Healthcare projects planning and delivery for the future

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MOH HOLDINGS

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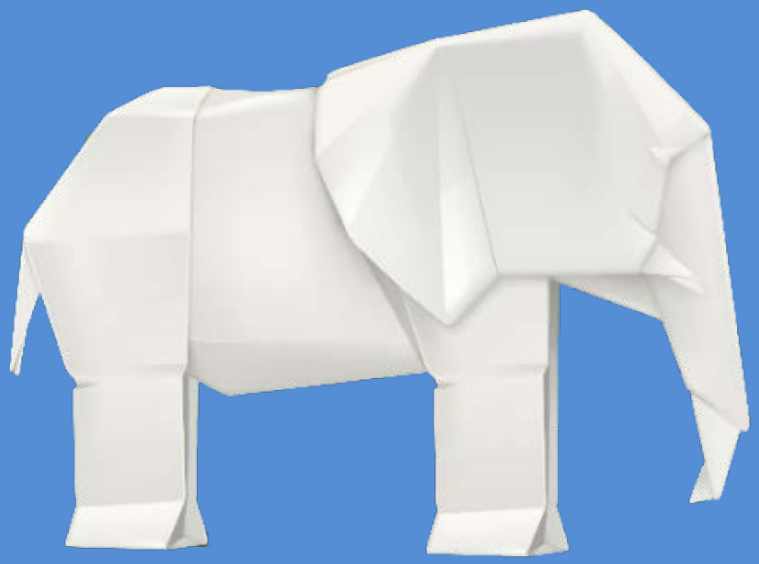
Our hypothesis…



If we continue to plan and deliver healthcare projects as we have in the past, arguably we are heading for trouble

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The industry's views…

- What are the biggest challenges ahead in health? What might the health sector look like in the future?

- What does that mean for planning and delivery of healthcare infrastructure?
  - What features will be important?
  - What models are currently used in Singapore and Australia?
  - Which models are most likely to be successful?
  - What innovation is occurring
  - What other changes are needed?

Thanks to the 50+ health providers, government agencies, consultants and contractors who have contributed to this research in Australia and Singapore

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What are the biggest challenges ahead in health?

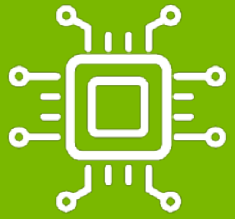
Increasing demand

Affordability gap

Funding availability

Lack of staff

Regulatory change



Digital disruption

Rapid advances in research and technology

Pace of change

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Just imagine what health could look like in the future

- More efficient
- Less staff + changed roles
- More integrated
- More preventative + personalized
- Better system + asset optimization
- More care outside hospitals
- Hospitals changed shape
- Advances in research + treatment
- Technology all pervasive
- Patient is watching
- People incentivised + empowered
- New funding models
- Real time, meta and personal data
- More global

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Innovation

Integration

Consumer centricity

Service focus

Technology

What does this mean for how we plan and deliver infrastructure?

Productivity

Resilience + adaptability

Salutogenics

Value for money

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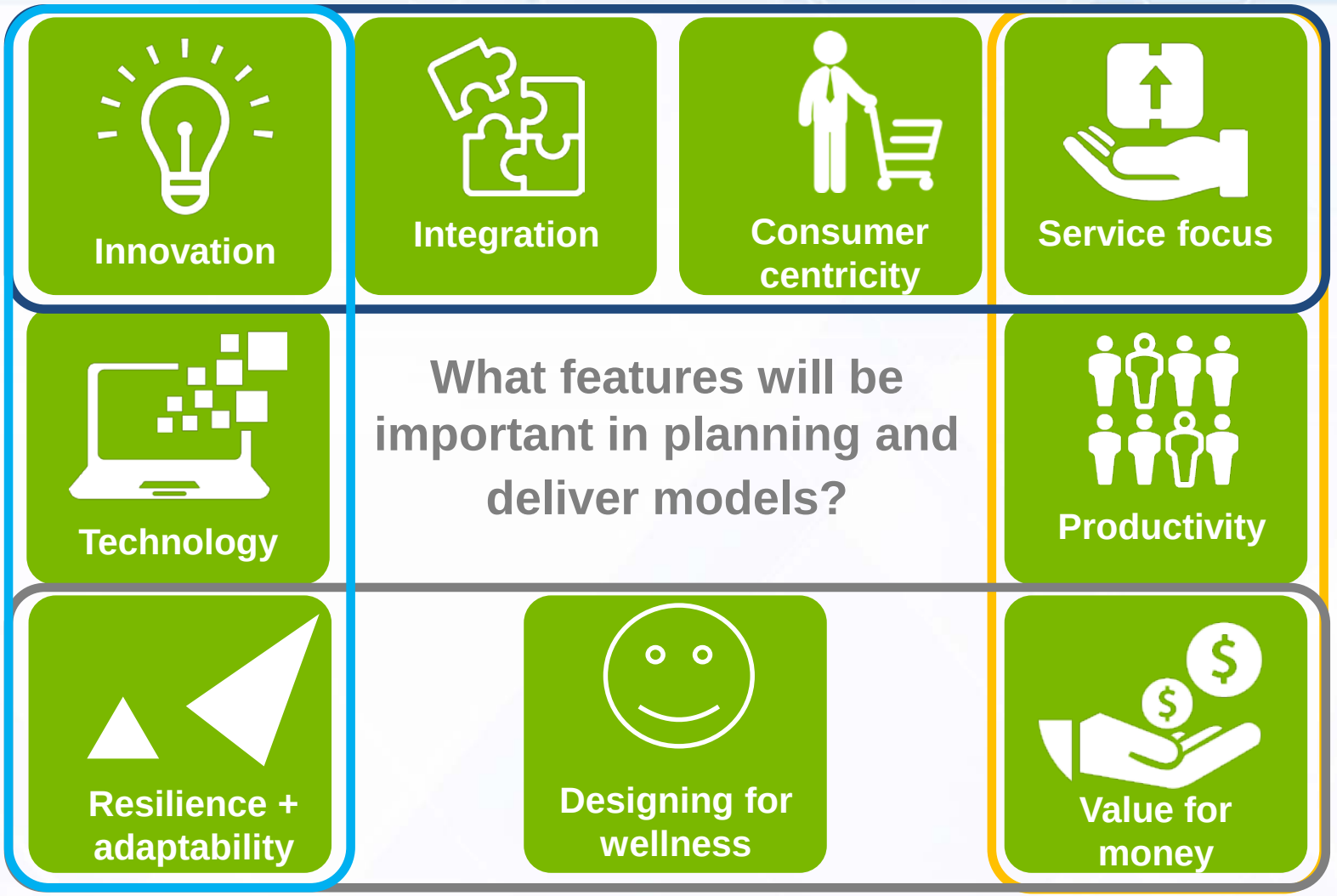

