



**RUGBY
FOOTBALL
UNION**



East Stand Development Draft Construction Management Plan

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1 Introduction

This Construction Management Plan (CMP) is intended to set out the procedures and measures that will be put in place ensure that there is no material impact on adjoining owners, neighbours and stakeholders during the and construction works.

The CMP has been based on current available information and will be updated and developed in greater detail once the Principal Contractor has been appointed.

The CMP considers analysis of the current scope of works, site and project constraints, how the critical construction activities will be undertaken, and specifically covers the environmental, public health and safety aspects of the proposed development.

2 Scope of Works

The general Scope of works is identified below:

- Service diversions
- Piling
- Pilecaps
- Demolition works / structural modifications
- Structural Frame prep works
- Structural frame
- Cladding
- Roofing
- New plant and services
- Blockwork to stair cores / escalators
- Form lift shafts
- Install new passenger and goods lifts
- Fit out and finishes
- Relocate turnstiles

3 Site Constraints

The new works are located on the east side of the Stadium which is the elevation that faces Rugby Road.

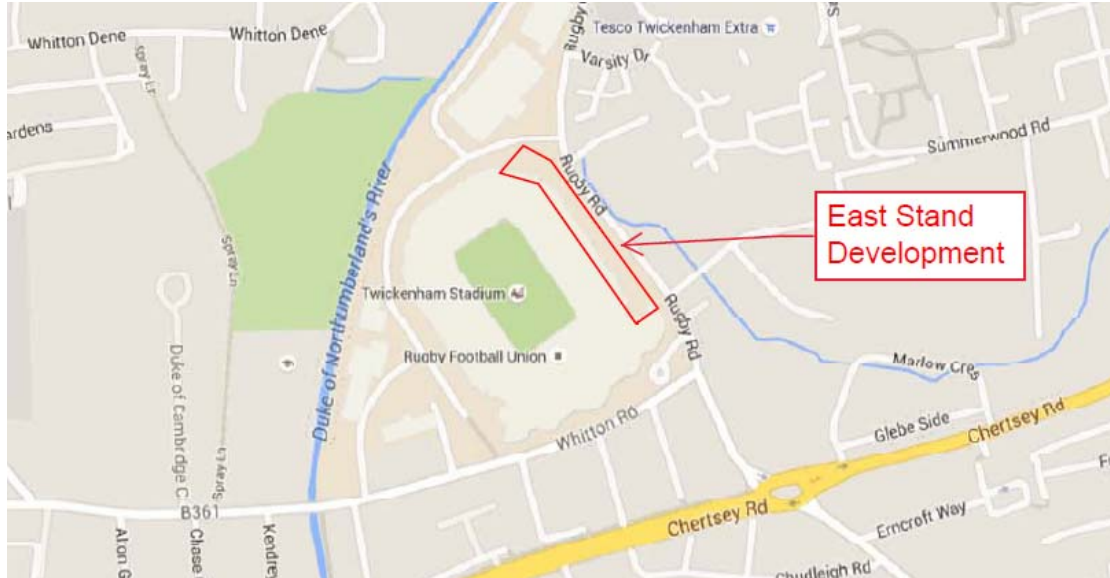
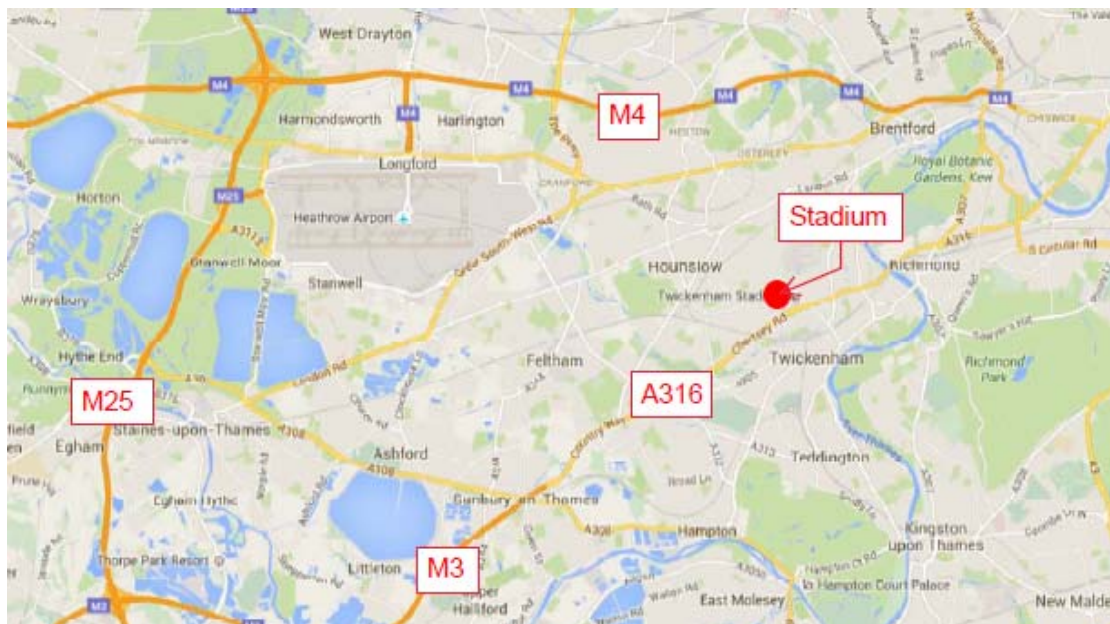


