

APPENDIX G

Site Lifting Plan

Project:
King Square Estate

In accordance with BS7121

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Site Lifting Plan	Dick Peek	00 D Peek	Feb 2012	

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INTRODUCTION

The key safety principles regarding lifting operations are explained within this document. These principles must be understood by the management and effectively implemented on projects where there is an interface with crane operations.

This plan has been created to assist with the management of crane activities on site although it is recognised that LOLER 98 also covers the following list equipment:

- Excavators (used for lifting)
- Fork trucks and telescopic handlers
- Lorry loaders
- Vacuum lifters and manipulators
- Hoists
- Beam and trestle hoists
- Pilling rigs
- Scaffold/bracket hoists
- Suspended access equipment
- Personal suspension equipment
- Mobile elevating work platforms
- Any other equipment used for lifting materials or persons

It is vital that all lifting operations are properly planned by a competent person and that the plan is followed by everyone involved in the operation.

This plan is to be read by all team members involved in lifting operations; this must be done prior to any lifting being carried out.

It is essential that all team members are fully competent and certified to carry out their individual roles. (See section 13)

It is essential that all team members are confident that they can fulfil their duties especially when works may need to be carried out at height.

Management of lifting operations

Safe system of work

Whether the lifting operations are repetitive or if they are a one off, a safe system of work must be established and followed for the operation to be both safe and successful.

Competent personnel must be appointed to be responsible for the planning, organisation and execution of all lifting operations.

Only equipment which is fit for purpose and has undergone suitable inspection and test must be used.

Clear, simple and well-defined communication systems must be in operation at all stages of the process

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In order to provide a safe system of work the following items are to be included in the lift plan / Assessment:

The selection of suitable cranes and work equipment must be carried out.

The areas for the cranes access and rigging etc must be properly planned and properly prepared.

A regime of maintenance, testing and examination of equipment must be devised.

All certification, reports of thorough examination and other documents including manufacturer's manuals are to be retained and be available.

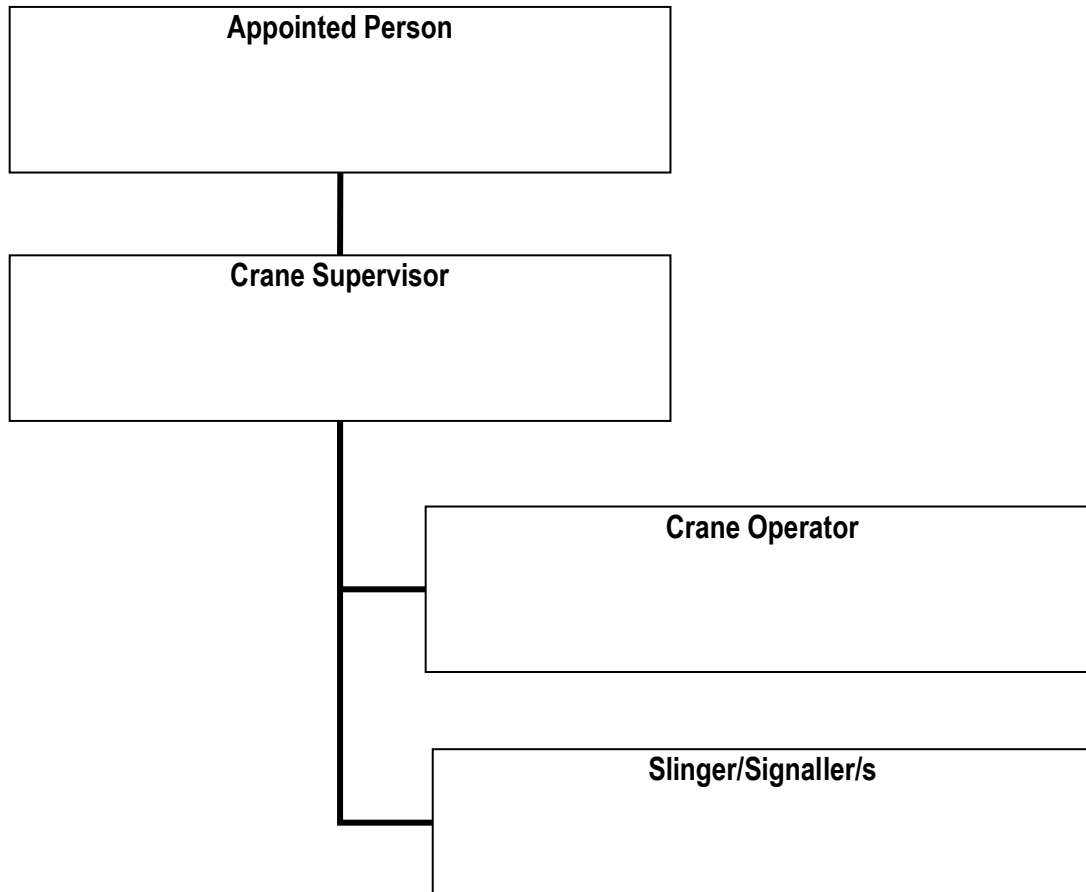
Selection and duties of personnel

When appointing a crane team it is essential that all the members of that team are fully aware of the role and duties and that each person has sufficient knowledge, training and experience to carry out their role.

Records of training and experience are to be verified prior to any new member joining the crane team and their details are to be retained in the site file.

The crane team organisation chart is shown below and roles and duties are continued beneath.

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Appointed Person

The appointed person's duties are to include the following;

- Being familiar with the relevant parts of the project Health and Safety Plan where lifting operations are to be carried out on a site where CDM regulations apply.
- Assess the lifting operations to provide such planning, selection of cranes, lifting accessories and equipment, instruction and supervision as is necessary for the task to be undertaken safely. (where works are on a shared site or where logistics may be restrictive co-ordination with others will be required)
- Ensure that adequate inspection / examination and maintenance of the equipment have been carried out prior to its use.

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- Establish an effective procedure for reporting defects and incidents and taking necessary corrective action.
- Takes responsibility for the organisation and control of the lifting operation.
- Ensure the crane supervisor is fully briefed in the contents of the lift plan / method statement etc.

The appointed person is able to delegate his duties to another person but the responsibilities still remain the appointed persons.

Crane Supervisor / (Co-ordinator Multiple Cranes)

The crane supervisor role is to direct and supervise the lifting operation and ensure that these are carried out in accordance with the relevant method statement / lift plan.

