R.P.M.

Real PM Ltd
Derbyshire House
St Chad's Street
London WC1H 8AG
020 7036 0800

Precis Advisory Ltd

Acorn House

Construction Management Plan

RPM Internal Review / Issue Process			File details	
Stage	Initials	Date		
Originator	NB	30 Mar 20	File Name	2020.08.11 – Acorn House - CMP
Peer Review	SW/CB	30 Apr 20		
Final Check	SW/CB	03 Apr 20	Revision	05 – Updated to CCC, TfL & team comments
Issue Date	NB	11 Aug 20		

Distribution		
	PAL	JA/FL
	AHMM	IP
	AKTII	KA
	GE	KH/AN
	TTP	PS
	RPM	SW

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    - Mobile Crane
    - Tower Crane

1.0 Introduction

This Construction Management Plan has been prepared by Real PM Limited on behalf of Access Self Storage/Precis Holdings Ltd ('the Applicant') in support of an application for full planning permission for the comprehensive redevelopment of the existing building Acorn House, 314-320 Gray's Inn Road, London WC1 8DP ('the Site') within the jurisdiction of London Borough of Camden 'LBC'.

The development proposals, designed by Allford Hall Monaghan Morris ('AHMM') Architects, (herein referred to as 'the Proposed Development') consist of the following:

'Redevelopment of Acorn House as a part 6, part 10 storey building to provide 33no. affordable housing units with affordable office space and a retail unit at ground and basement level together with cycle parking facilities. An external playspace is proposed at level 6 and a community room with kitchenette and landscaped terrace for residents at level 9.'

This report sets out details of the works required to carry out the demolition/enabling and construction activities involved whilst outlining their anticipated timescales and identifying the environmental impact of the works and where practicable, proposals for how these are to be mitigated.

The proposed development being undertaken relates to site which is situated on the corner of Gray's Inn Road and Swinton Street and is a short walk from Kings Cross Station, the existing 7-storey building, predominantly office accommodation with 1no. residential unit and a lower ground floor car park, with vehicular access from Swinton St. Built c. 1965, the building has a distinctive saw-tooth façade to Swinton Street and external frame at ground floor.

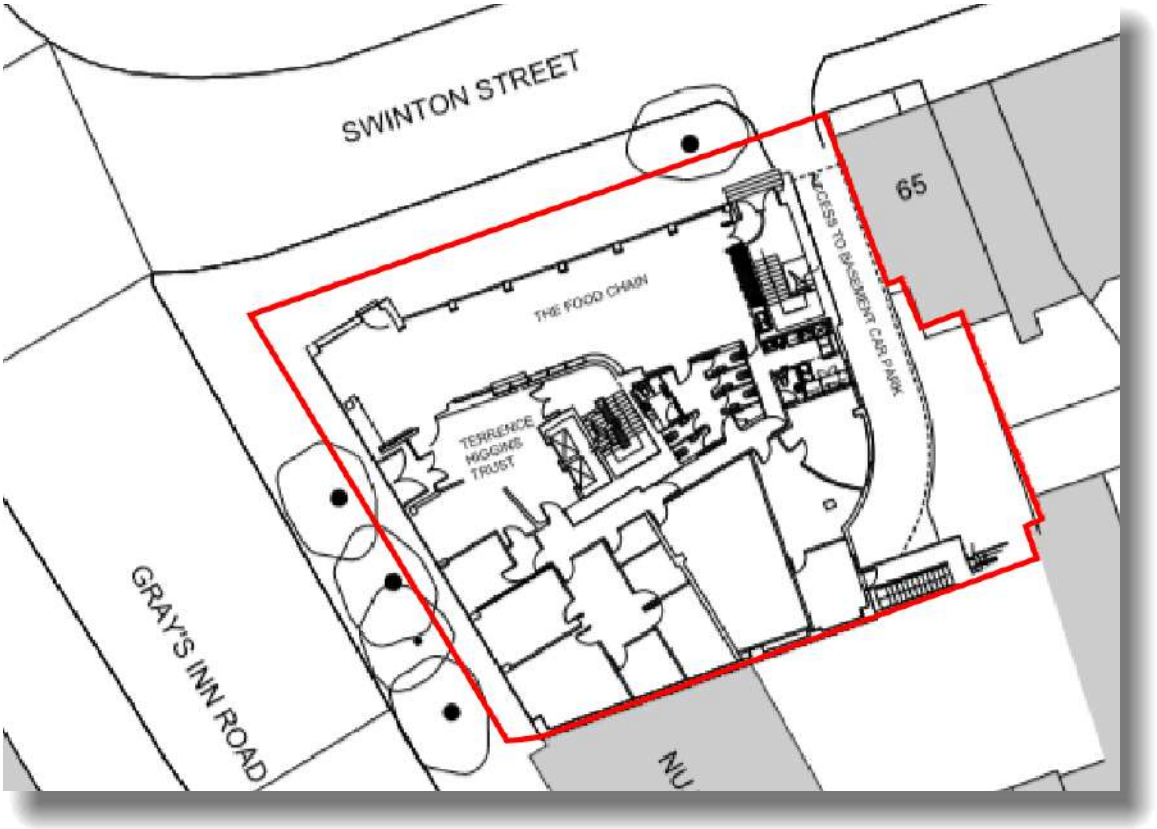


Figure 1 – Existing Building Plot (Redline)

2.0 Site location and access

2.1 Existing Development Site

The existing building is known as Acorn House is in located Kings Cross, within the and London Borough of Camden.

The proposed development can be found to the south of Kings Cross in an area of mixed residential and commercial properties off the Gray's Inn Road at its junction with Swinton Street.

The site itself is located and is bounded by Gray's Inn Road to the west and Swinton Street to the north.

The site is located within the Bloomsbury Conservation Area, but the building is not listed.

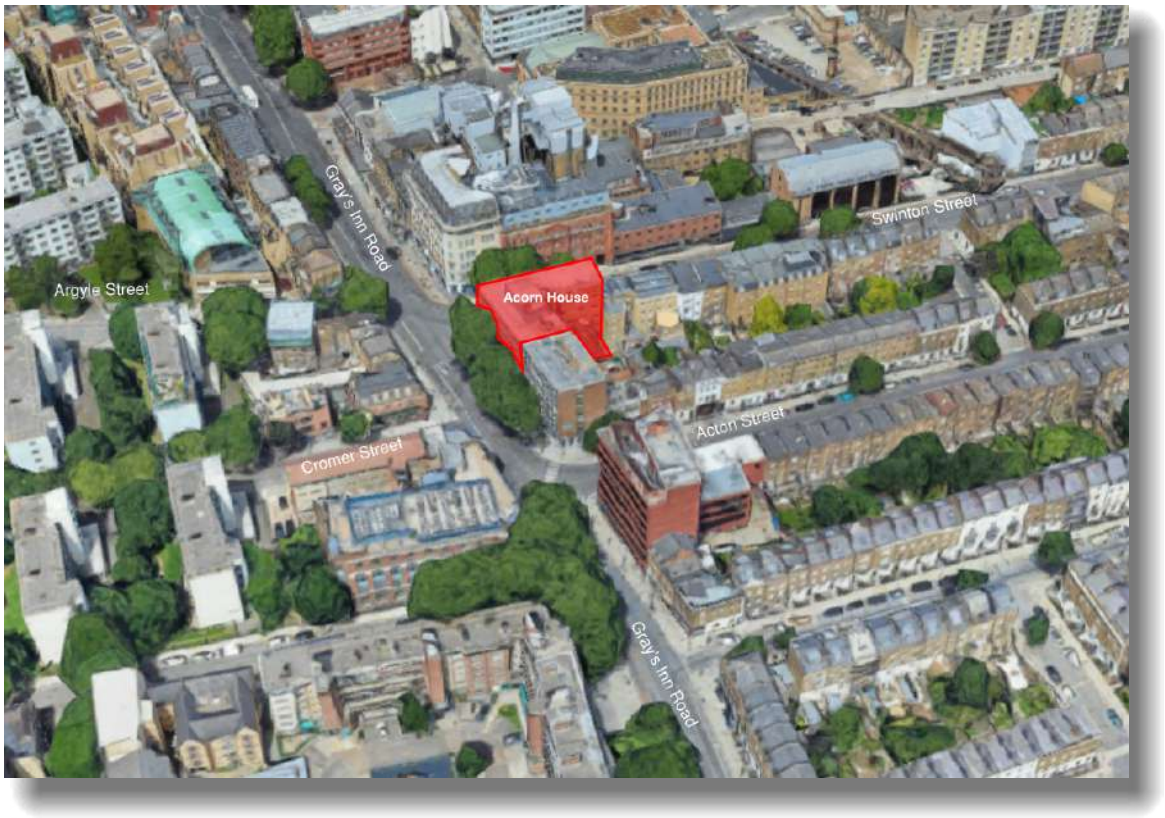


Figure 2 – Location Plan

2.2 Local area

As highlighted in section 2.1, the site is located to east of Gray's Inn Road at its junction with Swinton Street (A501). The existing site which is currently occupied by a 6-storey concrete framed building with a masonry façade and a single level of basement accessed via a ramp off Swinton Street.

The site is bounded by mainly residential and commercial properties which will provide some logistical challenges in terms of access during the demolition and construction phases, but in general terms the site is well served by vehicle access.

Gray's Inn Road to the west of the site is a one-way three lane carriageway and bus lane which reduces to two lanes at its junction with Swinton Street as it heads north and merges into Euston Road. Swinton Street to the north of the development is a one-way two carriageway street whose westbound carriageway connects via a traffic light-controlled junction with Gray's Inn Road. Both are designated red routes.

The primary construction vehicle access routes and logistics proposals have been prepared taking the local road layouts into consideration where practicable.

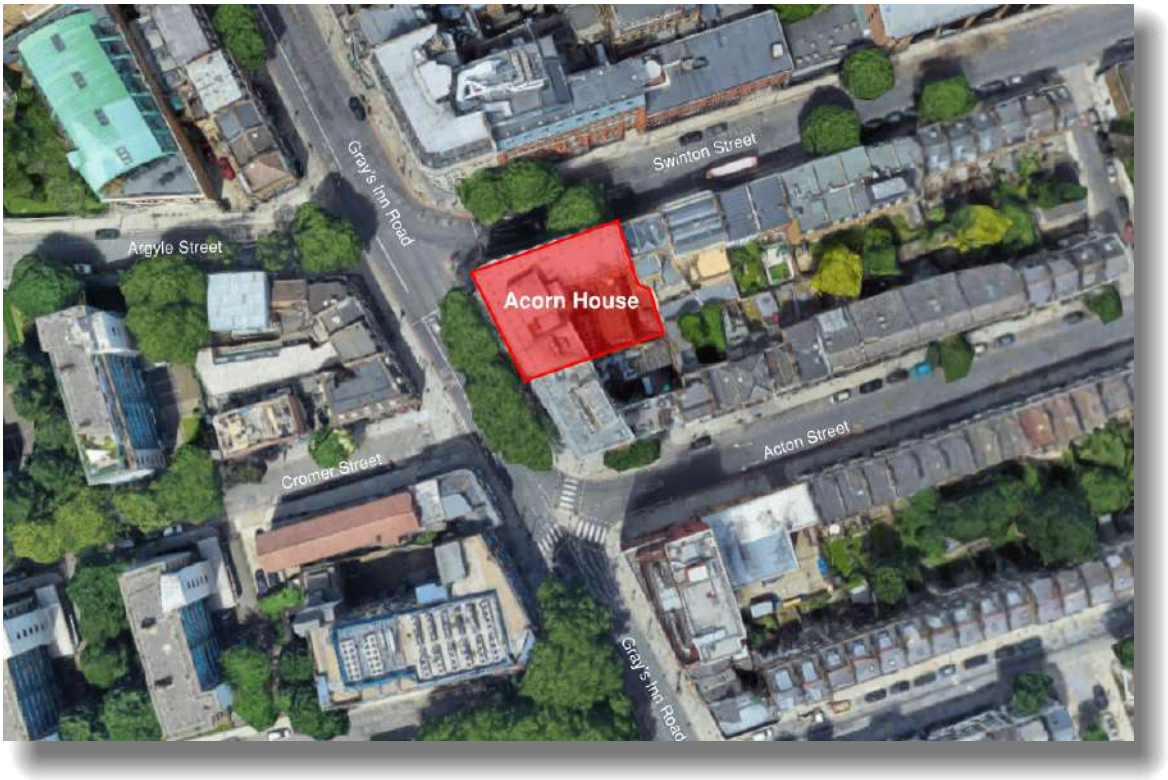


Figure 3 – Local site location plan

2.3 Existing Physical Constraints

2.3.1 Key Receptors

Following a review of the local area a number of key receptors and potential constraints have been identified with respect to neighbours, businesses and other physical constraints surrounding the site.

These have been located on the local receptors plan below and where appropriate this section further details the approach regarding the constraints and the approach. In general terms the residents, businesses and public interfaces are dealt with elsewhere in this document, the following sub-sections highlight the key receptors related directly to the existing building.

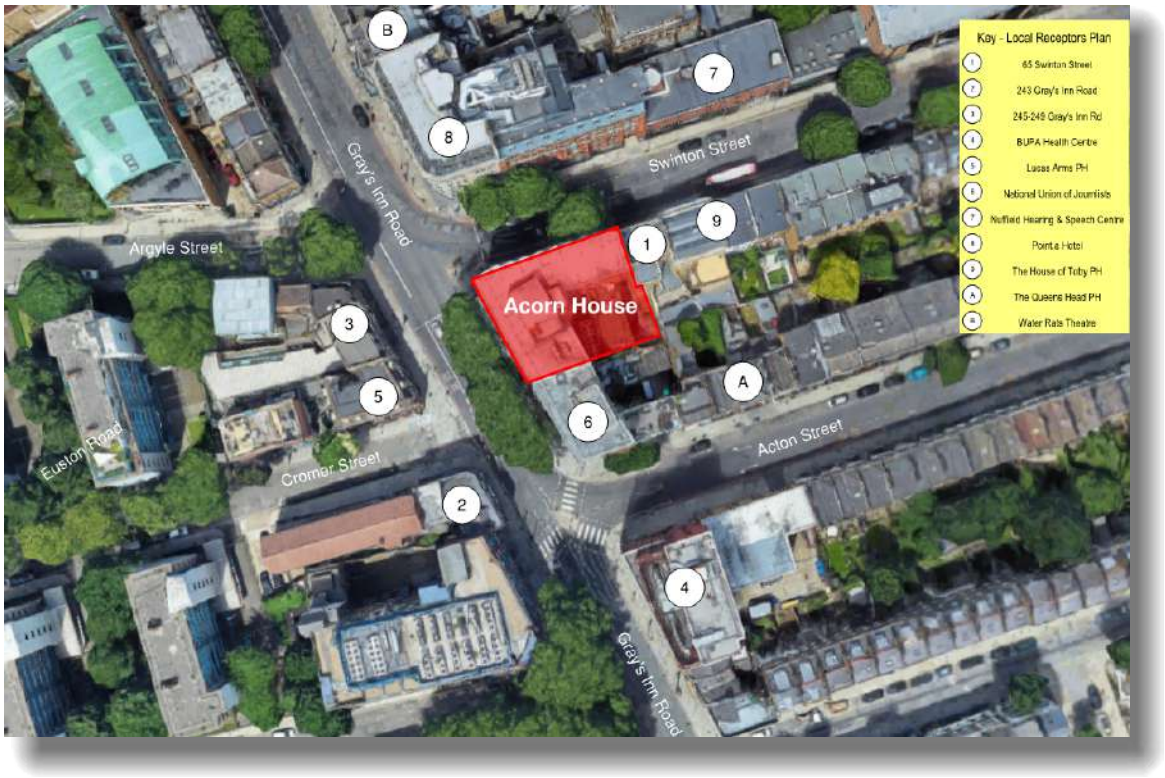


Figure 4 – Key Receptor location Plan

2.3.2 Existing Trees

There are existing London plane trees to both Gray's Inn Road and Swinton Street that will need to be protected during the works.

