



St Mary's Catholic Church, Hokitika

Partial Strengthening and Early Opening Scheme

Resource Consent Application to Westland District Council



St Mary's Catholic Church, Hokitika

Partial Strengthening and Early Opening Scheme

Prepared By



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APPLICATION FOR RESOURCE CONSENT UNDER SECTION 88 OF THE RESOURCE MANAGEMENT ACT 1991

TO: Westland District Council
Private Bag 704
Hokitika

FROM: Catholic Diocese of Christchurch
PO Box 4544
Christchurch 8140

1. The Catholic Diocese of Christchurch applies for resource consent to:

Undertake deconstruction and strengthening works to alter a listed heritage building.

2. A description of the activity to which the application relates is:

The Catholic Diocese of Christchurch propose to undertake deconstruction and partial strengthening works to the St Mary's Catholic Church, Hokitika, a Category II listed Heritage Building within the Westland District Plan, to strengthen parts of the Church to at least 34% of the New Building Standards to enable the early re-opening and partial re-use of the building. The proposed works will consist of the following main elements:

- Deconstruction of the bell tower and replacement with a lightweight replica
- Post-tensioning strengthening works to the nave (internal and external)
- Strengthening works to the chancel arch
- Strengthening works to the ceiling
- Removal of the rear gable end and replacement with a lightweight replica

The proposal is described in more detail in the attached Assessment of Environmental Effects and associated appendices.

3. The names of the owners and occupiers and legal description of the land to which the application relates are as follows:

Roman Catholic Bishop of the Diocese of Christchurch (owner) Pt Lot 1 DP 3795

4. The location to which the application relates is:

St Mary's Catholic Church
71 Sewell Street, Hokitika
Map reference Topo50: BU18 334 687

5. The following additional resource consents are required:

No additional resource consents are required.

An Archaeological Authority will be required from Heritage New Zealand

6. Attached, in accordance with the Fourth Schedule of the Resource Management Act 1991, is a description of the proposed activity and an assessment of the environmental effects the proposed activity may have on the environment.

7. Attached is any information required to be included in the application by the regional plan, the Resource Management Act 1991 or any regulations made under that Act.

An Assessment of Environmental Effects, along with plans and appendices, are attached.



Signed on behalf of the Catholic
Diocese of Christchurch

Date: 20 June 2016

Address for service:

Catholic Diocese of Christchurch
P O Box 4544
Christchurch 8140

Attn: Steve Baker

Ph: 021 243 2512

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Annexures:

A description and assessment of environmental effect in accordance with section 88 of, and the Fourth Schedule to, the Resource Management Act 1991.

1 Introduction

St Mary's Catholic Church (the Church) is a listed Heritage building in Hokitika. It is listed as Category I on the Heritage New Zealand (HNZ) List, and is listed Category II in the Westland District Plan (the District Plan).

The Church has been closed to the public since June 2012 when it was identified as being an earthquake-prone building. Strengthening works are required to bring the building up to earthquake safety standards prior to allowing further use of the site.

Initial works to remove the existing asbestos ceiling and to undertake intrusive investigations have been undertaken pursuant to resource consent 150056 which was approved on 10th August 2015.

The Catholic Diocese of Christchurch (the Diocese) proposes to commence the Partial Strengthening and Early Opening Scheme (Stage 1 Scheme) as part of an overall strengthening scheme for the Church. The purpose of the Stage 1 Scheme is to undertake sufficient works to remove critical structural weaknesses and partially strengthen parts of the church to at least 34% of the New Building Standards (NBS). This will allow the majority of the access restrictions to be lifted, thereby allowing an early re-opening and re-occupation of parts of the Church. The Diocese is applying for a land use consent from the Westland District Council (WDC) under the District Plan to undertake these Stage 1 works.

Some access restrictions will still remain. There will be a further Stage 2 Strengthening Scheme in the future to complete the overall strengthening works of the Church and which will remove all access restrictions. Resource consent for Stage 2 works will be applied for at a later date once the final strengthening scheme has been designed.

The status of the proposed Stage 1 activity is assessed as being a discretionary activity under Rule 5.2.3.2 (j) of the District Plan. The Plan does not include any specific assessment criteria for discretionary activities.

