



ROTORUA
LAKES COUNCIL

TE WHARE TAONGA O TE ARAWA

Building Update

28 September 2022

COMPLEX PROJECT: BOTH BUILDING AND GROUND CONDITIONS

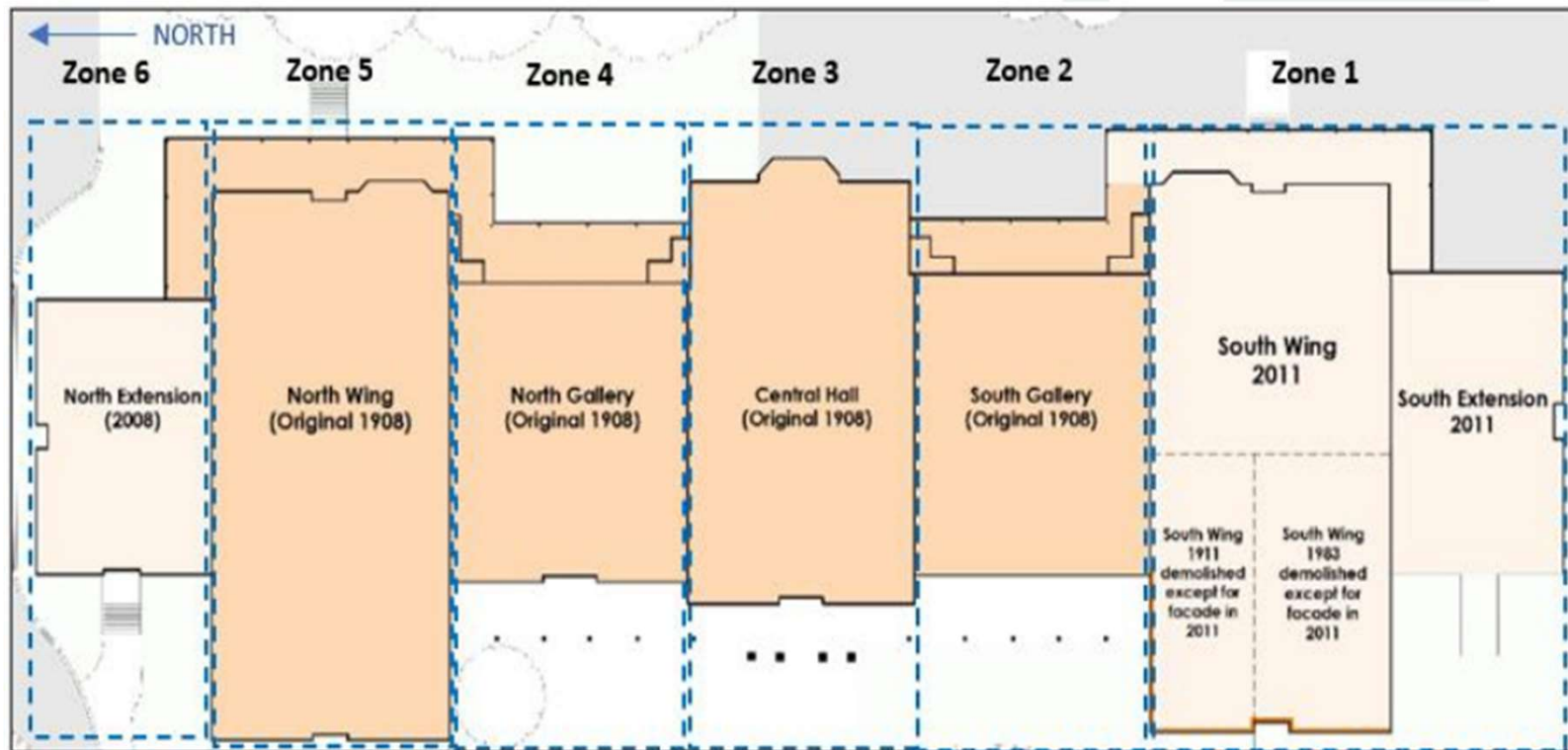


Figure 4.2: Years and stages of building of the Rotorua Museum. Source: DPA Architects⁷



WHAT'S HAPPENED

2017 – Investigations and testing for DSA

- Found building to be 19% NBS
- 3D Scanning

2018 – Concept design and business case

- Plus full decant of building and crack mapping
- Agreed to invest \$15.5m in LTP – unchanged

