

Proposed Construction Logistics Plan

Terminal 2 Hotel

Site Logistics and Traffic Management Plan

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1 Introduction

This plan details the onsite logistics and traffic management requirements proposed for the project construction phase.

The strategy is to optimise the interface between site traffic, Airport Operations and T2 delivery vehicles, and to reduce the number of deliveries where practicable, so the volume of traffic is kept as even as possible, avoiding peaks, and controlling vehicular movements on the project. This is also of particular importance in easing the burden of deliveries on the Airport security operations.

This plan is also to be communicated to principal contractor and sub-contractors and suppliers to provide them with the relevant information to enable them to correctly schedule and arrange their site deliveries, and to manage their unloading /loading operations and associated site logistics.

This Project logistics plan is a live document and as such is subjected to amendment and adaptations that improve the planning of the logistics of the site or adapt to constrain not foreseen or not existing at the present time.

1.1 Risk Management

Avoiding hazards and controlling the risks arising from the use of the vehicles and plant in construction work is essential. Therefore the principal contractor and second tier contractors are due to efficiently and safely manage the site delivery and site activities aspects related to logistics and lifting operations, in compliance with H&S best practice and policies, the H&S law and legislation, HAL standards and CDM regulation. Some of these aspects are denoted –but not limited- below:

- Planning and managing plant and vehicular routes.
- Safe management of off-loading/loading areas.
- Safe driving and working practices.
- The elimination of reversing where possible and ensuring a Banksman is present when any reversing or complex vehicle movements take place.
- Controlled movement of equipment and materials between site areas.
- Protection of other construction workers and third parties. Vehicle / pedestrian segregation
- Adequate vision and lines of sight.
- The provision of signs and barriers.
- Comply with LOLER and PEWER under the law
- Best practices for the management of lifting operations
- HAL safety practice, restrictions and requirements

1.2 Deliveries, Airside Operations& Tunnel Access:

The construction site is at landside on the CTA, as such all deliveries will be in line with the Fulcrum delivery system and monitored throughout.

All vehicles need to arrive to the outside facility from CLC in order to be checked before entering the airport CTA tunnel. This facility is located on Colnbrook, at the northwest of the airport (Outside of the airport premises) – Refer to Traffic management plan on next section-.

HAL include into their best practice CLOCS initiative which is measured by FORs standards. Vehicles delivery to site shall comply with FORs bronze standards as minimum requirement. Exceptional deliveries shall be agreed before being brought to site

Vehicle contained combustible materials as fuel or gas have to come through airside routes.

Within regards to abnormal loads entering the tunnel, this vehicle must be notified to HAL traffic desk and escort need to be arranged prior tunnel entering. – This constrain could change in order to suit tunnel alterations. At this moment the maximum allowed tunnel height is 4.3 m

Abnormal load description as below:

Description	Maximum Width	Maximum Length ¹	Maximum Height ²
1. Small Oversized Load	2.9m to 3.5m (9ft 6' to 11ft 6')	16.25m (53ft)	4.3m (14' 1'')
2. Medium Oversized Load	3.5m to 4.1m (11ft 6' to 13ft)	18.75m (61ft 6')	4.3m (14' 1'')
3. Large Oversized Load	4.1m to 5m (13ft to 16ft 6')	24m (78ft 9')	4.3m (14' 1'')
4. Outsized Load	> 5m (>16ft 6')	> 24m (78ft 9')	> 4.3m (14' 1'')

Depending of the characteristics and dimension of the load and also, the period/time of the delivery, the vehicles could be asked to come through airside. This will be agreed and coordinated with sufficient time in advance

In order to maintain the coordination of the activities, a delivery forecast will be asked for all contractors. These delivery forecast shall be produced and distributed in 3 month of activities period. Changes in this need to be agreed before application

2 Traffic Management Plan

2.1 Site Location

The project location is landside adjacent to the terminal 2 car park so all site deliveries /collections must be managed and agreed before arrival.

Delivery /collection vehicles will not be allowed to lay-up in surrounding Airport Roads causing disruption to the flow of traffic.

All delivery/collection vehicles must report to the Colnbrook Logistics Centre (CLC) before coming to site. The CLC will contact the site logistics team and confirm if site is ready to take the vehicle, once confirmed the vehicle can be released.

