

## Guide to Choosing a Hirer

Marquees | Tents | Structures



Cover photos kindly provided by  
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## 1 Types of Marquee, Tent & Structure

### 1.1 Traditional Marquee



Traditional marquees go under a number of names, pole tents, soft tops, (not to be confused with Big Tops or Circus Tents), or guyed marquees. They all have one thing in common in that the main structural element is the cover itself. Most traditional marquees use cotton based fabrics as the covering, but PVC coated polyester is popular too.

Whilst traditional marquees can be as wide as 120 feet, most hirers will switch to frame marquees for widths above 40 or 50 feet (12 or 15 metres).

Being relatively inexpensive and easy to erect, traditional marquees are a popular choice for private functions and traditional venues such as agricultural shows and village fetes. The combination of the traditional look and feel of pole tents and the breathability of natural fibres means that this type of tent is still as popular as ever and still represents a significant slice of the market in the UK.

Over recent years we have seen the introduction of American traditional and sailcloth tents which add an interesting visual dimension to this sector.

For some time, the difficulty in calculating the structural qualities of this type of tent looked as if it would prevent its continued use in the current climate of regulated safety, but MUTA has done a lot of work and carried out many test procedures to ensure that this is not now the case. It is important however to be sure that your hirer erects the marquee correctly.

### 1.2 Frame Marquee



Frame marquees, where a semi rigid frame provides the structural stability, mostly use synthetic fabrics as a covering so as to avoid the problems created by shrinkage and expansion of natural fibres. Frames can be of wood, steel or aluminium tubing or, as is the case with most modern frames, box section aluminium. This latter type are often referred to as "clear span" structures which can be in widths up to 50m with no intermediate pole supports (hence the name).

The uninterrupted internal space of frame structures makes them very popular for a wide variety of events from private functions, through corporate hospitality to large exhibitions.

Because they have a solid frame this type of marquee can accept a higher level of accessories, such as doors, windows, rigid side panels and sophisticated flooring systems. Consequently the move, of late, has been to an ever increasing standard of finish and internal comfort, so much so that many guests do not realise that they are actually in a "marquee". This level of sophistication, together with their structural stability has encouraged the recent trend to extend the traditional marquee season beyond the summer into the autumn and, indeed, the industry now erects marquees 12 months of the year.

Not all frame structures are inherently safe and there are many "home made" varieties out there in the market place that are neither safe nor attractive. Whilst standards for

structural stability do exist it is difficult for the authorities to police all events, particularly those on private property. MUTA Members are obliged to follow the correct standards.

## 1.3 Giant Structure (over 30 metres wide)



Generally defined as large span aluminium frame or tensioned pole tents that are in excess of 25m wide. 30/40/50m span frame tents usually needing the aid of telescopic plant or cranes to erect and dismantle. Giant pole tents can usually be erected manually, thus differentiating them from Big Tops that required plant.

These are specialised structures and only very few hirers are competent to deliver them safely.

## 1.4 Multideck structures



Multideck structures can be either double, triple or quad level structures. The top floor being of a standard clear span aluminium frame design with the lower floors being constructed from an integral steel upright and horizontal beam system.

These are specialised structures and only very few hirers are competent to deliver them safely.

## 1.5 Nordic Tipi



Giant, linkable Nordic tipis were introduced to the UK rental market in 2005. Their natural timber and canvas construction, aesthetics, and quirky possibilities have quickly established them as an interesting alternative type of structure. They are used widely for weddings, parties and festivals, and increasingly for smaller scale corporate events.

All manner of interesting shapes can be created by linking the tents in different configurations to meet the requirements of individual events.

To the untrained eye, they may appear to be simply a “bunch of sticks and canvas”, but there is much more to them than that. The need to have full structural calculations, flame retardant fabrics and competent build crews is the same with these tents, as with any other. MUTA Members are obliged to have all three to operate.

