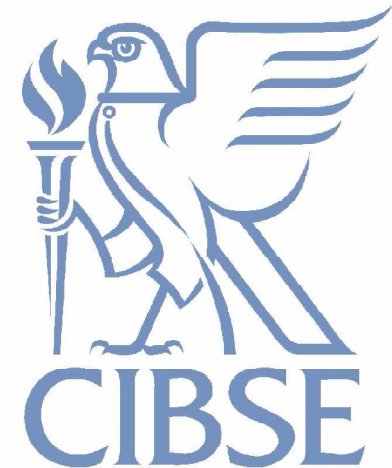


- What is a data centre ?
- What is driving customer performance expectations?
- The 'Core' Reference Standard
- Tier Ratings (Levels of Redundancy)
- Hot Topics
- Key Learning's



What is a data centre ?

- Is a specialised facility for housing computer systems and associated components, such as telecommunications and storage systems. Referred to as ICT (Information and Communications Technology)
 - Provides back-up / redundant high reliability power and air-conditioning environments for optimal performance of ICT in a secure environment.
 - Typically caters for low permanent occupancy rates unless flight decks or operation centres are run within the site.
 - 24 / 7 facility management and security presence or fast response.
 - The site will be secured in a such a way that members of the public will not be permitted within the building perimeter or the property boundary.
 - Car parking is not be permitted within the building for security reasons.
 - Clients of the site may attend 24/7 for normal and abnormal operations such as outage response and routine maintenance.

Customer Expectations



- ICT underpins efficient, effective and profitable business operations
- Today's ICT equipment is able to process vast amounts of information in fractions of seconds
- Short power outages may have significant impacts to business revenue, brand image and reputation
 - Stresses the importance of 'availability and resiliency'

The 'Core' Standard



- TIA – 942 Telecommunications Industry Association, Telecommunications Infrastructure Standard for Data Centres
 - Internationally accepted standards for data centre site selection, design and operations
 - Architectural, Electrical, Mechanical and Network
 - A four tiered classification approach, developed by The Uptime Institute, Inc. to site infrastructure functionality within data centres that addresses the need for a common benchmarking standard.
 - Needs to be intelligently adapted for the Australian environment

Tier Ratings (Levels of Redundancy)



Tier	Redundancy	Features	End User Availability
1	no redundancy	<ul style="list-style-type: none">- single distribution path- no redundant components	99.67 % (28 hrs)
2	redundant components	<ul style="list-style-type: none">- single path distribution- redundant components	99.75 % (22 hrs)
3	multiple distribution paths (one active path)	<ul style="list-style-type: none">- multiple distribution paths- redundant components- concurrently maintainable system	99.98 % (1.6 hrs)
4	multiple active distribution paths	<ul style="list-style-type: none">- two simultaneously active paths- redundant components- concurrently maintainable system- provides a higher degree of fault tolerance	99.99 % (0.8 hrs)

- The convergence of IT and Telecommunications technology
 - Growth of power and cooling loads
 - 300w/m² > 600 w/m² > 1000 w/m² >> where to next ?

Versus

- The green theme being driven into IT vendor system performance
 - Energy efficiency is being integrated at the ICT hardware level e.g. 'Linux'
- Increasing energy consumption costs
 - PUE 1.8 or better are demanded
 - Localised gas power generation versus grid power supply
- Environmental Sustainability
 - Regulators around the world are aware that data centres are inefficient high power consumers e.g. US EPA

Key Learning's



- Understand TIA-942 and educate your customer
- Lock down the client's requirements
 - Understand your clients appetite for risk
 - Understand your clients IT capacity plan and spatial requirements
 - Focus on services to site, its capacity, diversity and expansion capabilities
- Ensure a rigorous land acquisition process
 - Diversity of Services
- Simple designs
 - Simplify designs and component count
 - Hot and cold isle isolation
- Use proven building technologies with a good support base
- Engage security and FM representatives in the design process
- Focus on whole of life solutions with demonstrated cost benefits
- Over check compliance to client requirements