All vehicles must follow the traffic route/plan to site, and must not deviate unless informed to do so. The routes are attached below as required

Upon arriving the driver will be received by the gateman/site operative and informed of where to go for off load/load, the driver must stay with the vehicle at all times wearing full PPE if he/she needs to get off the vehicle

Vehicle shall be switched off during the offloading period

M4 to the Colnbrook Logistics Centre



Colnbrook Logistics Center to the Main Tunnel.



Main Tunnel exit to Site



These are the main route sections to site and must be followed. As a rule - from the tunnel stay in the left hand lane to reach the site entrance.

2.2 The Site

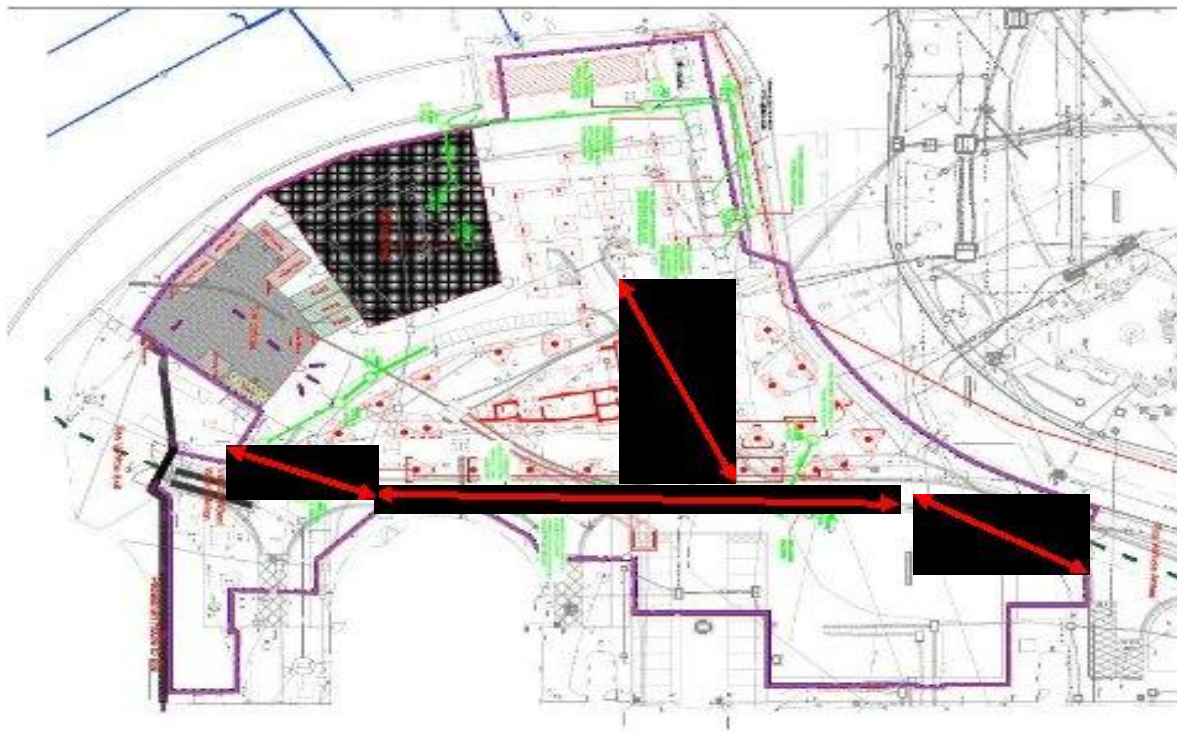
The site is a landside located at the east of the Terminal 2 Car Park of the CTA. The project is 14 storage building designed to be Hotel ones built. Site address is:

Arora Terminal 2 Hotel
Cessna Road
London Heathrow Airport
Hounslow
TW6 1AH

2.3 Vehicle and Pedestrian Routes around the Site:

The pedestrian routes will be managed and change to suit safe and efficient access to the working areas. These routes will change as the site progress; however, the segregation between pedestrian and vehicles/plant shall be maintained at all times.

All vehicular and plant movements around the site will be via the designated routes.



As per the pedestrian segregated routes, during the project there will be phased works that will change the vehicle routes around site, these will be amended to suit the requirements of each phase as the work progress. Changes in any plans and routes shall be displayed where necessary.

It is anticipated that the main road to be used for the access for the majority of the project will be Cessna Road, Located at the east end of the site boundaries. It is also expected that Cessna Road will be the principal access to the loading bays – Refer to section below-.

