Back & White Tent Specifications

"Magpie"

Prepared for: Let's Circus, United Kingdom

Prepared by: Peter Brockman, Designer and Manufacturer, Safari Tents Australia

Completed, 1 June, 2015

Tent name: The Magpie

Tent number: 372/6

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SUMMARY

Tent Specifications:

Black and white tent dimensions 10.5m x 14.7m

Can be configured as 10.5m diameter single pole or a 4.2 m centre panel added by standard lacing system.

Centre height at 7.7m when erected on 2.4m side poles.

2 centre King poles are telescopic wind up to a max of 8.2m , and can accommodate alternative side pole height or uneven ground.

Fabric used :

Landmark Polyfabric Black/White - http://www.synthesisfabrics.com/files/documents/Landmark+-+Rev.5++05-05.pdf

Properties:

Fabric mass	340gsm
Tensile strength	– warp 2643 N/50mm
Tensile Strength	– Weft 2816 N/50mm
Burst strength	5350kPa

All reinforcing is with polyester seatbelt webbing (105) rated at 2200kgs

Meets Fire Rating compliance of DIN4102.B1 - Difficult to light/self extinguishing

Wind loadings:

Design specifications wind loading is 25m/sec (55.9mph) with a max of 30m/sec (78mph)

Recommended that public be removed when wind exceeds 22m/sec (49mph)

In strong winds it is recommended that openings be left on lee side to prevent lift

If wind speed is expected to exceed 12m/sec (26.8mph) it is recommended to double peg all anchors.

King pole vertical loading at 22m/sec (49mph) is 1560 kgs safe working load 2500kgs

All tie downs being 1500kgs ratchet straps including guy cables

Max loading any anchor will not exceed 450kgs.

Screw on flag fit to all poles which will prevent any point lifting off .

Performance truss when fitted between 2 king poles, designed to be winched up to 6m

Note: King poles are not designed for high lateral load - as in swinging trapeze, but for normal vertical performance

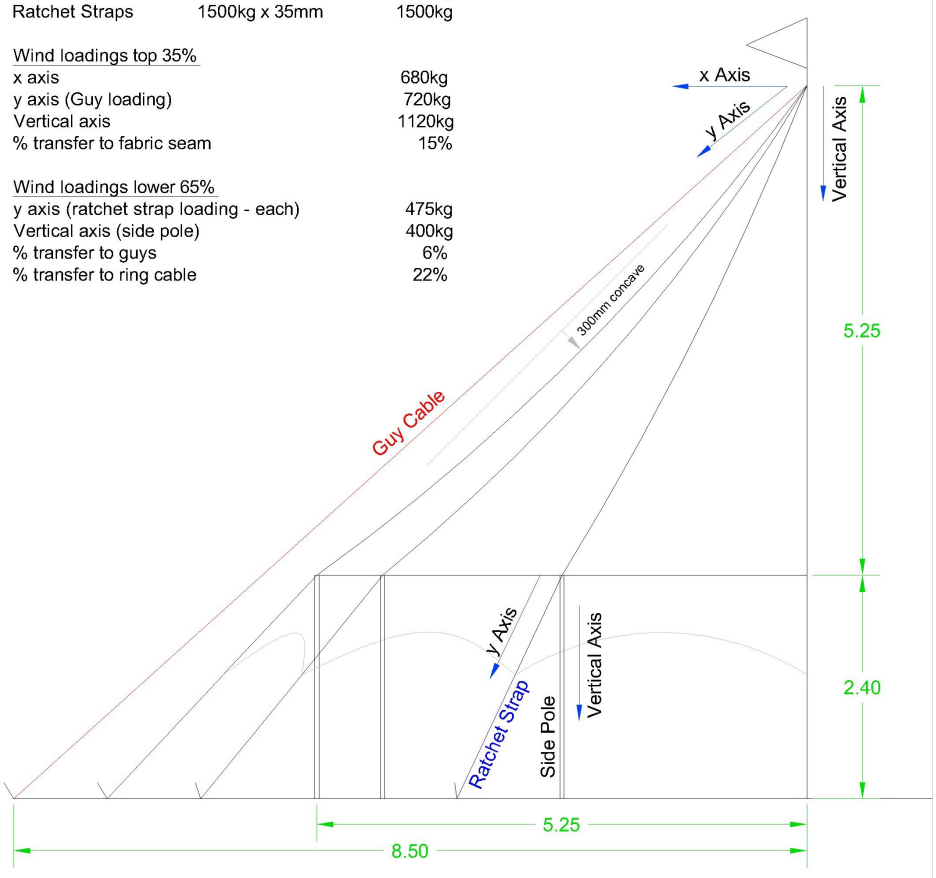
Note: Guy cables to king poles needs to be in situ and tight for any performance on truss.

