SEISMIC & HERITAGE REFURBISHMENT

LT

McGuinness
BUILDING CONTRACTORS
Introduction

Wellington residents have long known they live in an earthquake-prone city. Most of Wellington’s buildings range from around 1900 to the present day and, while modern buildings conform to the latest earthquake performance standards, older ones fall well short. Yet to get rid of them would destroy the city’s sense of history. The answer lies in seismic strengthening and heritage restoration, a field in which LT McGuinness has gained a formidable reputation.

The recent Christchurch earthquakes have heightened awareness of seismic strengthening. However, our firm has been developing expertise in this area since the 1970s when central and local governments began to address the risks posed by older, under-strength buildings. This coincided with a growing mood to preserve our heritage.

The quality of our work is widely acknowledged. Australian heritage expert Peter Watts rated our restoration and strengthening of Government House as better than any he had seen worldwide. In 2009, the New Zealand Property Council gave our Chews Lane development its supreme award.

The RCP project managers for the Harbour City Centre upgrade identified the early involvement of the contractors as the key to that job’s success. We were the lead contractors.

So at the start of your project, bring us in for innovative, cost-effective solutions that draw on 40 years’ expertise in seismic strengthening and heritage restoration.

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LT McGuinness has transformed an old, pale green warehouse on the Wellington waterfront into the NZX Centre, the imposing home of New Zealand’s stock exchange.

Once home to Odlins timber merchants, the building was a city landmark. But by the late 1990s it was in such poor repair that anyone entering it risked falling through the dilapidated floors.

LT McGuinness worked with Athfield Architects and developer Willis Bond and Co on a refurbishment plan to make it highly functional while preserving its unique status and character. The plan also covered the two buildings on its flanks, Shed 22 and the Free Ambulance Building.

The Odlins building was strengthened and seven prestige apartments now occupy the top floor. All had to sit within the existing roof line. Remaining floors were converted to offices outfitted as far as possible with the original timbers and bricks. Below sea level, the basement was dug out for a carpark.

The strengthening, refurbishments and fit-outs were delivered within budget in May 2005. That met the tight timeframe required by two large commercial tenants, the New Zealand Stock Exchange and shipping company Nedlloyd. They were later joined by local internet giant Trade Me.

NZX Centre
(The Odlins Building)

‘An old, pale green warehouse was transformed into the imposing home of New Zealand's stock exchange.’

‘The building was strengthened and seven prestige apartments put in the top floor.’
LT McGuinness’s founder, Lawrence McGuinness, first worked on Government House in the 1950s. Fifty years later, the firm was entrusted with one of New Zealand’s most significant heritage refurbishments.

Built in 1910, Government House has Category 1 heritage status. Its two storeys contain 27 bedrooms, 19 bathrooms, a grand staircase, dozens of other rooms including a ballroom, conservatory, kitchens, offices, a flag tower and self-contained apartment for the Governor-General and their family.

Earthquake strengthening involved building new piles and foundation walls for much of the House and ensuring the foundations were properly connected to the building. Walls were strengthened with structural steel braces. Additional steel frames helped fortify the roof and tower.

Forty-five LT McGuinness tradesmen and up to 150 sub-contractors were on the job. Chimneys that once dotted the roofline were reconstructed and 180,000 new roof tiles installed. Windows were re-glazed and lead lights reintroduced. Many non-original doors, windows and exterior pipes were removed, along with asbestos, and native and jarrah timbers were painstakingly restored.

In early 2011, Maarten Wevers, head of the Department of Prime Minister and Cabinet, said:

“This important heritage project, costing more than $40 million, is not only set to be completed ahead of schedule and within budget, but to a very high standard. The quality of the work in the completed House is a credit to all of those involved.”
Life for Wellington City Council tenants in the Central Park Apartments has become safer and more comfortable following a two-year refurbishment completed in 2012 by LT McGuinness.

The council is New Zealand’s second-biggest landlord, and the 50-year-old complex at the foot of Brooklyn Hill is one of its biggest investments. The project involved a major seismic upgrade and structural reconfiguration of the entire complex and its 190 units. The earthquake strengthening has lifted the apartment blocks to 70 percent of the current building code.

