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INTRODUCTION

Roundshire Ltd. is the leading provider of riggers and other height workers for the entertainment industry in Ireland. We specialise in the hanging of lighting and sound equipment for touring rock and roll and theatre productions product launches and other corporate events, and the erection and dismantling of temporary staging structures for medium to large scale outdoor events.

Michael O'Byrne, the company founder and director, has been employed at the Point since 1989 as a stage manager and house rigger. In 1990 he began working as a scaffolder and height worker for both of Ireland's leading promoters, *Aiken Promotions*, and *MCD*, on their outdoor concerts. Between this work and his responsibility for all rigging at the Point, Michael accumulated extensive hands on experience of best practice in the field of rigging and height work.

Over the next seven years, as the industry expanded and crewing needs increased, he formed an informal group of skilled and experienced scaffolders and riggers, who soon became the leading practitioners in this field.

In 1997-98 Michael toured as a rigger with U2, and upon his return decided to formalise the structures for crewing, and he established Roundshire as the vehicle to do so.

Over the past six years we have become the leading scaffolding and rigging company in the business, and have seen turnover grow substantially year on year. We are the house riggers at the Point and continue to be the exclusive provider of riggers for both MCD and Aiken Promotions. There has been hardly a single outdoor concert of any size that we have not worked on for the past 5 years.

Michael Kerr began to work with Roundshire having met Michael O'Byrne while working on the PopMart tour for U2. He has 20 years experience as a scaffolder, rigger, staging crew boss and most recently as a site co-ordinator. He has a long history with U2 and has worked extensively with Edwin Shirley Staging in the UK and StageCo. the Belgian based world leaders in the provision of outdoor stages.

For the past three years Michael has worked on a contract basis with this company, and had full operational responsibility on site last season. This year (2003) he will move to Ireland and become a director of the company.

Michael brings a wealth of knowledge and experience at all levels of the rigging and staging business, and his arrival at this time of expansion will have a major impact on improving and formalising work practices and health and safety standards.

SAFETY, HEALTH & WELFARE POLICY

Roundshire Ltd. commits as far as reasonably practicable to maintaining Safety, Health & Welfare in the workplace, ensuring that the workplace is safe for all employees as well as visitors. Roundshire Ltd. strives to create a safe place, safe plant, safe system, safe person and a safe culture. Safety is good business and everything will be done in our power, to give Health & Safety issues as much consideration as production and quality of business. We believe that our employees are our greatest asset; and their well-being is of the utmost importance to the overall business performance of the Company.

The Safety, Health and Welfare Act 2005 requires an employer to prepare a Safety statement for the particular activities pertaining to the workplace and to include it in a Risk Assessment which puts in place, procedures for controlling and reducing the level of risks to employees in the workplace.

This Safety Statement has been prepared which outlines Management's commitment to health and safety, notes the main hazards and risks of the workplace, and specifies the way in which all employees can co-operate to ensure that maximum care is taken to safeguard the health and safety of everyone who comes to the workplace.

In consultation with the employees, the main hazards and risks have been identified. Where possible, hazards have been eliminated. Correct working methods have been outlined so as to make tasks within the workplace, as safe as reasonably Practicable. Safety precautions, such as provision of suitable protective clothing and equipment for unavoidable hazards, have been implemented. Technical Standards & Codes of Practice are adhered to where applicable.

All employees and sub - contractors have been made aware of their duty to take care for their safety and that of their fellow employees while at work. Employees are required to co-operate with the Employer and Safety Officer in reporting all accidents and near misses and in the use of protective equipment and clothing.

Management commits to planning and regularly reviewing and developing this policy. It will be reviewed periodically to ensure that it remains relevant and appropriate to the organisation, or when machinery, personnel, workplace changes or modifications have taken place. Any changes in safety procedures will be brought to the attention of employees.

We strive for better communication, encouraging the involvement of all employees and we commit to continuous improvement in health & Safety performance and we will secure the competence of specialist advice when required. A copy of this Safety Statement will be held at the office and by each crew boss on site and will be available to all employees and visitors.

..... Date.....
Michael Kerr

..... Date.....
Michael O' Byrne

PART 1

RESPONSIBILITIES

1.1 RESPONSIBILITY OF THE MANAGING DIRECTOR – Michael O' Byrne & Michael Kerr

The Managing Director shall:

- Ensure that an effective Safety Statement exists within the Company and take responsibility for its implementation.
- Ensure that adequate resources are available for the effective implementation of the Safety Statement. Prior to commencement of work at each venue, assess whether the work can be carried out in a safe at the planning stage, with regard to site conditions, layout and surroundings.
- Make Safety a priority and show good example by having it high on the agenda at management meetings and when visiting or when supervising work.
- Ensure that arrangements exist for employees to appoint a safety representative so as to make representations on matters of Safety, Health and Welfare.
- Ensure all accidents and dangerous occurrences are thoroughly investigated, cause identified and prevention procedures put in place.
- Inform the Health and Safety Authority (HSA) of any accident where an employee is off work for more than three days.
- Ensure that all risks are insured especially in relation to injuries to employees, members of the public and loss or damage to company property.
- Obtain the services of a competent person to advise on Safety and Health, if such expertise is not available in the Company.
- Review the effectiveness of the Company Safety Statement annually and ensure that it is modified as necessary.
- Ensure that all hazards are identified and included in a Method statement.

1.2 RESPONSIBILITIES OF SAFETY OFFICER – Event Safety

The Safety Officer shall:

- Be familiar in all relevant Safety Legislation, Statutory Instruments and Safety Codes of Practice relevant to works being undertaken.
- Keep abreast of all current developments in Safety Legislation, Practices and Publications applicable to the music industry.
- Oversee implementation of Safety Training for staff and Certification of Plant and Equipment.
- Administer and oversee preparation of Site Specific Method Statements, reporting of Accidents and Dangerous occurrences in company accident book and to Health & Safety Authority.
- Oversee procurement and distribution of PPE and site safety notices.
- Monitor sites for safety compliance and duly inform management of hazards and shortfalls and advise further measures to be adopted.
- Carry out Toolbox talks prior to commencement of works at each venue.
- Investigate all accidents and dangerous occurrences and organise and ensure that procedures be put in place to prevent re-occurrence.
- Check on safety procedures and certification of all sub contractors and ensure compliance with the Safety management .
- In general, liase with crew boss to identify hazards and to ensure that all works are carried out in a safe and competent manner.
- Ensure that all employees acquire a full and accurate knowledge and understanding of Method Statement and Safety Statement and ensure signature of same.

1.3 RESPONSIBILITIES OF CREW BOSS

The Crew Boss shall:

- Ensure so far as reasonably practicable that safe systems of work are in place and adequate supervision is provided at all times.
- Maintain a tidy workplace and carry out regular clean - ups. Ensure that all access routes and walkways are clean and free of trip hazards.
- Ensure all personnel have the appropriate PPE for the job they are carrying out on site and enforce the wearing of such equipment for all on site.
- Perform a safety check on all electrical equipment, hand tools, and site equipment and machinery on a regular basis.
- Check for all overhead utilities, before commencing works on site.
- Report any defects in equipment, plant or machinery to the Managing Director and organise their repair.
- Ensure that First Aid Box is fully stocked.
- Report all accidents, no matter how trivial, to the Safety Officer.
- Instruct all employees in safe use of tools and equipment and general safe work practices.
- Ensure that all visitors are issued with helmet, viz vest and boots (if necessary) and accompanied while on site.
- Ensure that unauthorised access by children is considered and that works or equipment is made as safe as reasonably practicable, by removing batteries from all machinery at night.
- Report inappropriate or bad behaviour or breaches of safety, health and welfare, by personnel on site, to management.
- Ensure that all personnel are aware of their duties and ensure that they are not under the influence of any intoxicant, which might endanger their safety and that of others on site.