Side Walls:

Side walls strap to the top of each side pole and lace joined. Each join can be opened to form an entrance.

Wind Calculations

Magpie Specifications		Ratings
Guy Cables	SS304 x 6mm 7 x 7	2903kg
Ratchet Straps	1500kg x 35mm	1500kg
Wind loadings top 35%		
x axis		680kg
y axis (Guy loading)		720kg
Vertical axis		1120kg
% transfer to fabric seam		15%
Wind loadings lower 65%		
y axis (ratchet strap loading - each)		475kg
Vertical axis (side pole)		400kg
% transfer to guys		6%
% transfer to ring cable		22%



ERECTION INSTRUCTIONS AND METHOD STATEMENT

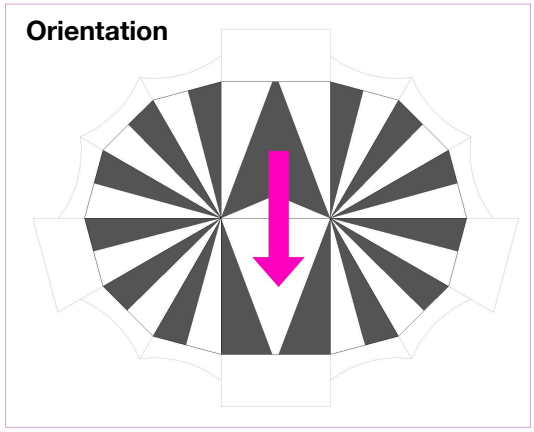
Tent pitched and struck within cordoned space, checks made for overhead clearance of 9m and ground penetration of 100cm.

Competent team only inside cordoned space, wearing closed shoes and protective helmets at appropriate times (King Pole and Truss placement and erection). Minimum of three people required for pitching and striking.

Erection Instruction:

1. Select orientation of tent (pink arrow is front)

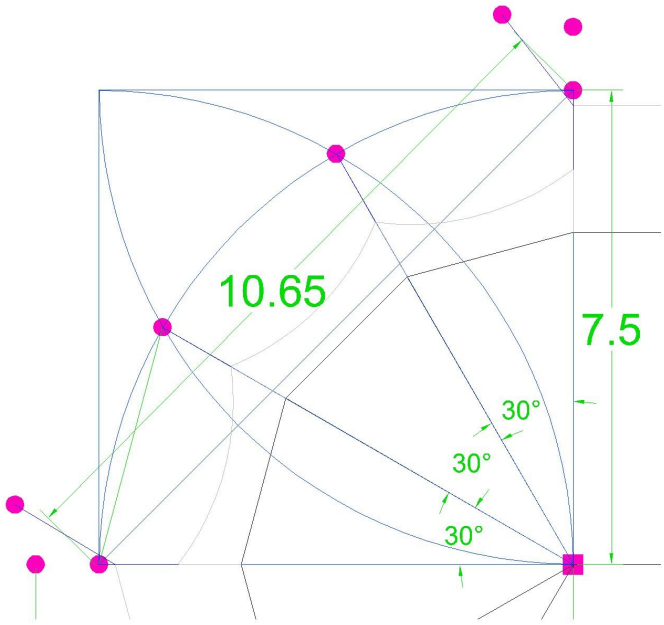
Orientation



2. In a straight line mark: guy cable peg 1 position at 0m, peg 2 position at 1m, first king pole position at 8.5m, second king pole position at 12.7m, peg 3 position at 20.2m and guy cable peg 4 position at 21.2m.