The crane supervisor should be competent and suitably trained and must be experienced to carry out all relevant duties.

The crane supervisor has authority to stop the lifting operation if he considers it dangerous to proceed.

The crane co-ordinator's role is to plan and direct the sequence of operations of the cranes to ensure they do not collide with other cranes, loads and other equipment and buildings.

These roles may be carried out by the appointed person or may be delegated to someone with appropriate expertise in lifting operations

Duties of Contractors Crane Supervisor / Co-ordinator.

Each contractor undertaking lifting operations must appoint a suitably competent person to plan and have overall control of their lifting operation.

This person will be known as the **Contractors Crane Supervisor/Co-ordinator** whose duties will be as follows:

- Identify and ensure a written record of all lifting equipment and lift accessories used on the project is maintained.
- Formulate a simple written health and safety method statement for all routine crane-lifting operations.
- Crane lifting operations will require a written health and safety method statement.
- Amending the method statements as relevant, where there are any variations to the lifting operations.
- The appointed lifting Supervisor/Co-ordinator must control crane-lifting operations. Duties, but no responsibilities, may be delegated to competent persons for crane lifting operations, i.e. trained

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- slinger/signaler may be delegated direct control for routine crane lifting operations. However more complex crane lifting operations may require additional supervision.
- The following points must be taken into consideration when planning crane lifting operations:
 - Risks associated with the specific nature of the lifting operations, i.e. load characteristics, operating conditions, method of lifting, travel route of the crane with load and proximity hazards.
 - Interface risks with other contractors when undertaking crane lifting operations.
 - Provisions of an adequate safe system of work, which eliminates the risks or reduces them to an acceptable level.
 - Appointment of competent persons to supervise and control the lifting operations.
 - Provision of lifting equipment and lift accessories that are suitable for the task.
 - Provision of all necessary test and thorough examination certificates (to be available for inspection).
 - Adequate arrangements for undertaking statutory examinations/ inspections of the lift equipment and accessories, maintaining written records of these.
 - Safe Working Load (SWL) clearly identified on all lifting equipment and lift accessories.
 - Provision of suitable storage for lift accessories when not in use.
 - Prevention of unauthorised lifts.
 - Attend the weekly crane co-ordination meeting.

Assist in the monitoring of crane lifting operations.

Crane Operator

The crane operator is responsible for the correct operation of the crane in accordance with the manufacturer's instructions and within the safe system of work.

The crane operator is to respond to a single slinger / signaller at any given time and these must be identifiable to the operator.

Should any person near a lifting operation give the recognised stop signal the operator must cease lifting operations immediately and confirm what actions are required from the slinger / signaller.

The crane operator must report any defects to the appointed person immediately. (The driver may report defects etc direct to the fitters etc but the appointed person must still be made aware of this action)

Slinger / Signaller

The slinger / signaller is responsible for the attaching and detaching of loads to and from the crane load lifting attachment and ensuring that the correct accessories are used for that operation in accordance with the planning of the operation.

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The slinger / signaller is responsible for the safe movement of the crane and clear direction must be given whether visual or hand signals.

Where more than one slinger / signaller is required, clear instruction must be given when passing responsibility over to the next slinger / signaller.

The slinger / signaller is to store lifting accessories in a suitable place when not being used and prior to re-using an accessory he must visually inspect it before use.

The slinger / signaller must notify the appointed person of any damaged equipment immediately.

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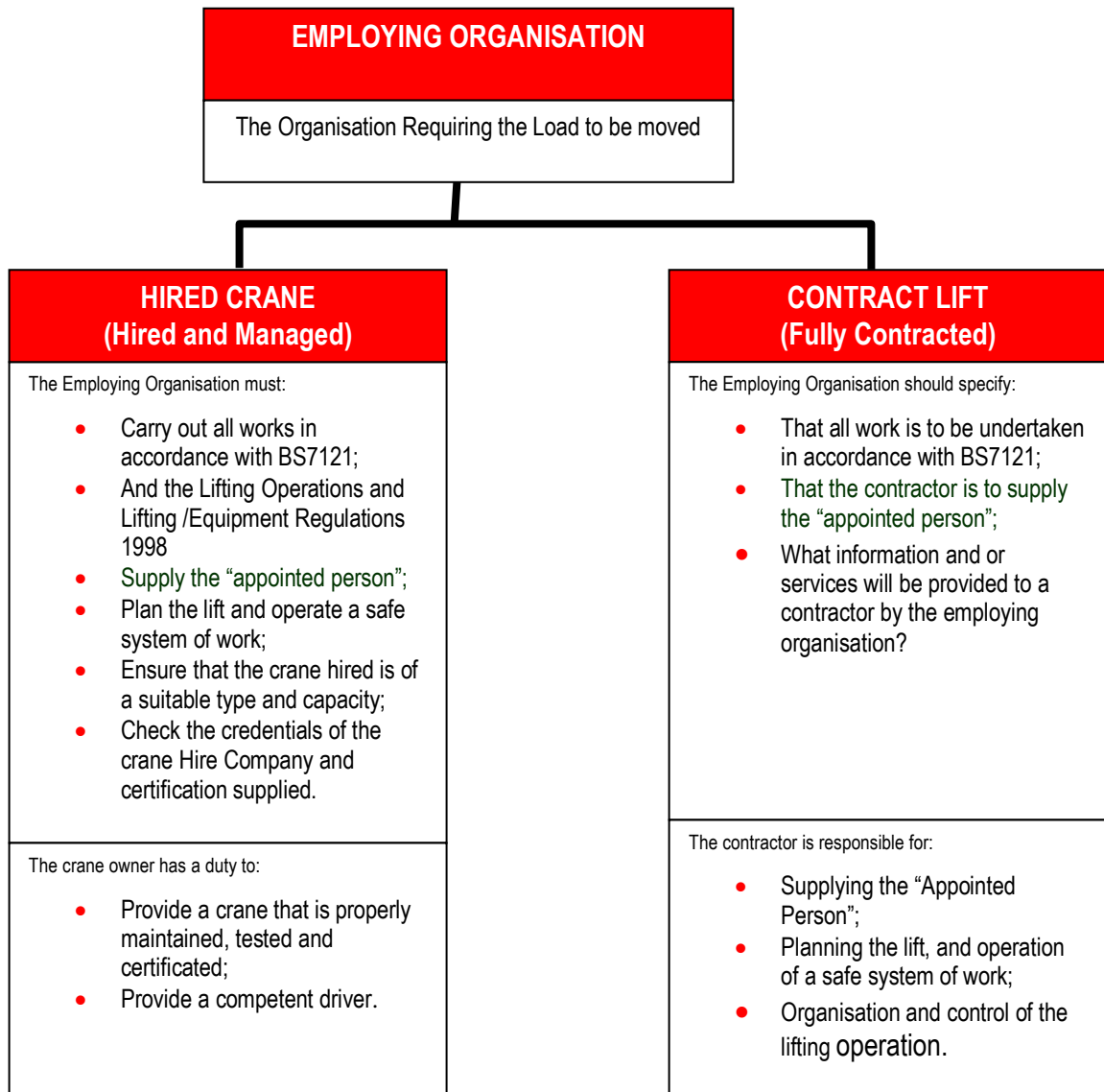
Contract Lift Operations

