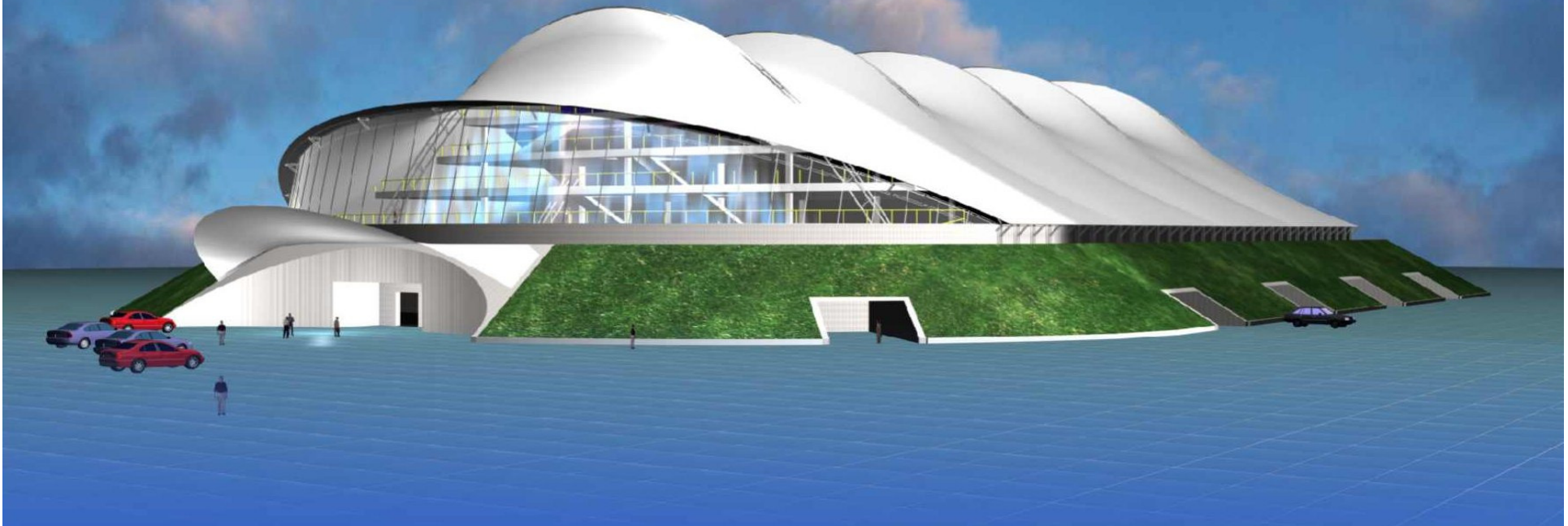


Rudi Enos
Design

P Span Arena



P Spain Arena



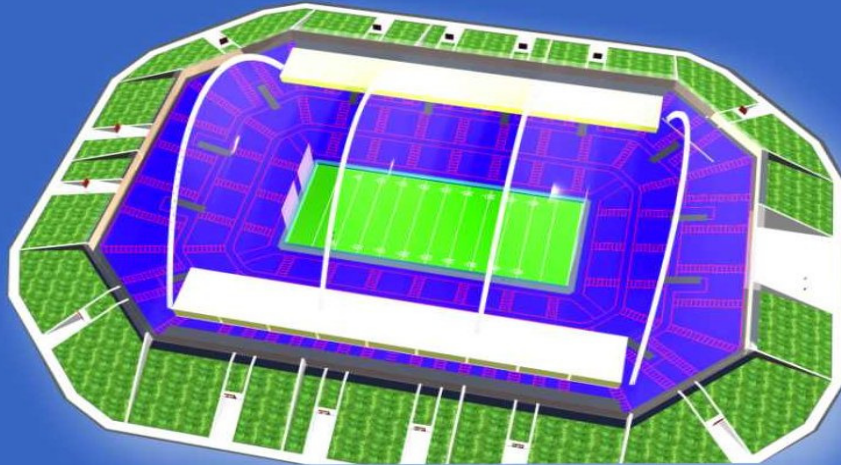
Attractive Design • Signature Architecture • Cost Efficient • Fast Track Construction

