

# Jackie Gillies + Associates

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Church Property Trustees  
c/o Marcus Read  
Resource Co-ordination Partnership Ltd  
PO Box 1434  
Christchurch 8140

19<sup>th</sup> December 2012  
(Original draft, 12<sup>th</sup> September 2012)

Dear Marcus,

## Christchurch Cathedral

This letter is a finalised version of a draft forwarded to CPT in September this year and which has been updated and finalised as part of the judicial review process.

We concluded our report dated 31<sup>st</sup> July 2012 on the relative pros and cons of the deconstruction and maximum retention options, by saying that as heritage professionals, deconstruction of the cathedral is a bitter pill to swallow and by stating that, in our view, neither the deconstruction option proposed by CPT or the maximum retention option proposed by the IPSE have strong merit from the heritage/building conservation point of view. Since that time, Robin and I have felt uncomfortable that, as heritage advocates, we have been unable to propose a better solution in line with the outcome of our work during the Collaborative Working Group last year when the preference for a part new, part reconstructed and part repaired cathedral was accepted within the group.

Prompted by discussions in June & July 2012 with a number of structural engineers regarding projects this office is involved with in Dunedin and Methven, we have spent a considerable amount of our own time recently looking at what the potential options are for stabilisation and retrofit seismic strengthening of historic buildings where an approach is required on a minimum intervention basis.

This research reaffirmed to us the potential for retention of part of the cathedral and its in-situ repair and stabilisation/strengthening without the need for deconstruction to sill level or the highly interventionist creation of a reinforced concrete 'body' within the building. As we made clear in our letter dated 31<sup>st</sup> July 2012, we are doubtful, in heritage conservation terms, of the wisdom in removal of the inner wythe of the building to allow a reinforced concrete skeleton to be built after which the inner ashlar stone and decoration would need to be reconstructed, probably involving a lot of new work. As Holmes Consulting Group has pointed out, there is the risk that some of the outer stone wythe would also need to be reconstructed. Such work is likely to have a negative effect on the authenticity<sup>1</sup> of the remaining building.

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<sup>1</sup> **Authenticity** means the credibility or truthfulness of the surviving evidence and knowledge of the **cultural heritage value** of a **place**. Relevant evidence includes form and design, substance and **fabric**, technology and craftsmanship, location and surroundings, context and **setting, use** and function, traditions, spiritual essence, and sense of place, and includes **tangible** and **intangible values**. Assessment of **authenticity** is

The office projects referred to above have raised the possibility in our minds that, instead of the insertion of mass reinforced concrete body into the structure, it may be possible (subject to detailed structural engineering advice) to carry out stabilisation and in-situ repair/strengthening using a combination of techniques of:

1. Helical-profiled stainless steel ties/bars;
2. Grouted anchor steel anchor rods and carbon fibre strips, etc; and
3. Post-tensioned, steel rods or sleeved and greased steel strands/cables.

It is our understanding that these technologies are new in New Zealand. It goes without saying that we are not structural or civil engineers, but we are very interested in exploring with Holmes Consulting Group, the other members of the project group and CPT whether this form of stabilisation and repair/strengthening could be used to great advantage at the Cathedral.

The approach outlined in our draft letter of September 2012 has more recently been reaffirmed by Win Clark, the structural engineering consultant of NZ HPT, at a presentation made by him to representatives of CPT and myself at a meeting in Christchurch in November. Mr Clark described the effects of the 2009 earthquakes in L'Aquila in Italy on heritage buildings of very similar construction to the cathedral. He described the extensive temporary shoring employed around the outside of the buildings, across the roof and the interior, and the temporary shoring and tying which assured the buildings' temporary stability until repairs and strengthening could be undertaken. Mr Clark also described some of the core grouting and tying techniques employed by Italian engineers, some of which had been carried out prior to the '09 earthquake and which survived well.

At the beginning of 2012, the project team was working on a maximum retention option prepared by HCG which was based on shoring and stabilising the building so that the opportunity remained to repair and reinstate some or all of the remaining structure into the new cathedral, (an approach with factors in common with Mr Clark's methodology). For us, this option lost much of its appeal when we learnt that it would still lead to removal of the roof and most, if not all, of the structure needing to be strengthened by the insertion of a reinforced concrete core, together with the excavation and construction of new foundations, etc. This 'solution' has more recently been reiterated by the IPSE. On the basis of this high degree of intervention, we accepted that deconstruction to the proposed 2-3m height was necessary. We are now hopeful that this may not need to be the case.