They will initially be impacted by the enabling works to provide the scaffolding and gantry and demolition activities which will likely require some seasonal pruning of the canopies to trees on both Swinton Street and Gray's Inn Road and but be exposed throughout the construction process, so a suitable tree protection management plan will need to be implemented.

An arboriculturist has been appointed to the project to ensure that a methodology will be prepared to ensure the management plan is agreed in conjunction with TfL Asset Protection team and protection measures installed and maintained in accordance with BS 5837.

2.3.3 UKPN Existing Sub-Station

There is an existing Network UKPN sub-station situated in the south east corner of the basement, indicated as 1. on the plan below.

The current entrance to the substation is via the car park ramp off Swinton Street which leads to the lower ground floor of Acorn House and provides access for UKPN maintenance vehicles from street level.

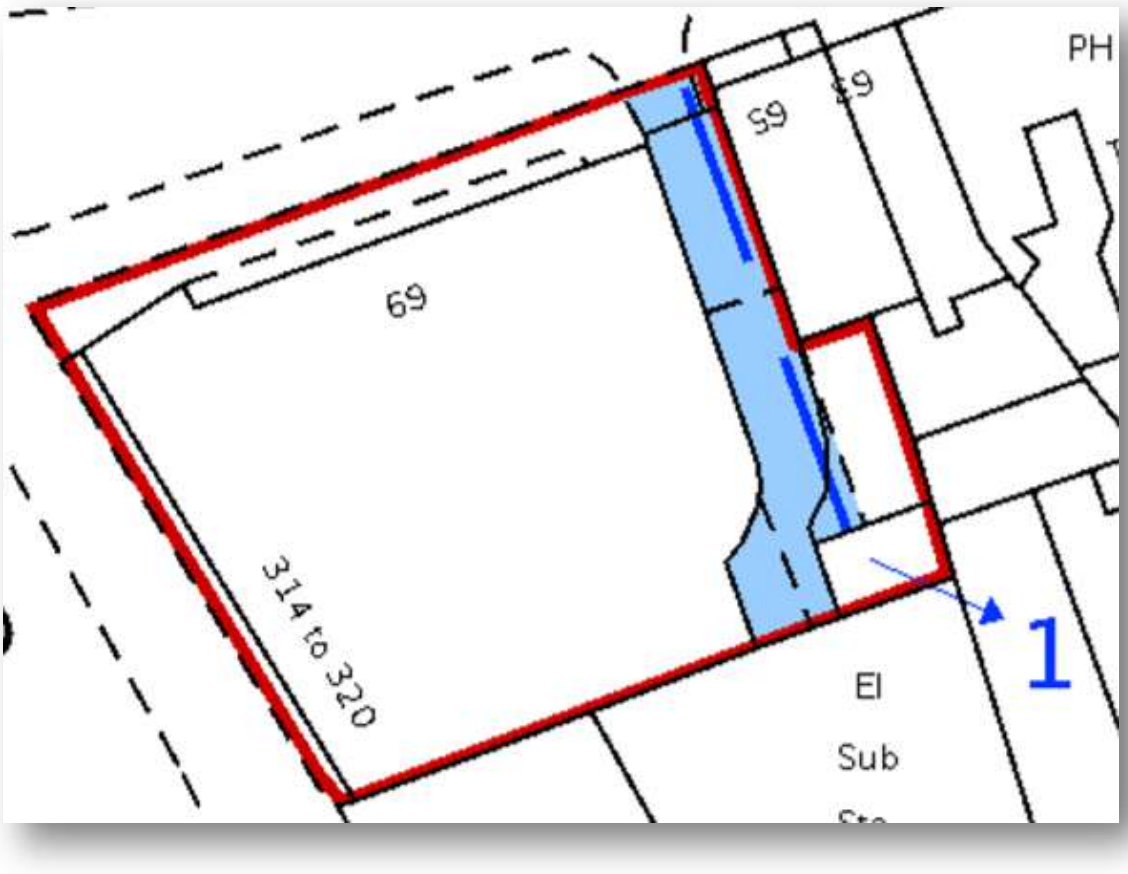


Figure 5 – Extract of title plan denoting existing sub-station (1)

Figure 6 – Extract of proposed ground floor plan denoting proposed UKPN sub-station location

As part of the proposed design, a new sub-station is to be provided at ground floor level which will be accessed directly from Swinton Street, as indicated in Figure 6.

UKPN are in the process of providing technical and commercial input in the project and as such the final details are yet to be formalised.

To ensure continuity of supply to other customers connected to the sub-station and provide enough power to run the temporary builders supply required during the construction phase of the project, a temporary sub-station arrangement will be required.

Due to the constrained nature of the site, the proposed temporary sub-station cannot be housed on site, nor is it feasible for the existing network sub-station to remain in its current position for the period required to construct the new facility.

Therefore, it is proposed that the temporary sub-station arrangement is located at street level on Swinton Street. Several options have been explored and considered to minimise the impact of the temporary sub-station upon the local highway and following consultation with Camden Council and TfL, a location within the existing vehicle loading bay on the north of Swinton Street is proposed.

This location is well positioned to connect to the existing HV network and as detailed below ensures the pedestrian footpaths to both sides of Swinton Street to be maintained whilst also limiting the impact upon the highway.

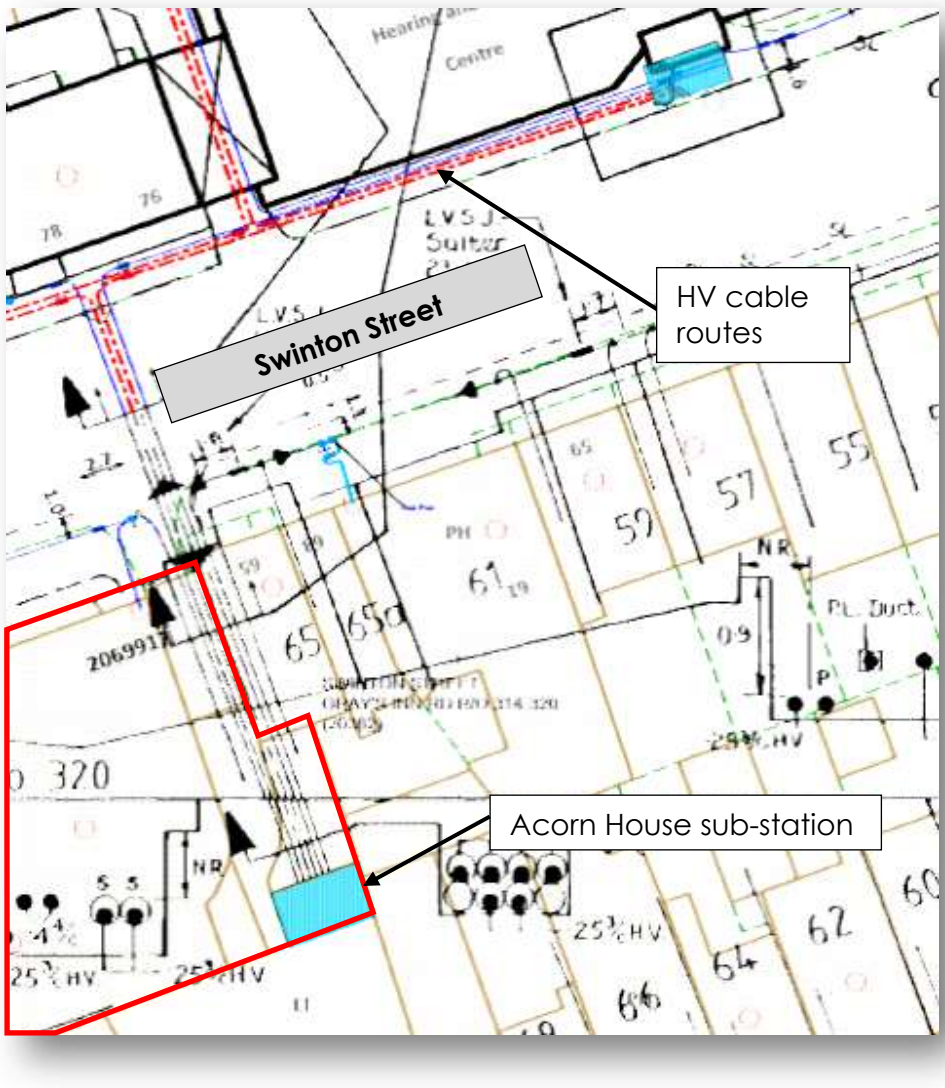


Figure 7 – Extract of UKPN local Network Plan indicating cable routes along and across Swinton Street

2.4 Site Access and Egress

The primary construction access and egress route to the site for demolition and construction HGV's has been considered carefully to reduce the impact of vehicle movements on the local community and road network alike. Following review of the physical location of access nodes to the site potential routes during demolition and construction stage have been identified.

Following this assessment and review of the local traffic movements, as detailed in section 2.4.5 we have identified vehicle access and egress routes from the north and south to ensure efficient links back to the Transport for London Road Network (TLRN).

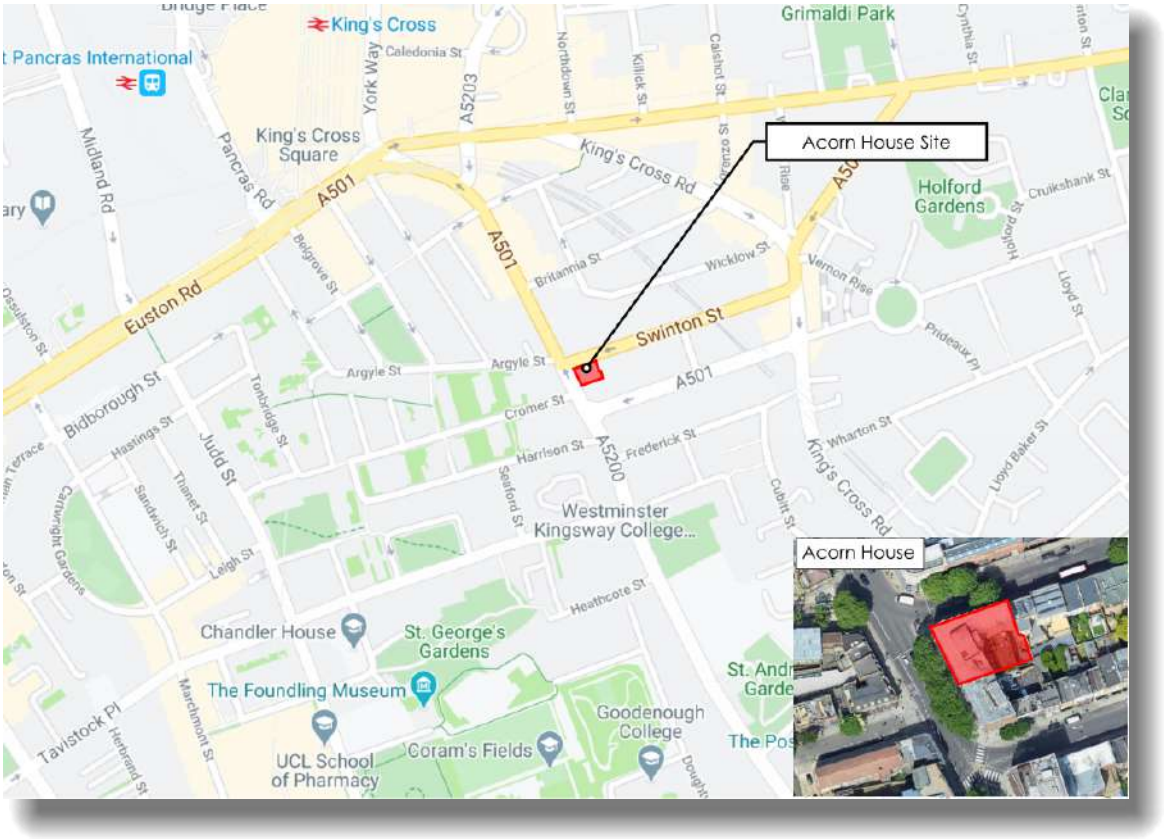


Figure 7 – Wider site location plan

2.4.1 Congestion Charging and Ultra Low Emission Zones

The development lies within both the London Congestion Charging and Ultra Low Emission Zones, situated to the northern boundary of the zones at its interface with Swinton Street and Gray's Inn Road therefore construction vehicles delivering to and from the site will require to comply with their requirements.

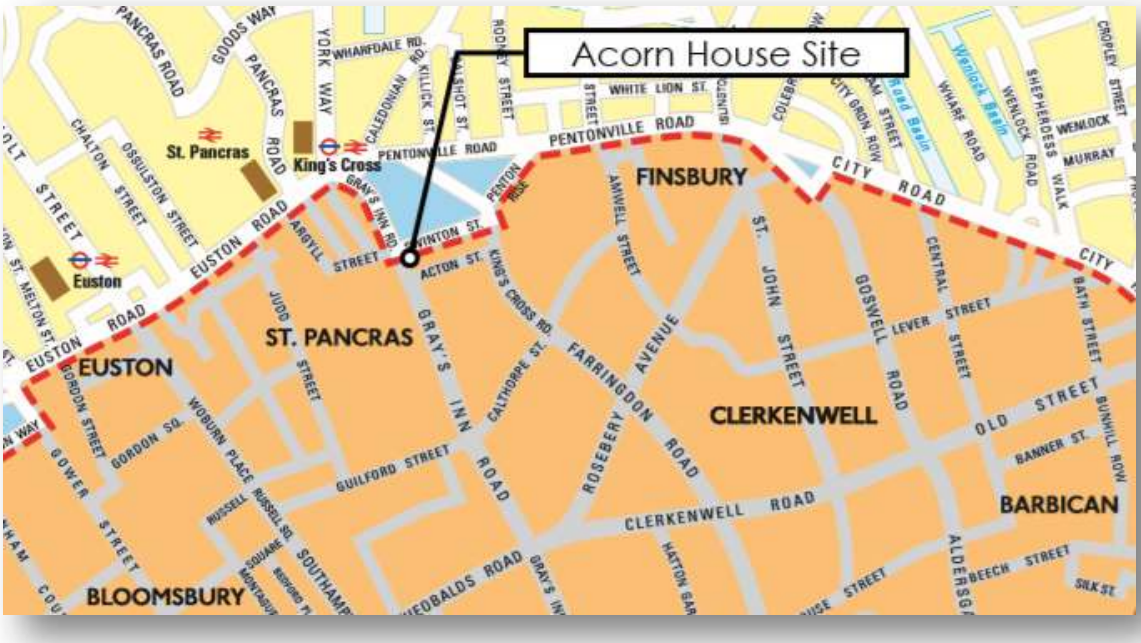


Figure 8 – Site location in relation to the TfL Congestion Charging Zone

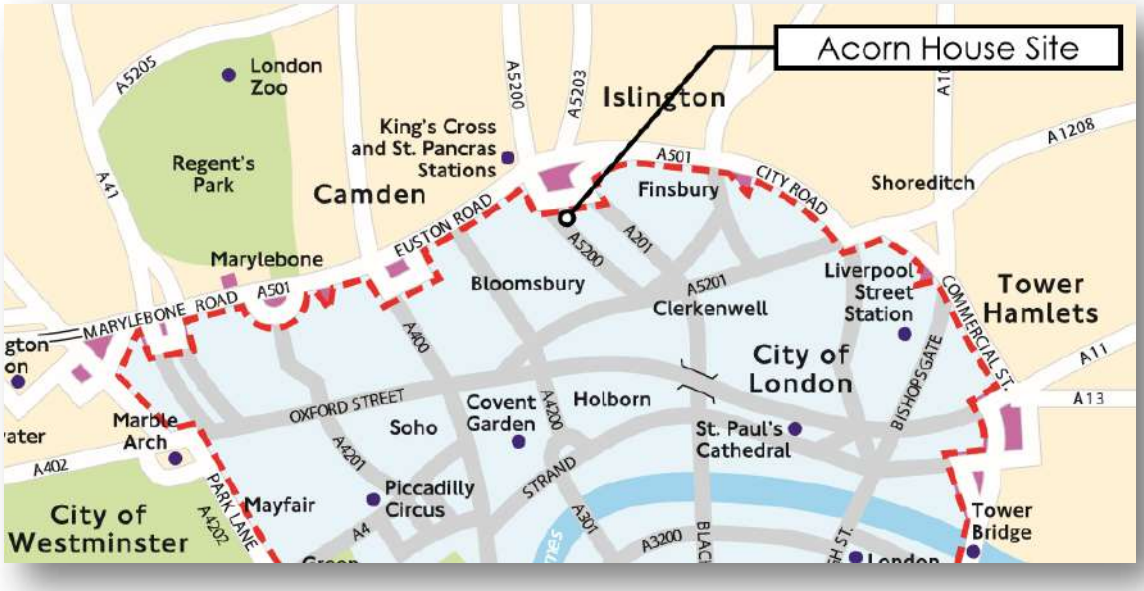


Figure 9 – Site location in relation to the Ultra-Low Emission Zone

2.4.2 TfL Primary Road Network (TLRN)

The development is well located in relation to the TLRN, with vehicle access possible from the north links to the TfL Primary Road Network (TLRN) as noted below and within Appendix 1.0.

