The Cracking of Stormwater Pipes & the Significance of Construction Loads

Subdivisional Audit
Stormwater Drainage Issues
- Undertaken 1994/95
- Audited Physical Infrastructure including:
  - Pavements & CKC
  - Traffic Islands
  - Footpaths & Bikeways
  - Gullies & Manholes
  - Stormwater Pipes
  - Fences
- Major Issue - Premature Cracking of Stormwater Pipes

Cracking of Pipes
- Longitudinal
- Circumferential
  - Cracking normally occurs between 10-2 o’clock and 5-7 o’clock

Examples of Cracked Pipes
- Circumferential Cracking extending for full perimeter
  - Carindale
- Longitudinal and Circumferential Cracking
  - Bridgeman Downs

Not just in Brisbane
- Circumferential and Longitudinal Cracking
  - Neighbouring Shire
- Circumferential Cracking
  - Neighbouring Shire

Deterioration over Time?
- November 1994
- February 1998
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Pipe Cracking - Design Load Chart

Design Chart developed by BCC in 1994

Compaction Equipment

Wacker Packer

No Problems
Low Load/Impact

Compaction Equipment

Mini Roller

Some Problems - Can be Critical Load Case

Construction Equipment

Scraper and Roller

Possible Contributors to Pipe Cracking

Compaction Equipment

Excavator Mounted Compaction Wheel

Major Contributor to Pipe Cracking

Actions Since Subdivision Audits

- Consultation with:
  - Development Industry
  - Civil Contractors Federation
  - Pipe Manufacturing Industry
- Introduced “No Cracks Policy”
- 2 Submissions + Copy of CCTV Video to AS3725 Committee

NZ Presentation 10 August 1999