House Construction Waste Minimisation Project Unitec

- Estimates range from 8.7m tons to 10.8m and growing 5.5% per year nationwide
- Estimated 2.5m tons to land fill
- Approximately 2.8 m tons recycled
- House holds generate approximately 1 ton per annum
- Auckland alone sends 1.7 to 2.4 m tons to land fill
- 850k to 1m tons construction/demolition
Project Methodology

- 4 identical re-locatable houses measured in project
- 3 Bed, open plan wooden framed, iron roofed, cedar clad,
- Waste stream separation by activities
  - Sub floor-bearers up-
  - Framing
  - Roofing and soffit
  - Exterior cladding and rap
  - Internal lining and trim
  - Plastics and cardboard
  - Sub trades
    - Roofing, electrical plumbing, kitchen/bath fit-out
Weigh Station

• 2 x 120 ltr bins labelled per house
• 3 x 120 ltr recycle bins
• 3 x 120 ltr land fill bins
• Materials sorted by cross section sizes/location and weighed
• Placed into 3 cm bin for recycle-furnace fuel-
• Each house weighed once per week, weather permitting
• Running spread sheet tracks results
Student Participation

- Student awareness of waste in industry
- Initial concept of competition amongst students
- Student involvement in project
- Benchmarking - virtual or real world-
Some Further Considerations

• Cross reference collected data to prior Unitec research data
• Estimated $31k cost of waste from new house construction (AUT)
• Industry buy in
  • Cost benefit analysis on quadruple bottom line
    • Economic, Environmental, Social, Intergenerational
• Political intervention/legislation
  • Fine tuning Waste Minimisation Act 2008
  • E.g. responsibility for product “end of use/life”