Contractors may and often do call upon the services of a specialist crane company. The contractor requiring the load to be moved has two options when employing the services of a specialist.

- Option 1 – Hire the crane (Contract hire)**
- Option 2 – Contract Lift (Fully contracted out)**

Ultimate responsibility for the management of the lifting operation remains with the contractor regardless of whichever option is chosen (refer to the model below).

Non Contract/Contract Lift Operations Flow Chart



The Cranes Interest Group of the Contractors Plant hire Association, (CPA), have produced a ‘best practice guide’ to ensure compliance with B.S.7121 Code of Practice for the Safe Use of Cranes, in relation to conditions of hire, contract and insurance cover.

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Procedures and Precautions

Crane Operation

Whenever a crane is to be moved (even if not lifting) it is to be driven by a competent operator nominated by the appointed person.

The crane must only be operated under a safe system of work and within the manufacturer’s instructions.

When the days operations are completed and the crane is “parked” the operator must put the crane in out of service position and set the block at minimum radius (mobile cranes), 25% radius (Luffing cranes), maximum radius (Saddle jib cranes).(see manufacturers specifications)

The cabin must be secured at the end of the shift and where there is a risk of intruders or protesters a lockable trap door will be required for tower cranes.

Regular inspections of the crane are to be carried out and this must be recorded weekly in the site office.

Inspection and Maintenance

Where there is a requirement for a person to climb the mast of a crane whilst the crane is still operational the driver must be made aware of someone climbing before they commence.

Any tools or equipment needed to be used must be secure and free from risk of falling and if tools are to be lifted up using the crane they must be done so using equipment designed for that task.

A regime of monitoring and examination is to be established by the appointed person this must include a schedule of servicing for cranes and generators etc.

In order to maintain production it may be necessary to carry out maintenance outside normal working hours.

Other cranes / plant / buildings

Where there are other cranes on the same site and there is a risk of collision, a crash radio system is to be established and be used. This will be determined by the lifting assessment.

Any other plant (Other cranes, Concrete Booms, Piling Rigs etc) that may be working within the radius of a crane, their operator must be made aware of such risks and a system must be put in place to control their movements (this may be via the crash radio or a permit to work system)

Where existing buildings are situated within the cranes radius specific control measures must be put in place (these will be determined in the risk assessments)

Signalling

Where available the recognised hand signals will be adopted and a copy of those is below.

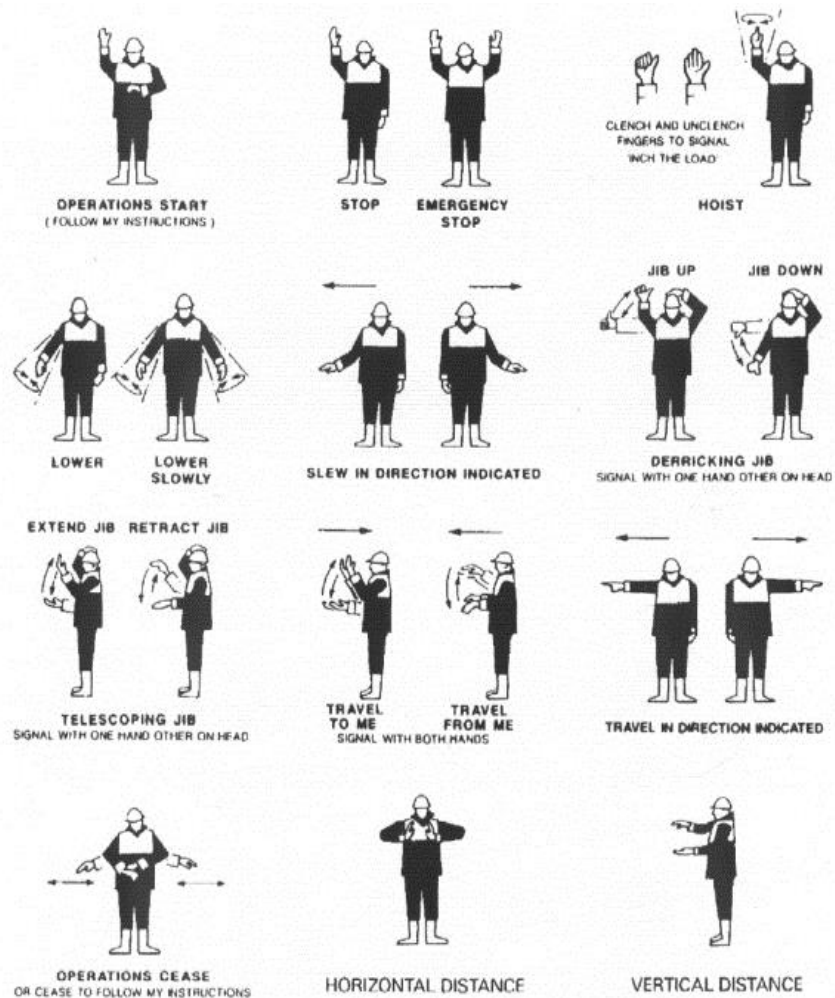
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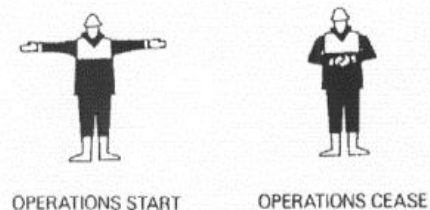
Where hand signals are not suitable radio contact is to be established and implemented, when using radio contact the slinger / signaller is to give clear, concise directions and if unclear the driver is to stop all lifting operations (If communication is lost during a lift the driver is also to stop)

Any interference on the radio system is to be notified to the appointed person as soon as possible.