Fig. 1 Site Location Plan

Directly opposite the development, across on the other side of Rugby Road is a large Access Self Storage unit along with a vacant office building. There are a few residential properties in the vicinity of the Stadium to the north east and south east corners of the site.

The site has direct links to the M25, M3 and M4 motorways via the A316 Chertsey Road which is located to the south of the Stadium.



The main vehicular entrance to the site is via Access Gate D which is located to the north of the Stadium.

There is a bus stop (for the 481 bus) directly adjacent to the Stadium fenceline along Rugby Road.



Fig. 2 Bus Stop on Rugby Road

There are 2 banks of turnstiles (Gate E & F) the east elevation that need to be maintained during the works for use during main Stadium events.



Fig. 3 Turnstiles to be maintained

The site working hours will be;

- 8.00am – 6.00pm Monday to Friday
- 8.00am – 1.00pm Saturday
- No working on Sunday

4 Logistics

4.1 General

The logistics plans included within Appendix A are draft at this stage and will be developed further with the appointed Principal Contractor.

4.2 Traffic Access and Egress

There are good road links to the site. The A316 which links with the M3, M4 and M25 motorways runs closely along the southern boundary of the site.

Where possible peak times (rush hour) will be avoided for deliveries.

The flow of vehicles and deliveries on site will be managed on site by utilising the North Car Park. It is proposed that part of the North Car Park is made available for construction purposes as shown in the Logistics drawings. The car park will be used as a holding point for all deliveries, thus ensuring that delivery vehicles do not cause disruption on Rugby Road.

All access into the Stadium will be maintained via Gate D.

The following measures will be implemented;

- Traffic marshalling of vehicles entering and exiting construction areas
- The setting of specific delivery and collection times
- Consolidation of deliveries wherever possible
- Prior authorisation to be scheduled with a logistics manager when visiting the site via vehicle
- Just in time delivery system

4.3 Road / Pavement Closures

Road closures are not currently envisaged at this time but closure of the adjacent pavement may be necessary to provide access for cranes – when installing the services plant and equipment – and also for cherry pickers / scissor lifts when installing the cladding to the building façade. If any closure is required this will have to be by prior agreement with the relevant third parties.

4.4 Construction Logistics

Prior to commencement of works on site a period of pre-construction planning and activities are required to ensure works can commence.

- Production of a Site Environmental Management Plan and Construction Traffic Management Plan.
- Mobilisation of selected plant and operators.
- Formulation of project Health and Safety Plan and risk assessments.
- Formulation of Site Waste Management Plans and environmental plans as per the
- Current DEFRA guidelines.
- Production of detailed works programmes and sequencing.
- Surveys of existing services and structures to confirm demolition methodology.
- Highways condition surveys to be carried out prior to commencement on site.

- Services investigations/surveys for decommissioning purposes.
- CCTV surveys of existing drainage if desired.
- Neighbour liaison before the commencement on site to explain the nature of works.

4.5 Plant and Equipment

Consideration has been given to the type of plant that is likely to be used during the construction works. The anticipated vehicle type and use, as well as the anticipated plant and equipment associated with the construction process are set out in the table below.

