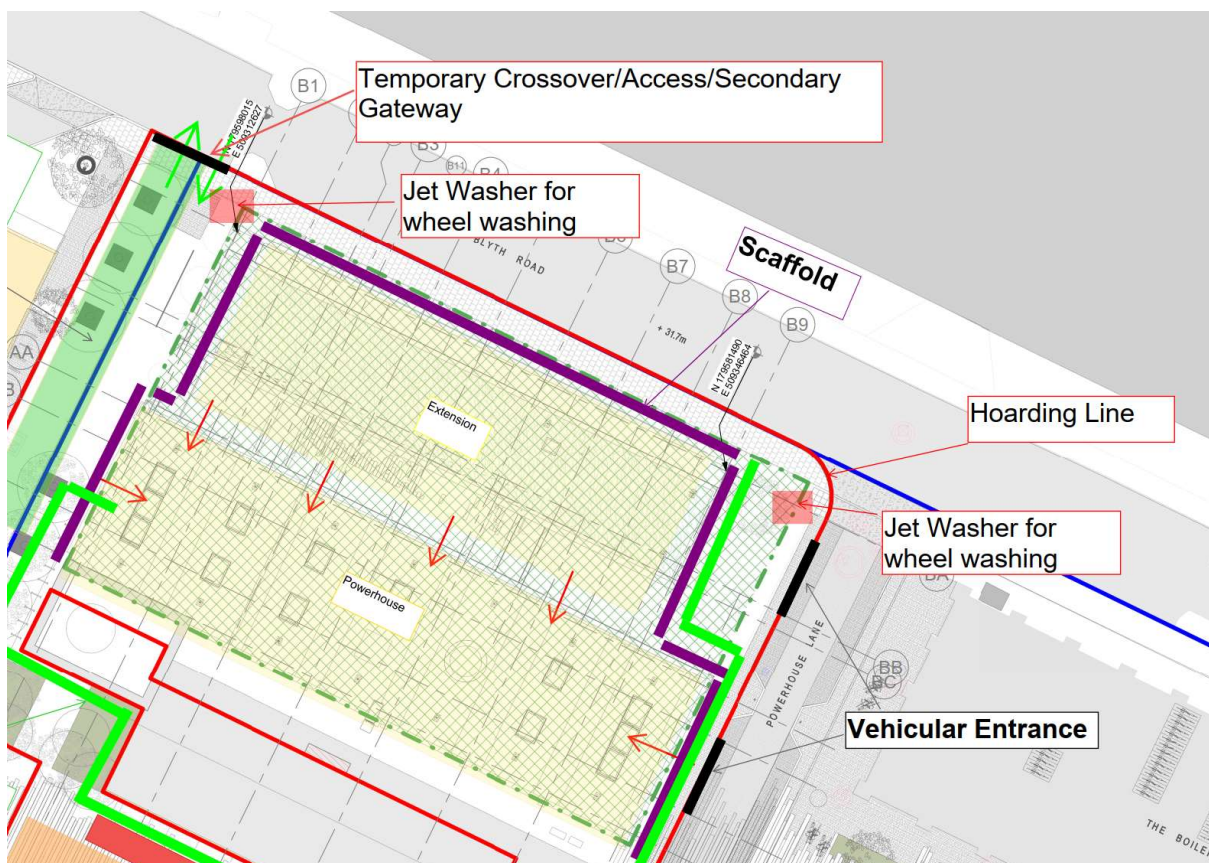
- Have prominent signage warning cyclists of the dangers of 'undertaking' on the inside of such vehicles.

## 6.4 Site Access & Egress

Access/egress to the site will be via Blyth Road for both pedestrians and vehicular access. The main site entrance will be controlled by a Gateman at the main gate. A pedestrian gate with turnstile will be included in the hoarding for operatives/visitors arriving by foot.

All roads and footpaths in the vicinity of the Site will be meticulously maintained and on completion of the works they will all be reinstated to the condition they were found in at the start of the works.

All vehicles leaving the site will have the tyres and under carriage power hosed by the gateman to ensure no debris or dirt are brought outside of site and sully the surrounding area. Road sweeps will be used on a regular basis to aid in the cleaning of the area around the site



The Site will at all-time be adequately protected by barriers to prevent unauthorised access (either accidental or deliberate). Flynn intend to install a 2.4meter high solid hoarding to the entire site

boundary. When the work has stopped for the day, the Site must be secured, all ladders and access must be removed, the plant must be immobilised, and all hazardous materials must be safely stored.