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Given this, which planning and delivery models are likely to be most successful in the future?

Engagement, collaboration & integration

Salutogenics

Wholistic value for money

Innovation & adaptability

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Previous study: Australian procurement models

Five procurement models used for health infrastructure:

- Construction Management
- Design and Construct
- Managing Contractor (Early Contractor Involvement)
- Public Private Partnerships
- Traditional Lump Sum

Focused on:

- Preferred models per different size projects
- Facilitation of innovation
- Level of buy in or collaboration
- Achievement of salutogenic outcomes

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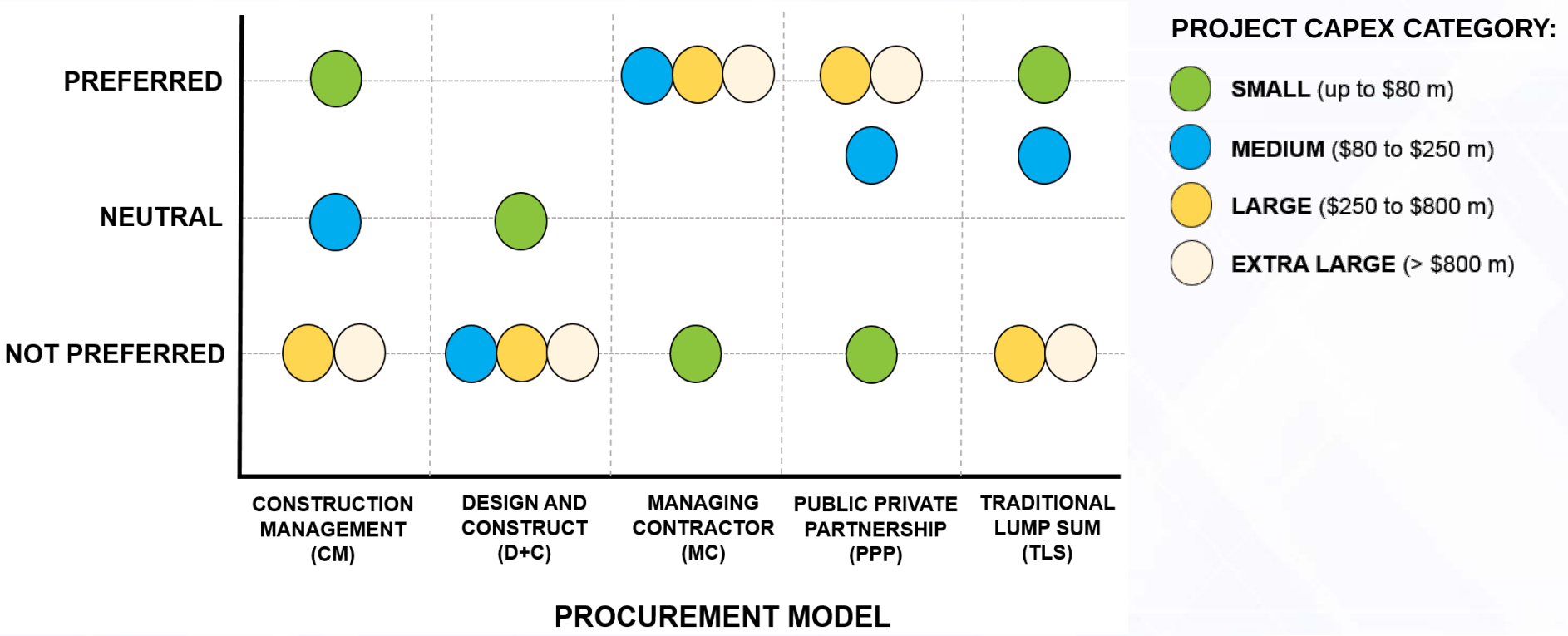
Key findings