## 1.6 Stretch Tent



Funky shapes in a wide variety of colours characterise Stretch tents which use a special technical fabric that is stretchy but also provides structural stability. The fabric is anchored at its corners and along its sides, and then poles of different lengths are pushed up to create the iconic shapes.

There are several manufacturers of these tents and not all use fabrics that are properly water resistant and flame resistant, so it is important to check that the tents you are getting won't let the water in, and won't catch fire.

## 1.7 Saddlespan



Some people describe a Saddlespan tent as looking like a Pringle crisp. Made from tensioned PVC and supported by architectural aluminium trussing, these unusual looking tents can be used as a large marquee, stage cover, audience shelter, exhibition venue... and so on.

They are available in different sizes and can be linked in a variety of ways to create large and interesting structures.

Safety issues are paramount, and this type of structure like all other tents requires competent installation. MUTA has created guidance specific to Saddlespan tents which MUTA Members are obliged to follow.

## 1.8 Inflatable Tent



Inflatable tents use air to support the structure. They might use air beams, tubular construction or cellular walls; some have a supporting metal framework; some use a single skin and rely on positive pressure inside the structure.

Primarily used in the corporate market, they are highly customisable and capable of being branded. Creativity and innovation are ingredients for success in this market and inflatable tents provide that in spades.

As always, safety concerns are paramount and MUTA's guidance on use of Inflatable Temporary Structures is followed by MUTA Members.

## 2 Private Events – choosing a hirer

### 2.1 Introduction

What is not always obvious to private customers is the nature of the marquee and tent hire industry. Whilst there are many excellent companies, there are also some very poor ones. There are a lot of hirers that come and go; companies that start up, “have a go”, and then disappear. It’s not easy to be a high quality hirer, and not something you can learn overnight.

The best hirers will build you a first-class structure, keep your stress levels low, and be a delight to work with. The worst ones will make your event a nightmare.

We hope that the following pointers will help you find the good companies.

### 2.2 Experience & Track Record

Look at how long the hirer has been trading. Most of the dodgy companies won’t survive more than a few years. MUTA Members have to be trading for 2 years before being admitted and have to pass a credit check – so asking to see the hirer’s current MUTA Certificate is a good start.

Does the hirer have a good track record? Is there evidence of recent customer thank you letters, testimonials or references? Will they let you talk to a previous customer? Have they won any awards?

### 2.3 Range of Services

Apart from erecting the marquee or tent, there’s a lot to do to make an event happen: flooring, stages and dancefloors; lighting & PA; heating; power; loos; furniture – the list goes on.

Good hirers will be able to take on as much or as little of the supply of these items as you wish, acting as a one-stop-shop if that is what you want.

### 2.4 On Site Support

If something goes wrong whilst the event is happening, what arrangements are in place to cope? Will you have staff from the hirer on site during the event? If not, is there an emergency contact number, and how fast can you expect a response?

Good hirers will be able to offer both options.

### 2.5 Coping with Problems

Problems happen in hire businesses all the time. Staff go off sick. Vehicles break down. Equipment gets damaged.

Good hire businesses solve these problems without their customers ever being aware. They have additional staff they can call on, arrangements in place to cope with broken down vehicles and spare equipment to hand.

Ask your hirer about contingency arrangements they have in place to cope when things go wrong. And don’t believe anyone that tells you things never go wrong!

### 2.6 Price

Compare prices, of course, but understand that good hirers with contingency tents, contingency staff and contingency vehicles have additional costs compared with the

companies that have “just enough”. You can expect to pay a bit more to know that there are measures in place to ensure your event is not left high and dry. So the message is to look for good overall value and not simply the lowest price.

## **2.7 The Contract**

Good hirers will insist on signing a contract with you and won't take cash payments to avoid VAT (that's illegal). The contract gives you and the hirer confidence because you both know clearly what you have agreed.

The contract doesn't need to be long or difficult – it is often just a Booking Form with a set of Terms & Conditions of Hire.

