

INTEGRATING MANAGEMENT OF STORMWATER

KAPITI COAST DISTRICT COUNCIL CASE STUDY

**Our Experience in Changing the Rules of
the Game for Subdivision &
Development Which Encourages Low
Impact Design**

Dale Wills – Team Leader, Sustainable Design, KCDC

Presentation Outline

- **Review of Code of Practice**
 - Why a new Approach
 - Flaws in Subdivision Process
 - Objectives of the review
 - Review Process
 - Selected Approach
- **How can the silos work together**
 - Typical Structures & Associated Consent Reporting
 - Kapiti Coast Structure & Reporting
- **Design and Review Process**
- **Some Lessons**
- **KCDC experience with low impact alternatives**
- **Getting Stormwater into District Plans**
- **Questions**

Review of Code of Practice

- In 2002 the Council decided that a new approach was needed to subdivision and development.
- The Subdivision Engineer and a Policy Planner were given the task of developing the new approach.
- Both were recent appointments to the Council.

Why a new approach was needed

- Rapid urban growth putting pressure on infrastructure and land
- Feedback from community via LTCCP challenged conventional development
 - Boring – same subdivision pattern and building designs
 - Flat earth – no respect for landform or retention of open space
 - “Cookie cutter” pattern

Why a new approach cont.

- Pressure from developers and community to consider alternative & innovative approaches
- The old code of practice for subdivision & development
 - Seen as barrier for innovation, more so than the District Plan
 - Did not embrace low impact urban design and development principles

Flaws in Subdivision Process

- 1. Developers lodged subdivision consents with no pre-lodgement consultation**
 - led to inflexibility: developers who spent thousands \$ in preparing subdivision were reluctant to alter plans, even if better ways for design were pointed out to them by planning staff.
- 2. Little room for negotiation to achieve better design, e.g., connected streets, retention of landforms, provision of open space**

Flaws in Subdivision Process

- 3. Lack of neighbourhood and urban design expertise**
 - Subdivision layouts often prepared by people trained in recording site data and in street and drainage issues (e.g. surveyors)
 - assessed by planners/engineers with little or no expertise in neighbourhood or urban design
 - need for further training

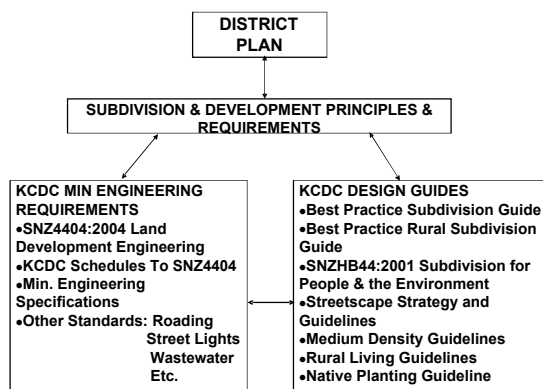
Objectives of the Review

- To provide for:
 - sustainable development, Low Impact Urban Design
 - flexibility
 - technological improvements
 - integrated approach.
- But not dismiss more traditional methods.
- Objectives not met with just updating Code. Also Required:
 - Philosophical Changes
 - District Plan Changes
 - Better Assessment (team approach and expertise).
 - Process Change

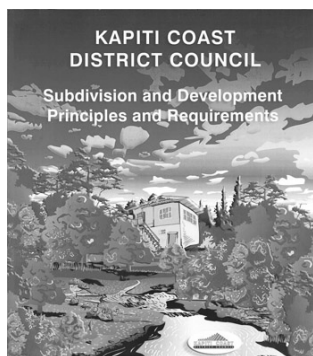
REVIEW PROCESS

- Interdisciplinary and interdepartmental approach
- Stakeholder representation.
- Discussion Document on the approach.
- Policies and assessment criteria.
- Peer review.
- Community consultations.
- Council decisions.

