



Cathedral of the Blessed Sacrament, Christchurch

Post-Earthquake Stabilisation

Fact sheet, 5 May 2011

Background

The Cathedral of the Blessed Sacrament, one of the most significant buildings of its type in the Southern Hemisphere, suffered significant damage in the earthquakes that have struck Christchurch since September last year, particularly the magnitude 6.3 earthquake of February 22.

Situation

The Cathedral is currently in a precarious state, and the main dome and the north tower could potentially collapse further should a sizeable aftershock occur. These sections of the Cathedral are therefore a falling hazard, and until stabilised will continue to prevent the adjacent Cathedral College from reopening.

Observed damage

Engineers, suspended from a crane in baskets, have been able to look inside the cathedral. Their brief observations to date include:

Dome & rear of building

- The supporting structure of the dome has sustained considerable damage. Indications are that the main columns supporting the dome have settled, and this along with the vertical and horizontal movements during the earthquakes has contributed to the failure of the north arch and the near failure of the south arch. The east end of the building is severely damaged with the entire east wall behind the dome in danger of toppling towards the school. From what we have observed this area is in a very fragile state and would only require a moderate event for this part of the structure to suffer a major structural failure and total collapse.

Main Body

- Good news we hope. The main structure appears to be in reasonable shape. This will require confirmation once access can be gained and a more detailed structural investigation undertaken. Columns, ceiling and structure appear intact however the big pipe organ at the back seems to have suffered considerable damage.

Front Towers

- Damage to the two towers is evident from the street. What remains of the south tower (right hand side looking from the street) is now reasonably stable with only loose blocks to be removed, although it has suffered quite a bit of damage. The north tower is showing signs that the same failure as has already happened to the south tower could occur. A large section of the front face of the north tower has split away leaving it in a very unstable position. At present this area is undergoing more analysis to determine the best way forward.

Assessment

A full assessment of the damage to the Cathedral is not possible until the building is made safe for entry. Parts of the two front towers and main dome need to be dismantled for this to occur.

Work to be undertaken

Structural engineers and heritage specialists from Opus International Consultants are carrying out a controlled dismantling of these areas. The aims are:

- To reduce the likelihood of further damage to the Cathedral in the event of a significant aftershock
- To protect the adjacent school buildings
- To make safe the Cathedral so that assessors can enter the building and carry out a full assessment
- To ensure as much of the Cathedral building as possible is able to be retained and rebuilt should that be a viable option.

Deconstruction

This is time-consuming task. It involves:

- The recording of heritage features
- The careful removal of the dome structure down to the sill of the dome windows (and other parts of the building so that as much heritage fabric as possible can be preserved).

Timetable

- Partial deconstruction of the north tower and the removal of the bells has already occurred.
- Removal of the main copper dome and stonework down to the sill of the dome windows, and subsequent stabilisation and weather proofing is expected to occur in stages from the end of May* (*This date is approximate and could easily change.*)

Expertise and equipment

Removal of the main dome will be completed using a 400-tonne crane - one of the largest mobile cranes in New Zealand. A professional stonemason will also have a key role in the deconstruction process.

Future decision

No decision on the future of the Cathedral will be possible until assessors have completed a full assessment of damage to the inside of the Cathedral and the relevant experts have had an opportunity to study the report and consider the ramifications of the findings.

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