



Design Thinking Workshop – Building Commissioning

Sydney | 7th December 2017

This document summarises discussion at a workshop held by the Standards Australia Incubator regarding Building Commissioning in Australia. The outcomes of the workshop may be used to inform next steps for the industry participants.

This workshop was designed to:

- Bring together industry experts to workshop potential solutions to issues around building commissioning in Australia.
- Establish a deeper understanding of the problems, opportunities and constraints relating to building commissioning in Australia.
- Explore priority areas for development.
- Promote participation and continued engagement in the Building Commissioning conversation among key industry organisations, their members and other relevant stakeholders.

Stakeholder Representation

Stakeholders from throughout the Building Commissioning value chain were represented at the workshop, including:

- Fire engineers
- Hydraulic engineers
- Commissioning experts
- Mechanical engineers
- Building certifiers
- Building regulators
- Builders
- Property owners

- Local council representatives
- Technical managers from industry associations

Key themes from the workshop

Key themes from the workshop discussions included:

- That a standard would be a key mechanism for encouraging industry uptake of best practice in building commissioning in Australia.
- That for a standard to be successfully implemented there would need to be a 'hook', either through a new or existing industry building ratings scheme, such as Greenstar or NABERS, or through state or federal legislation.
- That a standard could also gain traction through contracts and/or tenancy agreements.
- That further data and research was required around quantifying the benefits of building commissioning
- Education and promotion of the benefits of commissioning would be key to increasing industry awareness and uptake.
- That commissioning was an end to end part of the design and delivery of building projects
- That commissioning did not end at the point of delivery but was an ongoing process to ensure that a building was kept tuned and optimised
- It was recognised that commercial buildings are highly complex systems, often designed and built on a unique, one off basis, meaning that gathering meaningful and transferable baseline data can be difficult.
- It was further recognised that the value chain of delivering buildings is also highly complex, with numerous parties involved, long chains of responsibility and often no clear accountability.
- That further training around commissioning was required throughout the value chain.

Problem/Opportunity Statement

The workshop participants were asked to review and re-work the following **problem/opportunity** statement regarding building commissioning from their own perspectives:

“Problem Statement:

Services in buildings are not currently being tested as fully integrated systems during the commissioning process.

As many aspects of these systems, such as fire safety and essential power are dependent upon each other, this may lead to critical failures, meaning a reduction in safety for occupants.

Additionally, as buildings become increasingly complex, many of these functions are being integrated and automated through IT infrastructure.

This increased complexity requires a complementary level of testing to ensure the system as a whole is functioning optimally. Without this, there may be significant operating inefficiencies including: higher running costs, loss of services and comfort and increased environmental impact through energy wastage.

Opportunity Statement:

The opportunity exists to create a means of integrated system verification during the commissioning process of a building, paralleling best practice in industries such as IT.”

There was broad agreements amongst the participants that the above statement captured the essence of the problem and opportunity, however some **additional factors** were noted below.

- There were seen to be silos throughout the design teams
- There was a lack of interface testing
- Often, even individual system components were not being well tested/commissioned
- Stakeholders did not yet see the value in commissioning
- Lack of legislation
- Lack of “policing” or certification

A number of **constraints** were also considered including:

- Lack of skills in the project teams
- A lack of independent expertise
- Time and money
- Lack of accountability in current value chain
- Reduced visibility of ‘value’ of commissioning

Solution Ideation Session

The workshop participants were asked to ideate a wide range of potential solutions to the problem/opportunity statement.

Criteria for a workable solution

In further developing their ideas into practical and realistic proposals to be pitched back to the main group, the groups were asked to consider the following criteria.

