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Construction de Défense Canada**

Quality Garbage is Still Garbage



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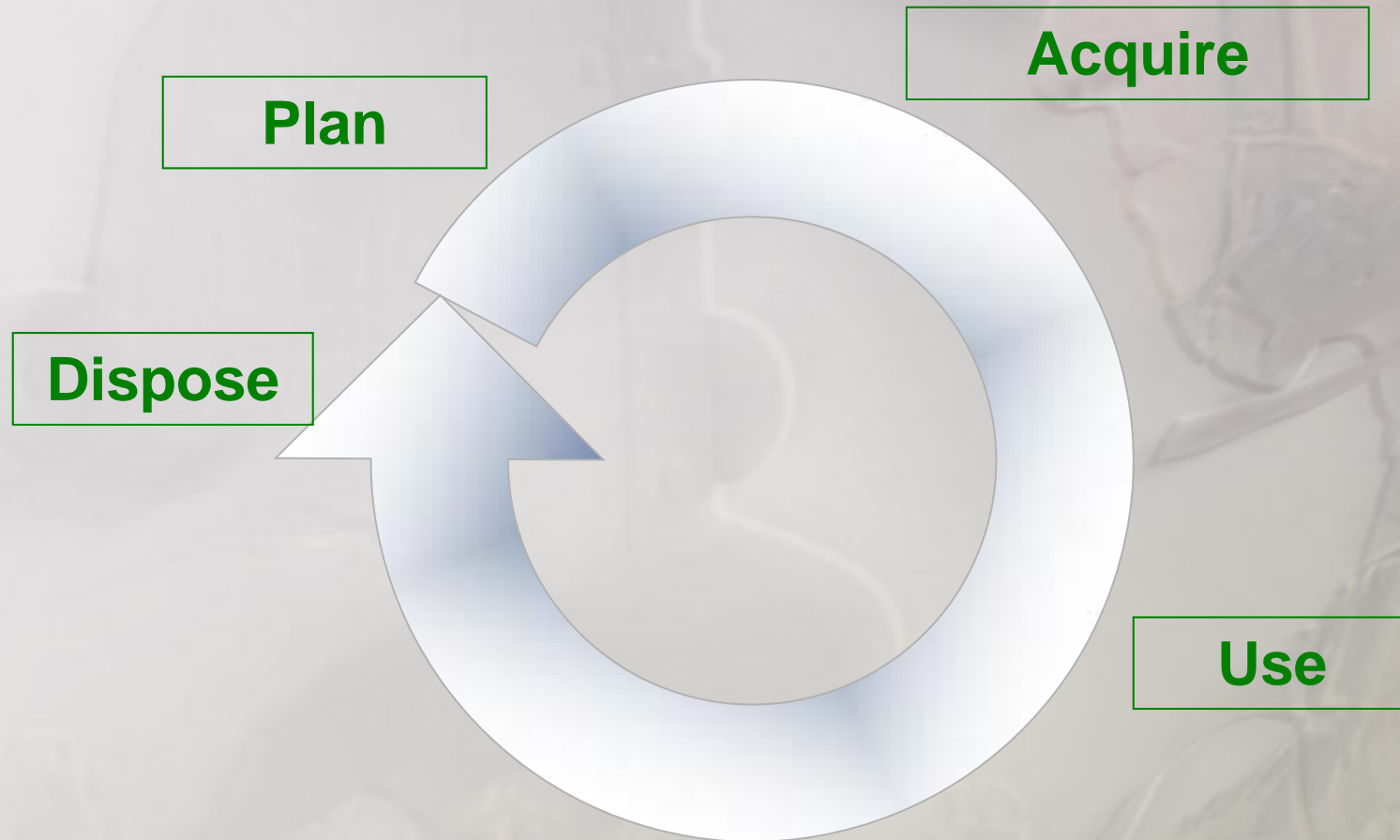
Overview

- Infrastructure Management Cycle
- Quality and its Impact
- Way Ahead
- WIFUS (What's in it for us?)