The slinger / signallers are to be identifiable to the operators and this will be achieved by the operatives wearing orange high visibility vests and safety helmets.



Alternative Start and Finish Signal



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Slinging and handling loads

It is essential that the weight of the load to be lifted is known to a reasonable accuracy and this can be determined a number of ways

1. Check for SWL markings
2. Phone the manufacturer
3. Run over a weigh bridge
4. Calculate

If weights are to be calculated the following figures should be used;

Material	KG/M ³
Brick	2100
Concrete	2400
Earth	1600
Iron and Steel	7700
Lead	11200
Water	1000
Wood	800

Additional allowances must be made if materials are wet or have been soaked this can vary substantially.

Lifting loads

Once the slinger has secured a load it must be raised 150mm and the load is to be re-checked for stability.

Once the slinger / signaler is assured of the stability of the load he will give direction to the crane operator to proceed with the lift.

Where possible the direction of travel will be the shortest direction and will be away from where operative are working beneath. If this is not possible the slinger signaler is to warn operatives of loads above. On multi-crane sites, this is to be addressed to all site workers during their site induction.

Loads must never be dragged as the cranes are only designed to lift in a vertical plane and there a possibility of damage to the crane.

Lifting Zones

No lifting to take place over occupied property or the public, site accommodation or welfare facilities. Lifting zones will be identified on plans and drawings and attached to the lift plan.

Collision prevention system

Zoning systems are available for modern tower cranes. These allow the crane to be programmed to prevent them

from carrying loads into prohibited areas such as railway lines. With multi-crane schemes, the use of anti-collision devices should be considered; however these are no substitute for vigilance by, and good communication between, the tower crane drivers.

System details are to be provided by the Crane Hire Company.

Weather

It is the policy of Higgins that all tower cranes are fitted with wind speed indicators.

Tower cranes on Higgins sites must not lift when the wind speed exceeds 38 M.P.H. at jib level.

Lifting can continue in gusty weather where the wind speed averages 30 M.P.H. or below, with occasional gusts in excess of 38 M.P.H., but not exceeding 45 m.p.h. In such cases large bulky loads should not be lifted, the S.W.L. of the crane should be halved, and lifts with duration in excess of 10 minutes should not be attempted.

Where any gust exceeds 45 M.P.H. the crane must be placed in the out of service mode. In all events the final decision on the safety and advisability of a lift rests with the crane driver and lifting co-ordinator. In the event of a disagreement the more cautious view will prevail.

The same conditions apply to mobile cranes although generally they are not fitted with wind speed indicators. Typical maximum operating wind speed for a mobile crane is 22 M.P.H.

The crane manufacturers operating handbook **MUST** be consulted to determine when it is safe to lift in windy conditions and these must be strictly observed.

Tower cranes will be fitted with an anemometer with display for driver and a remote display for senior management, safety staff, crane co-ordinators reference etc.

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Higgins Group Tower Crane Wind Alert Levels

Readiness code	Average wind speed	Gust speed	Activity guidance	General guidance
Green	Below 17 mph (27 kph)	25 mph (40 kph) or below	Safe for all site operations	Maintain good housekeeping and scaffolds. Take extreme care with laying roofing sheets 20m or more long - special assessment necessary.
Yellow	17 mph or above (27 kph)	26 mph (42 kph) or above	Cease laying or handling sheeting and decking over 5m long and the laying or handling of lightweight materials (glass fibre, insulation boards, liner trays, etc).	Check ground level storage/ housekeeping. On exposed sites take extreme care with all roofing operations. Maintain housekeeping.
Blue	23 mph or above (37 kph))	35 mph (56 kph) or above	Cease built-up felt roofing, mastic asphalt, slating and tiling, sheeting and decking.	Check roofs for loose objects, housekeeping. Extra care with crane handling of shutters, sheet materials.
Red	Average 38 mph or above (61 kph) or Average 30 mph (48 kph) with gusts of →→→→	45 mph (71 kph) or above	Cease crane and hoist use where exposed, mobile cranes may have lower limits (see manufactures manual). Cease formwork decking.	Check scaffolds, roofs for loose materials, missing ties. secure scaffold boards, sheeting, if appropriate
Black	Average 45 mph (71 kph) or gusts of →→→→→→	50 mph (80 kph) or above	Cease all external or exposed activities.	Assess safety of access to internal works. Check if there are external materials that could be blown around such as sheet materials & rubbish. If in doubt stop work

Note: Post appropriate flag depending on average wind speed on site. The contractor should then assess the wind speed at the place of work and where circumstances dictate, adhere to the guidance given above. In cases of dispute the Higgins Manager's decision will be final.

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Lifting Equipment

Only slings and other lifting accessories for which a valid report of thorough examination has been issued within the previous 6 months are to be used.

Lifting accessories should be clearly marked with the rated capacity and have an identification number for record purposes.

Lifting equipment must be visually inspected before use with any defects being reported immediately.

When lifting equipment is not being used it should be stored in secure dry conditions, preferably by hanging on a rack where they cannot get tangled or contaminated.

HIGGINS REQUIREMENTS

All loads are to be “choke” lifted. No cradle slings to be used.

In addition to weekly inspections all Webbing slings must be inspected daily before use and any damaged slings destroyed.

SPECIAL LIFTS

Rubbish skips (ref HAPPI) may be lifted by a crane if they have been designed to do so, clearly marked with its safe working load, has a valid test/inspection certificate and the lifting chains have been designed to fit the skip lifting lugs. In all other cases rubbish skips must be lifted by means of lifting cradles and spreader beams, which have been specifically designed and tested for use with the type of skip provided.

- The skip supplier is advised that his skips are to be lifted by cranes
- The skips must be inspected before being used to check that they are suitable and adequate for that purpose, with particular attention being paid to the lifting lugs, base and welds.
- All lifting gear, associated spreader beams and lifting cradles must be suitable and adequate for the purpose and marked with its safe working load. The skip and its associated lifting gear attachments must be compatible and designed/secured to prevent accidental displacement.
- It is of paramount importance to ensure that the weight of the skip and its contents does not exceed the safe working load of the crane for the radius at which it is operating and that the structure upon which the skip is to be placed is capable of supporting the total load.
- Skips must not be overfilled and where necessary should be suitably covered to prevent accidental spillage of the contents.
- The adverse effects of the wind on the skips should be considered when they are being lifted.
- The raising or lowering of the skips over public roads or footpaths is prohibited.
- The design of any purpose made lifting cradle and associated spreader beams must be checked by an Engineer. It is essential that a competent person supervise this type of lifting operation.

