The New Zealand Society for Sustainability Engineering and Science – Seminar Auckland19 May 2006

Sustainability: Clients and Consultants

- What do the Clients want?
- Are the Consultants giving it to them?

A Consultants view ....!!!

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Sustainability for Client and Consultant
A Journey or a Paradigm Shift?

It's very much a Journey!!

Already “In Place” for Client and Consultant

- Professional Training
- Professional Body - Codes of Ethics eg. IPENZ, NZPI
- Legislation
- Guidelines and Codes of Practice
- Client and Consultant Organisation Visions, Missions, Guiding Principles
- Affiliations e.g.. Member NZBCSD
- Personal Ethics and Approaches

Sustainability in an Engineering Context for Client and Consultant

The IPENZ Code of Ethics states as one of its five fundamental values the following

"Sustainable Management and Care for the Environment:
Members shall recognise and respect the need for sustainable management of the planet's resources and endeavour to minimise adverse environmental impacts of their engineering activities for both present and future generations."

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Four Key Sustainability Factors for Engineers

1. Managing changes in the environment
   - Maintain the integrity of global and local biophysical systems
   - Ensure the full cost of resource depletion is included in all feasibility studies and estimates
   - Optimise processes on a life cycle basis
   - Optimise the use of renewable resources
   - Minimise waste products
2. Equity and safety of engineering activities
   - Improve the overall quality of life
   - Balance increased consumption with improvements in quality of life
   - Long-term resource use
   - Prioritisation
   - Consultation
   - The precautionary principle
3. Holistic problem solving
   - Take a holistic approach
   - Base solutions on human needs
   - Take a synergistic approach
4. Making good on existing problems
   - Remedy past environmental degradation
   - Past hazardous practices must cease and be cleaned up
   - Reduce the use of non-sustainable practices
   - Support social and economic accounting methods

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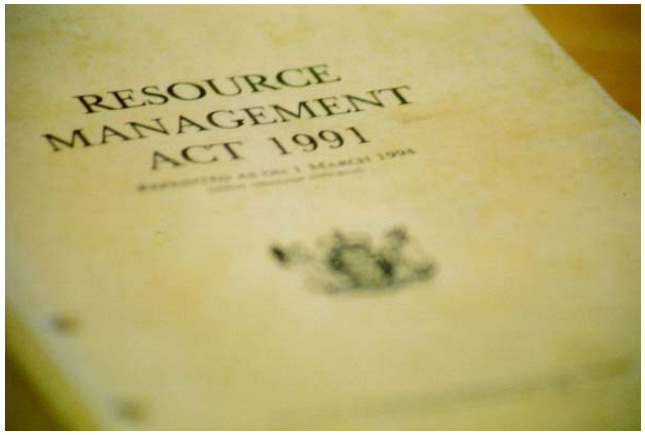
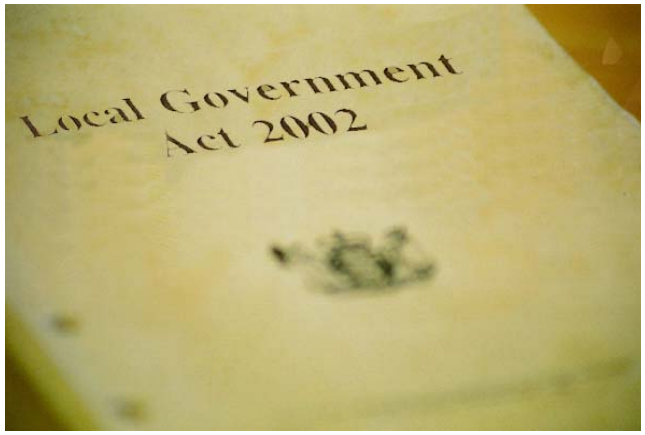
Our Drivers Include NZ Legislation

Sound sustainable development framework in legislation – e.g.

