

#### 4. CATHEDRAL OF THE BLESSED SACRAMENT, BARBADOES STREET – SEISMIC STRENGTHENING

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The purpose of this report is to provide advice on the seismic strengthening measures and costs proposed for the Cathedral of the Blessed Sacrament, which is a Group 1 listed heritage building.

##### HERITAGE SIGNIFICANCE

The Cathedral of the Blessed Sacrament was designed by FW Petre in 1899, and constructed from 1901-1905. It is the second church to be built on the site, which was given to the Roman Catholic Church by the Provincial Government in 1860. The Cathedral is a significant Christchurch architectural landmark designed in an Italian Renaissance style with a Basilica plan. The Cathedral is a significant part of a complex that includes the former Sisters of the Mission Convent, also designed by Petre, and to the former Convent Chapel. Noted for its construction technology, craftsmanship and masonry techniques, the Cathedral has been described as one of the finest examples of church architecture in Australasia, and has served the Christchurch Diocese for over ninety years. As there has been activity on the site since 1864, the site is also of archaeological significance. The New Zealand Historic Places Trust Pouhere Taonga register the Cathedral as a Category I Historic Place.

##### BUILDING DESCRIPTION

The building is constructed of un-reinforced concrete that has been formed with a masonry skin. The plan form is generally symmetrical and rectangular in shape. The nave is double storeyed with an internal double height colonnade and two prominent towers to the west flanking the entry. The towers are completed with individual domes. The sanctuary is contained within the east of the nave and is topped by a large dome supported on substantial square columns. There are numerous external decorative stone details particularly on the upper sections of the building. These include a number of triangular pediments, statues, cross, considerable lengths of tall balustraded hand rails and double height Corinthian columns.

##### SUBSOIL INVESTIGATIONS

Investigations by Soils and Foundations Ltd and Canterbury University identified layers of fine silt occurring at regular layers below the foundations. These would be expected to be prone to liquefaction that could increase the effective horizontal seismic forces by approximately three times compared with normal seismic loadings.

##### SEISMIC SECURING OPTIONS

Holmes Consulting Group have provided a seismic report (February 2002) outlining their investigations and recommendations for the securing of the building.

The focus has been on:

- The structural securing of the dome and its integration with the remainder of the structure.
- The creation of significant concrete and steel framed vertical structural elements within the western towers
- The development of a concrete diaphragm at the mezzanine level of the nave to provide a horizontal distribution of seismic forces
- The strengthening of the vertical columns by coring and grouting of vertical steel
- The securing of decorative statues, cross and balustraded handrails on the upper portions of the building which are expected to be particularly vulnerable to collapse in an earthquake.

##### COSTS

This securing work as detailed above has been estimated by Rawlinsons & Co to cost \$705,0000. No provision has been included to meet any fire or access requirements as a consequence of the upgrading works.

## **CONCLUSIONS**

Seismic securing costs for the Church are a significant burden that are required to be met both for public safety and for the retention of the heritage fabric of the building. The Cathedral of the Blessed Sacrament and the Christchurch Cathedral are the two most significant heritage ecclesiastic buildings in Christchurch. The City Council, in the case of the Christchurch Cathedral has provided a sum of \$1,000,000 for seismic strengthening over a period of five years. Consideration of assistance in the case of the Cathedral of the Blessed Sacrament would appear to be necessary and appropriate.

**Recommendation:** That the Council make specific provision for substantial financial assistance for the seismic strengthening of the Cathedral of the Blessed Sacrament over a period of five years for the 2002/03–2007/08 annual budgets.

### **Chairman's**

**Recommendation:**

1. That the Council make specific provision for the sum of \$140,000 for a five year period to continue the Cathedral seismic strengthening programme and following the completion of the Christchurch Cathedral strengthening in 2002/03, the funding be provided for the Cathedral of the Blessed Sacrament.
2. That this recommendation be forwarded to the Annual Plan Subcommittee for consideration in finalising the 2002/03 Annual Plan.