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Infrastructure Management Cycle



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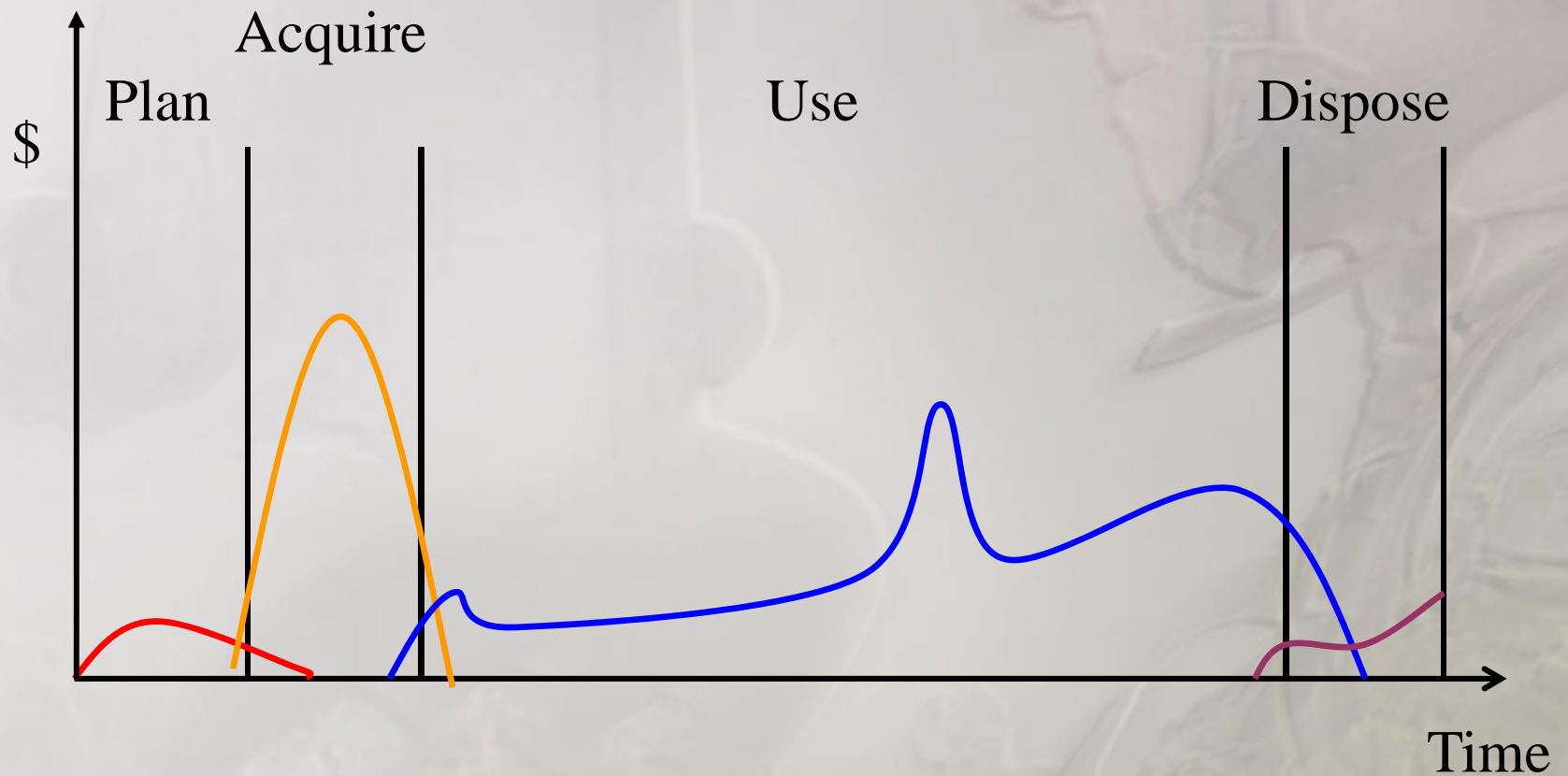
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Life Cycle Management

