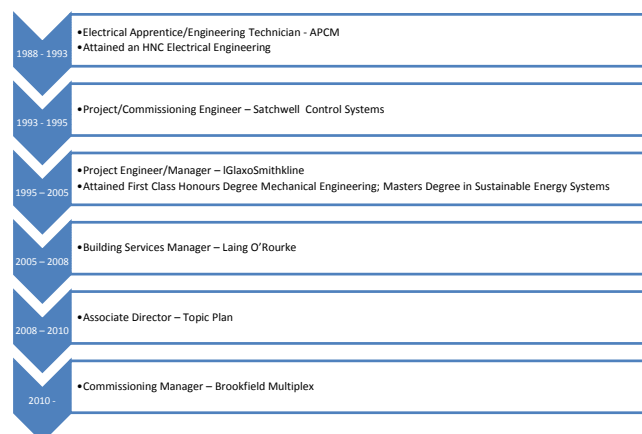


Commissioning Management

Mark Bridges; MSc, B-Eng (hons)

22 February 2012

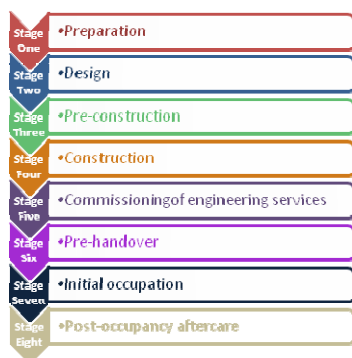
A bit about me

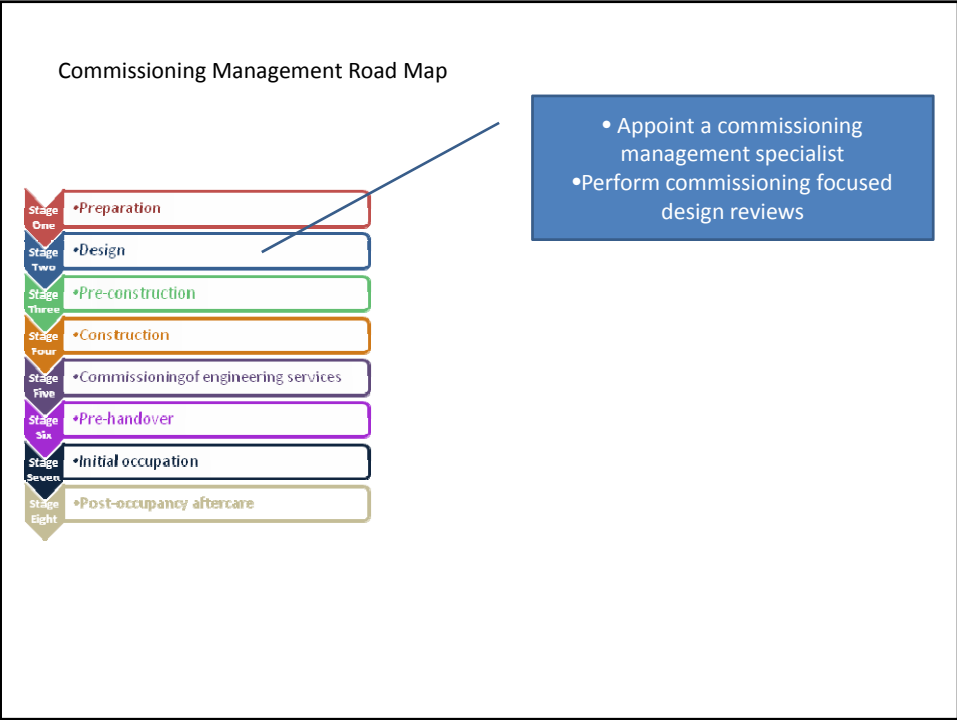
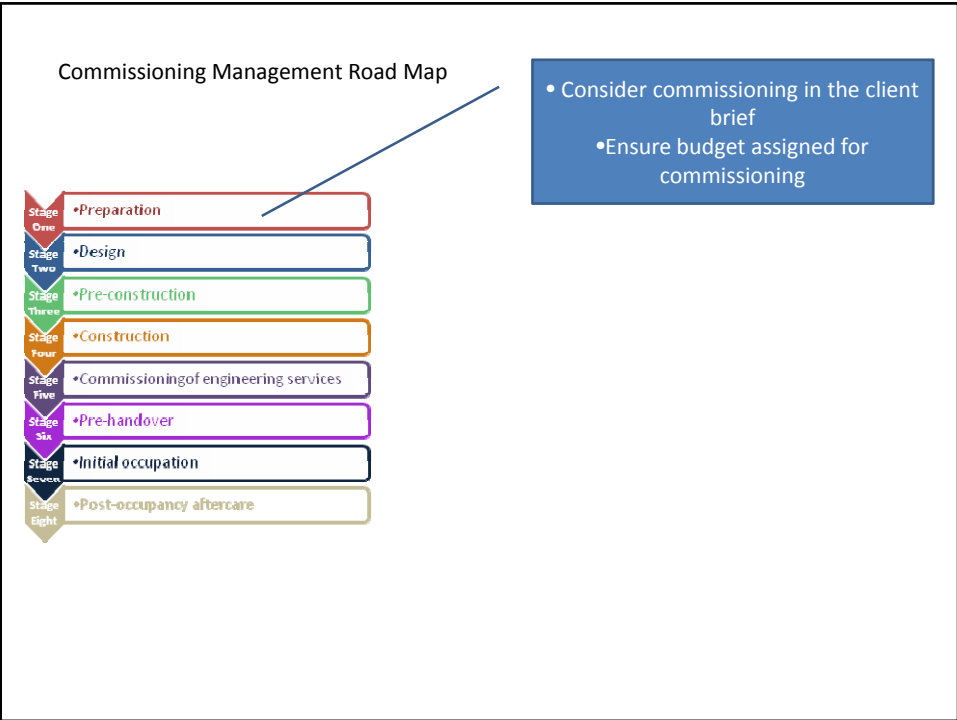


What is Commissioning Management?