Rudi Enos Design MT66 structure



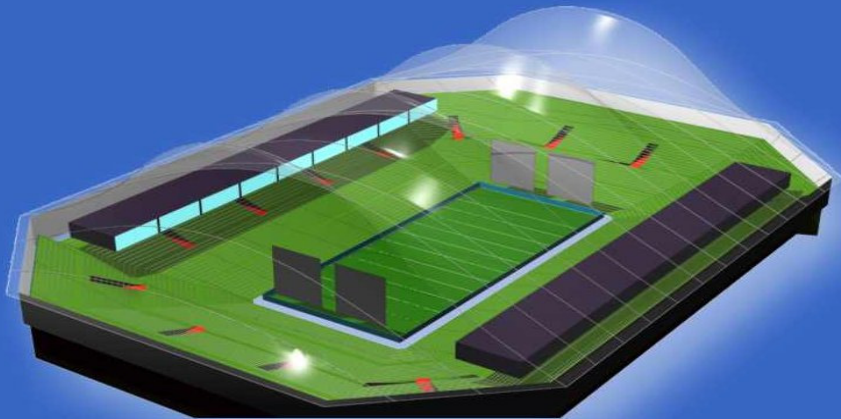
- Flexible internal arrangement
- No obstructed views
- Skyboxes with separate entrance
- Designed for low operating costs

Designs are available for sports venue seated layouts up to 14,000 seats. Other designs for exhibition, indoor practice areas, concert seating plans and conference style layouts are complete. The roof structure can accommodate heating and ventilation ducting, sprinkler systems, house lights and can accept the suspension of full concert lighting rigs.



The Parabolic Support Arches

The P Span Arena™ uses a fabric membrane with an anticlastic form which is supported for a considerable contact distance along supporting parabolic arches made from steel. The parabola (a geometric curve) is a form which is intrinsically capable of accepting loads efficiently, which reduces the manufacturing costs. The parabolic arches provide support for the fabric membrane roof while keeping the base of the arches outward of the centre of the arena. The arches are erected and stabilised temporarily prior to the membrane arriving on site. The arches do intrude into the main space of the arena and reduce the number of seats behind the arches, but only locally, which is considered acceptable due to the significant cost reductions provided.

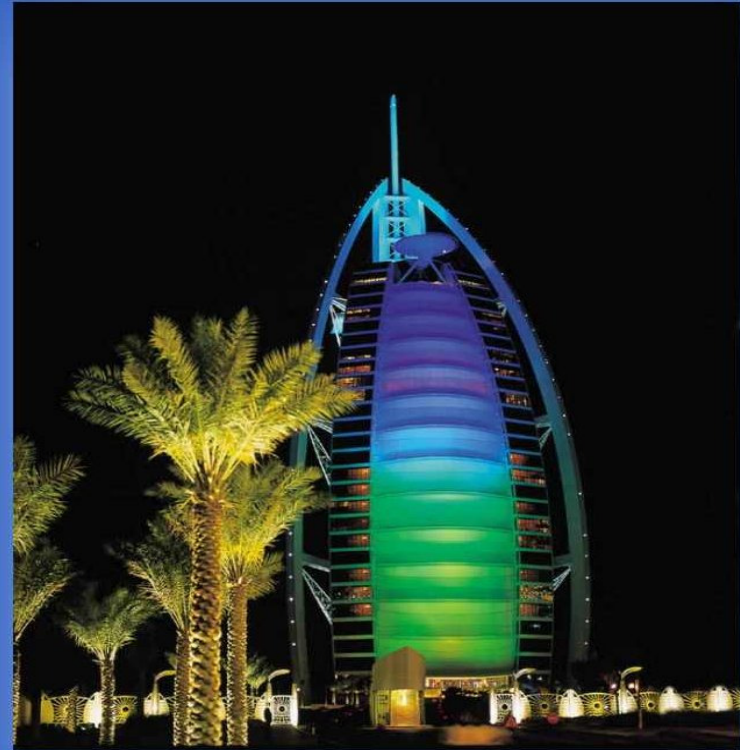


Multi purpose use

The arches are used as an intrinsic part of the building package. They can support suspended sky boxes (hospitality rooms) which would otherwise reduce the seating capacity and ventilation and electrical ducts at a point where they are the most effective. Advertising banners, broadcast screens and lighting can also be suspended from the arches. The arches become effectively invisible in use. This design package provides all the features of a typical long span arena roof while utilizing the economies of the shorter span parabolic arch.