- Resource Management Act – 1991 (RMA):
  - *Promotes 'sustainable management of natural and physical resources' - 'effects based'*
- Local Government Act 2002:
  - *Encourages sustainable development Councils' to "promote the social, economic, environmental and cultural well-being of communities in the present, and for the future"*
- Land Transport Management Act 2003 (LTMA); the Act aims to achieve
  - *"an integrated, safe, responsive and sustainable land transport system"*
- Building Act and others





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Approach to Sustainability for Consultants

Is it? :

- An Integrated Core Business Approach (Business as Usual)

  OR

- A specialist (product line) Service

➢ An Integrated core Business Approach but with key specialist tools as appropriate.

Clients Lead or Consultant Lead?

Who sets the Direction?

Must be the Client lead

So the Consultant must:

- Understand what the Client means by “Sustainability”
- Understand the Client’s mission, vision, values and corporate approaches
- Clarify and confirm the project approach
- Be clear on what the Client expects as outputs
- Perform

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So What is the Consultant's Role?

This depends to some extent on the Client and their position

- A Collaborative Team approach with the Client (not Consultant Lead!)
- Proactively supporting the Client and working within the scope of the Client's vision, overarching philosophy and methodologies, in fact assisting to further develop these
- Have the right "skill sets" – use the "right people"

So What is the Consultant's Role cont?

- Bring the Consultant's "Professional" and " Widest Technical" expertise to the project
- When appropriate facilitate and educate the Client in more sustainable approaches i.e. take the Client on " the journey"
- Use " Smart Tools" that encompass sustainability approaches and measures
- And ABOVE ALL:

  "To Deliver the Best Sustainable Outcome for the Client"

So are the Consultants giving the Clients what they want?

Yes and No

Its variable and there are reasons why on both sides

Reasons for Yes and No include the Consultant:

- Not understanding the Client, Corporate matters, brief, or needs
- Not having the right skills and experience
- Not understanding what sustainability is all about in the context of the project
- Not using the appropriate tools
- Inadequate quality and audit checks
- Other?

Some Useful "Sustainability Approaches and Tools" the Consultant and Client can use

- Adopting the fundamental triple (quadruple) bottom line approach (Social, Cultural, Economic, Environmental)
- Bring in all factors – not just Engineering and Science
- Use Integrated and Holistic approaches
- Link the Silo's in an organisation and work across them
- Work within the type of Sustainability being applied e.g. "Hard" or " Soft"
- Understand a true "effects" approach especially when working with the RMA

Some Useful "Sustainability Approaches and Tools" the Consultant and Client can use cont

- Understand and manage risks
- Listen, Learn, Think and Consult
- Use of Multi-Criteria Decision making and similar tools
- Use of "Sustainability Indices"
- Adopt Precautionary approaches
- Use of Ecological Footprints and related techniques
- Checklists and Audit Trails
- Other