## 6.5 Vehicle Loading & Unloading

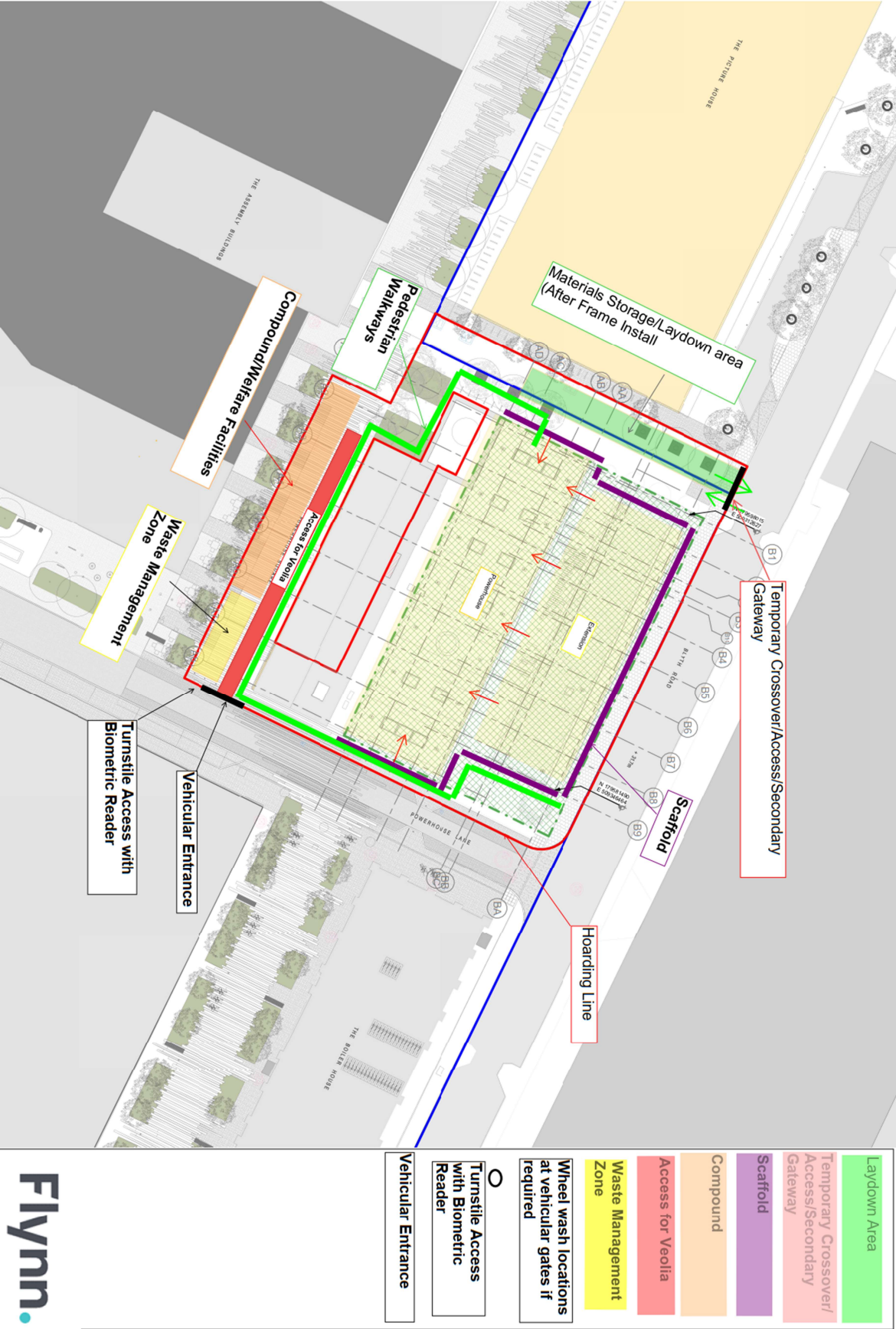
There is a risk to both the workers and general public/pedestrians associated with loading and unloading goods. Generally, all loading and unloading will take place within the secured Site boundary. Where this is not possible, a temporary exclusion zone must be set-up and a method of loading/unloading must be prepared. Adequate personal protection equipment and clothing must be utilised. Various operations such as Timber frame installation and plant placement on roof will require the use of a crane to offload, lift and distribute materials.

Crane lifts will generally be contained within the secured Site boundary and governed by the approved Lift Plan. A Crane lift plan by an accredited Appointed Person will be in force throughout the construction process. It is expected that wheel-washing facilities will be provided for vehicles required to enter and leave the site during demolition and groundworks phases.