- Strong preference for Early Contractor Involvement (MC) or Public Private Partnership models for large projects

Figure: Procurement model preference by capex (AUD)



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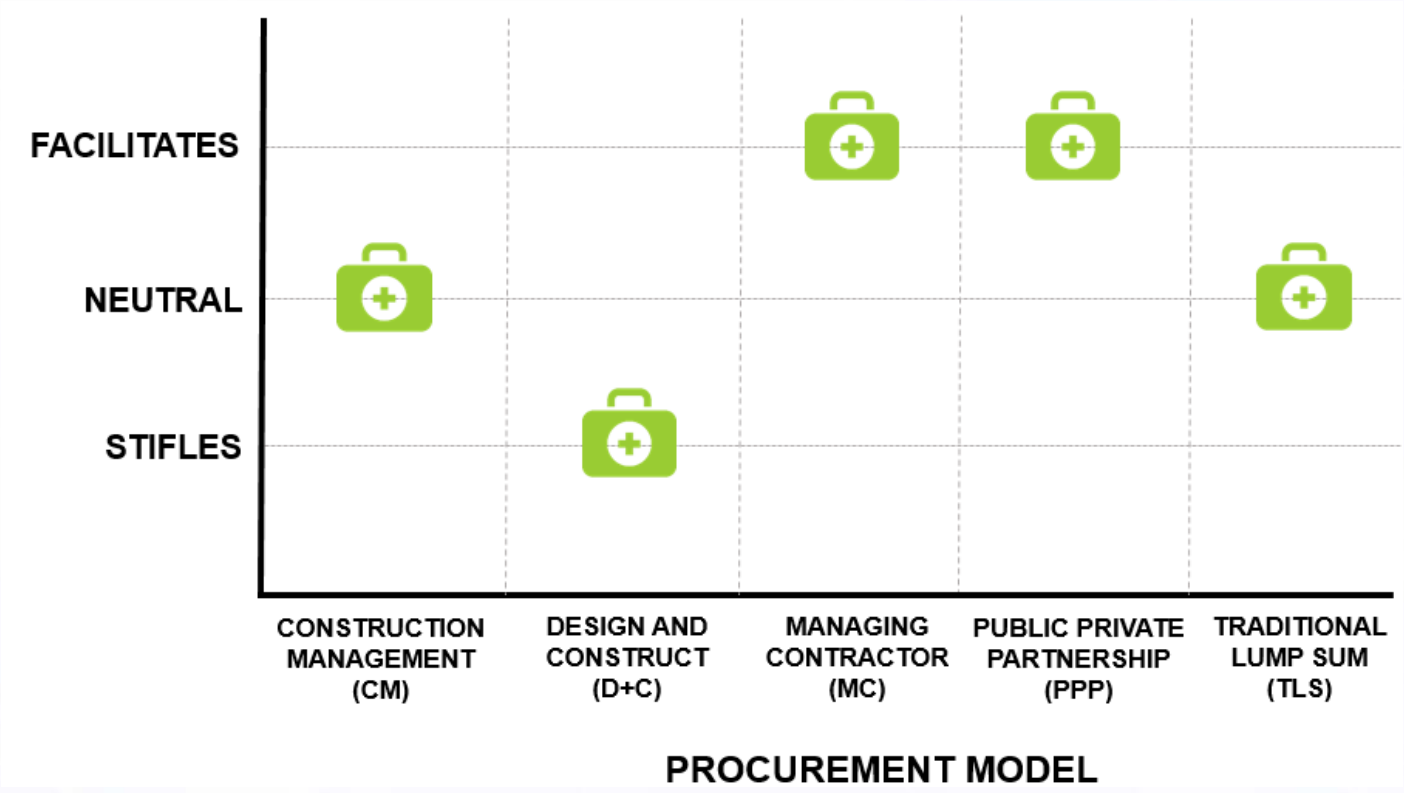
Key findings

- Early Contractor Involvement (MC) or Public Private Partnership most likely to facilitate innovation