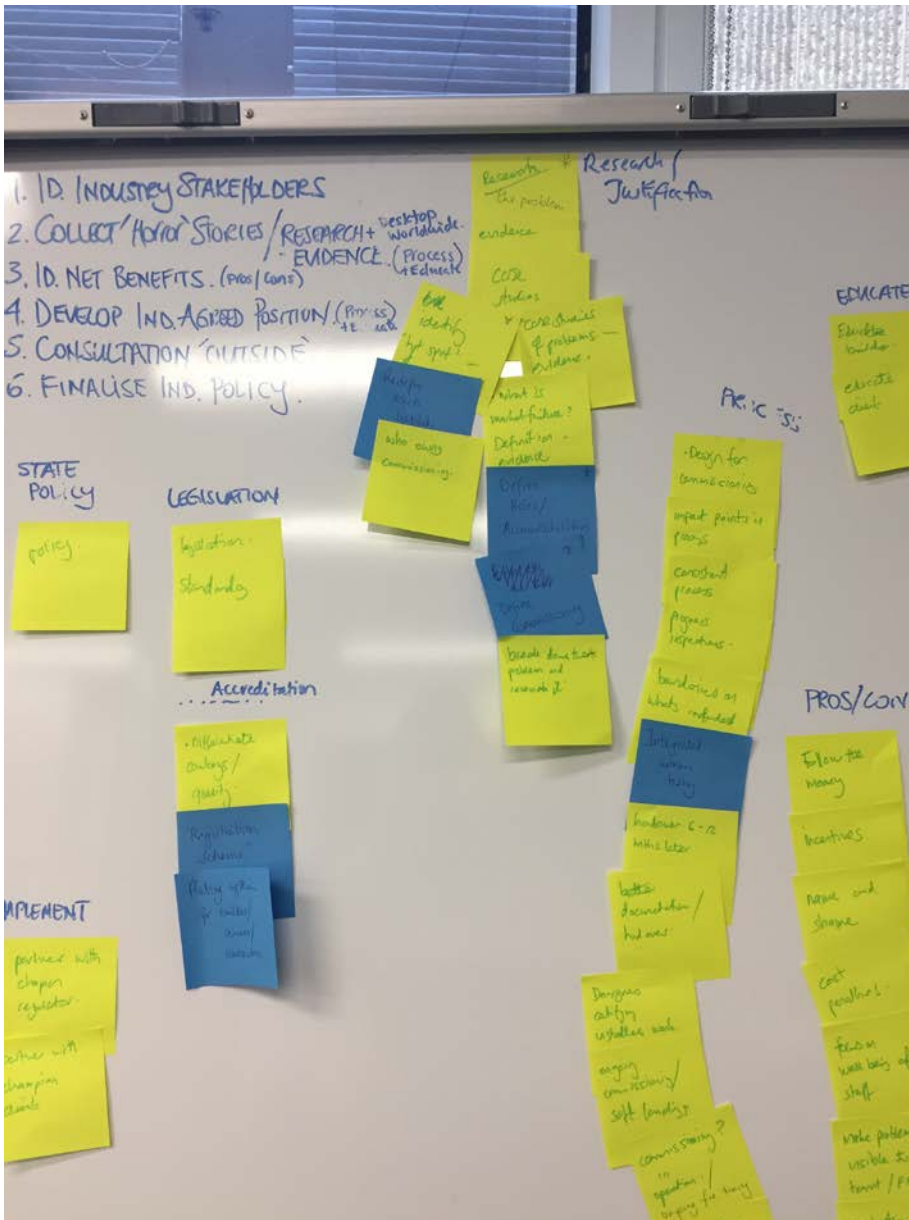
Did the proposed solution...

- *Clearly show that it solved the problem?*
- *Solve the whole issue or is it a part solution?*
- *Is it an intermediary step to something else?*
- *What does it actually achieve?*
- *Why would this actually work for the relevant parties? What would engage them?*
- *Who drives this? Who makes it happen?*
- *How quickly would this work?*
- *Can this idea be piggybacked on something that already exists?*

The pitches

Over the course of the workshop, these ideas were further refined into four potential solutions (one per group) which were pitched back to the main group.

Group 2 – Consultation, Research and Development



The key elements of the Group 2 solution included the following:

- The need to more closely identify and consult with key industry stakeholders
- Develop case studies to highlight the risks of not commissioning a building correctly
- Further data gathering and research in order to properly quantify the benefits of building commissioning
- Develop an industry agreed position and finalise policy

Group 3 – Building Commissioning Ratings Scheme

DRIVER

- Change view of testing as contract switch hand/
- Education -> create demand from owners & occupiers
- Commissioning DURATION IS PROTECTED!

OUTCOMES

- Define the required outcome

WHO

- Single point of responsibility for commissioning
- Setting minimum skills (top ->)
- CO-ORDINATION OF ALL TRADES SYSTEM COMMISSIONING
- Build it into design & construction training
- Commissioning should be a Trade!
- Focus on the why, not just the how

FEED/BACK VALIDATION!

