

FrontFoot®

Sleep easy. Base dissipation for lightweight structures & equipment.

Designer/Manufacturer: Seismic Shift, Christchurch, New Zealand

R&D Completion Date: July 2024

Description: The team at Seismic Shift has dedicated the past four years to developing an innovative new technology class – Planar Base Dissipation – sparked by insights from the Canterbury Earthquake Sequence. This system features a slip layer combined with planar damping devices which promote recentering while operating within a restricted displacement region of +/- 20mm laterally (flag-shaped hysteresis). Unlike traditional base isolation systems, this approach remains in the short period realm and requires significantly less displacement, eliminating the need for costly proprietary flexible service connections.

An installation of FrontFoot typically costs only 1-5% of the overall build cost and has minimal impact on project timelines. The devices are designed for compatibility with various foundation types, and in concrete applications, they can be installed in any radial orientation to eliminate installation errors.

In summary, Planar Base Dissipation offers a cost-effective and flexible solution that enhances seismic resilience and sets a new standard in earthquake engineering for lightweight structures and equipment which is accessible to all.

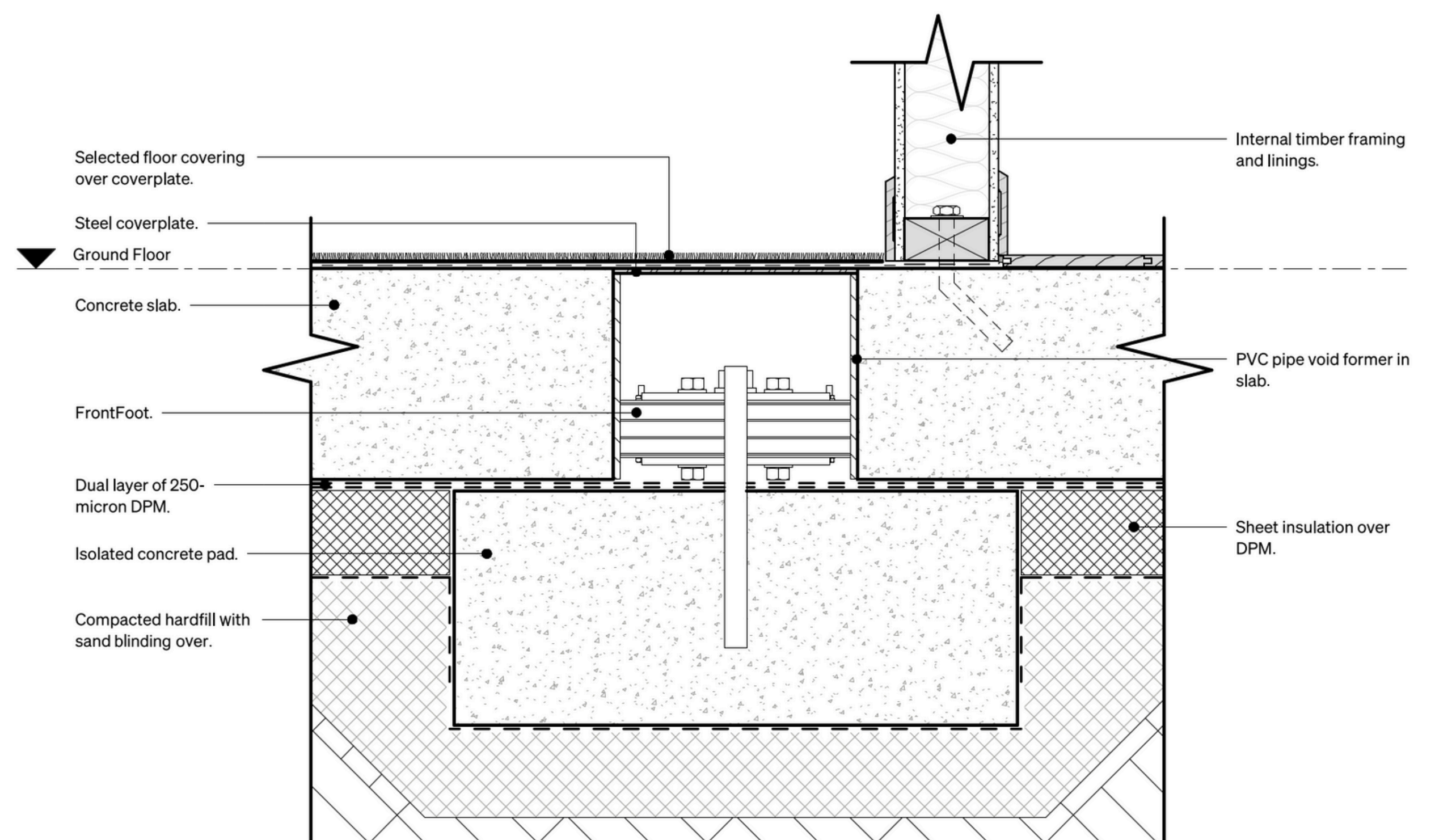