This application has been prepared and lodged in accordance with Section 88 of the Resource Management Act 1991 (RMA) and contains a description of the activity with an assessment of the actual and potential effects on the environment.

2 Background

A detailed seismic assessment of the Church was undertaken in 2012. Based on this assessment, the majority of the structure was estimated to have a seismic performance of less than 33% New Building Standards (NBS), hence being categorised as Earthquake Prone. Some of the structural elements have less than 10% NBS. It is likely that in a moderate earthquake the structure could partially collapse.

In general terms, the church is constructed from two principal materials; the nave from un-reinforced load bearing masonry walls bonded together with cement mortar. This in turn supports a concrete ring beam which carries the timber truss roof. In contrast, the tower above the porch is constructed from reinforced concrete walls from the first floor upwards. The key structural deficiencies of the Church are noted as follows:

- The connection between the gable end walls and the roof is limited and in a moderate earthquake event, it is likely the gable end wall would move away from the roof structure and collapse
- The columns between the nave and sacristy are assumed to be carrying a masonry structure above. It is unclear how the structure is held in place at the top, and in a moderate earthquake event this element above could fail in a similar manner to the end wall
- There appears to be a lack of restraining connections from the reinforced concrete tower to the structure below. The base of the tower containing the entrance porch and organ loft was built prior to World War I and is of unreinforced masonry construction while the tower and dome were built post World War I and are constructed of reinforced concrete. In a moderate earthquake event it is likely the tower would overturn, potentially collapsing into the nave or out onto the entry below
- Lack of seismic bracing elements at roof and ceiling level
- Lack of suitable seismic connections between walls, ceiling and roof

Strengthening works are required to bring the building up to earthquake safety standards prior to allowing further use of the site. Since closure of the Church, investigations have been undertaken to determine the nature and extent of the strengthening works that would be required.

The proposed staged strengthening scheme, as outlined in this consent application, is considered to be the most practical and cost-effective option that allows St Mary's Church to be reopened as soon as is possible, albeit with access restrictions still in place.

This is balanced against the need to take a broader, Diocese-wide view. St Mary's church is just 1 of 13 heritage churches (which includes the Cathedral of the Blessed Sacrament in Christchurch) located within the Canterbury / West Coast Diocese boundary. Many of these churches are closed due to either earthquake damage or are identified as being earthquake-prone. All 13 churches require either earthquake repair works and / or strengthening works. On top of this, the Diocese also has other non-heritage churches that have been demolished following the Christchurch earthquakes and which need to be rebuilt, plus repairs to presbyteries, schools and other associated buildings. Overall, the total portfolio of repairs and rebuilds amounts to approximately \$124M but with an insurance pay out arising from the Christchurch earthquakes of approximately \$73M. There is a shortfall of approximately \$51M that needs to be obtained through other means.

The Diocese's view is that the most effective way it can meet its obligations across the entire portfolio is to strengthen its churches to at least 34%NBS and to take a staged approach to these strengthening and repair works. The purpose of the staged approach is to initially address any critical structural weaknesses and to ensure life safety which will enable the early opening and re-occupation of the closed churches. This then provides a focus for fundraising activities in order to complete the future strengthening works. It also spreads out the funding requirements by doing strengthening works that are necessary but cost-effective to get the churches opened, prior to coming back through in a second wave of works to complete the overall strengthening works.

3 Description of the Environment

The Church is located on a 1,930m² site in Hokitika, within the Residential Mixed Zone of the District Plan. It is bordered on the south and west by commercial zoned property and to the north and east by mixed residential zoned property (see Figure 1 Location Map below).