Figure: Ability of the model to facilitate innovation



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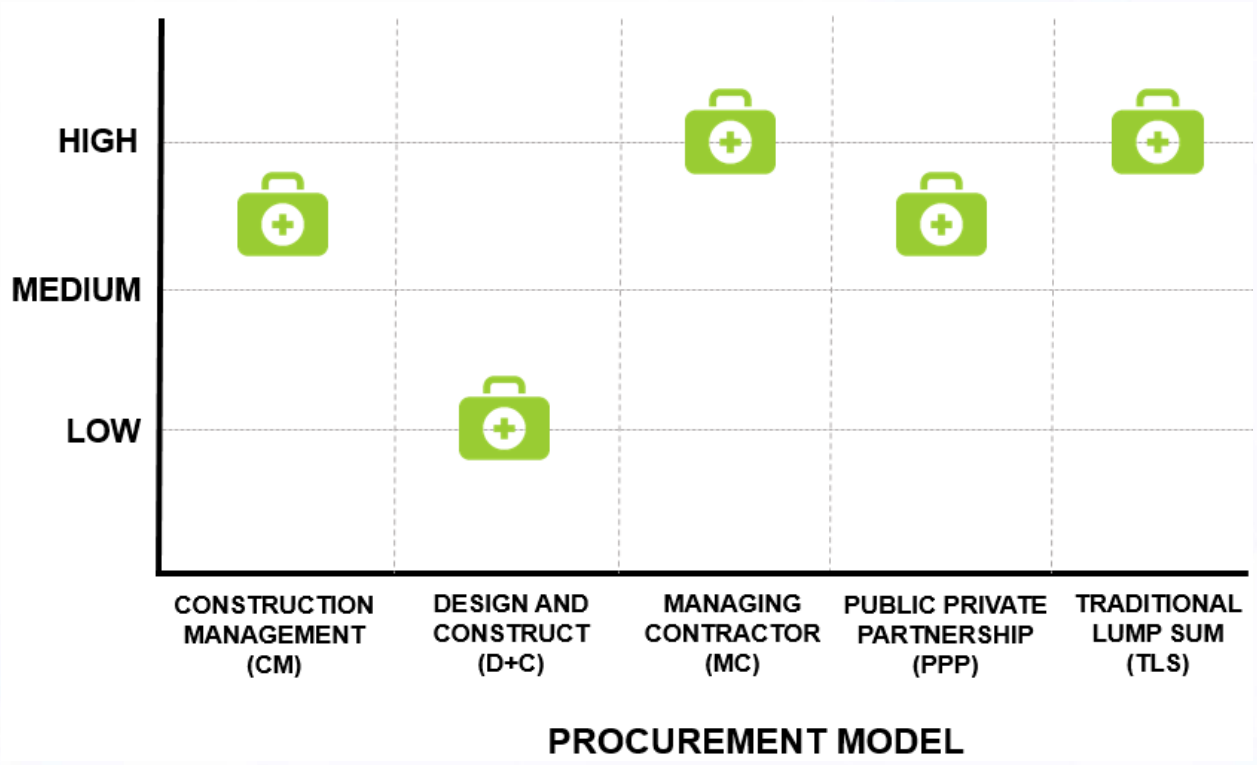
Key findings

- Early Contractor Involvement (MC) and Traditional Lump Sum models provide the highest likelihood of achieving strong stakeholder buy-in

Figure: Degree of stakeholder buy-on likely to be achieved per model



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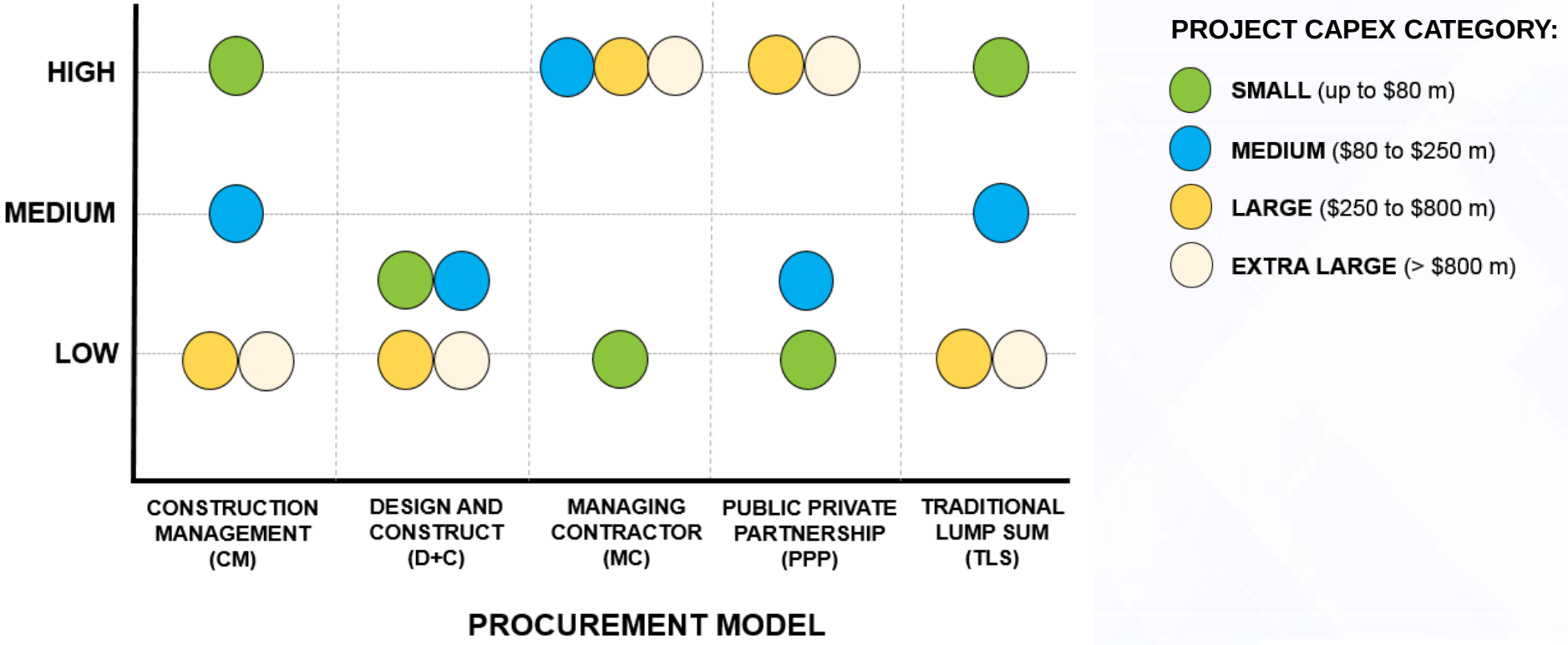
Key findings