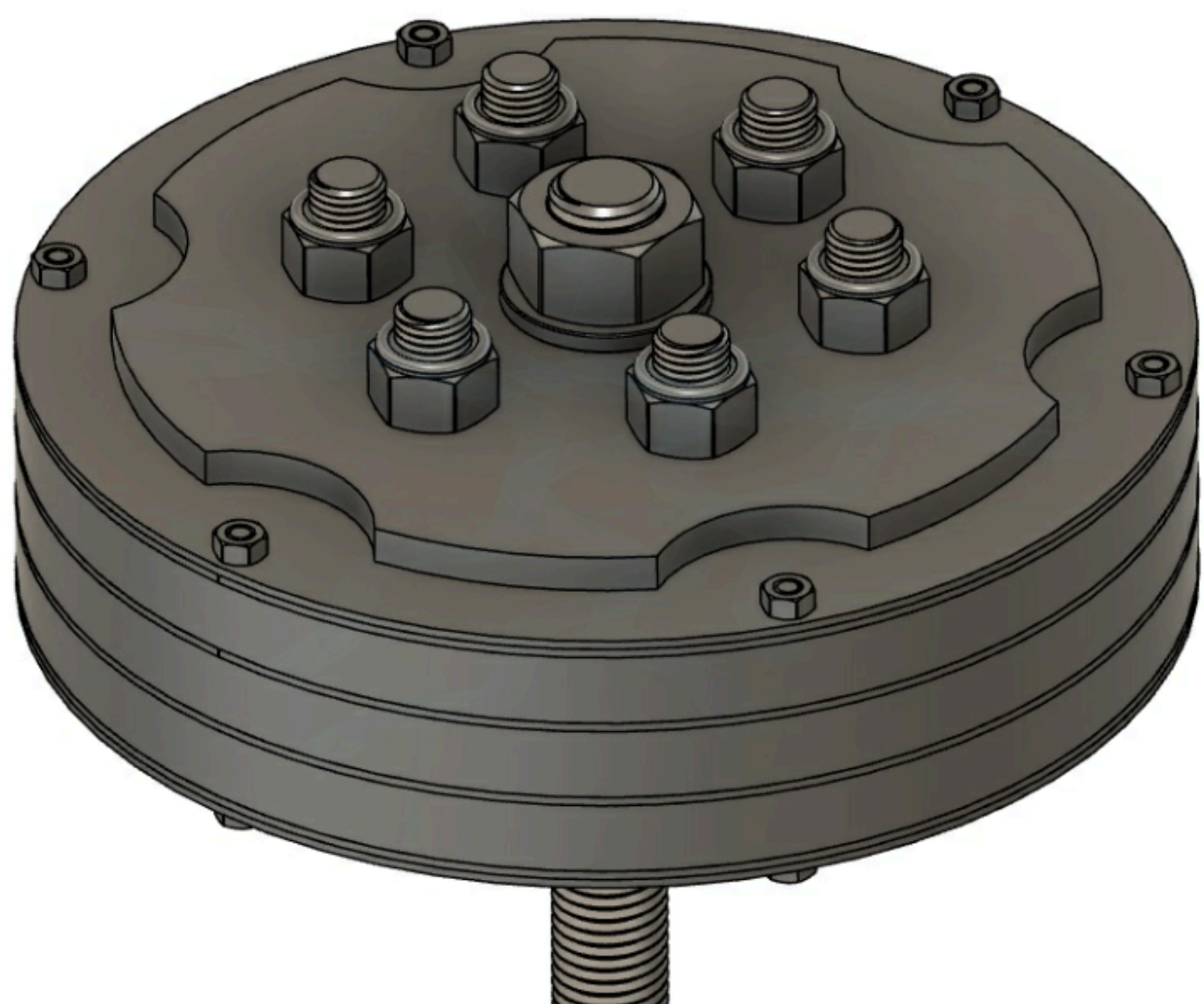
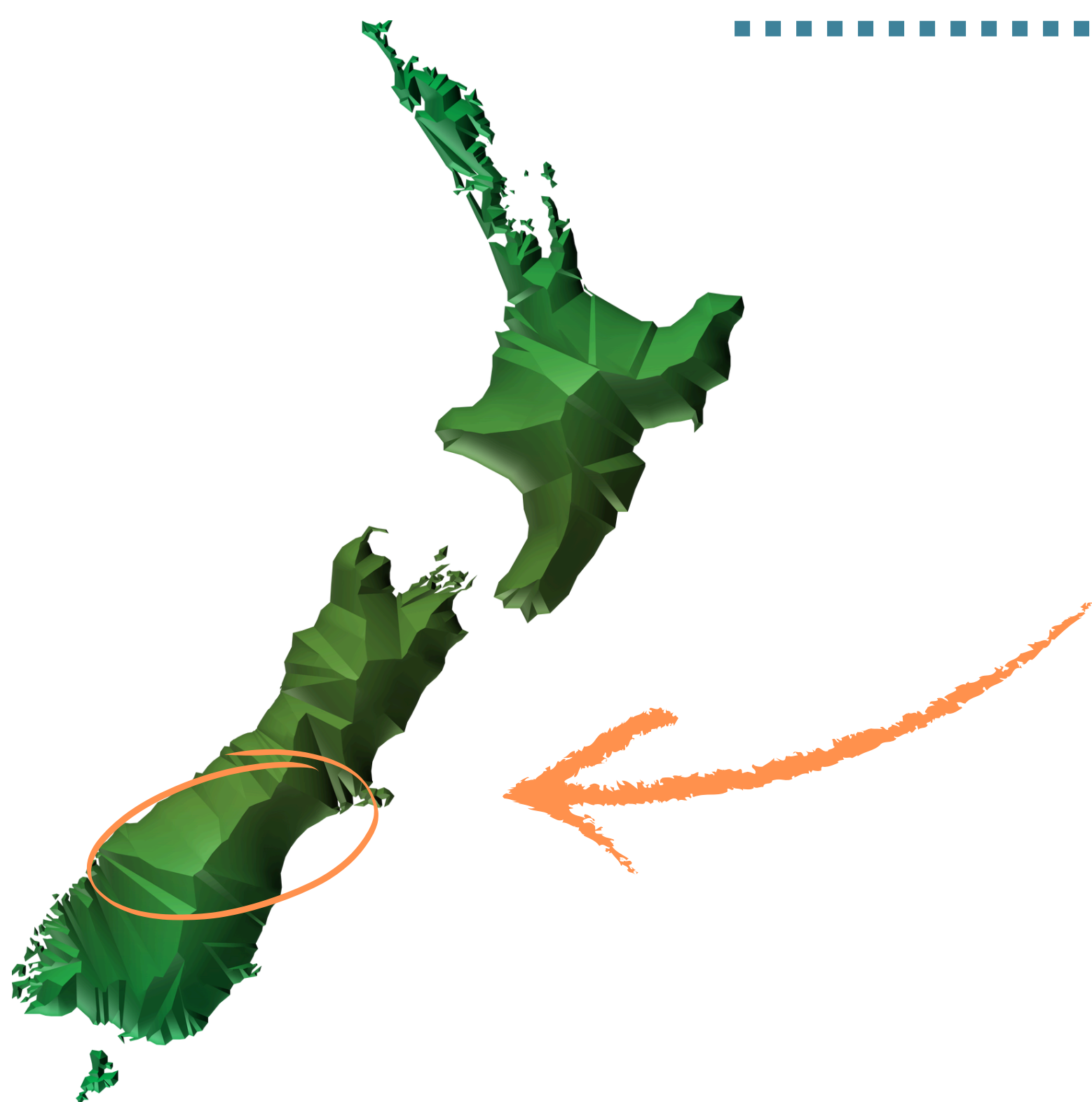


Figure 1 (left): A 3D model of the concrete configuration of FrontFoot. Figure 2 (right): An example detail of FrontFoot integrating into a house build - one of many foundation types that the system can integrate with.



Example Project - Pisa Moorings House

- 228m² home in Cromwell, New Zealand
- Undamped design acceleration 0.63g
- 22 FrontFoot devices (standard concrete configuration)
- 62% reduction in design superstructure acceleration
- Design superstructure drift < cosmetic damage onset
- Approx. 2% cost increase (devices & installation)
- Commencing construction October 24