

# Providing a safe venue

A unique circumstance of events is that the activities and tasks to be completed before an event greatly increases the closer you get to the start time. Most businesses have a much more predictable schedule. If someone is slow or does not complete work it may influence several others. The domino effect can create a pile up of unfinished activities; with a lot of rushed work to get everything done on time, this haste can be hazardous. An additional uniqueness of events is that most venues are not set-up until a few days prior to opening. This makes it difficult to get a good picture of what the event site will look like on the day of the event, especially in locations not ordinarily used for events. In established venues that conduct events you may find they have back-to-back events, which require quick setting up and tearing down.

## Venue design

With outdoor events in particular the site choice and preparation is obviously crucial to a successful event. It needs to be sufficiently large to accommodate the size of the audience expected, taking account of the space that will be occupied by structures, the activities and the facilities provided.

The suitability of the site will also depend on the ground conditions, access routes, the provision of services, and any environmental constraints such as the potential for noise disturbance if there are houses or workplaces close to the venue.

A site-layout map should be drawn up showing the position of all the activities/attractions, the facilities and structures, the circulation routes and entrances and exits. There should be sufficient, well dispersed exits to allow for safe and rapid evacuation and a specific non pedestrian route may need to be identified for emergency vehicles.

Walk the site and identify particular hazards such as steep slopes, uneven ground or kerbs on which people could trip. Consideration should also be given to weather conditions and under foot conditions in this regard.

Draw up an itinerary for the erection and dismantling of all structures on site and consider how to facilitate the safe movement of vehicles within the site.

## Providing space for people

The objectives in restricting the numbers in attendance at any event is to avoid the dangers of overcrowding and to ensure that the means of escape in an emergency are adequate for the numbers of people being evacuated from the venue. To determine the total number of people who can inhabit a given space you will need to calculate the 'occupant capacity'. The following factors should be considered:

- Layout of the venue/site
- Viewing areas
- Seating arrangements
- Site/venue infrastructure
- Exit doors and routes
- Circulation areas
- Space required per person

The advice of a competent person and the fire authorities should be sought when determining the numbers of people who can be accommodated at the event. If the event involves the provision of seating only, then the number of seats the venue can hold will be a determining factor.

Capacities should be arrived at not only in terms of space allowance, but also through considering appropriate rates of entry and exit from areas of the facility within specific time limits. This involves monitoring crowd or audience levels in particular areas. A well-managed and secure system of advance ticket sales is the best method of avoiding over-capacity. Where this is not an option and there is a limit on attendance numbers, it is important to have some method for assessing the numbers admitted to ensure the 'occupant capacity' is not exceeded. This can be achieved by using designated entrances manned by stewards in a way, which will allow them to carry out an accurate form of head counting.

While the need and the means to manage admittance numbers to an enclosed event which have attractions which are in temporary accommodation such as marquees, or events where the audience may be restricted to areas of the public roads should also address the need to prevent overcrowding in specific areas. It is important that reference be made to the relevant Codes of Practice and professional assistance sought in calculating occupant capacity.



## Ingress and egress

Approaches to the venue should be well sign-posted from parking areas and public transport points. The plans for using the venue for a particular event must safeguard pedestrians from traffic movement in the vicinity of entry and exit points. Temporary stands or trading points must not be allowed to obstruct circulation. You should address the issue of what influence your event will have on the existing arrangements for traffic and pedestrian usage with the local Gardaí.

Entrances and exits should be sufficient in number to allow the desired rate of ingress to and egress from the venue, and should be as evenly distributed as is practicable. Inappropriate positioning, width or impeded flow rate may constitute a hazard by creating bottlenecks, which result in crowd congestion with possible tripping and crushing injuries. They should be clearly labelled in terms of where they lead to, and should provide a smooth flow within a time period, which will not cause frustration.

Avoid locating attractions in the pathway of persons entering or exiting the venue. Exits should not disgorge people into a place of danger, for example into traffic or where a heavy crush is likely through crowd build-up. Ensure wheelchair users and persons with mobility impairment have means of access; this may necessitate supplying rampage and the designation of access facilities wide enough to allow free movement.

Issues, which can impede the safe operation of entrances and exits, include:

- extra security checks, which can reduce flow rates
- age of the audience may affect speed of entry or exit
- persons with psychological or physical impairment can slow movement

Large-scale events where activity ends at a given time will require exit planning to take account of the egress of large numbers into surrounding areas. This exiting plan needs to be agreed between the event organiser and An Garda Síochána/PSNI who have responsibility for managing off site movement. The provision of extra Gardaí/PSNI personnel to police an event may incur charges, which must be met by the event organiser.

