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Al Seal Contracting Risk Management System					
Risk Assessment-Precast Concrete Works					
Contract number and title: COMMUNICATIONS TOWERS AT AL RUWAIS, AL GHASHAM AND HALUL ISLAND, Q-406-01		RA number:	Element of work: <i>Precast Concrete Works</i>	Risk assessment	Date: 14/05/2018

Severity		Likelihood		Evaluation of risk		
NO INJURY MINOR MODERATE MAJOR FATALITY	1	RARE UNLIKELY OFTEN LIKELY EXPECTED	1	12 - 25	High	Action required urgently to control the risk, further resources may be required, work must stop immediately
	2		2			
	3		3	5 – 10	Med	Action required to control the risk, interim measures may be necessary in the short term, able to proceed with work under supervision
	4		4			
	5		5	1 – 4	Low	This represents a low risk, although control measures must be maintained

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Construction Site Activities Ignorance of site rules	All Construction Personnel	Physical & Mental harm from construction activities	5	5	25	<ul style="list-style-type: none"> HSE induction to be conducted to all personnel engaged prior to start of any work; Activity Hazard Analysis (AHA) to be furnished including equipment entry permit request, person entry permit Start briefing prior to work activities. 	1	1	1	Site Engineers and Supervisors
Vehicle Movement, Control measures	Operatives and other workforce	Concrete pump not connected properly can be cause Concrete falling off the vehicle and make serious injury to people and	4	4	16	<ul style="list-style-type: none"> Equipment must be check every time specially moving parts of the plant and inspection, maintenance, cleaning or repair must be done when it necessary. 	2	1	2	Authorized Mechanical Engineer or Site



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		damaging company property. Working without proper concentration will make trapped between the vehicle and materials. Unauthorized driving and drive exceeding site speed limit will make serious injury to workers. Uncontrolled or unexpected movement of the plant or material handled by improper way will make major accident at site. Not completing proper service rotation (Chemicals, Radiation, Vibration, Toxic gases or vapours, oil) can anyone be injured or suffer ill-health from exposure.				Uncontrolled or unexpected movement of the vehicle must be monitor every time during testing period and controlled measures must be conducted by competent person. Every time equipment drivers must follow signal or flag man's commands for minimize accident at site. Drivers must ride the vehicle under the speed limits and without blocking the access. Materials should be tie properly and it must be double check by the supervisors before starting the activities. Ach equipment and operators must be having third party competency certificate before operate at site.				mechanical supervisor. Site Safety Officer will take action on Flag mans.
Use of Mobile/Static plants (Compressor, generator, Concrete Vibrators etc.)	Operatives and Workforce	Electric shock, fire, stuck human body parts, nail or binding wire piercing in eyes or body, hitting debris.	3	4	12	<ul style="list-style-type: none"> All mobile plants shall in sound working condition with covered safety protection guard. Proper earth cable shall be provided for such as generator. Air compressor machine hose fitted with two clamps. Cleaning people shall wear appropriate PPE. Barricade the area and safety signage shall be provided. Fire extinguishers shall be provided. 	2	1	2	Project Manager and Site Supervisors
Materials lifting/ Manual Handling	Operatives and	Lifting in wrong method, without proper training, affecting to back-	3	3	9	<ul style="list-style-type: none"> All workers shall train on manual lifting procedure with necessary 	1	1	1	Project Manager,



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	Workforce	born and suffer with neurosis.				<p>demonstrations. Maximum weight will be 40 kg for male and 20 KG for female. Other than heavy weight shall lift by equipments.</p> <ul style="list-style-type: none"> Lifting of glasses, sharp irons, steel bars, etc shall use heavy duty hand gloves. Long pipes (light) shall lift by two people at the both end to prevent harming to other workers. 				Constructio n Manager and Supervisor
Health Hazard	Operatives and other workforce	High pressure concrete and aggregate going into eyes, face or any exposed skin due to standing or working in front of end hose, or opening up pipe joints when pumping. Head injury from suspended hoses from boom. Concrete splashing into eyes from the end hose	3	4	12	<ul style="list-style-type: none"> Concrete Gang should wear a safety helmet, safety footwear, impervious gloves / gauntlets, high impact goggles and high visibility clothing. Until concrete is flowing smoothly out of the end of the delivery hose, or when a blockage occurs in the boom pipeline, all personnel should remain clear of the delivery hose and placing boom. Under no circumstances should any unauthorised personnel attempt to open the pipeline. All unnecessary personnel including the general public should be kept well away from the concreting area inc lower floors and staircases. 	2	2	4	Project Manager, Constructio n Manager and Supervisor
Environmental Hazard	Property	Soil / Water contaminate by leaking from the pump or	3	4	12	<ul style="list-style-type: none"> Proper supervision must be given to Operatives and precaution must be 	2	1	2	Constructio n Manager