The main control measures in reducing risk are as follows:-

- Pedestrians to follow existing defined pedestrian routes.
- Vehicles to follow defined vehicular traffic routes.
- Vehicular traffic control on-site (e.g. demarcation from pedestrians/staff, one way systems, lay down & unloading areas, the use of banksmen, traffic marshals, pedestrian cross-over's, traffic control signage, etc.)
- Scheduling certain activities to occur in off peak conditions.
- Site personnel working within the site boundaries are to be particularly vigilant when working in the vicinity of plant and equipment.

2.4 Traffic Management for Vehicle Off-loading /Loading



The above plan details where vehicles (up to 40ft articulated Lorries) will be parked in the designated delivery area to unload /load materials and equipment into the site compound, a manual traffic management system must be put in place and operated, in order to maintain a safe and fluent vehicle movement and unloading/loading procedures, in that sense, traffic marshal and means of unloading and segregation shall be provided by the contractor.

3 Traffic Management Procedures:

3.1 Responsibilities

The responsibility for the site logistics and construction traffic movement is under the principal contractor who can designate a logistics provider to manage and execute the activities related to this works. As part of the logistic activities (but not exclusively) the principal contractor must comply with the following aspects:

- Ensure that sub-contractors and suppliers comply with Airport Notices and procedures.
- Ensure that sub-contractors and suppliers adhere to procedures set out in this Site Logistics, lifting and Traffic Management Plan along with the methodologies of their Safe Systems of Work.
- Ensure that a Delivery Schedule is submitted weekly to the project team, providing notification of all deliveries for the forthcoming week, so that site Security has sufficient notice to resource accordingly to receive the Airside deliveries.
- Ensure that only one delivery /collection vehicle is scheduled to be on site at any one time.
- Arrange all required access for delivery drivers, vehicle permits and escorts.
- Provide local traffic management of the off-loading process of vehicles at the site compound.
- Ensure that vigilance and safe working practices are maintained in the movement of equipment and materials between the site compound and the construction areas.
- Prevent unauthorized sub-contractor parking. Parking onsite is not permitted to not working vehicles
- Ensure that off-load /lay down areas are maintained in a clean and safe condition.
- Ensuring the lifting team from the sub-contractor cover the relevant competencies
- Audits and inspection to be carried out to plants and equipment to comply with H&S law LOLER and PEWER regulations and the British Standards

3.2 Delivery /Collections Process

All deliveries /collections must be pre-booked through the principal contractor system. Also, the principal contractor will determine the interface and slots available through its delivery management system; this include loading /unloading procedures, management of the safety aspect of the lifting operations, management of the loading bays and management of the material and equipment distribution alongside with the contractors

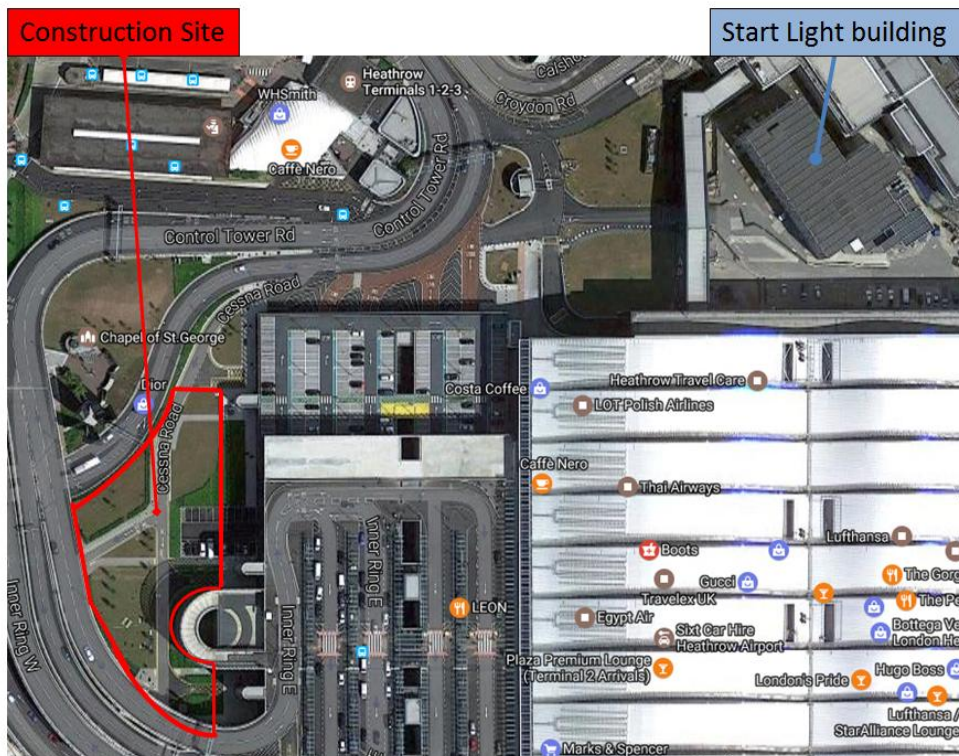
4 Site welfare facility:

The main welfare area is the Startlight building, located nearby the project premises. Any additional onsite welfare/office facility needs to be provided by the contractors.