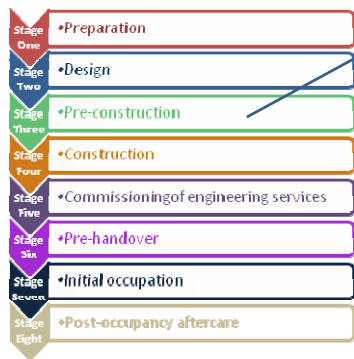
- The execution of commissioning **management procedures** that control and monitor the project from commencement to practical completion and beyond
- The **procedures** should provide traceability of the commissioning activities
- This should result in documentary evidence illustrating the completeness of a project to the original design intent

Commissioning Management Road Map



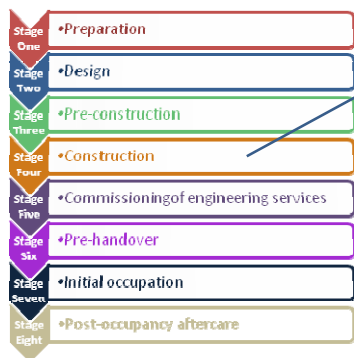


Commissioning Management Road Map



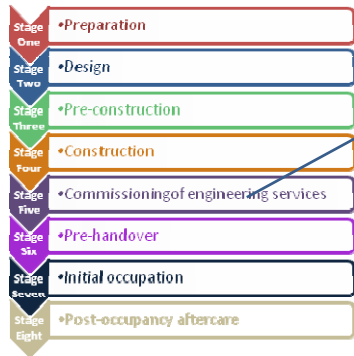
- Compile a commissioning plan
- Make clear the expectation during tender

Commissioning Management Road Map



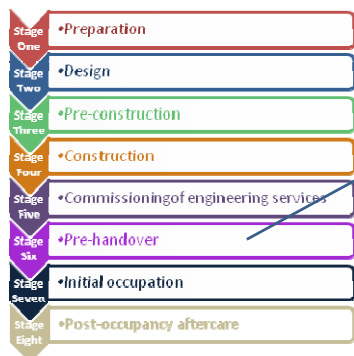
- Produce a commissioning programme
- Review 'for Construction' drawings

Commissioning Management Road Map



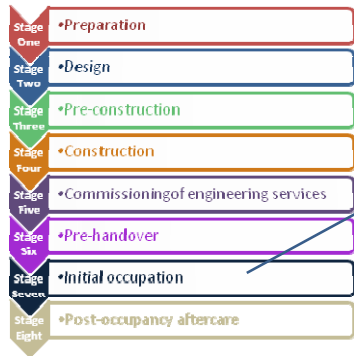
- Validate setting to work, regulation & performance tests
- Monitor progress of commissioning works & construction

Commissioning Management Road Map



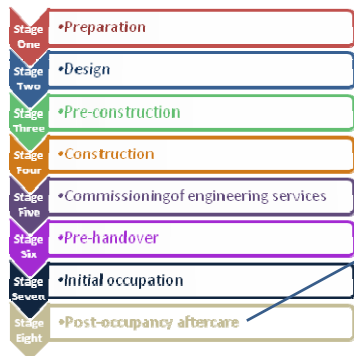
- Verify documentary evidence of commissioning activities & witness
- Ensure the training of users and operators is executed

Commissioning Management Road Map



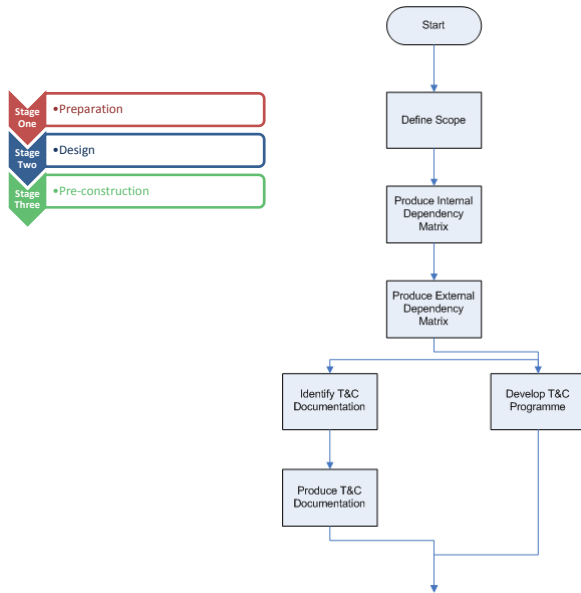
- Assist FM with initial building operation
- System configuration and tuning