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		washing the pump after activity finished.				taken to contaminate the soil and water.				and Supervisor
Lifting and beams	All workforce	Overturning of Tower crane, harm to the company properties and injury or fatal accident can be occur, working without competency certificate and license legal violation can leads to human &property damage ,Failure of lifting equipment & accessories can be lead injury to human body, fatal accident or property damaged	5	5	25	<ul style="list-style-type: none"> Crane operating lifting capacity with respective load to be proceeds. Ensure that crane used for lifting is inspected and comely with the third party certificate for proof load test for safe working load, minimum breaking load as per the crane loading chart, Annexure to the proof load text (though inspection) certificate of the crane shall comply with detailed inspection of all parts of the crane which include the following. The safe load indicator to be monitor as displayed on load chart for radius and extending of length of boom. Crane operator shall make sure that the radius and ankle indicator of the crane are in good working condition, Crane operator shall make sure that main hoist winch and auxiliary hoist winches are in good condition, All lifting equipment/trackless such as slings, chains, hooks, de-shackles shall have test certificate from supplier. Certified riggers with valid certificate must be engaged for lifting .Erecting supervisor, lifting supervisor and operator must inspect the crane toughly and submit equipment checklist before start operation. Continuous 	2	1	2	Site Engineer, Lifting Supervisor and Rigger.



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						supervision shall be provide during the lifting/erection work to ensure safe positioning of crane, lifting as per SWL only and proper signal to be provide by the competent riggers.				
Lifting and Beams (continuation)	All workforce	Workers are working underneath the load can be report major injury or fatal accident. Caught-in injuries when setting the equipment/pinch point. (Hand injury).	5	5	25	<ul style="list-style-type: none"> Lifting area to be barricade and sign board shall be displayed to alert and keep away unauthorized persons. Unauthorized persons are must not be involved in the lifting Hand off from the pinch point when setting the load work. Workers will not be allowed at any time underneath the load. Use tag line to control the lifting item in position. Signalling to be control in safe manner to avoid signal mistakes and hand injury. 	2	1	2	Lifting Supervisor and Riggers.
Lifting Materials.	All workforce	Unknown weight of materials can be lead property damage and human injury.	4	4	16	<ul style="list-style-type: none"> Make sure weight of materials are known prior to lifting though any source / supplier or catalogue / engineering calculation. 	2	1	2	Lifting Supervisor and Operator
Manual Handling	Operatives	Hand & back injuries, heat stress	4	3	12	<ul style="list-style-type: none"> Manual handling training, not lifting loads beyond the capabilities of the operative, use of correct hand protection. Supervision 	2	1	2	Site Engineers and Supervisors
Dust and air bourne debris	Persons involved in site office &	Risk of eye injuries	3	3	9	<ul style="list-style-type: none"> Workshop facilities to have eye wash facilities in place. Eye wash stations will be placed at strategic points around 	2	1	2	Site Engineers and



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	lay down area activities and others around the working areas					site. Light eye protection will be mandatory for all staff & operatives. Roads and haul roads will be damped down as and when required				Supervisors
House Keeping – material, waste.	All	Slips, trips & falls	4	4	16	<ul style="list-style-type: none"> Regular housekeeping inspections, keeping area well prepared and free from debris, materials, cables and waste. 	2	1	2	Site Engineers and Supervisors
Ground Conditions & Access	All	Trips and falls caused by poor, general access around the site and to the facilities and accommodation	4	3	12	<ul style="list-style-type: none"> All accesses, where people have to walk, to be well defined, properly constructed and maintained in good condition. Suitable steps to be provided and maintained, where appropriate. Where appropriate, because of the need of access during darkness, cause suitable levels of lighting to be provided and maintained. 	2	1	2	Site Engineers and Supervisors
Control of Plant	Plant Operators	Badly designed or defined haul roads or poorly maintained surfaces leading to a loss of operator control and mechanical damage to plant.	4	4	16	<ul style="list-style-type: none"> Haul road construction to avoid unnecessary cambers or bends and the line of the road to be well defined, where appropriate. Running surface to be maintained in good condition. 	2	2	4	Site Engineers and Supervisors
Noise (See Footnote)	Persons involved in hoarding	Noise induced hearing loss from vehicles & equipment when noise levels are exceeding 85dB(A)	3	4	12	<ul style="list-style-type: none"> Regular monitoring of the noise levels generated from the machinery. A competent person will carry out regular 	2	1	2	Site Engineers and



