

Appendix A

8 Market Overview and Literature Review

8.1 Market Overview

A large range of temporary structures are already available within an extensive industry which can be categorised into eight distinct groups, as follows:

- **Category One**
Commercial high end structures, used at expos and sporting events:
De Boer www.deboer.com
Losberger www.losberger.co.uk
- **Category Two**
Conventional large frame Clearspan marquees:
Mar-Key Group www.mar-key.com
Northern Marquees www.northernmarquees.co.uk
- **Category Three**
Big Tops and related pole tents:
Roustabout www.roustabout.ltd.uk
Big Top Mania www.bigtopmania.co.uk
Kayam Tents www.kayam.co.uk
- **Category Four**
Saddlespan tents:
Silver Stage www.silver-stage.com
Little Planets www.saddlespan.co.uk
Amazing Tents www.amazingtent.co.uk
- **Category Five**
Dome tents:
Dome Company www.thedomecompany.co.uk
GaiaNova www.gaianova.co.uk
GeoDome Hire www.geodomehire.co.uk
- **Category Six**
One-off, specially commissioned, purpose built structures:
The Lift www.liftfestival.com/the-lift.aspx
The Pleinmuseum www.pleinmuseum.nl/epm.html
International Festival www.international-festival.org
IOU Theatre dome www.ioutheatre.org
Tonneau Manège [www.salamtoto.com/salam-toto-cirque-equestre-le-tonneau-manege- 6 0 0](http://www.salamtoto.com/salam-toto-cirque-equestre-le-tonneau-manege-600)
- **Category Seven**
Specialist structures, generally available:
Het Spiegelpaleis www.spiegeltent.co.uk
Yurtopia www.yurtopia.co.uk
Stunning Tents www.stunningtents.co.uk

- **Category Eight**

Conventional small frame and pole marquees used extensively within the wedding and party industry, numerous suppliers throughout the country:

Marquees Direct	www.MarqueesDirect.co.uk
Crest Marquees	www.crestmarquees.co.uk
Elegant Marquees	www.elegantmarquees.co.uk

It should be noted that the companies listed here are examples only and may not necessarily be the market leaders.

8.2 Literature Review

As far as FEI has been able to establish, the provision and use of temporary structures specifically for festivals and outdoor events has not been the subject of a published review or report. These structures are a sub-sector of a wider sector that has been covered in a small range of publications aimed at designers and contractors including:

- Handbook of Temporary Structures in Construction: Engineering Standards, Designs, Practices, and Procedures by Robert Ratay (2nd edition) 1996

The one and only handbook of its kind, this edition of this definitive reference provides civil and structural engineers, architects, and contractors with all the technical and business information required to successfully design and construct temporary support structures. The Handbook incorporates the latest construction materials and methods, industry codes and standards, business practices, legal concerns, and costs associated with building and maintaining temporary systems. Readers will find detailed guidelines for the safe, cost-efficient design and construction of 17 different temporary structure systems, as well as the use of temporary structure systems, as well as all-new chapters on such timely topics as the use of temporary structures in repair and rehabilitation work and OSHA's influence on construction site safety.

- Mobile and Rapidly Assembled Structures III - Advances in Architecture Vol. 11 by C.A. Brebbia and F. Escrig 2000

Structures which move in the course of normal use, or which have to be assembled at high speed on a relatively unprepared site, offer a particular challenge to the designer. Featuring the proceedings of the Third International Conference on Mobile and Rapidly Assembled Structures, this text brings together contributions by engineers, architects and researchers concerned with the design, analysis, manufacture and erection of such structures.

- Temporary Buildings: The Trade Fair Stand as a Conceptual Challenge by Karin Schulte, 2000
- Temporary Demountable Structures by Institution of Structural Engineers (2003)
- Designing Galleries: The Complete Guide to Developing and Designing Spaces and Services for Temporary Exhibitions by Mike Sixsmith
- Wind Loads on Temporary Stage Decks (Pamphlet) by Paul Blackmore and P. Freathy, 2004.

Appendix A

9 Best Practice Examples

Using the eight categories identified, examples of best practice can be looked at in more detail. Best practice here is taken to mean temporary structures that are excellent festival venues and provide a good environment for a range of different types of performances, exhibitions or events. These examples describe the structures and where appropriate consider issues of capacity, construction time and cost.

This section is followed by an Options Appraisal in Section 8, considering three specific examples in more detail.