Commissioning Management Road Map

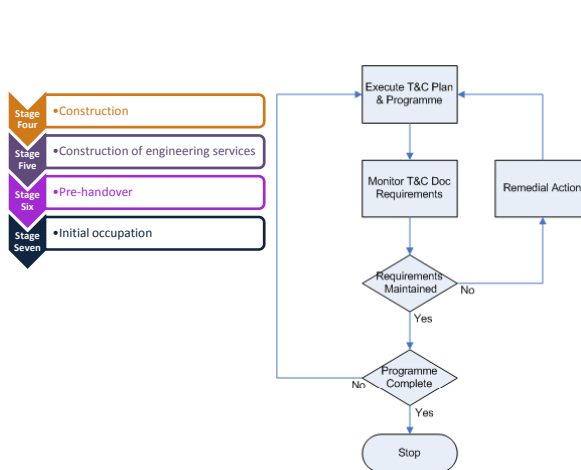


- Seasonal commissioning, configuration and tuning
- Collect evidence with regards to building performance

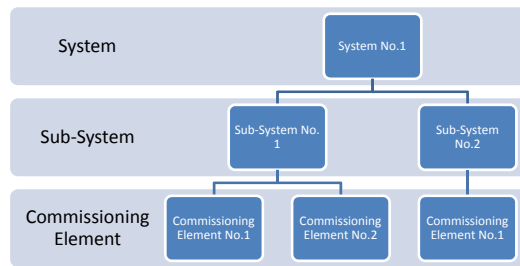
Commissioning Management – Phase 1; Planning



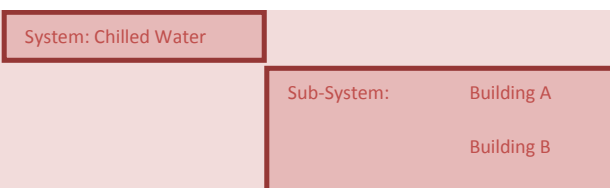
Commissioning Management – Phase 2; Execution & Monitoring

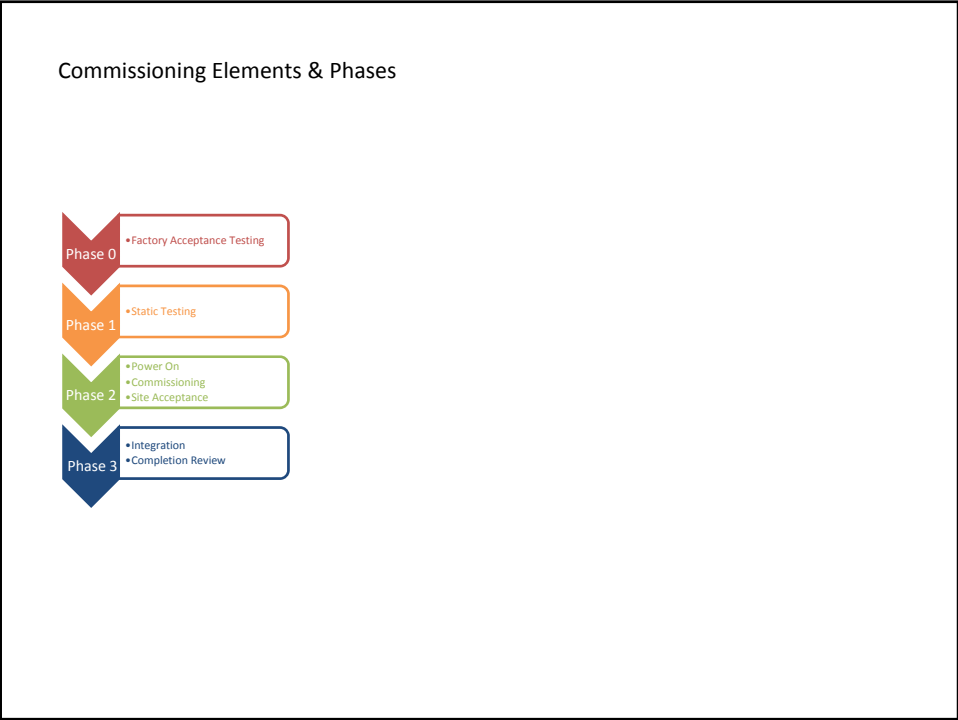
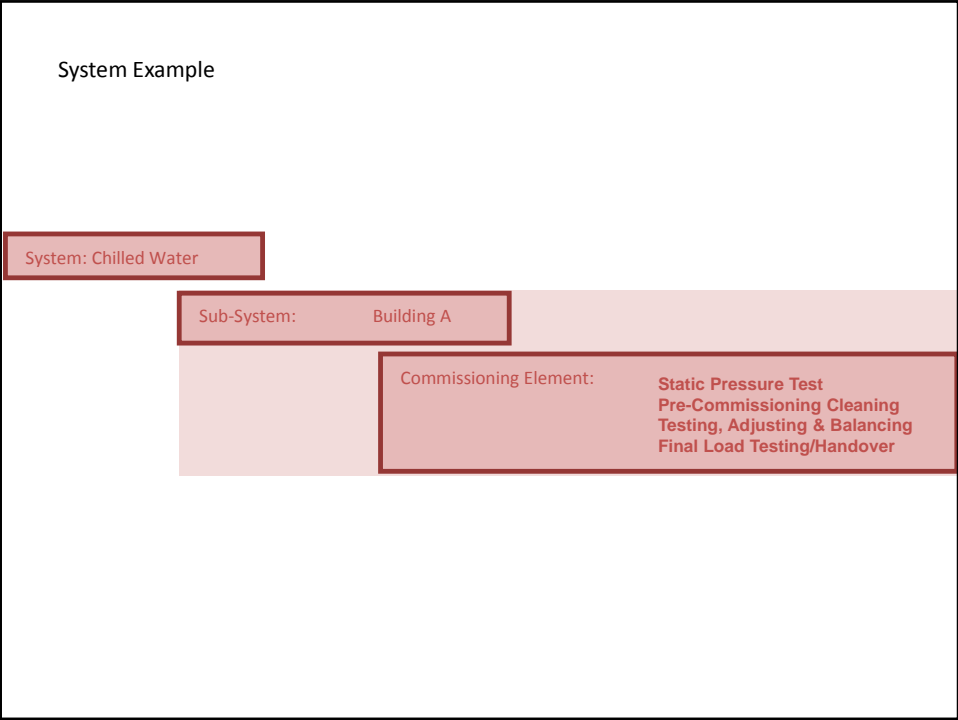