It should be noted that these facilities may need to be relocated to other parts of the site as the project progresses to facilitate construction operations.

## 6.6 Material Storage and Laydown Areas

It is envisaged that Flynn will utilise a number of strategic material storage areas throughout the site – as outlined on the Site Logistics Plan below. These areas will be managed and maintained by Flynn site management in order to minimise material handling and maximise safety and efficiency. This will, in part, be achieved by allocating designated storage areas to specific trades. Where possible, upon delivery, materials will be taken directly to the work face, when this is not possible or practicable, they will be transported to the designated storage area.



## 7 Noise and Dust

The LPA (London Borough of Hillingdon) has specifically requested that likely noise and dust related activities are dealt with within the Construction Management Plan. As such this section aims to deal with these activities. Attention has also been paid to the council's construction noise site noise code of practice.

### 7.1 Noise Generating Activities

Measures will be required to protect the workers on Site and suppress noise generated on the Site during the construction phase. Consequently, all sources of noise arising from the construction should be identified and assessed. Mitigation measures will include the following, where possible:

- Good public relations with the adjacent residents/workers, including timely warning/notice of likely periods of noisy activities;
- Where possible, 'silenced' plant and equipment to be used;
- Workers using 'noisy' plant will be trained and provided with ear protection;
- Where vehicles are standing for a significant period of time, their engines are to be switched off
- Screening around those parts of the Site where activities are likely to generate noise;
- Location of noise generating plant at a low level and as distant as possible from sensitive receptors;
- Acoustic enclosures to be fitted where possible to suppress noisy equipment;
- Plant to operate at low speeds, where possible, and incorporate automatic low speed idling;
- Location of site entrances and exits to prevent the need for vehicles to reverse and also minimise impacts upon sensitive receptors;
- All plant to be properly maintained;
- Consideration to be given to temporary screening or enclosures for static noisy plant to reduce noise emissions and plant should be certified to meet any relevant EC Directive standards;
- All contractors to be made familiar with the guidance in BS 5228 (Parts 1 and 2) "Code of practice for noise and vibration control on construction and open sites — Noise" which should form a pre-requisite of their appointment.

## 7.2 Noise & Vibration Levels

### 7.2.1 Noise Monitoring

Noise monitoring requires all construction site to be undertaken with a hand held or tripod mounted integrating sound level meter to determine noise levels as specified locations at known times during the working day. The monitoring equipment shall comply with at least 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 Sites2 Part I: Noise. Annex G.

It is Flynn’s intention to monitor noise at various interval during the construction. Results will be recorded.

Results will be recorded and saved on a Flynn database for future reference. Were noise levels are exceeded, it will be noted in the records and works will be stopped temporally, to access if further mitigation measures can be implemented to reduce the Nosie. Once work recommences the area will be monitored further with checks.

### 7.2.2 Mitigation Measures

Noise attenuation screening is to be used — if deemed appropriate — and noise monitoring is to be carried out at the start and at regular intervals during each task period.

Any mobile screens shall have sufficient mass so as to be able to resist the passage of sound across the barrier and to be free of significant holes or gaps between or under any acoustic panels or board materials as far as reasonably practical. Barriers would be:

- Fairly uniform panels, free from holes with no gaps or openings at joints (uneven ground may leave gaps to be filled);
- Stable and robust enough to stand up to site conditions and;
- Of a height and width sufficient enough to completely cut off sight of the source from the receiver.

To reinforce a previous point any exceedance of noise trigger limits shall initiate a review of works, to enforce changes of methodology or equipment, in order to keep within reasonable noise levels.

## 7.3 Potential Impacts on Air Quality

Impacts on air quality from the proposed development can occur during construction. During construction there is the potential for emissions of dust to cause annoyance. The development is in a mixed-use area with a number of residential properties that border the site.

The Institute of Air Quality Management (IAQM) published guidance on how to assess impacts of emissions of dust from demolition and construction sites. This guidance has been followed and is outlined below:

### 7.3.1 Evaluation of project Emission Magnitudes

The risk classifications detailed in this section comply with the requirements of: “*The Control of Dust and Emissions during Construction and Demolition SPG*”. The potential for the generation of dust pollution and annoyance divided into the following construction phases:

- A. Demolition
- B. Earthworks
- C. Construction
- D. Track out

#### A. POTENTIAL DUST EMISSION MAGNITUDE **DEMOLITION**

| Large                                                                             | Medium                                                                                     | Small                                                                                         |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Total volume of building to be demolished >50,000m <sup>3</sup> or                | Total volume of building to be demolished 20,000m <sup>3</sup> – 50,000m <sup>3</sup> , or | Total volume of building to be <b>demolished &lt;20,000m<sup>3</sup></b> , or                 |
| Potentially dusty construction material (e.g. concrete), or                       | Potentially dusty construction material, or                                                | Construction material with low potential for dust release (e.g. metal cladding or timber), or |
| On-site crushing and screening, or Demolition activities >20m above ground level; | Demolition activities 10-20m above ground level;                                           | Demolition activities <10m above ground demolition during wetter months.                      |

#### B. POTENTIAL DUST EMISSION MAGNITUDE M2 **EARTHWORKS**

| Large                                   | Medium                                                       | Small                                     |
|-----------------------------------------|--------------------------------------------------------------|-------------------------------------------|
| Total site area >10,000m <sup>2</sup> , | Total site area 2,500m <sup>2</sup> – 10,000m <sup>2</sup> , | Total site area <2,500m <sup>2</sup> , or |

|                                                                                                                    |                                                                    |                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry to due small particle size), or | Moderately dusty soil type (e.g. silt), or                         | Soil type with large grain size (e.g. sand), or                                                            |
| >10 heavy earth moving vehicles active at any one time on site, or                                                 | 5-10 heavy earth moving vehicles active at any one time, or        | <5 heavy earth moving vehicles active at any one time, formation of stockpile enclosures <4m in height, or |
| Formation of stockpile enclosures                                                                                  | Formation of stockpile enclosures 4m – 8m in height, or            | Total material moved <10,000 tonnes (where known), or earthworks during wetter months.                     |
| >8m in height;                                                                                                     | Total material moved 20,000 tonnes – 100,000 tonnes (where known). |                                                                                                            |
| Total material moved >100,000 tonne (where known).                                                                 |                                                                    |                                                                                                            |

## C. POTENTIAL DUST EMISSION MAGNITUDE M3 CONSTRUCTION

| Large                                                                                                              | Medium                                                             | Small                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Total site area >10,000m <sup>2</sup> ,                                                                            | Total site area 2,500m <sup>2</sup> – 10,000m <sup>2</sup> ,       | Total site area <2,500m <sup>2</sup> , or                                                                  |
| Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry to due small particle size), or | Moderately dusty soil type (e.g. silt), or                         | Soil type with large grain size (e.g. sand), or                                                            |
| >10 heavy earth moving vehicles active at any one time on site, or                                                 | 5-10 heavy earth moving vehicles active at any one time, or        | <5 heavy earth moving vehicles active at any one time, formation of stockpile enclosures <4m in height, or |
| Formation of stockpile enclosures                                                                                  | Formation of stockpile enclosures 4m – 8m in height, or            | Total material moved <10,000 tonnes (where known), or earthworks during wetter months.                     |
| >8m in height;                                                                                                     | Total material moved 20,000 tonnes – 100,000 tonnes (where known). |                                                                                                            |
| Total material moved >100,000 tonne (where known).                                                                 |                                                                    |                                                                                                            |

## D. POTENTIAL DUST EMISSION MAGNITUDE Tonnage/ADT TRACKOUT

| Large                                             | Medium                                              | Small                       |
|---------------------------------------------------|-----------------------------------------------------|-----------------------------|
| >50 HDV (>3.5t) outward movements in any one day, | 10-50 HDV (>3.5t) outward movements in any one day, | 3.5t) trips in any one day, |

|                                                                   |                                                             |                                                       |
|-------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------|
|                                                                   |                                                             |                                                       |
| Potentially dusty surface material (e.g. high clay/silt content), | Moderately dusty surface material (e.g. high clay content), | Surface material with low potential for dust release, |
| Unpaved road length >100 m;                                       | Unpaved road length 50 m – 100 m (high clay content);       | Unpaved road length                                   |

Given the close proximity of sensitive receptors, the risk of dust annoyance occurring during the overall construction is considered to be medium, Flynn will implement the appropriate mitigation measures to reduce this too low.

There are a number of mitigation measures that can be employed to lessen the nuisance and human-health impacts of the dust and particulates generated during construction activities and in this case, sheeting of Lorries and damping down would be employed as appropriate.

