

Seismic Design Competition



About the competition

- Balsa Wood Tower
- Seismic simulation
- Hosted every year in a different city
- Structural design
- Architecture proposal
- Sustainability assessment
- Geotechnical assessment

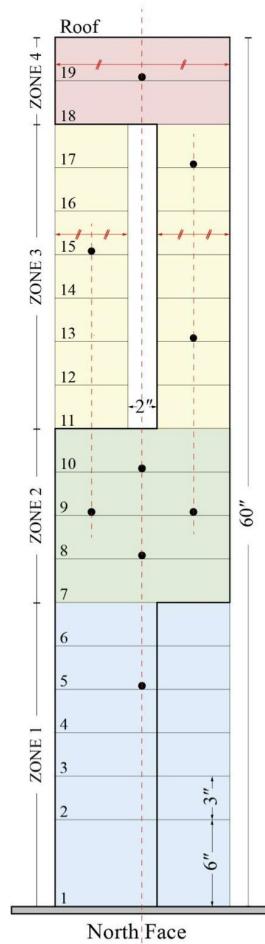
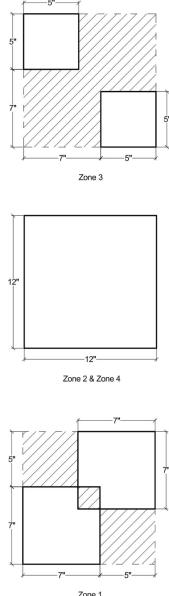
Video competition

Video shake

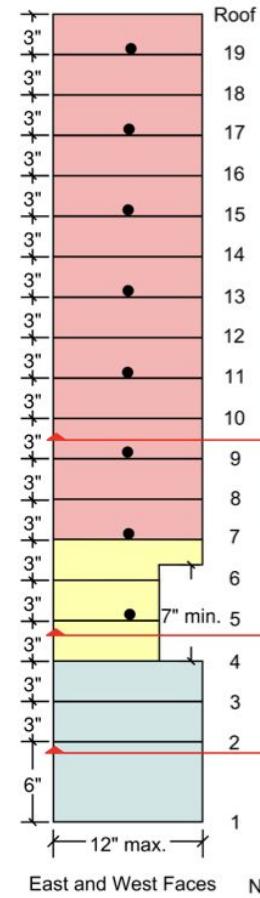
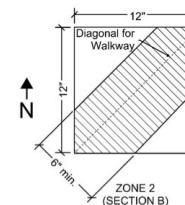
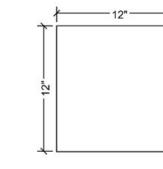