Vehicle Type	Use	Distribution
Rigid Heavy Goods Vehicle	Excavated material Removal	Strategic road network to motorway
Small Articulated Vehicle	Plant, steel bar, concrete and cladding panels	Strategic road network to motorway
Specialised Articulated HGV	Steel frame, Mechanical & electrical Plant, Cladding panels. Roofing materials	Strategic road network to motorway
Specialised Equipment Low loader	Occasional Delivery of Plant, including piling rigs, cherry pickers, etc...	Strategic road network to motorway
Vans	Plant service, materials, other Suppliers.	Distributed to local and strategic network
Cars	Site workers, occasional deliveries, Couriers etc...	Distributed to local and strategic road network

Table 1 Summary of Vehicle Type, Use and Distribution

Plant	Substructure	Superstructure	Fit out
Rotary Bored piling rigs	✓		
Excavators	✓		
Compressors	✓	✓	✓
Muck away lorries	✓		
Goods hoist		✓	✓
Plant	Substructure	Superstructure	Fit out

Mobile crane		✓	
Mobile concrete pump		✓	
General waste skips	✓	✓	✓
Power tools	✓	✓	✓
Delivery vehicles	✓	✓	✓
Forklifts	✓	✓	✓
Scaffold access platforms		✓	✓
Mobile towers		✓	✓

Table 2 Estimated Types of Plant and Equipment for Construction

4.6 Potential Impacts during Construction

A review has been undertaken of the potential source of adverse impacts, which can be associated with carrying out demolition and construction works. The results of this are presented in the table below;

Issue	Potential Impacts	Mitigation
Interface with Stadium staff	Certain areas will be out of bounds for staff. Access and egress routes for Stadium vehicles will be changed.	Detailed site logistics strategy to be implemented. Regular briefing meetings to be held for staff. Contractor to attend Stadium Interface meetings.
Noise	Increased road noise levels from vehicles. Increased noise levels from plant during excavation, piling and general construction works (e.g. from the use of air compressors and diamond cutters).	Vehicle routed to holding area. Engines switched off in holding area Defined working hours, baffles to certain plant, local acoustic screening. Beepers, radios etc. to be silenced.
Vibration	Increased vibration levels from vehicles. Increased vibration levels from plant during piling and general construction works.	Phased deliveries to minimise numbers of vehicles attending site, Engines to be switched off when vehicles are idle or on site Defined working hours. Selection of appropriate plant and work procedures.

Dust / Air Quality	Windblown dust from ground surfaces, stockpiles, vehicles, work faces and cutting and grinding of materials. Exhaust emissions from lorries and plant delivering and removing materials including dust and particulates.	Cover all open backed vehicles, 'water down' structural modification activities; switch off vehicle engines when parked.
Waste	Waste generation and its disposal.	Instigate Site Waste Management Plan and re- cycling programme
Water	Increased sediment loadings to storm water system. Potentially contaminated storm-water runoff.	Do not allow direct discharge of water into sewerage collection system.
Traffic	Potential traffic congestion caused by site traffic. Increased vehicle movements mainly consisting of Heavy Goods Vehicles (HGVs). Nominal levels of transfer of mud and material from vehicles onto the public highway. Disruption from abnormal or hazardous loads. Exhaust emissions.	Phased deliveries to minimise numbers of vehicles attending site, switch off vehicle engines when parked, minimise abnormal loads. Wheel washing
Storage of fuels and construction materials	Accidental spills, discharges to drains/storm-water systems. Contamination to ground.	All fuel tanks etc. to be bunded, no discharge allowed into the sewerage collection system.
Pedestrian access	Restrictions on pedestrian access to walkways, footpaths and roads.	Clear demarcation signage and barriers.
Hazardous and contaminated materials	Exposure of the workforce to deleterious / hazardous materials and contaminated land, mobilisation of any source contaminants and creation of pathway from source to groundwater receptor.	Site investigation reports to indicate if any contaminated fill is present. COSHH assessments and careful implementation of associated working method statements to ensure that no hazardous materials find a path to groundwater source.
Ecology	Water / mud run off into the drains.	Do not allow direct discharge of water into sewerage collection system, utilise interceptors where necessary.
Energy usage	Indirect impacts associated with energy consumption such as CO2 emissions, depletion of natural resources, air pollution etc.	Site environmental plan to be implemented.