2019 – Detailed design and ECI

- Completed for all zones except zone 3 (atrium)
- Heritage approvals and resource consent
- Apr – Sep funding (x4) secured in enable construction procurement; 71% external funding
- November work underway in zone 1 (south wing)

WHAT'S HAPPENED

2020 - ECI identified buildability issues and cost issues

- Technical peer review - design high cost, high risk and negative heritage impacts
- **Structural design reset late 2020** - force base to displacement philosophy
- Plus geothermal issues (bore failure) and first impacts of Covid
- Removed asbestos from basement

2021 - Additional testing of the building

- Model developed of existing structure
- Dec additional ground testing with Canterbury University - avoided another \$10-15m cost
- Plus more geothermal issues (power failure)

2022 - Developed design complete and cost estimates

- Detailed design underway
- Consenting and procurement planned
- Need approx. \$18-20m additional funding despite structural solution being cheaper



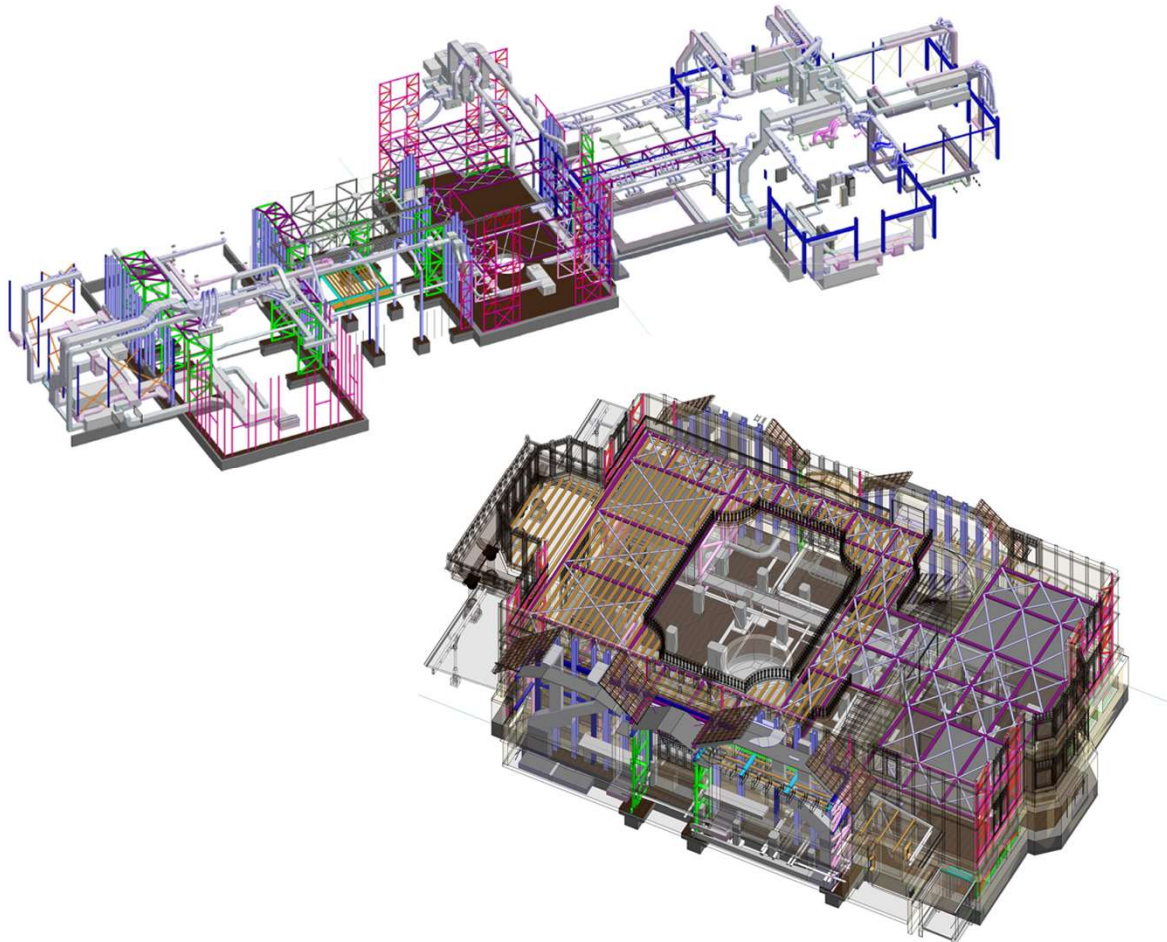
INTERESTING DETAIL

- Structural design
- Ground conditions



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STRUCTURAL RE-DESIGN - FROM



Force based design

- Evasive intervention on heritage fabric
- Buildability risks
- High cost

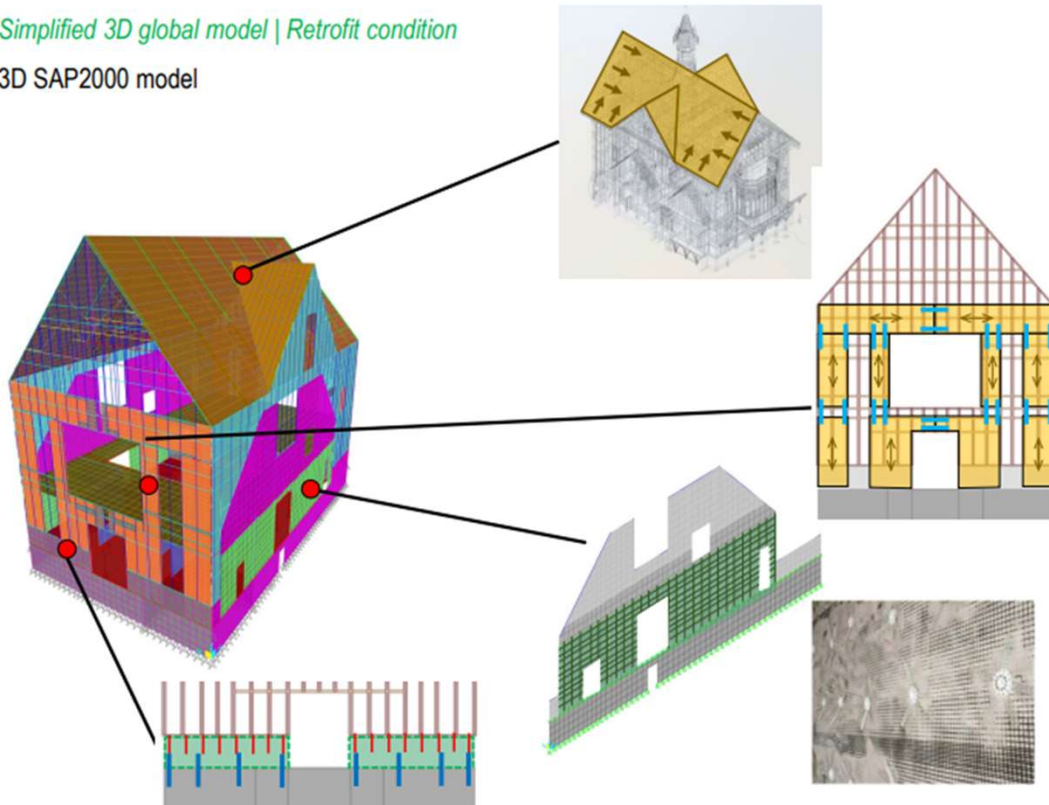


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...TO RESET STRUCTURAL DESIGN

Simplified 3D global model | Retrofit condition

3D SAP2000 model



Displacement based design has met expectations:

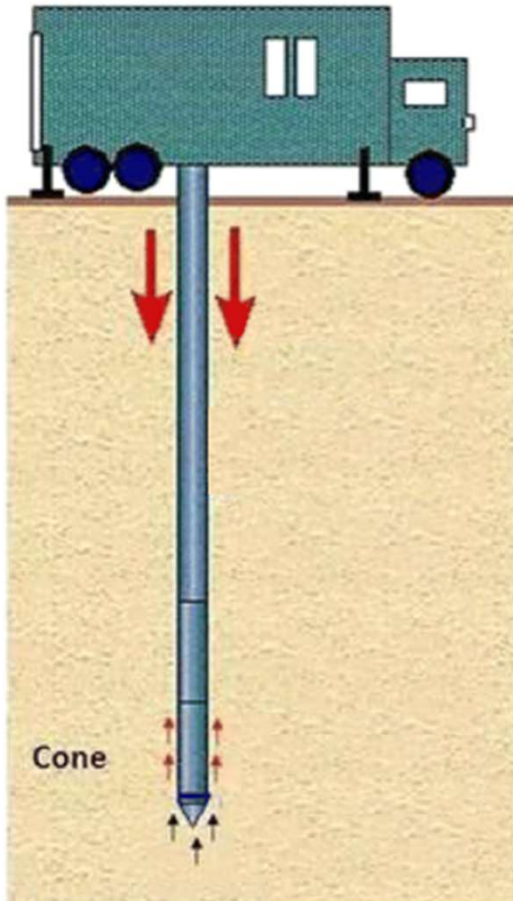
- 80% NBS
- Buildable
- Less invasive
- Faster
- More cost effective