3. Select a quadrant to work with. In order to establish the correct position for peg 5 is necessary to work with the triangle of 7.5m side, 7.5m side and 10.65m hypotenuse. See 'Marking out' diagram for reference.

Marking out method



4. Once peg 5 position is fixed, proceed to mark pegs 6 and peg 7. To establish a 30 deg angle mark the arc with radius 7.5m and king pole 1 centre. Then mark the arc with 7.5 radius with peg 2 centre. The intersection between these 2 arcs shows the position for peg 6. After

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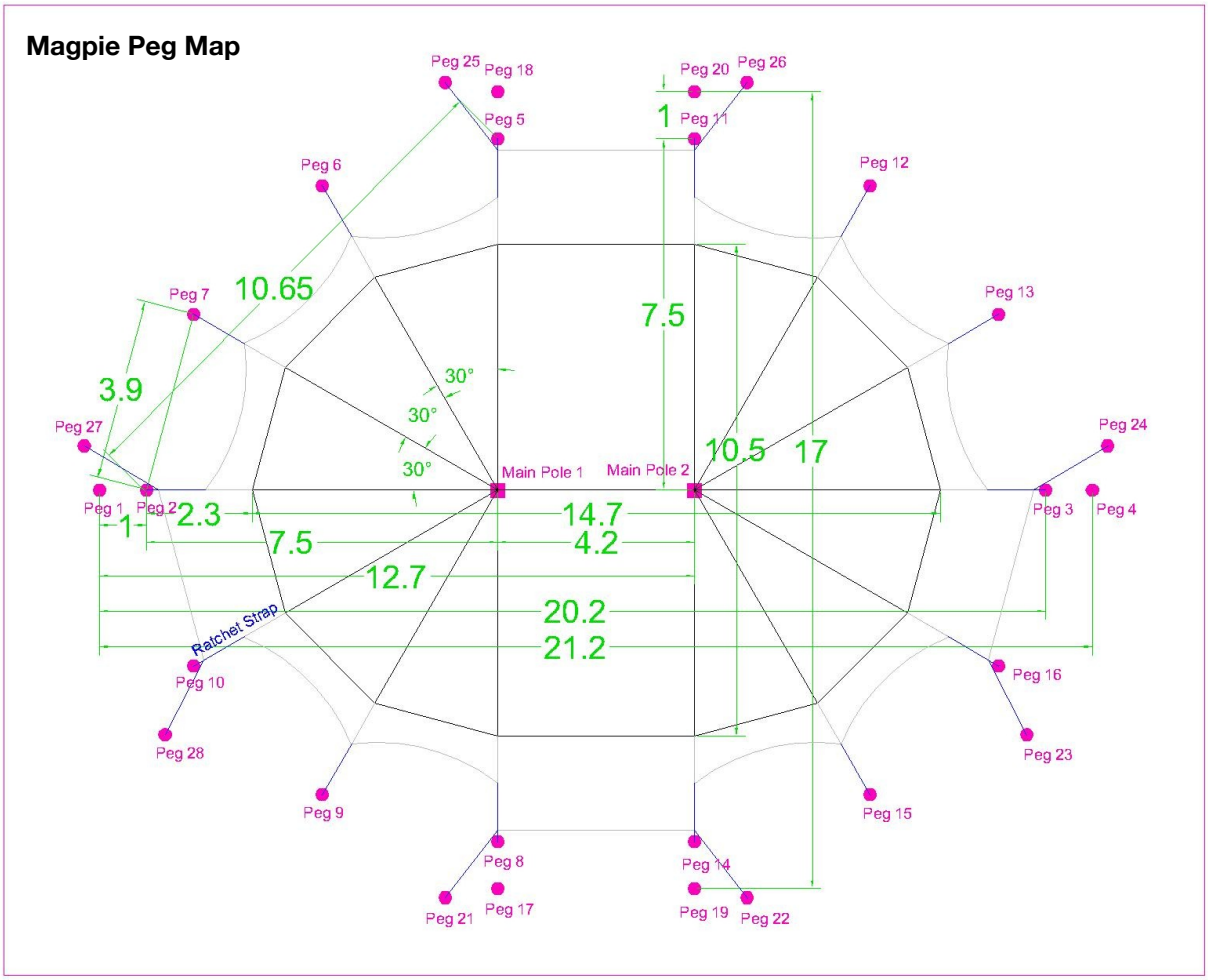
Magpie Peg Map