Figure 10 – Site location in relation to the TfL Primary Road Network (TLRN)

2.4.3 General Access

The extract below from the logistics plan within Section 5.0 indicates the overall location of the site, surrounding existing buildings together with construction vehicle access provided from Swinton Street.

Sections 3.0 and 5.0 develop these details further and provide an overview of the proposed construction logistics.

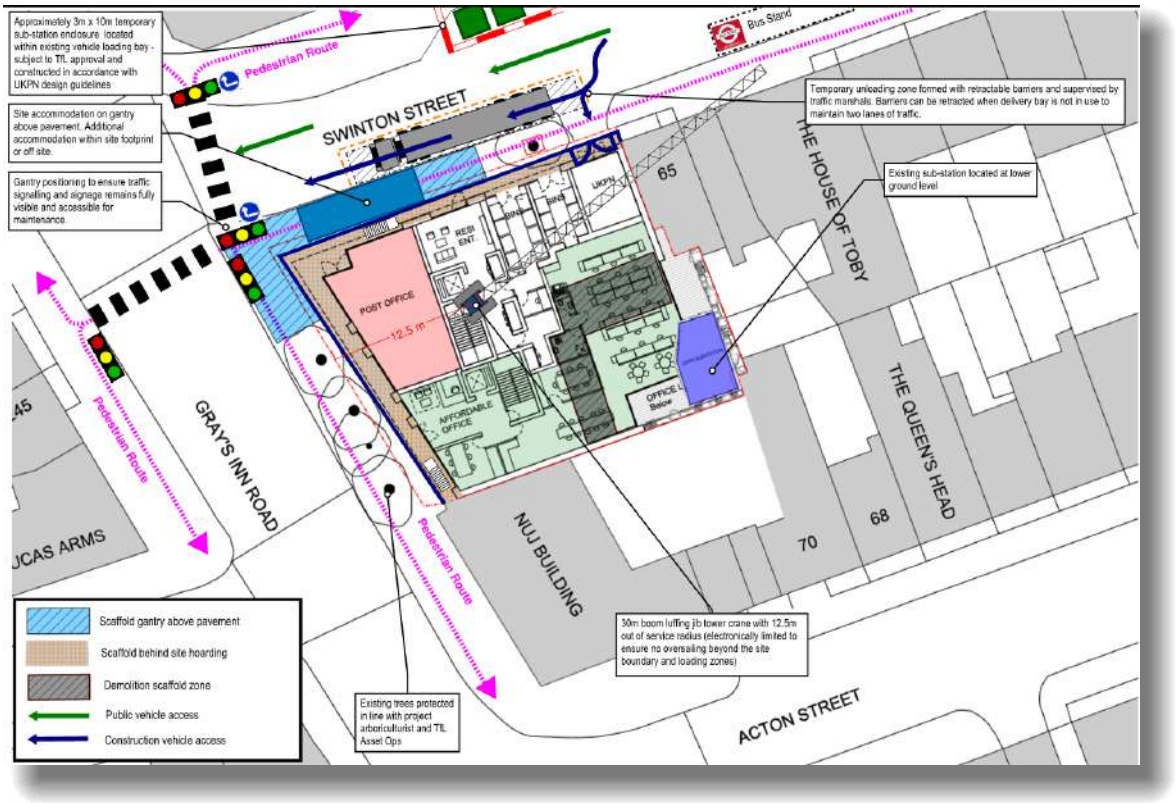


Figure 11 – Extract of Logistics Plan indicating construction vehicle access/egress location on Swinton Street

2.4.4 Pedestrian Access

Two-way pedestrian access will be maintained to the pavement of Gray's Inn Road, together with Swinton Street, which as noted earlier in this document has been achieved by the locating the temporary sub-station on the north side of Swinton Street in an existing vehicle loading bay. This will be required to be suspended from early in the demolition programme until the permanent UKPN sub-station has been constructed.

To further facilitate safe pedestrian access along Gray's Inn Road and Swinton Street during the works, it is proposed that a scaffold gantry will be installed to the building elevation providing a safe access route for pedestrians at street level.

2.4.5 Construction Vehicle Routing

Due to the restricted urban nature of the site and local road arrangements access from the Gray's Inn Road to the west is not proposed, therefore we have proposed that construction vehicles arriving at the site will be processed from Swinton Street.

The primary routes detailed below identifies the optimum route for not only HGV's, but all other vehicle types arriving and leaving the site.

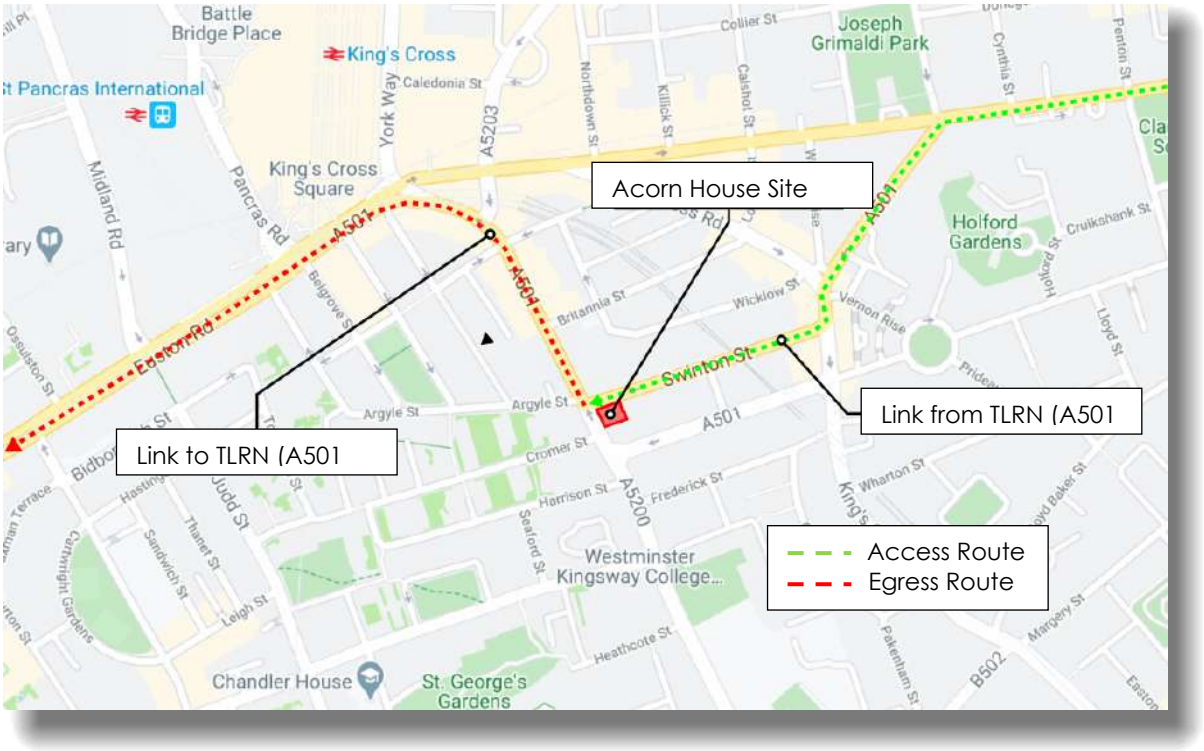


Figure 12 – HGV Construction Access and Egress Routes

3.0 Site set up and logistics

3.1 Logistics principles

The logistics plans within this document has been developed using the constraints as guiding principles and are intended to illustrate access to and from the site during the sub/super-structure and envelope and fit out phases of the project.

The plan included within the document details the vehicle access and egress locations during the various phases of the build and identify the tower crane locations and illustrate the pick-up locations necessary for the construction of the basement and super-structures.

3.2 Logistics outline proposals

Details of the logistics arrangements are illustrated within Section 5.0 of this document with the following indicating the proposed outline of how the project will be established.

The following sections cover the specifics around Gray's Inn Road and Swinton Street.

3.2.1 Gray's Inn Road

The pedestrian walkway to the west of the development will remain open to the public in both directions beneath a scaffold gantry. During the enabling phase of the project a solid hoarding will be erected to secure the site and the external demolition scaffold which will reduce the existing width by approximately 2.5m. The existing trees on this elevation will be protected in accordance with the requirements of the arboriculturist report.

3.2.2 Swinton Street

This will be the location for the vehicle delivery zone for the project and provide pick up location for the proposed luffing jib tower crane and the project welfare and accommodation. With the exception of concrete pours, where a pump set and concrete mix vehicles will be required for longer durations by arrangement with LBC highways, the timings of the deliveries to the site will be arranged to avoid peak morning and evenings and therefore in the main take place between 1000 – 1600 hrs.

It is acknowledged that Swinton Street is designated a red route, but to facilitate unloading whilst avoiding Gray's Inn Road, it is proposed that construction vehicle delivery to the building will take place using a temporary pit lane located on Swinton Street. Managed by trained Site Access Marshals, the pit lane and associated temporary traffic management will implemented only during deliveries and be sized to allow one parked HGV's to be unloaded using the tower crane positioned within the site and dependent upon the stage of the programme loaded and distributed at street level or lifted directly into the site. On completion of the delivery slot the pit lane will be removed, and the lane re-opened to traffic.

3.3 Logistics management and Neighbourhood Liaison manager

The successful contractor shall provide a nominated directly employed member of staff to act as Logistics and Neighbourhood Liaison Relationship Manager. This individual will be responsible for managing and co-ordinating the material access / egress to the site through the operation of a vehicle / material booking in system. It will be their responsibility to manage and update the contractors Construction Traffic Management Plan in conjunction with the Project Construction Phase Health and Safety Plan. Both documents will be reviewed, updated and distributed as necessary.

As part of the role, early contact will be made with key neighbours to ensure regular contact is maintained throughout the demolition and construction process. This will allow the site team to log any complaints received by the neighbours or any other affected third parties. Responses to those complaints can then be managed. To facilitate this, a Freephone contact number will be displayed on the external hoarding.

The cleanliness of the site boundary will be maintained. The areas adjoining and used for access to cross the public highway will be kept clean and free from obstructions. Where there is a need to run cables, hose or any other potential hazard for the users of the footway, suitable ramping together with appropriate signage must be employed.

These external areas will be the responsibility of the banksmen and outside of their role of policing deliveries to and from the site they will be on hand to offer help and assistance to vulnerable users of the footway.

3.4 Condition, Party Wall Surveys and Monitoring

As soon as the Contractor is appointed a series of photographic condition surveys will be carried out to the surrounding area during the lead in period before the start on site date.

Due to the nature of the site and the various adjoining owners a series of party wall awards and scaffold oversail licences will need to be entered into with owners of the following properties;

- Headland House, 308-213 Gray's Inn Road, London. WC1.
- 65 & 65A Swinton Street, London. WC1.
- 68 Acton Street, London.WC1.
- 70 Acton Street, London WC1.

Due to the relationship with the adjoining buildings and the excavation works involved to form the additional level of basement, an electronic movement monitoring regime will be implemented to the existing basement structure which will be monitored through the demolition and sub-structure phases to ensure agreed trigger and action levels are not exceeded.

As a matter of course, photographic condition surveys will take place to the immediate highway adjoining properties where appropriate.

3.5 Site Security, Access & Traffic Management

Where appropriate, external CCTV cameras may be located around the site perimeter. During working hours entrances and exits will be manned by security personnel throughout the project period. Energy efficient, sympathetically located lighting will also be provided to the hoarding to enhance security.

All staff and visitors to the site will use an electronic system to access / exit from the site.
The site is well served by local public transport bus links on Gray's Inn Road and the following nearby rail connections are available;

- Kings Cross Station (Main Line, London Underground Northern, Piccadilly and Victoria Lines) a 5-minute walk.
- Euston Station (Main Line, London Underground Central and Jubilee Lines) a 16-minute walk.

There will be **no parking** for staff or workforce construction vehicles on site.

Any deliveries not booked into this system or arriving outside the permitted working hours will not be permitted onto site and will be turned away. Waiting vehicles in the local residential streets will not be permitted.

3.6 Delivery / Vehicle Management

3.6.1 General Vehicle Movements

In order to minimise the impact the increase on local construction traffic will have on the local area; all vehicle movements both in and out of the site will be managed and monitored by the Logistics Manager who will ensure vehicles do not , other than in the defined pit lanes, wait on Swinton Street, Gray's Inn Road, Acton Street, Great Percy Street, kings Cross Road or other local highways, at any time.

All vehicle movements to and from the site will be subject to a delivery booking system managed by the contractor's Logistics and Neighbour Liaison Manager and this system will incorporate any special events for the neighbours. The system will also ensure that material deliveries are rationalised to reduce vehicle movements to the site generally. To ensure bottle necks and waiting vehicles are avoided a system will be implemented to ensure that each delivery calls into the site.

The appointed Contractor must have a proven track record for developments for this nature and operate an online booking in system for ALL deliveries and material removal from the site.

A detailed heavy goods vehicle analysis has been undertaken and details can be found within the programme section of this report. Based upon the resource loading of the programme, we expect peak vehicle numbers to reach 17 for a limited period of time during the main contract works, with this dropping to an average of 12 per day.

One vehicle movement relating to a single vehicle entering and existing the site via the previously noted primary HGV routes.

To ensure that all vehicles leaving the site are suitably cleaned at the key demolition and sub-structure stages of the programme, a dedicated logistics team will be in place to wash down vehicles prior to re-entry to the highway. This team will use jet-wash lances at a specific 'wash down area' to prepare the vehicles before they enter the highway together with regular road sweeper visits to sweep and wash the primary egress route local to the site.

3.7 Existing Incoming Services

In addition to the electrical sub-station noted the existing building is served by a water supply from Swinton Street and a gas supply from Acton Street. Prior to vacant possession meter readings for the 3 primary services will be taken and ahead of the demolition works commencing these services will be isolated and arrangements put in place for them to be relocated to suit the new construction.