UNDERSTANDING THE GROUND



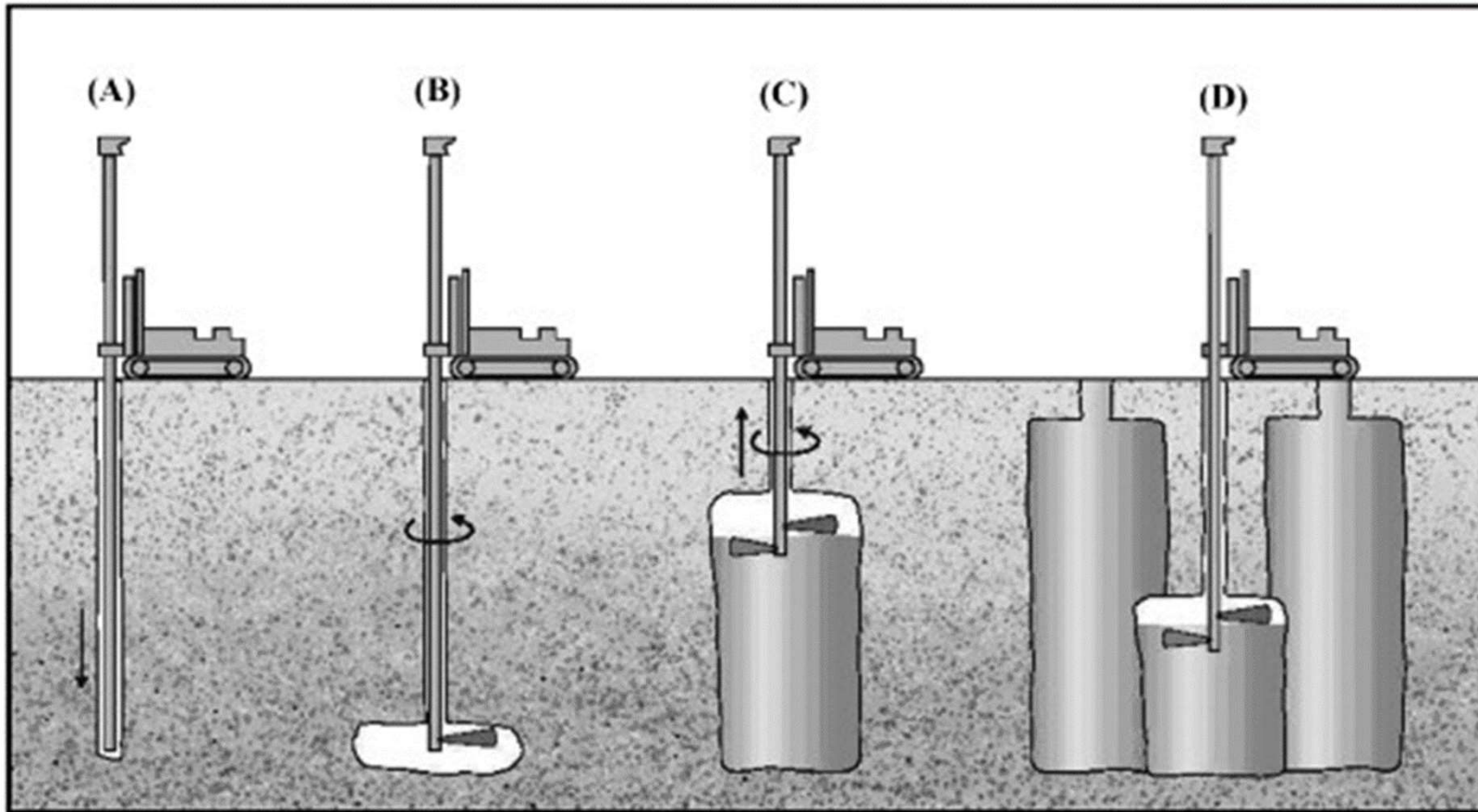
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TRADITIONAL LIQUEFACTION TESTING