## **2.8 Payment Terms**

It's worth being suspicious of companies offering big discounts in return for large deposits paid a long way before the event. It could be a sign that they are struggling to survive, raising the possibility that they won't be around by the time your event arrives.

## **2.9 Are they a MUTA Member?**

Actually it is better to look at this question from the other direction. If the hirer you are proposing to use is not a MUTA Member... then why not?

MUTA is only interested in having the best companies as Members.

Members sign up to a Code of Practice requiring them to be legal, decent, honest and truthful. They are obliged to provide a professional standard of workmanship, to check all their own work, and to maintain public liability insurance of at least £1m.

They must follow MUTA's industry-leading Best Practice Guide and submit themselves to independent inspection to ensure that they do. Members who fail their inspection are required to make immediate improvements; failure to do so results in expulsion.

If something goes wrong, MUTA members must promptly, efficiently and courteously investigate any complaint. If that process fails, customers can complain directly to MUTA. If MUTA upholds the complaint, members must take the required action or be expelled.

By choosing a hirer who is a MUTA Member you give your event the best chance of success.



## 3 Private Events – some useful pointers

### 3.1 How much space?

Too many people crammed into a small place is both uncomfortable and unsafe. Conversely too large a space can make your event seem under populated. The following table is a simple guide to determine the optimum size of structure required.

Guide to space required, in square metres					
Number of Guests	Standing	Seated Theatre Style	Seated at Long Tables	Seated at Round Tables (10 per 5ft round)	Banquet (8 per 5ft round)
25	16	25	36	36	54
50	36	54	54	54	81
100	54	90	100	108	135
150	90	135	162	162	180
200	216	162	240	240	240
300	180	240	300	300	360
500	300	375	525	525	675
1000	525	800	1000	1000	1200
2000	1000	1500	1800	1800	2250

Add space for stage, dance floor, bar, catering, reception, cloaks, toilets and so on.

Try to keep the length of the marquee or tent to no more than 3 times the width to ensure maximum stability and to avoid a "tunnel" effect.

### 3.2 Furniture

Specify the number of guests and agree with the hirer the numbers and styles of:

- a) **Tables.** Round tables come in a variety of sizes and are often thought more sociable than long tables; in reality it is often only possible to talk to people sitting either side of you - across a round table is too far. Long tables come in a variety of sizes too and enable you to use benches rather than chairs if you wish. Some tables are attractive in their own right and can be used without table linen, whilst others are purely functional and must be covered with a cloth.
- b) **Chairs and benches.** Chairs are available in an array of styles and finishes, with different coloured seat pads. It is also possible to choose decorative chair covers which render the look of the chair itself irrelevant. More informal or rustic events may use benches at long tables, or a combination of benches at some tables and chairs at others.

- c) **Bar.** If a bar is required, the simplest and cheapest solution is to use a couple of trestle tables. All manner of proper bars are available, though, in different sizes and styles to fit in with your event.

### 3.3 Floors, Stage and Dancefloor

**Floors.** Matting laid directly onto the ground, usually with a membrane underneath to prevent dampness and worm castings, is widely used and looks attractive when laid well. More sophisticated solutions involve a solid floor with or without carpet or matting laid on top. Ask your hirer about their policy for cleaning matting... do they clean it between every event, or just every now and then?

**Stage.** Will you have a band or other entertainment that requires a stage? Have the entertainers specified the size of stage? Do they need a stage at all, or could they perform at ground level?

**Dancefloor.** Think about the number of guests and realistically how many are likely to be dancing at one time. Use your hirer's experience to decide on the size of dancefloor needed. Dancefloors take up space, of course, so over-specifying the size not only increases the cost of the dancefloor itself but may require a larger structure as well.

### 3.4 Lighting

Perhaps the most diverse aspect – there are a bewildering array of lighting options available, from simple white light to complicated moving head lights that can create extraordinary effects.

External lighting may be needed to light the way to the car park for the guests, or to highlight dramatic external features (specimen trees, statues or building frontages for example).

