



JSM Group

Works North Hyde Gardens. (66kv)

Proposed work details & JSM power division case studies.

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Introduction

JSM have been requested to excavate across the entrance of Abellio bus depot as part of the Project Union Contract, as this forms part off the route that will bring the connection from NG substation to P.O.C at the old Vodaphone site comprising of 4 no 66kv circuits.

Hayes Bus Garage

North Hyde Gardens
Hayes
Hillingdon
London
UB3 4QT



It is proposed that JSM excavate across the entrance with two trenches (one excavated and reinstated prior to the installation of the second). After the installation of the cable the access into the garage from North Hyde Gardens will be restored.

It is anticipated that the works will take place over an eight-day period. Before the works start within the highway outside the depot, JSM will letter drop to all properties and arrange meetings with tenants along with bus depot to ensure that all parties are aware of dates and times. As part of this, JSM will provide appropriate contact information for the team onsite.

As part of their role at Bulls Bridge Industrial Estate, JSM have already previously engaged Abellio as operators of the bus garage to understand the nature and timings of car and bus movements to and from the garage. From these discussions it was established that there was a morning peak between **03:00 and 08:00** and an evening peak between **18:00 and 23:00**.

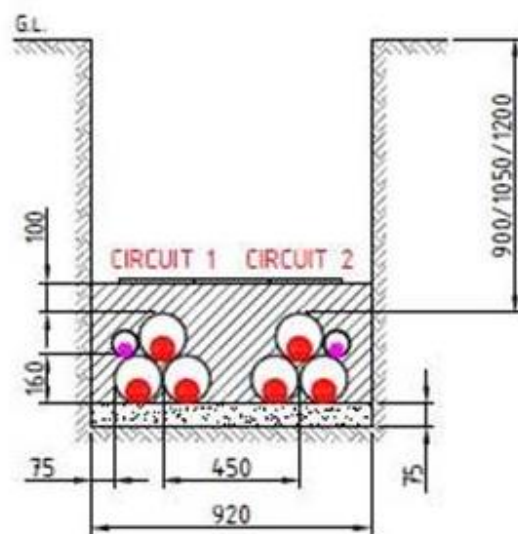
JSM understand the requirements of Abellio and can commit to not conducting works during these peak hours. Road plates will be laid by JSM in to allow vehicles to cross the trench. A specification of these road plates is included within this document. This confirms that the road plates can support the weight of a 12-tonne double decker bus of the type based at the site. The process of installing the road plates will take five minutes and will be undertaken by the JSM team onsite. A series of case studies of JSM's experience is included within this document and the team onsite will operate efficiently. This will ensure no interference and inconvenience is caused to Abellio bus garage as it will continue to enable the free movement of vehicles.

During the works a three-way traffic light will be positioned 25m, either side of the entrance into the bus garage from North Hyde Gardens. The location of the third traffic light within the Abellio bus garage site will be agreed with Abellio as part of these discussions.