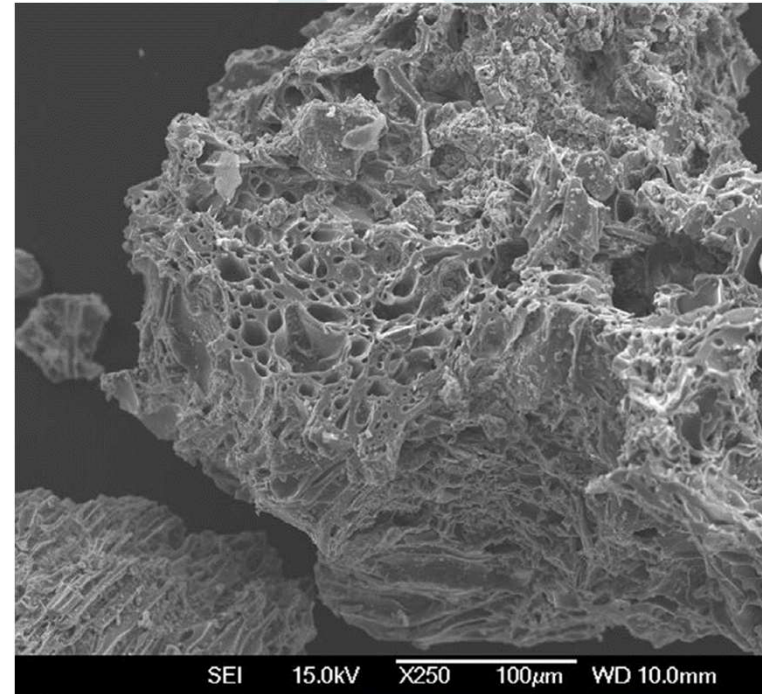
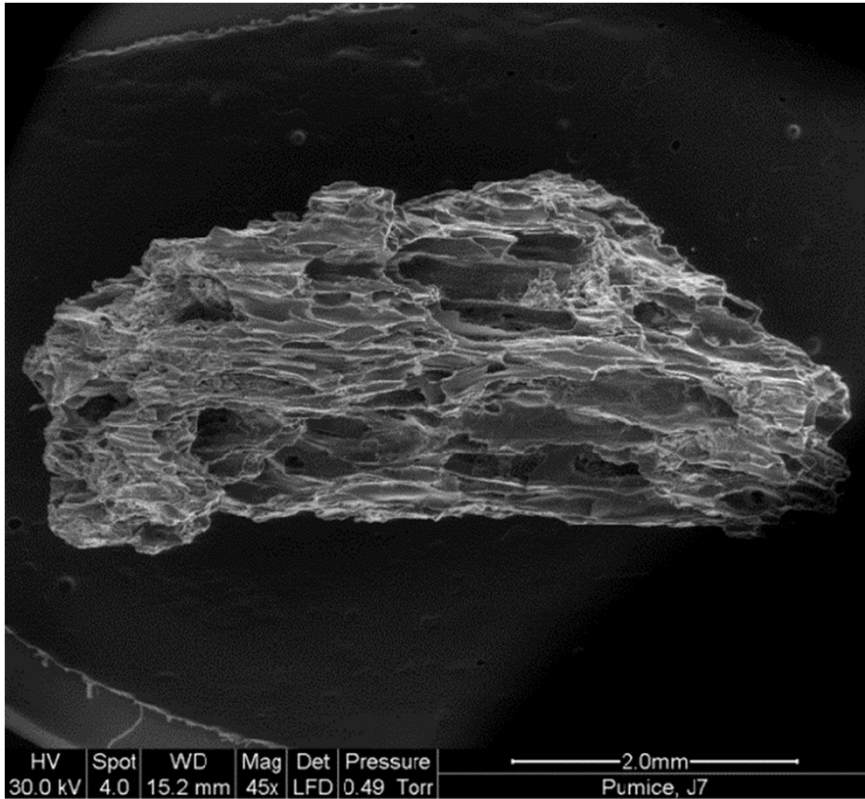