Competition examples

Portland, USA
2026



Kobe, Japan
2025



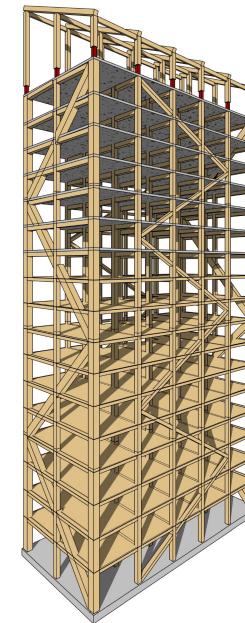
30 Teams Worldwide

- First in Northern Europe
- Mostly US, Mediterranean and Latin America



Importance in Norway

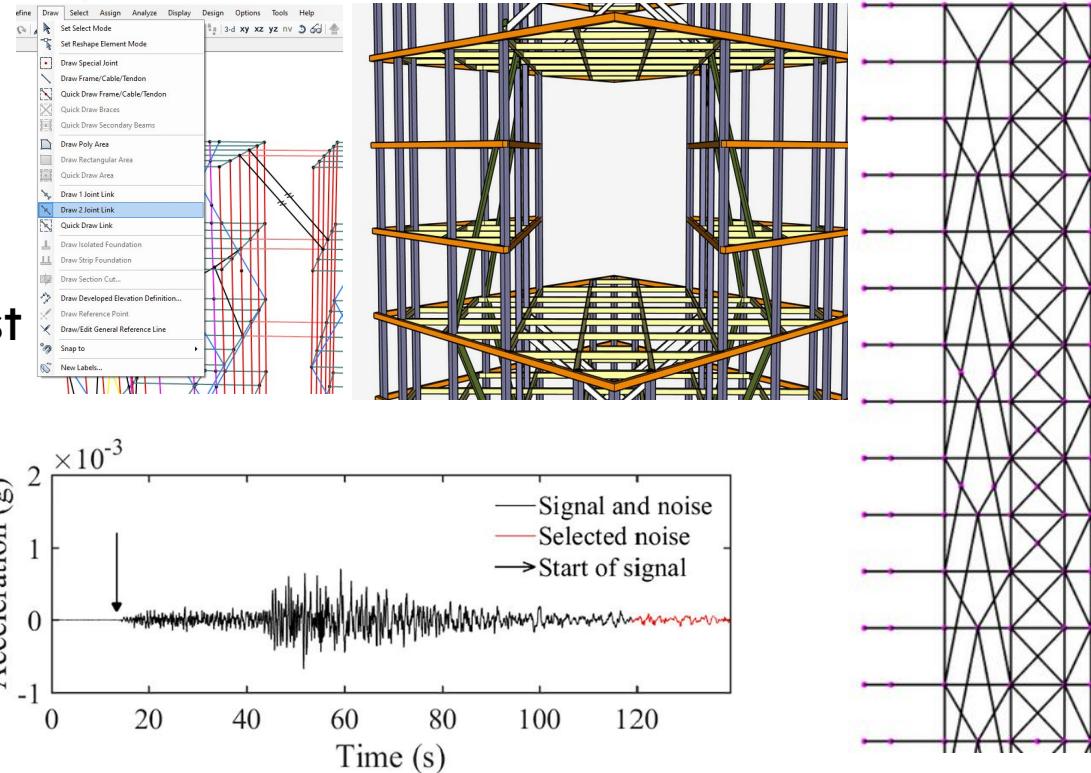
- Most seismically active region in Northern Europe
 - Oslo 1904: 5.4
 - Svalbard 2008: 6.2
- Seismic design for critical structures
 - Hospitals, concert halls, military etc.
- Dynamic design
 - Wind
 - Waves
 - Vibrations
- Timber Design



Subteams

Structure

- Formulate concepts for the structural design
- Model the design in structural software
- Test the software against earthquake loads



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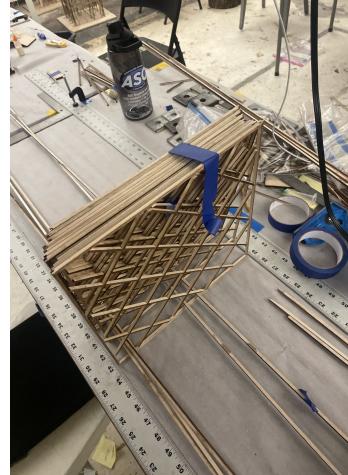
Architecture

- Create an architectural proposal for the tower
 - Architecture
 - Environment
 - Universal design
- Modelling the tower in architectural software
 - Renders
 - Construction guidelines



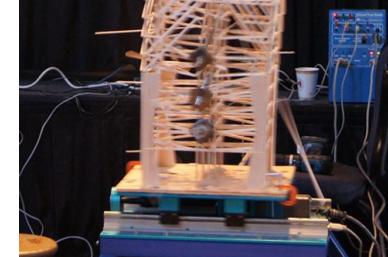
Materials & Construction

- Testing material data at the KT lab
- Laser cutting parts
- Finding materials
- Assembling the tower



Shake Day

- Submissions are tested on a shake table, simulating an earthquake
- Points are awarded for: structural integrity, architecture, environment, acceleration prediction, material use etc.
- Explore the host city: Vancouver, LA, San Francisco etc.



Information channels

Website:

ntnuseismic.no

Instagram:

[@ntnuseismic](https://www.instagram.com/ntnuseismic)

Linkedin:

<https://www.linkedin.com/company/ntnu-seismic-design-team/>