- Early Contractor Involvement (MC) or Traditional Lump Sum most likely to foster salutogenic outcomes

Figure: Ability of the model to foster salutogenic outcomes



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Planning and delivery models most likely to promote the characteristics needed to be successful in the future given the challenges ahead:

- Early Contractor Involvement
- Public Private Partnerships
- Traditional Lump Sum
- Design and Construct
- Construction Management
- Other?

Engagement, collaboration & integration

Salutogenics

Wholistic value for money

Innovation & adaptability

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Which planning and delivery models are likely to be most successful in the future?

Planning Models

- Optimise operator involvement
- Space for innovation
- Expert input
- Consumer focus
- Structured planning team up front
- Front end vision and strategy
- Engagement, collaboration - wide reaching

Delivery Models

- Integrated teams and input
- Engagement early
- Guided by robust planning outcomes
- PPP - but operator focused
- ECI - but operator focused
- TLS - sound planning & design overlay
- Design Team / Contractor input early and integrated
- Holistic thinking - service focus

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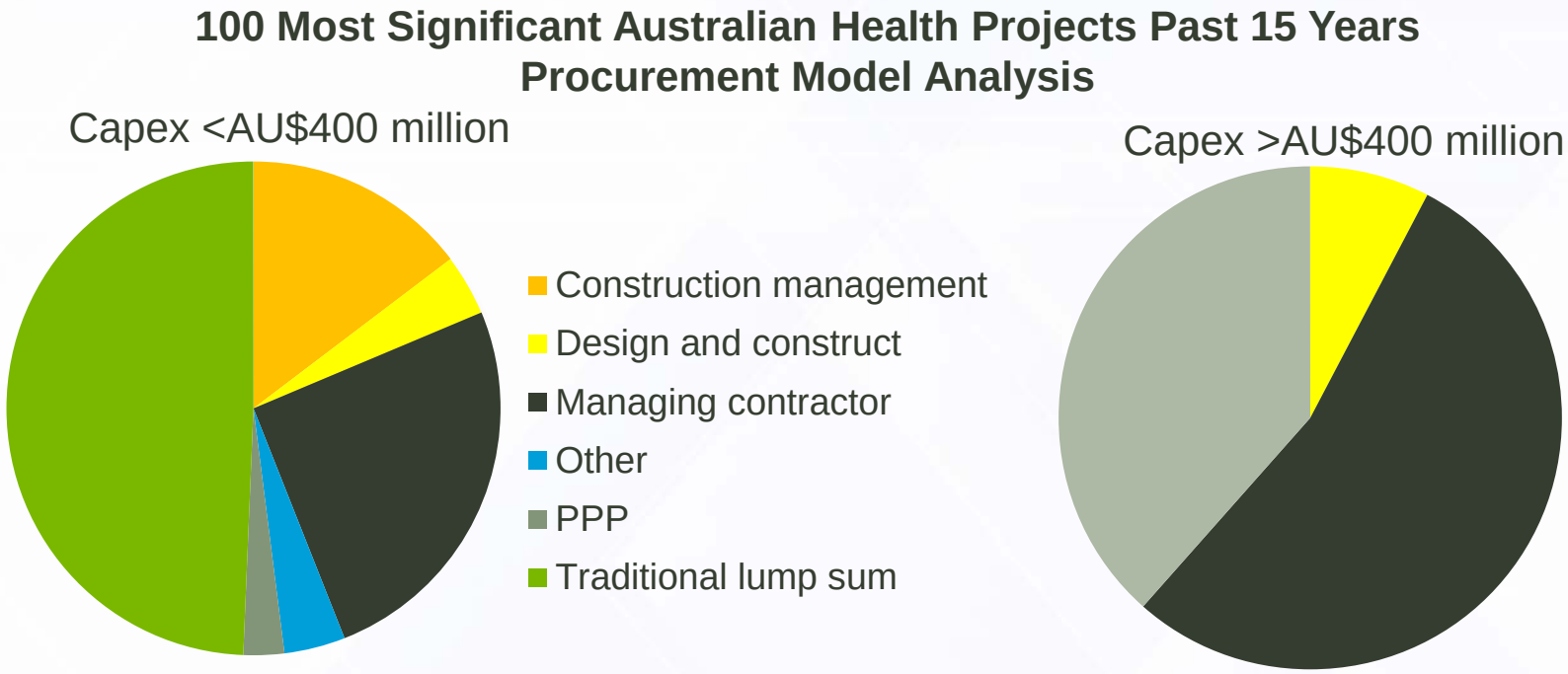
Latest research