mark the arc with radius 7.5m and centre on peg 5. The intersection shows the position of peg 7.

5. Repeat in the other 3 quadrants.

6. Mark guy poles pegs 17 & 18 and 19 & 20 making sure their alignment to the main poles.

7. Mark pegs 21 to 28 according to your door configuration.

8. Lay out tent sections (2 ends and 1 centre panel) ensuring perimeter cable is facing down

9. Commence lacing from centre (2 to 3 laces each way) then fit king pole caps through rings on both end and panel ---add guy cable plates with guys attached to centre bolt---screw on top flags on both centre king poles. Making sure the joining cable is attached to both king pole plates to horizontal lugs of plates , and guys are attached to the bent lugs (3x each) with D shackles..

10. Continue lacing (ensuring not to miss a loop) fold Velcro weather flap over lacing as you proceed to the outer edge. Tie off the last loop with single tail provided. Join

cables by D shackle. Complete all 4 lacings ensuring to tie off with single tail provided and join cables by D shackles.

11. Drive pegs in at measured marks allowing adequate back slop -important this is at 30deg - This can be done at any point up to this stage if adequate man power is available.

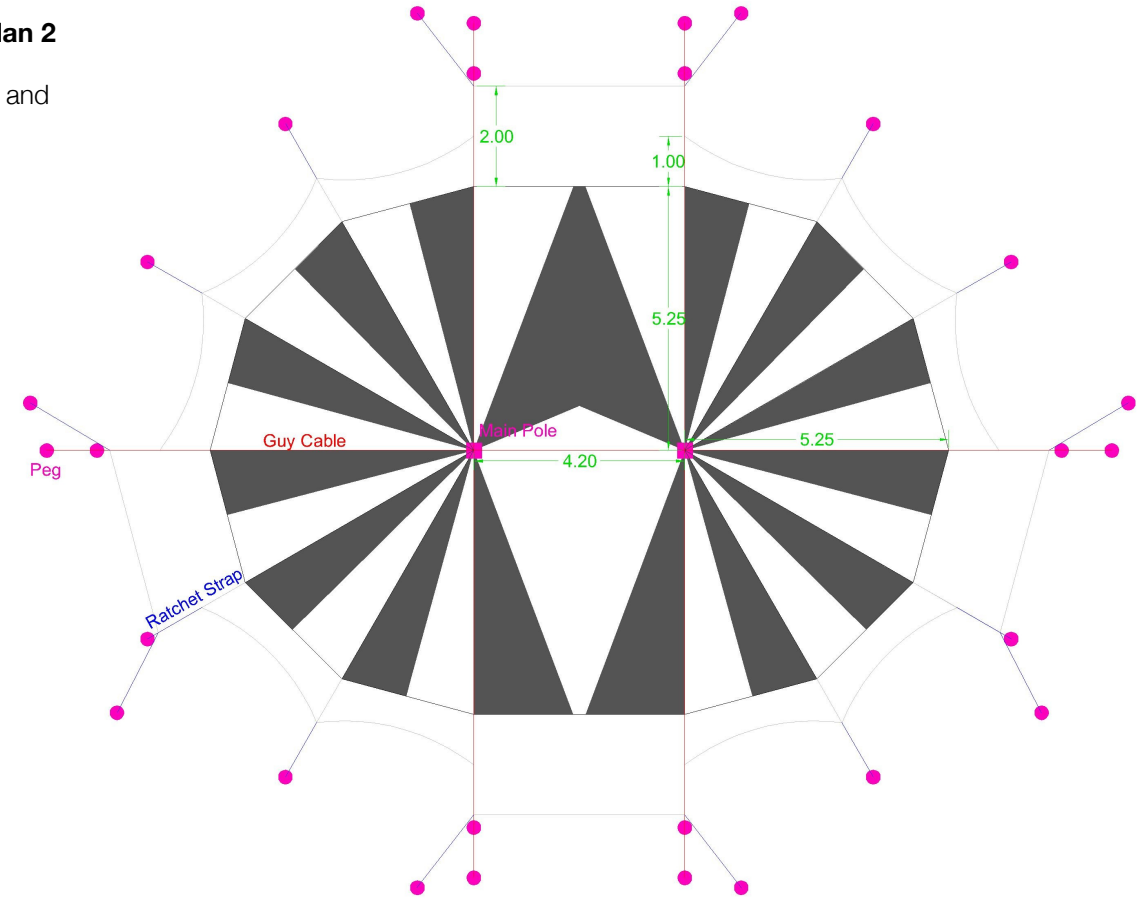