Any large job is lots of small ones or KISS

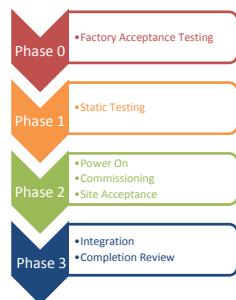


System Example



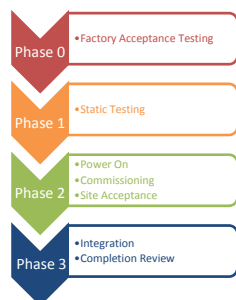


Commissioning Elements & Phases



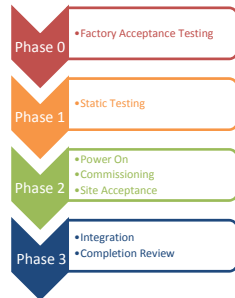
Factory Acceptance Tests – Conducted to determine and document the equipment hardware and software operates according to specification, covering functional, fault management, communications, support systems, and interface requirements. Particularly important are highly integrated systems.

Commissioning Elements & Phases



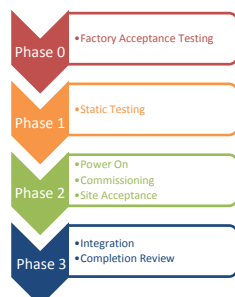
Static Tests – Ready to energise, installation complete. Undertaken on assets in a non-energised state, in order to confirm that the systems installation have been constructed in accordance with the design and specifications and that the following stage of the testing can commence without uncontrolled safety risks and with confidence that they will not cause and damage or malfunction. Examples include hydrostatic tests and continuity tests.

Commissioning Elements & Phases



Commissioning – Ready to integrate with other assets. Undertaken on the assets of a System in an energised state, that will ultimately lead to all parts of the system being connected together to ensure that it performs the function(s) for which it was designed.

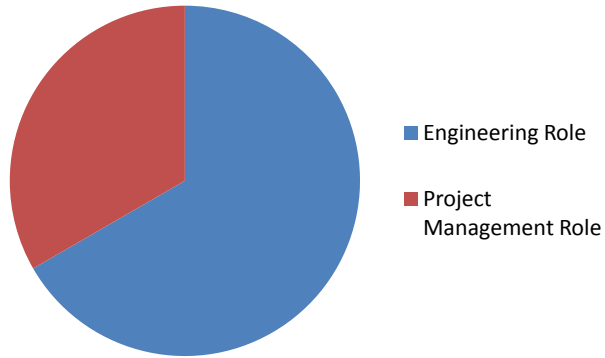
Commissioning Elements & Phases



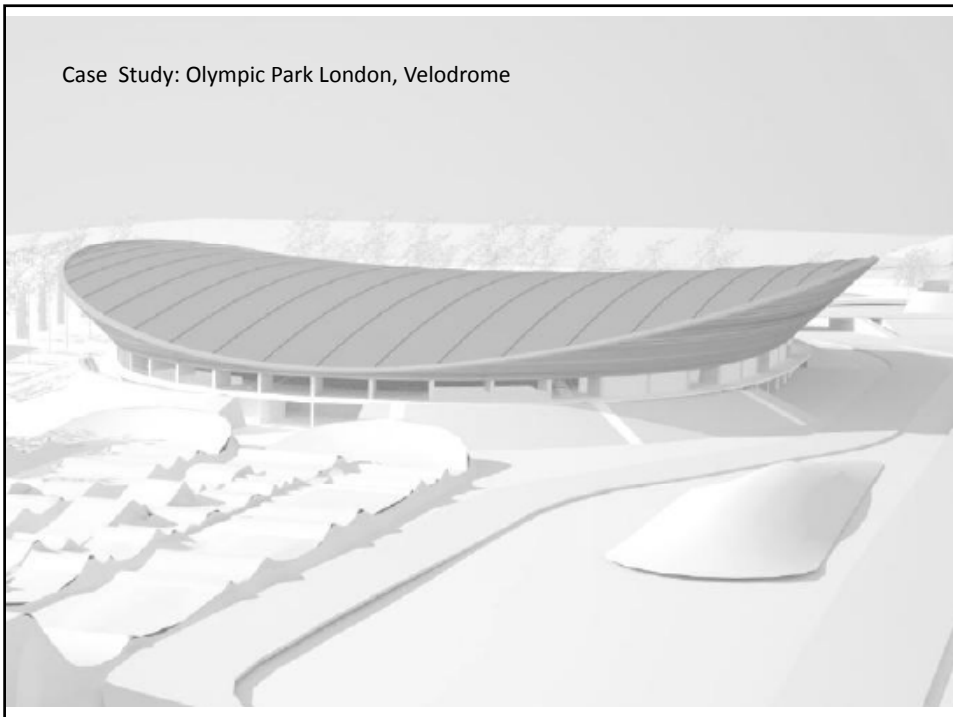
Integration – Any testing or commissioning activity that is required to demonstrate that systems within a project perform autonomously as intended when interconnected. Examples include any Cause & Effect Testing