Flexibility of options for: • Heating • Air conditioning • Sprinkler systems
Options for design dependant upon site • Pitch can be slightly below existing ground level

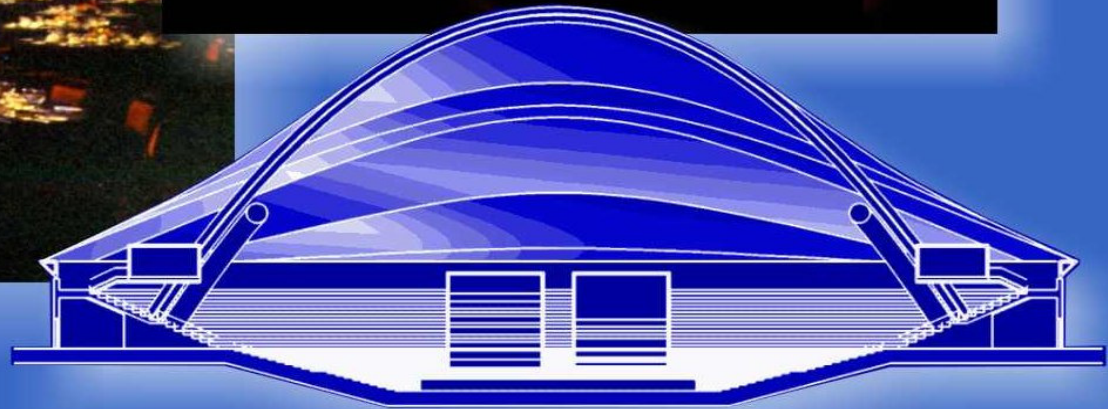


The buildings featured here are major membrane installations which prove the use of special construction techniques. Left and left above are the 'Zenith' building in France which has been a major venue for over 20 years. Above is the Burj Al Arab Hotel, Dubai, UAE which relies on the membrane atrium to help make it one of the most spectacular buildings in the world.

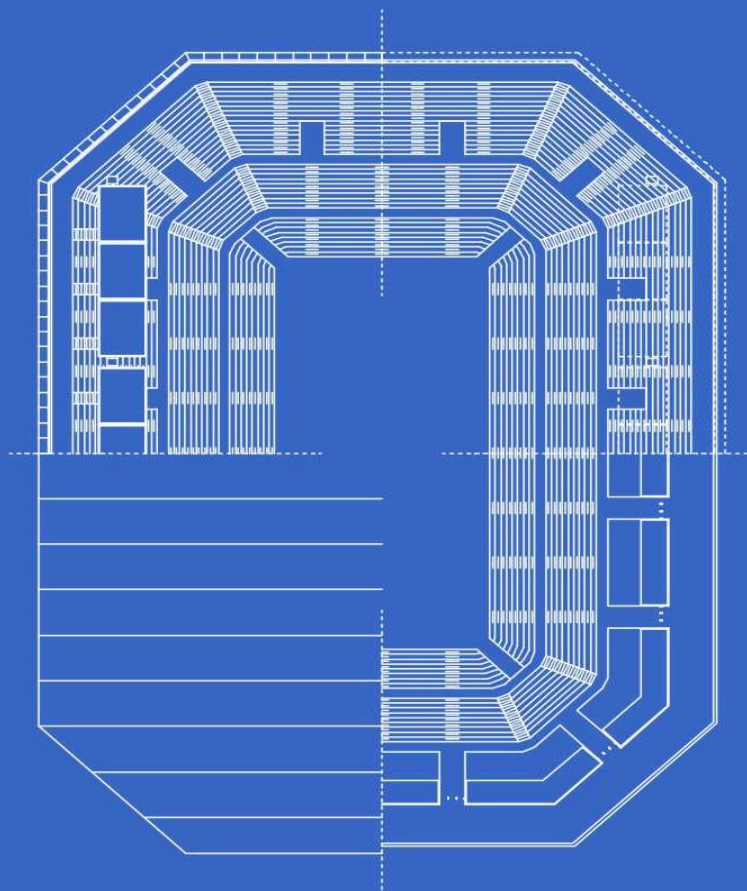
The P Span Arena™ uses similar construction techniques to achieve high visibility with low construction costs and short project times.