1.4 RESPONSIBILITIES OF EMPLOYEES

Section 13 of the Safety, Health and Welfare Act 2005 states that:

An employee shall, while at work comply with the legislation, and take care to protect his or her safety, health and welfare and that of any other person who may be affected by the employee's acts or omissions at work.

Ensure that he or she is not under the influence of an intoxicant to the extent that he or she is in such a state as to endanger his or her own safety, health or welfare at work or that of any other person.

If reasonably required by his or her employer, submit to appropriate, reasonable and proportionate tests for intoxicants under the supervision of a registered medical practitioner who is a competent person.

Co-operate with his or her employer or any other person and not engage in improper conduct or other behaviour that is likely to endanger his or her own safety, health and welfare at work or that of any other person.

Attend training and undergo an assessment as may be required by his or her employer relating to the work carried out by the employee.

Use any article or substance provided for use by the employer at work including protective clothing or equipment.

Report to the employer as soon as possible; any work being carried on, in a manner which may endanger the safety, health or welfare at work of the employee or that of any other person; any defect in the place of work, the systems of work, any article or substance which might endanger the safety, health or welfare at work of the employee or that of any other person; or any contravention of the regulations, which may endanger the safety, health and welfare at work of the employee or that of any other person..

An employee shall not, on entering into a contract of employment, misrepresent himself or herself to an employer with regard to the level of training.

Section 14:

A person shall not interfere with, misuse or damage anything provided for securing the safety, health and welfare of persons at work, or place at risk persons in connection with work activities.

PART II

ARRANGEMENTS

2.1 PERSONAL PROTECTIVE EQUIPMENT

SUPPLY AND ISSUE

Roundshire Ltd. will supply helmets, hi-visibility clothing, safety boots, gloves, eye protection, ear protection, safety harnesses and other occasional specialist safety apparatus, as necessary to all employees.

All sub-contractors will be responsible for supplying their own personnel with the same. All equipment issued will be recorded and the employee's signature obtained.

All persons on site will wear a safety helmet at all times. All persons on site will wear safety footwear.

All employees must wear high visibility clothing suitable for their work, sufficiently tight fitting to avoid catching in objects or machinery.

All employees and subcontractors must wear goggles, earmuffs, as required for their particular jobs or tasks.

Always ensure that safety equipment is of the right type, of good quality and in good condition and to a recognised and approved standard.

All equipment and clothing is maintained in a hygienic condition, free of any defects and it will be the responsibility of the user to ensure this. All employees will be responsible for looking after their own Personal Protective Equipment.

2.2 ARRANGEMENTS FOR ACCIDENT REPORTING AND INVESTIGATION

An Accident is any unplanned event that results in personal injury or death or property damage. It is a result of system failure, either by equipment, people or environment. Accident investigation determines how these failures occurred and looks to find a solution to preventing a reoccurrence. Most accidents are a blend of unsafe acts and unsafe conditions.

All accidents must be reported first to site foreman and then to Safety Officer immediately or without unreasonable delay. All injuries received at work, are recorded into the accident book and kept at head office.

An accident, which disables a person for more than three days is a reportable accident and will be notified to H.S.A. on the prescribed form by the safety officer. Dangerous Occurrences shall be notified on Form IR3.

When a serious accident occurs the crew boss on site or other nominated person takes charge of the proceedings and the procedure is as follows:

- Observe accident location and status of injured person. If there is a risk of further injury move injured person to safety, otherwise do not move.
- Call for immediate medical assistance or emergency service. See that first-aid is administered as required.
- If emergency services are summoned ensure that they are given exact location and ensure they can access the site as near as possible to the injured person.
- Appoint a suitable person to travel with the injured person and establish location of hospital. Notify the Head Office of the Company. Notify family of injured person and if required arrange for them to be transported to the hospital.
- Ensure that the scene of the accident is not disturbed and if H.S.A. are to inspect the scene do not move anything unless further serious risks have to be avoided.
- Gather all information immediately about the accident and what led up to it.
- Take photographs or draw sketches of the scene to include measurements and obtain statements from all witnesses, write them down as they are given and get signature.
- Complete Accident Report Form and give every assistance to the H.S.A. Inspector if /when they carry out the investigation.

2.3 WELFARE FACILITIES

The employer must provide welfare facilities adequate for the number of persons on site. Welfare facilities include a Canteen, Toilets, Wash hand basins and Storage lockers.

The facilities are required to be maintained to a high standard of cleanliness by employees. Anti – bacterial soaps, gels, barrier creams and cleansers must be provided and should be used at all times.

Employee Assistance Programme EAP Solutions.....4913038
Alcoholics Anonymous 109 South Circular Road, Dublin 8.....453 89 98
Drugs HIV Help line.....1800 459 459
Rape Crisis Centre.....1800 77 88 88

2.4 FIRE FIGHTING

Section 18 (2) of the Fire Services Act 1981 states that:

It shall be the duty of every person having control over premises to which this section applies to take all reasonable measures to guard against the outbreak of fire and to ensure as far as is reasonably practicable the safety of persons on the premises in the event of an outbreak of fire.

18(3) It shall be the duty of every person, being on premises to which this section applies, to conduct himself in such a way as to ensure that as far as is reasonably practicable any person on the premises is not exposed to danger from fire as a consequence of any act or omission of his.

Fire wardens must be chosen and given appropriate training.

Yearly inspections of all equipment, alarm devices and evacuation procedures must be carried out by management and accompanied by the Fire warden.

All crews must be given the appropriate fire extinguishers particular to their type of work.

Training must be provided to all employees on use of fire equipment.

Escape routes must be clearly defined with appropriate signage.

Exits must be suitable and sufficient in size and number.

Escape routes must be adequately lit with emergency lighting.

For outdoor venues the number and size of the exits in the fences must be sufficient for the number of people present and must be clearly signposted along the perimeter fence and illuminated.

Exits and gateways must be unlocked and staffed by stewards at all times throughout the load in and load out phase.

Class	Materials	Colour	Extinguisher
A	Solids	Red	Water
B	Liquids	Blue	Foam
C	Gases	Cream	Dry Powder
D	Metals		Special Powders
E	Electricity	Black	CO2

2.5 STAFF TRAINING

Section 10 of the Safety, Health and welfare Act 2005 states that:

Training is provided in a form, manner and language that is reasonably likely to be understood by the employee.

Training is given on recruitment or if new or changed risks have evolved in the workplace or in the event of transfer of employees, a change of job, the introduction of new work equipment, a change in equipment or the introduction of new technology.

The capabilities of the employee must be taken in to account in relation to safety and health, especially in relation to the manual handling of loads.

Roundshire Ltd. is committed to ensuring that all employees, receive sufficient training appropriate to the particular characteristics of any work activity involved and/or receive instructions relating to risks to health and safety which may be encountered during work activities.

We are committed to maintaining a high percentage of our core employees with requisite Manual Handling instruction before commencing work on site. New employees receive site-specific induction.

The employees must sign records to show that training has been given. All records include the date, time and location and the name and qualifications of the instructor.

2.6 RESOURCES

Health and Safety is a management responsibility of equal importance to production and quality at Roundshire Ltd. Funds for resources are essential for the continual growth towards maintaining a risk and accident free environment.

Every effort is made to find a balance between the humanitarian and the commercial considerations of the company. It is in our interest to achieve the highest standards, but not at a cost to our employees.

Safety is good business and we aim to keep it that way by supplying adequate funds for improving safety, employing and training staff, hiring safe plant and machinery and installing safe systems of work.

2.7 FIRST AID

First Aid facilities will be provided by the employer. A stocked First Aid Kit will be kept with the crew boss and must be maintained and restocked as necessary.