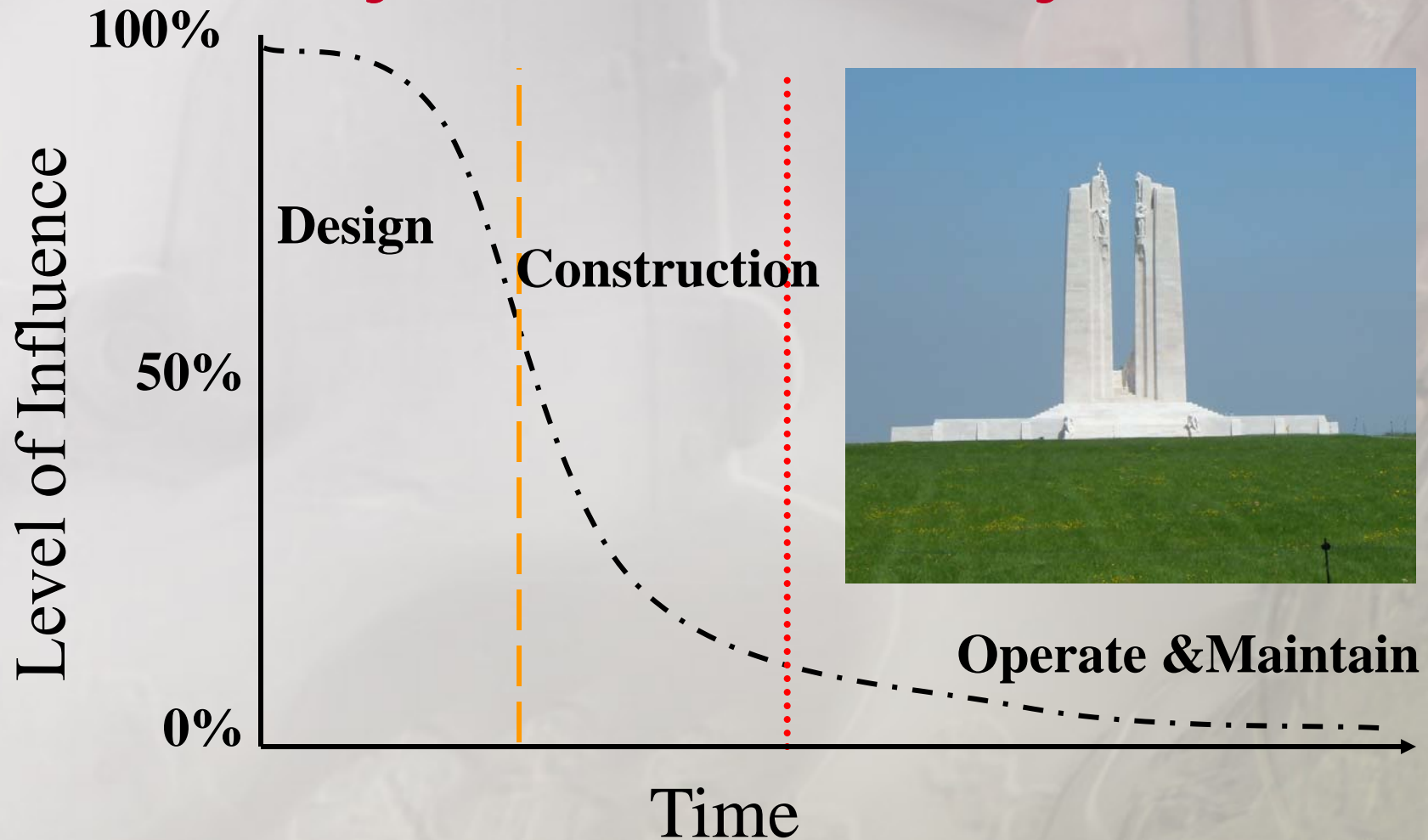


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Ability to Influence Life Cycle Costs





What is Quality?

- “Degree of excellence” (Oxford Dictionary, 1992))
- Conformance to requirements (Crosby, 1979)
- “Satisfaction Guaranteed or your money refunded” (T. Eaton Company)
- “Totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs” (American Society for Quality)



Dimensions of Quality

- Performance
- Reliability
- Durability
- Serviceability
- Aesthetics
- **Conformance**
- Perceived quality



Defining the
Requirement

Process



Product



Impact of Quality

- DND Study
- Quality Myths: fact or fiction
 - #1 Save now pay later
 - #2 We don't build 'em like we used to
 - #3 Perception is everything
- Impact



DND Study

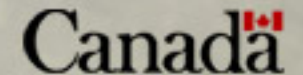
- Five categories of buildings
 - administration, residential, operations, institutional (lecture/training), hangars
- Common design
- Constructed after 1950
 - Older >41 years of age
 - Middle-aged 26-41 years of age
 - Newer <26 years of age
- Focus on costs in first 20 years of building life