Table 3 Potential Impacts and Headline Mitigation Measures during Demolition and Construction

4.7 Mitigation Measures

- Industry accepted practical means of preventing, reducing and minimising noise generation will be adopted in agreement with LBRuT.
- Appropriate procedures need to be followed in order to mitigate noise, vibration and air pollution (e.g. through dust and fume generation) impacts.
- Measures currently planned include:
- No works will be undertaken outside the specified working hours; except in cases of emergency, where safety is an issue, or where conditions of dispensation apply.
- The contractor will comply with the relevant statutory regulations.
- All plant and equipment to be used for the works will be properly maintained, silenced where appropriate to prevent excessive noise and switched off when not in use and where practical.
- Hydraulic machinery and plant will be used in preference to percussive techniques where practical.
- The contractor will erect and maintain throughout the construction period temporary hoarding around all working areas to assist in the screening of noise and dust generation from low-level sources.
- Plant will be certified to meet relevant current legislation and Noise and Vibration Control on Construction and Open Sites (BS 5228).
- Loading and unloading of vehicles, dismantling of equipment such as scaffolding or moving equipment or materials around the site will be conducted in such a manner as to minimise noise generation.
- Noise complaints, or exceeding of agreed levels will be reported to the contractor and immediately investigated.
- Vehicles transporting materials capable of generating dust to and from site will be suitably sheeted on each journey to prevent the release of materials and particular matter.

4.8 Site Security

The Principal Contractor will implement security procedures that complement and integrate with the Stadium Security.

The contractor compound will be secured with a 2.4m high hoarding.

Access for deliveries into the holding area and will be controlled by the contractor.

4.9 Accommodation

The contractor's accommodation facilities will be located within the Stadium North Car Park. These facilities will stay insitu throughout the duration – even during Stadium events.

Facilities will include:

- Management offices

- Meeting Rooms
- Tea/coffee stations
- Canteen and cooking facilities
- Drying rooms and changing facilities
- Sub-Contractor accommodation
- Toilets
- Induction room

5 Good Neighbour Policy

A key aspect of the successful management of the project will be to establish and maintain good relationships with all site neighbours. Once a contractor has been appointed, a construction liaison group will need to be established with the closest neighbours and interested parties who would be affected by the demolition and construction works. Regular news letters will be distributed to all relevant parties advising of construction progress and future activities that may impact on the surrounding areas and neighbours.

Formal and informal meetings may be arranged to communicate to all relevant parties when specific high intensity or high risk activities are to be undertaken. Prior to commencement of works a single point of contact (usually the contractor's Construction or Logistics Manager) will be established as the neighbour's point of liaison. This person will be named at the site entrance with a telephone number for queries/complaints.

The Construction or Logistics Manager will keep accurate records of complaints received, which will be made available to LBRuT for inspection.

6 Programme

A copy of the Project Programme is included within Appendix B.