12. Set up a sling double choked on each peg, layout and attach ratchet straps to each sling and to each tent ring (with practise you will learn to pre-set each strap to desired length) – ensure no twisting-.

13. Fit ratchet straps to Guy anchors cables (these are left loose, to be tightened after centre poles are extended (see step16.)

14. Put in side poles through eyelets with cable on outside and screw in flags on top, repeat this step until all side poles are in eyelets. Where shackles connect wires put pole through centre of shackle. Then raise every side pole to a 45deg inclination. Ratchets should have similar tension.

Magpie plan 2

Skin, pegs and guys



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15. Start bringing side poles progressively into a vertical position, adjusting ratchets to equal tension, until every pole is in a straight position.

16. If truss is going to be used, slip sliders on to king poles facing inwards.

17. King poles can now be brought into centre of tent and caps (previously fitted with flags step 9.) slipped in and bolted to top of king pole. Release truss wire. Check king poles correct position (top pulley to the centre).

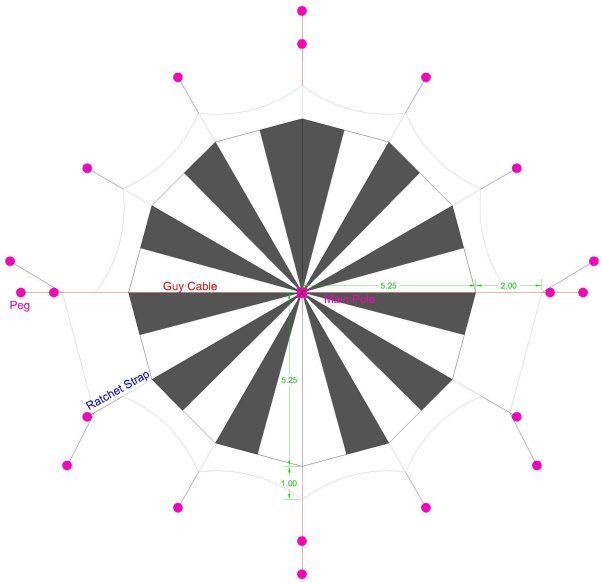
18. Push up king pole (in the closed position) to 30 deg. Push 2nd king pole to 60 deg. Then push 1st king pole into vertical position. Repeat with 2nd king pole.