Your hirer should be able to advise on lighting rigs suitable for their structures, and offer different levels from simple white light to something more sophisticated.

### 3.5 Power

A safe and sufficient power source is essential for any event. There are three main options:

- a) Running a cable or two from a domestic 13A mains socket. This is suitable for events that don't require much power, and where the mains sockets are not too far from the site (long cables result in voltage drop which can mean that equipment will not function). A Residual Current Device must be included in the circuit at the mains socket.
- b) Wiring into a fuse board. This is suitable for events requiring more power where the fuse board is not too far from the site. Wiring into a fuse board is potentially lethal and must only be carried out by a properly qualified electrician.
- c) A generator. Generators come in a range of sizes to handle the smallest events right up to Glastonbury. "Super silent" generators are available which make little more noise than a diesel car engine. Generators must only be installed by a properly qualified electrician.

### 3.6 Heating

With modern heaters there is no need to be cold inside a marquee or tent. The trick is to have enough heaters, and enough ducting to have the heat coming in at a number of points around the perimeter of the structure.

Heaters should be “indirect”. That means they sit outside the tent and blow warm air in through ducting running under the edge of the canvas or through a specially made cut-out in the wall.

Check how long the heaters can run for on a full tank of fuel. If you expect to exceed that time, ensure there is spare fuel on site and someone who knows how to refuel. Bear in mind that if there is snow, or a risk of snow, the marquee or tent must be heated at all times (day and night) to prevent a build-up of snow on the roof.

### **3.7 Toilets/Cloakroom**

Consider where guests will leave their coats – is a coat rack needed inside the marquee or tent?

Where will guests go to the loo? Are there loos in a nearby building that can be used? If not, hiring in a toilet trailer will be needed. Ensure you check the requirements for the toilet trailer – some require a water supply whilst others are self-sufficient for water. All except the most basic “builders’ loo” require an electricity supply.

### **3.8 Logistics**

Agree with your hirer the erecting date(s) and date on which the structure will be complete ready for you to use. Ensure that someone responsible is available at the time the hirer arrives on site to confirm exact positioning of the structure. Also ensure that someone responsible if available at the time of completion for the formal handover of the structure from the hirer.

Stagger the arrival of the various contractors to site. For example, there is no point having the caterers arrive to lay up the tables if the marquee or tent is still being built.

Agree with your hirer the dismantling date(s). Ensure that someone responsible is available at the time the hirer arrives for dismantling, so that a formal “hand back” of the structure can happen. Your hirer will usually carry out an inventory check with you at this time to ensure nothing is missing.

### **3.9 Safety**

Check that your hirer will be following MUTA’s Best Practice Guide.

Don’t be afraid to ask to see the hirer’s Safety Policy, Risk Assessment, Method Statement, Flame Retardancy Certificate and Structural Calculations for the structure proposed. If erecting requires use of forklifts or other plant, ask to see the licences of the drivers.

Be sure that your hirer is aware of the position of underground and overhead services (e.g. drains, gas pipes, electrical cables, irrigation systems).

Ensure that furniture is laid out allowing access to fire escape routes and fire exits. Ask your hirer for advice on the regulations.

Consider fire precautions, we recommend as a minimum a water and CO<sub>2</sub> fire extinguisher by each fire exit.

Keep all flaps and doors closed in windy conditions.

### **3.10 Other things to remember**

Invitations.

Photography.

Public Address system for speeches.

Flowers.

Transport for guests.

Parking for guests.

Entertainment.

Security.

Insurance.

Informing the neighbours.

## 4 Public Events – choosing a contractor

### 4.1 Introduction

With organisers of public events having a duty of care to both the people involved in erecting the structures for an event, and the public who attend it, it's crucial to choose a competent contractor.

Asking your contractor the questions below should help you to understand if they are really up to the job.