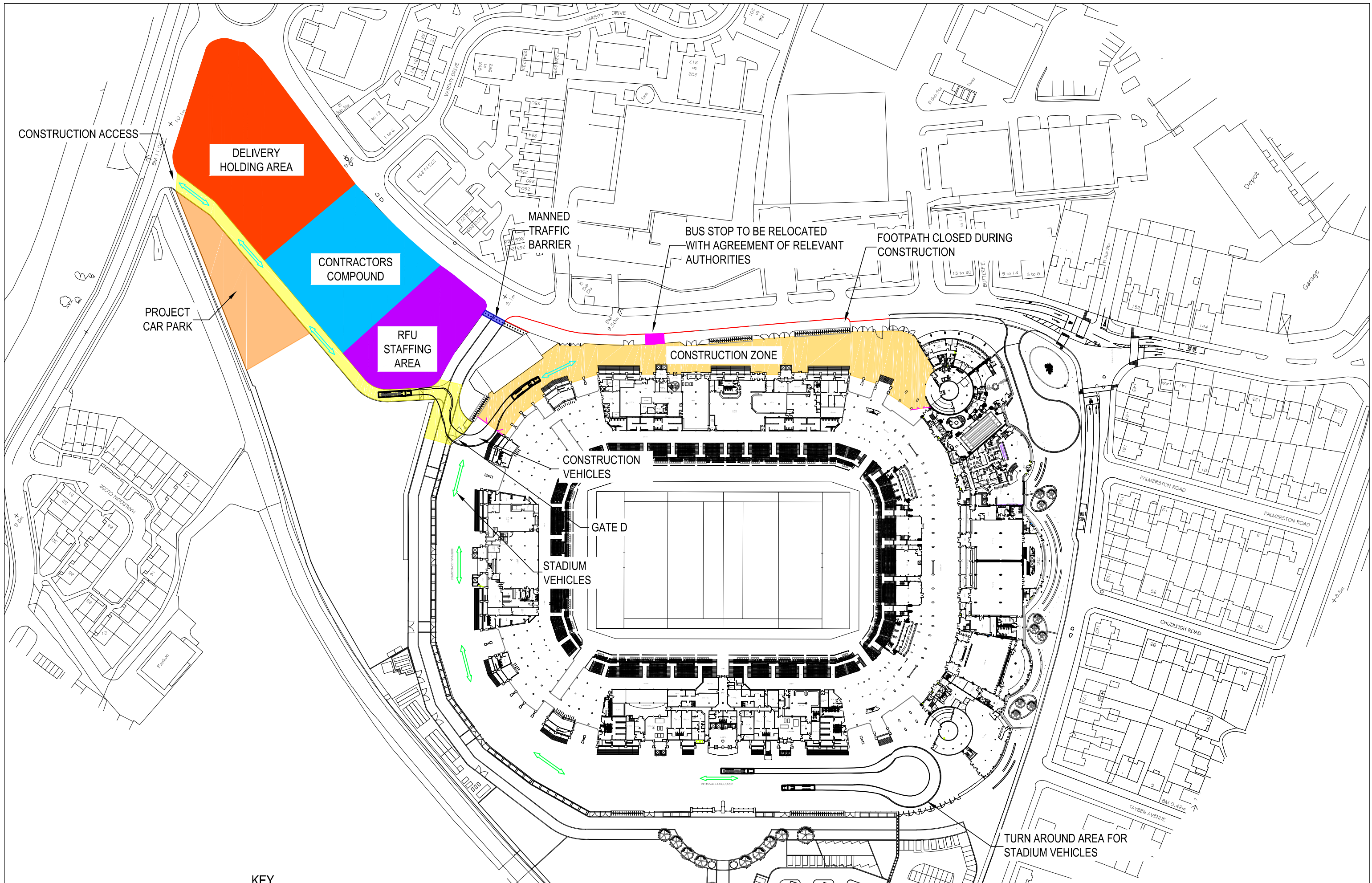
The programme shows that the construction activities will be split as follows;

- Shell and Core works
- Fit Out works

The transport logistics associated with this are covered within the Transport Assessment accompanying this planning application.

The construction will commence, subject to receipt of planning permission, in March 2017, immediately after the Six Nations matches. Completion of the works will be before the 2018 Autumn International events.