2.8 EVACUATION PROCEDURES

In the event of a Fire

- Call the Fire Brigade
- Leave the venue
- Tackle the fire if safe to do so
- Close all doors on the way out
- Assemble at the Assembly point.

In the event of hearing the Alarm

- Evacuate the venue
- Do not re-enter the venue
- Assemble at Assembly point in front car park

If a fire is discovered on site, alert personnel and the safety officer immediately and evacuate the site. Call 112 or 999 and ask for the fire services. If it is safe to do so, tackle small fires with appropriate fire extinguishers. Site-specific evacuation procedures are given as part of induction courses.

2.9 EMERGENCY PLANS

A death or serious injury can occur in almost any area of the site and may be as a result of a fall, electricity, work equipment, machinery or vehicular injury. Personnel must minimise the risk of further complications to the casualty and to preserve the scene of the accident for the HSA & Gardaí, which has resulted in death. The Emergency plan for each and every venue must be communicated to all employees prior to commencement of work. In the event of an emergency the following guidelines must be adhered to.

A) SERIOUS INJURY

- Call the First Aide
- Call the Emergency Services Ambulance & Fire Brigade
- Check for signs of life
- Do not move the Casualty.
- If unconscious, give ABC
- Keep the casualty warm.
- Open all Gates for Access to Emergency crew.
- Assist the Ambulance Crew
- Take Statements and Reports

B) DEATH

- Assess the area - Make the area safe
- Contact the Emergency Services, HSA, Gardaí
- Shut down whole operations and vacate area of all non-essential staff
- Preserve scene for evidence - Tape the area

D) MINOR ACCIDENTS

Minor accidents can occur in any part of the site. Minor accidents can include slips, trips and falls burns, cuts from equipment or tools etc. It is important to inform the First Aide of all injuries, in order to assess the severity of the injury and the type of treatment necessary.

- Assess the area
- Make area safe
- Check the casualty's airway
- Apply ABC if not breathing
- If possible move casualty to the First Aid room.
- Give First Aid to the casualty.
- Call for medical assistance

2.10 EMERGENCY PHONE NUMBERS

When you ring 112 or 999, you will be asked for the service you require.

Please state Gardai, Ambulance, Fire or Coastguard.

A & E Hospitals

Dublin

- Beacon Clinic 01-213 5600 Minor Injuries (No Queues)
- Beaumont A&E 01- 809 2714
- Blackrock Clinic 01- 283 2222
- Connolly, Blanchardstown 01-646 5000
- Royal Victoria Eye & Ear, Adelaide Rd, Dublin 2. 01- 664 4600
- St James's A&E 01- 416 2774
- St. Columcille's, Loughlinstown A&E 01- 282 5800
- St. Vincent's A&E Merrion, 01- 209 4358
- Tallaght A&E 01- 414 3500

Utilities

- Gas An Bórd Gáis Gas Leaks 1850 20 50 50
- Electricity ESB Emergency 1850 372 999
- Control of Horses/ Dogs 01 457 0785
- Litter Hotline 1800 403 503
- Roadworks Control 01 672 2246
- Traffic Control Centre 1800 87 23 45
- Road Maintenance 01 414 9300
- Safety officer/First Aid – 087-9312049
- HSA Health & Safety Authority - 614 7000
- Michael O'Byrne –
- Michael Kerr -

2.11 KEEPING OF RECORDS

All records of Accidents and Incidents must be documented and kept on site for 10 years. All sickness and ill health resulting from activities on site must be documented and kept for a period of 40 years.

2.12 FITNESS FOR WORK

Section 23 of the Safety, Health and Welfare Act 2005 states that:

An employer may require an employee to undergo an assessment by a registered medical practitioner, nominated by the employer, of his or her fitness to perform work activities, and the employee shall co-operate with such a medical assessment.

An employer shall ensure that employees undergo assessment by a registered medical practitioner of their fitness to perform work activities, which give rise to serious risks to the safety, health and welfare of persons at work.

Where, following an assessment, a registered medical practitioner is of the opinion that an employee is unfit to perform work activities he or she shall notify the employer, by the quickest practicable means, of that opinion and the likelihood of early resumption of work for rehabilitative purposes and shall inform the employee accordingly, giving the reasons for that opinion.

If an employee becomes aware that he or she is suffering from any disease or physical or mental impairment which would be likely to cause him or her to expose himself or herself or another person to danger or risk of danger, he or she shall immediately notify the employer concerned or a registered medical practitioner nominated by that employer who shall in turn notify the employer.

Where an employer receives a notification from a medical practitioner, he or she shall immediately take appropriate action to comply with his or her general duties under *section 8*.

2.13 BREACHES OF SAFETY RULES

Participating in any of the prohibited behaviours in the workplace as detailed below is considered to be a grave matter and any employee found to be in breach of these prohibitions is subject to disciplinary action up to and including dismissal from the company in line with our standard disciplinary procedures.

Also you may face criminal charges for more serious breaches of the prohibitions below.

Offences under the Safety, Health & welfare Act 2005

Employees must observe the contents all safety legislation. Under no circumstances are employees to be under the influence of alcohol, prescribed or non-prescribed drugs, which may endanger their safety and that of others, during working hours.

Employees must wear PPE, Helmet, Boots and High Visual Vest, at all times. Smoking is not permitted indoors at any time. Employees must not interfere with or misuse PPE or equipment that has been given to them for their safety i.e. harnesses, lanyards etc.

PART 111

POLICIES

3.1 SMOKE FREE WORKPLACE

Smoking is prohibited throughout the workplace with no exceptions.
This policy applies to all employees and management.
Event Safety©2008

Overall responsibility for the policy rests with the Managing Director but all staff has an obligation to adhere to and facilitate the implementation of this policy.

Infringements by staff will be dealt with, in the first instance, under employee disciplinary procedures.

Employees who contravene the law prohibiting smoking in the workplace are also liable to prosecution.

Any employee found smoking, will be disciplined. Repeated offenders will be suspended and as a last resort, dismissed.

Second hand smoke, also known as environmental Tobacco Smoke (ETS) or Passive smoke is a cause of disease, including Lung Cancer and Heart Disease.

3.2 OUTDOOR WORK

All employees must observe the conditions of the weather when working in outdoor venues. It is imperative that all employees use the personal protective equipment (PPE) that has been provided to protect themselves from the weather.

Exposure to UVA and UVB rays are extremely damaging and can cause skin cancer or Melanoma, which is fatal. All employees, when working outside are advised to apply factor 30 Sun Block, for use.

3.3 ALCOHOL/DRUGS

Part 2, Section 13 of the Safety, Health & Welfare Act 2005 states that;

“The employee shall ensure that he or she is not under the influence of an intoxicant to the extent that he or she is in such a state as to endanger his or her own safety, health or welfare at work or that of any other person, and if reasonably required by his or her employer, submit to any appropriate, reasonable and proportionate tests by a competent person,”

Employees have a duty to ensure that they are not under the influence of an intoxicant when arriving for work. Employees must be aware that failure to comply with their duty under the Safety, Health & Welfare Act 2005, they can be stopped from working and could be subject to normal disciplinary procedure up to and including dismissal

Harmful alcohol or drug use jeopardises efficiency and safety in the workplace with increased mistakes, errors in judgement, near misses and of course, absenteeism. It is a well-known fact that workers who consume alcohol are twice as likely to be absent from work the day after, especially Mondays.

The consumption of alcohol and/or drugs in the workplace is strictly forbidden. This also applies to break times. This includes the smoking of Hash joints etc. The possession of any drugs whether they are Stimulants, Depressants or Hallucinogens on site is a criminal offence and the possessor and the employer or foreman in charge, if they knowingly allow such activity to take place, will be subject to a criminal prosecution.