Construction dust usually responds well to these measures as long as a co-ordinated Management Plan is implemented. A comprehensive list of measures is as follows:

- Use of water spraying, especially on access roads, in order to reduce dust generation, as and when conditions dictate;
- Effective wheel/body washing facilities to be provided and used as necessary;
- A road sweeper to be readily available whenever the need for road cleaning arises; Dampening of exposed soil and material stockpiles, where necessary;
- Consideration will be given to wind speed and direction prior to conducting dust generating activities to determine the potential for dust nuisance to occur and avoid such activities during periods of high or gusty winds;
- Stockpiles of soil and materials should be located as far as possible from sensitive receptors, taking account of prevailing wind directions;
- Windbreak netting should be positioned, where possible, around material stockpiles and vehicle loading /unloading areas;
- Completed earthworks should be covered or vegetated as soon as possible;
- Ensuring that all construction plant and equipment is regularly maintained in good working order;
- Vehicles carrying waste material off-site to be sheeted;
- Under no circumstances should fires be allowed on site

Where activities are likely to cause disturbance to local sensitive receptors, dust monitoring should take place at most affected facades.

All sub-contractors will also be required to go beyond best practice site management as defined by the Considerate Constructors Scheme (and RBG's guidance, as necessary).

## 7.4 Dust Generating Activities

Mechanical disturbance of granular material exposed to air creates atmospheric dust. This is termed 'fugitive' as it is not discharged in to the atmosphere in a confined stream. The potential sources of these fugitive emissions are summarised below:

Site clearance and excavation

- On-site earth moving operations, site levelling, cut and fill etc.
- Vehicle movements over haul roads;
- Vehicle movements on-site during dry periods;
- Wind blowing across the Site during dry periods;
- Stockpiling of excavated materials;
- Cutting and grinding;
- Accidental spillage and loss of load from vehicles carrying loose material;
- Deep excavations.

Other factors that need to be taken into consideration with regard to fugitive emissions include:

- Prevailing wind (speed, direction etc.);
- Prevailing climate, including rainfall;
- Location of sensitive receptors (including residential and commercial premises, habitats and watercourses).

### 7.4.1 Control of Dirt and Dust on the Public Highway

Flynn will ensure that debris deposits onto the public road are minimised as much as possible, and cleared away if they occur. In addition, no concrete will be washed in to highway gullies.

Mud and debris on the road are one of the main environmental nuisance and safety problems arising from construction sites.

The contractor will make provision to minimise this problem. In the early stages of the project, when enabling and associated works are being carried out, staff will be on hand to ensure all vehicles that enter/leave the construction site in a tidy manner.

Muck-away Lorries will be fully sheeted to minimise the risk of debris over-spilling onto the highway shows further dust mitigation methods to be employed.

## 7.4.2 Mitigation Measures during Specific Activities

### Site Preparation and Earthworks:

- Wheel wash and wheel jetting facilities will be established and kept in place during the initial Site clearance activities.

### Materials handling and storage:

Dust generating materials will generally be delivered in sealed packaging or containers; any bulk deliveries will be handled with care and kept covered where possible during delivery and storage. Concrete the sub-structure works will be delivered pre-mixed to prevent dust from dry stockpiled material.

- The superstructure envelope is constructed of a timber frame, prefabricated windows, prefabricated walling units and cladding. There is limited space for site storage and deliveries will scheduled to suit immediate use.
- Materials for construction will be off loaded by the haulier onto the site for transportation to an area of hard standing within the site by forklift or crane; then distributed to the work face.
- Handling, erection and installation of above ground components will not generate significant quantities of dust due to mitigation measures of sealed packaging and use of prefabricated products.
- Main Haul routes will be stoned up with type 1 recycled material.

### Construction and Fabrication:

Dust generating construction is limited to low level substructure, and superstructure erection, cladding and masonry. Dust will be controlled by suppression kits being used during on site cutting and drilling.

- Below ground construction will be with pre-mixed in-situ concrete
- Above ground construction comprises Glulam columns and beams, lightweight wall and CLT floor panels, and panel cladding, with lightweight internal walls. Internal works will be kept clean and clear to prevent dust arising, with adequate resources and supervision.

The method of construction and fabrication does not give rise to a risk of nuisance by dust.

## 7.4.3 Waste

Quantities of waste will be detailed in the Flynn Site Waste Management Plan.

- Excavation waste will be disposed of via covered tippers and/or skips, and waste generated by the construction activities will be segregated at the point of disposal (waste transfer station) and will be stored and removed in skips.

The method of storing and disposing of waste does not give rise to a risk of nuisance by dust.

## 7.4.4 Risk Assessment

The risk assessment must take account of proximity to sensitive receptors (e.g. schools, care homes etc.). In line with Control of Dust and Emissions Supplementary Planning Guidance a dust risk assessment will be undertaken following the steps detailed within the guidance:

- Screen the Need for Detailed Assessment;
- Assess the Risk of Dust Impacts;
- Define the Sensitivity of the Area;
- Define the Risk of Impacts.