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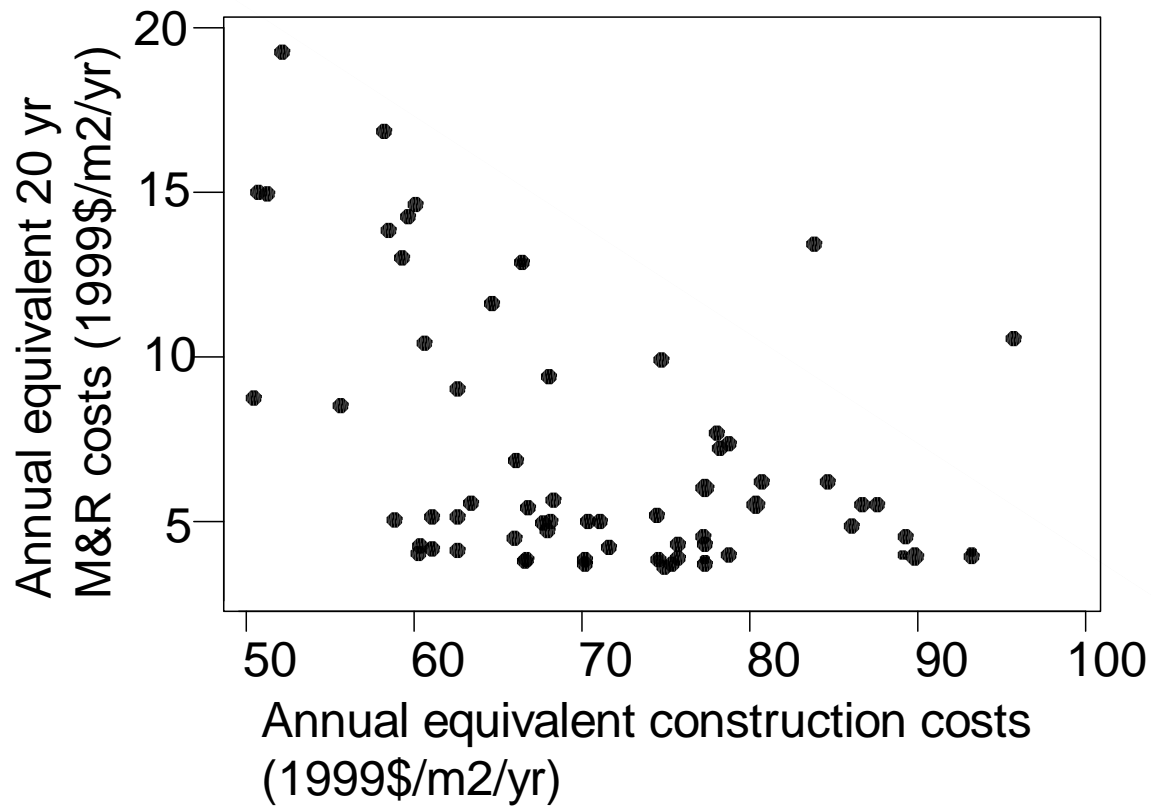
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Myth #1: Save Now, Pay Later