9.1 Category One: corporate high-end structures



De Boer's Millennium Structure

De Boer has the world's largest rental stock of freespan "super structures" and are one of the leading suppliers of temporary facilities for exhibition, trade show, conference and sporting venues. The company offers modular temporary structures and semi-permanent accommodation. From tents and marquees to robust longer-term modular units the company provides temporary accommodation for major sporting events including hospitality accommodation, semi-permanent venues, media facilities and VIP lounges. In addition they provide structures for corporate entertainment, trade fairs, expos and large conferences.

No further examination of this category is included as its products are generally beyond the financial reach of UK cultural events.

9.2 Category Two: conventional large frame clearspan marquees



De Boer's Alu Hall with window panels and additional foyer tents



Mar-Key Structures' hospitality area at Royal Ascot with 4m-high walls no covering



Mar Key Structures' seated performance venue with draped black-out lining



Northern Marquees. 75m long x 25m wide with 4m eaves and 8m apex

Large frame marquees are a ubiquitous sight across a wide range of events. They are a modular design which ensures almost any footprint can be created within the limited parameters of the design. The length of the structure is made up of 5m wide bays whilst the gable ends come in a smaller range – normally 15m, 20m, 25m and 30m although other sizes can be created at a price. One could for example create a 100m x 100m covered space using Clearspan marquees by putting together 4 x 25m wide sections and leaving out the internal walls.

The Northern Marquees photo above shows one such module with wall linings removed on the left hand side of the picture. This also illustrates the very basic module with no accoutrements. Additional costs would be incurred by also hiring:

- Cassette flooring specified to 10 KN²M
- Carpets
- Full or partial Blackout linings
- Push bar exit doors
- Maintained exit lights
- Fluorescent work lights
- Ramping for wheelchairs
- ABS “Hard Wall” for greater sound and heating insulation
- Branded roof, or gable end panels

Typically, these types of structure are designed to a standard recognisable template and cannot be considered innovative. They are however practical, widely used and are often the cheapest way to create an empty venue which can then be turned into a performance space, a party venue or an exhibition space etc.

Based on a 35m long x 20m wide structure with 4m eave height and 8m roof apex, fully floored a large frame marquee would have the following attributes:

Build time: **2 day minimum**

Break down: **2 day**

Capacity: **1,000 standing, 600 seated dependent on stage infrastructure**

Costs: **£10,000 for a week, £12,000⁺ across two weekends**

9.3 Category Three: Big Tops and related pole tents



Roustabout's Big Top: 60' x 120' Three king-poles with 10' high side walls

Big Tops are always colourful and although some years ago they were often associated with a rough and ready approach they are now frequently seen at up market corporate events as well as the more usual music festival and circus events.

Big Tops are now always supplied with wind loading test certificates, materials fire test certificates and winch test certificates.

Like Category Two marquees, big tops cannot be considered innovative but are equally practical and widely used. They are sometimes used with the walls removed or partially removed to create a more open yet covered space in which there is free movement in and out. A free music stage for example could be programmed under a Big Top roof at an otherwise 'open air' event although the increasing use of Saddlespan structures (Category Four) has somewhat superseded this practice.



Roustabout's Big Top with side walls removed

Kayam Tents are a related form of Big Top using the same system of large king poles and relatively low walls. Like Big Tops they have deep stakes to stabilise the king poles and a large number of smaller stakes supporting the sidewalls.



Kayam 2 Pole

“The Kayam was designed as a mobile theatre venue which could accommodate all the requirements of modern stage performance while retaining the versatility of a circus big-top. We wanted a blackout structure so that stage lighting would still be available in daylight, we wanted to rig unimpeded 6m and higher over the stage, we wanted to be able to drive lorries into the tent to unload and we didn't want auditorium and backstage areas restricted by tent poles. The Kayam has lived up to all these requirements and more - more because its high profile 3D symmetry makes it a more eye-catching and exciting structure than any big-top.”



Kayam 6 pole



Kayam 6 pole interior with blackout lining and concert stage

Both the Big Tops and Kayam structures are relatively straightforward and cannot be considered innovative. They are however more interesting than the large frame marquee and if used in the right setting can be striking.

Based on a 60' x 120' structure a Big Top would have the following attributes:

Build time:	up to 2 days
Break down:	1 day
Capacity:	1200 standing, 500 seated
Costs:	£4,500 for a week, £6,750 across two weekends

Based on a 2-pole structure a Kayam would have the following attributes:

Build time:	up to 3 days
Break down:	1 - 2 days
Capacity:	1,400 standing, 1,200 seated
Costs:	£10,500 for a week, £13,750 across two weekends

9.4 Category Four: Saddlespan structures

Appearing at major festivals around the world, SaddleSpan™ concert tents, event tents and stage covers offer great acoustics, excellent sight-lines and an unforgettable profile.