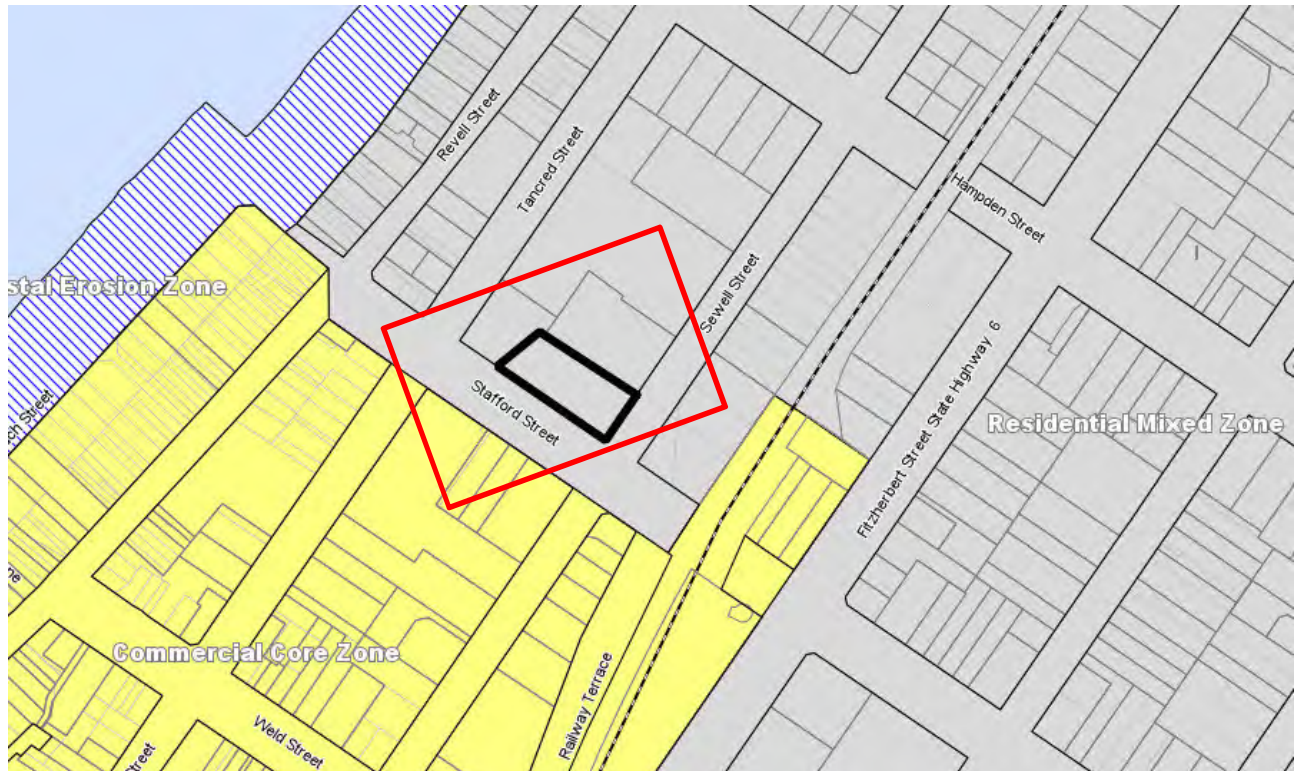


Figure 1: Location Map

The Church is registered with Heritage New Zealand as a Category I Historic Place (Register Number 1705). It is also listed in Appendix A of the Westland District Plan as a Category II Heritage Building (Reference Number 22).

The site has been associated with the local Catholic congregation since the first church was built in 1865. Construction of the current St Mary's Church commenced in March 1914. The shell was completed in time for Christmas Midnight Mass in 1914, but was interrupted further progress. The façade was completed after the war and the interior was completed by 1927.

It is the largest church and tallest building in Hokitika. In its summary of St Mary's Church, the Heritage NZ List entry for St Mary's variously describes the church as follows:

"The third St Mary's church to be built in Hokitika, this church forms part of a group of classically designed masonry Catholic churches of varying sizes in the South Island. These church buildings were designed to be landmarks and St Mary's Catholic Church is no exception, being outstanding within the Hokitika townscape".

And

"It is historically and aesthetically important in Hokitika as a dominating feature in the town representing the strong presence of the Irish Catholic community".

As the only neo-classical (Roman) styled church along the West Coast of the South Island, the design reflects a transition from the Gothic style previously used and generally employed in Protestant churches; and a new trend being set for Catholic churches in New Zealand at that time. The construction of St Mary's Catholic Church, interrupted by the First World War, represents a 'feat of conception and vision during an era of few available resources' (Burgess 2010).

The New Zealand Historic Places Trust significance values are reprinted here from Burgess¹ 2010.