### 4.2 Size of company

Is the contractor easily able to cope with the needs for your event, in addition to other events they will be handling at the same time? How much tentage do they have available, how many staff?

### 4.3 Financial Standing

How long has the contractor been trading, and do they have the financial standing to cope with your event? Is their financial history stable?

### 4.4 Experience

How many similar size events has the contractor handled, and over how many years? Can you speak to previous customers to obtain references?

### 4.5 Backroom support

Is the contractor able to supply health & safety advice? Do they have account managers, logistics managers, capability to prepare drawings and the like?

### 4.6 Documentation

Is the contractor able to provide readily:

- a) Safety policy
- b) Risk assessments
- c) Method statements
- d) Training records
- e) Proof of public liability insurance
- f) Structural calculations
- g) Fire certificates
- h) A current MUTA membership certificate
- i) Itemised quotations with contract terms.

### 4.7 Range of equipment

Most public events require a wide range of equipment from very small to very large structures. Does the contractor have the appropriate range of equipment?

### 4.8 Type of equipment

If equipment fit for purpose and does it have appropriate fire and structural documentation?

## **4.9 Resources available**

Does the contractor have additional equipment, staff and transport available for last minute additions or amendments or emergency situations?

## **4.10 Latest Health and Safety**

Does the contractor have knowledge and understanding of the latest health & safety requirements and guidance? MUTA's Best Practice Guide encompasses the very latest health and safety legislation.

## **4.11 Competency**

Organisers of public events have a responsibility and duty of care to ensure that all of their contractors are competent. How will your contractor demonstrate that they are competent? This could be evidenced by membership of a nationally recognised trade body such as MUTA.

## **4.12 Staff training**

Organisers of public events again have a duty of care to ensure that all contractors used have adequate and appropriately trained staff. Examples of appropriate qualifications include MUTA's StructureSafe course or a Foreman's NVQ qualification. Is the contractor able to supply evidence of the training that its staff have received?

## **4.13 On site support**

What arrangements are in place for standby staff, should a structure need attention during the event?

## **4.14 Emergencies**

Is there an emergency out of hours contact numbers and agreed response time? Does the contractor have the wherewithal to monitor and respond quickly to extreme changing climate conditions?

## **4.15 Sustainability**

Organisers of public events are paying increasing attention to sustainability in the organisation and running of their shows and events. Sustainability is the balance between the environment, the social (employees) and the economic considerations which drive business and their connected events. Internationally recognised accreditations such as ISO 14001 and ISO 20121 are the highest level of competency but self-evidence schemes are also acceptable.

## 5 Public Events – a useful guide

### 5.1 Introduction

This guide is intended to provide useful information to organisers of public events, and covers the safe erection, use and dismantling of marquees, tents and similar structures. It is not intended as an exhaustive list of an event organiser's roles, actions and responsibilities, but as useful guide.

### 5.2 Basic Principles

The failure of any marquee, tent or structure (referred to as Temporary Demountable Structures, or TDS) no matter how small, could have a devastating effect at an event. The safe erection, use and dismantling of a TDS are important parts of event planning.

A TDS is designed to be erected rapidly and dismantled many times. Generally, these structures are only in place for a short time. TDS are widely used for a variety of functions at events.

Seek guidance from people who are competent in the TDS at an early stage in the planning process.

Identify safety-critical checkpoints in the erecting schedule, and ensure checks are made by a competent person before work progresses to the next checkpoint.

Undertake the work safely by having competent staff and a suitable onsite operational management system in place.

Make sure there is an independent design check and management system for the control of changes to a TDS, e.g. clients attaching advertising material that affects wind loadings.

Ensure there is a suitable maintenance and inspection regime for the completed TDS, which will also require monitoring for the effects of wind and weather.

Allocate adequate time and resources for each of the above stages.

### 5.3 Regulations & Enforcement

The Enforcing Authority Regulations 1998 determine whether it is the Health and Safety Executive (HSE) or the local authority who are responsible for enforcing the erection and dismantling of TDS. In most cases, local authorities will enforce on all matters to do with the use of completed TDS, unless it is in use at a local authority event, in which case HSE will be the enforcing authority.

