

Coordinating Site Works and considerations with the use of Structures, Electrical and Lighting Systems

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Although temporary demountable structures, temporary electrical systems and temporary lighting are common features of events which allow event organisers to deliver safe, enjoyable and successful events, they also pose considerable risk to those who come in to contact with them and as a result, organisers must ensure measures are taken to reduce the likelihood and impact of this risk.

Event organisers are reminded of their duty of care to ensure the health, safety and welfare of those working or attending their event and are recommended to utilise the further reading provided to satisfy themselves that they understand the risks involved as well as the measures which would be deemed sufficient to mitigate those risks.

The following information is introductory guidance which is intended to give event organisers an overview of considerations and not intended for those responsible for designing, installing or managing this type of equipment as their knowledge, understanding and experience should greatly surpass the level of information and detail contained herein.

Assessing the needs of the event and assigning a Production Manager

The assessment and management of all “production” needs such as lights, power, public address systems, video screens, crowd barriers, rigging, special effects, band equipment (often referred to as “Backline”), staging, structures as well as associated staffing requirements should be overseen by a competent person or organisation to ensure sufficient coordination of these important and potentially dangerous aspects of the event project. This duty holder is often known as the Production Manager.

The Production Manager should ideally have experience in fulfilling similar roles and have a working knowledge of the needs, risks and complexities of each of the individual elements which make up the event’s “production”. They must also be capable of coordinating and managing the event’s site works in order to reduce risk and maintain a safe working environment.

Event organisers should work with their Production Manager to assess the needs of the event during the early planning stages of the project planning process. The outcome of this assessment will depend on the aims, objectives, size, format and budget of the proposed event as well as contractual agreements and requirements of the performers, bands and suppliers.

Produce specification of requirements and ensure competency in suppliers

Once the needs of the event are known the event organiser should undertake procurement exercises to contract the various suppliers and contractors required to deliver the event.

Procurement exercises involve the event organiser providing would be suppliers with the detail of what is required of them and key information which will allow them to determine their capacity to carry out the work, the resources

required, and the cost implications. The information required by contractors will vary but event organisers are advised to consider:

- What equipment or services is required
- Key dates and times including access arrangements, deadlines, milestones and derig requirements
- What access will be granted (deliveries, vehicles, plant equipment, staff numbers etc.)
- What resources are available to assist if any (staff, equipment, catering etc.)
- Whether other works are being carried out
- Site rules and health and the safety standards required

This information is often referred to as a Specification of Requirements. Bidders will be asked to assess the requirements of the event and provide inclusive quotes as well as information to evidence their competency in a timeframe which suits the event organiser's project plan.

Procurement exercises are recommended as they ensure that a) the event receives best value, and b) they are a measure of vetting the suitability of suppliers, ensuring that they are competent, experienced, can provide the equipment required within the timeframe stated and are able to demonstrate safe working practises.

Event organisers are required to satisfy themselves that suppliers & contractors employed to design, supply, install or manage the required equipment have the skills, knowledge, experience and capacity to carry out the work allocated to them.

To assess the competency of suppliers Aberdeen City Council recommends that either during the procurement process or before contracts are signed, event organisers should request copies of the following from suppliers:

- insurance(s);
- risk assessments;
- method statements;
- evidence of their industry experience;
- membership of any governing bodies or industry association;
- staff training certification or policies;
- certification for any equipment being used;
- references from other similar events

The Health & Safety Executive recommends that suppliers and contractors are asked to:

- demonstrate knowledge and understanding of their work and the health and safety risks involved;
- provide evidence that the workforce has the necessary skills, knowledge, training and experience to carry out the work;
- confirm that they have enough resource levels to do the work;
- provide evidence of previous successful work that shows they can adopt and develop safe systems of working;
- testimonials from previous employers

Ensuring the coordination of activities

Once competent suppliers are contracted, the works must be coordinated to ensure that the event project deadlines are met and that the risk of individual elements, as well as risks resulting from multiple contractors working on site simultaneously, are assessed and managed sufficiently. All employers have a legal obligation to cooperate and coordinate with others under the Management of Health and Safety Regulations 1999.

The event's Production or Site Manager will work with contractors and suppliers to understand their requirements to allow them to work safely and meet the schedule required for the event. This will include the amount of time they require, what works they require to be in place before they can carry out their duties, their access requirements, their staffing requirements as well as communication of any high-risk works including the need for working at height, utilising lifting equipment or plant vehicles. This information will be used by the Production Manager to compile the event's production schedule, which is a detailed timeline of work activities from the installation of a sterile working site at the beginning of the event build, through to the site inspection before opening to the public.