"St Mary's Catholic Church has social and spiritual significance as the centre of Catholic worship in Hokitika and its environs for 95 years. It is built in close proximity to the sites of two earlier St Mary's churches (1865 and 1866), each built on Hokitika's 'Roman Catholic reserve'. It is historically and aesthetically important in Hokitika as a dominating feature in the town representing the strong presence of the Irish Catholic community. It has architectural value as an unusual West Coast example of a classically inspired design by a prominent Edwardian architectural practice, the Luttrell brothers".



Figure 2: Photograph of St Mary's, Hokitika

¹ Burgess R. Review Report for a Historic Place: St Mary's Catholic Church, Hokitika. 2010. New Zealand Historic Places Trust Pouhere Taonga

A Heritage Impact Assessment (HIA) has also been prepared by Ian Bowman (refer Appendix 2). The HIA provides the following summary statement of heritage significance:

The building is a physical and historical landmark in Hokitika as a substantial Basilica styled Church, maintaining a stylistic consistency of design for major Catholic Churches in New Zealand. It is the only neo-Classical design prepared by highly esteemed Christchurch architects, Luttrell Brothers, and the only such styled Church on the West Coast. The former churches and current Church on the site reflects the high numbers of Irish immigrants who brought their faith to New Zealand.

4 Proposal Description

4.1 Stage 1 Partial Strengthening and Early Opening Scheme Design Philosophy and Methodology

The Diocese is undertaking a staged approach to the strengthening of St Mary's Church over several years. This approach will enable the partial re-occupation of the Church in the short term whilst further strengthening design is undertaken for the remainder of the church, and provides time for fundraising activities for future works.

The completion of the Stage 1 works will enable the majority of the access restrictions to be lifted and allow the church to be re-opened and partially re-occupied. The proposed works will achieve a building capacity for these re-opened parts of at least 34% NBS.

The methodology to achieve Stage 1 will require:

- Access restrictions to remain in place on some external and internal areas of the Church (i.e., the porch / lower tower / east gable area)
- Mitigation of the seismic hazard through removal / deconstruction works
- Installation of strengthening and securing works, which will contribute to the final strengthening works required

The organ, pews, and other removable items in the church have already been removed as part of the earlier asbestos removal works. These items are being stored in a shipping container on site. They will all be moved back into the church as the various stages of works are completed (i.e., the organ will not be placed back into the church until the full strengthening has been completed).

The proposed Stage 1 Scheme is as illustrated on the drawings titled "*St Mary's Church, Hokitika, Strengthening Early Opening Scheme*", and as further described below.

These drawings form Appendix 3 of the Options Assessment Report. The full Options Assessment Report for St Mary's Church is contained in Appendix 1 of this consent application.

4.2 Removal of the Bell Tower

The bell tower is to be demolished down to the concrete floor that sits at the balcony level. This is as shown on Sheet 3 of the scheme drawings contained in Appendix 1.

The dome will need to be deconstructed to be removed. There is no crane large enough to remove the dome structure in one piece. Furthermore, the dome would need to be strengthened first in order to remove it in one piece. The original dome will not be re-used in the bell tower replacement as it will be too heavy.

Original elements within the bell tower, such as the doors, windows, louvres, bell and bell-supporting mechanism, will be saved during the deconstruction. The construction methodology to protect these elements during their removal shall be determined by the appointed contractor in conjunction with the project's Conservation Architect.

Once the bell tower has been demolished, a temporary waterproof roof will be fixed on top of the concrete floor and sloped to ensure stormwater runs to the existing downpipes and drains.

4.3 Replacement Bell Tower

The bell tower will be replaced with a replica constructed out of resilient lightweight materials (not polystyrene).

It is the intention of the Diocese to re-use the original elements within the bell tower (i.e., bell, windows, louvres and doors) if this is possible within the design and financial constraints of both the project and the overall Diocese rebuild programme. It is probable the original doors, windows and louvres will be able to be re-used in the replacement tower. What is more uncertain is whether the bell can be reused given the weight of this specific item and the potential structural engineering that would be required to support it within the new lightweight tower structure. However, none of this can be guaranteed or confirmed until the Stage 2 strengthening scheme has been designed and finalised. The weight of these specific items needs to be taken into account when the lower tower strengthening and lightweight upper tower replacement are designed, taking into account the design philosophy to strengthen the building to at least 34% NBS.