If an accident or incident occurs on site where an employee is injured and employees are tested and found to be under the influence of an intoxicant, they could face criminal charges of Reckless Endangerment, under section 13 of the Non Fatal Offences Against the Person Act 1997 and shall be liable on summary conviction to a fine of £1,500 or to imprisonment of 12 months or to both, or on conviction on indictment, to a fine or to imprisonment for 7 years or to both.

While the law dealing with drug offences are pretty complex, there are a number of principle offences that deal with possession of drugs. The main body of law that deals with drug offences is the Misuse of Drugs Act 1984. If a person is found to be in possession of drugs, they are liable to a penalty of €1,260 and or 12 imprisonment for a summary or 7 years on indictment.

A person in possession for the intent to supply will be liable to €1,260 fine on summary conviction and or 12 months imprisonment. A conviction on indictment could incur an unlimited fine and or life imprisonment.

Drugs tend to stay in the body longer than alcohol, e.g. hash being stored in the fatty tissue for up to 52 days. Tests include Urinalysis, Hair and saliva samples. Blood testing is less frequent, but with the prevalence of alcohol and drug use in the construction industry, random testing will become commonplace on sites over the coming months with the introduction of the regulations on testing in the autumn.

Observation is an important aspect of monitoring for any risks of alcohol or drug abuse and it is the responsibility of all foremen and employees to report back to management any suspicious behaviour of individuals. Even the suspicious smell of alcohol from personnel will be presumed that the person is unfit for work.

Alcoholism or addictions to alcohol and/or drugs is seen as a disability and the Employment Equality Act provides that those with a disability should not be discriminated against. A person with a disability cannot be treated in a less favourable way than another person in the workplace. The employer must make reasonable accommodation for that person.

- **Alcoholics Anonymous 109 South Circular Road, Dublin 8. 01-453 8998**
- **Al-Anon (For relatives and friends of problem drinkers). 01-873 2699**
- **Alateen (For children of problem drinkers). 01- 873 269**

3.4 RISK ASSESSMENT

Roundshire Ltd. is required under the Act to put together a Safety Statement, which includes the Risk Assessment and sets out the safety measures for protecting the workforce and all who comes in contact with the workplace.

Roundshire Ltd. in seeking out the hazards in the workplace must consult with employees in identifying hazards, as very often, the employees at the coal-face, are more aware of the hazards that exist in the workplace. The employer must commit to implementing safer systems of work through policies. In a shared workplace environment, i.e., a construction site, employees must co-ordinate all safety measures required and work together to create a safe environment.

Roundshire Ltd. must assess the risks by identifying the people at risk, i.e.; full and part time employees, sub-contractors or members of the public. A simple numerical form of risk assessment can be carried on hazards found, but for more complex hazards, a more detailed analytical assessment may be required.

It is imperative that employers record the risk assessments and record them in the Safety Statement. The Risk Assessment should indicate the resources that are necessary to bring about the changes in the workplace and competent persons must be chosen from the workforce to implement safe procedures on site and monitor the workplace on an ongoing basis.

The Safety Statement must be communicated to all persons on site; it must be site specific; and made available to the main contractor, HSA inspectors and all personnel.

PART IV

GUIDELINES

4.1 PEOPLE

The key factor in working safely at height is the ability and competence of the individual worker. People are either comfortable working at height, or they are not. It is the view of the writer, based on nearly 15 years experience, that this basic ability cannot be taught or learnt.

There is indeed some evidence to suggest that fear of heights,(or in this case its absence) may be genetic. Our first concern then is to ensure that the people doing this work are in capable of and comfortable working at height.

As a result climbers (and aspiring climbers) are a largely self-selecting group. Nonetheless responsibility for all decisions as to suitability for height work rests solely with the directors.

They and only they can instruct an employee to work at height. No employee should climb/work at height without the express instruction/consent of one or other director. Any breach of this instruction will be treated as a disciplinary matter.

The existing pool of about 15 climbers, are all of proven (if varying) ability and experience. They are comfortable with heights and have proven their ability to carry out a variety of tasks at height.

Any additions to this pool of labour will be made at the sole discretion of the directors and only on the basis of known ability or recommendation from a reputable fellow employer or experienced and knowledgeable individual.

Only the individuals trained will act as lead riggers, and they will have responsibility for day to day implementation of this policy. All other climbers will work at all times under the supervision of the one of the directors or a lead rigger.

4.2 TRAINING

There is little or no training available in Ireland for commercial climbers, and certainly none specifically tailored to meet our particular needs. Consequently there is no qualification or certificate to be obtained, and we are left relying on experience and proven ability as the standard by which competence can be judged.

There are however training programmes that partly meet our needs and of these the IRATA course(s) is the most applicable. It is our intention that this course, or an adapted version of it, would become an integral part of our in house training programme.

In the case of our existing climbers they are all of proven ability and the 10 most frequently used all now have IRATA Level 1 or equivalent.

The issue is obviously new climbers, and until we have an adequate training system in place, we will use only the existing climbers and such others as come with IRATA Level 1 or equivalent and/or come with proven experience and knowledge.

As an additional safeguard only those new employees who are personally known to the directors, and with whom one or other director has worked, will be permitted to work solo. All others will be assigned to a lead rigger or an experienced climber so that they have they can be closely supervised, and their ability assessed.

4.3 ACCESS

Much of the height work that we do is done in the roof structure of buildings. The first issue then is accessing the workspace safely, and particularly providing of fall arrest systems where appropriate.

The first rule is to use the method of access that is the least hazardous. In order these would be:

- **Permanent fixed access provided by the venue (stairs, ladders and lifts)**
- **Temporary structures (ladders and scaffold towers)**
- **Mechanical access (Aerial platforms, scissors lifts)**
- **Climbing existing structure with PPE based fall arrest or Rope Access.**

This is the obvious choice if available. The venue is then responsible for maintaining said access in serviceable condition. Any faults or defects should be notified to the venue via the lead rigger/crew boss.

Ladders and scaffold towers are useful up to c10m. Much of the work we do is above this height. Where ladders are used, it is essential that they are checked prior to use, and that they are footed if being used to a height of 5m, tied off if being used up to 10m.

If erecting a scaffold tower all components should be checked before use, built by experienced climbers according to the manufacturer's/renter's instructions and all the requisite bracing/outriggers used. If the tower is mobile, ensure that the brakes are applied before climbing. Always climb on the inside of the tower. Particular caution should be exercised when climbing off the tower and onto/into the roof structure.

Aerial platforms and scissors lifts are often the safest way of both accessing and working in a roof. Only people who have the necessary training and/or experience should drive such machines. The driver of the machine should have IRATA Level 1, or there 1 should be Level 1 or above on site to carry out rescue if the machine fails.

Only climb existing structures if there is no alternative. Only IRATA level 1 or above should attempt such activity. There must be a second Level 1 on site to actively belay and carry out rescue if necessary. As noted above there is no readily available training for commercial climbing.

There are a number of basic rules however.

- **Always maintain three points of contact with the structure you are climbing (i.e. reposition only one leg or arm at a time).**
- **When climbing vertical structures an appropriate fall arrest system should be in place where there is any risk of injury.**
- **Be aware of the length of fall that your fall arrest system allows before stopping you.**
- **When stopping to work, tie off and position yourself comfortably so that both hands are free.**
- **Always work in pairs and have someone available to carry out a rescue and raise the alarm in the event of a fall.**
- **Never climb alone. Always have a rescue kit.**
- **When climbing, all tools and equipment must be secured to you by appropriate lanyards.**
- **All ground workers must wear hard hats while climbers are working above them.**

4.4 WORKING AT A HEIGHT

While carrying out the various duties at height, the two main concerns are:

- Safe work positioning
- Fall arrest.