A Production Schedule is a key planning document which all key contractors, suppliers and event staff will be required to work to in order to ensure safe working practises, so it is important that the contents of this document are detailed and accurate. Once the Production Manager is content that the document details a safe work schedule for all work activity, the document should be shared with suppliers, contractors and others who may be impacted by the works before a final version is signed off and work begins. You may find that whilst this document is being compiled contractors and suppliers plans change slightly and this may have an impact on the accuracy of the document, so it is best to check before signing off.

The Production or Site Manager should make it clear to all staff, contractors and suppliers that works must be carried out according the schedule.

An example Production Schedule is included within the [Template Event Manual](#).

Providing contractors with key pre-event information in accordance with CDM 2015

As detailed within The Construction (Design and Management) Regulations 2015 (CDM2015), event organisers are required to provide pre-event information on known risks to contractors, such as underground or overhead cables, before they begin work. Aberdeen City Council recommends that this legal requirement is developed to also include important information relating to the event's site rules, processes and procedures. Combining this information into one document prevents duplication of time and effort. This may also reduce the risk of accident or injury by ensuring good communication with contractors and suppliers.

The information which is shared will depend on the format, risk and complexity of the event build. Aberdeen City Council's pre-event template includes:

- Key dates and times
- A copy of the production schedule with specific contractor construction timeline and deadlines highlighted
- Details of site induction requirements and arrangements
- Accreditation information and access information
- Site rules including traffic management, health and safety, waste management and no smoking etc.
- Details of any communication plans and contact details for during the build phase
- Site plan
- Details of known risks of the site (e.g. underground or overhead cables etc.)
- Welfare provision during build and live phases
- First aid and firefighting arrangements for each phase
- Emergency procedures during the key phases of the event
- Accident and near miss reporting protocol
- Roles of key staff including names and contact information

An example pre-event information sheet is included within the [Template Event Manual](#).

Temporary Demountable Structures

The installation and use of temporary structures such as marquees, stages and platforms is a regular feature at outdoor events. They offer sheltered event, activity and performance spaces and whilst they benefit events that feature them, they also present very real risk of accident and injury when installed, used or dismantled incorrectly or when impacted by adverse weather conditions.

Due to the nature of the works required to install such structures, contractors will be required to comply with a number of legal requirements and codes of practice including Health & Safety at Work Act, Management of Health & Safety Regulations 1999, Working at Height 2005, Manual Handling 1992, PPE at work 1992, The Use of Work Equipment 1998 and Lifting Operations and Lifting Equipment Regulations (LOLER).

CDM2015 will also apply to these works and as such the CDM roles must be assigned in writing and the duties of each role carried out accordingly. Further information can be found on [here](#).

Getting the Basics Right

The repercussions of one of these structures failing could have devastating effect on an event and it's attendees. As a result, event organisers are required to ensure that the equipment being used is fit for purpose, that only competent suppliers are engaged to supply, install or adapt* the equipment and that it is used as per the manufacturer's guidelines.

*Adaptations may include the addition of lighting, staging, additional truss, drapes etc to the temporary structure. This work should be done with knowledge of the structures technical specification.

MUTA are the UK's Health and Safety Executive (HSE) endorsed trade association for marquees, tents and other similar temporary structures. MUTA members are vetted prior to being accepted as members, are subject to regular inspections and are required to adhere to the association's Code of Practice & Best Practice Guide in order to reduce risk of accident. To ensure that only safe and certified equipment is used on council land, Aberdeen City Council have made it a condition that only marquees or tents supplied by MUTA members will be accepted.

All structures should be made up of flame-retardant materials. Evidence of certification detailing this should be available from competent professional providers.

Due to the risks involved in the erection of such structures, the organisers must ensure that sterile working areas are created before any work commences. This could be done by locking park gates to prevent unauthorised access or installing barriers around the area where the structures are being installed.

Staff working and allowed access to the site must be briefed on the risks involved and have appropriate Personal Protective Equipment (PPE).

Using the Structures Safely

The contractor employed to install the structure should sign it over to the event organiser confirming that it has been installed as per the manufacture's guidelines and it is safe for use. There is often a checklist which the contractor will go through with the client to confirm that the structure is fit for purpose and is now the responsibility of the organiser. If the organiser is unsure they should seek the opinion of a trained and competent structural engineer prior to accepting the structure.

Once the structure has been accepted by the event organiser it is now their responsibility to ensure that the structure is used appropriately and that measures are in place to ensure the safety of those using it.

Often organisers will be provided with a checklist from their supplier to ensure the structure is routinely inspected during the event or alternatively the contracted supplier may have a member of staff on-site to monitor the use of the equipment to ensure that they remain structurally sound. Event organisers should review [MUTA's checklist](#).