SaddleSpan™ stage covers are designed and engineered for modular use and can be easily rearranged, replaced, combined, or interchanged to provide cover and band shells for events large and small.

“Tentnology's SaddleSpan™ stage covers, concert and event tents are tensile membrane structures, offering the look and distinction of architecturally designed space with the performance, flexibility and affordability of a portable tent”.

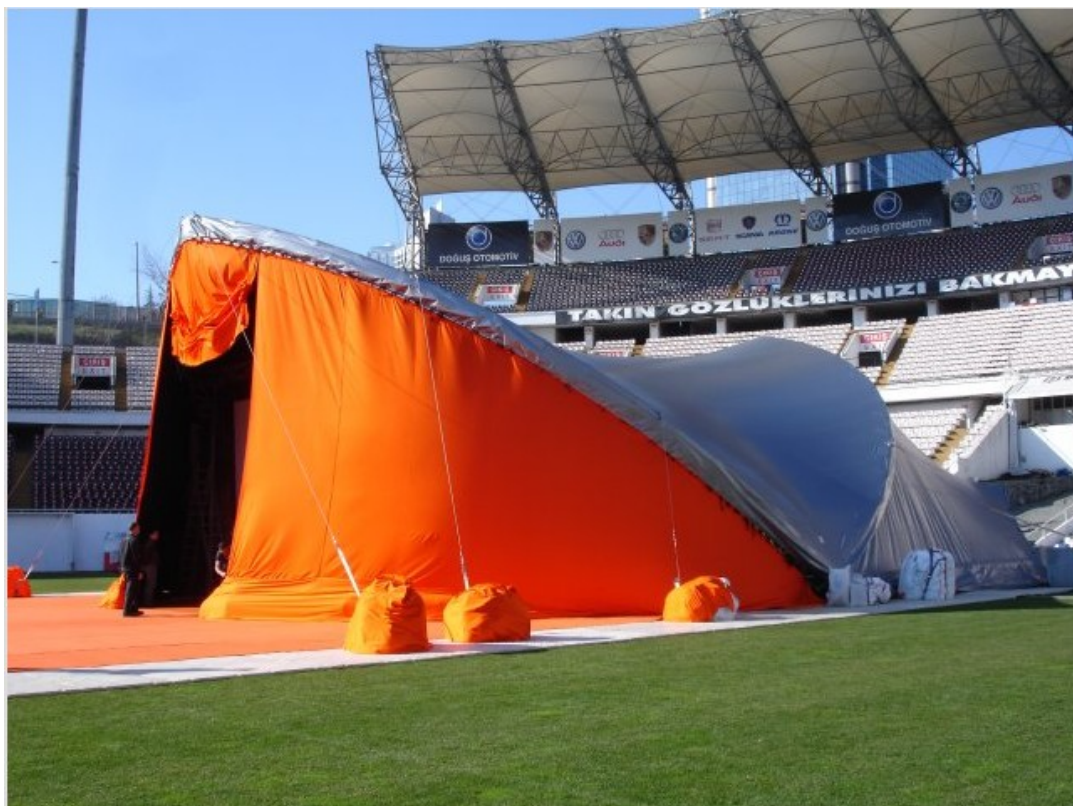
Tentnology's SaddleSpan™ design is available to hire in numerous configurations from a large range of UK suppliers. They are distinctive both as tents and as stage covers where the natural curve of the roofline affords excellent rain protection for performers whilst also maintaining good sight lines for a large audience.



Silver Stage's Saddlespan stage cover: fashion show, Leeds



Tentnology's Saddlespan tent



Silver Stage's Saddlespan tent: TNT conference, Turkey

Saddlespan's are also available as DuoSpan and Trispan options creating large inter-linked areas



Amazing Tents' Saddlespan & DuoSpan side by side



Silver Stage's Trispan



Silver Stage's Trispan interior

Saddlespans, in their various configurations, are an innovative design with many uses as stage coverings and complete enclosures. They can provide a striking temporary venue.

Based on an 18m wide x 25m long, 7.3m high Saddlespan would have the following attributes:

Build time: **2 days**

Break down: **1 day**

Capacity: **800 standing, 500 seated**

Costs: **£4,500 for a week, £7,000 across two weekends**

9.5 Category Five: Dome tents



The Dome Company's 17m dome



The Dome Company's 17m dome in use by Arcola Theatre

The Dome Company is one of a small number of companies that design and hire more original structures than those in Categories 1, 2 and 3. The design principles are often borrowed from natural forms like geodesic domes and benders.