Image 1

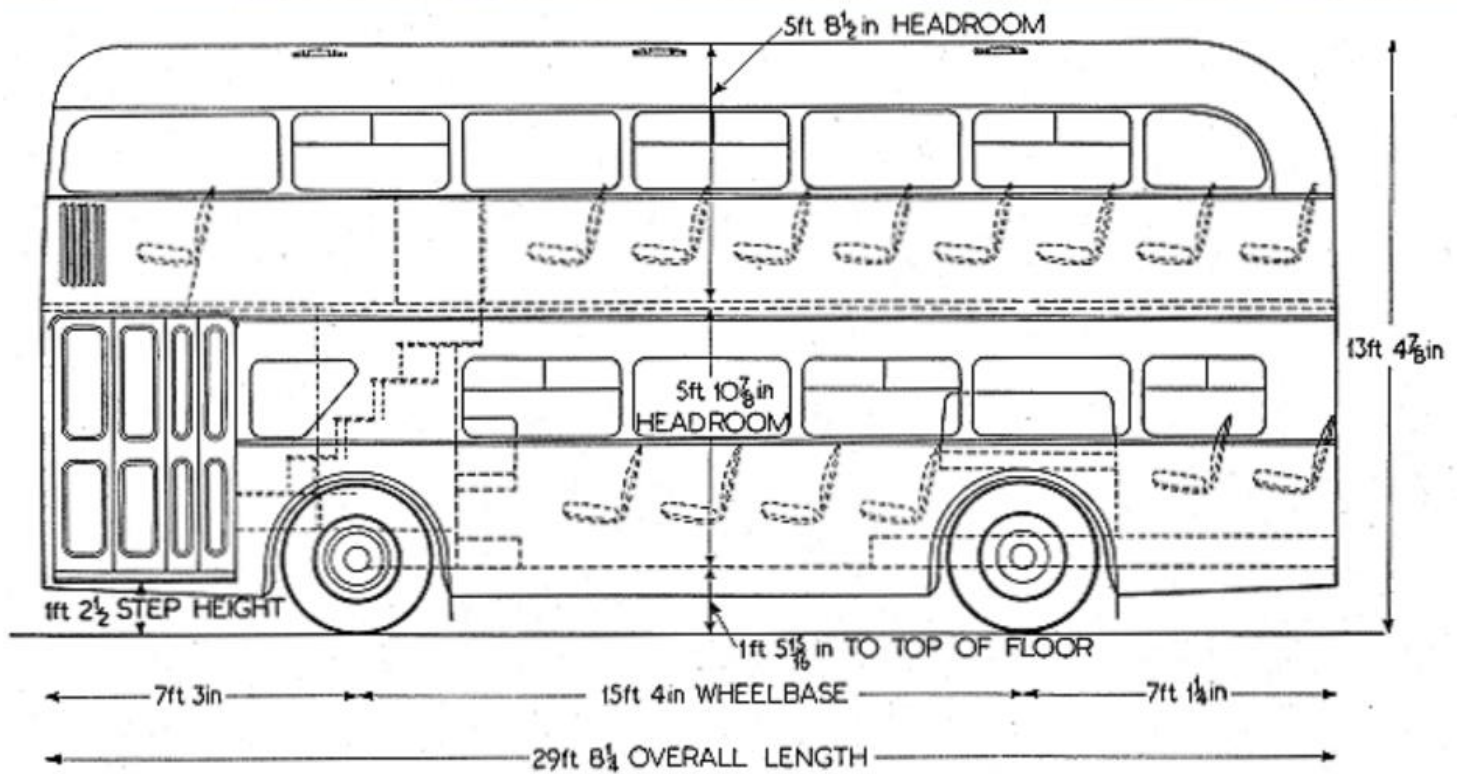


Image 2



The works are to allow double decker buses to cross the trench utilising the Road plates for access and weight of 12 tonnes allowing access as per dimensions below. (see Image 3)

Image 3



Road Plate specification *see image 4.*

Image 4



Typical applications:

- Unique serial number clearly marked for traceability.
- Can be used on streets and highways.
- Bevelled/chamfered edges on all four sides to avoid them being a trip hazard.
- To traverse excavations up to 1700 mm wide, where pedestrian and/or cars will cross.
- To cover trench up to 1200 mm wide for trucks, heavy construction plant, cranes, and forklifts.
- Ideal for stabilising collapsed man-hole areas.
- To make safe larger open excavations such as inspection pits, bell chambers or utilities service junctions.
- Can be bolted down with ANKERBOLTS to improve security and load performance.
- Not suitable for traversing with steel tracked vehicles, as their tracks will cause damage to the anti-skid surface if applied directly.

- As with all road plates/crossing plates, the loadings for whatever passes over them will be transferred to the areas bearing the edges of the plate. Adequate measures to shore the underlying excavations should be taken.

Mass: 785 kgs

Mechanical handling: Yes, either SALLY or suitable forklift.

Scrim ratio: 70

Anti-skid: Resin encapsulated aggregate.