Lets highlight some of these tools

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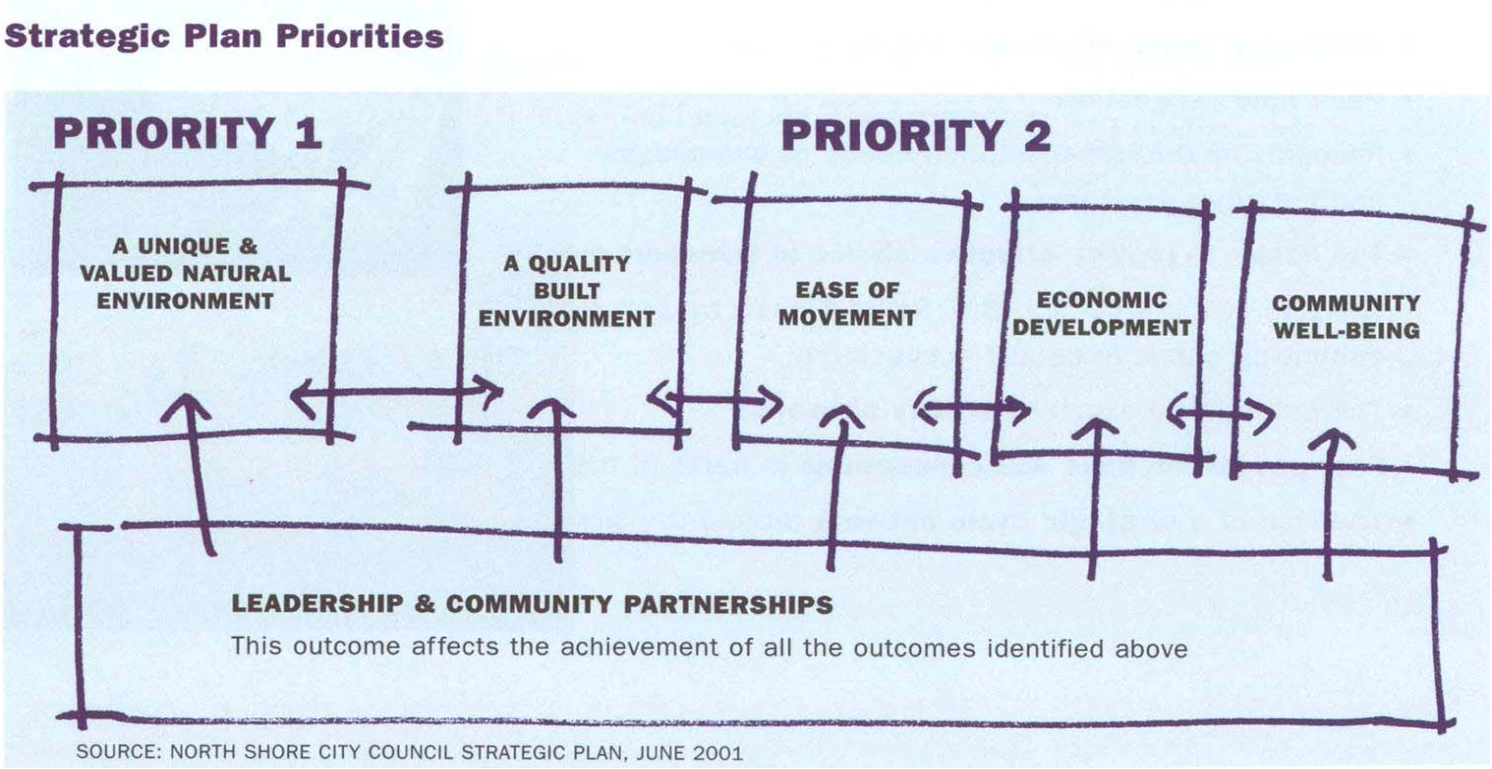
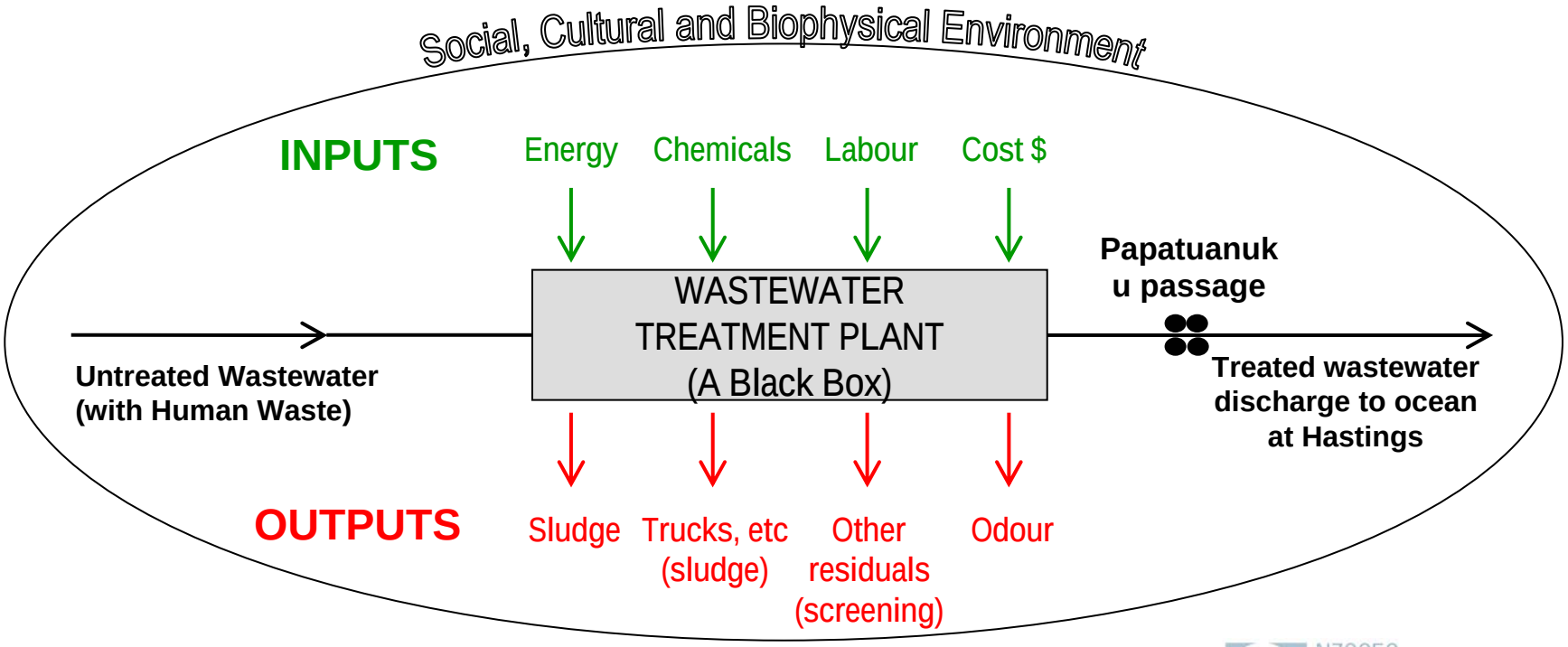
The Approaches – Linking the Silos