Those responsible for the management of the event or it's health and safety aspects should consider the design, layout and capacity of each structure, ensuring that emergency exits are sufficient & have clear signage, exit routes remain unobstructed, that emergency lighting is in place and that the appropriate firefighting equipment is provided.

It should be noted that emergency exit routes should have a minimum of a 1.2m corridor, be unobstructed, clearly illuminated and lead to a clearly signposted emergency exit. The exit should lead to a place of reasonable safety and be left clear at all times. Often contractors and suppliers utilise these areas for storage of equipment and refuse; this is

not safe, and these areas should be checked regularly.

Further information please see [Contingency Planning](#), [Fire Risk Assessment](#) and [Accessibility Arrangements](#)

Management of Loadings

Due to the high risks created by exceeding the loadings of temporary structures, event organisers will need to ensure that the weight, wind and snow loadings of each structure are known, that they are not breached and that procedures are in place to react before circumstances impact the safe use of the structures.

The supplier of the structure, be it a stage, marquee, platform, bouncy castle or other structure must be able to provide you with the structural load information of each structure, including the maximum wind loading, snow loading and weight loading. This information will then need to be shared to ensure that those responsible for adapting or working on these structures (e.g. by adding lights to a stage or marquee) know the safe parameters which they can work within and allow them to develop management plans accordingly.

It is common for multiple contractors to add weight to each structure and therefore it is essential that the weight distribution and total weight of each point is planned and monitored by a competent person who has a technical understanding of the structures being used. This role is again often delegated to a Production Manager or Production Company who hold the necessary skills, knowledge and experience to plan and manage the loading of structures sufficiently.

Aberdeen City Council advise event organisers get the basics right by ensuring that:

- Contractors and suppliers are competent and that evidence of this has been provided
- The equipment being used is fit for purpose and safe for the structure/site being utilised
- The Production specification meets the needs of the event
- The total weight of all equipment and each weight loading point are within the safe parameters set by the supplier / manufacturer
- The work of the various suppliers is coordinated and monitored to reduce risk
- Work is carried out safely
- A Wind Management Plan is in place and communicated to operators and managers responsible for implementing or coordinating it

Creating a Wind Management Plan

It is recommended that a table is created which details the wind and snow loadings of all relevant equipment being used on-site. This will allow the organiser to ensure the equipment is only used in safe conditions and within the parameters set by the manufacturer. Event organisers are advised to work with suppliers and contractors to develop an action plan for when / if the wind speeds or snow begin to reach 60%, 75% and 90% of the max loading, with an evacuation plan developed and available as a last resort when the safe loadings of the structure are breached.

Event organisers should ensure that forecasts are monitored, and wind speeds measured on-site using an anemometer to ensure accurate, real time information is available to allow decisions to be made and prior agreed plans implemented as required. For up to date weather forecasts organisers can check [on-line](#) or can call the Met Office directly, who provide a free service as well as a paid for service which provides specific and detailed forecast information at the precise event location.

For further information on Wind Management can be found [here](#)

Raised Structure Permit

Section 89 of the Civic Government (Scotland) Act 1982 requires a permit for all temporary raised structures which stand over 600mm above the ground. This [application process](#) is managed by Aberdeen City Council's Building Standards Team who will review the structural stability of the raised structure, as well as its access, handrails, protective barriers, transference of loads to suit the ground conditions before issuing the permit.

The permit application form, the fee for the permit and the structural information of the raised structure must be provided no later than 28 days prior to the event, but as with other licences – the sooner the better.

Summary of Event Organiser's Responsibilities

Although event organisers may have limited knowledge of the technical aspects required to install equipment safely, their decisions will have an impact on those who have been contracted to act on the organiser's behalf. Event organisers can reduce the risk of accident or injury by ensuring the basics are taken care of. Event organisers duties, as detailed within CDM2015 are required to:

- Assess whether adequate resources are available before beginning the project to ensure contractors have enough time and staffing to carry out their work safely
- Ensure activities and works are coordinated and managed
- Ensure cooperation between staff, contractors, suppliers and others impacted
- Set site rules and ensure that they are adhered to
- Ensure sterile areas are created for any dangerous activities such as construction of Temporary Demountable structures
- Ensure competency of suppliers and contractors
- Employ people with the relevant skills, experience and capacity to carry out duties on the events behalf
- Ensure welfare and facilities are in place for contractors and staff
- Ensure first aid provision is in place
- Provide pre-event information to those who require it, allowing enough time for review and development of plans to work within the stipulations set by the event
- Ensure that staff are briefed
- Monitor work in line with the submitted risk assessments and method statements to ensure safe working practices are employed
- Ensure that a Construction Phase Plan has been created

These duties do not need to be carried out by one individual and can be delegated but the event organiser is ultimately responsible for ensuring that they are carried out.

Event organisers have further duties under [CDM2015](#) which must be carried out to ensure public safety and that the event is operating legally.