The route from the welfare facility to the construction site shall be defined and approved by Grove Developments and HAL; after need to be briefed and followed by the operatives from the contractors as they will pass on front of the Heathrow Terminal 2.

No PPE is allowed to be used into the Airport terminal area and good behaviour must be shown at all times, as this area has high level of public interface

All operatives using Start Light building will attend to an induction briefing done by the Startlight Building management team or by the contractor once, he present an induction that cover the Start light facility usage main points and its approved.



The main welfare facility houses the following areas:

- Changing rooms
- Female and male toilets
- Canteen and canteen kitchen
- Meeting room facilities
- Gym
- Office space

The building is accessible 24/7 but there are restrictions on the office floors, as they have access from 7.00 to 19.00 hours. Staff working out of these hours needs to have approved passes to his/her floor working area

5 Environment and public interface:

5.1 Road& walkways maintenance and set up

During the different phases of the project the principal contractor is entitle to maintain the adjacent roads clean. Also, to ensure there is in place a swiping/cleaning system of the walkways adjacent to the site and assembly point.

The road cleaning regime will be implemented to eliminate the amount of dirt and muck transported onto the carriageways.

During peak period of deliveries, it is suggested to use means of cleaning such as road sweeper and also mitigation system e.g. wheel washing systems

5.2 Waste management – management and segregation

Through the building process, the principal contractor is entitle to lease with contractors in order to establish waste management and waste segregation systems, to comply with the H&S and environmental legislation and HAL standards

Waste management transfer notes and waste control shall be kept in order to demonstrate that the project comply with the environmental legislation and best practice for the construction industry

5.3 Transport miles and CO2 emissions:

As part of the environmental aspect to be taking in consideration, the project management team from the main contractor will be able to demonstrate the recording of date related to CO2 emission for vehicles transporting material two and from site. Also, enabling to record the mileage and transport flow to and from site

5.4 COSHH and Combustible storage and waste:

It is expected for all contractors to comply with environmental best practice in terms of COSHH storage and COSHH waste management, in order to avoid contaminating agents spillages during the project faces. In that order it is responsibility of all contractor (principal and second tears) to ensure all measurement and process are in place, including spillage mitigation systems and spillage prevention strategies

5.5 Vermin Control:

Vermin control and eating/ drinking designated areas are due to be determine into the environmental and safe system of works in order to avoid the contamination of food due to be ingested and also to minimise the attraction of vermin to site. If it is identified as a necessity, the principal contractor shall be able to implement vermin control systems

6 Storage of Materials, Work Equipment and Plant

The Site Compound and other site storage areas have the potential to become congested with stored materials, skips, work equipment and plant. It is therefore important these areas are properly managed to avoid accidents and damage to materials and equipment.

All materials and equipment to be delivered to the site are to be scheduled on a 'just in time basis'. Removed materials and equipment are not to be stored on site and must be taken away as soon as practicable. Only plant and equipment in regular use may be kept on site.

Stored materials and equipment are to be neatly set out within the Site Compound. Access and escape routes must be maintained. Where materials and equipment are stacked they must be in a stable condition.

To plan in case of crane downtime or adverse situations when doing deliveries, that may require the temporary storage of a load off-site, CLC shall be engaged and an emergency system shall be on places. This system shall be coordinated between the principal contractors, the logistics provider (if any) and the second tier contractor involve in this potential operational risk.

All storage areas are to be regularly tidied by the respective sub-contractors.

7 Cranes:

7.1 General crane activities on site:

Contractors are expected to produce lifting plan and lifting strategies, including safe system of works and considering the working environment. This activities are due to be monitored by the principal contractor as part its contractual duties under the Health & safety point of view, in that sense an Appointing Person for Lifting Operation shall be nominated into the site team in order to check and monitor the adequate and safe procedures of all site lifting operations.