Selected Approach



THE NEW "CODE"



Find at www.kapiticoast.govt.nz/DistrictDevelopment/SubdivisionandDevelopment

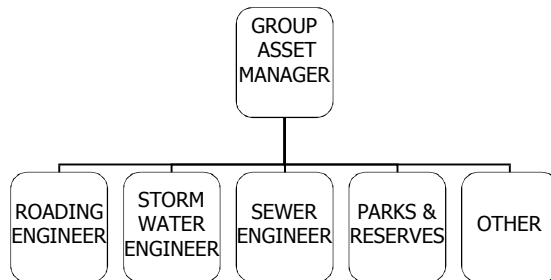
Best Practice Design Guides

- Urban Subdivision Guide
- Rural Subdivision Guide
- Streetscape Guideline
- Medium Density Guide
- Native Planting Guides

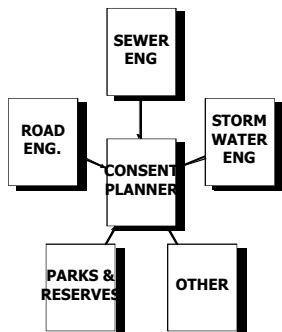
STRUCTURAL CONSIDERATIONS

HOW CAN ALL THE SILOS WORK TOGETHER?

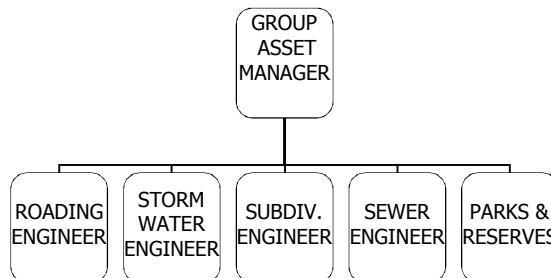
A COMMON STRUCTURE



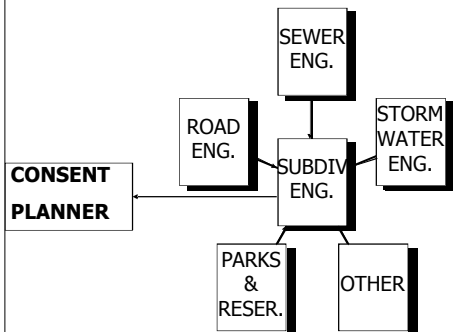
CONSENT REPORTING



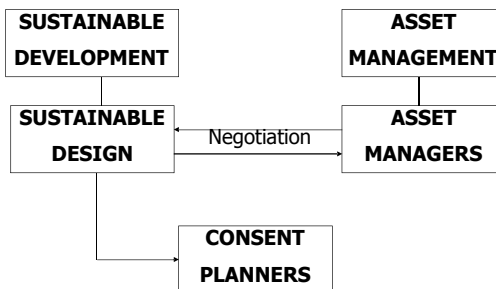
ANOTHER STRUCTURE



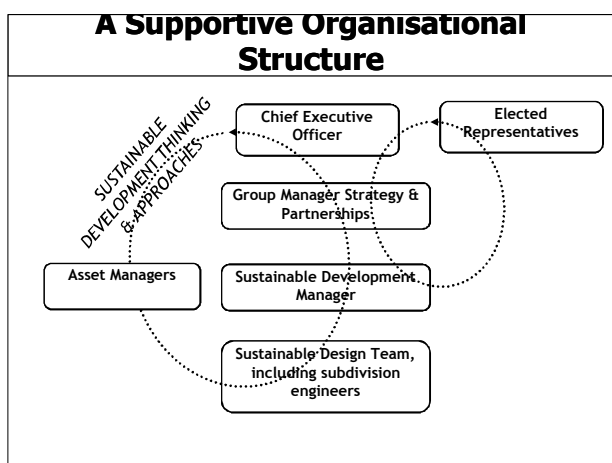
CONSENT REPORTING



KAPITI COAST DISTRICT STRUCTURE



A Supportive Organisational Structure



Design Review Process

- Adopted Design Review process
 - Trigger is subdivision with new/extended public road and/or reserves, resource consents and plan changes
 - Design and review team core members:
 - Sustainable Development Manager and/or Policy Planner
 - Subdivision Engineer
 - Processing Planner
 - Infrastructure Manager
 - Others added where needed e.g. parks, roading, stormwater engineer
 - Process required developers to produce basic sketch maps prior to meeting

Design Review

- Encourage pre-lodgement discussion
- Also use post-lodgement to resolve issues
- Very important process
 - Influence developers before lodged
 - Work with developers post lodgement to get desirable changes
 - Resolve internal conflicts
- Gets everybody talking to each other Developers/Consultants/Council Staff

Some Lessons

- Critical to get senior management support
- Consideration given to organisational structure necessary for implementation
- Identified gaps within the organisation
- The sustainable approach requires more effort by developers and Council staff.
- Need to upskill Council staff, Consultants and Contractors
- More risky, in the early stages at least until experience built up.