Across Organisations / Industries / Stakeholders

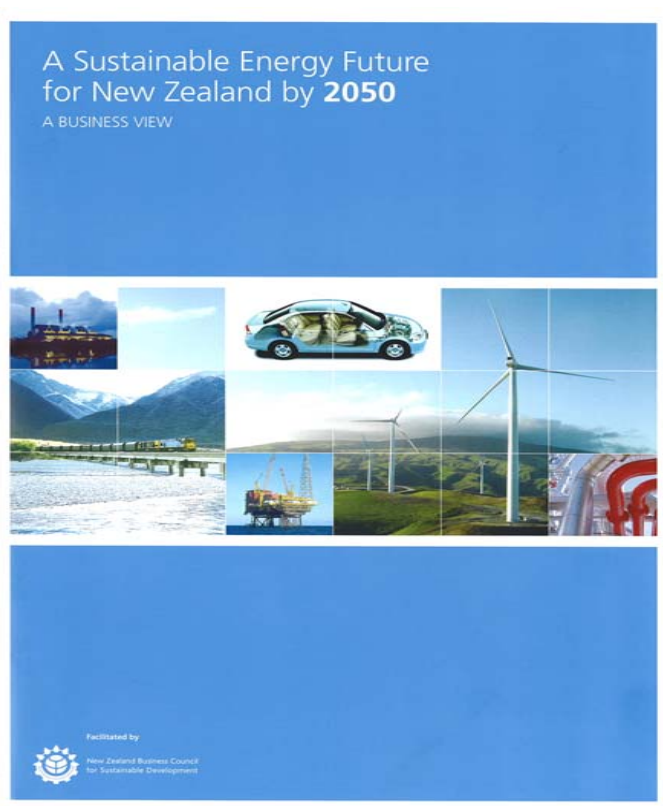
Integrated and Holistic Approaches: bringing all the Client and Stakeholder Parties together

- The Wastewater Management Example:



Each different wastewater treatment option will have different inputs and outputs and effects on the environment.

Common Tools for the Client and the Consultant – Guidelines, Hand-books and Protocols etc