"Our geodesic domes for hire are perfect structures for entertainment venues, corporate presentations and private parties. Our geodesic domes for hire are perfect structures for entertainment venues, corporate presentations and private parties. They are designed with the philosophy that the quality of a venue is an important part of the event contained within it. The domes can be erected on any reasonably flat surface"

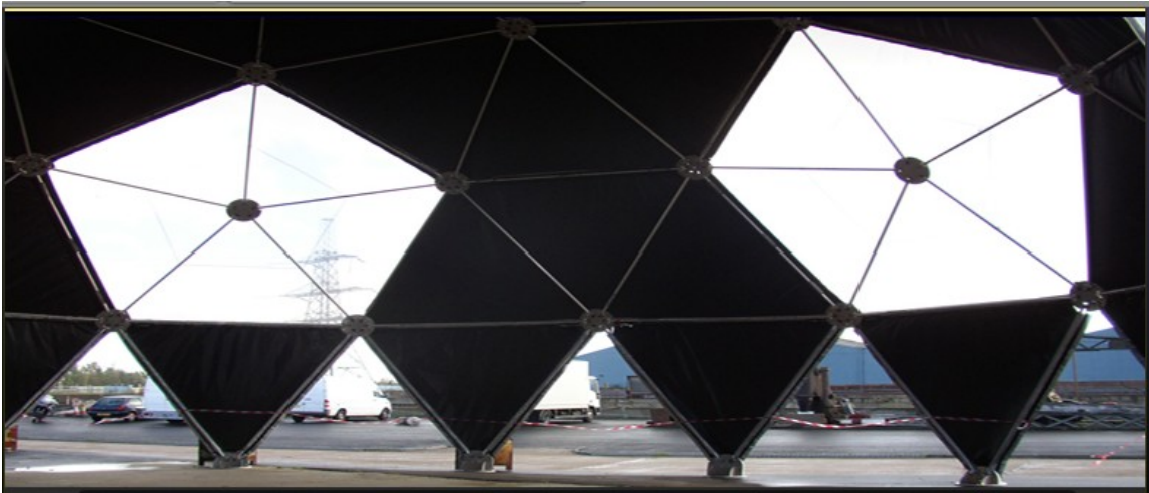


The Dome Company 17.5m interior in use by Arcola Theatre

GaiaDome3 series are made from aluminium and are available in a number of sizes, ranging from 10 metres to 25 metres in diameter. They provide flexible spaces with removable panels or see through panels and plenty of internal height (up to 10m). They are freestanding and require no staking, the frame is constructed from standard gauge alloy scaffolding thereby providing rigging positions throughout the space.



GaiaDome3



GaiaDome3 inside

Dome tent structures provide a more individual and innovative solution than Categories 2 and 3, while maintaining the principles of practicability and ease of use. It may be worth noting that Kneehigh Theatre will have its new temporary structure designed and built by the Dome Company.

Based on either a 17.5m or 20m dome, a structure from The Dome Company would have the following attributes:

Build time: **half a day**
Break down: **half a day**
Capacity: **between 200 and 400**
Costs: **£3,500 for 1 week, £6,000 across 2 weekends**

Based on either a 20m dome, a Gaia Dome structure would have the following attributes:

Build time: **2 days**
Break down: **1 day**
Capacity: **800 standing, 400 seated,**
Costs: **approx £12,000 for 1 week, £18,000 across 2 weekends**

9.6 Category Six: One-off, specially commissioned, purpose built structures

This category may be considered the luxury end of the market. Each of its structures is likely to have been developed out of a particular artistic vision, with less consideration being given to its potential use by other users than with any of the other categories.

They are therefore likely to score most highly on innovation, and maybe less well on viability and ease of use, than structures in the other categories.

A good example is the Pleinmuseum, a mobile exhibition pavilion which forms a closed white cube in the daytime and at sunset folds out into the exhibition space below. It has been used:

- In Oct 2007 at the Place de la Bastille in Paris for la Nuit Blanche.
- In June 2007 for the 52nd Venice Biennale as part of the collateral programme Pan European Encounters, 'Curatorial Awareness in times of globalisation' Pleinmuseum was presented as 'The Migrating Museum'.
- In April 2008 for the Milan Design Week



Expect Poison from Standing Water IV, Peter Missotten
Neude, Utrecht

Build time:	3 days
Break down:	Minimum 1 day
Capacity:	50+ dependent on nature of exhibition,
Costs:	Not known but likely to be high-end

Another example is International Festival's The Theatre, an arts-led temporary structure that is conceived as art, social intervention and building.