Mandatory Conditions

- Temporary structures must be provided and installed by MUTA members and used as per the manufacturer's guidelines
- Events must have the relevant licence(s) granted
- Wind management plans, detailing use of anemometer on-site, will be required to be in place and submitted in advance to Aberdeen City Council
- Suppliers and contractors must be deemed competent
- Events must be CDM compliant

Further Reading

[Guidance for the Management & Use of Stages -](#)

[Temporary demountable structures: guidance on procurement, design and use](#)

[MUTA trade association for marquees, tents and structures](#)

[HSE - Temporary Demountable Structures](#)

[Purple Guide](#)

Electrical Systems

The installation and use of temporary electrical systems are complex and dangerous operations which require several legal obligations, British Standards and Codes of Practice to be adhered to including The Electricity at Work Regulations 1989. It is therefore essential that temporary electrical systems are installed and managed in line with manufacturer's instructions by competent contractors.

Electrical supplies will either be provided from a fixed on-site mains source (distribution box) or portable generator(s). A competent electrician with experience of working at similar events will be able to advise on the power requirements for your event and advise on the equipment required after liaising with other suppliers and contractors to find out their power requirements.

The location of generators, fuel storage and other electrical equipment should ensure segregation from members of the public and unauthorised personnel, allow ease of access for refuelling, repairing and in an emergency. They should also be sited in well ventilated areas away from flammable materials such as fuel sources and fabric structures. Additional segregation using barriers or other measures may be required as the events risk assessment deems necessary.

The use of and access to generators including refuelling, should only be carried out by trained persons in line with the manufacturer's guidelines. Access using barriers or other measures

Only diesel generators should be used as they present lower risks than petrol generators, and Aberdeen City Council has made this a condition of the use of the land.

Firefighting equipment should be in close proximity to the equipment and staff should be trained on how to deal with emergencies resulting from their use.

Silent generators will be required for events taking place near noise sensitive buildings including residential properties. You may also benefit from reviewing the impact on the atmosphere at the event if a noisy generator is used.

Electrical cables will create multiple trip hazards so consideration as to the routing of these cables in areas used by staff or members of the public is required. Where it is not possible to route cables in a way that presents no trip hazards then cable ramps or mats will be required to mitigate the risks.

To avoid cables being damaged, ensure that vehicles cannot drive over them and heavy or sharp items are not placed on top of them as they can damage the cable resulting in a risk to life. Again, cable ramps should be used if it is not possible to avoid traffic routes.

Prominent signage warning people not to enter high risk areas, interfere with equipment or smoke in high risk areas should be installed.

All portable appliances should have evidence of PAT testing and be deemed to be in good working condition before they are allowed to access the electrical systems.

The use of temporary electrical systems, including the storage and use of fuel, should form part of the event's fire risk assessment and at minimum should detail that firefighting equipment will need to be sited close to each generator or power supply due to the increased risk of a fire starting in these areas.

Mandatory Conditions:

- Aberdeen City Council require notification of any temporary electrical systems, including generators, as well as comfort that they are fit for purpose, installed by competent persons and used safely, prior to approval being granted.
- Aberdeen City Council will only allow diesel powered generators to be used within it's parks and open spaces
- Events which utilise temporary electrical systems will be required to carry out a Fire Risk Assessment and ensure that sufficient fire fighting equipment is in place

Further Reading

[Electrical safety at places of entertainment](#)

[Electrical safety](#)

Temporary Lighting

Often the parks and open spaces in which events take place are designed for day time use and as a result lack enough lighting infrastructure to allow safe use in low light or darkness. If your event extends into the evening when the site will become dark you will be required to provide temporary lighting to ensure the safety of those at the event.

Event organisers should consider lighting requirements on the following areas:

- Lighting within temporary structures such as marquees
- Lighting of facilities such as toilets, information points, first aid posts and the event control room
- Key directional signage such as emergency exit, first aid and information points
- Walkways
- Areas where there are trip hazards or uneven surfaces which cannot be removed
- Emergency exit routes
- Car parks and routes from your event site to any taxi/bus pick up locations

Temporary lighting will often have built in generators and as a result present similar risks as those mentioned in Electrical Systems and event organisers also need to consider the following:

- Segregation of equipment from the public by positioning or barriers
- Site layout and access in the event of failure or accident
- Trip hazards from equipment and associated cabling
- Manufacturer's guidelines and safe use method statements

- Refuelling arrangements and the storage of fuel
- Firefighting equipment
- Warning signage
- Ground conditions
- Wind loading

Mandatory Condition:

If the event is to take place in the evening in dark conditions, then the organiser must arrange suitable lighting.

Further reading

[Purple Guide - Electrical lighting](#)