Some Lessons

- Keep working with the development community so processes can be reviewed to ensure outcomes being sought are being delivered
- Design Review system is generally working well
- It is necessary to ensure that the council walks the talk in their own works
- Important to use the regulatory framework to get it implemented – needs to be in the District Plan.
- Consult, consult, consult

KAPITI COAST EXPERIENCE

WITH LOW IMPACT ALTERNATIVES

Low Impact Alternatives

- Baffled Sumps
- Enviropods
- Soakpits
- permeable paving
- Swales
- Raingardens
- Wetlands
- Lakes and Ponds

Some Outcomes

Subdivisions

- Awatea
- Kotuku Park
- Jade Gardens
- Raumati Developments
- Ferndale
- Lake
- Riverbank Road Industrial
- Pukenamu

Awatea Avenue Soakpits



Kotuku Park

- Treatment train used for road and roof run-off
 - Enviropods
 - Wetlands/pre-treatment pond
 - Lake
 - Controlled discharge to scientific Reserve

Kotuku Park Treatment Train



Main lake before discharge to sensitive area



Road stormwater collected in sumps with enviropods and piped to forebay. Roof stormwater directed to roads.

Jade Gardens - Waterstone

- Uses Wetlands and Wet and "Dry" lakes for treatment and attenuation
- Promoted by "no adverse effects" and "hydraulic neutrality" principles
- Also uses on-site water tanks and greywater irrigation systems

Attenuation Lakes Also Provide Amenity



Dry and Wet Lakes



Raumati Developments



Swales



Raingardens



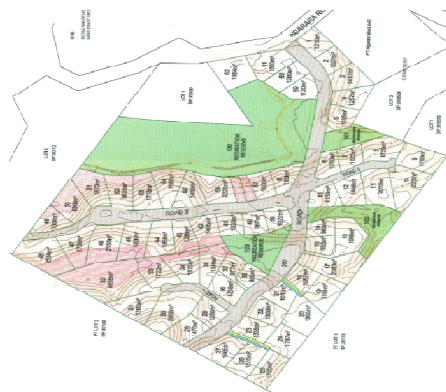
Permeable Paving



Attenuation Area With Amenity



Ferndale



Swales



Infiltration Strips - Versicell



Attenuation Area With Amenity



Lake Kurawha, Otaki



Attenuation Lake with Amenity



Riverbank Road Industrial



- Long soakage trench under road
- Enviropods in sumps
- Sump leads go into chambers

Pukenamu Rural Lifestyle Blocks



Council Examples

Otaki Rail Car Park



- Raingardens
- Soakpits
- Secondary flowpath to existing channel



- Waitohu Valley Road Swales with permeable footpath



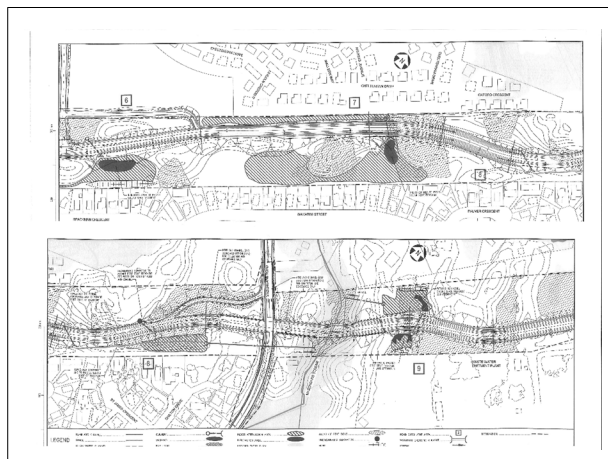
- Rangiuru Road Kerb & channel and footpath on built up side, swales on flood prone other side.

Proposed Western Link Road

- Proposed highway from Raumati in the South to North Waikanae
- Applying hydraulic neutrality principle
- Applying Low Impact Designs
- Looking to significantly reduce extent of kerb and channel and piped network and to provide treatment.

Proposed Western Link Road

- **Stormwater Strategy Considering Use Of**
 - **Swales**
 - **Wetlands**
 - **Dry Ponds**
 - **Flood Attenuation Areas**
 - **Hydrodynamic Separation to treat water collected where k & c used.**



Getting Stormwater into District Plans

- **Sustainability principles included in rezoning requirements for future growth areas**
 - see **Plan Change 79: Waikanae North Urban Edge, Low-Impact Urban and Eco-Hamlet Areas**
 - these **PC 79 principles incorporated into private plan changes in Waikanae North**
- **Planning to use the forthcoming District Plan Review to get low impact stormwater provisions entrenched into the District Plan Requirements**