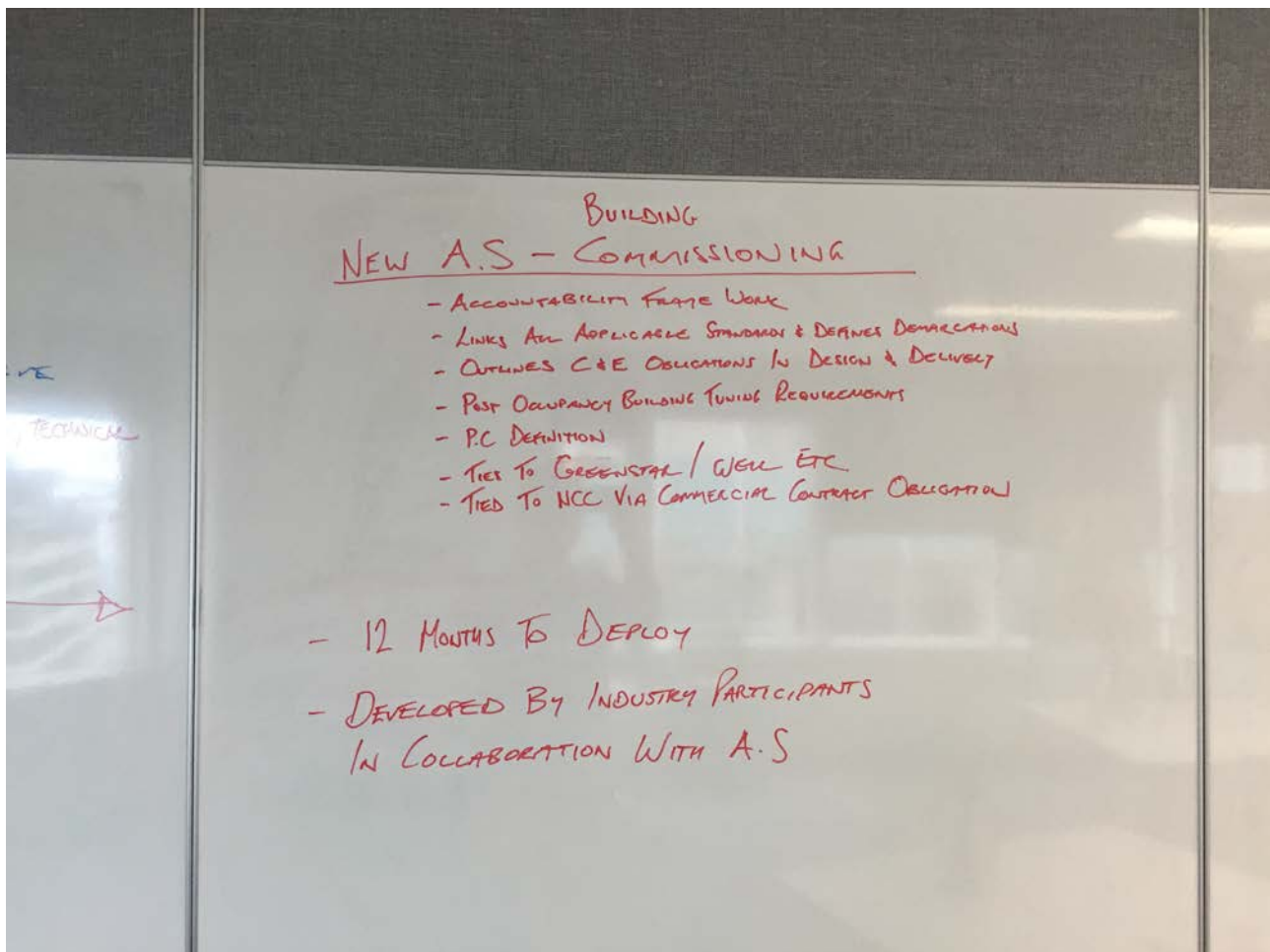
DESIGN/CONSTRUCT/POE

- Get the lines involved (they love a smoke test!)
- Commissioning engaged by client/arch.
- Make risks, consequences & -ves of poor comm. more apparent
- Better & clear accountability at all points - from design onwards
- Standardise Commissioning as integral, not an add-on
- Agree on Project Mgmt Process, who what & when
- Pa to Random checks of systems
- OWNERS SIGN OFF.
- FOCUS ON THE END
- Testing is a deliverable

The key elements of the Group 3 solution included the following:

- Developing a new building rating scheme unique to Building Commissioning and complementary to NABERS and Greenstar.
- The need to change the perception of commissioning within the industry.
- The need to clearly define the desired outcomes
- The need to clearly define roles and responsibilities within commissioning
- Develop further training and agreed minimum industry skills

Group 4 – New Australia Standard – Building Commissioning



The key elements of the Group 4 solution included the following:

- The creation of a new Australian building commissioning standard
- Including an accountability framework, and linking all applicable standards
- Ties to Greenstar and NCC via Commercial Contract Obligation

- 12 months development and deployment schedule

Preferred solution

The participants collectively indicated their preference for a combination of the Group 1 and Group 4 solutions, which were broadly aligned in terms of:

- Developing an Australia Standard
- Seeking a tie in to an existing building ratings scheme, such as Greenstar

Next steps

- Disseminate workshop outcomes to other industry participants to encourage further discussion, engagement and buy-in.
- Review current project proposal for an Australian Building Commissioning Standard, developed by AIRAH (this proposal is currently on hold, pending the outcome of the workshop).
- Continue to engage GBCA / NABERS in the process going forward
- Liaise with ACT government regarding development of their new regulations and guides for commissioning

Organisations in attendance

Society of Fire Safety
AG Coombs
AIRAH
WT Consultancy
Dept of Environment & Energy
City of Sydney
ECS
NEBB Australia
Green Building Council
IBMS
Australian Institute of Building Surveyors
AIRAH
John Holland
AECOM
Lendlease
WT Consultancy