Contractor shall provide competent person to manage and execute their lifting operations, this operatives shall include:

- Machine operator.
- Lifting supervisor
- Lifting banksmen / slingers
- Appointing person for producing all lifting plans as per law and legislation
-

Note: All lifting operations shall comply with LOLER and BS7121. Lifting Plans are to be separately provided for the use of a HIAB's or Fork Lift Trucks.

7.2 Cranes and Airport height restriction:

Due to the height restrictions, radar and control tower interface, all lifting plans/lifting strategies for cranes planned to be used on site shall be notified -with sufficient time- to the HAL authorities for its comments and approval. This process shall be done through the principal contractor

7.3 Crane for pre-cast concrete activities:

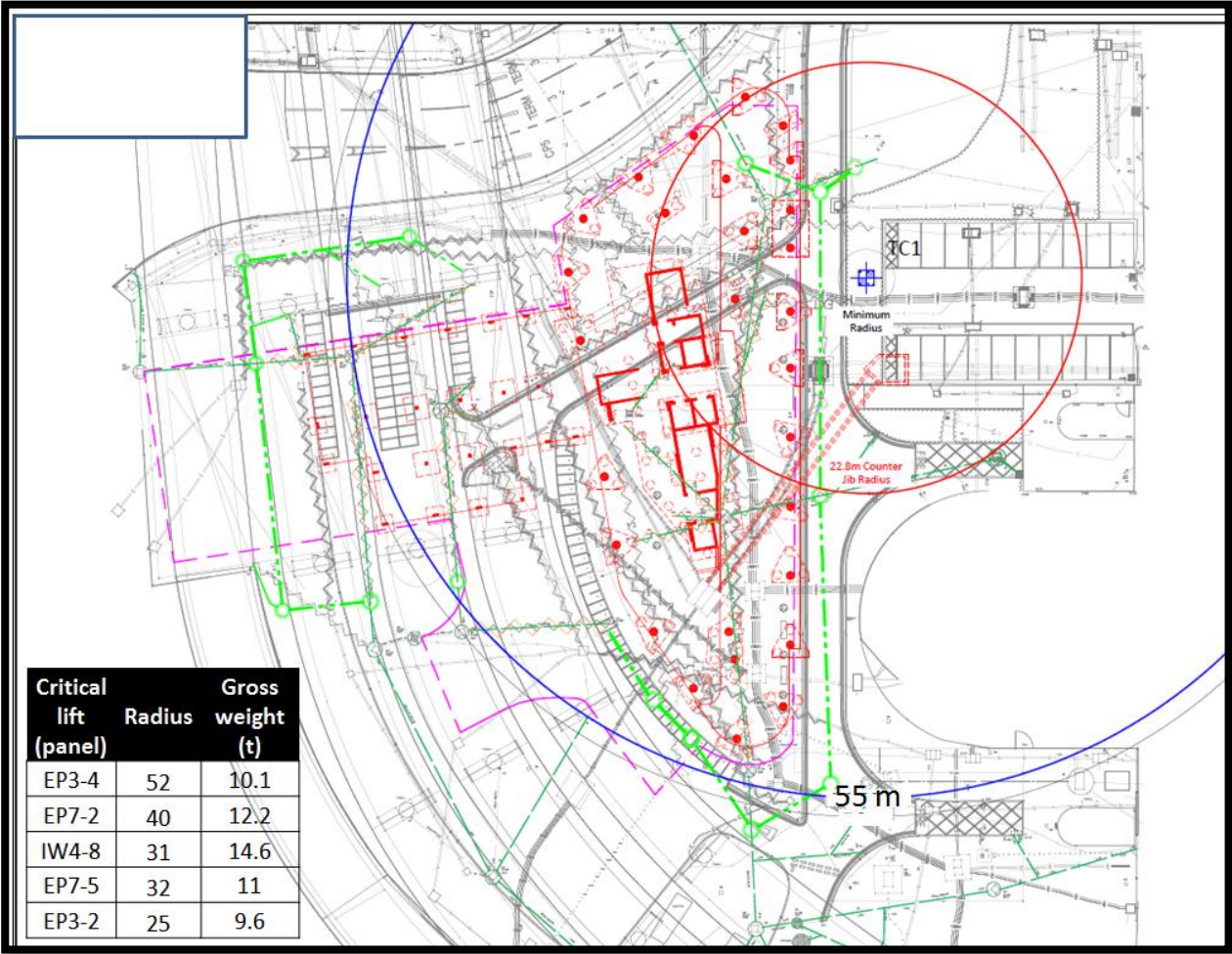
For the pre-cast concrete activities, the main contractor is due to provide and manage the rigging, usage and de-rigging of a crane able to lift 10.1 tonnes at 55 meter radius and be at a height (Ground floor to Hook) approximately of 57.6 meters