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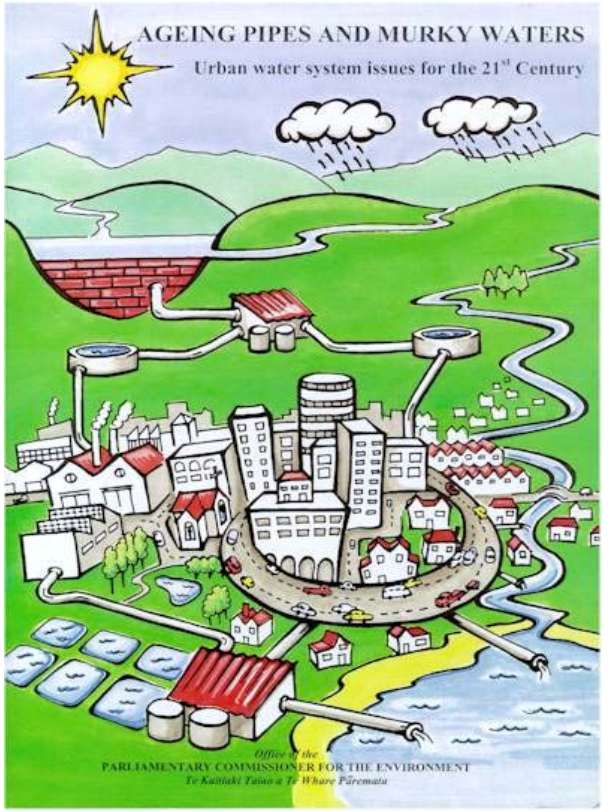
Urban Three Water Systems (Water Supply, Wastewater and Stormwater)

The NZ journey:

- Parliamentary Commissioner for the Environment recommendations to Parliament covered:
  - Fragmented approach
  - Stakeholder awareness
  - Pricing and charging
  - Integrated management

- Approaches being adopted:
  - Integrated catchment management
  - Sustainable urban (three) waters
  - User pays
  - Levels of service Water Service Assessments



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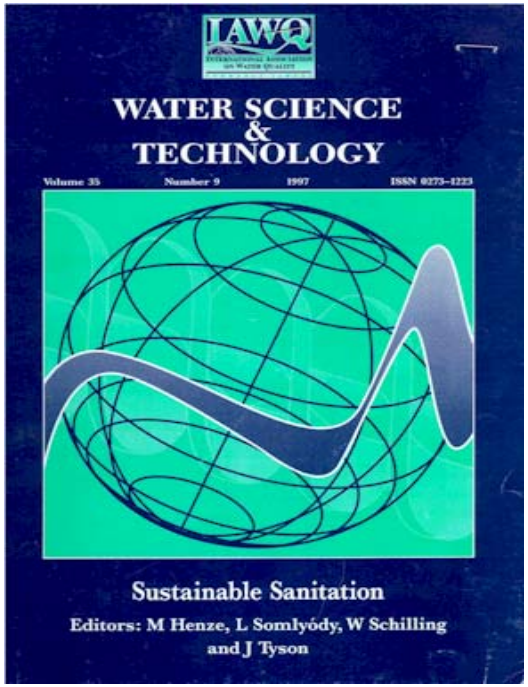
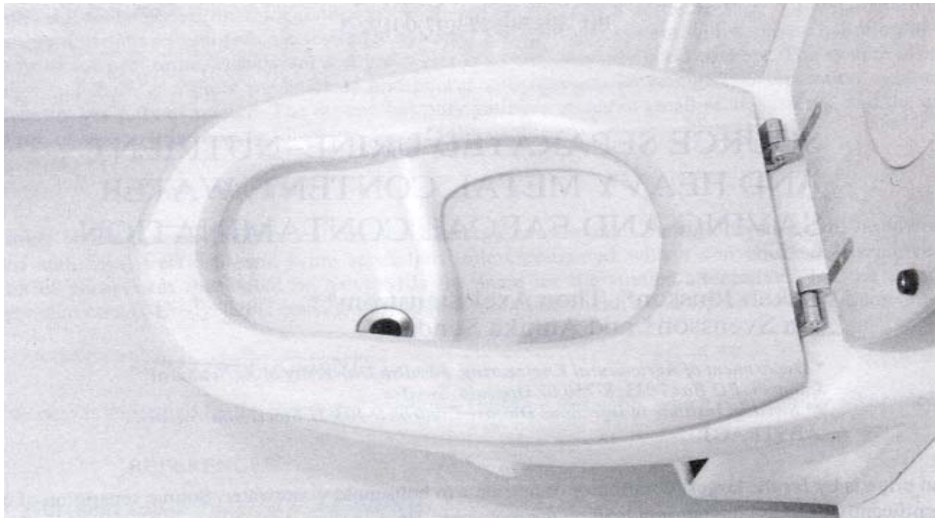
Using and Levering “off” Global Progress…

but how do we “do it”?

