FIDIC Webinar
Collaborating to transform the infrastructure that shapes society

with
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Our core proposition

More sustainable infrastructure can be readily achieved at no net cost – including savings on capital cost

We’ll illustrate this by exploring:
• Underpinning experience and evidence base
• Current reality and impediments to progress
• Case studies providing transferable insights
• Key ‘how to’ recommendations
Our book and evidence base

Co-author: Susanne Cooper

Available from: insighttrading.globalskm.com
Mining port and facilities
Intended design

Habitat encroachment, energy load, water use, dust emissions, noise > regulations

Innovative solution

No habitat impact, energy reduced, ~90% water reduction, noise < regulations, capital and operating cost savings
Value creation potential

Future creation

Achieving WoL goals

Cost effective

Safety & efficiency

Enhancing productivity

Business models + technology choices

Innovation potential

Capital spend

Cost of sustainable development

Capital allocation

Concept

Design

Delivery

Operation

Improvement potential

20-70%

10-15%

5-10%

Source: McKinsey 1996; and Jacobs Experience

Organisation development

Asset Development
Global infrastructure spend should exceed US$5 trillion per year over the next 20 years. How sustainable are those investments likely to be? Could we boost the dividend to society?
Exciting potential Schemes suggesting what to do … but not how to do

Schemes suggesting what to do
What’s the real problem to solve?

Efficiency
“It’ll take longer and cost more”

Simplicity
“Don’t over-complicate things!”

Action
“I have the answer. Let’s get on with it”

Declining trust in institutions

Social challenge to legal licence

Declining revenues, asset write-downs

Water, food, energy, climate insecurity

Challenges to science

Projects over budget, behind schedule

Multiple sources of the ‘truth’

Legitimacy
“We need the approvals.”

Growing knowledge, growing complexity

Legalistic
“We’ve got the approvals.”

(Ir)rational
“If they just understood…”

Combative
“Us and them”

Fear
“Did I lead the wrong approach?”

Fear
“Will I look weak, or like a greenie?”

Fear
“How else could I solve the problem”

City cohesion and affordability

Efficiency
“It’ll take longer and cost more”

Simplicity
“Don’t over-complicate things!”

Action
“I have the answer. Let’s get on with it”

How can we intervene in this complex human (not technical) situation in a practical, constructive and repeatable way?
PURPOSEFUL CREATIVITY

Design
Value
Effectiveness
Collaboration

DUTIFUL MECHANICS

Fulfilment
Cost
Efficiency
Competition
Initial difficult conditions

- Poor brand, no trust, two routes chosen, EIA required, no in-house construction experience

Social licence and support gained

- Stakeholder support, no EIA required, no public submissions, saved time and cost (EIA and very likely during construction), rising brand and trust
**Odour generating liability**

Wastewater treatment plant, drain on finances, odour generating community complaints

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**Resource creating asset**

Co-generation of energy, odour management, utilisation of buffer zone, revenue generation, local job creation, brand enhancement, award winning ... inspiring similar thinking on other assets
How #1 – Systems mapping

What’s the project boundary?
How #2 – Issues Wheel

How do risks evolve and inter-relate over time?
How #3 – Stakeholder ‘deep dive’

What does success look like for each stakeholder?

How could we deliver on that success *by design*?
How #4 – Reframe, toward design

• Continually lead with powerful questions
  e.g. What would success look like for Stakeholder X?
  e.g. What would this asset’s features need to be to ensure it remains highly valuable in 15 years time?
  e.g. From our project team perspective, what might just be possible and worth striving for?

• Then use questions guiding toward outcome design
  e.g. How can we eliminate the identified risks by design, and even translate them into assets?
What emerges again and again?

• Deeper, shared insight
• Joined-up solutions to multiple issues
• Simpler solutions, smaller footprints
• Lower capex, opex, cost of ownership
• Offset collaboration costs
• Socially viable solutions
• Reduced whole-of-life asset risk
• Motivation for future innovation
• Greater teamwork, less rework
Conclusions

• A bigger, exciting role exists for engineers
• Mindset shift is pivotal to realising the benefits
• Myth that sustainability costs more should be rejected
• Not more effort, just better placed effort
• Impediments are rarely technical – fear and know-how
• Questions are one of the most powerful tools

*With these insights, what choice will you make and why?*