40% NBS

GROUT INJECTION

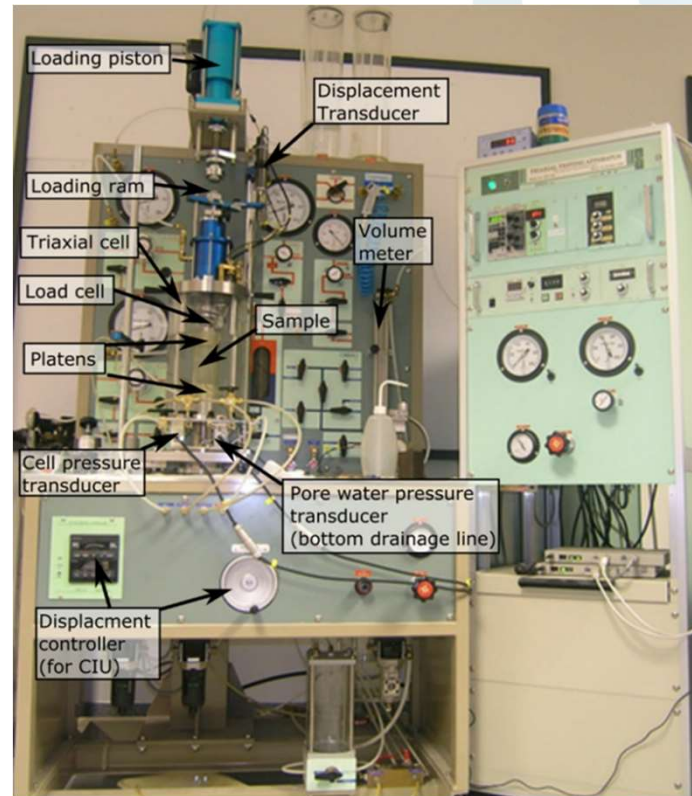


DIFFERENT MOLECULAR STRUCTURE



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SPECIALIST TESTING



70% NBS

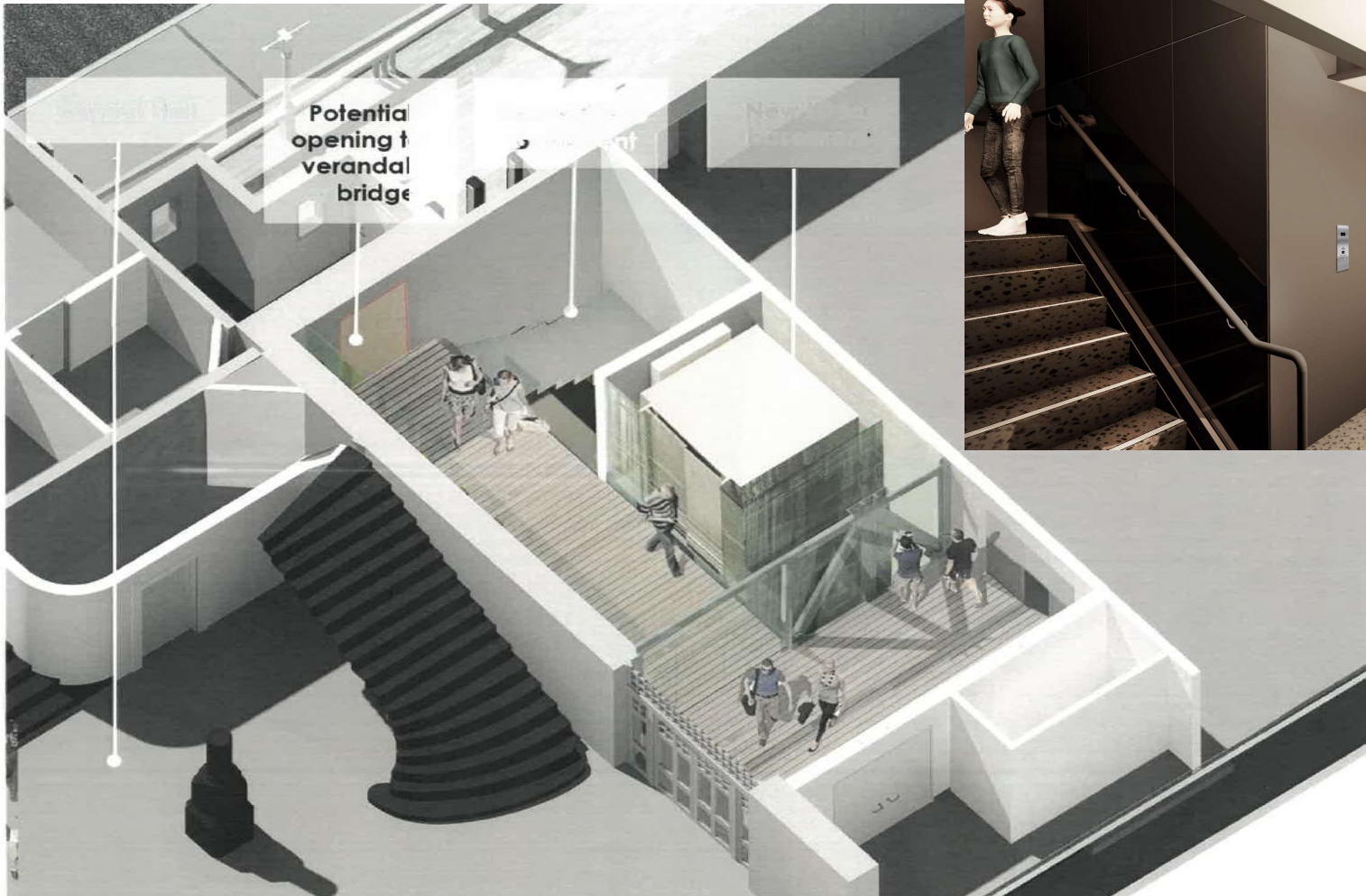
WHAT'S NEXT

- Complete detailed design Nov 22 and lodge for consent
- Exhibition development
- In discussion with funders for more support
- Decision to be made by new council in Dec 22
- Construction underway early new year
- Museum opening in 2025
- More information - Vision to Action page
- Have your say on exhibition design - visit Rotorua Museum website

