



ORBITAL

RISK ASSESSMENT MATRIX

Site Name: St Marks Crescent

Date: Feb 2020

#	Hazard	Persons Affected	L	S	R	Control Measures	Site Specific	L	S	R
1	Asbestos	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input checked="" type="checkbox"/> Other <input checked="" type="checkbox"/>	M	H	H	<ul style="list-style-type: none"> Orbital have been advised that a full R&D survey is required before significant works start on site. This will be undertaken by a competent asbestos surveying company and the results will be reviewed by the OBC foreman and contracts manger prior to start to determine the need for any other follow up removal or encapsulation works. 		L	H	M
2	Falls from Height	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	H	H	<ul style="list-style-type: none"> Any fall from height that could give rise to injury must be protected with suitable rigid barriers set at 950mm with a toe-board and an intermediate rail. Underpin excavations to be protected from falls using barriers consisting of 4x2 timber posts, double handrails and toe-boards. Foreman must consider how access to works at height is to be gained. Generally, access at height to be undertaken from Tube and Fitting Scaffolding or Mobile Aluminium Scaffold Towers or Podium steps or Stepladders or Hop Ups selected in that order. The access equipment chosen should be recorded within the Method Statement Matrix Site Specific column. Equipment provided to gain access to works at height must be inspected on a minimum of 7 day frequency and the results recorded within the Work At Height Register. Ladders Grade 1 industrial ladders only to be used Ladders to be in good condition, properly cited and tied at the top. 		L	H	M
3	Hand Held Tools and Machinery	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	M	M	<ul style="list-style-type: none"> All tools are to be inspected on a weekly basis any findings recorded within the Plant and Equipment Register. If deemed unsafe then it should be immediately taken out of service until repaired. Particular attention is to be given to guarding of dangerous parts of tools and machinery. Ensure the guard is in place, is in good condition and is operating correctly. Cutting edges are to be kept sharp to maintain accurate work and reduce damage to tools and materials Tools should be of the correct type, size and weight. They should be suitable for the task in hand. When not in use, tools should be correctly stored to avoid damage and injury Eye protection (EN166) should be used when there is a risk of ejection and suitable gloves in conjunction with mandatory PPE 		L	M	L



ORBITAL

RISK ASSESSMENT MATRIX

#	Hazard	Persons Affected	L	S	R	Control Measures	Site Specific	L	S	R
4	Manual Handling	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	M	M	<ul style="list-style-type: none"> Eliminate or reduce the need for manual handling as far as reasonably practicable by use of mechanical lifting and handling aids. When manual handling is unavoidable foremen are to ensure that correct manual handling techniques are employed. Long periods of repetitive processes should be shared amongst all able operatives allowing resting men time to recover. During periods of increased/prolonged activity, foremen are to monitor performance and ability of operatives throughout the task and increase breaks as necessary. All foremen to be aware of the physical condition of their operatives and promote the honest reporting of health issues to management. 		L	M	L
5	Mechanical Lifting	Employees <input checked="" type="checkbox"/> Sub-C <input checked="" type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	H	H	<ul style="list-style-type: none"> All lifting appliances are to be thoroughly examined every twelve months All lifting equipment, such as slings and chains are to be thoroughly examined every six months. All mechanical plant is to undergo a weekly inspection by a competent person and the findings recorded in a weekly plant inspection register. Only competent persons are to operate lifting machinery. All lifting equipment must be visually checked before use. Materials are to be lifted with suitably rated lifting chains or slings. The safe working load must be clearly displayed. Operatives must keep clear of all loads being lifted. Foremen are to supervise all lifting operations. 		L	M	L
6	Dust	Employees <input checked="" type="checkbox"/> Sub-C <input checked="" type="checkbox"/> Public <input checked="" type="checkbox"/> Other <input type="checkbox"/>	M	M	M	<ul style="list-style-type: none"> Dust suppression measures must be employed for all cutting operations Dust suppression can be by: <ul style="list-style-type: none"> Water(from a pressurised bottle or mains supply) Local exhaust ventilation Dust suppression systems are to be regularly inspected and any findings reported straight away. In conjunction with mandatory PPE, other specific PPE must be worn: <ul style="list-style-type: none"> Safety glasses (EN166) Dust mask (FFP3) The site has been assessed using the Mayor of London's Best Practice Guidance on The control of dust and emissions from construction and demolition, November 2006, section 4.1 as a Low risk site as it is: <ul style="list-style-type: none"> Under 1,000 square metres of land. Development of between one and ten properties. Has potential for emissions and dust to have an infrequent impact on sensitive receptors. <p>This is based on the site being within the enclosure of the existing building.</p>		L	L	L



