A DATA MODEL FOR LIFECYCLE MANAGEMENT OF NATURAL HAZARDS ENGINEERING DATA
Natural Hazards Engineering

Data

• Sophisticated experimental design
• Complex relationships
DesignSafe-CI

- Seven different experimental project types
Modeling

- Draw workflows
- Equipment, processes, software, indispensable documentation
Modeling

• Analyze domain models to generalize entities
• Emphasize structure and provenance
• Document metadata
Progressive Curation: Project Creation

• Curate data throughout research process
• Minimal initial metadata
• Unique ID tracks with project through lifecycle
Progressive Curation: Project Data and Documentation

- Files enter CI, fulfilling key data model entities
  - Model configuration
  - Sensors
  - Data output
- Transformation and analysis
Progressive Curation: Categorizing and Linking

- Establish relationships
- Add further tags and description
Visualizing the Data Set

- Graphical tree diagram
- Integrated view of the research project
Publishing Data

- Preview
- Pipeline
Published Data

• Enable understanding and reuse
Preservation

• Maintaining structure, relationships, metadata
## Conclusion

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<td>Evaluation of Drainage for Liquefaction Remediation</td>
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<td>Testing of seventeen identical ductile reinforced concrete beams with various loading protocols and boundary conditions</td>
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<td>Large-Scale Laboratory Experiments of Wave Impacts on Vertical Cylinders</td>
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<td>Final Results - Deep Shear Wave Velocity Profiling for Seismic Characterization of Christchurch, NZ</td>
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<td>Development of validated methods for soil-structure interaction analysis of buried structures</td>
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<td>RAPID/Collaborative Research: Investigation of Reinforced Concrete Buildings Damaged in the Magnitude 6.4 Southern Taiwan Earthquake of February 2016</td>
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