



# Improving the cost of ownership - Rehua building

The University of Canterbury





















● Earthquake prone - unoccupied  
● Earthquake prone - strengthening added to allow re-occupation









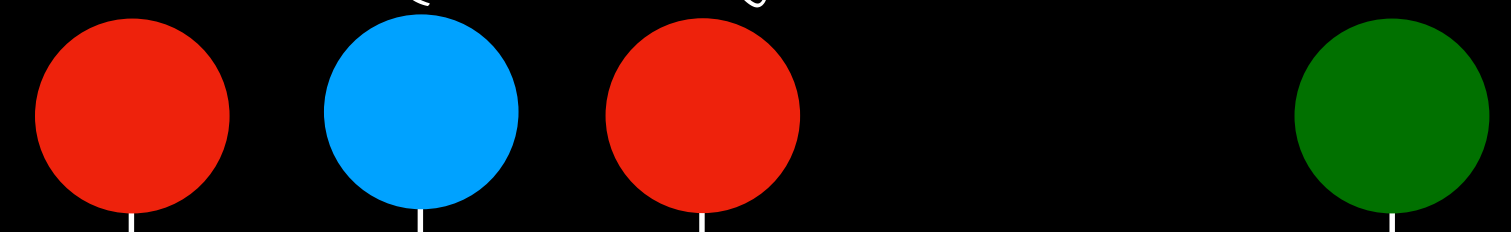


**4 September 2010 - Darfield quake**  
7.2M, 40kms west of UC

**Hawkins appointed remediation contractor**  
(Approved by UC insurer)

**22 February 2011 - Lyttelton quake**  
6.3M, 13kms east of Christchurch

**Possible strengthening solution identified**



2010                      2011                      2013                      2014                      2015                      2017                      2018                      2019



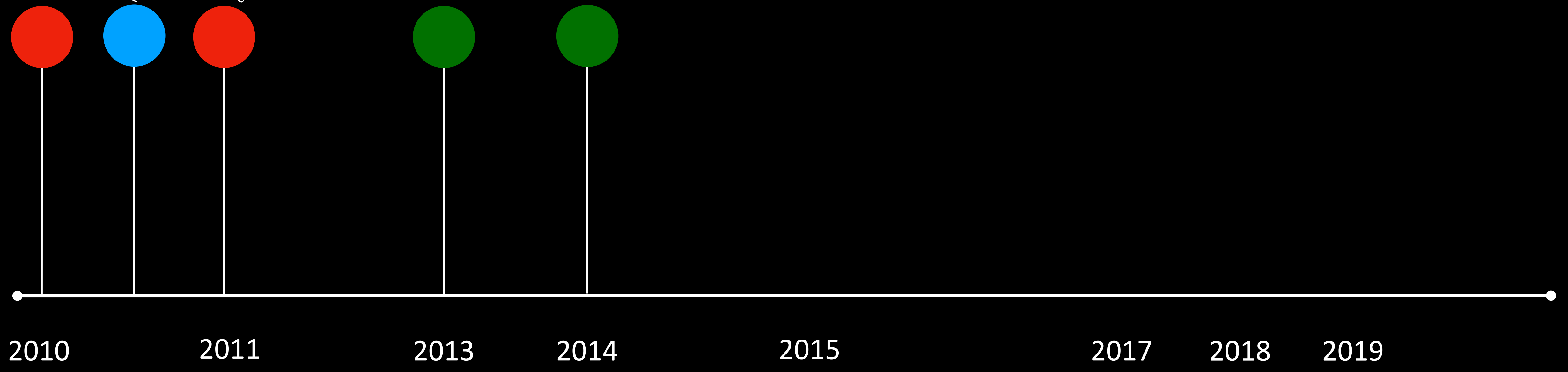
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Soft strip of building starts