As has been discussed on many occasions by the project team, the issue of contractor safety is of paramount importance during whatever work is done to the building. We have not been convinced by the IPSE proposal for thrusting a steel tunnel through the building – there seem to be many potential issues for this method – and we have preferred the approach whereby as much work as possible is done from outside the building or from a crane platform, after which contractors can enter in the safer area behind. The methodology described by Mr Clark and employed in L'Aquila gave worker safety the highest priority and was proven to be successful. This might form the basis of further discussions with CPT with respect to this proposal.

In general terms (and subject to more detailed investigations), the heritage/building conservation merits for the building would be:

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based on identification and analysis of relevant evidence and knowledge, and respect for its cultural context – ICOMOS New Zealand 2010.

- Minimal intervention for strengthening compared to the reinforced concrete core approach;
- Far greater retention in-situ of original historic building fabric than the reinforced concrete core approach i.e. preservation rather than reconstruction;
- The potential for this form of repair and strengthening to be 'reversible' should advancements in seismic strengthening result in even less intrusive methods being available in the future;

In addition, there could be a significant cost saving to CPT by stabilisation and repair/strengthening in-situ rather than deconstruction, storage and reconstruction. It might also mean that instead of a part new, part reconstructed and part repaired cathedral it might be possible to dispense with the reconstruction part and look to the future with solely a part new and part repaired building.

The approach advocated above could also go a long way to silencing some of CPT's critics, who do not feel that CPT have taken sufficient of a 'heritage' guardianship role in deciding what is to be done with the cathedral. Furthermore, we feel that preservation of the building or, at least, part of it in this manner would attract widespread support and funding opportunities.

Working with heritage buildings, we are well used to having to balance a range of apparently conflicting requirements. As you will know, as architects, this is what we are trained to do, but in heritage work the range of conflicting issues can be even greater. However, I personally get great pleasure from finding solutions which satisfy as many of these different requirements as possible and to find a "win/win" solution.

Since our involvement in the Cathedral project began in July of last year, including being part of the Collaborative Working Party, discussions with Stuart at Holmes and Bill at Warren & Mahoney about future possibilities, and yourselves and the Church regarding financial issues and practicalities, we have acquired some understanding of these conflicting issues and appreciate the very difficult position in which the CPT find themselves.

However, this involvement, together with our recent research, has led us to believe that a mutually acceptable solution may be possible. This would involve the combination of three separate concepts. Firstly, the application of some of the minimum intervention shoring and strengthening methodologies described above; secondly, acceptance of some loss of original fabric; and lastly, fully contemporary additions to create spaces suitable for the church's needs in the 21<sup>st</sup> century. What would be created would be a revitalised cathedral that was very clearly a repaired and strengthened familiar icon as well as a new building symbolic of Christchurch's ability to rise from the devastation of the earthquakes and capable of functioning appropriately in the 21<sup>st</sup> century.

In view of the current debate with the GCBT, as we have mentioned above, consideration of this proposal may have further benefits to the church and to the CPT. One of the arguments made by the GCBT is that additional funding would be available from external and international sources if the future option of stabilisation and repair/strengthening was adopted. Balanced against the CPT's limited budget and reluctance to fundraise for repair in favour of helping its congregation, the solution proposed above would allow for this external funding to be applied, without impacting on the church's other priorities.

Similarly, the church has made it clear that the traditional layout of the cathedral does not lend itself to modern methods of worship. The concept in our minds includes retention of large areas of the original building (nave, transepts, chancel but not porches or aisles) with the design and construction of wide radiating additions on

each side of the nave which focus on the chancel and altar, but which are designed in a modern idiom and to suit modern requirements. I am confident Warren & Mahoney would excel if given a brief such as this. This is not a new idea and simply develops our previous recommendation that a part repaired, part strengthened and part new cathedral would best suit the conflicting requirements.

In essence, the purpose of this letter is to let you know that we have become aware of another potential structural solution for stabilisation and repair/strengthening of the cathedral that we would like CPT to consider. It avoids deconstruction of the building and allows a future option of part new/part old that we believe would be world class.

We very much regret if this letter implies a disregard for our brief or instructions. This is not our intention. We value the rapport we have developed both with RCP and the CPT, but we feel that it is our professional duty to pass on a concept that in our minds has such high benefits to conservation and heritage values and may help the very difficult position in which the church finds itself. We do not expect that this letter or its contents will turn the world on its head, but we believe we would not properly fulfil our role as heritage professionals if we did not put this case before you.

We look forward to hearing from you.

Kind regards.

Yours sincerely

**Jackie Gillies**

For and on behalf of Jackie Gillies + Associates

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