LIFTING OF PALLETISED LOADS

Where bricks, blocks, tiles and similar loads are to be delivered on site on pallets for lifting by crane the following requirements apply.

- The brick or block supplier must be made aware that the material is to be crane handled to ensure correct palleting for lifting equipment available.

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- The pallet must be of sound construction and the load must be adequately secured to prevent displacement. On delivery any unsuitable loads must be re-stacked and banded or be returned to supplier.
- To prevent distortion and allow for safe removal, loads must be stacked on solid level ground not more than 3 in height. Pallets/packs which are to remain in storage must be reduced to a maximum of 2 high.
- The crane handling forks used for lifting must be suitable for the load; a current test/thorough examination certificate must be available on site. The equipment must be checked by the slinger for damage before each use and any damage must be immediately reported to site management.
- The safe working load (S.W.L.) must be clearly marked on the equipment and this load must not be exceeded.
- A safety net or cage must be provided around the load to retain the load or parts of the load if the pack separates. This net or cage must be certificated to sustain a static load of twice (2x) the safe working load (S.W.L.) of the crane handling forks.

WARNING: Some nets available do not comply with this requirement - if in doubt check with Safety Department.

Vacuum lifters and manipulators

The use of vacuum lifters and manipulators (usually a hiab arm with a vacuum lifter attached) are becoming common on UK construction sites. Used to install glass and cladding panels, this type of equipment can dramatically reduce the risk of manual handling injuries. However, they have their own inherent risks, and accidents have already occurred. At present both these items of equipment are relatively new to the industry. They are covered by legislation in the form of The Lifting Operation and Lifting Equipment Regulations 1998, (LOLER) and Provision and Use of Work Equipment Regulations 1998 (PUWER). However, guidance and training in the use of this specific equipment is still at the development stage. **The following guidance is to be followed on all Higgins Group sites/projects.**

The Equipment

There are two components to equipment of this type, both of which demand careful consideration. These are:

- **The Vacuum Lifter.**
 - This is the device with suction pads, which attaches to the glass
- **The Ergonomic Manipulation Unit (EMU).**
 - This is a lifting arm attached to a machine which facilitates the lifting and offering up of the window into its seating in the structure. EMU's are not always needed as the vacuum lifter can be attached directly to a crane.

What are the Risks?

There have been several cases of glass being dropped near ground level and so far without injury. However these EMU machines are designed to offer glass outside at high level whilst standing on the floor slab. This obviates the use of tower cranes, which provides flexibility, but should the glass be dropped it will fall many storeys with great risk to those below. Furthermore, these machines are manipulating not just the glass but often the aluminum frame as well, increasing the load and damage potential.

Glass and any attached frame can be dropped for the following reasons:

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- Damp or wet glass surface causing loss of suction or the glass to slip/slid off the suction pads. **This is one of the most common causes of dropped glass / units.**
- The presence of inclusions in toughened glass, which causes it to shatter into many pieces. This is a well-documented problem.
- Dirty glass or glass with a film of cleaner or other chemical, which allows the suction to fail.
- Poorly located suckers imposing unacceptable loads. Suckers must be evenly distributed or a full engineering design carried out to prove eccentric arrangements.
- Glass striking the structure during maneuvering. Some corner units are extremely difficult to position even with this equipment and great skill is demanded of the operator.
- Loss of suction due to a machine failure. On many present-day machines, damage to one sucker or its suction hose will mean loss of suction to all pads, thus dropping the load.

What are the control measures?

The risks dictate a rigorous approach if the undoubted benefits of these machines are to be realised safely. This may include all or some of the following depending on circumstances.

- Careful risk assessment and detailed method statement.
- **Never use vacuum lifting equipment in the rain and ensure glass / panel surface is clean and dry.**
- A realistically wide exclusion zone below the operation, with physical barriers and signage. If this is impossible, consult safety department.
- Secondary means of attachment of window frames to the lifting device, to act as a fail-safe device.
- Careful and appropriate equipment selection.
- Proven operator training.
- Detailed and specific examinations and test of the equipment.

Tests and Examinations

Under LOLER this equipment must have a thorough examination every 12 months by a competent person. A certificate confirming the examination must be presented to Higgins Group before the lifter is used on site. Due to the critical nature of this equipment consideration should be given to carrying out a full examination and a certificate of worthiness **immediately prior to its first use on site and every 6 months thereafter.** Examination to be carried out by the manufacturer or other competent person. (Not operatives or site management).

The appropriate regular checks are to be made as the manufacturers instructions however these must include the following, with which ever is the most stringent taking priority.

Before First Use

Before first use, as daily check but with test load held for 2 hours with the pump off. Also check vacuum filter as manufactures instructions.

Mobile Cranes/Crawler Cranes

Particular attention must be given to the ground bearing capacity to ensure it will withstand the weight of the crane and its load. The use of properly based outriggers is most important to ensure the stability of this type of crane. Regular checks should be made to ensure all outriggers are used and properly extended.

CHECK THE PROPOSED FOUNDATION OF THESE CRANES FOR HIDDEN MANHOLES, VOIDS, BASEMENTS and SOFT/BACKFILLED GROUND ETC.

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Where tower cranes are already in use on a site the tower crane co-ordinator will also control all mobile cranes.

A rigid control system must be set up by the crane co-ordinator to check the items detailed on the Mobile Crane Checklist are completed before a mobile crane is put to work.

Mobile cranes will be subject to the same methods of communication as for tower cranes. If required a communication system is to be loaned to the Mobile crane driver for the period on site.

Excavators Used as Cranes

A wide variety of excavators are used in the construction industry. These machines are strongly constructed and as they are fitted with a boom and have a slewing motion, they can be used to lift suspended loads in the manner of a crane subject to certain conditions.

Legal Requirements

Statutory provisions applicable to excavators are The Health and Safety at Work etc. Act 1974, The Lifting Operations and Lifting Equipment Regulations 1998 and The Provision and Use of Work Equipment Regulations 1998.

Procedures to be Adopted

As excavators are classified as lifting appliances site management must ensure the regulations relating to lifting appliances are adhered to, i.e.