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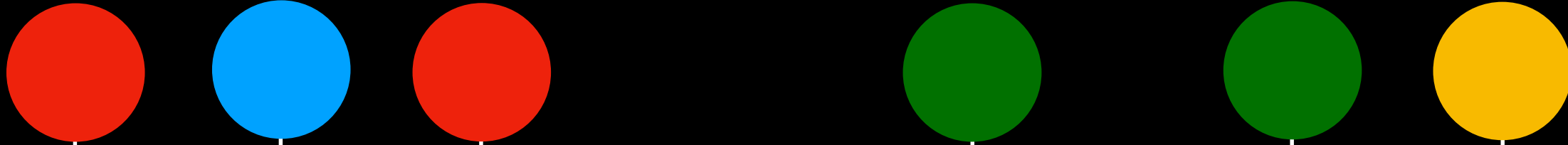
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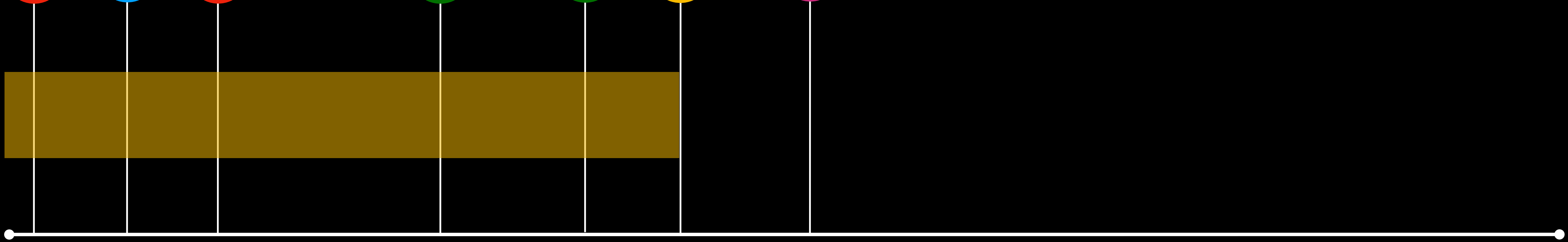
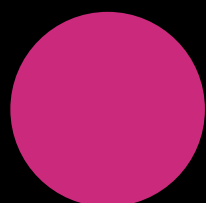
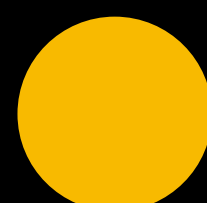
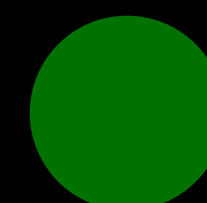
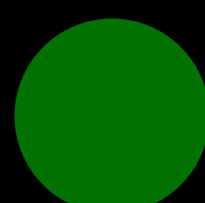
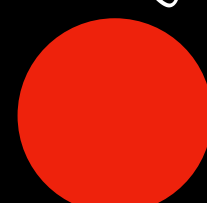
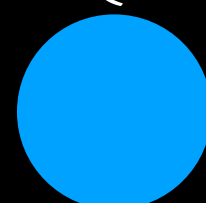
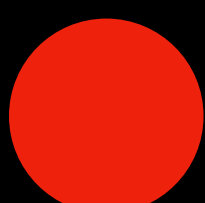
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Pause and Challenge Report



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# pause and challenge report

Governance level report to review trajectory of project and risks, re-consider continued strategic fit of the project

Options considered;

- Continue project “as is”
- Continue project with new builder
- Demolish building and build new