Reducing the 52 entrances by dividing the complex into 16-unit segments where tenants can control access has also greatly improved security.

Doing away with internal corridors, opening kitchen and living areas, and giving each unit its own balcony or courtyard has delivered additional living space.

In addition, the cold, damp units have been transformed by upgrading bathrooms, kitchens and the interior décor. Modern insulation installed in walls and ceilings, double glazing of windows, and ventilation ducts installed over stoves and in bathrooms keep the flats drier and warmer.

Externally, the tired appearance of the mustard-coloured tower block and podium has been revitalised with a modern new colour scheme.

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Central Park Apartments

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The work brings the building to 100 percent of the current code in terms of collapse prevention.

Known to many Wellingtonians as the old DIC building, the Harbour City Centre is a registered Category II heritage landmark. The six-storey steel and concrete frame building was constructed in 1928. Although well-designed and built for its day, there was no provision for earthquake loading. The building was strengthened in the 1970s but an assessment in 2008 revealed its performance was well below today’s standards.

The 2011-2012 project was one of the first seismic upgrades undertaken by LT McGuinness while a building was occupied. Complex staging of the work was required to minimise disruption to tenants. Frequent night work meant the job ran virtually around the clock.

Columns were reinforced and concreted from the lower floors going up, to meet their counterparts coming down, where they are joined by couplers.

During the upgrade, the ground floor was divided into three sections. While shoppers on Lambton Quay scanned the clothing racks, construction went on behind acoustic wall panels. On the floors above, LT McGuinness was asked to complete fit-outs for tenants including Contact Energy and Lumino Dentists.

The work brings the building to 100 percent of the current code in terms of collapse prevention. As it neared completion, RCP project managers said that the early involvement of the contractors contributed greatly to the project’s success.
Originally constructed in 1932, the Free Ambulance Building in the Taranaki Wharf area is considered one of Wellington’s best examples of art deco architecture. Designed by architect William Turnbull who also designed Turnbull House, the building was home to the city’s free ambulance service for 61 years. It was constructed of reinforced concrete just after the Napier earthquake and has massive reinforced concrete foundations. It is perhaps the only Wellington building of its era that has not required major earthquake strengthening.

Nevertheless, when LT McGuinness was contracted to refurbish it for commercial and retail use in 2006, some strengthening was required to bring it up to current codes while retaining its exterior features and heritage character. A major challenge involved the discrete insertion of a mezzanine floor.

The ground floor is now occupied by the St John’s Bar, which required a particularly high standard of finishing. High-quality boutique offices on the two floors above accommodate Willis Bond and Co, who were the developers for this project, Sustainable Future, Knight Coldicutt and Carat New Zealand.

The Free Ambulance Building is grouped with the NZX Centre (formerly the Odlins Building) and Shed 22, and together they form a popular harbour-edge heritage precinct.

St Mary of the Angels in downtown Wellington is believed to be the first reinforced gothic church in the world. Built in 1922, it is an architectural masterpiece and considered the finest of 112 churches designed by Frederick de Clere. LT McGuinness began restoration work on the church in 1994. The original concrete work had deteriorated badly. Thousands of metres of cracks, large and small, criss-crossed the building, the result of water damage, earthquakes and the dated concreting techniques used 80 years earlier.

Together with structural consultants Clendon Burns, the firm researched and specified the remedial concrete work using epoxy injection and epoxy mortar repairs. Epoxy was pumped into minor cracks. For larger cracks, the old concrete was cut down until solid concrete was reached and then resealed, plastered and painted.

Two towers were strengthened and pews that seat 650 people were sent away to be restored. A maze of scaffolding covered the walls and reached high into the arched ceilings as the paintwork and beautiful stained glass windows were brought back to life.