### Signs, way-making and circulation

Safety signs, way marking and labelling of entries and exits must be large, legible, unambiguous and suitably elevated. Directional signage must be consistent with, and easy to relate to, information on tickets and ground plans. Way marking should help people to recover from mistakes and wrong turns and retrace their steps.

Clearly numbering exits and referencing them to a map or line drawing of the venue layout will assist stewards with their training in knowledge of the venue. Signage designating key items such as the location of first aid points, emergency exits and fire equipment should be easy to see. Safety signage must be consistent with industry standards. Multi-ethnic audiences may be a feature at some events and it is advisable when planning the signage requirements that you consider the use of pictograms to depict essential services.

Movement to and from attractions/seating should be unimpeded and should be along clearly defined routes, the aim is to ensure that a one-directional flow is in operation where practical. It is important to examine areas where patrons are likely to congregate such as particular attractions or catering outlets and ensure sufficient space is provided around these to avoid congestion. The stewards at the event should be encouraged to monitor entrances, exits and circulation routes and event management should be prepared to alter circulation routes if required.

### Event control facilities

The provision of a room or space as the event control point is essential for the smooth operation of an event. Even small events should have a central point where the administration and co-ordination of the event takes place. Some of the reasons why the organisers should designate an event control room with limited access are:

- for display, collection and distribution of information for key event staff
- for the collation of event documentation
- as a point of contact for persons visiting the event on business
- as a focal point for the Event Controller
- as an incident room in the event of a major incident occurrence

For large events it is recommended that the central control room should be equipped with or adjacent to event communications facilities.

## Structural safety

The failure of any temporary structure in a crowded, confined space could have devastating effects. It is therefore essential to ensure that any temporary seating, staging, sound towers, large tents, marquees, stalls, attractions etc, are acquired from reputable companies, comply with the appropriate standards and are erected by experienced persons using safe working practices. A competent person should provide certification on the stability of all such structures and you should be advised of the maximum wind loading which structures can withstand. Once the structure has been erected, a competent person (structural engineer) should 'sign it off' as being sound.

The risks associated with the supply and use of these structures can be minimised by adherence to the following safety guidelines:

- provision of a clear brief to the supplier
- provision of clearly defined site layout drawings
- provision of proper working drawings
- accurate setting out and levelling of bearing pads
- an organised work sequence and regular inspections
- adherence to design without site modification unless absolutely necessary
- regular maintenance and inspection of components
- adequate time for erection
- routine inspections during the period of the event

Hazards associated with temporary structures, which should be addressed during the course of the event are included in quick reference appendix 1.

## Temporary covered accommodation

Temporary covered accommodation can range from small tents used as first aid posts, catering outlets, craft stalls etc. to large tents and marquees. The anchoring of such structures will depend on the type of ground available, anchored on soft ground and others on a hard standing. Hazards associated with such accommodation include:

- Trip hazards; ropes and stays
- Heavy rain running off roofs can puddle and create a hazard
- Underground cables, overhead power lines and tree branches can cause hazards
- Fire hazards in the use of materials, decoration and electrical supply

Marquees and large tents should be made of appropriate material that does not permit rapid surface spread of flame and certification should be provided from the supplier to confirm this. You should be advised of the maximum wind loading that the tent can withstand and you may need to monitor the wind strengths on site using an anemometer.

An adequate number of fire exits should be provided in accordance with the number of people likely to be accommodated in the marquee at any one time and fire extinguishers and emergency lighting must be provided. Your local Fire Authority can provide you with further advice in this regard.

## Barriers/fences

Barriers may be required for a number of purposes including securing the site, controlling entrances and crowd movement, relieving crowd pressure, excluding people from unauthorised or dangerous areas, protecting the public from dangerous equipment and preventing climbing on structures. Types of barriers can range from simple rope and post to Herras fencing. Some hazards associated with barriers are included in the quick reference appendix 1B.

Front of stage barriers are likely to be essential for pop concert type events to enable those suffering physical distress to be removed to a place of safety and to displace any crowd surges away from the centre of the stage. The basic design criteria for barriers are that they are capable of withstanding the load which is likely to be placed on them. Obviously the effective use of such systems also depends on the provision of sufficient numbers of trained stewards.