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	work activities and others around the working areas					noise assessments of noise levels, Operatives will wear hearing protection when working in the area. Mandatory noise signage to be displayed.				Supervisors
Oil & Fuel	All persons operating plant and machinery	Oil leakage due to insufficiently maintained equipment, fuel spillage, oil spillage.	4	5	20	<ul style="list-style-type: none"> Use drip trays, training, toolbox talks, spill kits, regular maintenance, pre user checks COSHH information provided 	2	3	6	Site Engineers and Supervisors
Persons	Surveyors, Engineers & other workers on site	Falls of earth or material onto persons	5	3	15	<ul style="list-style-type: none"> Assess the likelihood of a fall of earth or other material and where appropriate support or batter any excavation in which a person could be struck by a fall. Keep persons clear of the top of excavation faces where because of the nature of the work there is a risk of material falling. Cause spoil or heavy materials/plant to be kept away from the edges of excavations. 	2	2	4	Site Engineers and Supervisors
Persons	Surveyors, Engineers & other workers on site	Being struck by moving plant / equipment	5	3	15	<ul style="list-style-type: none"> Competent & certificated plant operators to operate all items of plant. Plant certification to be provided prior to commencing on site, segregation of plant & operatives with barriers & signage, operatives briefed not to walk / stand around rear of machinery or items of plant. Operatives instructed to maintain eye 	2	2	4	Site Engineers and Supervisors



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						contact with plant operators at all times. Operatives to wear high visible vests & safety helmets, safety footwear, light eye protection, overalls. mobile phones not to be used whilst operating equipment.				
Persons working beneath machinery attachments i.e. buckets	Site operatives involved with the work activity	Attachments striking operatives either by the machine operator or by machine parts detaching from the machine.	5	4	20	<ul style="list-style-type: none"> Site operatives involved with the activity are to be instructed not to work beneath attachment i.e. buckets, where semi-automatic quick hitches are in use, these are to have the safety pin in place prior to commencing works. Operators to be briefed in use of quick hitches. 	2	2	4	Site Engineers and Supervisors
Machine/Plant Operators	All site operatives	Incompetent to do their job safely	5	3	15	<ul style="list-style-type: none"> Operators to be trained & competent to operate items of plant they are instructed to operate, certificates of competence to be provided prior to commencing works. 	3	2	6	Site Engineers and Supervisors
Operator Visibility	Plant Operators and other personnel on site	Poor operator visibility	5	4	20	<ul style="list-style-type: none"> Plant & equipment to have all round operator visibility, Traffic management plan showing segregation of plant & pedestrian walkways. Implement hierarchy of controls avoid the need for reversing vehicles, by implementing one way systems where practical, alternatively implement turning circles, or hammer head turning area, Appoint trained and competent vehicle banksman. Segregation of plant & operatives with 	3	2	6	Site Engineers and Supervisors



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						barriers & signage, operatives briefed not to walk / stand around rear of machinery or items of plant				
Access & Egress	Plant / machine operators and other site operatives	Inadequate access or egress. Persons being asphyxiated.	4	3	12	<ul style="list-style-type: none"> Access and egress to be maintained, taking account of the need to get persons out of the excavation, in the event of an inrush of gas. 	2	1	2	Site Engineers and Supervisors
hand tools / power tools	Tool operators	Due to unapproved tools (unsafe), unauthorised operatives and poor supervision	4	5	20	<ul style="list-style-type: none"> Before handing out tools, visual inspection will be carried out, by competent electrician. hearing protection shall be used if exposed to noise levels of 85 db(a) or above Competent operators shall handle the tools & competent supervision will be ensured. All tools used will be well maintained and defect free. Electrically operated tools shall comply with established safety requirements-double insulated / colour coded / properly grounded. appropriate PPE 	2	2	4	Site Engineers and Supervisors
Installation and use of temporary electrical supplies	All workforce	<ul style="list-style-type: none"> Electrocution Fire Damage to equipment 	5	5	25	<ul style="list-style-type: none"> Temporary supplies will be planned to take into account foreseen load requirements, environmental conditions, and progress of work and compatibility/maintenance of 	2	5	10	Site Engineers and Supervisors