Source Separated Urine

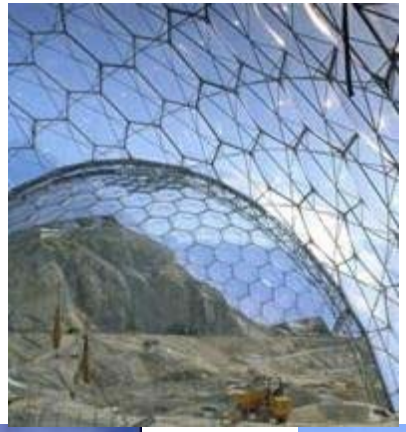
- Nutrient and heavy metal content, water saving and faecal contamination





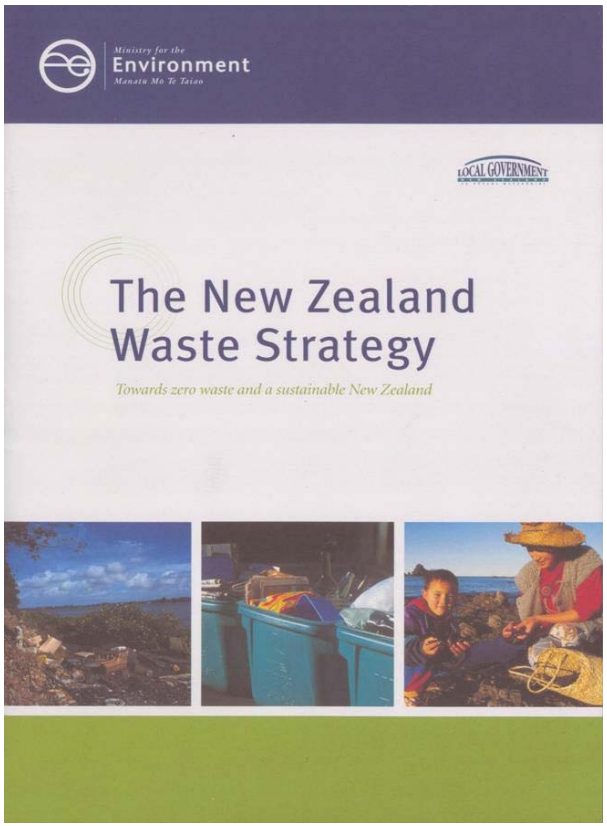
Help Shape the Future for Green Buildings in NZ – Client and Consultant Joint Roles

Sustainable Building Assessment Scheme Project





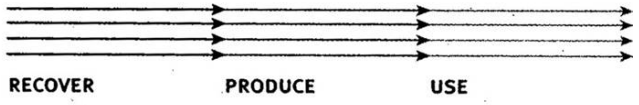

Resource Efficiency
Closing the Loop e.g. NZ Waste Strategy



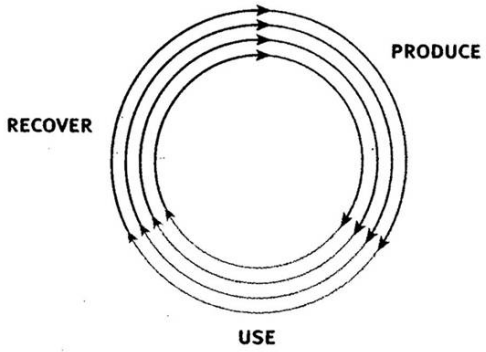
Vision: Towards Zero Waste:
About – Closing the (resource) loop