Both of these concerns are dealt with by the use of mechanical access equipment and this makes them the first choice whenever possible. However their use is not always possible and in those instances the following is the procedure for working at height..

Work positioning involves the use of a PPE system (harness, slings etc.) to attach the climber to the existing roof structure so that he/she can be positioned safely and comfortably and work with both hands free. Rope Access techniques are also occasionally used.

Where this does not involve full or partial suspension in the harness, one point of attachment is adequate. If even intermittent suspension in or loading of the harness is involved, two points of attachment must always be used. Attachment to a fall arrest system counts as one point of attachment in this case.

The general rules for climbing outlined above, equally apply here. A climber must always be attached by at least one point at all times when working.

Some buildings provide a Latch-way (an horizontal wire rope safety line) system or similar PPE based system of fall arrest. Such systems are primarily designed to provide protection while moving about, but can also be used as the single point of attachment when working. However if the climber needs to suspend him/herself, then these systems are not appropriate, and the procedure outlined above shall apply.

Where the venue does not provide a fall arrest system, then a temporary system of safety lines must be installed. This can only be done by IRATA Level 1 or above, and only after the directors or a consultant (e.g. IRASC) have specified how it should be done.

If a temporary system cannot be installed, the climber must be belayed by another IRATA Level 1 or above climber.

If a fall arrest system is provided it must be used.

4.5 FALL ARREST AND RESCUE SYSTEMS

As will be clear from above, in those situations where it is necessary to climb, fall arrest systems are essential.

There are two separate systems:

1. Vertical systems to protect while climbing for access
2. Horizontal systems to protect while working in the roof structure.

1. The most commonly used vertical fall arrest system is based on the inertia reel principle, where the wire rope safety that is attached to the climber will spool in and out of its casing, but will stop within 1m if shock loaded by the climber falling. These devices are usually rigged in the roof structure either on a temporary or permanent basis and are best used to provide protection while climbing a ladder.

Their main disadvantage is that in the event of a fall it is not always possible for the climber to rescue him/herself.

Since these devices are regularly used by lighting and sound companies, it is our policy that a rescue kit, and an IRATA Level 1 climber always be available where inertia safeties are to be used by our employees.

The alternative is a rope and belay device system. In this instance a vertical static rope safety line is rigged, and each climber is issued with an appropriate PPE fall arrest device (a device which when attached to the rope will travel freely, but will stop within 1m if shock loaded by the climber falling).

This rope shall be rigged in accordance with IRATA practice, and most importantly can include a belay device, which will allow speedy rescue in the event of a fall.

Such systems shall only be rigged by IRATA Level 1 or above.

2. Horizontal safety lines can either be permanently or temporarily rigged. As with vertical lines a system incorporating a belay device, based on rope access techniques is to be favoured as it allows for simple and speedy rescue.

Almost all permanently rigged, and the most commonly used commercially available temporary horizontal safety line systems do not have this built in rescue facility. In the event of a fall, it is very likely that the casualty will be unconscious.

Even he/she is not, it is very often impossible for them to conduct a self-rescue. It is therefore essential that on any site where there is a risk of fall into a fall arrest system, that there be a minimum of 2 IRATA Level 1 or above, so that there is always someone to conduct rescue.

In the event of a fall the priority is to get the casualty safely to the ground, as soon as possible. They must then be provided with appropriate medical attention as quickly as possible. In the event of a fall, the following procedure shall be followed:

- The lead rigger, or the next most senior rigger will take charge of any rescue.
- If there is an EMT on site notify him/her immediately. He/she will take charge of all medical aspects of the case and will decide if and when to seek further medical assistance.
- If there is no EMT, call an ambulance, unless the casualty is clearly conscious and unhurt.

- If the climber is conscious and can self rescue, or do so with assistance, then do so. He/she must leave the roof however to allow time to recover.
- Always use the simplest and quickest rescue technique. (In most places where we work this will be either a snatch rescue or lowering on a belay device).
- Only IRATA Level 1 or above climbers should attempt a rescue.
- Once the casualty is on the floor, pass responsibility over to the EMT or ambulance personnel.
- Move the casualty as little as possible.
- Do not attempt first-aid if you have not been trained
- Even if the casualty is mobile and unhurt it is important that he/she gets medical attention. **Always** insist on a hospital visit.

A note on the use of first-aid in fall related emergencies:

It is well established that improperly administered first-aid can, in some cases, do more harm than good. It is therefore of vital importance that any training we provide equips the trainees to deal with the cases they are likely to encounter.

A number of staff already have basic occupational first aid training, but a much higher standard will be required. In the meantime we will where necessary employ, or have the promoter employ an EMT.

4.6 EMERGENCY EGRESS

Given that access into the working area for climbers is often time consuming, speedy emergency egress is very important.

The first choice is always to get to the ground by the safest route, which will normally be via the permanent stairs/ ladder provided by the venue.

In the event of a fire or similar emergency, this may not be possible.

In case of emergency then the fastest, and on balance, the safest way is to abseil using the emergency rescue kit. This procedure should only be used as a last resort and, and using correct rope access procedures.

Abseiling for any other purpose (other than as a means of rope accessing a work area) is forbidden.

4.7 GROUNDSMEN

A key element in safe working at height, particularly when suspending motors, is the quality and competence of the people who prepare the wire rope slings and motors and attach them to the ropes so that the riggers can pull them up.

There is no training for this work currently available, apart from our own training schemes which is implemented with the assistance of current ground riggers.

It shall be our policy that one or other of these two people will be on any job where there are groundmen required, and we are providing them. New or inexperienced employees will be assigned where possible to work with either of these two for their first jobs.

The groundmen are at high risk from falling objects and it is therefore compulsory for them to wear appropriate PPE at all times when there are riggers working above them. They shall also be responsible for ensuring that the area immediately under a working rigger is kept as free as possible of unnecessary personnel.

4.8 MAJOR VENUES & SITES.

Working at height activities breaks into two categories:

- Climbing/working at height to construct and dismantle temporary structures for outdoor stages.
- Climbing/working at height to install motors for the suspension of lighting, set and sound equipment in outdoor structures and at indoor venues throughout Ireland.

4.9 CONSTRUCTION OF OUTDOOR STAGES & RELATED HEIGHT WORK.

The structure consists of a trussed roof, which is supported on between 4 and eight towers. They are a number of different systems, but they are all erected by first installing the free standing towers, then building the roof structure, lifting it on motors attached to the towers and attaching it to the tops of the towers.

Some staging systems will have some safety features as standard (e.g. protected vertical ladders built into the towers for access), but the systems we outline below are the minimum standards we will insist upon in order to protect our employees.

The main procedures for climbing in these circumstances are outlined below.

People

Only adequately trained and/or experienced people will be allowed to climb above 3m. This will generally mean IRATA Level 1 or above, or a similar scaffolding qualification or sufficient experience to satisfy the directors. Employees will only climb with the express consent of the crew boss/lead rigger/director as appropriate.

For the purposes of this and following sections, the term climber is taken to mean anyone with IRATA Level 1 or equivalent. Climbers should be familiar with all sections of the SS relating to height work. There must be a minimum of two climbers on site if anyone is to climb on an outdoor stage structure.

PPE

All relevant PPE (harness, hard hat, fall arrest device, slings etc) must be worn and used.(see 7.3 below). All those working on the ground must wear hard hats when there are climbers working above them.

Fall arrest (vertical).

Where the staging system does not provide a caged ladder (e.g ESS system) a rope vertical safety line, complete with Grigri or other belay device will be installed on each tower before it is lifted into place. The line will be sufficiently long to allow a climber to be lowered from the top of the tower. The line will be tensioned through the Grigri and any excess stored in a rope bag attached to the bottom of the tower. A climber will install this safety line.