## Lighting

If a venue is intended for use outside daylight hours, all parts of a venue should be provided with suitable levels of artificial lighting to allow people to leave, enter and move about the venue and its surrounds in safety. An adequate emergency lighting system should be available as a back up if the normal system fails. Particular attention should be given to clear illumination of exits and directional signs, which indicate escape routes and clear lighting of entry and exit ramps and stairways.

## Electrical systems

Electrical installations for one-off events, particularly outdoor events, can be complicated and extensive and is definitely a job for an expert. If not installed and managed correctly, serious injury to employees and/or members of the public can occur. Only electrical equipment designed for outside use should be provided at outdoor events. The positioning of cables often causes problems where temporary supplies are used - where cables have to cross pathways and roadways, they should ideally be buried to protect them from damage and prevent trip hazards. Where this is not possible, cables should be covered with suitable matting or where there is a risk of vehicular damage be provided with additional sheathing or routed and supported overhead. Again professional help is essential. In all circumstances, inappropriate equipment and connections or inadequately protected circuits may cause electric shock and/or overloading, which can lead to lighting/sound failure or result in a fire.

A qualified electrician should check generators, including those, which have been brought to the venue by other persons such as caterers. Where necessary, they should be properly earthed and located away from public areas or surrounded with appropriate barriers. Ideally electrical generators should be used at events.



## Fire prevention equipment

An adequate number of the appropriate types of fire extinguishers and if required other types of fire suppression equipment should be provided in key positions, such as close to catering areas, power sources and fireworks firing zones. Fire extinguishers should conform to the requirements of IS 290 and IS 291 or other standard approved by the Fire Officer, fire blankets should conform to BS6575: 1985.

An example of areas of special fire risk at events and the minimum fire safety equipment required are set out below, however the location and numbers of equipment required should be determined by a competent person and approved by the fire authorities.

<b>Portable generators</b>	<b>CO<sub>2</sub> or Dry Powder Extinguisher</b>
<b>Catering concessions</b>	<b>Dry Powder Extinguisher and Light Duty Fire Blanket</b>

Special care should be afforded the use of LPG cylinders at catering concessions, they should be caged, located in the outdoors and access should be limited to the user.

Dependent on the level of fire risk at an event you should consider designating a number of event stewards as a fire watch team. All stewards should know the location of the fire prevention equipment and how to use it. They should be trained to inform their immediate superior as soon as an outbreak of

fire is confirmed and should only attempt to suppress a fire for a short time. In the case of fire the primary consideration is to evacuate those in danger and to inform the emergency services. Emergency action procedures for dealing with all outbreaks of fire should be written down and agreed with the Fire Authorities.

Event organisers should take advice from the Fire Authorities on all aspects of fire prevention including the type of safety equipment required.

## Environmental issues

Issues of public health at events such as: food hygiene, sanitary and drinking water provision and noise/ air pollution are monitored and regulated by Environmental Health Officers. Environmental Health Officers with responsibility for monitoring the effects of noise and air pollution, drinking water provision and sanitary accommodation operate from within the local authority structure. The relevant Health Authority Environmental Health Officer has responsibility for all issues related to food hygiene at event catering concessions.

### Noise

Site design, layout and management systems are important in minimising the environmental impact of noise. The location of the stage, the orientation of the speakers, the type of sound system, the control of sound power levels, and the duration and timing of the entertainment can all be engineered to reduce the noise impact. The noise control unit of the local authority will specify conditions and restrictions in a Notice under the Environmental Protection Agency Act 1992 in order to prevent persons in the neighbourhood of the event being unreasonably disturbed by noise. This Notice will have regard to the criteria in the Code of Practice on Environmental Noise at Concerts issued by the Noise Council (United Kingdom).

Also of importance is the risk of damage to hearing, which can occur as a result of exposure to loud sound over a period of time. This risk is greatest for employees and performers. Where loud music is part of the entertainment you may need to provide hearing protection for staff that are located near the source of the sound.