Figure 2: Linear versus cyclical approaches to resource use

LINEAR – CURRENT



CLOSING THE LOOP – FUTURE



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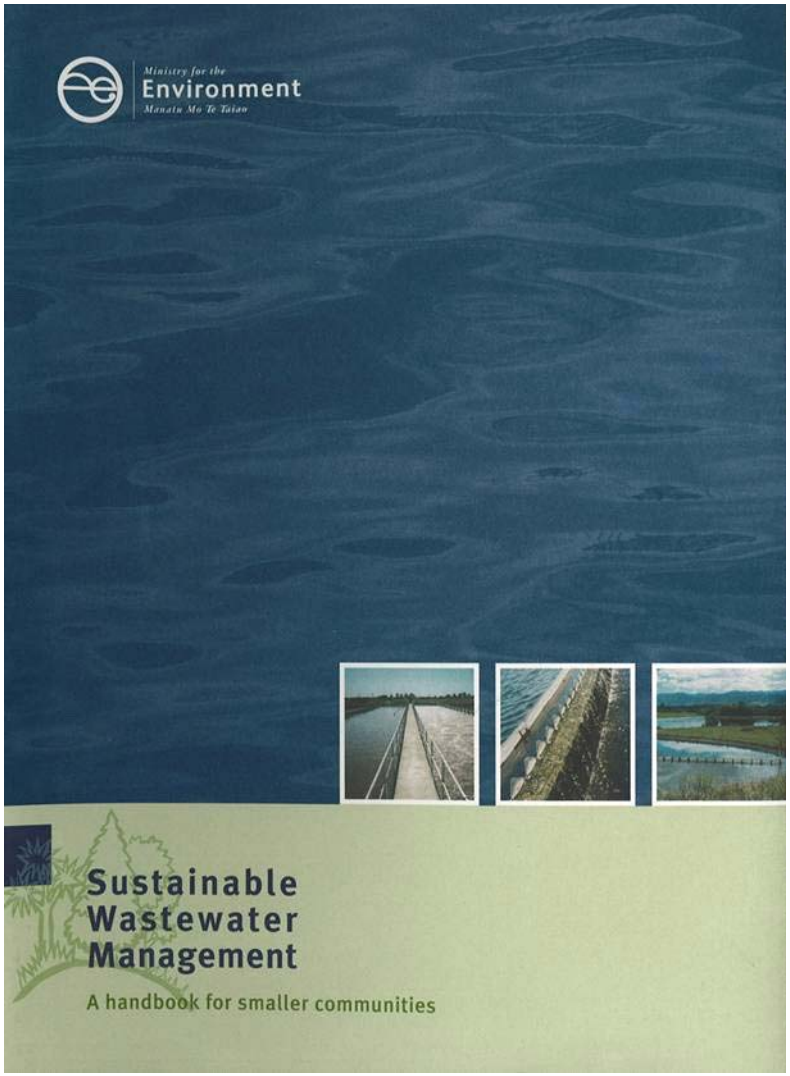
Systems Approach: An Example



Systems thinking and Approaches

- Reflects a sustainable development framework
- Recognition of Maori perspective
- Integrated urban (three) waters
- Using ecosystem services
- Subsidy scheme allocation criteria
- Risk Management approaches

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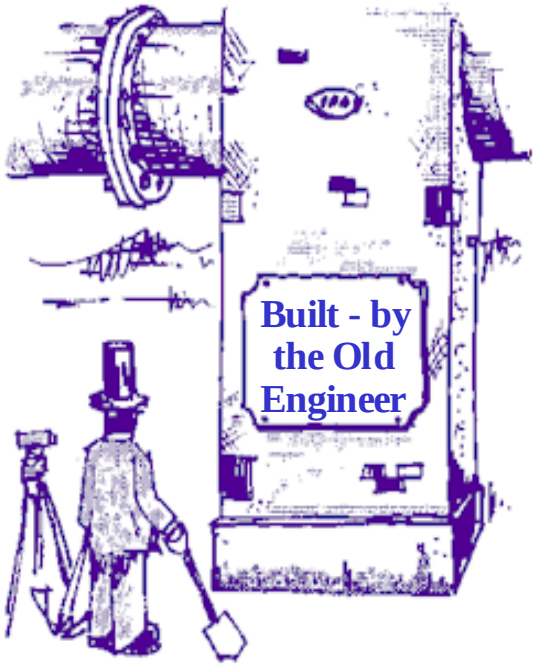
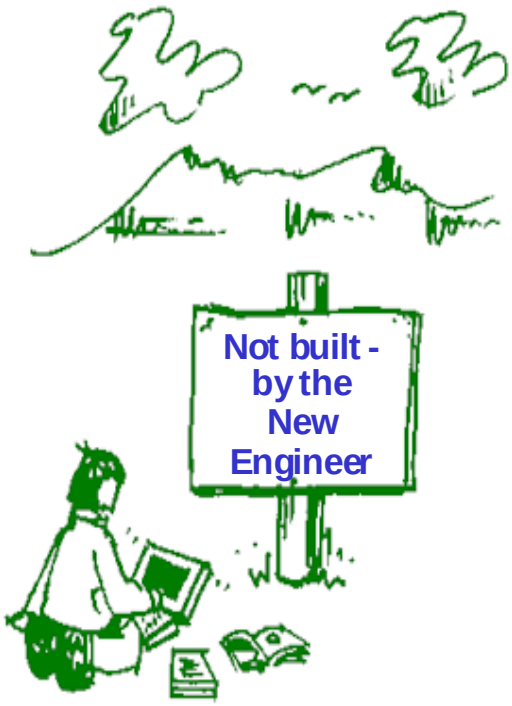
Our Sustainable Development Journey