4.0 Details of the Works

The Acorn House site comprises a combination of residential and commercial space over a total of 9 floors, ground floor retail together with 2 basement levels.

4.1 Outline Demolition and Construction Sequence

This section provides an indicative summary construction sequence.

- **Vacant Possession**

For the purposes of this document, we have taken a notional Vacant Possession date of 4th January 2021.

- **Site Set up and Enabling Works**

Once vacant possession has been achieved the building will be secured with a perimeter hoarding to the Gray's Inn Road and Swinton Street elevations, this will be set an approximate dimension of 2.5m from the existing building facade to allow sufficient space for a perimeter demolition scaffold to be erected; any street furniture that the proposed gantry and scaffold cannot accommodate will also be relocated at this time through prior approval with LBC Highways team and TfL.

This will be carried out at the same time as the erection of the pedestrian gantry to Gray's Inn Road that will provide safe access for pedestrians.

As the external enabling works progress and internal asbestos R&D survey will be undertaken and the results of which will determine the existence of asbestos containing materials (ACM's). Due to the age and type of construction of the building and review of the building survey report prepared by Gerald Eve, we have assumed there are ACM's within the building that will need to be removed prior to the soft strip commencing.

On completion of the asbestos removal works by a licenced carrier and issue of appropriate clearance certificate, the soft strip works can commence to strip the building back to its structure prior to demolition.

These works will be carried out using the existing lift shaft as vertical distribution and material cleared from the existing car park area.

- **Demolition**

Prior to demolition the incoming services will be capped off to allow the safe demolition to take place. Demolition will be carried out from top down using plant lifted onto the roof slab (subject to loading capacity checks of the hollow pot floors); and will progressively be undertaken down to ground
floor level. Roof mounted plant will be removed during the initial crane lift where possible.

The building will have a full scaffold installed on all perimeter faces to allow access and protection to all levels of the building. The scaffold will be fully sheeted to mitigate the escape of dust and noise to the surrounding areas.

At this stage, an electronic real time structural movement monitoring regime which incorporates agreed trigger and action levels will be installed to the existing basement structure. These will be remotely monitored through the demolition and sub-structure phases to ensure agreed trigger and action levels are not exceeded and appropriate hold points identified.

The structural demolition will be carried out in a top-down manner using a number of machines including large excavators with hydraulic hammer attachments. The demolished structure will be progressively removed from site in bulk skips with smaller light duty vehicles initially accessing the car park off Swinton Street.

In advance of the ground floor slab removal the temporary sub-station will need to be commissioned and the changeover from the existing carried out to allow for its removal and the temporary sub-station proposed on Swinton Street installed; timings of which will be arranged with UKPN to ensure a changeover across a weekend.

Once the demolition has been completed to the ground level slab, some temporary structural supports will need to be installed to allow the ground floor slab to be demolished while ensuring that the exiting retaining walls do not collapse. The remaining ground floor and fit out slabs can them be removed.

During the demolition phase, dust, noise and vibration minimisation techniques will be used to minimise negative impact on the surrounding area.

- **Construction**

As demolition competes a luffing jib tower crane will be installed.

This crane will be used for the installation of the new concrete frame, elements of the façade and roof plant. Given the tight nature of this site, this crane will also be used to lift the materials for the internal fit out to the correct floors using a preston platform or similar crane loading platform

With the new basement slab and service pits/cores formed, the above ground structural works will commence. The new concrete frame will be constructed utilising the tower crane and a static pump for the placement of concrete.

We expect the façade will be formed from a proprietary metsec/SFS system, installed off the new concrete floorplate spanning between columns and a masonry facade installed from an external access scaffold.

Upon completion of the building façade and external roof works the scaffolding will be removed.

- **Office and Residential Fit Out – Risers, Lifts & Core Areas**

The fit out works on the core are planned to be carried out “separately” from the office and residential works. The fit-out works are planned to start once the core is waterproofed.

The risers and lift shaft need to be formed in the core level by levels. Following the shafts formation, the risers and lift installation can start.

As soon as practicable towards the end of the fit-out period the office and welfare will be relocated into the building to allow the external gantry to be removed and the external works reinstated.

- **Plant Rooms / Areas**

There are two plant room areas in the building. One is located on the basement levels and the other at roof level. The works for the upper level plant commence once Level 9 roof slab and associated upstands are complete and waterproofed.

- **Final Clear Commissioning Period and Practical Completion**

16 weeks have been allowed for commissioning following Power On. 8 weeks have been allowed for final completions once all the fit-out works have been completed.

4.1.1 Site Set Up and Welfare Facilities

Immediately following vacant possession and to allow the initial works to commence, a fully decorated and suitably illuminated 2.4m hoarding will be provided to the site boundary. This will require an application to LBC Highways Dept for location of scaffold and hoarding. Vehicle access gates will be provided to the car park access off Swinton Street to provide demolition vehicle access.

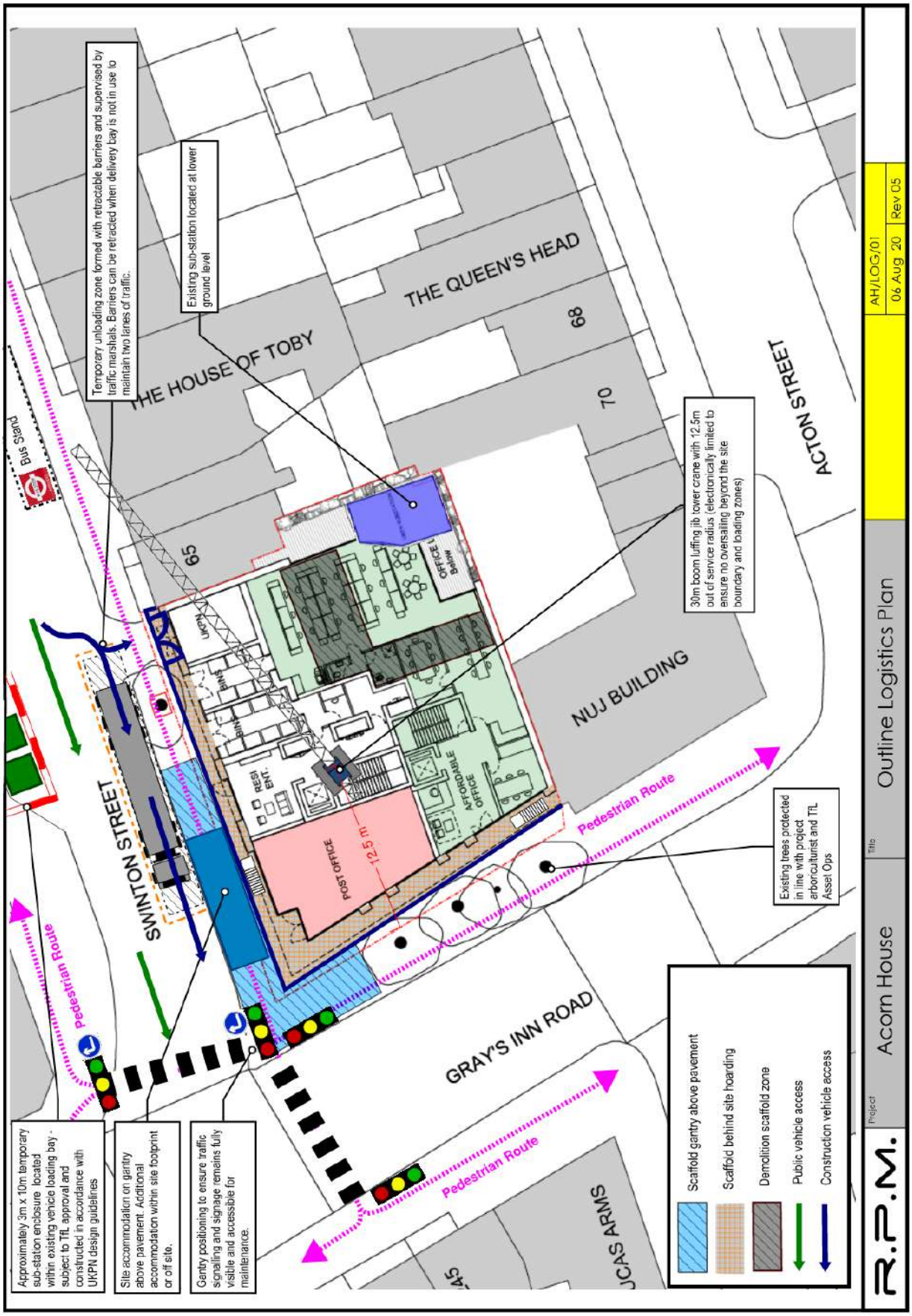
Welfare and accommodation will be initially located on a gantry to Swinton Street for the demolition and construction phases with this relocated into the building as the development progresses into the final stages.

The hoardings will be lit with energy efficient LED lighting and the access points illuminated so to minimise visual intrusion and light spillage/ pollution at the nearby properties but will comply with regulations to ensure safe passage around the perimeter. The hoarding is to include (where appropriate) public viewing panels that allow children as well and adults to observe operations and a Freephone contact number to the Neighbourhood Liaison Manager.

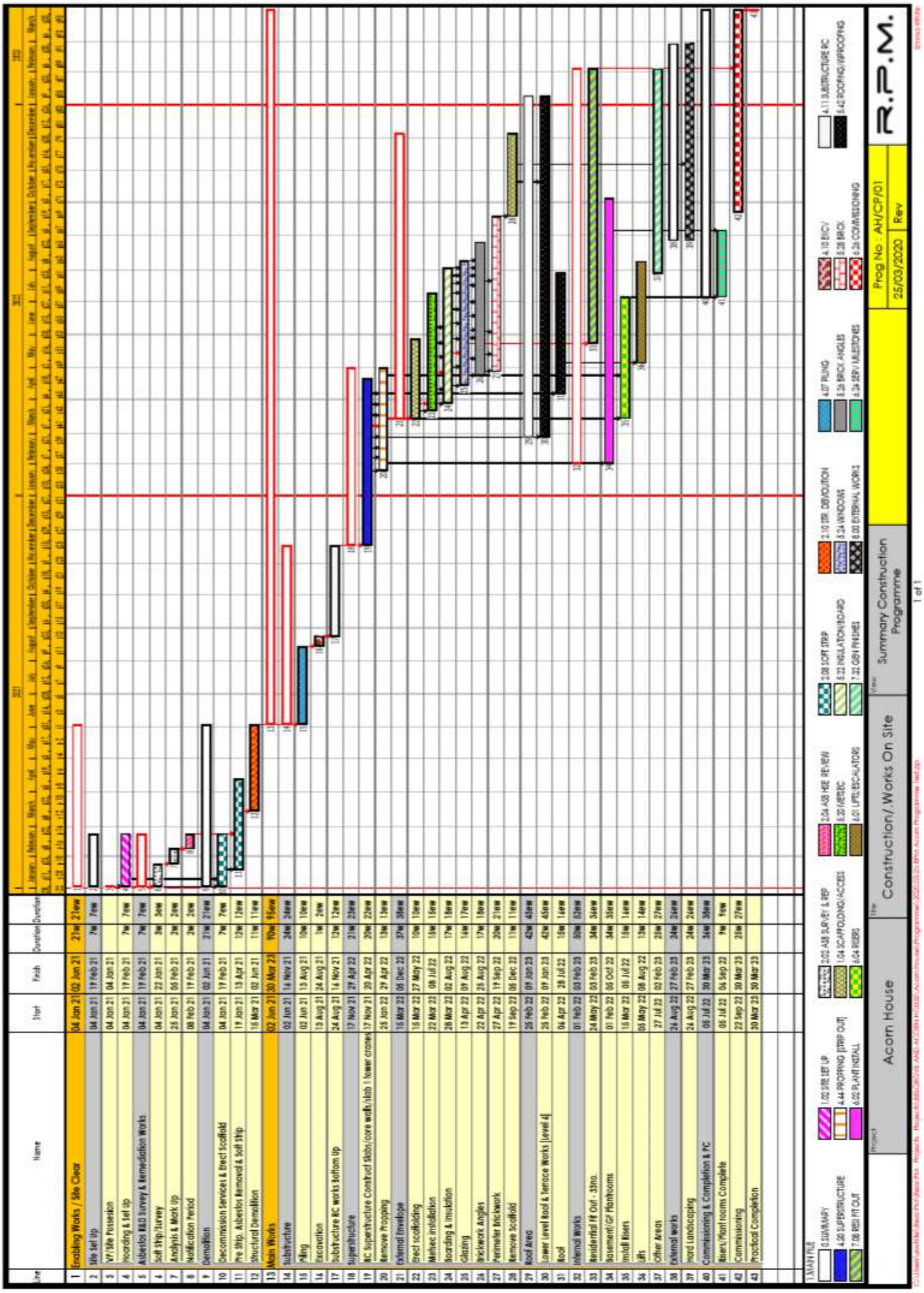
The site hoarding line will remain in place throughout the project and in the main will only be removed as the external finishing works require it. As the façade and external works are completed, the interface with hoardings will be locally sequentially relocated.

Finite details of progressive hoarding moves will be provided within the contractors detailed logistics and phasing plans as part of the Construction Phase Health and Safety Plan.