- The excavator must not be used unless it has been thoroughly examined during the preceding 12 months.
- The thorough examination must be repeated after any substantial alteration or repair.
- The competent person carrying out the examination must record the results of the thorough examination on a certificate.

In addition to the above requirements, any excavator used as a crane must:

- Be fitted with an automatic safe load indicator of H.S.E. approved design and have check valves, or similar devices fitted to the hydraulic lifting cylinders to prevent a gravity fall in the event of hydraulic failure.
- Have properly constructed attachment points for the lifting gear.
- The point of attachment of lifting slings etc. must be considered with great care. Slings for example, must not be hooked onto a bucket tooth but must be properly secured to a correctly designed and manufactured lifting point. A hook welded onto the back of the bucket is not considered satisfactory, due to the possibility of damage during digging and of the ring slipping off due to bucket angle.

Hiabs

All Hiabs attending site will be subject to LOLER 98 and therefore the same conditions as set out in the Higgins Mobile crane and Hiab checklist Appendix?. **Where is this!!!!**

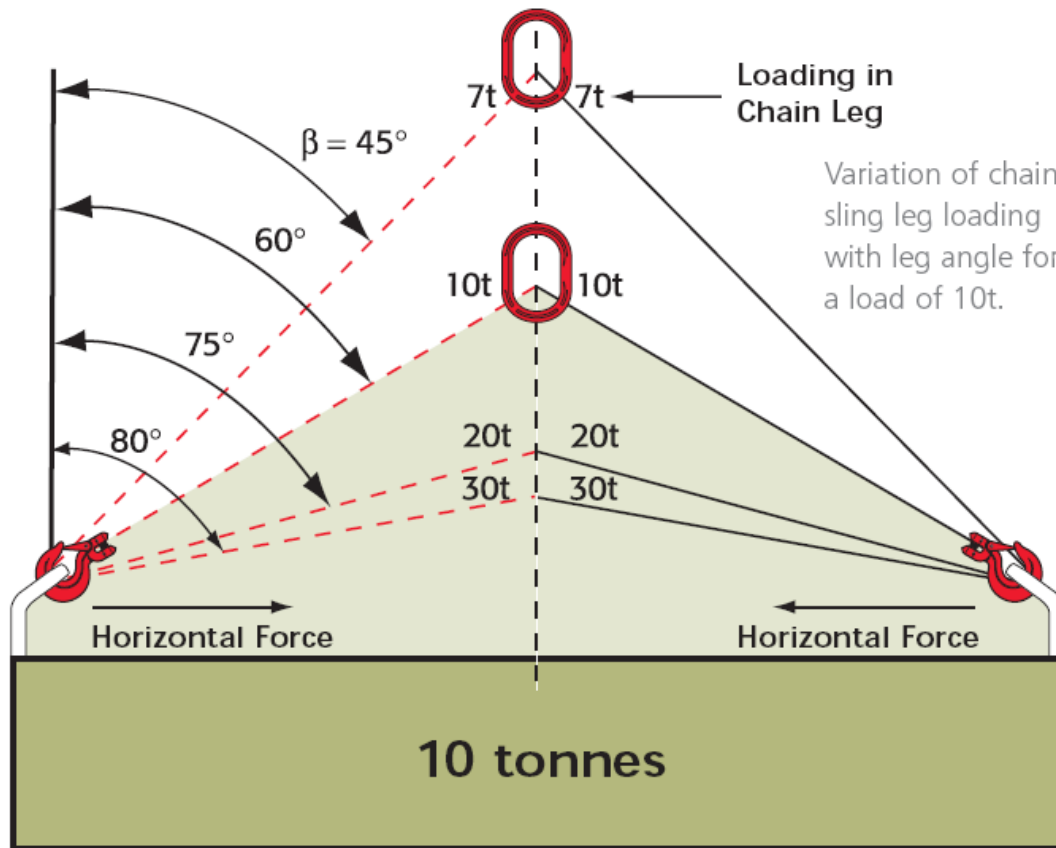
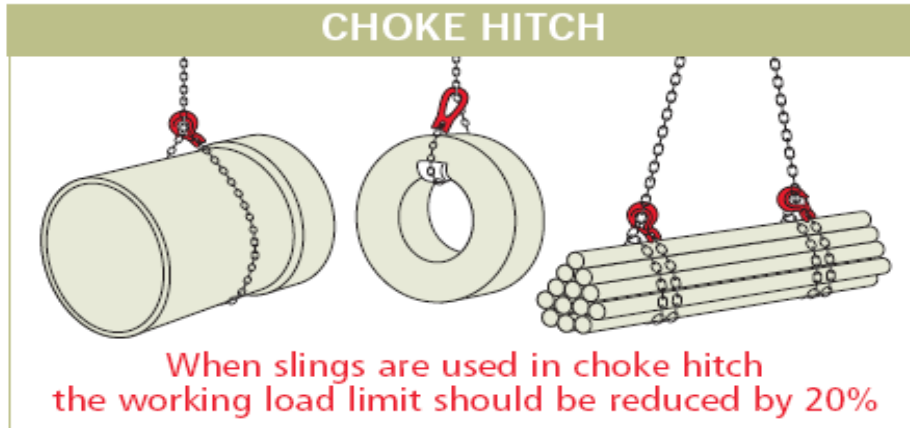
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Chain sling capabilities

There is a misconception regarding the capability of chain slings and below is a simple guide taken from the Kuplex brochure.

Chain Dia. mm	Grade	Single Leg	Two Leg		Three and Four Leg		Endless
		90°	β		β		
			$0^\circ < \beta \leq 45^\circ$	$45^\circ < \beta \leq 60^\circ$	$0^\circ < \beta \leq 45^\circ$	$45^\circ < \beta \leq 60^\circ$	
Factor 1	Factor 1.4	Factor 1	Factor 2.1	Factor 1.5	Factor 1.6		
7	8	1.5	2.12	1.5	3.15	2.24	2.5
7	10	2	2.8	2	4.2	3	3.2
8	8	2	2.8	2	4.2	3	3.2
10	8	3.15	4.25	3.15	6.7	4.75	5
10	10	4	5.6	4	8.4	6	6.4
13	8	5.3	7.5	5.3	11.2	8	8.5
13	10	6.7	9.5	6.7	14	10	10.7
16	8	8	11.2	8	17	11.8	12.5
16	10	10	14	10	21.2	15	16
19	8	11.2	16	11.2	23.6	17	18
19	10	14	20	14	30	21	22.4
23	8	16	23.6	16	35.5	25	26.5
23	10	21	29.5	21	44	31.5	33.5
26	8	21.2	30	21.2	45	31.5	33.5
26	10	27	38	27	57	40	43
32	8	31.5	45	31.5	67	47.5	50
32	10	40	56	40	85	60	65