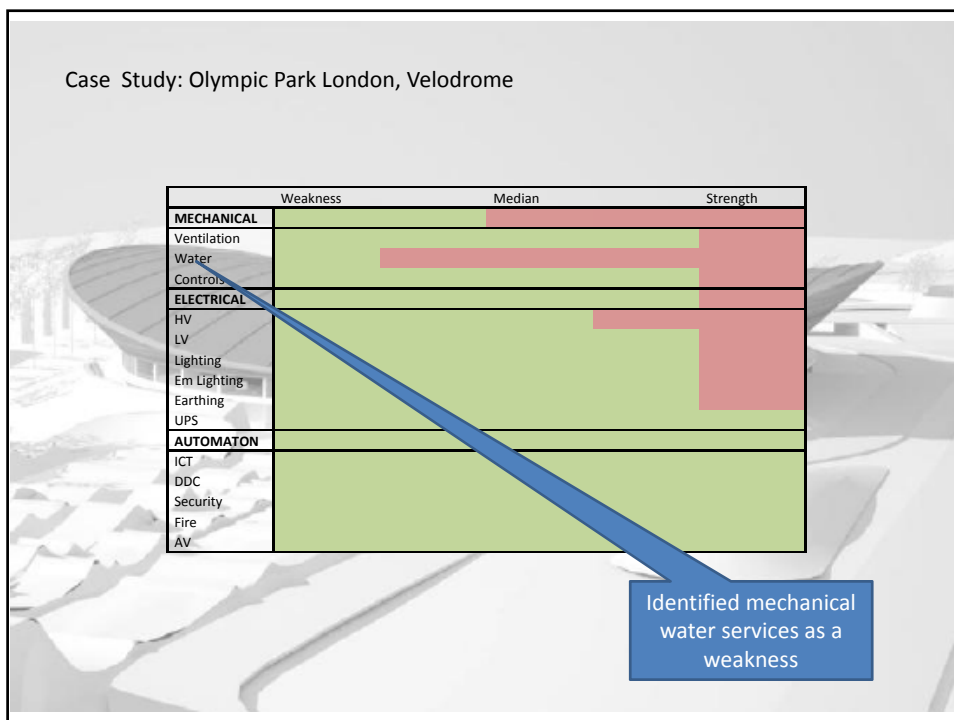
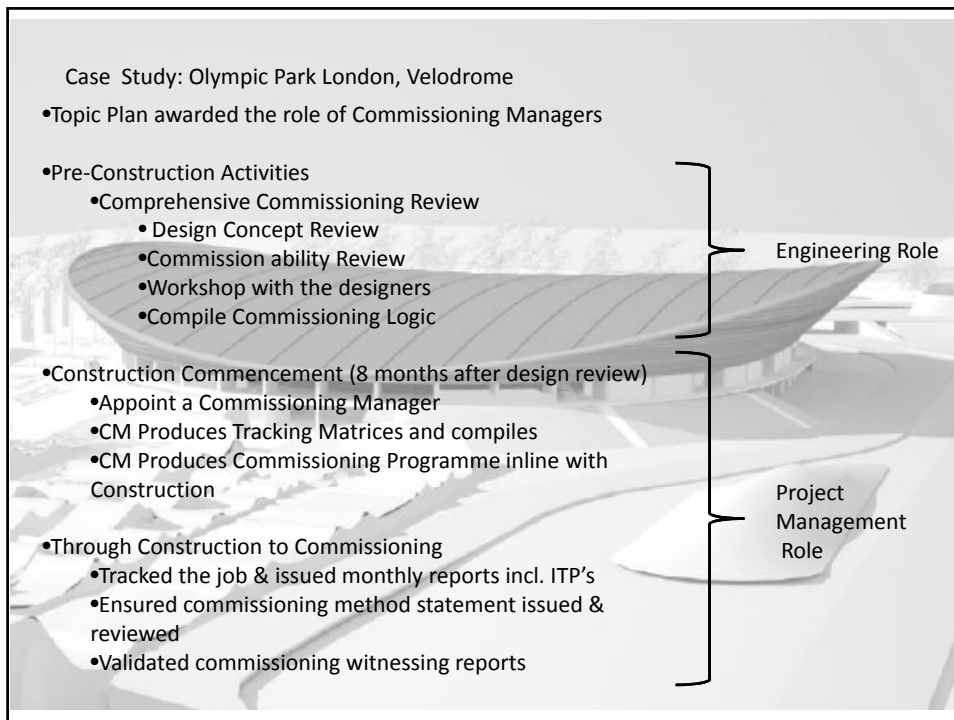
So Commissioning Management Predominantly a PM or Engineering Role?