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						<p>equipment. Competence of electrical sub-contractors will be checked before contracting work. The installation will be certified before being brought into use. Locked supply cabinets will form part of the system. Offices, stores, drying rooms and canteens will be regarded as permanent installations.</p> <ul style="list-style-type: none"> Supply and distribution units will be lockable and the keys controlled. Signs warning of electrical hazard will be displayed on supply units. Fire extinguishers (carbon dioxide) will be available adjacent to distribution units. Rubber gloves and rubber mats to an appropriate standard are to be used for live work. All cables will be routed so as to prevent damage to cables and avoid tripping hazards. Permit to work system or other suitable means of control to be used when work on live systems is foreseen. Operatives will not be permitted to work alone on live systems. Only competent electricians are authorised to install or modify temporary supplies; certification will be obtained after modification. Systems will be monitored for physical damage and will be checked and 				



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						recertified every 4 months. <ul style="list-style-type: none"> Electricians will receive additional training in the above standards and HSE guidance material, toolbox talks will be given at regular intervals. 				
	Operative. Employees. Other persons on site. Members of the public. Members of the emergency services.	Fire Serious injury or fatalities	4	4	16	<ul style="list-style-type: none"> Permit to work completed. Identify and remove or protect any combustible materials in the work area. Use suitable guards or covers such as metal sheeting, mineral fibre boards or fire retardant blankets Suitable fire extinguishers are made available in vicinity of hot work. Depending on the area where work is being undertaken, a continuous fire watch during the period of the work, and for at least an hour afterwards may be required. All operatives are to be aware of the emergency procedures in operation on site. 	2	1	2	Project Engineers and Site Supervisors
	workforce	Exposure to fume Operative using burning equipment. Temporary or permanent lung damage. Sensitisation	3	2	6	<ul style="list-style-type: none"> COSHH assessment for burning activities on site to be provided. Explanation of this also to be carried out to all employees involved. Operator works with head outside plume of fume and works up wind from the piece being worked on. Adequate ventilation should be provided for all burning activities on site 	2	1	2	



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						especially where galvanised or stainless steel is involved. Where this is not feasible then PPE should be used				
Vibration	Operators	Can result from the transmission of vibration from a vibrating implement (i.e. Plate Compactors, road-breakers, Grinders and drill machines etc.) to the hands, occurring as a result of several years of regular exposure. Primarily, it results in damage to the blood vessels and nerves of the hand resulting in skin blanching (white finger) on exposure to cold, together with pain, pins and needles, numbness and loss of manual dexterity. If you are affected you will suffer symptoms on exposure to cold conditions with the time taken for recovery increasing as the condition develops. The condition may become permanent if early symptoms are not identified and action taken. It is important to recognise that these symptoms do not necessarily occur during or immediately after exposure to	4	4	16	<ul style="list-style-type: none"> Wear adequate clothing to keep dry and maintain hand and body temperature at an acceptable level, wear suitable gloves to keep your hands warm. Anti-vibration gloves are available which can reduce exposure. Let the machine do the work and grip the handle as lightly as possible, providing that this is consistent with safe working practice. Do not use blunt tools. Keep steels sharp and use the appropriate tool for the job. If you smoke and use vibratory equipment you are at increased risk of vibration related disease, since nicotine reduces the blood supply to the hands and fingers. Should attacks of white or blue finger or long periods of tingling and/or numbness occur, report this to your Supervisor. Inform your Supervisor if abnormal vibration occurs when using your machine. 	1	2	2	Site Engineers and Supervisors



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		vibration but usually occur early in the morning when the weather is cold. Therefore, cold is the primary trigger for the symptoms. If you smoke you are at increased risk since smoking reduces the supply of oxygenated blood to your hands and fingers. The main way to prevent vibration finger/hand is to reduce levels of vibration by careful selection of equipment, the introduction of damping techniques on existing equipment if practicable, the use of alternative work procedures if possible, and to minimise the time working with vibrating machinery by job rotation.								
Vibration - Environmental pollution		Vibration is not only a health and safety problem it is also an environmental concern. Vibration mainly occurs from demolition and piling activities within construction.	3	4	12	<ul style="list-style-type: none"> When carrying out demolition work minimise the distance materials can fall as this will help to reduce levels of vibration. Vibration caused by heavy plant can cause environmental pollution therefore haul road surfaces should be kept as smooth as possible and carefully repaired potholes in the access road may also help to reduce this. 	1	1	1	Site Engineers and Supervisors

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						<ul style="list-style-type: none"> Ensure you keep good relations and communications with neighbours as they often worry about damage to their property caused by our activities. If you believe there to be a vibration problem on site or in area where you are working contact your supervisor. 				