Each climber will have an appropriate fall arrest device, approved by the directors and suitable to be used on the safety line provided, and will always use it while climbing the towers. In the event of a fall, another climber on the ground will use the Grigri to lower the climber to the ground.

Fall arrest (horizontal)

Prior to the lifting of the roof an appropriate set of safety lines shall be installed. The lines should be tensioned with a Grigri and be long enough to allow a casualty to be safely lowered to the floor. Any excess rope shall be stored in a rope bag tied off in the roof. The safety lines shall be supported at c. 5m centres. The ropes should be rigged so as to allow simultaneous use

by at least two climbers. A climber shall install the ropes.

Work positioning.

When stopping to work, particularly on a tower, the climber must tie himself off with at least one attachment to the structure, as well as the safety line to which he is attached.

Abseiling.

As outlined above abseiling except for the purposes of emergency egress or appropriate rope-access to a work area, and in accordance with IRATA training, is forbidden.

Subcontractors, other suppliers.

Any persons climbing on the structure or in the roof should use the safety lines provided, and should only carry out rescues if they have IRATA level 1 or above.

All suppliers will be instructed in the safe use of the equipment provided.

Responsibility for the supervision of non-Roundshire employees or labour-only subcontractors, rests with their employer/supervisor and/or the promoter/event controller's safety representative.

Erection of scaffolding

We are rarely involved in the erection of free-standing scaffolding structures above 7.5m platform height.

Only climbers and/or experienced or trained scaffolders will work on these structures.

Where possible mechanical means will be used to lift equipment up to a decked platform during construction. Where this is not possible, a chain of climbers/steel hands under the direct supervision of the crew boss or an experienced scaffolder/climber will pass the components to the climbers/scaffolders at the top of the chain.

Only climbers and scaffolders shall man the chain above 3m unless there is a platform to work on. The number of people on the top of the chain shall be kept to a minimum.

All appropriate PPE (hard hats, steel toecap boots) must be worn.

Platforms as required by the structure will be installed as it is built giving a safe area to work on. All bracing is to be installed as the structure is built.

Clear communication should be maintained between those at the top and the person on the ground, who is organising the equipment.

Particular caution shall be taken during the dismantling of such structures to ensure that all equipment is passed down the chain or roped down as appropriate.

Equipment shall never be dropped.

Rigging of motors

Electric hoists, above for detailed statement of procedures for installation of motors.

4.10 THE POINT DEPOT

The main indoor venue at which we work is the Point, where we currently hold the contract as house riggers. This gives us particular responsibility for ensuring that the roof is loaded in accordance with Loading Manual as prepared by URS, the Point's consulting engineers.

We further have responsibility for checking that the incoming company/band provide the information necessary to allow us to carry out these duties. Michael O'Byrne will have primary responsibility for this work.

There are three work areas where height work is conducted:

- The fly tower above the stage.
- The roof trusses immediately downstage of the fly tower.
- The suspended beams over the auditorium.

Brief descriptions of the work areas, and relevant procedures:

The Fly tower (Grid lines 4-13)

The fly tower is c. 23m high at its highest, and houses the double purchase counterweight flying system used for the flying of sets and lighting during theatrical performances. The grid floor (the main working area) is c. 21m above the floor of the venue.

It is floored with pierced steel planking with gaps of c50mm between planks. Although the flooring is not continuous there is no gap of greater than 100mm.

It presents no fall hazard as it is railed or walled on all four sides.

The major hazard is from dropped/falling objects. All climbers must secure tools by lanyards or use the tool trays provided by the venue for storing tools etc while working.

Climbers should leave keys, 'phones etc on the floor.

All unused equipment should be sent back down immediately, or securely tied off for later use. Groundmen must wear hard hats.

Access is via a protected ladder, and no fall arrest is required.

The roof trusses immediately downstage of the fly tower (Grid lines 14 & 15).

These roof trusses are constructed of 120mm and 100mm RHS. They are c2m deep and 19m wide. The bottom cord of the trusses is c 16m above the venue floor, and the trusses are at 2.3m centres.

Access is via the protected ladder mentioned above to the weight floor and thence by catwalk and caged ladder unto to roof trusses. The access presents no fall hazard.

In order to access the work area the climbers must leave the catwalk and climb on the roof trusses.

Appropriate PPE must be used when working in this area.

It is possible to use the roof trusses themselves as a safety line, attaching and reattaching with a

double lanyard to attain continuous attachment.

We are reviewing the installation of safety lines with the venue to enhance safe movement around this area.

Climbers must attach themselves to the roof trusses at all times and shall be particularly vigilant when stopping to work.

Particular care needs to be taken when working on Grid line 13, and when installing bridles two climbers should be used where at all possible.

The suspended beams over the auditorium.

These beams are 203 square UC suspended by drop rods from the wind bracing outside the roof. They are c. 21m long and are 12.4m above the auditorium floor.

Access is via the same catwalk that provides access to the work area described above.

It is easy for a climber to position himself safely, and attach himself to the beams while working.

However moving about the beams while maintaining continuous attachment is difficult and cumbersome.

Given the structure of the roof space in this area, the installation of safety lines requires careful consideration if they are to be attached at points capable of taking the load imposed by a falling climber.

We will review their installation, with the venue and our safety consultants and make a recommendation to the venue by the end of June 2003. In the meantime the following procedures shall apply:

Mechanical access and work positioning (cherry picker or similar) shall always be the first choice when working in this area.

A mobile scaffold tower of suitable construction will be the next choice. Climbing in this work area shall only be considered by the most experienced climbers (i.e. the directors or lead riggers) and only when absolutely necessary.

4.11 THE ODYSSEY ARENA, BELFAST.

The other major indoor venue in which we work is the Odyssey arena in Belfast.

The roof consists of large roof trusses constructed of c400- 600mm square UB and various sizes of intermediate members provided specifically for the suspension of motors. Height to the underside of the lowest beams is c23m

Access is via stairs and protected ladder to a series of catwalks in the roof space. To access the work area the climber must leave the catwalk and climb on the roof beams.

Fall arrest is provided by a Latch-way system of wire rope safety lines. Appropriate PPE is essential if this system is to be used effectively.

The venue provides a device, which allows continuous attachment to the safety lines, and a shock-absorbing lanyard for each climber. These devices must be used, and returned to the venue after use.

Climbers should give careful consideration to the use of additional/alternative attachments when positioning themselves for work, and at no time should a climber suspend himself from the safety line to position himself.

The main hazard here is associated with rescue in the event of a fall.

An appropriate rescue kit must be available in the roof while there are climbers at work.

The procedure outlined above for the proper conduct of a rescue must be adhered to.

The venue should provide a house rigger capable of conducting rescue on all calls, and where this is not the case there must be a minimum of 2 IRATA Level 1 climbers present from Roundshire.

Given the proximity of the venue to a major hospital a qualified EMT is not essential, but we intend to review this with the relevant consultants as part of this summer's review of our SS.

REGARDLESS OF THE VENUE, ALL CLIMBERS MUST BE FAMILIAR WITH AND ADHERE TO THE PROCEDEURES OUTLINED IN THIS SECTION.

PART V

HAZARDS, RISKS AND CONTROLS

5.0 RISK ASSESSMENT METHODOLOGY

- A Hazard is anything that can cause harm to a person or the environment.
- Falls from Heights, Hazardous Chemicals, Electricity etc.
- A Risk is the likelihood great or small, that the hazard will cause harm, together with the severity of harm suffered.
- Risk Assessment is a careful examination of the workplace to identify hazards and assess the implications for those hazards on the workforce and environment.
- Controls mean that the employer must do what is practicable to ensure that the hazard does not injure or cause harm to any person or the environment, by eliminating or controlling the hazard by safe systems and procedures.