Survey Results



Case Study: Olympic Park London, Velodrome

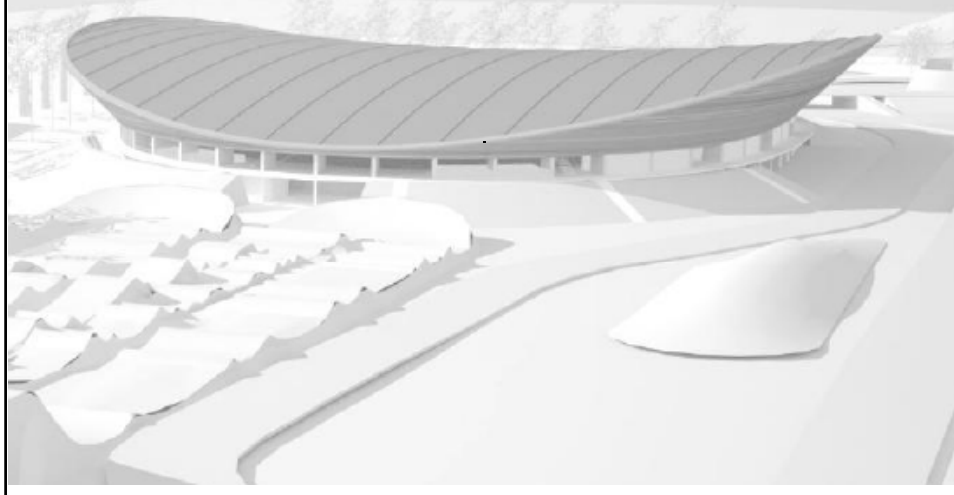




Case Study: Olympic Park London, Velodrome

The Mechanical Water Services

In the first instance – reading material



Case Study: Olympic Park London, Velodrome

The Mechanical Water Services

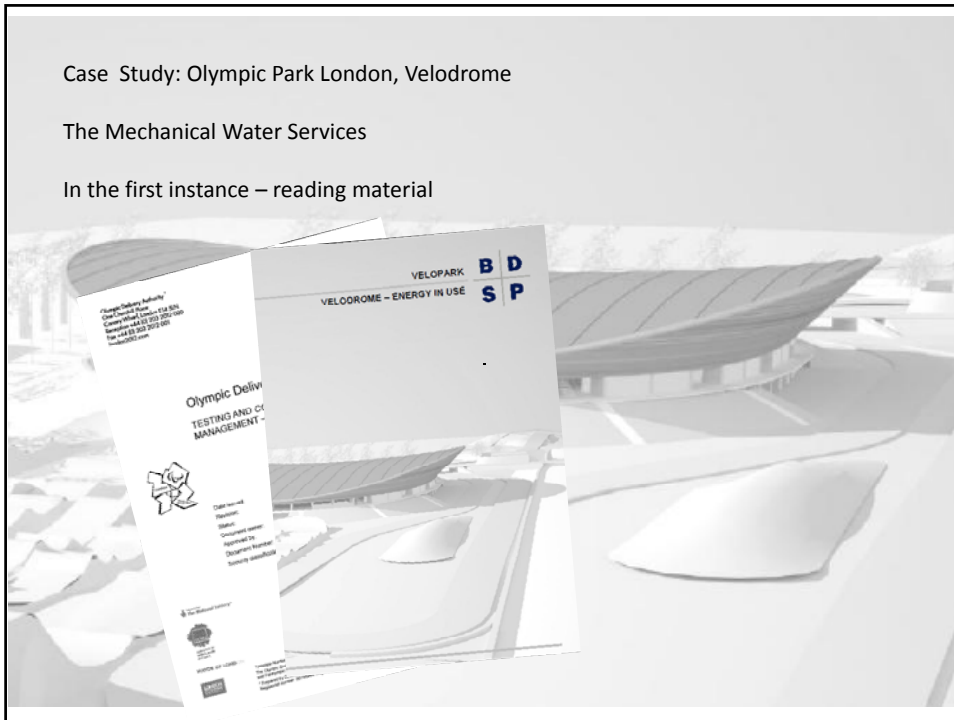
In the first instance – reading material