This crane will be on site from the period in which the pre-cast activities start and will be programmed to be de-rigged after the structural steel erection works have been completed at roof level. The principal contractor is due to provide the crane, crane driver, basic lifting tackles, communication system (radios) and project AP. Also, it is due to comply with the management and recording of the H&S legislation related documents and procedures for lifting operation throughout its appointment on the project. Also, to provide the Project lifting plan

It is expected for the sub-contractor to provide lifting personal (banksmen, slingers and lifting supervisor) to carry out its element of work. Also providing a schedule of lift and lifting plan to be added to the project lifting plan.

The lifting accessories -required to carry out their element of works- and its regular inspection are responsibility of the contractor. However the principal contractor has the responsibility to foresee these activities in order to ensure safety, programme and quality aspects of the project

Sketch for crane radius and capacities bellow:



8 Site Plant

Plant is to be provided by sub-contractors as required for their use on the construction site. The main powered plant that will be utilised during the project construction phase will be for access and lifting operations and will include MEWPs, Cherry Pickers, Fork Lift Trucks, boom lifts, spiders and mobile cranes.

Plant operators are to have valid operator skills cards /certificates from accredited bodies such as CPCS, IPAF, or other acceptable accredited training organisations.

All plant brought onto the site is to be in safe working order and fit for the purpose. It is to be regularly maintained in accordance with manufactures instructions and concise records kept in compliance with construction legislation, to include certification, inspection dates and PAT Testing, etc. It must be clearly identified with the sub-contractors name and site contact details.

Principal contractor is due to arrange charging points for electrically powered plant but this is subject to the sub-contractors providing adequate notice of plant charging requirements. Sub-contractors using any other fuelled plant must provide their own facilities for correct external storage of fuel or gas bottles in accordance with both construction legislation and Heathrow Airport Regulations.

Parking areas for plant are to be agreed between site management teams. Keys must be removed from all plant when not in use.

The Provision and Use of Work Equipment Regulations (PUWER) apply to the use of all plant and equipment. Also, for lifting equipment the Lifting Operations and Lifting Equipment Regulation (LOLER) apply.

9 Material and operatives movement & site material vertical movement:

9.1 Material & operatives movement:

Materials, equipment and personal movement between the Site Compound and construction areas will be via the designated routes. Movement of equipment or materials will generally be undertaken utilising fork lift trucks, telehandlers, or manually moved on pallet trucks or suitable trolleys.

Where the loads dictate, a banksman will be in attendance to marshal the load to its destination.

Care is to be taken when moving materials into the storage areas to ensure no damage occurs to the materials or site areas/equipment

Once in the storage areas, all materials and equipment are to be immediately transferred to the designated construction areas as required.

When not in use all plant shall be parked up in the Site Compound or designated construction areas that are suitably cordoned off.

9.2 Vertical movement:

For the material, equipment and operatives vertical movements -after the pre-cast concrete structure has been completed- it is planned to fit 2 external hoists, situated at north and south end of the building. The capacity and dimension of these machines shall suit the material, equipment and personal movement needs. The principal contractor is due to provide these machine, the operators (hoist drivers) and also to comply with the operational, logistical and safety aspects of these 2 hoists.

For the cladding installation the preferred method of access -from the contractor- is mast climbers. These mast climbers also are expected to be used for sealing and grouting the external concrete structure (to be coordinated between contractors). The installation and operation of these machines as the sequence of installation and power feeding are elements to be agreed between the contractor and the principal contractor. As per all other elements of works, the principal contractor has the duty to ensure the safe system of work has been followed

10 PPE – Inductions – Working hours – Site access and egress:

10.1 Personnel Protective Equipment (PPE)

As part of HAL standards, for landside works, all personnel accessing to site must have 5 point PPE as minimum

- Hi-vis vest
- Hard hat
- Safety glasses
- Gloves
- Mid sole and toe protection boots

Traffic Marshall shall and airside operatives shall wear 6 Point PPE to include Hi visibility Trousers

Refer to the Construction Phase Plan, Site Safety Induction and sub-contractor Task Specific Risk Assessments and Method Statements for PPE requirements in the various site areas.