Securing method: Precision drilled and counterbored for M18 ANKERBOLTS or similar





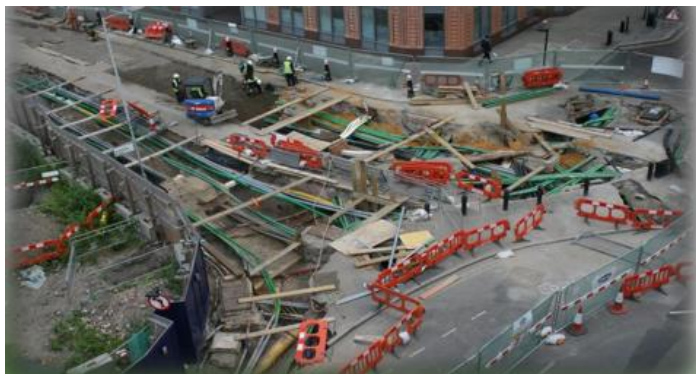
WHO ARE JSM?

JSM is a utilities service specialising in the delivery of integrated power and communication solutions. Operating through two divisions; Power and Communications. JSM's comprehensive service delivers full turn-key solutions of infrastructure networks which extend to multi-utility, diversionary, contestable, civil engineering and highways works.

We support our clients in delivering effective capital expenditure by improving existing assets to increase their operational life and efficiency. Safeguarding supply by upgrading and replacing infrastructure and fast response to provide repair and maintenance services.

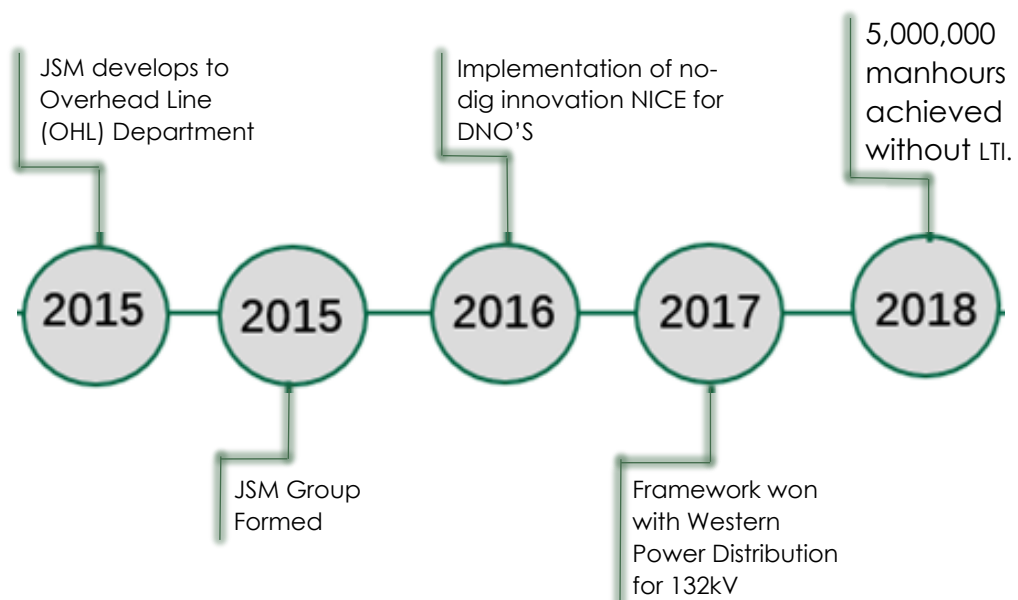
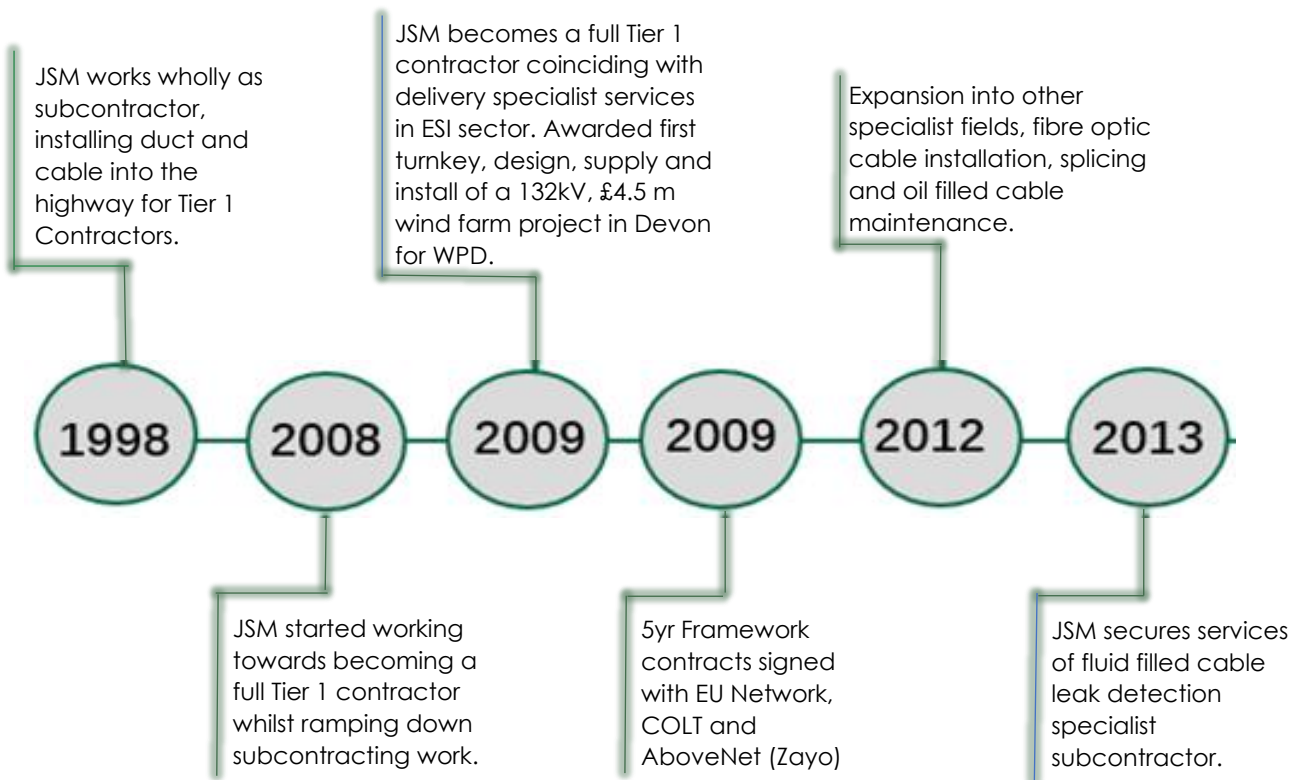
JSM's comprehensive turn-key solutions service includes:

- Feasibility Studies
- Pre works site Surveys
- Design
- Planning/Notifications
- Principal Contractor project management
- Construction
- Commissioning
- Maintenance
- Response and repairs





JSM GROWTH CHART





POWER DIVISION

Major Projects

Our clients in the energy sector benefit from our significant capabilities in power transmission and distribution in the installation, jointing, commissioning, and servicing and maintenance of cable infrastructure and associated equipment from 11kV up to and including 400kV.

We provide full end to end services using our own direct staffing which includes feasibility studies, design, civils, installation, jointing, reinstatement, and commissioning.

Case Study: Birmingham

- Installation of a dual 132kV circuit and associated 10 joint bays in the heart of Birmingham.
- 6km running from Nechells Primary to Bordesley Primary.
- Consists of works in roads, bridges, verges and footways through public highway, industrial and residential areas of Birmingham city, including traffic sensitive areas.

ICP Works

By obtaining the necessary accreditation by Lloyds Register EMEA under the National Electricity Registration Scheme (NERS) up to including 132kV.

JSM offer a complete end to end turnkey service a turnkey solution for the design, build and delivery of extra high voltage, high and low voltage electrical connections to commercial, industrial, retail and city-living developments with safety-first approach.

Case Studies of three completed projects by JSM in 2019/2020

Peel Centre - Colindale

Description of the Works

The Peel Centre is a new housing development currently being constructed by Redrow Homes. JSM have been engaged by Power on Connections to install the electricity network to the new development. The supply comprises of an off-site cable route from a point of connection just outside Colindale primary substation to multiple distribution substations within the development. This Scope of Works identifies the remaining works required in order to complete the off-site cabling works.