We have now advanced this study and considered:

- Dominant models used in Singapore and Australia
- Comparison of models used in Singapore and Australia
- How these models are evolving
- Innovation needed in the future

Findings - Australia

- For large projects Early Contractor Involvement is the most common model



Findings - Singapore

Procurement models in Singapore

- Traditional Lump Sum
- Design and Build
- PPP not common
- Design Bid Build with Early Contractors' Involvement (DBB-ECI)
- ECI process
  - Phase - often late design development
  - Multiple contractors
  - Selected projects
- Construction Management not used

Singapore-Australia high level comparison

Singapore

- Early planning / briefing by client
- No PPPs in health
- ECI use increasing - focus on constructability and value for money, relatively late engagement, with multiple contractors tendering ideas, lump sum
- Planning and Construction Manager role in architect team in some instances
- Strong focus on productivity
- Increasing prefabrication – precast and structural steel works
- Shift to life cycle thinking

Australia

- Service planning by client
- Business case / early planning / briefing by consultants
- Brief further developed by consultants
- ECI & PPP dominant on large projects
- ECI involved early then negotiate Guaranteed Construction Sum and novation
- Traditional Lump Sum on smaller projects only
- D&C not popular
- Some prefabrication

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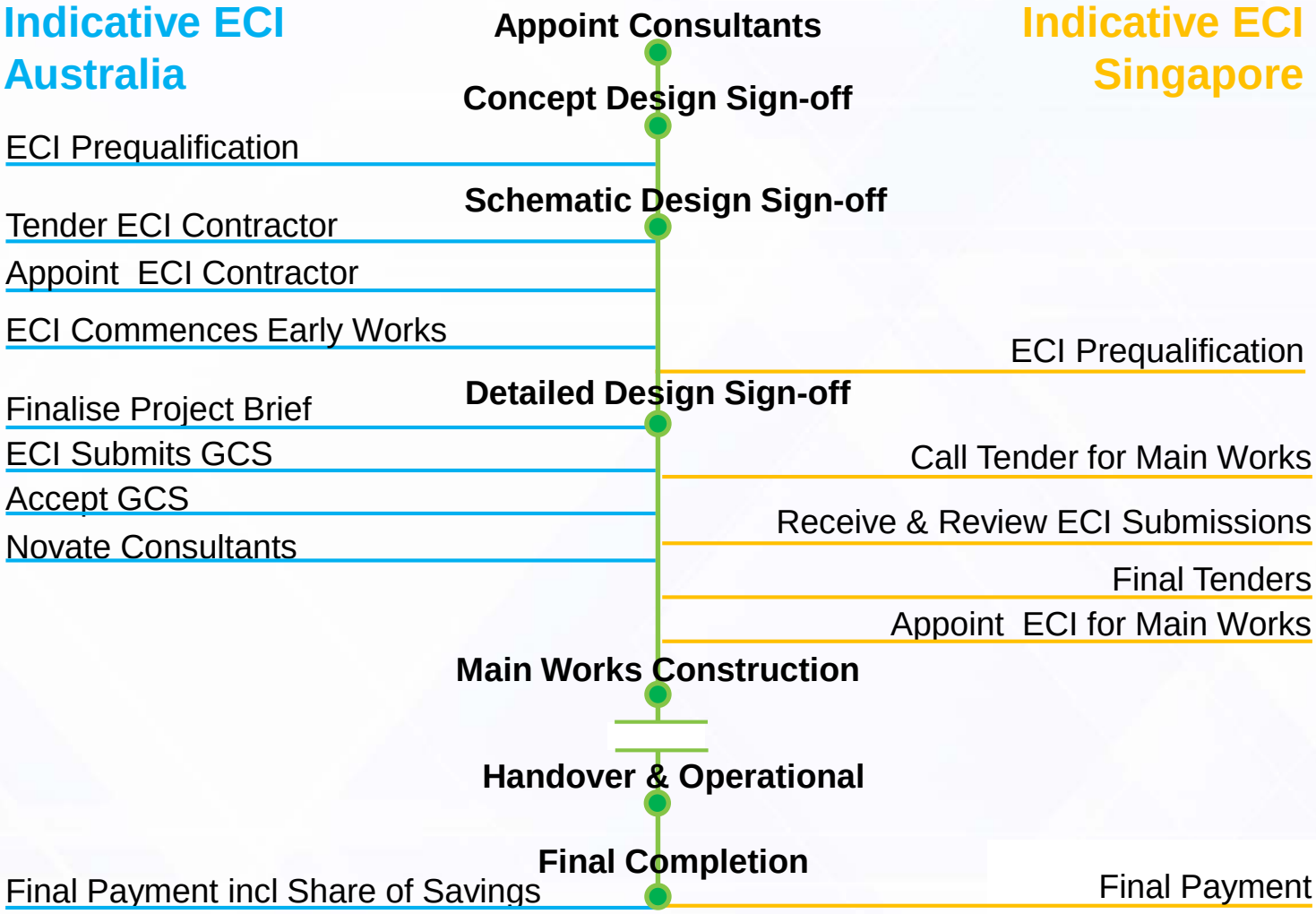
Australia-Singapore ECI Comparison