7 Appendix A – Logistics Plans



CONSTRUCTION ACCESS

DELIVERY HOLDING AREA

CONTRACTORS COMPOUND

RFU STAFFING AREA

PROJECT CAR PARK

MANNED TRAFFIC BARRIER

BUS STOP TO BE RELOCATED WITH AGREEMENT OF RELEVANT AUTHORITIES

FOOTPATH CLOSED DURING CONSTRUCTION

CONSTRUCTION ZONE

CONSTRUCTION VEHICLES

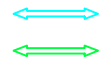
GATE D

STADIUM VEHICLES

TURN AROUND AREA FOR STADIUM VEHICLES

KEY

CONSTRUCTION VEHICLES
STADIUM VEHICLES



Rev.	Date	Description
00	---	Revision Description

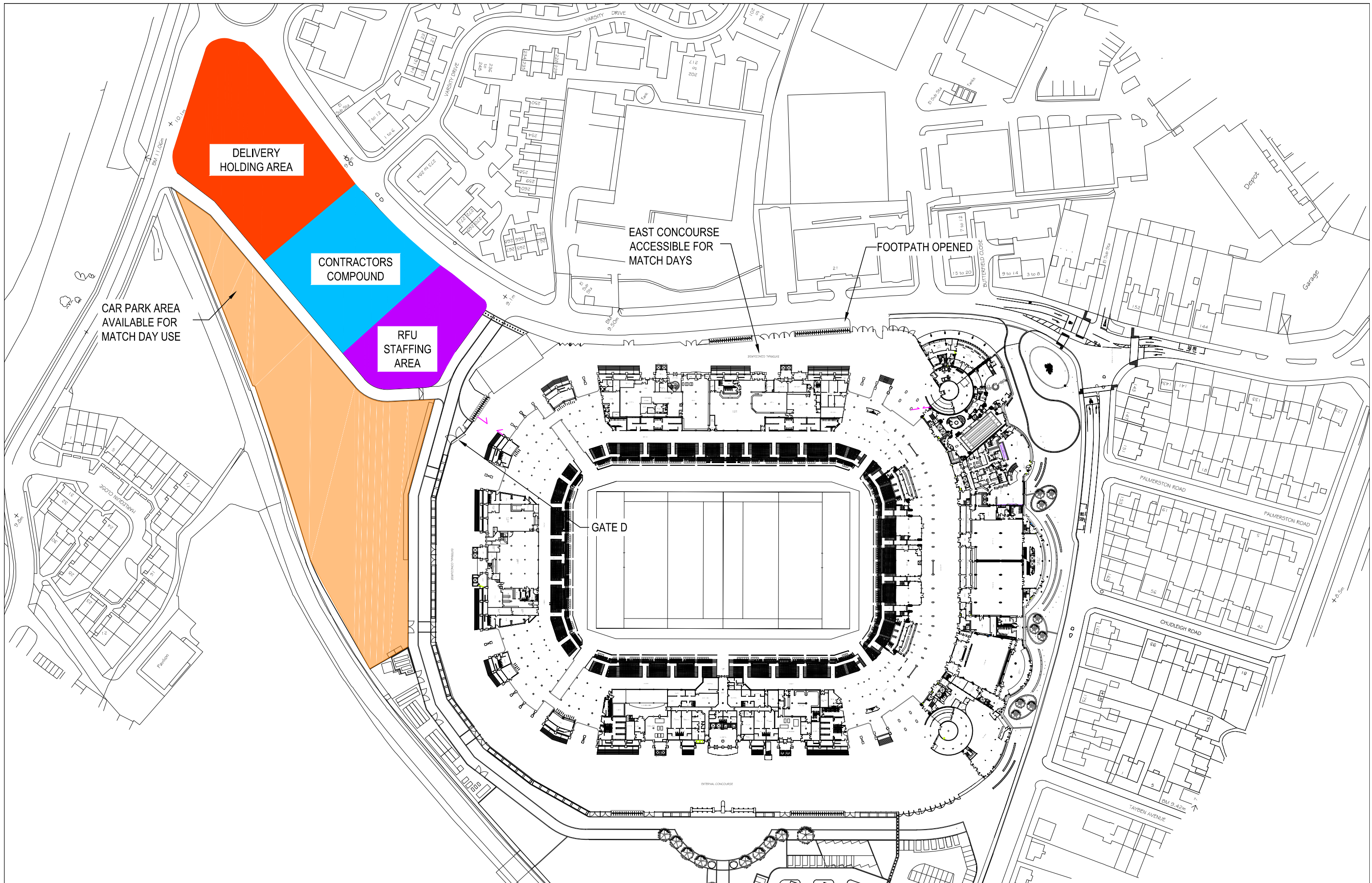
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Drawing Title	Logistics Drawing

Date	06.06.2016	Drawn by	DW
Scale	1:1700 @ A3	Checked by	XX
Sheet	A3		
Dwg.No.	33288_TWST_LOG-01-01	Rev.	00


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Note: Do not scale this drawing, work from figured dimensions only