NB: Even though there is a division of enforcement responsibility, expect all health and safety inspectors to challenge unsafe work activity, regardless of when it is happening.

The requirements of the Health and Safety at Work etc Act 1974 (HSWA) and the Management of Health and Safety at Work Regulations 1999 will apply to the erection, use and dismantling of a TDS.

Depending on the type of structure, its use and the erecting process employed, the requirements of the following sets of regulations may apply:

- a) Workplace (Health, Safety and Welfare) Regulations 1992
- b) Manual Handling Operations Regulations 1992
- c) Provision and Use of Work Equipment Regulations 1998

- d) Lifting Operations and Lifting Equipment Regulations 1998
- e) Work At Height Regulations 2005
- f) Personal Protective Equipment at Work Regulations 1992
- g) Control of Substances Hazardous to Health Regulations 2002

The erection of some temporary structures falls within the definition of construction work in regulation 2(1) of the Construction (Design and Management) Regulations 2007 (CDM).

However, HSE policy is that the CDM regulations do not provide a useful regulatory framework for temporary structures. This is because the CDM regulations were specifically drafted for the procurement and delivery of projects in the construction industry. This approach is expected to change in the near future, though, with all TDS work falling under CDM.

Currently, HSE focuses on compliance with the provisions of the HSWA and other related regulations when considering temporary structures at events.

For further guidance on non-HSWA legislation, including design standards, see the Institution of Structural Engineers publication Temporary demountable structures: Guidance on design, procurement and use (3rd Edition) (2007). This document contains useful guidance should bespoke design or major alterations to a structure be needed.

## 5.4 TDS stability

To ensure the stability of a structure during erection and use, consider its location and orientation early on in the planning of an event. An organiser and TDS contractor should carefully consider the following factors:

- a) is there enough information about the load-bearing capacity of the ground or floor? Take account of previous ground disturbance, e.g. farmland. Geotechnical engineering assistance may be required for sophisticated structures and/or unreliable ground conditions.
- b) the possible effects of ground elevation and prevailing winds
- c) is there enough information about the suitability of ground conditions at any structural anchorage point? Pull tests may be required.
- d) is it an adequately drained site? Avoid locations that become unstable due to flooding, as this could cause either the load-bearing capacity of the ground to be reduced or washed away beneath the structural supports.
- e) is the site flat or can it be made flat?
- f) are there overhead power cables, or underground services?
- g) does the proximity of surrounding buildings, structures and vegetation create risks in relation to the possible spread of fire?
- h) are there any gaps or basements under the ground/floor surface?
- i) are there any restrictions on access (and use) for construction plant and equipment?
- j) are any other known hazards relevant to the location?

NB: Consult the Institution of Structural Engineers publication Temporary demountable structures: Guidance on design, procurement and use for more detail.



Where the site has limitations for TDS use, organisers should provide contractors with site information as early as possible in the planning process, to allow them to fully consider its implications. If reliable information about onsite conditions is unavailable, allow contractors access to carry out their own site assessment.

## 5.5 Advertising/scrim

Attaching advertising/scrim to a structure can affect its wind loadings and so increase the risk of a collapse or overturn. Where a structure is likely to carry advertising, this requirement should be included in the specification and structural assessment.

The event organiser or another nominated person should manage the production and placement of advertising to ensure that it is made of suitable material, dimensioned and placed appropriately.

The TDS contractor should make it clear which structures are suitable for carrying advertising and what forms of advertising are permissible. Where the TDS contractor has not approved a structure for advertising, the organiser should ensure that no advertising is attached to it.