### Catering/food safety

The event organiser should ensure that all caterers operating on their behalf are reputable, their staff are appropriately trained and food handling and preparation techniques are safe. Caterers operating concessions should be asked to produce food stall licences, occasional food permits (where appropriate) and where required a casual trading permit from the local authority. The suppliers of catering outlets must have the facilities required in order to prevent the contamination of food. The main concerns of the Environmental Health Officer in relation to food safety are the provision of:

- suitable, sufficient and easily cleanable:
  - surfaces for the preparation of food
  - cooking equipment
  - utensil wash-up facilities
  - staff hand wash facilities which are separate to food preparation
- hot (> 63°C) and cold (< 5°C) holding facilities
- temperature checks and monitoring
- storage for dry goods
- removal of refuse
- supply of potable water and power supply
- separate sanitary facilities for catering staff to include:
  - wash hand basin with hot and cold water
  - antibacterial liquid soap
  - paper towels for hand drying

## Occasional food premises and permits

Under Article 2 of the Food Hygiene Regulations, 1950/89 a food stall is defined as: “a vehicle, vessel, aircraft or structure... in, at or on which food is offered for sale or from which food is sold.” A food stall must be licensed “...where meat products (other than fish or fish products) are sold or where food is prepared, cooked or heated for sale directly to the public”. The following categories of food stalls must be licensed with the Health Board:

- Soft ice cream stalls;
- Hot dog/baked potato stalls;
- Burger/fried fish/chip stalls;
- Chinese and other ethnic food stalls.

To require an occasional food permit the business must be carried on in the premises more often than one day in any period of three months. Once it has been established that the premises require an occasional food permit it is the responsibility of the proprietor of the food business to apply for a permit. For example, if the proprietor is the event organiser then he/she must apply for the permit or if the proprietor is a private caterer the caterer must apply for the permit.

The event organiser is responsible for ensuring that all licensable food stalls should draw up a list of all food stalls attending the event and send details to the health board in advance of the event. Further information on the operation of such stalls is contained in appendix 2.

## Sanitary facilities

The provision of such facilities is based on the anticipated numbers of persons attending the event. When determining the sanitary accommodation required the organiser should also take in to account:

- Male, female ratio expected
- Duration of the event

Temporary facilities should be in a suitable location, clearly marked and sufficient types provided to avoid unnecessary queuing, this will entail undertaking consideration of the actual male: female ratio present at the event and the needs of people with disabilities or impairments. Facilities should be located to deter queues forming which could impede circulation near to entries, exits, steps etc. While they should not be in the vicinity of catering outlets the location should be clearly identified by directional signage close to these outlets. Regular inspection and maintenance are very important, particularly for events of long duration. Non-slip flooring will reduce the risk of accidents and if it is necessary to locate sanitary accommodation in the open they should be protected from the weather. Separate sanitary facilities must be provided for food workers.

The minimum facilities recommended as per the relevant Code of Practice is 10 water closets per 1000 female patrons, 2 water closets and 8 urinals or 3.6 metres of slab urinals per 1000 male patrons. In addition there should be a minimum of 1 appropriate toilet facility per 13 disabled persons. Each unit must be provided with an integral hand wash facility and where individual urinals are provided; hand wash units should be installed at a ratio of 1 per 5 urinals installed in the urinal accommodation area. For non-ticketed events a rule of thumb is to provide accommodation as recommended for each grouping of 1000 persons expected to attend at any one time.

All temporary sanitation units must be in- situ on an open venue site a minimum of 24 hours before the public are admitted; any deviation from this timescale is at the discretion of the relevant Environmental Health Officer. Temporary drainage arrangements must be in accordance with Section 3 of the Local Government (Water Pollution) Act 1977(1), which applies to the pollution of ground water and surface watercourses, on no account should waste be discharged into the ground.





## Drinking water

The provision of free drinking water is of particular importance at concert type events where the audience may assemble in cramped or hot conditions. At more lengthy concerts/festivals conditions such as dehydration can be a serious problem, and can result in people fainting with the subsequent risk of being trampled.

A minimum of one drinking water point per 1,000 persons must be provided, drinking water where possible should be supplied from the rising main and should be dispensed through spring loaded standpipes. A suitable non-slip surface adequately drained must be provided to all drinking water supply areas.

If the use of a mains supply for drinking water is impracticable, the event organiser must advise the Environmental Health Officers section of the location, date and time of the filling of any tankers to ensure the water in question (via the appropriate tanker) remains of safe and potable quality. The event organisers must confirm the precautions to be taken to ensure that the water supply in any tankers is and remains fit for human consumption throughout the event.

All taps must be adequately sanitised/cleaned prior to the event, each tap must be run for at least 2 minutes prior to the commencement of the event, this is to ensure that any stagnant water is run out of the system. Disinfectant fluids such as 'Milton' or other such food grade solutions are acceptable for the purpose of sanitising taps.



## Litter and waste

Make arrangements for the cleaning of the venue before, during and after the event. Arrange for adequate litter bins/refuse collection points to be positioned on the approaches and throughout the venue. Ensure in particular that sufficient bins are located in the vicinity of catering outlets as the main accumulation of waste on the event site usually occurs around catering concessions.