19. When both king poles are in place they can then be winched up until the tent is tight, always checking for over tensioned sides and adjusting ratchets if necessary.

20. The anchor guy cables can now be tensioned (see step13.) insuring not to distort the tent (In windy conditions this may require tensioning to bring king centre poles back to vertical.

2**1.** Entry and/or Exit foyers can now have poles fitted if required.

Single Pole layout



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22. Walls can now be fitted (If required) starting from each foyer, and laced together.

23. The truss can now be fitted (If required) between the 2 king poles using pins to the sliders and winch cable attached each end.

Adapt setup for 1 pole configuration following same steps.

Dismantling Instructions:

1. Remove Truss by winching down from king poles and un pining from sliders.
2. Remove walls by unstrapping from outer poles
3. Wind down king poles, and unbolt king pole caps and remove poles from underneath tent.
4. Remove side poles and unscrew flags

   Note: (This does not usually require slackening of ratchet straps)
5. Unhook ratchet straps from D rings around outer edge of tent.
6. Undo D shackle on perimeter cable and unlace joins , repeat on all 4 joins.
7. Remove top flags from centre king pole caps
8. Roll up Guy cables (these can be removed from guy plate if required)
9. Fold up tent sections 2 ends and 1 centre panel and tie in bundles

   Note: (It is preferred not to fold tent fabric the same way each time)
10. Remove pegs and ratchet straps and load for transport.

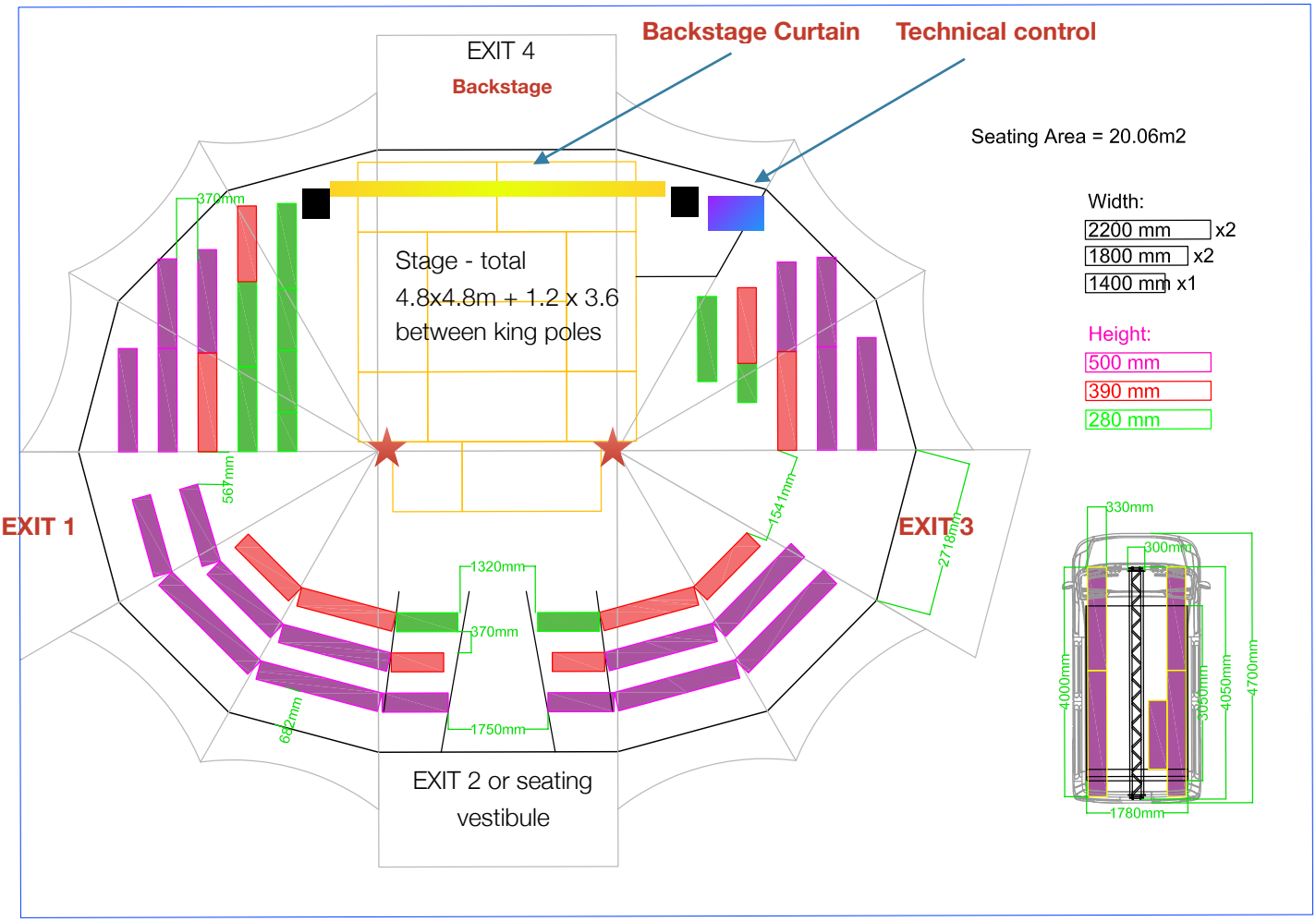
Note: (Step 6.) is not necessarily required if you wish to keep tent as a whole and transport as 1 bundle. (keeping in mind the size and weight for lifting and transport.