5.0 Outline Logistics Plan

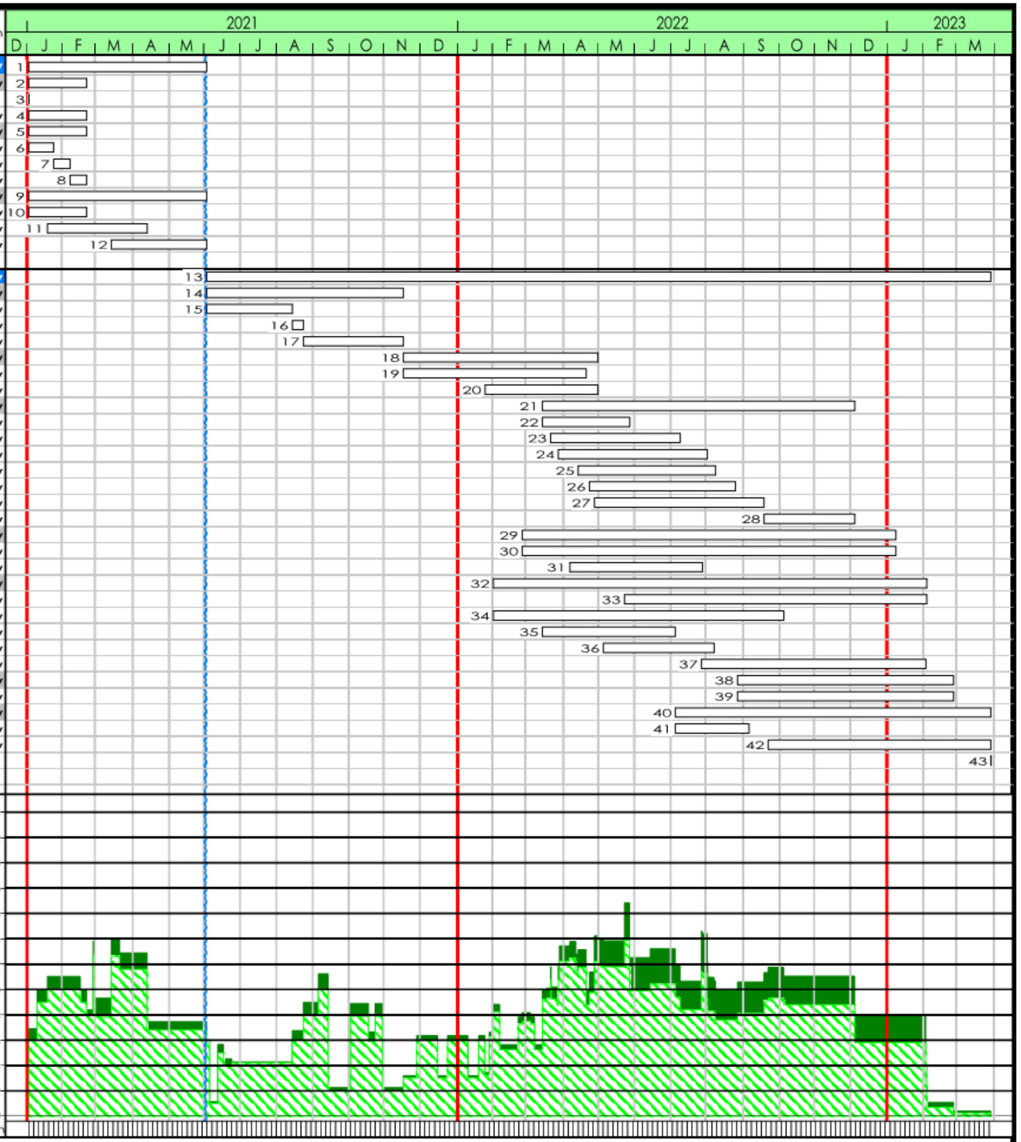

Temporary unloading zone formed with retractable barriers and supervised by traffic marshals. Barriers can be retracted when delivery bay is not in use to maintain two lanes of traffic.
Existing sub-station located at lower ground level
THE HOUSE OF TOBY
THE QUEEN'S HEAD
68
70
65
ACTON STREET
Bus Stand
30m boom luffing jib tower crane with 12.5m out of service radius (electronically limited to ensure no oversailing beyond the site boundary and loading zones)
NUJ BUILDING
SWINTON STREET
POST OFFICE
12.5 m
RESI EXT.
AFFORDABLE OFFICE
OFFICE
Pedestrian Route
Existing trees protected in line with project arboriculturist and TfL Asset Ops
GRAY'S INN ROAD
Pedestrian Route
Pedestrian Route
JCAS ARMS
Approximately 3m x 10m temporary sub-station enclosure located within existing vehicle loading bay - subject to TfL approval and constructed in accordance with UKPN design guidelines
Site accommodation on gantry above pavement. Additional accommodation within site footprint or off site.
Gantry positioning to ensure traffic signaling and signage remains fully visible and accessible for maintenance.
Scaffold gantry above pavement
Scaffold behind site hoarding
Demolition scaffold zone
Public vehicle access
Construction vehicle access
R.P.M.
Project
Acorn House
Title
Outline Logistics Plan
AH/LOG/01
06 Aug 20
Rev 05

5.1 Summary Programme


Acorn House
Construction/Works On Site
Summary Construction Programme
R.P.M.
Prog No : AH/CP/01
25/03/2020
Rev
1 of 1

5.2 Vehicle Movement Programmes

Line	Name	Start	Finish	Duration
1	**Enabling Works / Site Clear**	04 Jan 21	02 Jun 21	21w
2	**Site Set Up**	04 Jan 21	19 Feb 21	7w
3	VP/Site Possesion	04 Jan 21	04 Jan 21	
4	Hoarding & Set Up	04 Jan 21	19 Feb 21	7w
5	**Asbestos R&D Survey & Remediation Works**	04 Jan 21	19 Feb 21	7w
6	Soft Strip/Survey	04 Jan 21	22 Jan 21	3w
7	Analysis & Mark Up	25 Jan 21	05 Feb 21	2w
8	Notification Period	08 Feb 21	19 Feb 21	2w
9	**Demolition**	04 Jan 21	02 Jun 21	21w
10	Decommission Services & Erect Scaffold	04 Jan 21	19 Feb 21	7w
11	Pre Strip, Asbestos Removal & Soft Strip	19 Jan 21	13 Apr 21	12w
12	Structural Demolition	15 Mar 21	02 Jun 21	11w
13	**Main Works**	02 Jun 21	30 Mar 23	90w
14	**Substructure**	02 Jun 21	16 Nov 21	24w
15	Piling	02 Jun 21	13 Aug 21	10w
16	Excavation	13 Aug 21	24 Aug 21	1w
17	Substructure RC works Bottom Up	24 Aug 21	16 Nov 21	12w
18	**Superstructure**	17 Nov 21	29 Apr 22	21w
19	RC Superstructure Construct Slabs/core walls/slab 1 tower cranes	17 Nov 21	20 Apr 22	20w
20	Remove Propping	25 Jan 22	29 Apr 22	13w
21	**External Envelope**	15 Mar 22	05 Dec 22	37w
22	Erect scaffolding	15 Mar 22	27 May 22	10w
23	Metsec installation	22 Mar 22	08 Jul 22	15w
24	Boarding & Insulation	28 Mar 22	02 Aug 22	17w
25	Glazing	13 Apr 22	09 Aug 22	16w
26	Brickwork Angles	22 Apr 22	25 Aug 22	17w
27	Perimeter Brickwork	27 Apr 22	19 Sep 22	20w
28	Remove Scaffold	19 Sep 22	05 Dec 22	11w
29	**Roof Area**	25 Feb 22	09 Jan 23	42w
30	Lower Level Roof & Terrace Works [Level 6]	25 Feb 22	09 Jan 23	42w
31	Roof	06 Apr 22	28 Jul 22	15w
32	**Internal Works**	01 Feb 22	03 Feb 23	50w
33	Residential Fit Out - 33no.	24 May 22	03 Feb 23	34w
34	Basement/GF Plantrooms	01 Feb 22	05 Oct 22	34w
35	Install Risers	15 Mar 22	05 Jul 22	15w
36	Lifts	05 May 22	08 Aug 22	13w
37	Other Areas	27 Jul 22	02 Feb 23	25w
38	**External works**	26 Aug 22	27 Feb 23	24w
39	Hard Landscaping	26 Aug 22	27 Feb 23	24w
40	**Commissioning & Completion & PC**	05 Jul 22	30 Mar 23	36w
41	Risers/Plant rooms Complete	05 Jul 22	06 Sep 22	9w
42	Commissioning	22 Sep 22	30 Mar 23	25w
43	Practical Completion	30 Mar 23	30 Mar 23	



1 Combined Project Trips - 1.00 HGV/LORRIES, 1.01 VANS

Histogram Legend

Allocation - 1.00 HGV/LORRIES

Allocation - 1.01 VANS

Project	Title	View		
Acorn House	Vehicle Movements	Combined Vehicle Trips	Prog No : AH-VM-01	R.P.M.
			16/04/2020 Rev	

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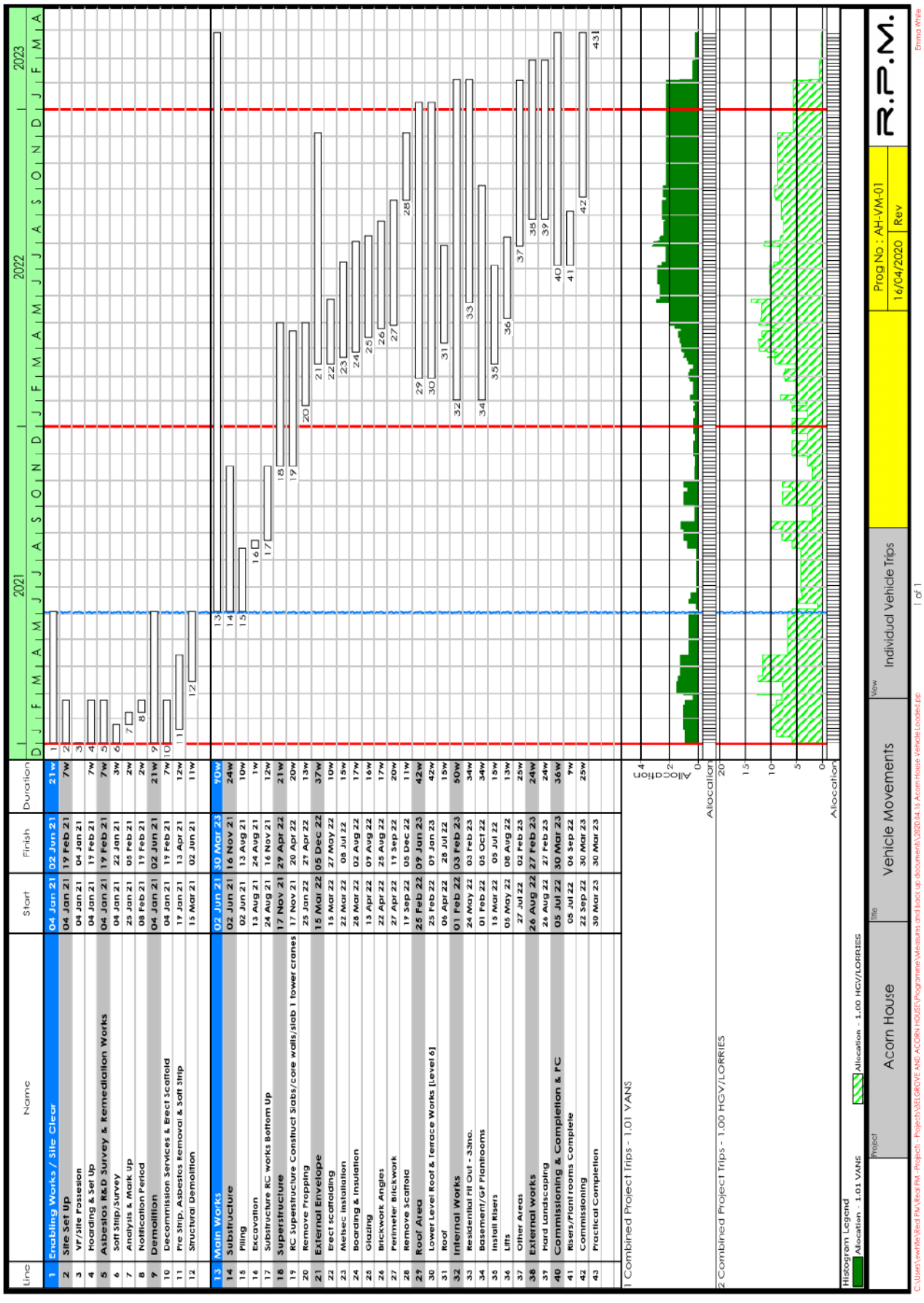
1 of 1

Emma White


Line
Name
Start
Finish
Duration
2021
2022
2023
1 Enabling Works / Site Clear 04 Jan 21 02 Jun 21 21w
2 Site Set Up 04 Jan 21 19 Feb 21 7w
3 VP/Site Possesion 04 Jan 21 04 Jan 21
4 Hoarding & Set Up 04 Jan 21 19 Feb 21 7w
5 Asbestos R&D Survey & Remediation Works 04 Jan 21 19 Feb 21 7w
6 Soft Strip/Survey 04 Jan 21 22 Jan 21 3w
7 Analysis & Mark Up 25 Jan 21 05 Feb 21 2w
8 Notification Period 08 Feb 21 19 Feb 21 2w
9 Demolition 04 Jan 21 02 Jun 21 21w
10 Decommission Services & Erect Scaffold 04 Jan 21 19 Feb 21 7w
11 Pre Strip, Asbestos Removal & Soft Strip 19 Jan 21 13 Apr 21 12w
12 Structural Demolition 15 Mar 21 02 Jun 21 11w
13 Main Works 02 Jun 21 30 Mar 23 90w
14 Substructure 02 Jun 21 16 Nov 21 24w
15 Piling 02 Jun 21 13 Aug 21 10w
16 Excavation 13 Aug 21 24 Aug 21 1w
17 Substructure RC works Bottom Up 24 Aug 21 16 Nov 21 12w
18 Superstructure 17 Nov 21 29 Apr 22 21w
19 RC Superstructure Construct Slabs/core walls/slab 1 tower cranes 17 Nov 21 20 Apr 22 20w
20 Remove Propping 25 Jan 22 27 Apr 22 13w
21 External Envelope 15 Mar 22 05 Dec 22 37w
22 Erect scaffolding 15 Mar 22 27 May 22 10w
23 Metsec Installation 22 Mar 22 08 Jul 22 15w
24 Boarding & Insulation 28 Mar 22 02 Aug 22 17w
25 Glazing 13 Apr 22 09 Aug 22 16w
26 Brickwork Angles 22 Apr 22 25 Aug 22 17w
27 Perimeter Brickwork 27 Apr 22 19 Sep 22 20w
28 Remove Scaffold 19 Sep 22 05 Dec 22 11w
29 Roof Area 25 Feb 22 09 Jan 23 42w
30 Lower Level Roof & Terrace Works [Level 6] 25 Feb 22 09 Jan 23 42w
31 Roof 06 Apr 22 28 Jul 22 15w
32 Internal Works 01 Feb 22 03 Feb 23 50w
33 Residential Fit Out - 33no. 24 May 22 03 Feb 23 34w
34 Basement/GF Plantrooms 01 Feb 22 05 Oct 22 34w
35 Install Risers 15 Mar 22 05 Jul 22 15w
36 Lifts 05 May 22 08 Aug 22 13w
37 Other Areas 27 Jul 22 02 Feb 23 25w
38 External works 26 Aug 22 27 Feb 23 24w
39 Hard Landscaping 26 Aug 22 27 Feb 23 24w
40 Commissioning & Completion & PC 05 Jul 22 30 Mar 23 36w
41 Risers/Plant rooms Complete 05 Jul 22 06 Sep 22 9w
42 Commissioning 22 Sep 22 30 Mar 23 25w
43 Practical Completion 30 Mar 23 30 Mar 23
1 Combined Project Trips - 1.01 VANS
2 Combined Project Trips - 1.00 HGV/LORRIES
Allocation
Histogram Legend
Allocation - 1.01 VANS
Allocation - 1.00 HGV/LORRIES
Project
Acorn House
Title
Vehicle Movements
View
Individual Vehicle Trips
Prog No : AH-VM-01
16/04/2020
Rev
R.P.M.
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1 of 1
Emma White

6.0 Environmental Considerations during Construction

6.1 Site Working Hours

The programme is based upon the following proposed working hours;

- Monday to Friday 0800hrs – 1800 hrs.*
- Saturday 0800hrs - 1300hrs.*
- No noisy works between 0800hrs and 0900hrs.
- No Sunday or Bank Holiday working planned unless by prior approval for specific works. i.e. Mobile crane for demolition plant install and removal, tower crane and installation and removal activities.

Noisy operations will not take place outside these times.

*With the scope of demolition and piling planned, it is expected that the Principal Contractor will make an application to the LBC Environmental Protection Team for prior consent for works through Section 61 of the Control of Pollution Act 1974. The demolition and piling programme have already taken these hours into account.

6.2 Electric and Hybrid Vehicles (E&HVs)

The use of electric and hybrid plant and vehicles both within the site and undertaking deliveries to and from the site will be encouraged.

6.3 Non-Road Mobile Machinery (NRMM)

In accordance with the Mayor London's Planning Guidance on 'The Control of Dust and Emissions during Construction and Demolition' all non-road mobile plant and machinery used on the project will be registered on the NRMM register and comply with the emission criteria of Directive 97/68/EC covering net power between 37kW and 560kW.

An individual within the contractor's team will be appointed to ensure the relevant operatives are aware of the requirements; keep appropriate documentation on site and ensure that the NRMM online register is kept up to date.

6.4 Considerate Constructors Scheme

The development will be undertaken in accordance Considerate Constructor Scheme (CCS) with target set for minimum performance for the project, contractors and suppliers.