10.2 Site Safety Inductions

All personal is due to attend to the site safety induction; the induction will be given by the principal contractor to all site operatives and mangers, highlighting risk areas, site activities and general safety and emergency arrangements. Also, the workforce will be required to attend to safety briefings related to the particular operations to be carried out. Briefing initiatives and best practice as daily briefings are welcome to implement.

For delivery /collection drivers entering the site is duty of the principal contractor to manage the safe system of work and transmission of information in the case of emergency. Also to communicate site procedures such as engine running protocols or PPE requirements for driver climbing off the cabins.

Visitors Safety Inductions are due to be implemented on site.

10.3 Site working Hours:

The site is not under section 60 or 61 requirements and HAL doesn't specify working hours restrictions. However it is important to keep constant communication between the site principal contractor and HAL authorities and Grove Developments, in order to coordinate activities and understand if the hours of work affect or interface with external activities

For the project programme point of view it is expected that the contractors will work on rates of 10 hours a day and Monday to Fridays. It is at discretion of the contractor to manage its activities and the duration of them, as soon as notification is given and coordination between the different parties being on place.

10.4 Access and Egress to Site

For staff using Startlight building, they will only use the designated walking routes to and from site and must not deviate from this route, Whilst walking between Starlight and site, staff will remove all high visibility clothing and muddy boots. The principal contractor will be designated the routes and managing the process

11 Fire Safety:

11.1 Interphase with the fire route:

The north entrance of Cessna Road is the main site access to vehicles but also it is the entrance route to the fire brigade in case of emergency in the T2 parking area. Therefore the entrance of the site cannot allow vehicles being parked at the outside of Cessna Road, also any vehicle –not site related- parked outside of the premises shall be notified to HAL Traffic Control.

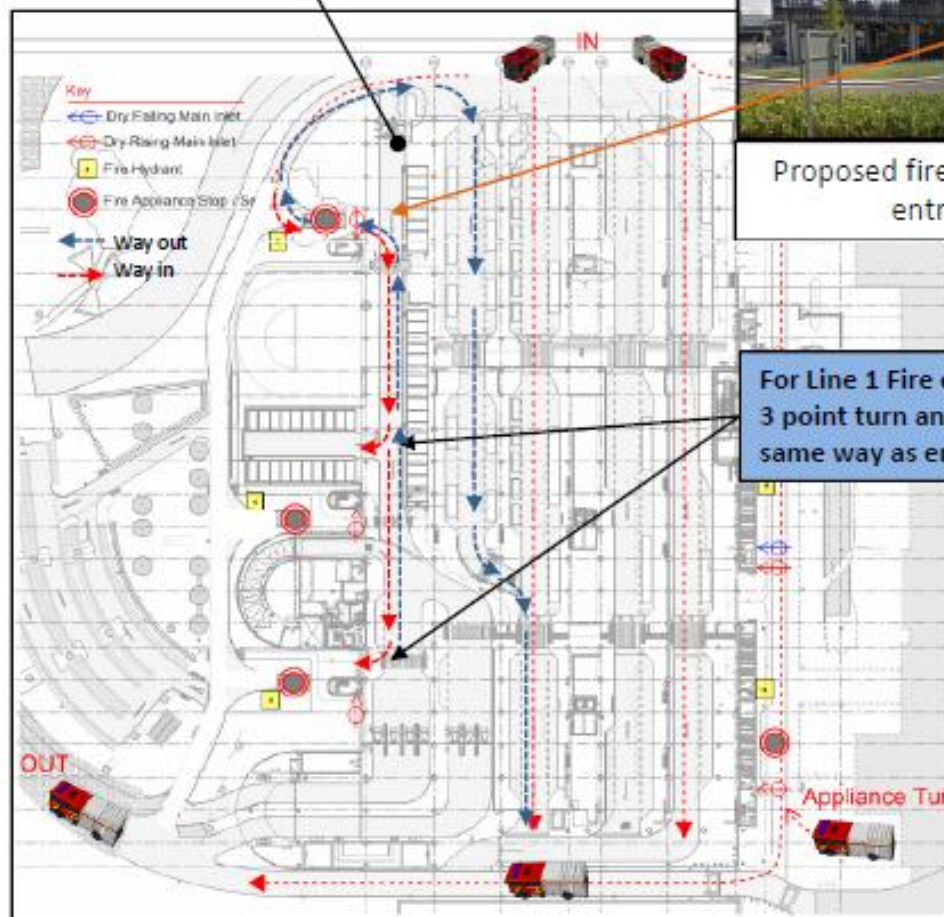
Below is the agreed protocol for the temporary access of the fire brigade into the T2 parking area:

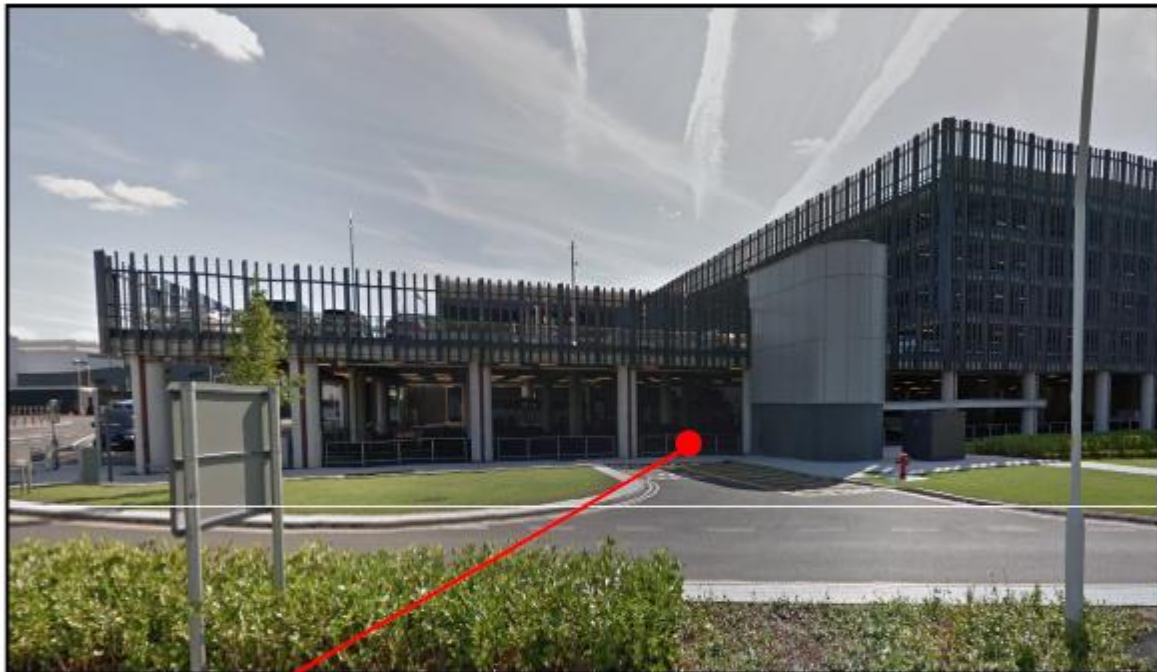
T2 – Hotel

Clipper Road . Parking entrance access for the fire brigade

Report

Proposed fire brigade routes during
T2 building period using Line 1



**T2 – Hotel****Clipper Road . Parking entrance access for the fire brigade**

Modified barrier and Crash gate key padlock used for fire engine access

To grant access and maintain the security of the area, the stainless steel barriers will be modified and made access barrier



11.2 Site Fire safety & Combustible Storage:

It is responsibility for the main contractor to ensure all combustible and gas storage comply with the H&S regulation and best practice.

All gas storage must be kept at a safe distance from the site boundaries and in adequate storage cages or bowers

The main contractor will provide as part of his CPP a fire safety plan stating assembly point and emergency exits. Also, the principal contractor will be responsible for the fire mitigation management system of the site throughout its appointment.

The Heathrow Airport emergency centre should be called and notified using the number below, stating the emergency services required and the location.

0208 759 1212

Staff should only attempt to tackle the fire if safe and trained to do so.

All operatives on site should head directly to the assembly point immediately and wait until the designated fire marshal has checked the site register to confirm all staff are present. Roll-call system shall be put in place for the principal contractor in order to identify missing operatives in the event of emergency site evacuation

12. Site security:

It is responsibility of the principal contractor to ensure all security requirements are achieved and the site is safe of general public transposing the site boundaries.

Also, the principal contractor has the duty of ensure systems are in place to ensure unauthorised operatives access to restricted zone within the site premises or the site welfare

13. Construction schemes:

The principal contractor can be asked to comply and/or get registered in construction schemes as CCS or CLOCs. HAL and Grove Developments will notify in due time to ensure the means are in place and association to these schemes is granted