Using the chains at different angles and hitching the chains results in a reduction of the working ability of the chain sling and examples are shown below











SITE LIFTING PLAN

RISK ASSESSMENT

Work Activity/Task	Lifting Operations	Who may be Harmed (Tick ✓)
Significant Hazard Identification		Who may be Harmed (Tick ✓)
1. Control of lifting operations.		Employees ✓
2. Crane Collapse		Contractors ✓
3. Crane erection / set up / falls		
4. Mechanical failure		Residents ✓
5. Unsupervised Lifting by incompetent personnel.		
6. Lifting over public/operatives		Public ✓
7. Collision of tower cranes		
8. High winds/gales		Visitors/school children ✓
9. Communication		
10. Falling Materials		
11. Proximity hazards, power lines, railways structures etc. Flight paths and mobile cranes.		
12. Failures of lifting accessories.		
13. Crane operator illness.		
14. Stress.		
Overall Assessment of Risk Prior to the Implementation of Control Measures (Tick One ✓)		
Low	Medium	High
✓		
Control Measures to Reduce the Risks (use additional sheet if necessary)		
1. Appointed person, crane supervisor, crane driver and slinger/signallers to be identified in the lift plan and hold the appropriate training certificates. Lift plan to be fully briefed to all operatives involved in lifting operations.		
2. Rated capacity indicator to be checked daily on each crane. Any lifting must be free standing. Crane to be checked by independent expert 12 monthly. Crane foundations to be sound.		
3. Tower crane base to be designed and constructed to the design. Tower cranes to be erected by trained operators with RAMS available. Suitable fall protection to be employed during erection. Slinger/signaller to carry out visual inspection prior to use.		
4. All cranes are to be inspected daily by operator, weekly recorded in the LOLER register & be subject to thorough examinations in accordance with LOLER/PUWER.		
5. Appointed person to check competency of all personnel involved in lifting operation. Slinger/signallers to wear orange hats and high visibility tabards. Blind lifting only by experienced signallers. Adequate trained supervision to be available during all lifts activities.		
6. Lifting over the public/areas is to be avoided where possible. Where unavoidable ensure the use of crash decks, exclusion zones etc. Limiters to be fitted to cranes to stop them slewing into areas of high risk. Safe walkways for operatives planned into projects. Lifting should be done where possible inside the project boundaries.		
7. Radio communication plan to be implemented during planning process. Crash radios primary means of prevention. Collision prevention system secondary means of control.		
8. Anemometer fitted to all cranes. Flag system to indicate wind speeds. Five day weather forecast everyday. Obtain historical data from the Met Office during conception stage. Manufacturer's maximum wind speeds for products.		
9. Slinger, signallers & crane operators must be able to clearly understand each other. Crane co-		

SITE LIFTING PLAN

<p>ordinator to issue radios to competent personel. Dedicated channels on radio system for communication between slinger/crane operators. Lift co-ordination meetings are to be held weekly. All lifts are to be planned & recorded in the lift plan.</p>								
<p>10. All lifts are to be carried out by competent trained (CPCS) slinger/signallers Similar for crane operators. All loads attached to hook/block by lifting accessories must have certified/tested means of lifting the load. Weights of all loads must be known. All lifts are to be carried out as directed in the lifting assessments and schedule of common lifts</p>								
<p>11. Limiters. Anti collision system fitted in areas of high risk. Limiter system to be primary means of anti collision. Weekly meetings to plan in mobile Craneage and warn crane operatives of new hazards. Where appropriate liaise with external bodies for example Railtrack, CAA and local airfield management.</p>								
<p>12. SWL to be clearly marked. Brick forks and tested cargo nets to be used for palletised loads. Prior to lifting skips these must be thoroughly inspected with lift lugs tested. Alternatively a purpose designed skip lifting device must be used. Where Man riding cradles are used must be inspected daily prior to use. Cranes are to be thoroughly inspected at 6 monthly intervals. Lifting accessories supplied by crane provider are to be inspected weekly, reports to be recorded. Lifting accessories stored from elements and colour coded to signify current 6 monthly inspections</p>								
<p>13. Medicals should be arranged at regular intervals. Hours of work to be carefully monitored. Regular breaks – relief drivers. Rescue system to be planned and in place.</p>								
<p>14. Regular breaks relief operators on every project. Hours to be carefully monitored. At least 11 hrs rest every working day and one days rest per week.</p>								
<p>Personal Protective Equipment Needed (Tick ✓) Remember PPE is always a last resort</p>								
Head	Safety footwear	Hi Vis	Gloves	Respiratory Protection	Eye Protection	Hearing Protection	Harness	Other
								
✓	✓	✓	✓					
<p>Information, Instruction and Training</p>								
<p>Appointed Persons, Crane Operators, Lift Supervisor & Slinger/Signallers to hold in date CPCS accreditation.</p>								
<p>Overall Assessment of Risk after the Implementation of Control Measures (Tick One ✓)</p>								
<p>Adequately Controlled Work can proceed. Monitor and review regularly.</p>			<p>Further Control Needed Additional Method Statement required to reduce risk.</p>			<p>✓ Unacceptable Work must <u>not</u> proceed.</p>		

Identification and initial assessment of lifting operations

Operation *	Items to be Lifted	Max Weight	Crane Used	Lifted From	Lifted To	Equipment Used	Comments
Site Set-Up N/A	offices Welfare facilities	2.5t	Mobile Crane (Hired in)	Delivery Vehicles "On Site"	Final position as per site layout plan	4 leg 10t chains 4 no. 3t shackles	Survey required of site ground conditions prior to crane set-up. Crane Co-ordinator and Slinger/Signaller to be in attendance. Chains & shackles to be hired with crane.
Concrete frame	Bundles of Reinforcement	2t	All Cranes	Delivery Vehicles		4 leg 6.7t chains	Choke wrapped using 2 legs
	Reinforcement cages	1.5t		Site position	Final position	4- Leg 6t chains	Lifting points to be clearly defined in method statement .
Retaining Wall N/A	Bundles of reinforcement	2t	Mobile / tower	Delivery Vehicles	Areas between Final position	2 leg 6t chains	Choke wrapped using 2 legs
	R.M.D Shutters	2.5t	Mobile / Tower	Preparation area	Wall Shutters	R.M.D lifting devices and 2 leg 6t chains	Approval required for R M D system via Temp Work procedure C Frame.
	Concrete by Skip	3t / 6.5t	Mobile / Tower	Areas between		8t Drop Chain	Ensure there are no loops or knots in operating line. Keep tag lines as short as practicable.
Main Frame Steelwork	Columns, beams, bracing	Not yet known	To be advised	Delivery vehicles	Final position	To be confirmed prior to commencement	All offloading to be carried out within site boundaries.