The Contractor will be required to register the Project under the Considerate Constructor Scheme with a minimum target score of 7 in each section of the Schemes site code for Considerate Practice.

As part of the CCS scheme regular inspections will be carried out and subsequent reports will be distributed as part of the contractor's monthly report.

6.5 Noise, vibration and dust

In order to mitigate construction noise vibration and dust the works will employ the 'Best Practicable Means'. Including application of methods recommended in BS 5228: Noise Control on Construction and Open sites, for example, undertaking works to ensure minimum disturbance, using muncher attachments to excavators in lieu of pneumatic breaker and utilising separation cut lines to minimise vibration transfer where applicable.

Construction processes will be monitored using air quality monitors to record particulates and the results compared to London wide monitoring stations. A site action level measured over 15 minutes will be agreed through consultation with LBC Environmental Team, once set appropriate mitigating action would be taken if this level is approached.

The following measures are to be undertaken for the control and monitoring of dust, fine particles and odours:

The contractor will develop a Code of Construction Practice (CoCP) in relation to construction noise and fugitive dust which must detail:

- The type of works to be undertaken and construction techniques to be used.
- The site layout and access arrangements.
- Times and duration of site operations.
- An inventory and timetable of all dust-generating activities.
- Principle Contractor(s) Statutory Obligations and duties.
- How staff will be trained in the use of noisy machinery.
- How materials are to be handled to minimise the potential for noise nuisance.
- Times and durations of any abnormal noise and how the public will be kept informed.
- The appropriate range of dust suppression and control measures to be implemented in accordance with a 'high risk' site as defined under the Best Practice Guidance for 'The Control of Dust and Emissions from Construction and Demolition' (Greater London Authority and London Councils)

- The on-site storage of fuels or chemicals.
- Identify the Site Environmental Management Representative (SEMR).

All vehicle loads entering / departing the site are to be covered and material sprayed with water on all unsealed or exposed areas via watering carts at regular intervals during dry-weather.

Erect temporary solid hoardings along all site boundaries to act as a windbreak and to limit lateral dust 'escape'.

Ensure that suitable training and awareness are provided to construction personnel so that they understand their responsibilities regarding environmental management, particularly the control of fugitive dust.

The appointed neighbourhood liaison/relationship manager will undertake regular liaison to ensure all residents and users of adjacent premises have been given advance notice to minimise dust concerns.

Where appropriate, the following measures to minimise noise and vibration levels will be adopted:

- Using modern, quiet and well-maintained equipment;
- Using low impact techniques, such as munchers where applicable;
- Using electrically powered equipment (mains or super silenced generators);
- Use of screws and drills rather than nails installing the hoarding;
- Careful material handling such as lowering rather than dropping items;
- Isolating the deconstruction works from sensitive neighbours, to minimise the transfer of vibration and structure borne noise;
- Avoidance of unnecessary noise between operations, shouting, loud radios or excessive revving of engines by effective site management;
- The use of radios on site, shouting, swearing, singing; sitting outside the site is not to be permitted at any time.
- No idling engines to reduce noise and pollution.

The distance between noise and vibration sources and sensitive neighbours will be maximised and the sound path obstructed, where practical, by considerate siting of stationary plant and loading/unloading areas.

The suitability of specific noise limits is highly dependent upon the individual situation. The factors to be considered include the characteristics of the potentially affected neighbours, baseline ambient noise levels and the nature and duration of the works.

6.6 Neighbour and Community Liaison

The appointed Logistics and Neighbourhood Liaison Relationship Manager will liaise with the LBC, local residents, businesses and other interested parties to keep them informed of progress on site and forthcoming activities which may affect them.

As part of the demolition and construction processes, the Principal Contractor will meet with the LBC Environmental Health and Highway representatives and key members of from the local community to fine tune methods of working and the measures to minimise disruption. As part of this liaison, regular meetings will be held to ensure they are kept informed of the progress and any comments received logged and actioned as a result of the works.

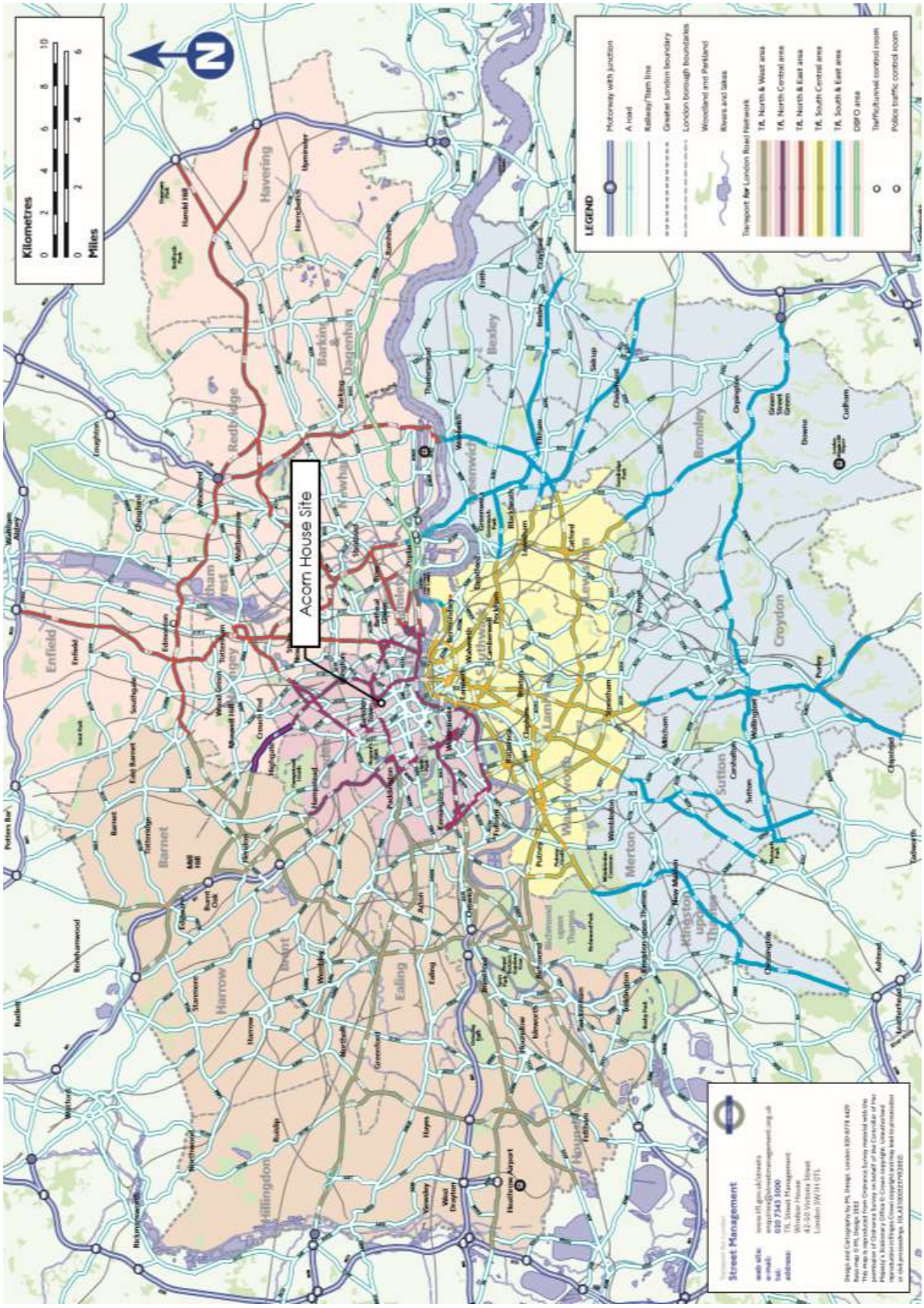
To mitigate disturbance the Principal Contractor will identify all residential properties and other sensitive occupiers in close proximity to the site prior to commencing work.

Prior to starting work, all occupiers in the vicinity of the site will be informed of the start date, the duration and nature of the project, the principal stages of the project and contact names and numbers of appropriate personnel via hand delivered mailed Project newsletter.

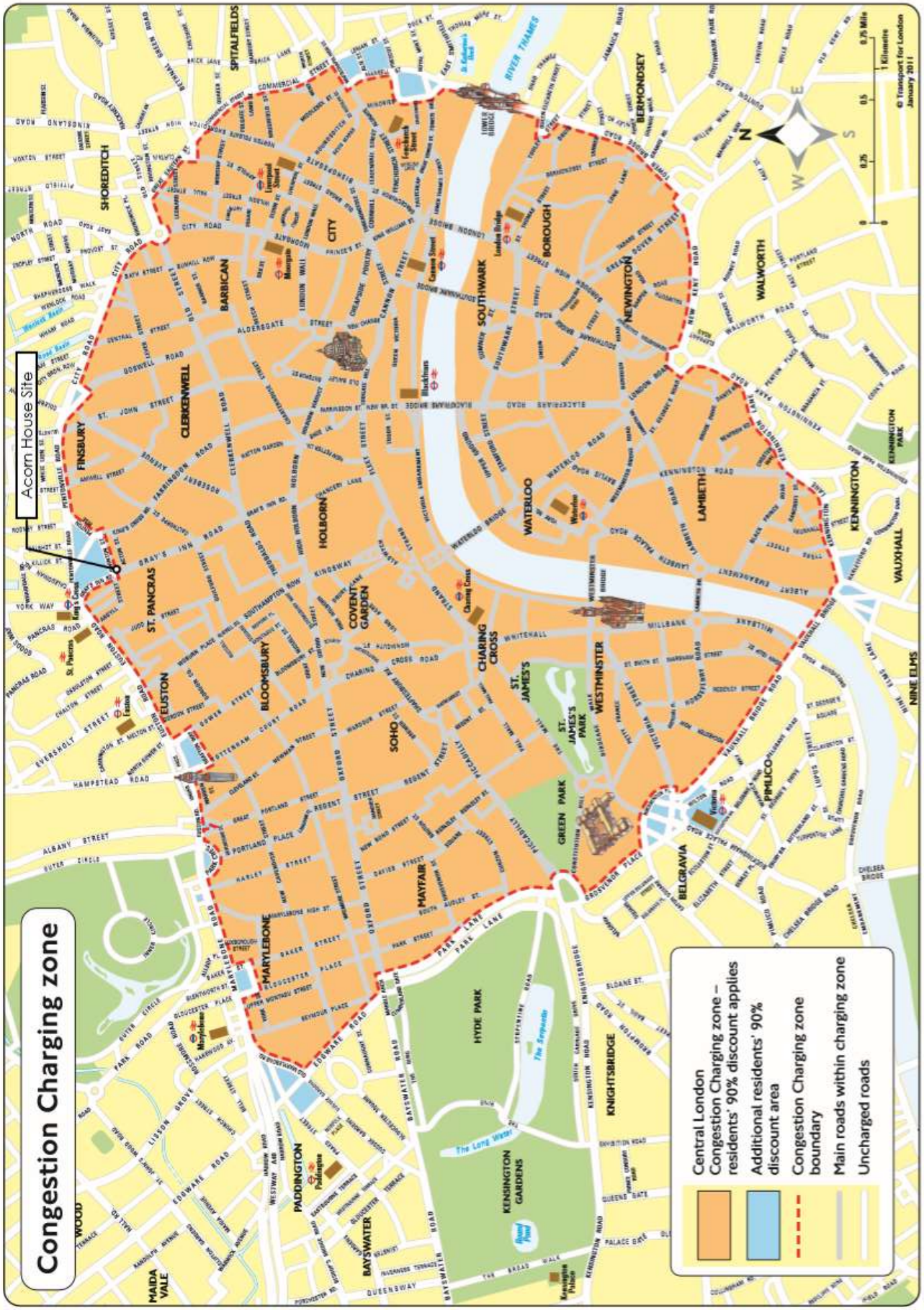
Further newsletters notifying neighbours of progress and forthcoming activities, particularly those which may cause disturbance, access difficulties and the like, are to be hand delivered to all adjoining occupiers and other neighbouring occupiers who may be affected by the works, on a monthly basis throughout the duration of the works.

A 'display board' will be erected outside the site, which will identify key personnel, contact addresses, and telephone numbers as well as a full copy of the planning permissions and any forthcoming activities relating to

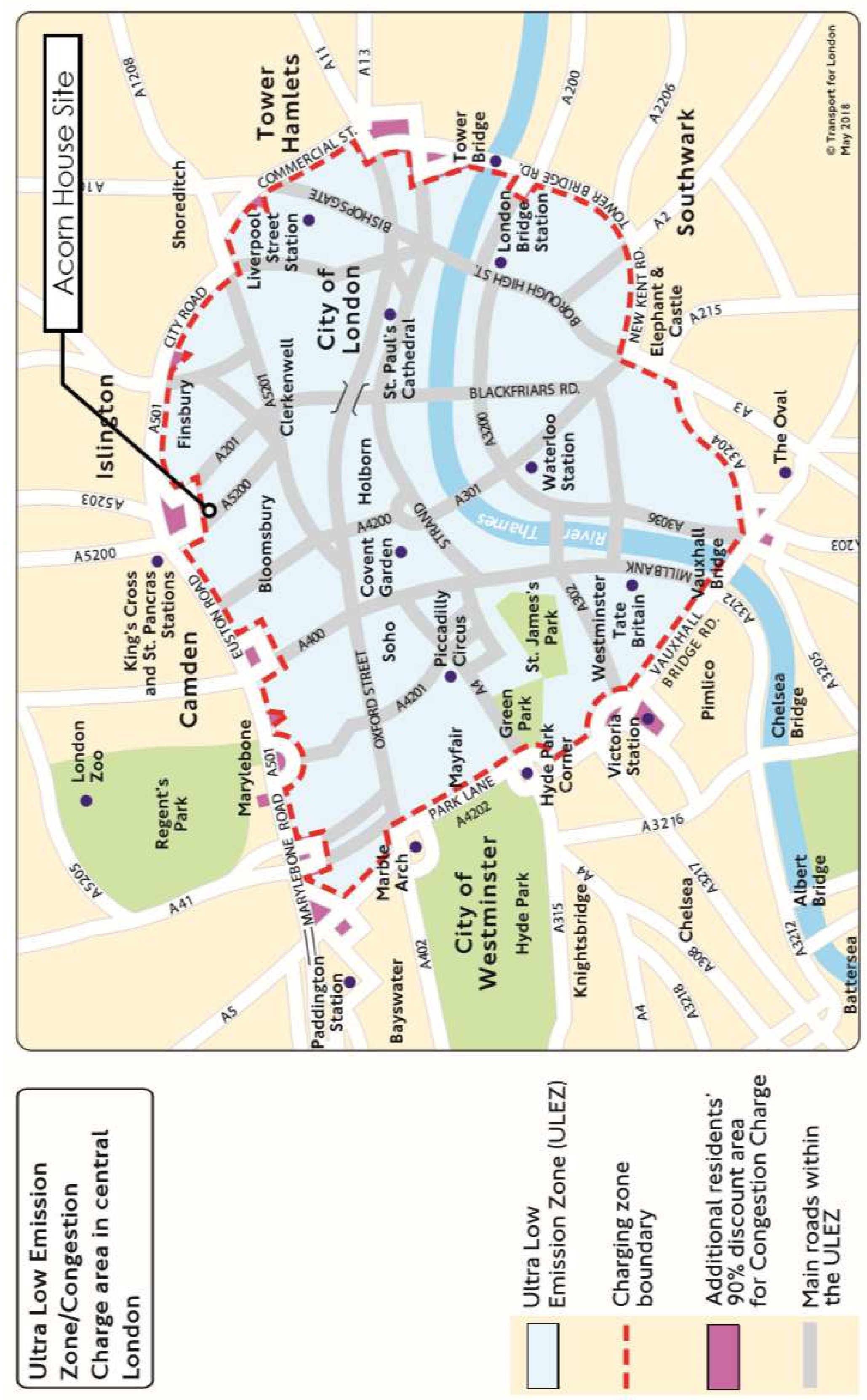
Appendix 1 - TfL Primary Road Network Plan