Rudi Enos Design Kayam structure



Long span structure • Fabric membrane roof • Translucent or light blocking roof



Multi Purpose Venues

Typically, arenas are multi purpose venues which are required to accommodate a wide variety of events. To allow the returns required to recover the investment, there are between 8,000 and 20,000 seats, with most seating around 12,000. In order to accommodate the optimum viewing sight lines, the seats have a severe rake which requires walls of up to 18 metres or 60 feet in height to clear. In addition, to avoid the 'tunnel' effect of long buildings, the typical arena structure is 60 to 80 metres in span to provide an equality of viewing distances.

The roof of the building is required to suspend ventilation, heating and air conditioning, house lights, access passageways for maintenance, and occasionally, other suspended loads such as lighting rigs for rock concerts. With the extreme span of the roof, the requirement to accommodate all environmental loads of wind and snow plus occasional suspended loads results in a very expensive construction, typically using conventional long span trussed steel members, or recently, cable supported fabric membranes.

A typical arena features extremely high walls to accommodate the rake of the seating inside. Such walls are expensive to build and install.

This combination of expensive long span roof and high walls means that the designer is limited in scope of design, and is unable to vary the fundamental form. A potential solution to this problem is to use a construction method which accommodates all the fundamental requirements yet is substantially more economical to construct.



P Span is configurable for many different uses. It can be specified for a single use at design stage or specified for multi purpose use. This may involve some compromises in layout but with minimal adaptation can be used for;

Sports

Basketball, ice-hockey, indoor soccer, tennis - other

Performance

Variations of the membrane arena can be created to house rock concerts, dance venues and other performing arts.

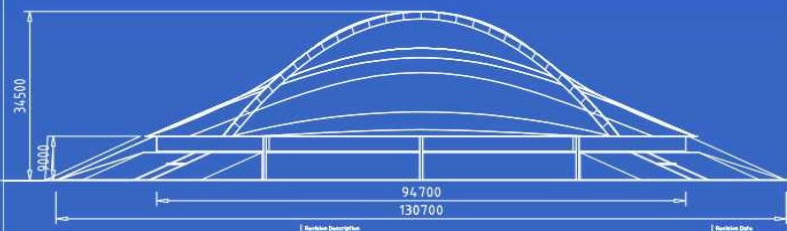
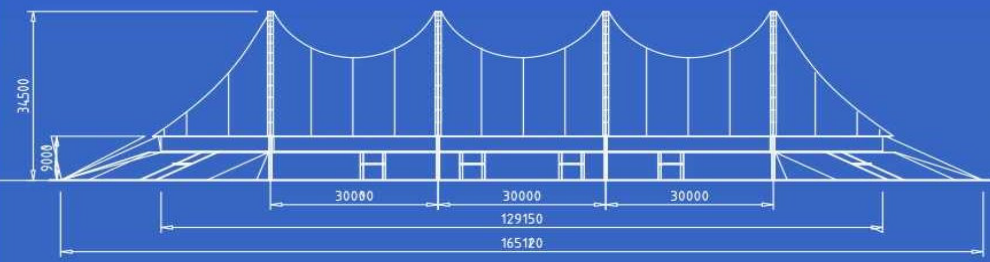
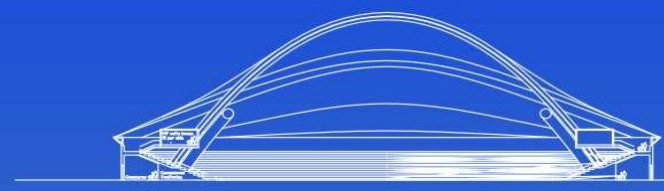
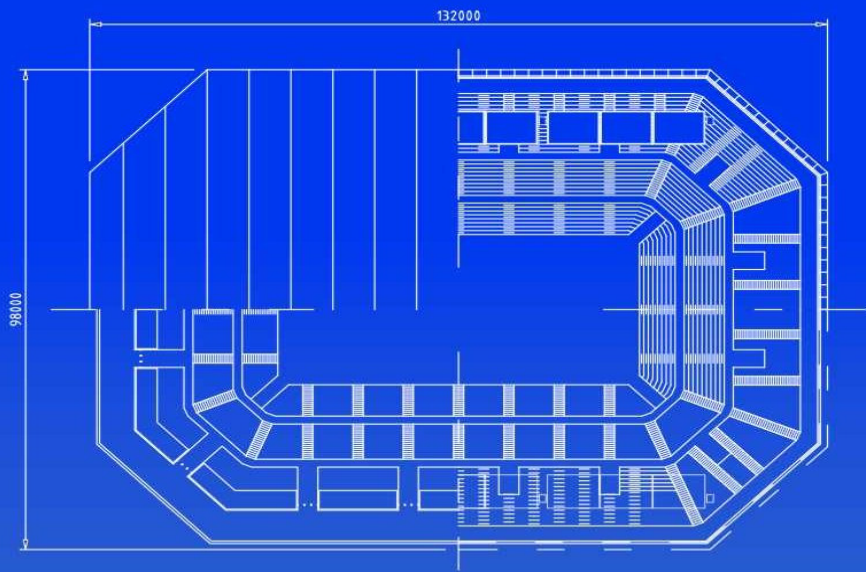
Exhibition