## 5.6 Planning for erecting and dismantling the TDS safely

It is likely that the event organiser will contract a TDS contractor to safely erect and dismantle a temporary structure, and it is important that a competent one is chosen. Ensure that a prospective contractor can:

- a) demonstrate knowledge and understanding of the work and the health and safety hazards involved
- b) provide evidence on the competence of key staff for the project and trained workforce. Crew undertaking specialist roles, such as rigging, should be able to prove that they have the appropriate competencies
- c) confirm they have sufficient resources to undertake the work
- d) provide evidence of previous successful work, which shows they can adopt and develop safe systems of working
- e) in the absence of experience of previous work, demonstrate an appropriate level of technical ability.

Membership of an appropriate accreditation scheme or recognised organisation may assist in this regard.

## 5.7 Risk assessment

Ensure that whoever erects the structure (in most cases the TDS contractor) undertakes an assessment of the likely hazards and risks inherent in the techniques required for erecting and dismantling. This may require the TDS contractor to obtain specialist assistance. Key erecting and dismantling hazards may include:

- a) working at height
- b) transport
- c) manual handling
- d) slips and trips
- e) electricity and fire
- f) loading and unloading operations

- g) lifting operations
- h) use of machinery and tools
- i) local activities

NB: For further detail, see <http://www.hse.gov.uk/construction>

The outcome of the TDS contractors risk assessment should serve as guidance on how to safely erect and dismantle the structure onsite. This could be in the form of suitably clear plans and drawings and/or photos that identify the sequence of safe erecting (and plan for the safe dismantling of the structure).

A safe system of work should be established for the erecting and dismantling of the structure, e.g. choosing the safest way of working at height.

The TDS contractor should make erection/dismantling plans and drawings available to those managing the erecting of the structure onsite, and ensure those undertaking the work (supervisors and operatives) understand them adequately.

## 5.8 TDS erecting/dismantling

Before work starts, TDS contractors should inform the event organiser (or those delegated responsibility by the event organiser for the site, e.g. production manager/site manager) of any significant health and safety issues or requirements that may occur during the erecting, use of, and dismantling of the structure. An example of this would be the use of cranes or forklift trucks.

In this way, the event organiser can plan and work with the TDS contractors to develop safe systems of working and ensure all significant risks on the site are properly controlled.

Work to create good co-operation and co-ordination among those involved in erecting and dismantling a structure. It requires effective communication at all levels. Plan to minimise confusion and conflict, particularly between those contractors carrying out concurrent or consecutive activities on the same structure, or in the locality.

## 5.9 Time and resources

The TDS contractor should ensure that the structure could be built given the available time and resources. Where long working hours are involved, an event organiser (sometimes through their site manager) should take steps to minimise any associated health and safety risks.

The agreed erection and dismantling plan should be flexible enough to deal with any delays, e.g. bad weather, without adversely effecting safety.

## 5.10 Monitoring and review of erection work

TDS contractors should ensure there are systems in place to monitor implementation of the erection and dismantling plan, and intervene in the event of any deviation from the plan that puts people's safety at risk. Any system will require appropriate levels of supervision onsite. Event organisers should ensure the TDS contractor has put these systems in place.

## 5.11 Safety checks (sign off/handover of the structure)

During erection and before use, the event organiser and the TDS contractor should be satisfied that the design specification has been followed. They should complete all the necessary design and safety checks.

Upon completion, the TDS contractor should inspect the TDS, and complete appropriate sign off documentation for retention, the TDS should then be formally handed over to the event organiser as safe to use.

## 5.12 TDS operational use onsite

Once the TDS is erected, operational risks must be managed to ensure people's safety at all times, for example any risks associated with overcrowding. Consider any operational limits on the structure in the event management safety plan.

In any organiser/TDS contractor relationship, both parties will have duties under health and safety law. However, a key factor to consider will be the extent of control that each party has over the work activity and workplace during each phase of the erect, use and dismantling cycle of a structure.

Organizers and TDS contractors should agree the extent of their control at the planning stage, so that responsibility for structural safety is understood and maintained throughout the event.