Efficiency means build less, or nothing - hard for engineers!

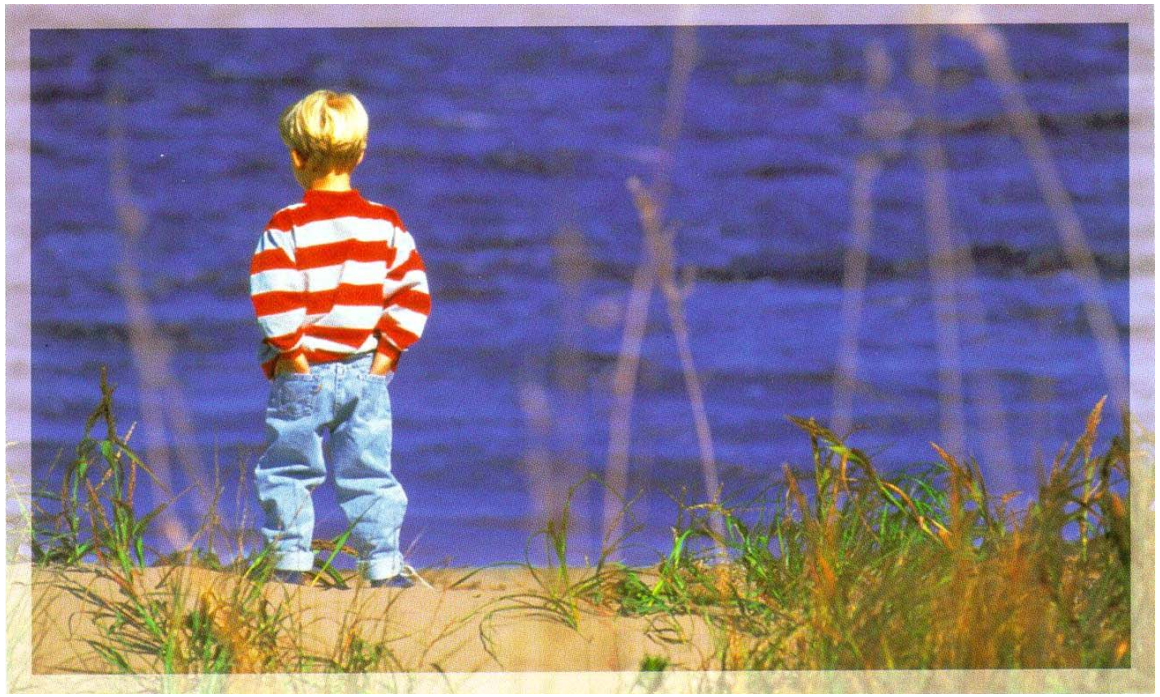


Visible construction to meet society's *wants*

Refurbishing the minimum to meet society's *needs*



Lets Us All Never Forget: Client & Consultant



"A hundred years from now it will not matter what my bank account was, the sort of house I lived in or the kind of car I drive…But the world may be different because I was important in the life of a child".