Acorn House Site
Kilometres
Miles
LEGEND
Motorway with junction
A road
Railway/Tram line
Greater London boundary
London borough boundaries
Woodland and Parkland
Rivers and lakes
Transport for London Road Network
TfL North & West area
TfL North Central area
TfL North & East area
TfL South Central area
TfL South & East area
DBFO area
Traffic/tunnel control room
Police traffic control room
Street Management

Appendix 2 – TfL Congestion Charge Zone Map


Congestion Charging zone
Acorn House Site
Central London Congestion Charging zone – residents' 90% discount applies
Additional residents' 90% discount area
Congestion Charging zone boundary
Main roads within charging zone
Uncharged roads
© Transport for London January 2011
CLERKENWELL
FINSBURY
BARBICAN
CITY
SHOREDITCH
SPITALFIELDS
HOLBORN
ST. PANCRAS
EUSTON
BLOOMSBURY
COVENT GARDEN
SOHO
CHARING CROSS
ST. JAMES'S
WESTMINSTER
WATERLOO
SOUTHWARK
BOROUGH
BERMONDSEY
NEWINGTON
LAMBETH
WALWORTH
KENNINGTON
VAUXHALL
NINE ELMS
PIMLICO
BELGRAVIA
MAYFAIR
MARYLEBONE
PADDINGTON
BAYSWATER
MAIDA VALE
KNIGHTSBRIDGE
HYDE PARK
KENSINGTON GARDENS
GREEN PARK
RIVER THAMES

Appendix 3 – ULEZ Map


Ultra Low Emission Zone/Congestion Charge area in central London
Acorn House Site
Ultra Low Emission Zone (ULEZ)
Charging zone boundary
Additional residents' 90% discount area for Congestion Charge
Main roads within the ULEZ
Islington
Finsbury
Clerkenwell
Shoreditch
Tower Hamlets
Liverpool Street Station
City of London
St. Paul's Cathedral
Holborn
Bloomsbury
King's Cross and St. Pancras Stations
Camden
London Zoo
Regent's Park
Marylebone
Covent Garden
Soho
Piccadilly Circus
Mayfair
Marble Arch
Paddington Station
Bayswater
City of Westminster
Hyde Park
Hyde Park Corner
Green Park
St. James's Park
Knightsbridge
Victoria Station
Westminster
Tate Britain
Pimlico
Chelsea
Chelsea Bridge
Albert Bridge
Battersea
Vauxhall Bridge
The Oval
Waterloo Station
Elephant & Castle
Southwark
London Bridge Station
Tower Bridge
River Thames
CITY ROAD
EUSTON ROAD
MARYLEBONE ROAD
PARK LANE
OXFORD STREET
STRAND
BLACKFRIARS RD.
BOROUGH HIGH ST.
NEW KENT RD.
TOWER BRIDGE RD.
BISHOPSGATE
COMMERCIAL ST.
MILLBANK
VAUXHALL BRIDGE RD.
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Appendix 4 – Major Plant

Piling Rig


Hydraulic Rotary Rig
SR-75
SR-75
soilmec
soilmec
Drilling and Foundation Equipment

SR-75 Hydraulic Rotary Rig

LDP APPLICATIONS

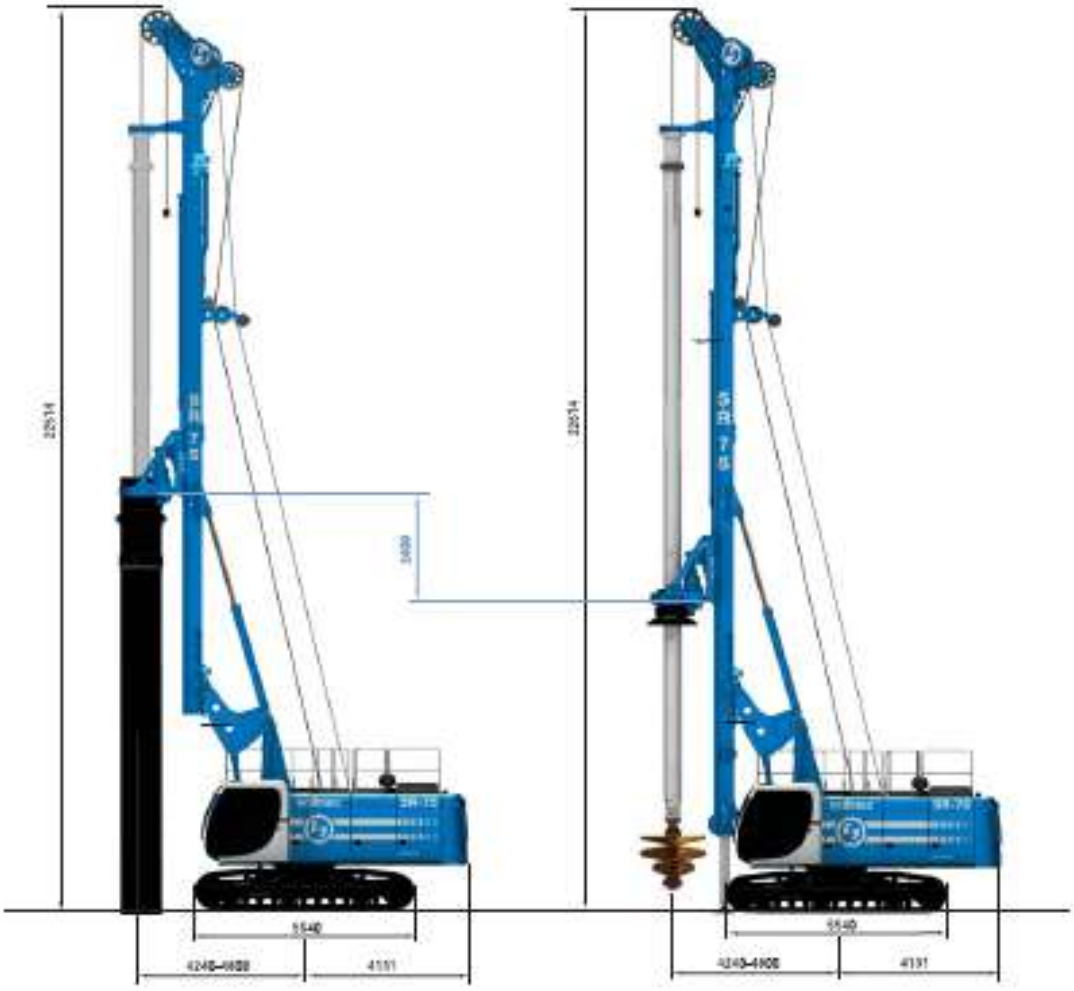
LDP - Large Diameter Piles - WCS version		
Operating weight c/w 6x10,5 kelly bar	75750 kg	166989.7 lb
Max pile diameter	1760 (2500)* mm	69.3 (98.43)* in
Max pile depth - friction kelly	77 m	252.62 ft
Max pile depth - locking kelly	62,5 m	205 ft

* Tool below mast

SR-75 Hydraulic Rotary Rig

LDP APPLICATIONS

Crowd cylinder double positioning



LDP • Large Diameter Piles • CCS version		
Operating weight c/w 6x10.5 kelly bar	74300 kg	163803 lb
Max pile diameter	2000 (3500)* mm	78.7 (98.43)* in
Max pile depth – friction kelly	77 m	252.62 ft
Max pile depth – locking kelly	62.5 m	205 ft

* tool below mast

SR-75 Hydraulic Rotary Rig

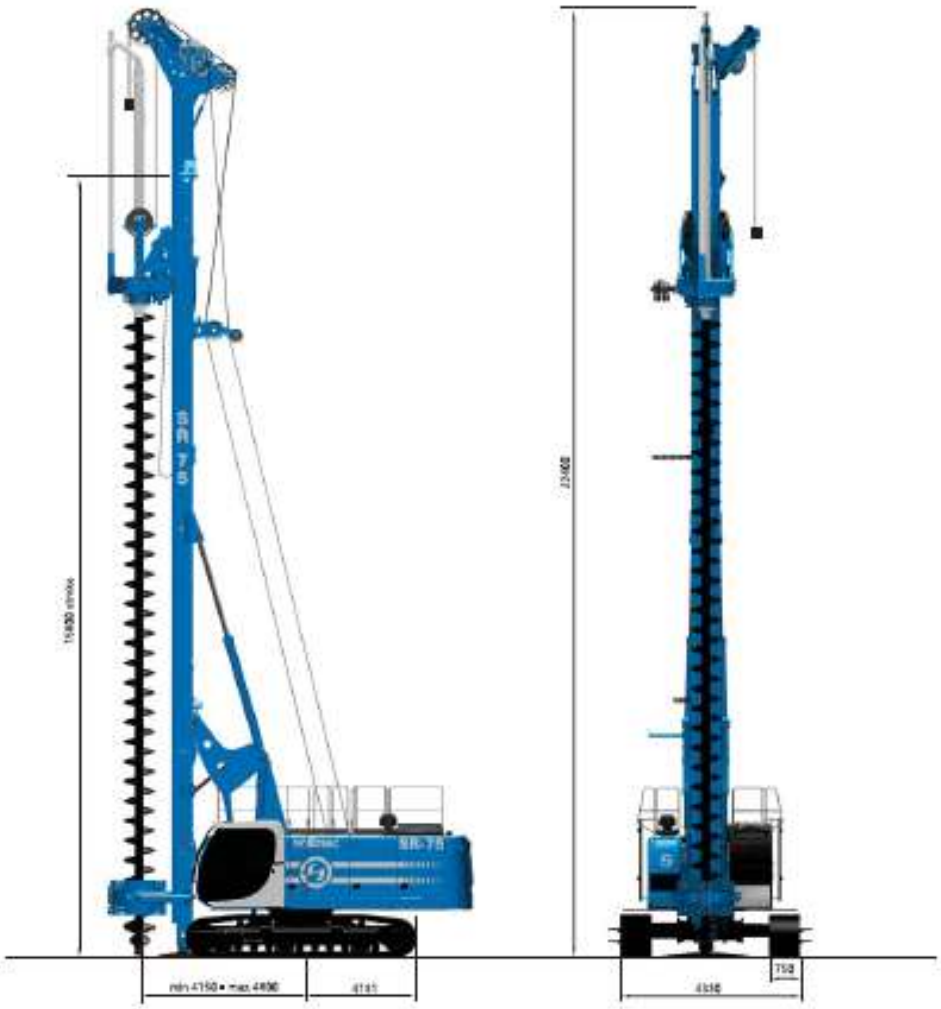
KELLY DRILLING SYSTEM

Drilling Depths	Kelly dimensions	Depth		Weight		CCS SYSTEM H = low pos		CCS SYSTEM H = high pos		WCS SYSTEM H	
	section x m	m	ft	ton	ton	m	ft	m	ft	m	ft
3 parts BL HD	3 x 9	24,0	78,7	3,4	3,5	8,5	27,9	10,3	33,8	10,3	33,8
3 parts BL HD	3 x 10,5	29,5	96,8	4,2	4,3	8,5	27,9	8,9	29,2	8,9	29,2
3 parts BL HD	3 x 13,5	37,0	121,4	6,7	6,8	4,7	15,4	4,7	15,4	4,7	15,4
3 parts BL HD	3 x 16,5	47,0	154,2	8,0	8,1	1,8	5,9	1,8	5,9	1,8	5,9
4 parts BL HD	4 x 10,5	37,0	121,4	5,7	5,8	8,5	27,9	8,9	29,2	8,9	29,2
4 parts BL HD	4 x 11,5	41,5	136,2	6,2	6,3	6,7	22,0	6,7	22,0	6,7	22,0
4 parts BL HD	4 x 13,5	50,1	164,4	7,1	7,2	4,7	15,4	4,7	15,4	4,7	15,4
4 parts BL HD	4 x 15,5	58,5	191,9	8,1	8,2	2,7	8,9	2,7	8,9	2,7	8,9
4 parts BL HD	4 x 16,5	62,5	205,1	8,5	8,6	1,8	5,9	1,8	5,9	1,8	5,9
4 parts FR HD	4 x 10,5	37,0	121,4	5,7	5,8	8,5	27,9	8,9	29,2	8,9	29,2
4 parts FR HD	4 x 13,5	50,1	164,4	7,1	7,2	4,7	15,4	4,7	15,4	4,7	15,4
4 parts FR HD	4 x 15,5	58,5	191,9	8,1	8,2	2,7	8,9	2,7	8,9	2,7	8,9
4 parts FR HD	4 x 16,5	62,5	205,1	8,5	8,6	1,8	5,9	1,8	5,9	1,8	5,9
5 parts FR HD	5 x 11,5	51,5	169,0	8,4	8,5	7,0	23,0	7,0	23,0	7,0	23,0
5 parts FR HD	5 x 13,5	62,0	203,4	9,7	9,9	4,5	14,8	4,5	14,8	4,5	14,8
5 parts FR HD	5 x 14,5	67,5	221,5	10,3	10,5	3,5	11,5	3,5	11,5	3,5	11,5
5 parts FR HD	5 x 16,5	76,0	249,4	11,6	11,8	1,5	4,9	1,5	4,9	1,5	4,9

* Non self-mountable kelly bar
** Rotinak dedicated kelly bar

SR-75 Hydraulic Rotary Rig

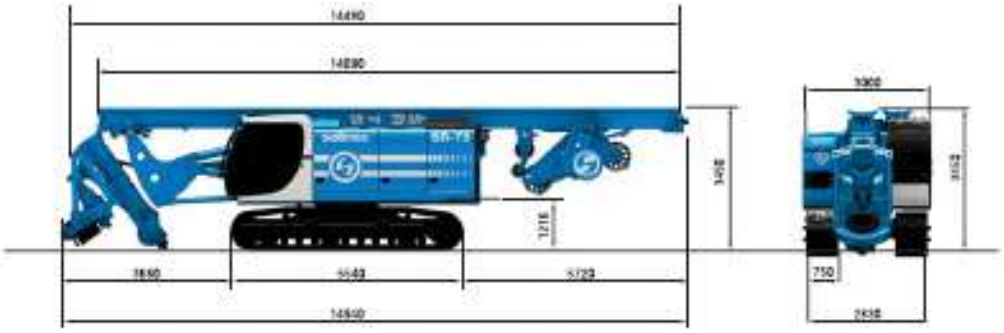
CFA APPLICATIONS Quick conversion kit



CFA • Continuous Flight Auger • Quick conversion kit		
Max pile diameter	1200 mm	203926 in
Max pile depth c/w 8 m auger extension	23,4 m	76.7 ft
Max pile depth with auger cleaner, c/w 8 m auger extension	22 m	72 ft
Extraction force	800 kN	179847 lbf
Crowd force on auger (optional)	408 kN	91722 lbf