In 2002 the exterior of the building was refurbished by using a STO paint system. Whilst the refurbishments have protected the interior and exterior of the church, the full strengthening of the church is still to be completed. LT McGuinness is involved with consultants in researching the best structural and economic outcomes for this work. It is expected to be staged over a few years so the church can be kept open as long as possible. When this work is completed it will provide the Wellington community with a church that is fully compliant with current seismic codes.
Shed 22, home of Mac’s Brew Bar, was built in 1922 as a woolstore on the wharves at the bottom of Taranaki Street. It was in a ramshackle state 80 years later when LT McGuinness began work to give it a new lease of life as part of a Willis Bond and Co development project. Working to a design by Athfield Architects, Shed 22 was strengthened and outfitted with a bar, restaurant, function room and offices. It also included a working brewery that required sophisticated technology to produce up to 3.5 million litres of beer a year. Special care was taken to preserve the building’s unique aspects, particularly its red brick façade. That meant the new internal structure had to be erected within the existing shell. Earthquake strengthening saw a network of steel beams installed, attached to a massive flooring raft supported on piles. Today Shed 22 is well patronised by locals and overseas visitors who enjoy its superb harbour views and sunny aspect. It is another iconic heritage project in a highly popular part of the Wellington waterfront.

In 2010, Victoria University engaged LT McGuinness and structural engineers Dunning Thornton Consultants to strengthen Weir House, its hostel complex that overlooks Wellington from the Kelburn hills. Weir House was, in one sense, shaped by earthquakes. Original plans to build it in brick were changed following the Napier earthquake, and it was constructed in concrete in 1932. Further wings were added in 1965 and 2005. Engineers’ investigations in 2010 showed that only the original William Weir wing required strengthening. The investigation had to take into account the cable car running through a tunnel underneath it. The William Weir wing is a listed heritage building and its main chimneys are an important part of its character. These were stabilised with additional restraint in the roof space instead of being replaced with a more lightweight material. The strengthening included targeted addition of sprayed concrete walls, securing works and upgrading connections. All masonry partitions were load-tested on site. The timber roof required an extensive upgrade. The client, engineer and builder worked closely to carry out other improvements such as the fit-out of a new sick room, new shelves and storage for the ground floor office, and better basement drainage. The project was completed in two stages over two summers to minimise disruption and risk.
LT McGuinness revitalised the entire Chews Lane precinct, two-thirds of a central city block, during 2007-2008. Chews Lane itself was transformed from a gloomy alley running between dilapidated buildings to the heart of an award-winning and vibrant mixed-use precinct. Four existing buildings were strengthened and refurbished to retain their heritage value. New shear frames to upgrade seismic strengthening were inserted within the existing structural frames. Two eight-storey concrete podia were constructed on opposite sides of the lane, spanning Willis and Victoria Streets. The precinct now provides around 15,000m² of office premises, 19 retail stores at ground level, six food and beverage outlets in the lane itself, as well as a tower with 97 apartments. In 2009, the development won five awards at the New Zealand Property Council Awards, including the Supreme Award. The judges commented:

"Construction took place in a functionally and spatially tight and challenging urban environment, with very restricted access. Heritage buildings have been imaginatively restored and retrofitted, and thoroughly contemporary new buildings seamlessly integrated. We were impressed with the total scope of the project, the attention to detail, the commitment to the concept of incorporating old with new and delivering premium quality accommodation in a revitalised environment."

‘Chews Lane was transformed from a gloomy alley to the heart of a vibrant mixed-use precinct.’

‘In 2009, the development won five awards at the New Zealand Property Council Awards, including the Supreme Award.’
The John Chambers Building occupies a highly visible wedge between Cable Street and the curve of Jervois Quay. It sat at the edge of the city’s commercial area when built in 1918 for engineering firm John Chambers and Son as a warehouse, workshop and offices.

As shown in the black and white photo above, an earthquake in August 1942 shattered most of the windows in the top two floors while those at ground level remained intact.

Today, the building has been earthquake-strengthened and extensively refitted. Its concrete structure and distinctive ‘bull nose’ remain remarkably modern in design.

Long horizontal bands of windows provide excellent views and natural light. The high stud has allowed mezzanine floors to be incorporated as part of top quality fit-outs across the three floors that cover 3000 square metres.

The building has been leased to major corporate clients including Morrison and Co on the top floor, and Xero on the first and ground floors. Both companies chose LT McGuinness to complete the fit-outs.

The John Chambers Building is the latest in a cluster of heritage buildings restored by LT McGuinness. Just across the road sit the Free Ambulance Building, the NZX Centre (formerly Odlins), and Shed 22 with its Mac’s Brew Bar.