It is a free standing building structure without foundation.

Total structure: 26 m x 17.20 m x 6.80 m

Stage: 12 x 12 m + wings (with fixed grid).

Foyer for 150 persons

Equipped with (optional): bar, kitchen, toilets, technical storage, office-spaces

Possibilities for rehearsal space, lecture space depending on requirements

Build time: **5 days**

Break down: **3 days**

Capacity: **150**

Cost: **Not known but likely to be high end**

9.7 Category Seven: Specialist structures, generally available

Two main types of structure are included here, each of which comes from a particular cultural tradition and has been used within varied arts festival contexts.

The first is the glamorous Spiegeltent, veritable halls of mirrors that are now very well established on the UK cultural festival circuit. There are at least four competing suppliers working in the UK at the moment.

Spiegeltents provide a glamorous space well suited to cabaret and small music events. The venue is central to the look of the performances and rarely works well conventional theatre. In the daytime, unlike many tents, the venue is bright and airy due to the large number of windows and they often operate as café/bars on Festival sites.



Het Spiegelpaleis: Victoria entrance

Spiegeltents are considered in detail in the Options Appraisal in section six of this report however based on an 18m diameter, a Spiegeltent would have the following attributes:

Build time:	2 days
Break down:	1 - 2 days
Capacity:	up to 350 seated and up to 450 standing
Cost:	£10,000 for 1 week, £15,000 across 2 weekends



Stunning Tents' single yurt

The Yurt is the most widely known of a number of traditional tented structures most of which originate amongst nomadic peoples in Asia and the Americas. They are smaller scale structures, though a large yurt can still hold up to 130 people standing. The basic design of the yurt has changed little over hundreds if not thousands of years; they are handsome, sturdy and practical and create a truly uplifting space. In hot weather, the canvas sides can be dropped to allow the breeze to drift through the beautiful ash latticework structure of the walls. Yurts come in various diameters although the 30' detailed below is amongst the largest size that is widely available. They can be linked together to create a series of rooms but this does not create one large space because of the domed design and narrow doorways.

Based on a 30' diameter, a fully furnished Yurt would have the following attributes:

Build time: **less than 1 day**

Break down: **less than 1 day**

Capacity: **approx 40 in a single 30' diameter**

Cost: **£1,200⁺ across 1 weekend, £2,000⁺ across 2 weekends**

Other traditional tented structures:



La Belle Maison Indian Mughal tent



Stunning Tents' Giant Hat

9.8 Category 8: Small frame and pole marquees

The most widely seen type of temporary structure in the country; very conventional, whether in basic form or with accoutrements which can make them more distinctive and add an element of luxury.

These structures are in high demand over the summer months for parties and weddings and consequently can be quite expensive and even difficult to get hold of. Extended hires during the summer months have limited discount attached due to this high demand



Conventional 20' x 20' frame marquee



Sussex Marquees conventional pole marquee



Charlesworth Marquees' carpeted floor and gathered roof lining



Mar-Key Structures pointed roof and clear window wall



Complete Events clear wall and roof panels

The range of sizes and options is extensive. The costing below is based on a basic frame marquee 6m x 18m frame marquee with wooden floor but no other additions. Further costs will be incurred by adding:

- Solid doors
- Carpet
- Roof lining
- Wall lining
- Entrance tunnels
- Pointed roof
- Window walls
- Internal lighting

Based on 6m x 16m structure a frame marquee would have the following attributes:

Build time: **up to 1 day**

Break down: **up to 1 day**

Capacity: **approx 200**

Costs: **approx £1,500 across one weekend; £3,000 across two weekends**

By way of a summary to the different categories and as a guide only, a comparison table is shown below. Please note that many factors affect quoted prices and that on-costs can also vary widely.

Type	Seated capacity	Standing capacity	Days to build	Days to remove	Cost 1 week	Cost across 2 weekends
Large Frame Marquee	600	1000	< 2 days	2 days	£10,000	£12,000+
Big Top	500	1200	2 days	1 day	£4,500	£6,750
Kayam	1200	1400	< 2 days	2 days	£10,500	£13,750
Saddlespan	500	800	2 days	1 day	£4,500	£7,000
Dome	200	350	> 1 day	> 1 day	£3,500+	£6,000
Spiegeltent	350	450	2 days	1 – 2 days	£10,000	£15,000
Yurt	30	40	> 1 day	> 1 day	£1,200+	£2,000+
Small frame marquee	80 – 100	200	> 1 day	> 1 day	£1,500+	£3,000