SR-75 Hydraulic Rotary Rig

TRANSPORT, DIMENSIONS AND WEIGHTS



Transport configuration		
Width	**9000 mm**	118.2 in
Height	**3450 mm**	135.8 in
Length w/o rotary	**14490 mm**	570 in
Weight CCS / WCS	**52200 / 56100 kg**	115081 / 123699 lb
Min transport weight CCS / WCS	**49500 / 55460 kg**	109128 / 122246 lb

www.soilmec.it

soilmec
Drilling and Foundation Equipment

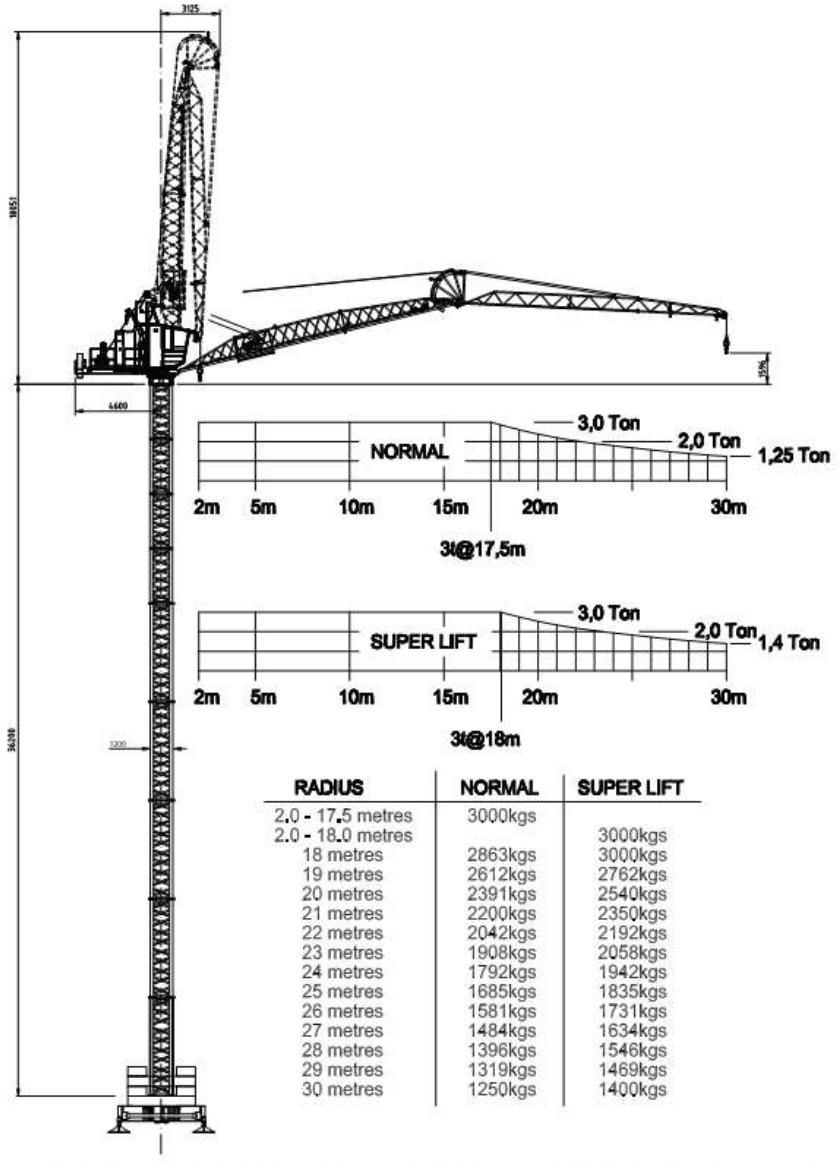
Tower Crane

Raptor 48

City Lifting
CRANE HIRE SPECIALISTS

Articulated Tower Crane

www.citylifting.co.uk



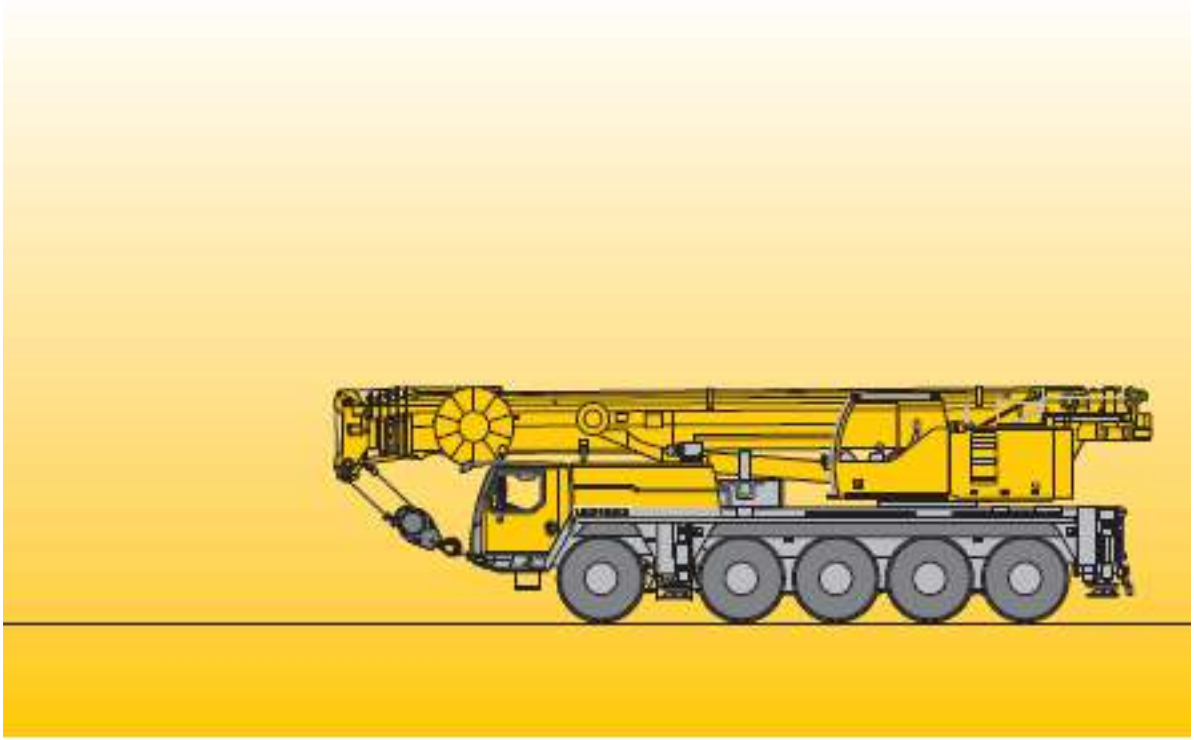
RADIUS	NORMAL	SUPER LIFT
2.0 - 17.5 metres	3000kgs	
2.0 - 18.0 metres		3000kgs
18 metres	2863kgs	3000kgs
19 metres	2612kgs	2762kgs
20 metres	2391kgs	2540kgs
21 metres	2200kgs	2350kgs
22 metres	2042kgs	2192kgs
23 metres	1908kgs	2058kgs
24 metres	1792kgs	1942kgs
25 metres	1685kgs	1835kgs
26 metres	1581kgs	1731kgs
27 metres	1484kgs	1634kgs
28 metres	1396kgs	1546kgs
29 metres	1319kgs	1469kgs
30 metres	1250kgs	1400kgs

Typical Mobile Crane (will vary for demolition and tower crane operations)

Mobilkran·Mobile Crane LTM 1095-5.1

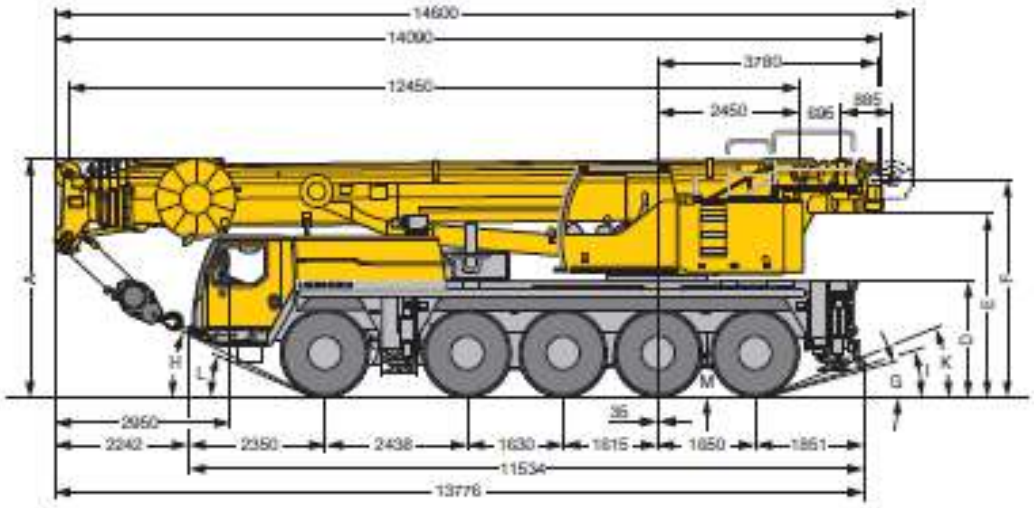
Grue mobile • Autogrù
Grúa móvil • Мобильный кран

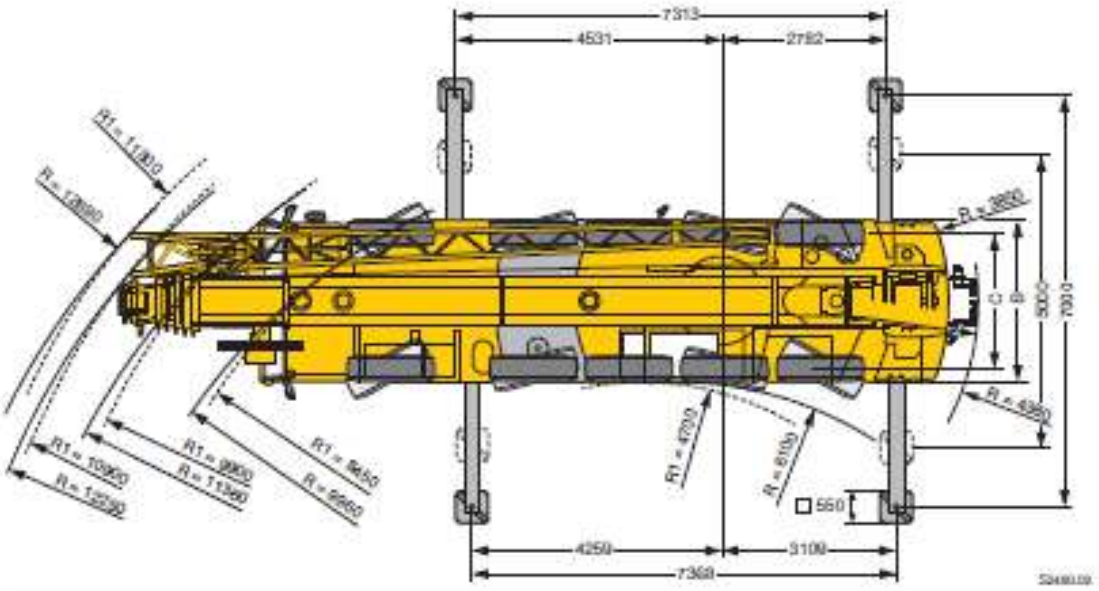
Technische Daten • Technical Data
Caractéristiques techniques • Dati tecnici
Datos técnicos • Технические данные



LIEBHERR

Maße
Dimensions
Encombrement · Dimensioni
Dimensiones · Габариты крана





R_1 = Abstellkurve · All wheel steering · Direction toutes roues · Tutti gli assi sterzanti · Dirección en todos los ejes · Габарит поворота колёсами

Maße · Dimensions · Encombrement · Dimensioni · Dimensiones · Размеры mm

	A	A 100 mm*	B	C	D	E	F	G	H	I	K	L	M
385/95 R 25 (14.00 R 25)	3950	3850	2750	2350	1890	3035	3696	13°	23°	14°	19°	21°	378
445/95 R 25 (16.00 R 25)	4000	3900	2750	2300	1940	3085	3745	13°	25°	16°	20°	22°	428
525/80 R 25 (20.5 R 25)	4000	3900	2850	2320	1940	3085	3745	13°	25°	16°	20°	22°	428

* abgesenkt · lowered · abaissé · abbassato · suspensión abajo · опущен

Gewichte
Weights
Poids • Pesi
Pesos • Нагрузка

Achse · Axle Essieu · Asse Eje · Мосты	1	2	3	4	5	Gesamtgewicht · Total weight t Poids total · Peso totale t Peso total · Общий вес, т
t	12	12	12	12	12	60[1]

[1] mit 15 t Ballast · with 15 t counterweight · avec contrepoids 15 t · con contrapeso di 15 t · com 15 t de contrapeso · с противовесом 15 т

Traglast · Load t Forces de levage · Portata t Capacidad de carga · Грузоподъемность, т	Rollen · No. of sheaves Poulies · Puleggе Polipasti · Канатных блоков	Stränge · No. of lines Brins · Tratti portanti Ramales · Запасовка	Gewicht · Weight kg Poids · Peso kg Peso · Собст. вес, кг
80	7	14	500
68,4	5	11	500
38,3	3	7	450
16	1	3	300
5,7	–	1	140

Geschwindigkeiten
Working speeds
Vitesses • Velocità
Velocidades • Скорости

		1	2	3	4	5	6	7	8	9	10	11	12	R 1	R 2	
385/95 R 25 (14.00 R 25)	km/h	1,79 – 5,2	6,7	8,6	11,1	14	18,1	23,8	30,6	39,4	50,5	64,2	75	1,92 – 5,6	7,2	48 %
		0,78 – 2,3	2,9	3,8	4,8	6,1	7,9	10,4	13,3	17,2	22	28	36,9	0,84 – 2,4	3,2	> 60 %
445/95 R 25 (16.00 R 25) 525/80 R 25 (20.5 R 25)	km/h	1,94 – 5,7	7,3	9,4	12,1	15,3	19,7	25,9	33,2	42,8	55	69,8	80	2,09 – 6,1	7,9	43 %
		0,85 – 2,5	3,2	4,1	5,3	6,7	8,6	11,3	14,5	18,7	24	31,4	39	0,91 – 2,7	5,4	56 %

Antrieb · Drive Mécanisme · Meccanismo Accionamiento · Приводы	Hubmaß · Schrittzahl variabel en continu · continuo regulable en escalonamiento · бесступенчато	Seil ø / Seillänge · Rope diameter / length Diamètre / Longueur de câble · Diametro / lunghezza fune Diámetro / longitud cable · Диаметр / длина	Max. Seilzug · Max. single line pull Effort au brin mont. · Massimo tiro diretto fune Tiro máx. en cable · Макс. тяговое усилие
	m/min für einfachen Strang · single line 0 – 120 m/min au brin simple · per tiro diretto · a tiro directo м/мин при одинарной запасовке	17 mm / 260 m	57 kN
	m/min für einfachen Strang · single line 0 – 120 m/min au brin simple · per tiro diretto · a tiro directo м/мин при одинарной запасовке	17 mm / 260 m	57 kN
	0 – 1,7 min⁻¹		
	ca. 60 s bis 82° Auslegerstellung · approx. 60 seconds to reach 82° boom angle circa 60 s jusqu'à 82° · circa 60 secondi fino ad un'angolazione del braccio di 82° aprox. 60 segundos hasta 82° de inclinación de pluma · ок. 60 сек. до выставления стрелы на 82°		
	ca. 390 s für Auslegerlänge 12,5 m – 58 m · approx. 390 seconds for boom extension from 12,5 m – 58 m circa 390 s pour passer de 12,5 m – 58 m · circa 390 secondi per passare dalla lunghezza del braccio di 12,5 m – 58 m aprox. 390 segundos para telescopar la pluma de 12,5 m – 58 m · ок. 390 сек. до выдвижения от 12,5 м до 58 м		

Hubhöhen
Lifting heights
Hauteurs de levage • Altezze di sollevamento
Alturas de elevación • Высота подъема

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