WHAT CIVIL ENGINEERING GRADUATES ACTUALLY DO

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Unitec Institute of Technology
2013 SURVEY AND INTERVIEWS

• Unitec Civil Graduates – 2010 to 2012
• NZDE and BEng Tech Graduates
• Responses – 45 out of 208 graduates
• Interviews with 15 graduates
2013 SURVEY - ACTIVITIES

Percentage Respondents

- CAD work: 41% (Construction), 71% (Consultants)
- Design: 24% (Construction), 76% (Consultants)
- Design or drawing checking: 48% (Construction), 36% (Consultants)
- Preparing contract documents: 18% (Construction), 29% (Consultants)
- Researching and writing reports: 12% (Construction), 29% (Consultants)
- Testing: 19% (Construction), 35% (Consultants)
- Inspections: 67% (Construction), 59% (Consultants)
- Surveying: 10% (Construction), 47% (Consultants)
- Procurement: 12% (Construction), 12% (Consultants)
- Project Management: 19% (Construction), 19% (Consultants)
- Contract Monitoring or ...: 12% (Construction), 13% (Consultants)
- Supervising others: 20% (Construction), 19% (Consultants)
- Maintenance and operations work: 14% (Construction), 18% (Consultants)
- Communication: 5% (Construction), 5% (Consultants)
- Other (please specify): 6% (Construction), 6% (Consultants)
2013 SURVEY - FIELDS
Roles

- Site Engineer – manage construction sites
- Draftspeople – produce drawings or other peoples designs
- Structural Engineer – carry out structural design
- Infrastructure Engineer – carry out infrastructure design
- Laboratory Technician – soil and materials testing
- Council Officer – manage council projects
2018 SURVEY

- Unitec Civil Graduates – March 2016 to March 2017
- NZDE and BEng Tech Graduates
- Responses
  - NZDE - 30 response out of 94 graduates (39% response)
  - BEngTech – 70 responses out of 160 graduates (43% response)

- Questions
  - Employer
  - Role(s)
  - Time to employment

- Followed by interviews with 17 graduates (all Auckland based)
  - Daily activities and responsibilities
  - Competencies used to undertake role
EXPANDED ROLES

- Construction Engineer
- Surveyor
- Structural Design Engineer
- Structural Draftsperson
- Geotechnical Design Engineer
- Laboratory Technician
- Infrastructure Design Engineer
- Infrastructure Draftsperson
- Traffic Engineer
- Consultancy Contract or Project Manager
- Council Officer
- Operations and Maintenance Engineer
2017 SURVEY - EMPLOYERS

Percentage of Respondents

- Construction Company
- Consultancy
- Council or Council Owned Organisation
- Central Government Department or Agency
- Equipment or Material Supplier
- Development Company
- Not working in Civil Engineering

NZDE vs BET
<table>
<thead>
<tr>
<th>Role</th>
<th>NZDE</th>
<th>BEngTech</th>
<th>Total</th>
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<td>4</td>
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<tr>
<td>Infrastructure Engineers</td>
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<tr>
<td>Structural Engineers</td>
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<td>Traffic Engineer</td>
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ROLES AND COMPETENCIES

• Construction Engineer
• Infrastructure Engineer
• Surveyor
• Project Managers
• Structural Engineer
SUGGESTED IMPROVEMENTS

• Construction paper required
• More drawing content
• Complete basic infrastructure design competencies
• More use of Council Standards
• More content on consenting processes
• Actual structures and geotechnical tasks need further research