



wintec, hamilton

Campus Redevelopment: Block F Earthquake Strengthening

With the momentum continuing to build for the use of Flexus™ Shotbond to strengthen existing buildings and infrastructure, the first historic unreinforced masonry building has been completed using the Shotbond system.

Although engineering design was for traditional shotcrete and mesh strengthening, it was recognised that the advantages of using Flexus™ Shotbond for its lightweight application and ease of use was ideal for this project.

The existing structure is an unreinforced masonry (brick) building with timber/concrete diaphragms and was built in the late 1920, and subsequent extensions were made in the late 1920s and early 1930s.

The strengthening philosophy for in-plane shear failure mode was achieved by strengthening the walls that lacked shear strength with spraying between 30-80mm layer of Flexus™ to the internal wall surfaces. For walls that were failing in combined shear and in-plane flexure (rocking), a sufficient number of grouted reinforcing bars, in conjunction with the Flexus™ layer, were cut into the walls were required. The reinforcing bars also contributed to sliding shear strength therefore reducing the Flexus™ layer thickness requirement. Out-of-plane strengthening was achieved by analysing the Flexus™ reinforced walls as a composite section.

Flexus was sprayed to the wall without any other processes or materials and was completed rapidly and ahead of schedule. A plaster finish was then applied which resulted in a high quality, architectural standard.



- Client:** Wintec Block F Building
- Engineer:** AECOM
- Construction:** Mainzeal Property & Construction
- Sub-Contractor:** Terry Texture Coatings