ORBITAL

RISK ASSESSMENT MATRIX

#	Hazard	Persons Affected	L	S	R	Control Measures	Site Specific	L	S	R
	Dust Continued...					<ul style="list-style-type: none"> In accordance with the guidance the following actions will be taken: <ul style="list-style-type: none"> Barriers will be erected / maintained around dusty activities and the site boundary. The site will be planned so that dusty activities are kept within the protected site boundaries where practicable. Delivery / collection vehicles will switch off engines where possible. The onsite mini-digger will be thoroughly cleaned before being moved from site. All materials will be supplied covered including all cement and ballast that will be supplied in closed bags and covered in shrink wrapped plastic sheeting. No materials will be supplied in loose form. No site run off of water or mud until the water has been left to settle and is free from particles (as explained in the CTMP). During demolition: <ul style="list-style-type: none"> Special care to ensure that the site is closed. Water to be used as a dust suppressant if appropriate / needed. Cutting equipment to use water as a suppressant or to have a local extraction ventilation system. The skip will be fully covered during normal operations. The skip will be damped down before the grab removes the spoil if appropriate / needed. If measures to control dust are unsuccessful work will stop and alternative method 				
7	Noise and Vibration	Employees <input checked="" type="checkbox"/> Sub-C <input checked="" type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	M	M	<ul style="list-style-type: none"> Noise will be kept within the legal limits as defined in the Environmental Protection Act 1990. Noisy operations will only take place during the following site working hours: <ul style="list-style-type: none"> Monday to Friday - 8am to 6pm Saturdays - 8am to 1pm All work will be carried out in accordance with BS 5228-1:2009 and BS 5228-2:2009. All works will employ Best Practicable Means as defined by Section 72 of the Control of Pollution Act 1972 to minimise the effects of noise and vibration. All means of managing and reducing noise and vibration which can be practicably applied at reasonable cost will be implemented. The following measures will be taken: <ul style="list-style-type: none"> Consultation / communication with neighbours / affected others prior to the start of the works. Use only of modern, quiet and well maintained equipment, all of which will comply with the EC Directives and UK regulations set out in BS 5228-1:2009. Use of electrically powered hand tools rather than air powered tools that require a compressor unless particularly hard concrete or other ground obstructions are encountered. If used air powered tools and a compressor will be used for to the minimum extent practicable. 		L	M	L



ORBITAL

RISK ASSESSMENT MATRIX

#	Hazard	Persons Affected	L	S	R	Control Measures	Site Specific	L	S	R
	Noise and Vibration Continued...					<ul style="list-style-type: none">Operating the site as a closed site, that is:<ul style="list-style-type: none">i. Leaving the building facade and roof in place during the work.ii. Having all windows and door closed during noisy operations within the building (the basement is being built only within the footprint of the existing building).iii. Installing insulation in the windows and other openings at ground floor to reduce noise escaping the site.iv. Closing openings in the building / hoarding with timber and lining insulation.Avoidance of unnecessary noise (such as engines idling between operations or excessive engine revving, no radios no shouting)Use of screws and drills rather than nails for fixing the hoarding.Careful handling of materials, so no dropping of materials from height into skip etc. Spoil will be deposited into the skip from approximately two metres height but this does not cause unreasonable noise.Ensuring that the conveyor is well maintained with rollers in good working order and well oiled.Isolating the neighbouring properties from vibration / breaking out work where practicable. In particular the edges of the existing concrete slab at ground floor will be broken out first (isolating the remaining slab at ground floor) before the main part of the existing ground floor slab is removed.Collection / delivery times will be as given in the CTMP.Collection / delivery vehicles will not loiter / wait in the area before the allowed times.Vibration will be kept well below the levels that may damage buildings, given in BS 7385-2:1993.				
8	Slips and Trips	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	M	M	<ul style="list-style-type: none">Work areas to be properly organised and kept in a good state of housekeeping.Storage areas to be properly organised.Walkways to be kept clear of materials and waste at all times with particular attention to designated pedestrian routes.P/C to provide background safety lighting in periods of darkness, including walkways and access routes.		L	M	L