Case Study: Olympic Park London, Velodrome

The Mechanical Water Services

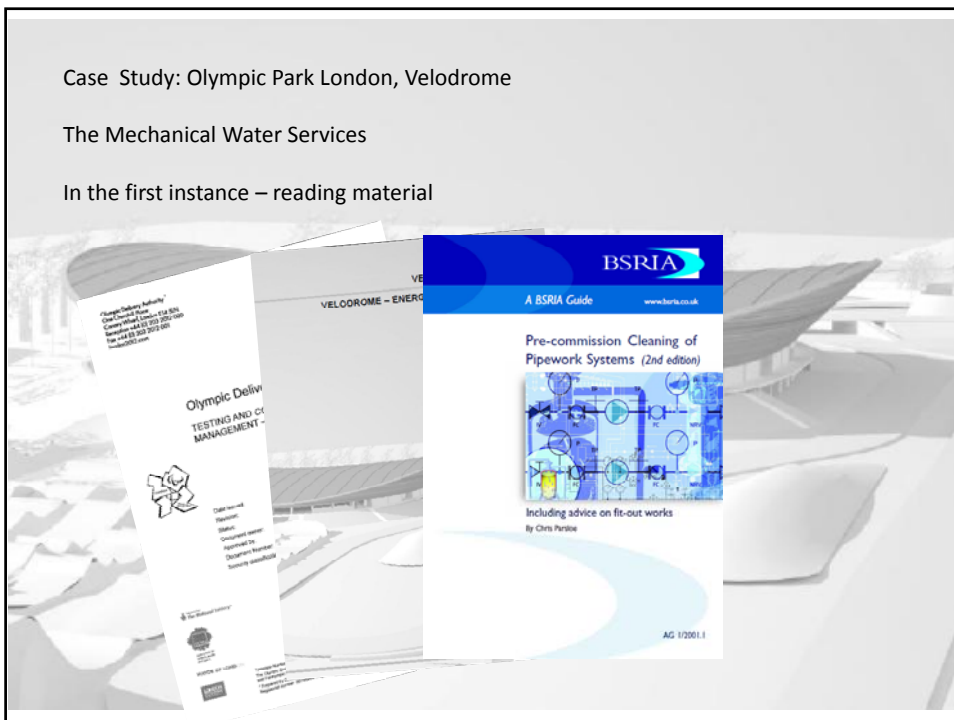
In the first instance – reading material



Case Study: Olympic Park London, Velodrome

The Mechanical Water Services

In the first instance – reading material



Case Study: Olympic Park London, Velodrome

The Mechanical Water Services

In the first instance – reading material



Case Study: Olympic Park London, Velodrome

No replacement for experience – Our Expert

- Assist in reviewing testing and commissioning documentation
- Assist in the review of water quality, commissioning reports
- Assist with handover

What actually happened

- As Commissioning Manager, built a relationship with Consultant & Contractors
- Reviewed method statements with 'Expert'
- Knowledge grew; reviewed the commissioning process utilising on-site skill set
- Conduct 'mock-up' performance tests prior to ODP
- Sign off achieved for each element
 - Cleaning
 - TAB
 - Quality
 - Maintenance

Case Study: Olympic Park London, Velodrome

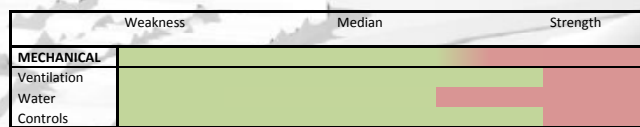
In Summary

The in house support never attended site (Although he was an Expert he had no ID)

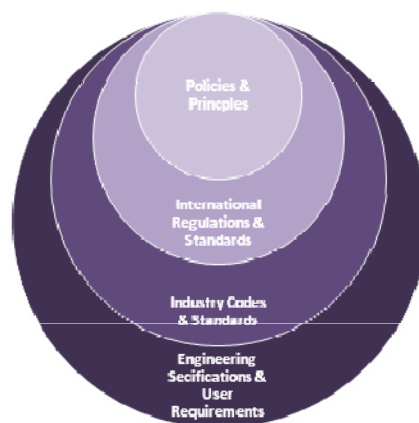
Good Project Management Practices were executed – the skill set available on site was utilised by the CM

Systems were tested, commissioned, signed-off, maintained and handed over at PC

CM gained invaluable experience to take to the next, his profile assessment post PC was:



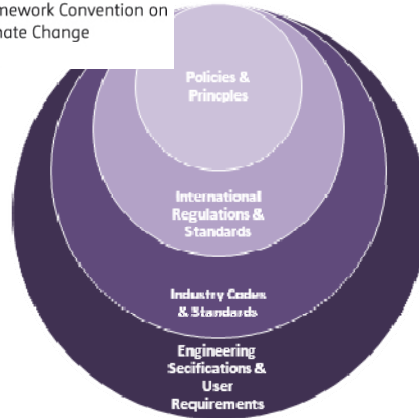
Engineering Guidance - defining T&C requirements