At all phases of the event keeping the venue clean and tidy will aid in the prevention of trips and falls. Litter and waste generated at events includes such items as food and drink containers, plastic sheeting and paper, left over food and liquid wastes. Event medical facilities can generate hazardous waste, which must be disposed of in accordance with biohazard disposal regulations. The organiser of outdoor events held on public property, such as parks, roads and streets have a duty to ensure roads and streets in the vicinity of the event are cleared of litter generated by persons attending the event. The local authority waste management services can offer advice on the collection and disposal of waste.



## Managing vehicular traffic

Decide how people are likely to travel to the event and whether you need to provide advice on public transport or parking facilities. It is best to keep as many vehicles as possible away from the venue environs. The objectives of traffic management at any event is:

- To ensure pedestrians and vehicles are separated
- To minimise the impact of the event on routine traffic movement
- To ensure emergency vehicles can access the event venue

All likely types of vehicles requiring access to the immediate area of the event venue should be considered, including:

- construction vehicles during build up and take down
- supplies and maintenance vehicles during the event
- emergency services vehicles
- disabled vehicle access and/or drop off and pick up points
- invited guests and production vehicles
- media broadcast units and equipment carriers

If vehicles are to be allowed access to the site, then arrangements should be made to segregate them from pedestrians either by providing separate routes or by allowing vehicles onto and off the site at pre-arranged time slots. The operation of one-way systems within some sites can also reduce risks.

For large events, park and ride facilities using buses to shuttle people between the site and remote car parks can work well. Advice should be sought from public and private transport companies for the provision of such a service.

Adequate signage in respect of diversions, parking etc. should be located where they are visible from a driver's perspective. In addition to signage ensure any stewards located at diversions for alternate routes limit the disruption on other road users who are going about their daily business.

Where there are traffic implications or where you are considering a temporary road closure you will need to liaise with the Gardaí and the relevant Local Authority well in advance of your event. You may also need to inform the residents and businesses in the area of any traffic diversions that may affect them.

## Managing people

Crowd safety at an event is related to space, the attractions on offer, the environment, surroundings and effective management of human behaviour. Compliance with regulations and the application of standards of best practice can go a long way to ensuring safe venues and activities, but the most difficult factor to manage at events is human behaviour. This section addresses how event staff can manage the behaviour of the attendance at the event to prevent as far as possible crowd related accidents/incidents and ensure enjoyment of the event.

When we think of events and managing peoples behaviour we tend to think of large gatherings, but poor management and a poorly designed layout can cause injury and unsafe behaviour irrespective of the numbers in attendance. For example allowing twenty people into a room designed for ten, adding extra chairs and tables to the space and placing obstructions at entrances and exits will result in an overcrowded space. Making no effort to alleviate the situation will have a negative effect on peoples behaviour with the net result of compromising the safety of the people in the room.

It is important at this stage to make a distinction between crowd management and crowd control. If you take the word 'crowd' out there is a distinct difference between 'management' and 'control', crowd management is proactive while crowd control is reactive. Crowd control will only be required when problems are encountered. Most problems with crowds can be prevented or quickly resolved when all aspects of crowd management are well organised.

People attend an event for a specific purpose, effective crowd management adds to the enjoyment of the event and can reduce risk of injury. The key components of a crowd management system are:

- Clear directions, facilitated by steward's instructions, signage and way marking.
- Ease of movement, facilitated by allowing sufficient space per person and active monitoring of bottlenecks and areas where congestion could occur.
- Ease of escape, ensuring there are sufficient exits leading to a place of safety and training stewards in evacuation procedures.

Generally people attending an event are not familiar with the venue or the type of event may be different from others they have attended at the same venue. The number and size of entrances and exits, viewing arrangements, the presence of clear directional signage, public information systems, well designed pedestrian flow routes and queuing systems and the presence of well trained, courteous and knowledgeable stewarding personnel are all influencing factors on crowd behaviour and can assist with preventing frustration and anger which can lead to problems of control.

In circumstances where it is anticipated that crowd control may be an issue it is appropriate to draw up a statement of intent in advance concerning the relative responsibilities of the Gardaí, security companies and the event stewards, the written document should make it clear which positions will be staffed by whom and who will assume responsibility in particular circumstances. This will assist with the formulation of clear procedures for ejecting or detaining persons who break venue rules.