Agreed: Continue “as is” - provides best support of student enrolment recovery



# strengthening solution

Secondary floor support brackets on all levels

Drift control system - Buckled Restraint Bracing and Fluid Viscous Dampers

Replace the central core floor diaphragm at most levels

Replace the pre-cast concrete facade with a light weight cladding system

Install seismic joint



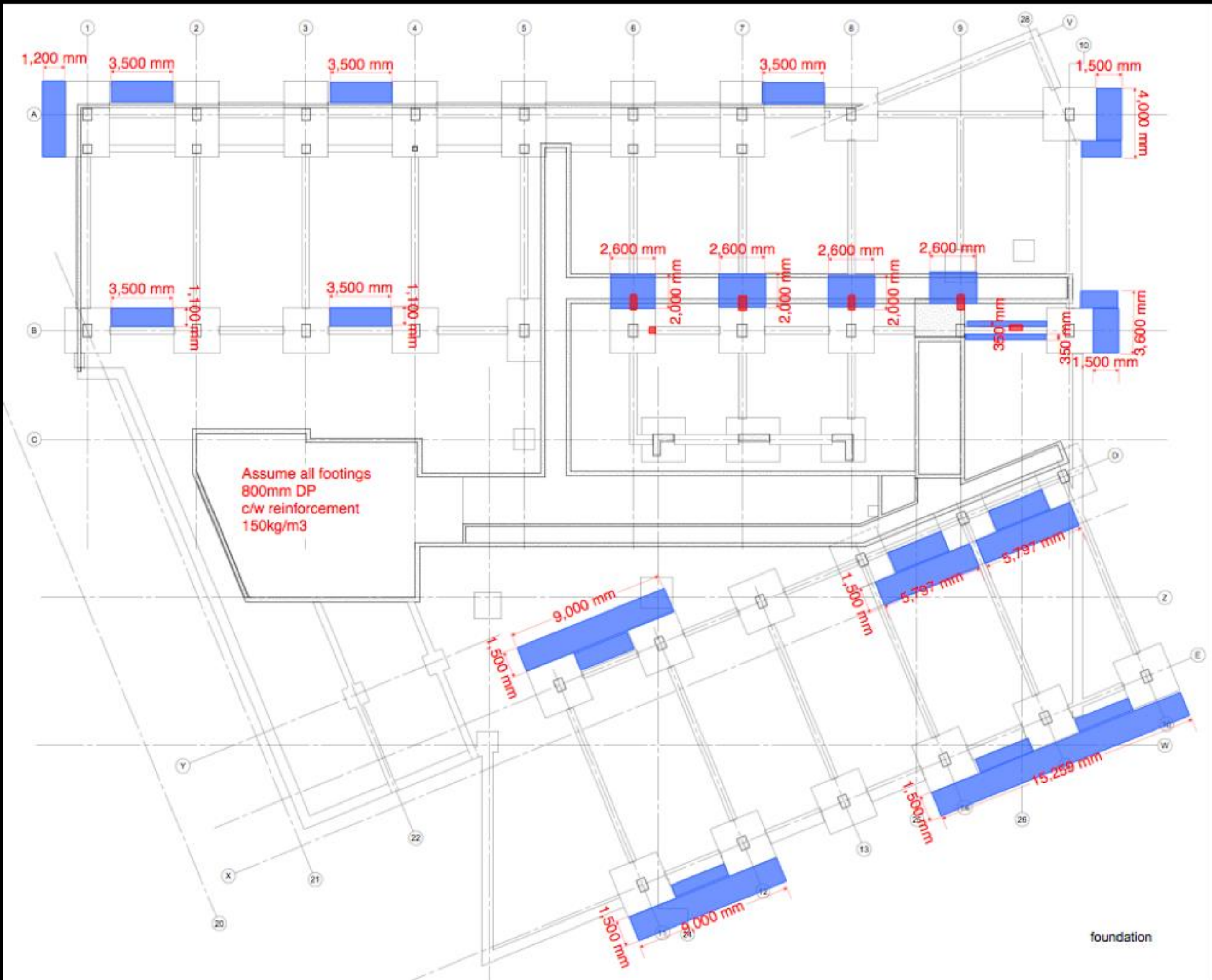




Support brackets

All floors



















# fluid viscous dampers

Shock absorbers, drift control for just the right amount of flex



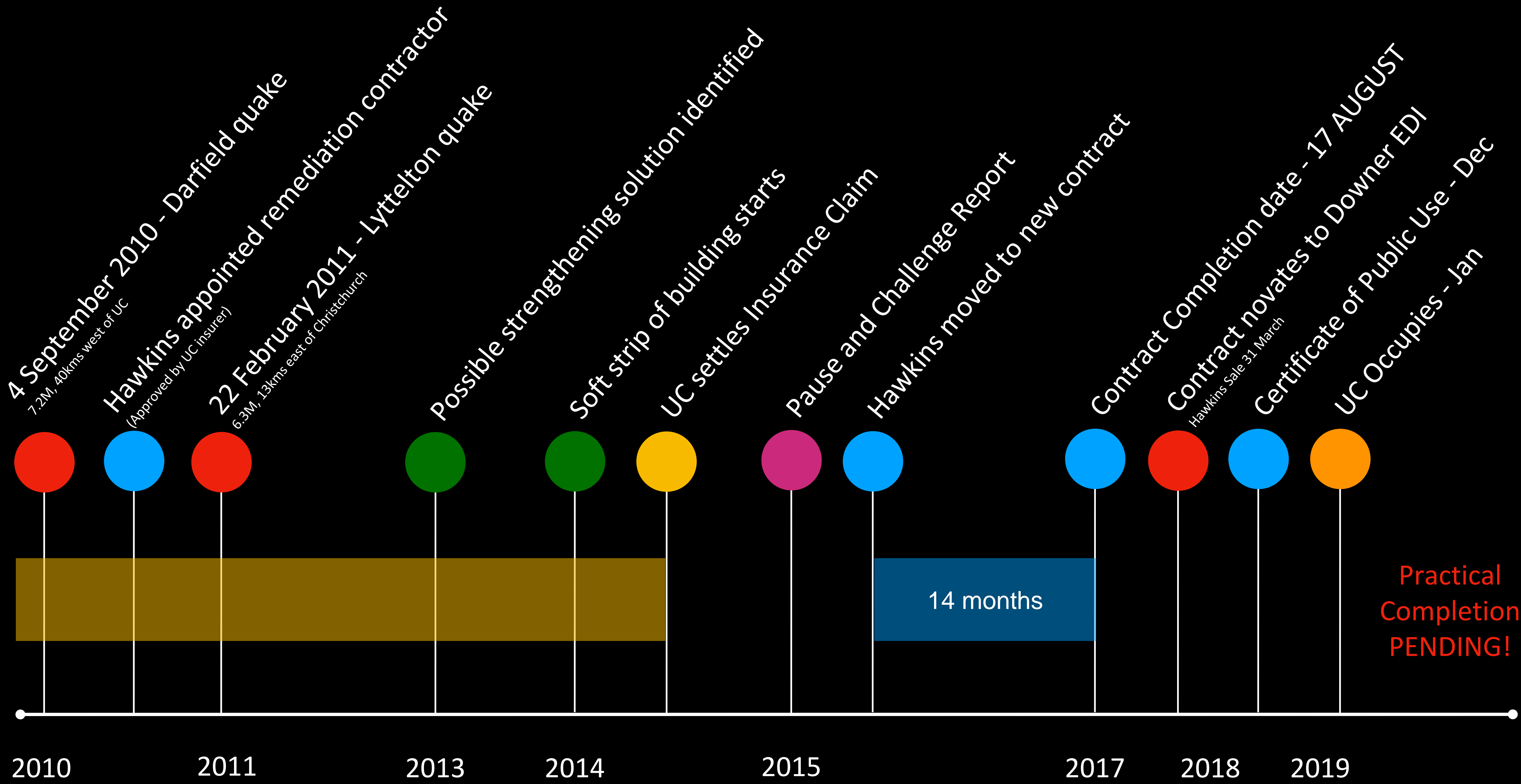










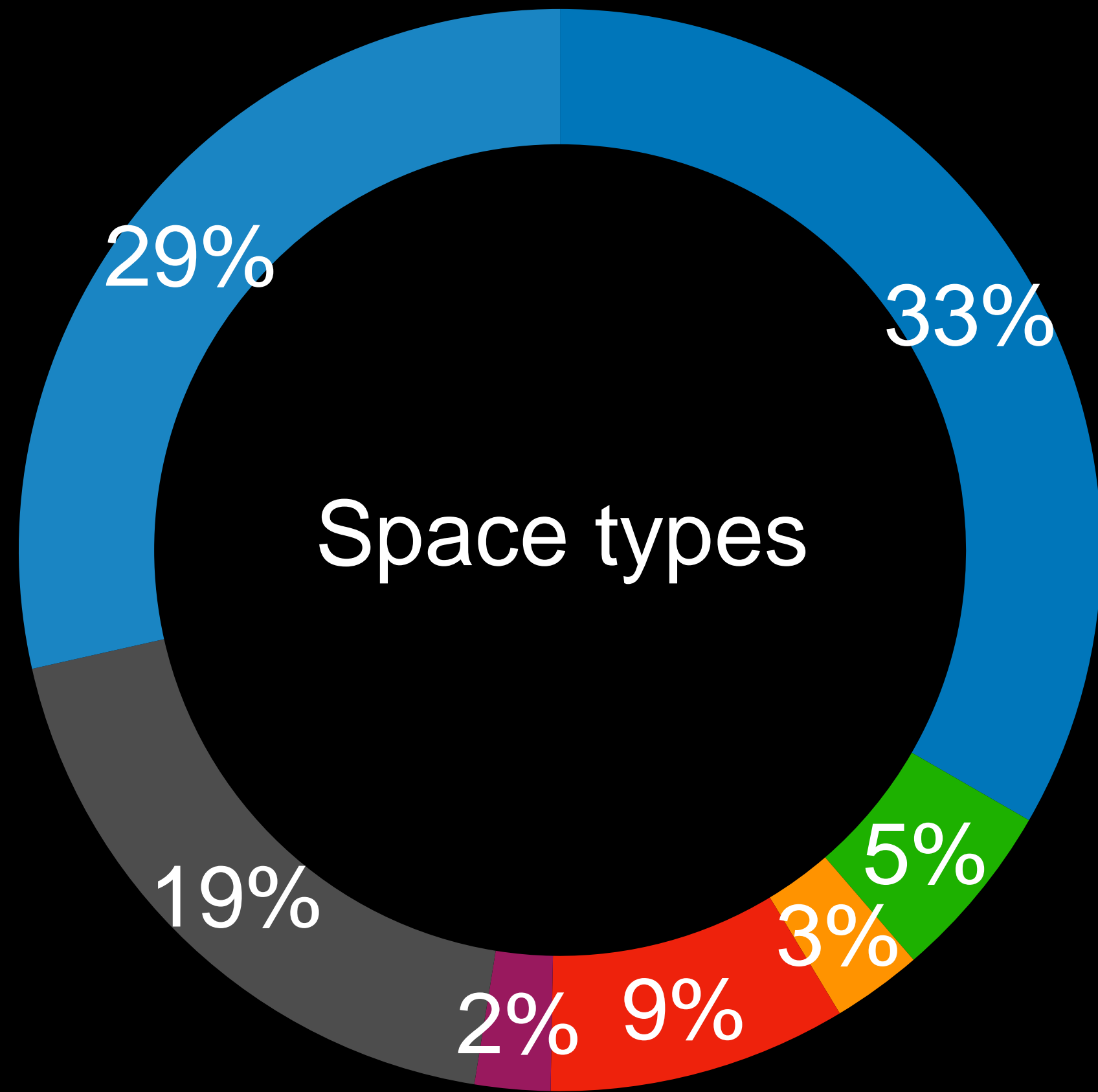


**Practical  
Completion  
PENDING!**









# flexible spaces throughout the building

Facilitates adaptive re-use at  
lower cost

- Lecture teaching spaces
- Community engagement, cultural space
- Cafe
- Informal learning
- Clinic
- Exec Ed
- Offices, open plan



Akomanga  
Learning Space

102













students are on Ilam  
campus

project continues ....,