Engineering Guidance - defining T&C requirements

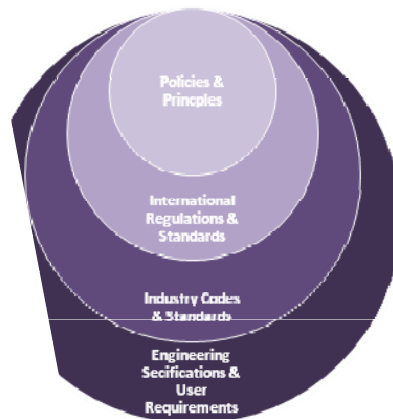


United Nations
Framework Convention on
Climate Change



Engineering Guidance - defining T&C requirements

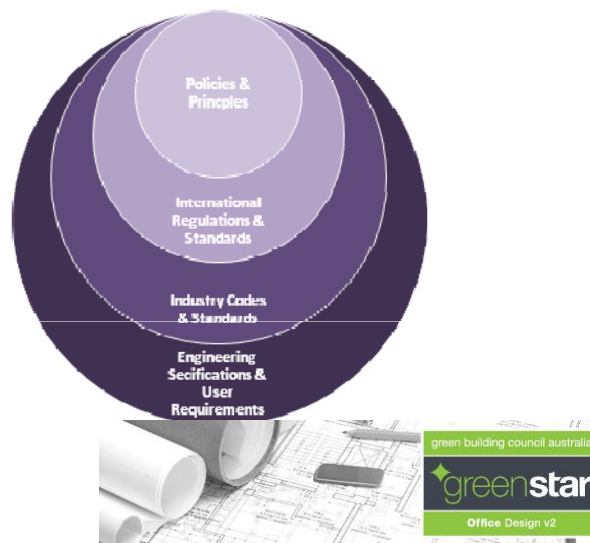
ANNEX PROPOSAL FOR THE UNITED NATIONS FRAMEWORK
CONVENTION ON CLIMATE CHANGE

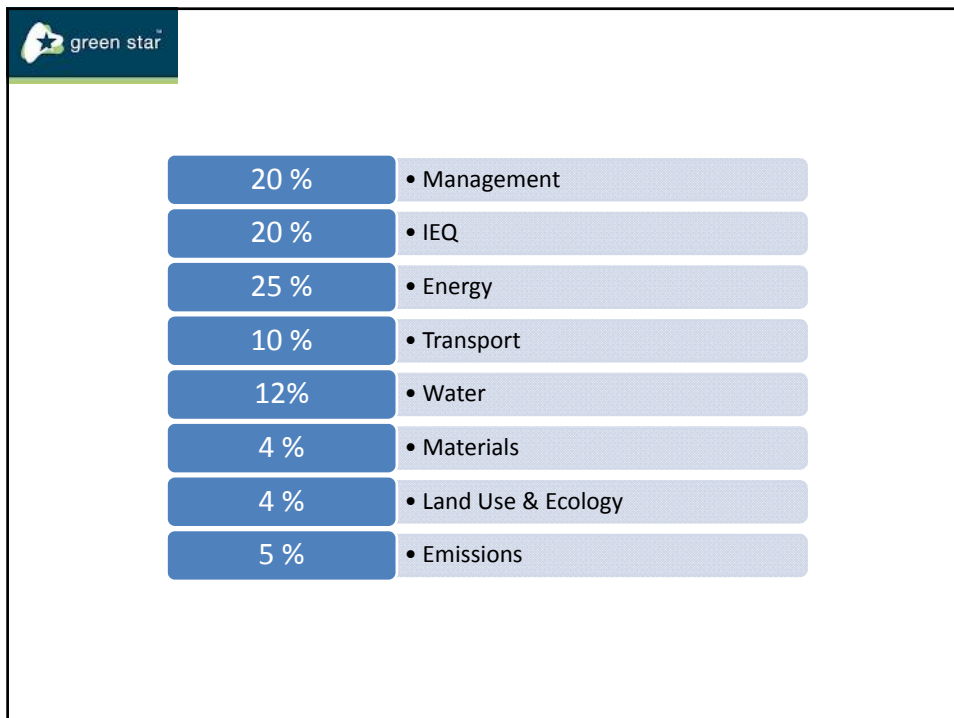


Engineering Guidance - defining T&C requirements



Engineering Guidance - defining T&C requirements





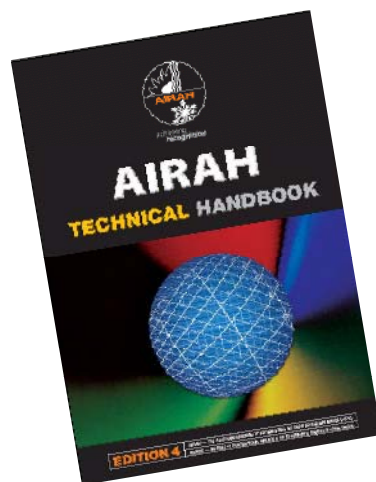


Commissioning Management – 2Points

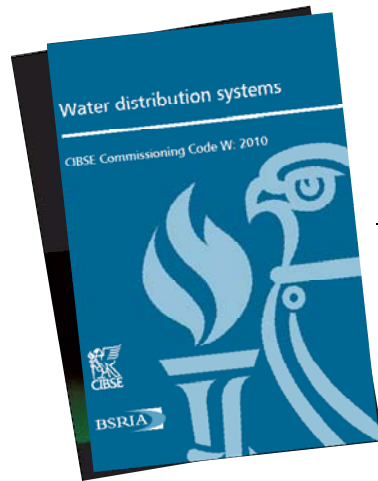
**Significantly effects –
Indoor Environment Quality
Building Energy Performance**

45 %

Useful Points of Reference



Useful Points of Reference



Useful Points of Reference



Useful Points of Reference



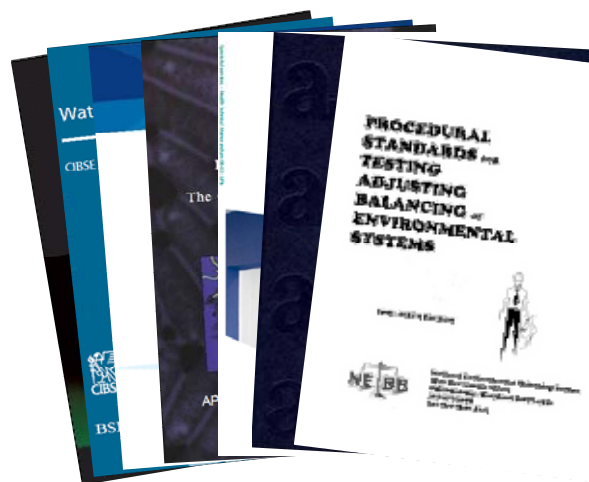
Useful Points of Reference



Useful Points of Reference



Useful Points of Reference



Useful Points of Reference



Questions & I've got some

22 February 2012