

GUIDELINES FOR SAFE USAGE OF TEMPORARY STRUCTURES WITHIN SYDNEY OLYMPIC PARK.

As of July 2008

Introduction to Structural provisions for Temporary Structures.

Temporary structures are by nature extremely light and do not possess large masses or dead loads within their framing systems or cladding. It is for this reason that temporary structures must be assisted as to their stability against lateral sliding and overturning during design service and must be tied-down with sufficient dead loads/weights/anchorage to protect the general public and guests attending any scheduled event. These tie-downs are required due to the effects of wind loads/forces being exerted upon such lightly framed temporary structures.

The Authority (*Sydney Olympic Park Authority*) seeks compliance for all events to comply with the New South Wales State legislative requirements as set out in the “*State Environmental Planning Policy for Temporary Structures and Places of Public Entertainment – 2007*”. To achieve compliance, the following structural provisions outline the needs and design criteria currently required for temporary structures servicing both community and private events within Sydney Olympic Park.

The Authority requires all temporary structures to have anchorage/tie-downs including the tension cables (tent ropes etc.), to a minimum wind design velocity/speed:

1. of ultimate limit state for a 3 second wind gust at 10m maximum height, 37m/s generally within the park, *(such as up to 110km/hr actual on site wind speed)*, or*
 2. of ultimate limit state for a 3 second wind gust at 10m maximum height, 43m/s for all structures erected within Bicentennial Park, *(such as up to 125km/hr actual on site wind speed)*.*
- *Note: Based on region “A3” in accordance with AS 1170.2, “Wind actions” as required by “SEPP for Temporary Structures and Places of Public Entertainment – 2007” and is due to historic wind speeds/velocities of this nature experienced within the park.*

Wind Speed Conversion Table.

Ultimate Limit state Wind Velocity.	Actual outside wind speed.
Ultimate 37m/s wind velocity.	110 km/hr actual wind speed.
Ultimate 43m/s wind velocity.	125 km/hr actual wind speed.

Structural Requirements

The use of an area associated with the erection of any temporary structure, requires specific approval. A formal SREP-24, Application is currently required to be submitted to SOPA's Planning Unit for all such structures to be erected within the park.

During the construction/erection of temporary structures (such as event preparation, bump-in periods), the construction zone, including all travel paths to and from delivery trucks etc, should be fenced off and made safe to the public where required. Any marquee, roofed walkway, tent or temporary structure erected should be suitable for the purpose intended and in good condition.

Structural Engineers' certificates are required indicating that the construction/erection of temporary structures are suitable and stable against lateral sliding and overturning to minimum design gust wind speed of ultimate limit state 37m/s generally within the park and 43m/s in Bicentennial Park. The certificates are to be submitted to the Authority prior to end of bump-in period. Requirements for bending should be designed for by the manufacturer and built into the temporary structures (structural members, connections and bracing) in accordance with the requirements of AS 1170.2-2002, Wind Loads. All certifying Structural Engineers are to hold current professional indemnity and public liability insurance.

* The certificates are to be dated referencing the particular site and nominated structures and are to remain in force until end of bump-out period. This certificate will also state that the anchorage/tie-downs have been designed in accordance with the wind velocities/speeds contained within the SOPA structural guidelines for use of temporary structures, AS 1170.2-2002, Wind actions and the requirements of the State Environmental Planning Policy for Temporary Structures and Places of Public Entertainment - 2007.

Note: The Authority will only require structural certification for load bearing roofed structures exceeding a 3 metre x 3 metre or (9 m²) floor area. Structures of floor area of 3m x 3m or (9m²) or under are to be installed and to have anchorage as per manufacture's specifications. Alternatively they are to have anchorage to the ground with a dead weight equal to an uplift pressure on the roof plan surface area of ultimate, 0.75kPa.

The full installation and anchorage/tie-downs of these small structures are to be certified by an accredited manufacture's installer. This certificate is to be submitted to SOPA prior to the end of the bump-in period.

All temporary structures that may be affected by wind actions or dead and live loads are to be anchored down with adequate dead load weights/tie-downs. They shall be designed and erected in accordance with the current Building Code of Australia, Section B, "*Structural Provisions*", AS 1170.1-2002, "*Structural design actions*" and AS 1170.2-2002, "*Wind actions*".

It is highly recommended that if the on site wind conditions/speeds reach a velocity/speed of *90km/hr actual outside wind speed or more*, all temporary structures are to have all linings (canvas walls and roofs etc.) sealed/closed up and the structure to be abandoned and screened off with an adequate *protection exclusion zone* to prevent any public access near the structure.

Design Criteria

- All structures at or under 3m x 3m or (9m²) must be a minimum distance of 6m apart from each other, otherwise the structures will be deemed as one structure totalling more than 3m x 3m or (9m²) and this will then require Structural Engineer's certification as required on all the larger structures.
- All certified temporary structures, roofed walkways, tri-truss frames etc. must comply with the Building Code of Australia and all other statutory regulations current at time of construction. This includes areas pertaining to egress, height and fire safety requirements. All stands and structures must be designed and constructed in accordance with all relevant Australian Standards.
- All supporting framework and poles etc, for tented structures, roofed walkways should be regularly tested by the supplier and maintained in a safe working condition. Where tented structures have pegs and where there is a risk of attendees tripping over them, the pegs and tie-downs must be adequately shielded.
- Any ground or floor that is intended to be used to support the temporary structure must be sound and stable (*with no possibility of an earth shear failure*) and is to be able to support the proposed structure, including dead and live loads associated with use of the temporary structure as per AS1170.1-2002 "Structural design actions" .
- All open form temporary fences (not permanently fixed), runs of fencing and similar barriers are to be installed in accordance with the manufacturers' designs and details. Any temporary fencing proposed to be provided with a material, commercial signage or lining is to be certified by a Structural Engineer immediately upon the completion of such installation. This certificate will reference that the installed fence which is applied with a lining or similar is able to resist lateral sliding or over turning to a minimum wind velocity as set out in these guidelines.

Inflatable Devices

- All Inflatable Amusement Devices shall be designed and constructed in accordance with AS 3533.1-1997, Amusement Rides Devices, in particular Section 5.9. Any repairs to a device shall maintain the fire resistance and other safety provisions required by part two of the standard.

For further Safety Information on Inflatable Amusement Devices visit "WorkCover", New South Wales at -

<http://www.workcover.nsw.gov.au/Publications/OHS/SafetyGuides/inflatdevices.htm>