Comparison of Maintenance/Rehabilitation Costs & Construction Costs



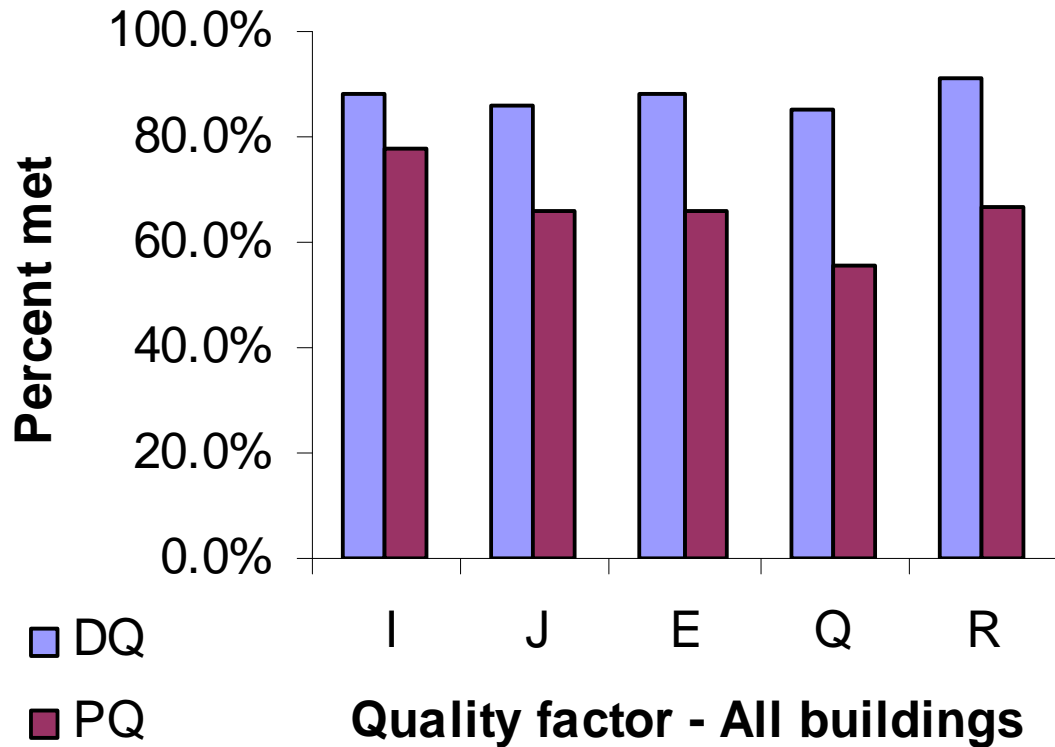


Myth #2: We Don't Build 'em Like We Used To

- Construction costs generally lower for newer buildings
- Building services costs comparable
- M&R* costs highest for *newer* buildings:
 - Newer 1999\$ 11/m²/yr
 - Middle-aged 1999\$ 10/m²/yr
 - Older 1999\$ 7/m²/yr
- CMHC study showed higher repair costs for post 1980 bldgs



Myth #3: Perception is Everything



E - washrooms

I - adequate/appropriate lighting

J - timely repairs

Q - mechanical ventilation

R - heating

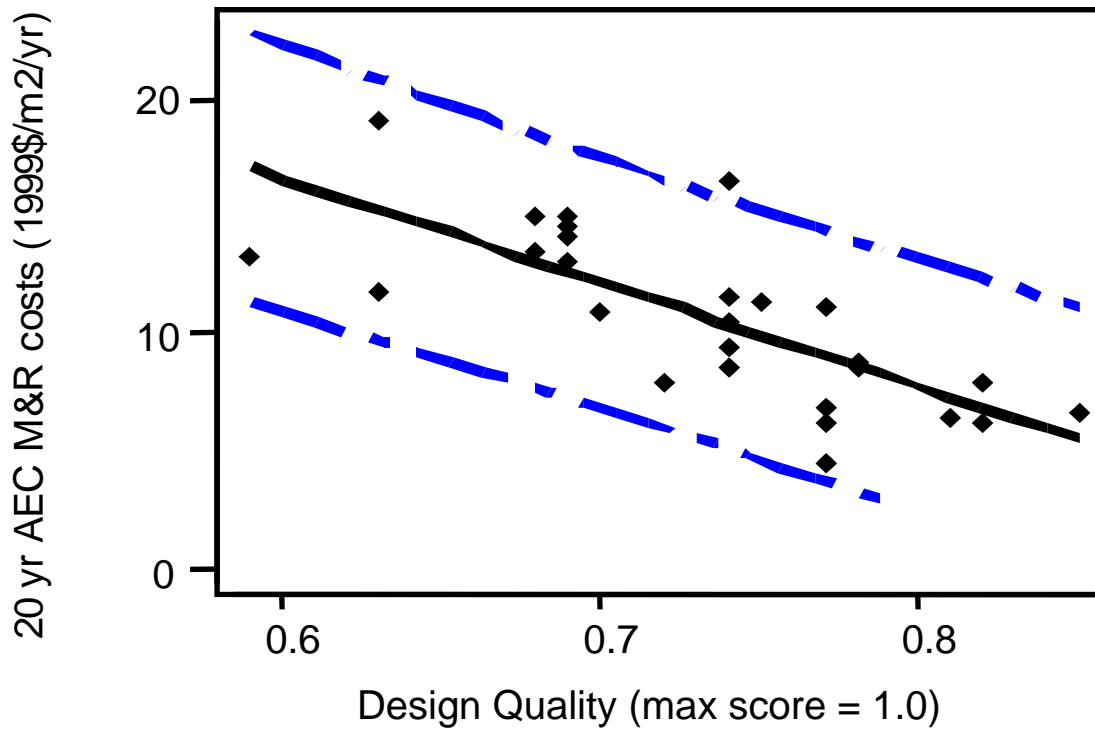
PQ - Perceived Quality

DQ - Design Quality



Impact of Design Quality on Costs

Comparison of Maintenance/Rehabilitation Costs & Design Quality





Way Ahead

- Focus on ensuring quality in design
 - Requirements, requirements, requirements
 - Communicate & collaborate
 - Mitigation vs litigation
- Whole life/life cycle cost approach



What's in it for US?

As consultants AND owners:

- WE define the design requirement
- WE have the greatest opportunity to affect end-user satisfaction
- WE have the greatest influence on the life cycle costs of what you design



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YOU can make:



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Thank You

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