The Risk Assessment method is the simple numerical form that involves assigning a scale 0 – 5; one scale representing the likelihood of the risk and the other scale representing the consequence of the risk. The likelihood of the risk is multiplied by the consequence and the sum of the two totals gives the risk number. This determines whether the risk is high, medium or low.

Multiply the Likelihood of Risk x the Risk Rating = Scale (5 x 5 = 25)

0 – 7 Low 8 – 15 Medium 16 – 25 High
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Likelihood of Risk

0 Impossible; cannot happen under any circumstances; 1 Unlikely; 2 Unlikely; though conceivable; 3 Even Chance; could happen; 4 Probable; not surprised; 5 Certain; no doubt.
--

Risk Rating

0 Impossible 1 Scratch / Bruise 2 Laceration / mild ill health effect 3 Break – major bone or minor illness 4 Loss of 1 limb / eye or serious illness 5 Death
--

The reason for using this method is that the numerical system provides a clear understanding to all employees of the risks involved, as the construction industry today comprises of workers from all corners of the globe speaking a variety of languages.

There are also workers who would have difficulty with reading and writing.

The numerical system ensures that all employees understand the importance and significance of the risks in the workplace.

Falls are the single biggest cause of workplace deaths and one of the biggest causes of major injuries. During the construction or dismantling of the structure, falls are not very common with scaffolders. The problem arises when other tradespersons climb onto the scaffold before it has been handed over, or persons removing parts of the scaffold to gain easy access to their workplace.

Falls by persons on stages or platforms can and will arise from the following: -

- Inadequate side protection. Guardrails.
- Persons working outside the guardrails.
- Accidental or deliberate removal of part of the guardrails or boards
- Poor access facilities.
- The collapse of all or part of the structure.

Hazard	Likelihood	Worst Consequence	Risk Rate	Controls	Persons at Risk	Resources
Falling From Height	3 = even chance Could happen	Serious injuries to Internal organs Broken Bones Death	5 = death	Full P.P.E. Body harness with twin Cowtails Fall arrest system	Employees and others On site	Money Training

3 x 5 = 15/25 = Medium risk

Controls:

- Scaffolding/stages shall be erected only by trained and competent personnel.
- All personnel will wear full body harnesses during the erection and dismantling of the scaffold. The full body harness will hold twin lanyards, or twin cow-tails.
- Personnel will attach lanyards to the uprights only. Never attach to the handrail as sometimes handrails can work loose during the erection phase.
- The lanyard must be attached above head level to eliminate the fall factor.
- Personnel will work on a minimum of three boards when erecting each bay.
- When the first lift is completed, a full handrail (mid and top) must be installed.
- No personnel will climb up the side of any scaffolding without the use of a ladder.
- The ladder will be fixed at the top with 12mm polypropylene rope.
- Two men will fix the ladder; one man standing at the foot; the second man climbing the ladder to fix the top. Never over-reach whilst standing on the ladder. The ladder is for access to the next lift only. No stepladders or hop-ups are to be used on the working platforms. If required, the handrail and toe boards must be hired to the required height for the task at hand.
- It is a criminal offence to tamper with any part of the scaffolding/stage.
- When stage /scaffold is completed it shall be inspected thoroughly and hand over certificates shall be dated and issued to the main contractor. The foreman shall ensure that the scaffold complies in all respects to the certificate.
- Employer is responsible for providing training and competent staff. The foreman of each team will monitor the safe work practices. Anyone not complying with the safe procedures put in place in the Safety statement will be dealt with under disciplinary procedures.

5.2 ELECTRICITY OVERHEAD POWER LINES

Electricity can kill! Striking an electric cable can cause death or severe injuries including electric shock, severe arc burns and crush syndrome, which is a liberation of acids into the bloodstream, which can be fatal up to 12 hours after electrocution. Contact with live parts of electrical equipment at 230 Volts AC can kill.

Hazard	Likelihood	Worst Consequence	Risk Rate	Controls	Persons at risk	Resources
Overhead Power lines	3 = even chance could happen	Loss of Limb Death	5 = death	Power lines to be Clearly marked. All steel must Remain 6 meters Away from any Power source.	Employees	Personnel Time

3 x 5 = 15/25 = Medium Risk

Controls:

- A competent person must supervise the work. Never tamper with electrical cables or electrical equipment. Electrical repairs and installations are best left to trained personnel.
- The location of existing services must be ascertained before commencement of works.
- The main contractor must examine site plans and make personnel aware of all overhead cables. Personnel will treat all cables as live until proof of being disconnected or proven safe has been given by ESB.
- Overhead cables shall have adequate clearance from the proposed scaffolding, so as to prevent danger.
- Lines shall be clearly signposted below to remind personnel of their existence and goal posted or flagged where possible, so as to avoid contact with plant on site.
- The scaffolding must be kept at a distance of 4.0 metres from the overhead lines to prevent arcing.
- Always keep the overhead cables in view when moving scaffolding or machinery around the site.
- Use an alternative route for the forklift so as to avoid the forks coming in contact with the cables.
- Do not handle any fallen cables; seek help immediately.
- Bonding may be required if the scaffolding carries any temporary electrical power circuits i.e.; Lighting etc. Scaffolding is susceptible to being struck by lightning and must be earthed. In case of fire, escape routes must be clearly marked and fire extinguishers must be within reach.
- The employer is responsible for the safety of others on site and making personnel aware of overhead cables. Employees must also be vigilant.

5.3 FALLING OBJECTS

Accidents can occur when objects fall onto persons or equipment below. They generally occur:

- During lifting operations.
- During the erection and dismantling of scaffolds.
- Accidentally knocking items off a platform.
- During working on a structure
- Though inadequate containment of tools, equipment or materials on the scaffold platforms.

When an object falls from one of the scaffold or stage platforms it will almost never travel in a straight line. More then likely the object will hit off the scaffolding or building underneath. This will cause the object to ricochet off into a different direction.

Hazard	Likelihood	Worst Consequence	Risk Rate	Controls	Persons at risk	Resources
Being Struck by Falling Object	3 even chance Could happen	Lacerations Loss of one Limb Death	5 = death	Brick Guards on All scaffolding lifts Scaffolder Training No loose parts	All personal on and near the site	Money Training

3 x 5 = 15/25 = medium risk

Controls:

- Personnel must be trained on how to hold and work the scaffolding tools and fittings. (Box Spanner, Hammer and Fixing Couplers)
- Eliminate all gaps or spaces on every lift of the scaffolding platform.
- Install brick guards and toe boards to every lift.
- All toe boards must be designed to resist a horizontal point load of 0.15kN.
- All effort must be made to ensure that all building materials are securely stacked.
- Materials being lifted or lowered will be secured to prevent any items from falling,
- Either by being contained or by being individually or grouped lashed, so that it cannot be shaken or knocked loose during lifting or lowering from the scaffolding.
- Employees are responsible for the safety of others on site; they must be vigilant and not create hazards in the workplace.

5.4 FORKLIFT USE ON SITE

Employees are at risk of being run over by vehicles on site, or being struck by a falling load. Forklift trucks are used on site on set-up and dismantling of the scaffolding. Vehicle movements on site need careful planning so as not to block the access and egress routes on site. Scaffolding is unloaded from the back of the flatbed lorry, and then stored in designated areas until further use, or when required the forklift will load the scaffolding loading bay if the scaffolding is more than one story high.