Adapt setup for 1 pole configuration following same steps.

CALCULATIONS

Strength data for ‘The Magpie’ PETER BROCKMAN

				31.00		33.38		31.00		59.00		
PANELS	360			3.14159		3.14159		3.1415927		3.1415927		
FORMS				1.35263		1.45647		1.3526302		2.5743607		
R	5		A	A	B1	B2	C	C1	D	D1		
H	5		54	73.04	54	78.65	54	73.04	54	139.02	100	500
A	5820	500	111	150.14	111	161.67	111	150.14	111	285.75	200	1000
			170	229.95	170	247.60	170	229.95	170	437.64	300	1500
			232	313.81	232	337.90	232	313.81	232	597.25	400	2000
			298	403.08	298	434.03	298	403.08	298	767.16	500	2500
HX	6390	559	365	493.71	365	531.61	365	493.71	365	939.64	600	3000
			436	589.75	436	635.02	436	589.75	436	1122.42	700	3500
			508	687.14	508	739.89	509	688.49	509	1310.35	800	4000
CLOTH	67587.09		583	788.58	583	849.13	585	791.29	585	1506.00	900	4500
SCALLOP	54000		659	891.38	659	959.82	664	898.15	664	1709.38	1000	5000
TOTAL	121587.0		737	996.89	737	1073.42	746	1009.06	746	1920.47	1100	5500
			817	1105.10	817	1189.94	831	1124.04	831	2139.29	1200	6000
			897	1213.31	897	1306.46	916	1239.01	916	2358.11	1300	6500
			979	1324.22	979	1425.89	1004	1358.04	1004	2584.66	1400	7000
			100	1352.63	100	1456.48	0	0.00	0	0.00	1425	7125
					104	1520.56					1455	7275
							1092	1477.07	1092	2811.20	1625	8125
						0.00	1100	1487.89	1100	2831.80	1500	7500
						0.00	1166	1577.17	1166	3001.70	1547	7735
						0.00	1360	1839.58	1360	3501.13	1708	8540



Stage, Seating, technical area, backstage and EXIT Locations (configured as Circus venue)