The event organiser and TDS contractor should provide other contractors accessing the completed structure with details of:

- a) any incomplete areas of the structure, e.g. voids or missing guardrails
- b) any ongoing work on the structure
- c) structural limitations (such as load-bearing capacities and locations, wind loadings) in its current state
- d) any other risks associated with the structure and work environment, e.g. lighting/electrical/fire

## 5.13 Management of adverse weather conditions

Almost all TDS used outdoors are susceptible to the effects of constantly changing climatic conditions and so appropriate management systems should be in place to:

- a) monitor and measure the local weather conditions
- b) define and deliver a plan to deal with variable loading conditions that can affect the structure and exceed the safe working parameters of the structure, e.g. changing ground conditions due to prolonged rain can significantly affect the resistance offered by ground anchorages (the ground conditions and anchorages may need reassessment by specialists)
- c) take action if required.

One of the greatest hazards to marquees and tents is the wind. Most of these structures are designed to be safe for use up to a certain wind speed. The event organiser and contractor should be clear as to the value of this wind speed and the wind-management plan required, ensuring the TDS stability at all times.

Venues using large TDS should be fitted with an appropriate anemometer to allow monitoring and recording of local wind speeds. Typical wind management plans will define action levels, based on local wind-speed readings. These readings will dictate the need for modifications, such as removing sheets or blowout panels to maintain stability and minimize the risk of component failure, or when the structure and surrounding area should be evacuated.

The design parameters for structures on the event site may vary from type to type. The action levels should be noted and key staff made aware of the procedures.

Other climatic conditions to take into account when using a TDS include:

- a) rain and its effects on the ground and any anchorage
- b) load from pooling rainwater on a structure's roof
- c) snow and the impact of snow load
- d) the effects of a lightning strike

## **5.14 Modifications during use**

Occasionally structures may need to be adapted to suit specific site conditions/layout. It is quite simple to make additions to modular systems as long as representatives of the TDS contractor/supplier carry them out. If applicable, the TDS designer should approve the changes and sign them off. To help with effective communication, it is a good idea to document these changes.

## **5.15 Maintenance and inspection during use**

Agree a suitable system of maintenance and inspection with the TDS contractor. Depending on the type of event and the time of year, the contractor may provide a standby service for structural matters onsite or just an emergency call out service.

If a contractor provides an organiser with a checklist to follow, it must be comprehensive. For example, it is unsatisfactory for a contractor to simply state "check the cable tension" without stating exactly what to look for and what to do about it if it is incorrect.

For long-term projects, agree a regular maintenance and inspection program by a competent person. Carry out additional inspections if there is a forecast of heavy rain, high winds or snow, or if any unforeseen incident affects the structure.

A thorough check of the structure should take place following removal of any secondary fixtures (banners, lights, tables, chairs and internal fit-out). This is to check that no components have been inadvertently damaged or removed that could affect the safe dismantling of the structure.

## **5.16 TDS documentation summary**

Depending on the type of structure, the event organiser should ensure the following key information and documents are available and passed on to all relevant parties:

- a) design concept and specification
- b) drawings (erection and dismantling plans)
- c) calculations (summary)
- d) risk assessments and safe work method statements (erection and dismantling plans)
- e) site layout plans
- f) wind-management plans
- g) fire-resistance certificates
- h) contractor competency (association/accreditation certificates)
- i) crew training/competency certificates

- j) structural completion certificates (sign-off/handover certificates)
- k) emergency contingency plans for structures
- l) lifting equipment and lifting-accessory certificates of thorough examination and test

## **5.17 Checklists**

TDS checklists can help. For example, MUTA has a recommended minimum checklist for assembled marquees, in its best practice guide, MUTA's Safe Use and Operation of Temporary Demountable Fabric Structures, Revised March 2014.

Temporary demountable structures: Guidance on design, procurement and use (3rd Edition) (2007) Institution of Structural Engineers, also includes checklists for planning, erecting and use of temporary demountable structures.