Hazard	Likelihood	Worst Consequence	Risk Rate	Controls	Persons at risk	Resources
Forklifts	2 = Unlikely though conceivable	Death	5 = death	PPE Training Flashing beacons Secure loads Pedestrian routes	Employees and others On site	Competent Personnel Money for training

2 x 5 = 10/25 = Medium risk

Controls:

- Assess the condition of the ground taking into account blind and sharp bends.
- Provide designated walkways for personnel on site.
- Forklift trucks require a competent operator (Senior crew personnel only) with an up to date CSCS plant card to control its use on site.
- Operator and other personnel on site must wear high visibility PPE.
- Flashing beacons and reversing siren must be in use when the forklift is operating.
- Mirrors, lights and reflectors must be visible.
- The operator must ensure that the gears and brakes are in good working condition.
- The wheels and windscreen must be free from dirt and grit and clean regularly.
- The load must be secured before lifting.
- A speed limit must be adhered to at all times.
- Signs must be erected to warn personnel of the use of forklifts in the area.
- Provide adequate lighting when necessary.
- Assess the weather conditions before planning lifts.
- Employer is responsible for supplying personnel with safe plant to work with on site.
- The employer is also responsible for supplying trained competent personnel to operate machinery.
- Employees are responsible for maintenance and reporting of defects to plant.

5.5 MANUAL HANDLING

Manual Handling includes lifting, lowering, pushing, pulling, carrying, or moving loads. A scaffolder spends most of his time lifting loads that require awkward positions or twisting and jerking movements. The trunk is twisted to enable the hand to reach down and grasp the scaffolding tubes; the knees are locked putting pressure on the joints and the muscles of the back come under great strain causing the nucleus pulposus of the disc to seep out causing a slipped-disc.

A risk assessment will determine the;

- Characteristics of the load
- Physical effort required
- Characteristics of the working environment
- Requirements of the activity

Hazard	Likelihood	Worst Consequence	Risk Rate	Controls	Persons at risk	Resources
Manual Handling	3 = Even chance Could happen	Slipped Disk Disk Degeneration Spondylolisthesis Fractures	3 = break major bone	Training Proper Lifting Technique	Employees	Money for training

3 x 3 = 9/25 = Medium risk

Controls:

- Manual Handling will be avoided where possible.
- The risk of injury can be reduced by good lifting techniques.
- Training must be given before work commences on how to adapt the 8 principles of lifting to the task at hand.
- Employers should have written proof of Manual Handling Training.
- Information should be available to all employees.
- All heavy materials will be stored at ground level in designated areas, thus decreasing the necessity to carry materials over long distances.
- The forklift and/or crane will be in operation so as to avoid the necessity for personnel to manually lift loads.
- The area will be cleared of all trip hazards.
- Up to three employees should be available at all times to help in the transporting of heavy loads.
- Emergency procedures should be followed and in case of injury; medical attention should be sought immediately.

- Signs should be in place to remind employees of the dangers of lifting heavy loads.
- Hoists should be available on site to lift heavy loads.
- A crane should be used to lift pallets from the container onto the ground.
- Ramps should be used instead of steps.
- Personal protective equipment, such as Rigger grip gloves should be worn to prevent the hands from freezing when handling steel tubes.
- Steel toe capped boots must be worn so as to prevent slips and avoid injury from drops.
- The employer is responsible for providing adequate training on manual handling. Employees must also adopt 8 principles of lifting. Foreman of each team must monitor the employees for safe lifting practices.

5.6 DEGLOVING INJURIES

De-gloving injuries are caused by external forces, shearing the skin off the underlying subcutaneous (fat) tissue on the fingers, i.e. the top layer as shown in the diagram below. Severe de-gloving injuries are classically associated with rings worn on fingers; roller type machinery or where vehicle wheels run over limbs.

Injuries are very common and can have disastrous consequences, often leading to amputation of fingers or even hands. Important structures such as tendons, nerves, and bones are exposed and will necrose (die) if not covered adequately and in time. In cases where skin cannot be re-attached, it may result in amputation.

Hazard	Likelihood	Worst Consequence	Risk Rate	Controls	Persons at risk	Resources
Handling scaffold tubes	2 = Unlikely Though conceivable	De-gloving injuries to fingers	3 = laceration	No rings or jewellery worn on site	Employees	Information Training

2 x 3 = 6/25 = Low risk

Controls:

- No jewellery is worn on site during work hours.
- Even though jewellery has been removed, personnel should wear protective gloves.
- The throwing of scaffolding during erection or dismantling is forbidden.
- When slinging scaffold tubes that are to be lifted by a forklift or crane, great care must be taken to clear all limbs before the load is lifted.
- If tag lines are in use, never turn the rope around the hand or arm. If the crane was to lift the load for whatever reason, the hand could be trapped.
- Employees are responsible for their own safety and that of others on site.
- Inappropriate work practices will not be tolerated and the foreman will report to management, such behaviour on site.
- Information must be provided to all employees about the potential for injury.

5.7 TRUCKS

Hazard	Likelihood	Worst Consequence	Risk Rate	Controls	Persons at risk	Resources
Handling Trucks	2 = Unlikely, though conceivable	Fractures to spine	3 = Break major Bone	4 persons to each box	Employees	Information Training

2 x 3 = 6/25 = Low risk

Four persons to a box

5.8 RAMPS

Ramps for equipment access to stages often terminate at the bottom on a truck dock. The dock should have a staircase to facilitate access and egress of crew.

Hazard	Likelihood	Worst Consequence	Risk Rate	Controls	Persons at risk	Resources
Use of ramps	2 = Unlikely, though conceivable	Falls and breaking of major bones	3 = Break major Bone	Use ramps don't take Shortcuts!	Employees	Information Training

2 x 3 = 6/25 = Low risk

Controls:

- The gradient of the ramp must be gradual enough to enable equipment to be moved safely. Specific safety measures will be required if the gradient is steeper than 1:5.
- Ramps should be no longer than 8 metres between horizontal landing areas.
- Landing areas should be at least 1 metre in length in the direction of travel and at least as wide as the access way/ramp.
- The gradient should be constant and not broken by steps.
- The ramp should have a non-slip surface and as appropriate have a guard rail and a hand rail.
- Ramps should be free of gaps and uneven surfaces, ridges etc.
- The ramp edges must be painted in a contrasting colour (*Black/ white or blue/yellow*) to the ramp surface for the benefit of personnel who are colour-blind.
- The use of greens and reds are not recommended.
- The maximum gradient for the ramp, which is subject to wheelchairs should not exceed 1 in 12.

5.9 FALLS FROM STAGES

Lack of handrails and poor stairs are the biggest causes of stage related accidents.

Low light or full light to blackout can cause serious accidents when trying to access or egress from stage. A combination of temporary blindness and familiarity with the stage can cause trips, slips and falls to occur.

Serious accidents occur where a narrow gap to an adjacent wall is present causing personnel to fall and become wedged between the stage and the wall.

Hazard	Likelihood	Worst Consequence	Risk Rate	Controls	Persons at Risk	Resources
Falling From Height	3 = even chance Could happen	Serious injuries to Internal organs Broken Bones Death	5 = death	Full P.P.E. Guardrails Hazard tape Upstand Lower platform Fall arrest system	Employees and others On site	Money Training

3 x 5 = 15/25 = Medium risk

Controls:

Handrails should be provided to all edges of a stage except the edge facing the audience.

Temporary barriers may be required to the front of the stage during construction.

There should be handrails on all except the performance edge of the stage regardless of height and at every staircase.

Adequate handrails and markings of all edges with high visual tape are essential.

If the gap cannot be avoided secure with handrails.

A lower ledge below the stage floor height can be used to protect personnel from falling from and unprotected fall of 2.5 metres or more.

A tactile strip should be used to warn personnel of approach to the edge of the stage.

A slight upstand may be used to the front of the stage to prevent falls.

All edges must be marked with white or luminous tape of at least 50mm wide.