SITE LIFTING PLAN



Identification and initial assessment of lifting operations

Operation *	Items to be Lifted	Max Weight	Crane Used	Lifted From	Lifted To	Equipment Used	Comments
Site Set-Up	Porta-cabin offices Welfare facilities	2.5T	Hiab	Delivery Vehicles "On Site"	Final position as per site layout plan	4 leg 10T chains 4 no. 3T shackles	Survey required of site ground conditions prior to crane set-up.
Plant and machinery	Compressors water browsers	3.0 t	All Cranes	Site location	Final position	4 leg 6.7t chains	Plant and machinery to be lifted by their designated lifting points only. Slinger Signaller to be in attendance.
Piling N/A	Bundles of Reinforcement Reinforcement cages	2T 1.5T	Crane Provided. by S/C	Delivery Vehicles Steelyard	Steelyard Final position	2 leg 6T chains 2 Leg 6T chains	Double wrapped using 2 legs Lifting points to be clearly defined in method statement and approved via Higgins procedure.
Bundles of Timber	Shoring	2.5t	All cranes	Delivery vehicle	Final position	4 leg 6.7t chains	Slinger signaller to be in attendance.
Tower Crane Base	Tower Crane Base	5t	Mobile / Tower Crane / Crawler	Delivery vehicle	Final position	4 leg 6.7t chains	Lifting points to be clearly defined in the method statement and approved by Principal Contractor

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SITE LIFTING PLAN



Identification and initial assessment of lifting operations

Operation *	Items to be Lifted	Max Weight	Crane Used	Lifted From	Lifted To	Equipment Used	Comments
Columns	Reinforced cages Shuttering Concrete Skip	1.5t 1t 2.275t	All Cranes	Site Locations	Final Position	4 leg 6.7t Chains 4 leg 6.7t chains 8t drop chain	Slinger Signaller to be in attendance
Walls	Reinforced cages Shuttering Concrete Skip	1.5t 1t 2.275t	All cranes	Site locations	Final position	4 leg 6.7t chains	Slinger signaller to be in attendance.
Striking walls and columns	Shuttering	1t	All cranes	Site locations	Final position	4 leg 6.7 t chains	Slinger signaller to be in attendance.
Ground Works	Boat skip	4 t	All Cranes	Site locations	Final position	2 legs providing they are of sufficient capacity or 8t drop chain.	

* as itemised in works programme

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Date:

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SCHEDULE OF COMMON LIFTS

Load	Method
Concrete or muck skip.	Skip chain 8t Ensure that any rope fixed to skip is of singular construction and is free of all knots and loops.
Boat Skip /Rollover skip	Skip chain 8t as above
Bundles of tubes, bars or other similar materials, e.g.. scaffold tubes, bars, small diameter pipes, lengths of timber, etc. – whether banded or not.	4 leg 6.7t chains, load to be double wrapped using 2 legs of the chains
Reinforcement Bar	Wrapped 4 leg chain slings. Ensure that bars to be lifted are of equal length
Structural steelwork, off-loading only.	Double wrapped two leg slings (Single wrapped acceptable only where sling legs are prevented from sliding together).
Flying Table Platforms	Four leg chains passed through pre prepared holes on top of platform and wrapped around upper platform alums or steel supports. Use C frame where possible.
Palletised materials.	Crane forks with cage or net. Fork Lift Truck. Web Slings will be used for palletised material
Stillages	4 leg chain slings wrapped around corner posts as per Guide to Safe Slinging and Signalling Beware rusted base. Fork Lift Truck.
Lorry type rubbish skips.	Must be tested and certified if lifting lugs are used <i>or</i> with steel box sections under skip and spreaders Beware of rusted floors/overloaded skips.
Wood Bundles	Wrapped with 4 leg chain slings. Ensure wood to be lifted is of equal length and bites are in place.
Column shutters	Chain to be attached to lifting eyes and ensure that the lifting operation is conducted within safe wind speeds as per L.O.I.E.R REGS.

SCHEDULE OF COMMON LIFTS (cont☺)

Load	Method
Small plant ie compressors, bowsers etc	Chains to be attached to certified lifting eyes only 8t drop chain.
Prefab Re Bar Cages	Chains to be attached to double wrapped removable thickened re bar, special care must be taken to ensure integrity of the load.

Issue No.: 1
Date:

Note: -

1. Refer also to Safe Slings & Signalling
 2. For the above common lifts, only the stated methods are to be used unless the Appointed Person has authorised alternative methods.
 3. Methods for other regular lifts: -
 - Shutters and table forms - see method statement ref
 - Pre-fabricated reinforcement cages - see engineers sketch no
- Structural steel work assemble - as per subcontractors detailed method statement

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SITE LIFTING PLAN

Record of lifting appliances and accessories

Lifting Appliances (e.g. Cranes)

Description	ID No.	Supplier:	Test Cert. Expiry Date:	12 Monthly Thorough Examination Expiry Date:	Used for lifting persons? Y/N. (If so, 6 Monthly Thorough Exam'n?)	Weekly Inspections carried out by:

Lifting Accessories (e.g. lifting gear)

Description	ID No.	Owner	S.W.L (t)	Test Certificate Y/N	6 Monthly Thorough Examination Y/N? Expiry Date

Issue No.: 01

Date:

Position	Name	Date Appointed

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SITE LIFTING PLAN

Appointed Person* (Lifting Operations)		
Deputy appointed Person		
Crane Co-ordinator		
Crane Operators*		
Signallers/Slingers*		

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* Must hold appropriate CPCS Cards

Date:

APPENDIX A

Crane Logistics Plan

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APPENDIX B

Lift Team Training Certification

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APPENDIX C
Thorough Examination Certificates for Lifting Equipment
and Accessories

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