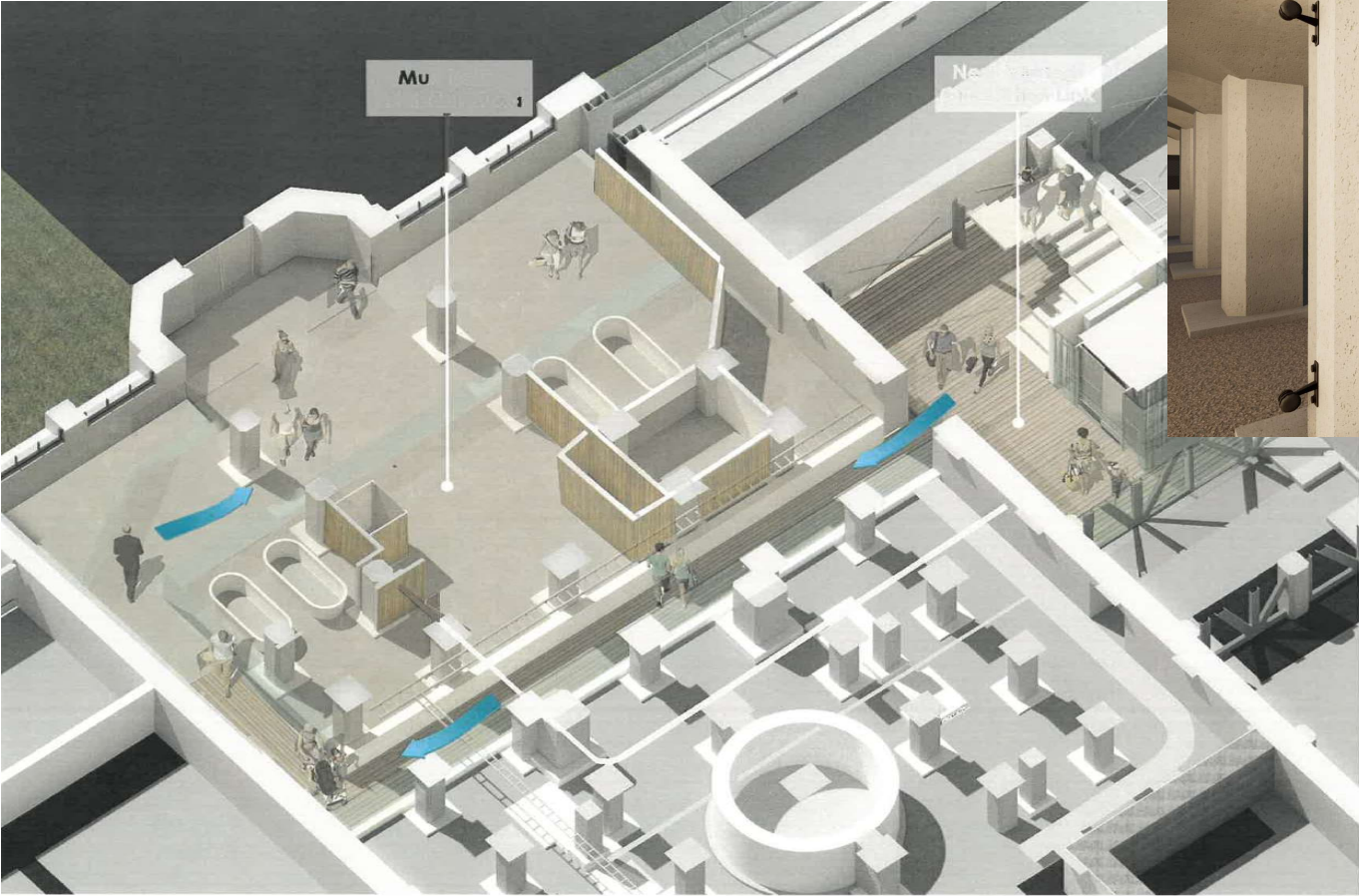
DESIGN FEATURES



GROUND FLOOR NEW LIFT AND BASEMENT ACCESS



MUD BATH BASEMENT



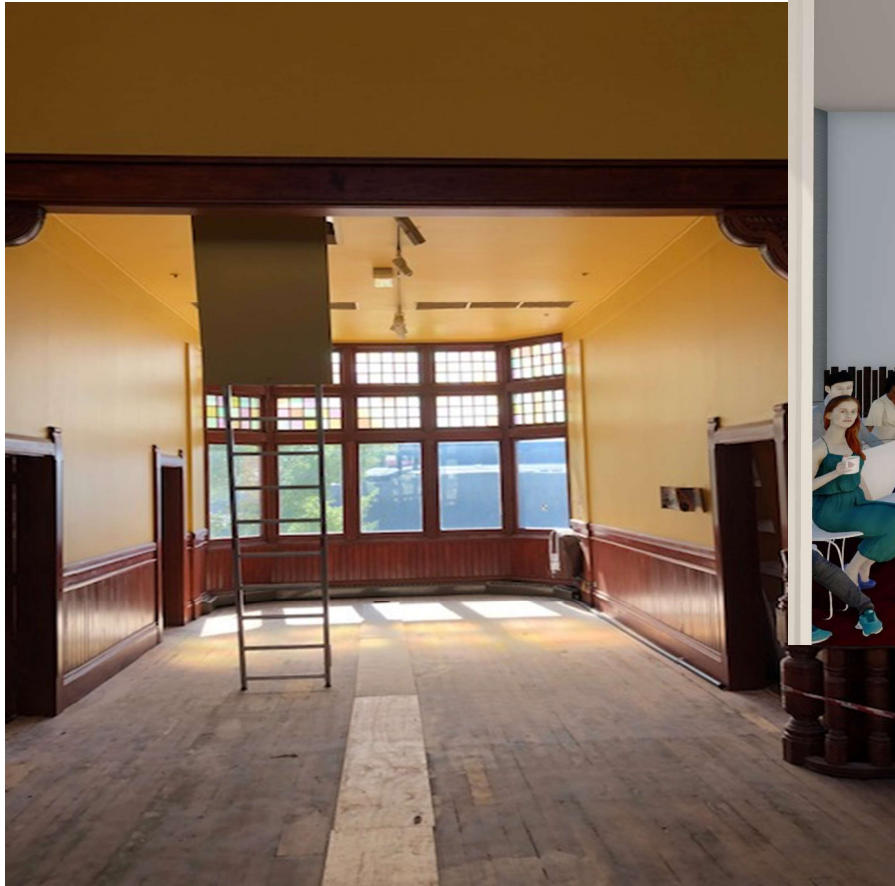
dpa
architects

NEW CAFE



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CONFERENCE SPACE



HERITAGE REINSTATEMENT



1908



2019



2025

HERITAGE REINSTATEMENT



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EXHIBITION DEVELOPMENT

- Northern Galleries remain short term exhibition space
- Southern galleries mix of previous and new as informed by engagement
- New exhibition design to modern standards including interactivity
- Co-curation with iwi and community groups
- Exhibition design, build and install from now until 2025
- \$4.2m secured to date with more required.

**THANK YOU FOR
HAVING US!**

Questions?



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