ORBITAL

RISK ASSESSMENT MATRIX

#	Hazard	Persons Affected	L	S	R	Control Measures	Site Specific	L	S	R
9	Collapse of Structure	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	M	M	<ul style="list-style-type: none"> All Temporary Works are to be subject to a Temporary Works design issued by the Structural Engineer. Temporary works to be installed in accordance with specified temporary Works Design. Following installation of temporary works, the temporary works co-ordinator will inspect the installation to ensure it is in accordance with the design and will permit the structure to be loaded. This inspection will be recorded within the Temporary Works Register. Following the completed demolition and installation of the permanent support, the temporary works co-ordinator will inspect and permit the removal of the temporary works. This inspection will be recorded within the Temporary Works Register. Excavations adjacent to load positions are to maintain a maximum of 45 degrees angle of repose. 		L	L	L
10	Overloading of Floors	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	H	M	<ul style="list-style-type: none"> Work areas to be properly organised and kept in a good state of housekeeping. Storage areas to be properly organised. Waste material and spoil from demolition activities to be regularly monitored and removed from the scene in a timely fashion. Where possible calculations of maximum permissible loading on floors to be calculated and all employees informed. 		L	M	L
11	Underpinning Excavations <ul style="list-style-type: none"> Sequencing Prevention of Collapse Prevention of ground heave 	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	H	H	H	<ul style="list-style-type: none"> All underpin excavations to be shored in accordance with the generic shoring drawing provided by Green Structural Engineering. The shoring will be inspected by the Foreman before entering the excavation and a record made within the excavations register. Further Inspection(s) will be carried out on a daily basis thereafter and these inspections will be recorded within the excavations register. Underpin excavation are to be no more than 1.2m in width. Excavations to be staged to maximum of 1.2m depth with shoring installed sequentially. The underpin excavations will commence in accordance with the sequence of work specified by the Structural Engineer. Underpin Excavations will be open for the minimum amount of time. If the existing ground condition will not allow the rear face of the underpinning to be unpropped, the stem of the underpin will be concreted in sections (max. 1.2 m lifts) and the timber struts and walers adjusted accordingly. This will be assessed on site. Underpin sections that require horizontal propping will be propped against the central bank of earth with trench props. Typically 2no. trench props will be installed per underpin section. Alternatively the excavation will be back – filled with excavation arisings in 300 mm layers, each layer compacted with three passes of a whacker plate. When all underpin sections are complete, the first level of horizontal props will be installed. This is to minimise the risk of ground heave because the underpin sections are not fully stable until the reinforced floor has been cast. As the Mass Dig continues, a second level of horizontal propping will be installed. The Horizontal propping will remain in place until such time as the slab has achieved sufficient strength 		M	H	M



ORBITAL

RISK ASSESSMENT MATRIX

#	Hazard	Persons Affected	L	S	R	Control Measures	Site Specific	L	S	R
12	Spoil Conveyor	Employees <input checked="" type="checkbox"/> Sub-C <input checked="" type="checkbox"/> Public <input checked="" type="checkbox"/> Other <input type="checkbox"/>	M	M	M	<ul style="list-style-type: none"> Conveyor must be constructed according to the manufacturer instructions and under the supervision of a competent person, usually the foreman or operations director. Components must be inspected prior to erection. The up-stands at the skip area are typically temporary scaffold structures and must be erected by a competent person and secured. Belt must be tensioned appropriately. The hooks, pin and locking bolt between sections must be carefully inspected and fixed correctly. The emergency stop button must be directly accessible from the bottom of the conveyor and easily reachable in the event of an entrapment. The emergency stop should be of the button type and clearly marked (red). All operatives on site must know how to operate the emergency stop. The conveyor will be enclosed in ply boarding extending above the skip to prevent overspill onto the pavement below. The ply will also be formed to shape a hopper at the bottom end with possible entrapment areas covered and out of reach. Supports for the conveyor must be the correct type and must be in good condition. The supports are anticipated at no more than 1m centres. Where wooden frames are erected to support the conveyor they must be suitable and sufficient and at appropriate centres to evenly distribute the loading. Operatives must not wear loose clothing. Hi Visibility vests must be done up with the Velcro straps. Long hair must be tied back. No chains or other loose jewellery. 		L	M	L
13	Concrete Pours	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	M	M	<ul style="list-style-type: none"> Chute set up by Site Manger should be inspected prior to starting the pour to ensure its stability throughout the operation. Operatives to wear impermeable gloves and use sticks to shuttle the concrete down the chute, ensuring that the chute itself is not overloaded and at risk of collapse. Welfare facilities must be readily available for washing should concrete come into direct contact with any persons skin as per the COSHH assessment. 		L	L	L