The Works comprises of the following:

- Organise and undertake the site setup and temporary arrangements in accordance with CDM Regulations 2015.
- Provide and maintain suitable barriers between the working areas and public areas to prevent unauthorised access to the works areas.
- Provide accommodation and welfare arrangements suitable for the Works.
- Provide any temporary water or electricity supplies if required.
- Control access into the site.
- Provide sufficient security to the Works Area.
- Provide sufficient storage space for materials, tools and equipment required by the Contractor.
- Provide any lifting arrangements required to complete the Works.
- Develop and manage the traffic management as required.
- Undertake any dewatering of excavations as required.
- Traffic Management.
- Excavation and duct installation works through Colindale Park and within the highway.
- Directional drill (HDD under the Northern Line LUL).
- Undertaking the directional drilling activity under the Northern Line LUL.
- Pull cables from the point of connection outside Colindale Primary substation all the way through to substation 9 within the development.
- Jointing carried out by POC in the required joint bays.
- As laid drawings

Freedom Iver 11kV

The 11kV Connection Cable Installation Works Packages Includes:

- Excavation & Reinstatement of 11kV Trench from the SSE substation in High Road Cowley, Uxbridge to Prologis Park Horton Road Uxbridge.
- Supply & Installation of Ducting as per the issued designs – This includes the areas where the 11kV & Future 66kV cable ducts are in a common trench. For Clarity the sub-contractor was to supply & install the 66kV Ducts as specified in addition to the 11kV ducts in the sections of the 11kV cable route where this was required. This to facilitate an easier installation of the 66kV Circuits at a later date.
- Supply & Installation of all sand, blinding materials, and Marker Tapes/Tile compliant within the issued designs.
- Installation of 11kV Circuits into the ducts as per the issued designs (Cable will be free-issued to sub-contractor) – For clarity, cable will be periodically delivered to site and JSM made allowance to take delivery of cable drums which will be delivered on a Hi-Ab lorry.
- 11kV Jointing Works.

- 11kV cable testing
- Formation of 11kV Joint pits at least every 500m or more frequently at strategic points, Areas where the 11kV & 66kV Cable route overlap a common joint pit will be formed – to allow installation and joint of the 66kV circuits to be installed at a later date. Both the standalone 11kV Joint pit & Combined 11kV & 66kV Joint pits are subject to
- Principal Contractor duties for the Cable route inclusive welfare facilities & laydown areas for JSM workforce.
- Attendance at monthly contract meetings throughout contract duration.
- All design responsibility was Freedom Groups.
- Traffic Management
- Crossing SED's
- Section 58 resurfacing works
- Working within substations
- Traffic Management

SSE Vastern Rd Reading 33/11 kV (33kV oil filled Diversions)

Description of the Works

The work is the replacement/diversion of section of existing oil filled 33kV cable running from Reading Town substation to The Mall substation. The work includes traffic management for all applicable roads, route & joint bay excavation, supply of all materials (excluding 33kV & comms cables), ducts, bends and tiles installation, cable installation & pulling, preparation of plinth, installation of plinth mounted tanks, transition jointing, XLPE straight jointing, testing and reinstatement.

- JSM were Principal Contractor under the 2015 CDM regulations.
- Site offices / Welfare Facilities
- Traffic Management
- Excavation, Laying of Cables and Reinstatement of Trenches.
- Excavation and Reinstatement of Joint Bays.
- Cable Pulling
- XLPE Jointing
- Oil Filled Cable Diversion
- Installation of 2no. Fluid-XLPe 33kV Groove joint
- Construction of flushing pit/link pit to accommodate both circuits.
- Replacement of 1no. fluid tank per circuit with 300l 1.5ATS fluid tank
- Removal of existing fluid tanks and apparatus at Reading Town Substation
- Pressure Testing & Commissioning of 33kV Circuit
- JSM ensured that all site and construction wastes were managed according to SSE requirements and applicable legislation.
- JSM commissioned the system in accordance with the Employer requirements as stated in the Agreement; this included ensuring that the system was integrated with the overall network.