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Case Study: Lady Cilento Children's Hospital

- $AUD 1.5+ billion program
- $1.2 billion 359-bed paediatric hospital
- 15 inter-related projects
- Multiple forms of procurement
- Early Contractor Involvement used for the main project

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Lady Cilento
Children's
Hospital
main reception

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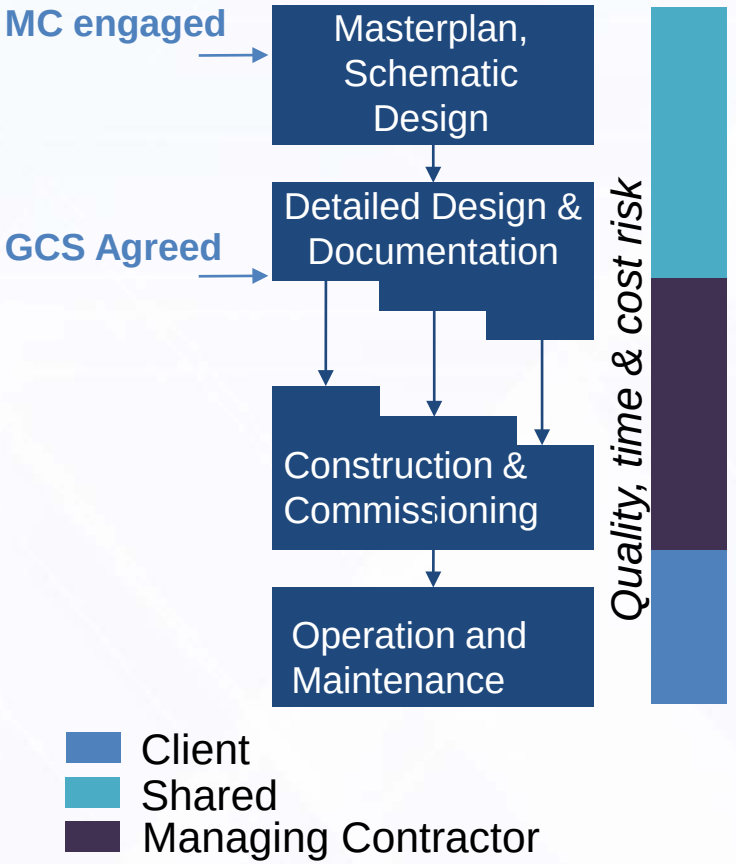
Case Study: Lady Cilento Children's Hospital

Procurement – Managing Contractor (MC)

- MC appointed through competitive process
- Guaranteed Construction Sum (GCS) negotiated
- If GCS not be agreed, then tender
- Consultants novated to MC
- Trades tendered open book
- MC shared in savings between GCS and actual

Factors affecting use

- Operator remains engaged throughout
- Start construction early
- Allow progressive completion of documentation
- Constructability input into design
- Shared incentive to value manage and innovate
- Cap on construction costs
- Risk of documentation error lies with MC