ORBITAL

RISK ASSESSMENT MATRIX

#	Hazard	Persons Affected	L	S	R	Control Measures	Site Specific	L	S	R
14	Pneumatic Tools	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	H	M	<ul style="list-style-type: none"> All tools are to be inspected on a weekly basis any findings recorded. If deemed unsafe then it should be immediately taken out of service until repaired. Always keep the sides of the compressor shut during operation to reduce noise levels. Operatives are not to operate breakers longer than the recommended vibration exposure time for their particular model and their usage recorded in a hand arm vibration Register. Use an 'anti-whip tether' devices at all joints Ensure all air pressure is released from compressor and that air discharge cocks are shut before starting the compressor. Shut off the air cock at the compressor and release air pressure before disconnecting hoses. Always switch equipment off when not in use, never leave equipment unattended. Wear suitable protective footwear when operating pneumatic tools. 		L	M	L
15	Leptospirosis (Weils Disease)	Employees <input checked="" type="checkbox"/> Sub-C <input checked="" type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	M	M	<ul style="list-style-type: none"> Operatives are to wear full PPE including gloves All contaminated clothing should be washed prior to next use Ensure suitable welfare facilities are available for washing and drying clothing Ensure hands are cleaned prior to eating or smoking Provide information on the symptoms and causes of Leptospirosis. 		L	M	L
16	Underground Services	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	H	H	<ul style="list-style-type: none"> Consult with the service companies to ascertain the exact location of services Prior to digging, the Foreman is to brief operatives on the location of services, this should be done with the aid of drawings. Hand dig trial holes to locate buried services Use Cable Avoidance Tool (CAT) to scan for services prior to excavating. Place warning markers to show the location of services All services must be assumed 'live' unless notified otherwise. During backfilling, the Foreman is to ensure that any new services are marked up on site drawings and that sand and demarcation tape has been laid over the service. 		L	H	M
17	Vibration	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	M	M	<ul style="list-style-type: none"> Where possible we will make use of plant mounted breaking and digging equipment. This will minimise any personal exposure experienced through hand operated equipment. Where the works restrictions dictate the need to use hand held equipment we will prioritise the use of tools with the lowest vibration output for example generally electrically powered breakers have less vibration output than Pneumatics. All equipment and tooling will be regularly inspected and these inspections recorded. We will assess each tool based on a ready reckoner system and provide data on key trigger times. All users will need to keep a log and report to the safety representative after each shift of equipment used and time. It is essential that all users report these figures to the safety rep so that exposure can be controlled within the acceptable exposure limits. 		L	M	L



ORBITAL

RISK ASSESSMENT MATRIX

#	Hazard	Persons Affected	L	S	R	Control Measures	Site Specific	L	S	R
18	Hand Dug Trial Holes	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	M	M	<ul style="list-style-type: none"> The locations of all underground services are to be ascertained by the supervisor prior to excavation work, this is to be achieved through one or all of the following: record drawings; liaison with local service providers; the use of CAT and Genny locator. Locations of services are to be thoroughly communicated to Operatives before digging commences. All services are to be treated as LIVE until disconnection has been confirmed. Where services are suspended across excavations, they are to be adequately supported to prevent damage. Operatives are not to enter or work in excavations over 1m deep unless the sides are either suitably battered back or supported. 		L	M	L
19	Confined Spaces	Employees <input checked="" type="checkbox"/> Sub-C <input type="checkbox"/> Public <input type="checkbox"/> Other <input type="checkbox"/>	M	M	M	<ul style="list-style-type: none"> The basement area is a typical working environment for Orbital, and for the most part is not considered a confined space under the current regulations. This situation requires monitoring to ensure we are not introducing; <ul style="list-style-type: none"> limited ventilation, internal combustion engine generator or compressor nearby issues with water ingress fire hazard (i.e. hotworks) other matters that may identify a specified risk. In this project there are no significantly deep pits and no external influences giving rise to the specified risks. Before work commences, the Site Foreman must establish if work in confined spaces is to be carried out and, if so, must arrange for any necessary equipment, working procedures, training etc. to have been provided, taking into account the hazards likely to be encountered. Entry into any Confined Space will be carried out under the conditions formed as part of the Company Confined Space Entry Permit (OBL_SMS_021). Specific Method statements must be prepared where a specified risk has been identified. 		L	M	L

L = Likelihood before control (High/Med/Low) S = Severity before Control (High/Med/Low) Risk = Risk before Control (High/Med/Low) Residual Risk = After Control (should be Low)

Site Specific Provisions = Use to ensure Risk Assessment is specific to that work place.