Exhibition, conference and theatre use, if necessary by reducing capacity with a sound deadening curtain to the rear of the audience.

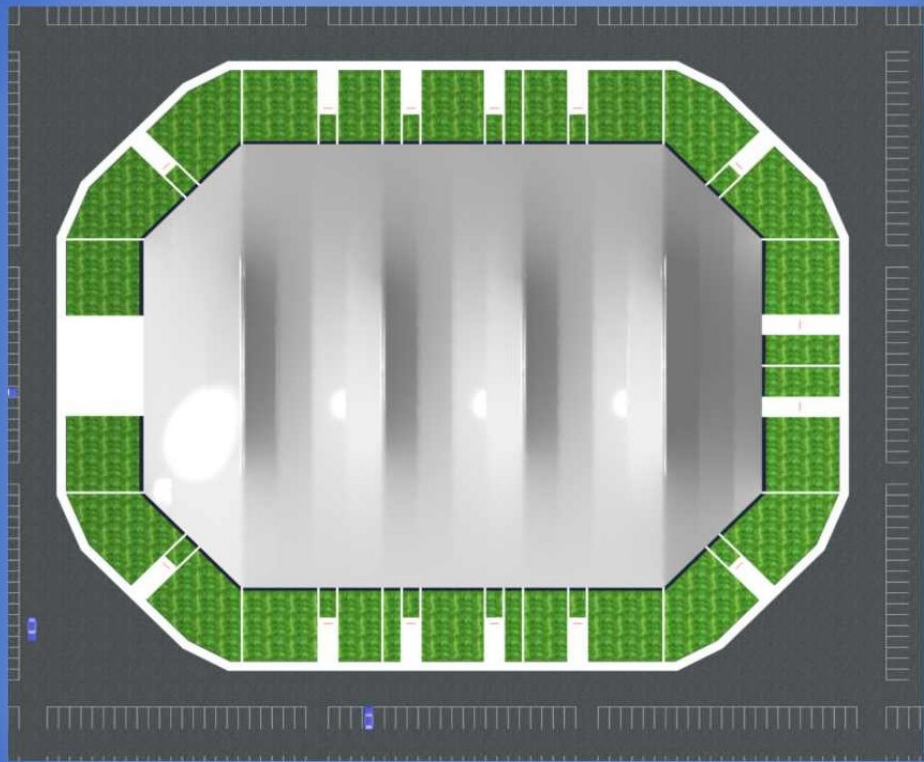


IF IN DOUBT, ASK.

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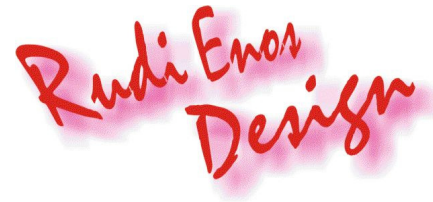
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Title 1 Cork Arena		Title 2 Plan and Elevation	
MoonBurst Structures Structural Engineers 17-11-03 17-11-03 17-11-03 17-11-03	Drawn By: C.B. Hodelton	Date: 17-11-03	
	Project: tp-078	Scale: nfs	Drawing No.: 004a
Designers		Sheet No.: 1 of 1	



Typical Specifications

(other spans from 60 m (200ft) to 110 metres (360ft) and seating 2,000 to 14,000.

	metres	feet
Overall width	80	262
Overall length	120	394
Overall height	30	98
Area	9,600	103,334
Pitch width	26	85
Pitch length	61	198
Pitch area	61	16,801
Seating	8,000	



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