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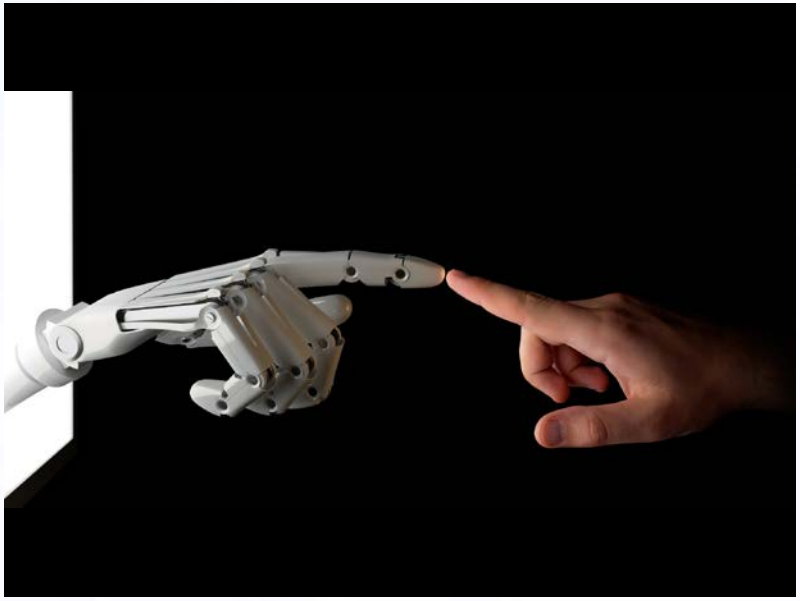
Planning and delivery evolution and innovation occurring

Singapore

- Implementation science
- “Innovative innovation management”
- Designing for the family to be more involved
- CASE – Construction, Asset management, Standardisation, Engineering
- IHAM – integrated healthcare asset management
- Technology focus and opportunities
- Embracing internet of things
- More emphasis on designing for flexibility
- Emphasis on wellness and integrated health
- Value for money infrastructure remains key



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Planning and delivery evolution and innovation occurring

Australia

- Some PPPs moving towards operator led
- Precinct and cross sector approach emerging
- Front-end emphasis
- Health service led design
- Increasing integration across system
- New entrants in infrastructure development
- Increasing focus on consumer engagement
- Digital integration more in focus
- Pockets of digital innovation

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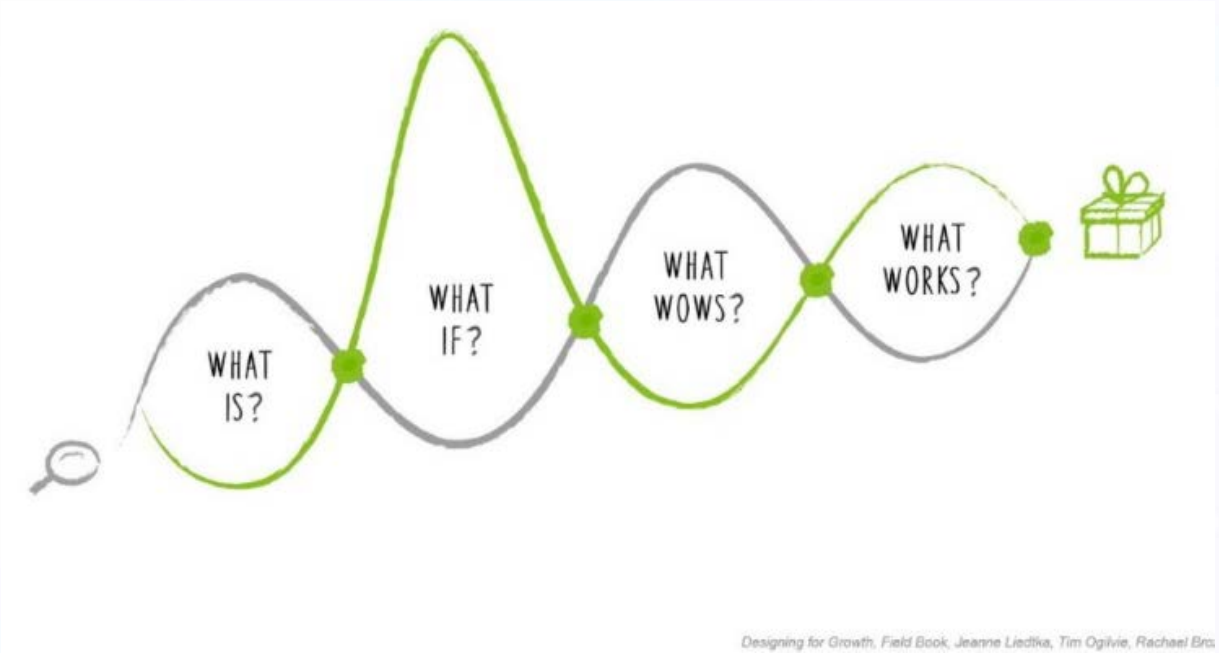
What innovation is still needed?

- Ability to contend with “wicked problems”
- Ways to plan from the future not the past
- Integrated thinking
- Better asset optimisation
- Improved productivity
- Continued construction innovation
- Technology led optimisation



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Case study removed for confidentiality reasons
Please contact susie.pearn@aurecongroup.com
for more information

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JUST IMAGINE

if we could use a SCIENTIFIC APPROACH to do more and better with less

if we had SOPHISTICATED MODELLING to plan and operate our future infrastructure

if we were to stop reinventing the wheel and FOCUS ON HIGH IMPACT INNOVATION

if we could make sense of the WICKED PROBLEMS AHEAD

if we could AVOID BUILDING WHITE ELEPHANTS

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Thank You

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