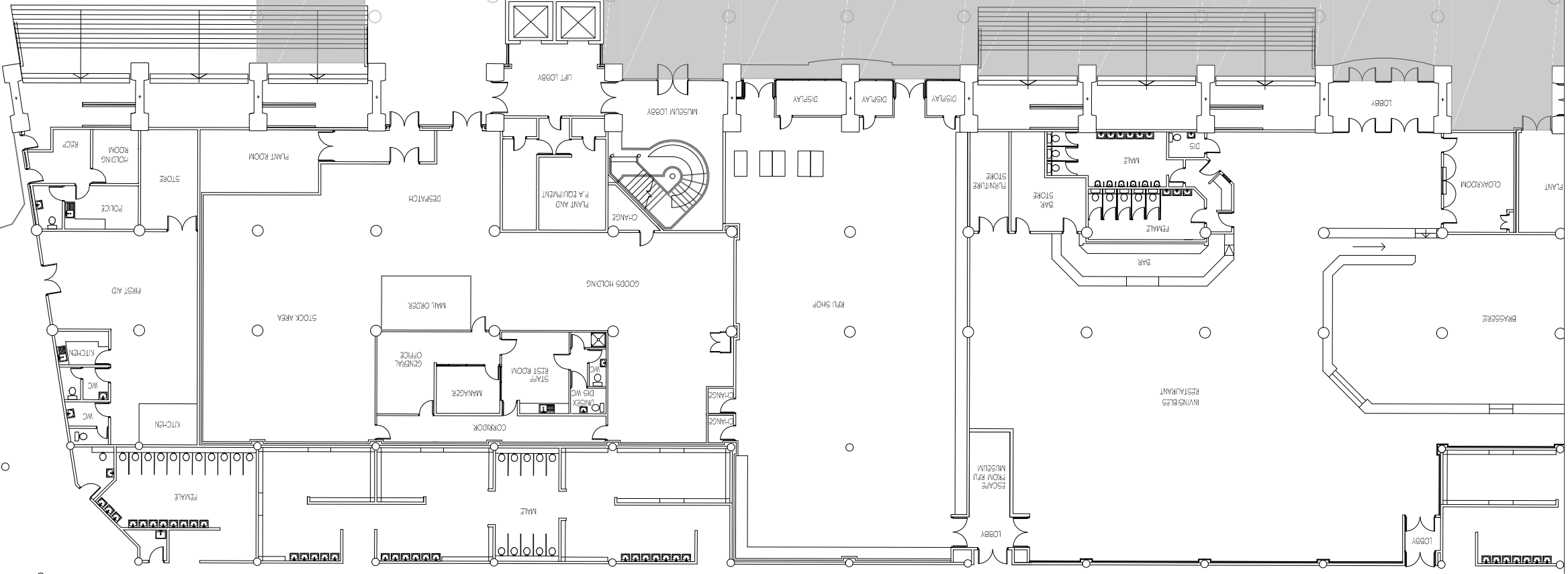
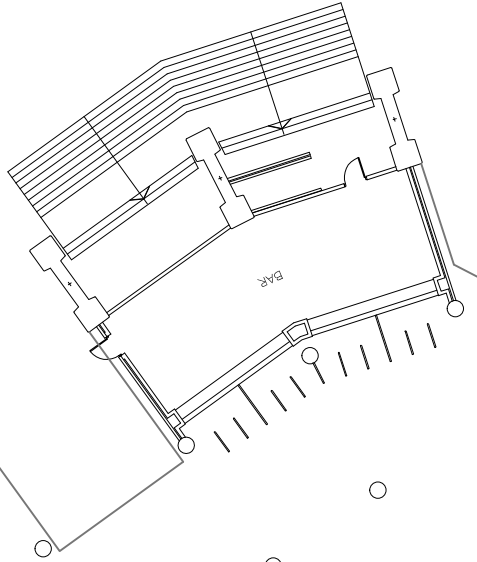
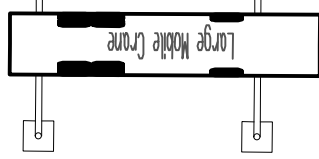
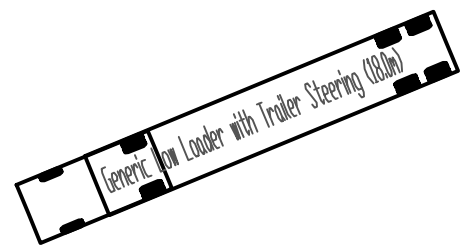
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Rev.	Date	Description	Project	Twickenham	Date	08.06.2016	Drawn by	DW
00	---	Revision Description	Drawing Title	Logistics Drawing Match Day Arrangements	Scale	1:1700 @ A3	Checked by	XX
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					Dwg.No.	33288_TWST_LOG-01-03	Rev.	00
								
							155 Moorgate London EC2M 6XB	
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BM
9.50m

PROPOSED
BUILDING
EXTENTS

EXTERNAL CONCOURSE



**VEHICLE DIMENSIONS
IN METERS**

CRANE

BODY WIDTH : 2.43 M
BODY LENGTH : 12.3 M
(WITH OUTRIGGERS)
OVERALL WIDTH : 8.49 M
OVERALL LENGTH : 12.3 M

DELIVERY VEHICLE

OVERALL WIDTH : 2.54 M
OVERALL LENGTH : 17.9 M

Note: Do not scale this drawing,
work from figured dimensions only

Rev.	Date	Description	Project	Date	Drawn by
00	---	Revision Description	Twickenham	06.06.2016	DW
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				A3	
			Dwg.No.	Rev.	
			33288_TWST_LOG-01-02	00	



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8 Appendix B - Programme



Twickenham Stadium - East Stand Development

Strategic Programme Rev 02