If the original bell cannot be re-used within the lightweight tower replacement, the Diocese will investigate an alternative location for it.

Notwithstanding the above, these specific elements (including the dome) are all an integral part of the upper tower and they will form part of the design of the tower replacement, either as original elements or as replicas. The project's Conservation Architect will maintain a close involvement in the design and materials choice for the replacement bell tower.

The replacement bell tower cannot be constructed straightaway, as it does rely on the remaining lower tower to be strengthened first (including possible foundation work). The strengthening of the lower tower has not yet been designed as it falls within the scope of the Stage 2 strengthening scheme. The Stage 2 scheme therefore has to be designed, consented and constructed before the replica bell tower can be installed. A lightweight construction is required as the Stage 2 Scheme will be strengthening the lower tower to 34% NBS.

The Diocese is committed to reinstatement of the bell tower within a reasonable timeframe that accounts for any unforeseen difficulties that might arise during the Stage 1 works, but which also provides certainty. The Diocese therefore proposes a condition on this consent requiring the replica bell tower to be installed within 5 years of the completion of the Stage 1 works, as marked from the date at which the majority of the access restrictions are lifted and the church is re-occupied. The Stage 1 works are anticipated to take approximately 18 months to complete.

4.4 Strengthening of the Nave Walls

The nave walls are to be strengthened to at least 34% NBS using a post-tensioning system. This will consist of 4No. 36mm diameter bars (2 internal and 2 external) per each pier. There are 9 piers requiring 36 bars to be installed (18 bars inside and 18 bars outside), on each side of the nave. This is shown on Sheet 6 of the scheme drawings contained in Appendix 1.

Inside the nave, the steel bars are to be hidden behind the existing heritage fabric. The timber panelling will be carefully removed at each pier, and a groove will be chased into the render. The bars will then be placed into the grooves and re-plastered over, with the timber panelling replaced. This will mean the strengthening bars do not damage the heritage covings.

Outside the church, whilst the bars can be placed against the piers they cannot be placed close in towards the nave wall. Therefore the bars will be visible although they will be painted to match the outside wall. The pier footings step out from the wall. The bars will be placed next to the footing and secured to a steel channel that will have been secured beneath the footings (see below).

Installation of the steel bars within the ceiling will require the temporary removal of roof slates and cutting locally through the sarking in order to slide the bars down through the concrete ring beam and into position. The roof slates will be reinstated as the works progress. Fixing the bars into place at the concrete ring beam requires a steel channel to be placed above the ring beam, through which the bars are placed and tensioned against.

Installation of the steel bars at foundation level will require the placement of a steel channel beneath the footings at each pier. As at the top of the wall, the steel bars will be fed down through the channel that has been placed beneath the footings, and tensioned.

Placement of the steel channel beneath the footings will require excavations to be undertaken. External to each side of the nave, a trench will need to be excavated along the length of the nave walls. The approximate excavation will be 1m wide x 1.3m deep x 30m long. The depth of the excavation will be down to the bottom of the footings. The exact dimensions will need to be determined on site.

Inside the nave, the timber floor will likely need to be opened locally around each of the pier locations to provide access beneath the floor cavity to enable local excavation (by hand) beneath the floor at each of the piers. This local excavation is to enable the placement of the steel channels beneath the footings. The localised openings may be in the order of 1m out from the nave walls / pier locations with the local excavations, from inside the nave, around each pier measuring approximately 1m x 1.2m. The extent of excavation will need to be determined on site as the works progress. The timber floor will be reinstated upon completion of the tensioning works.

The project's Conservation Architect will work closely with the appointed contractor to develop a construction methodology to ensure the protection and reinstatement of the heritage fabric (timber flooring, timber panelling, plastered walls etc).

There is a possibility that once the works commence and the foundations have been exposed, it may be found the size of the foundations need to be increased. If this is the case, additional design will need to be undertaken at that time. The Diocese proposes that if additional foundation works are found to be required then a methodology and drawings shall be provided to WDC for approval before these additional works commence. A copy of the methodology and drawings shall also be supplied to HNZ.

The proposed excavations and placement of the steel channels for the post-tensioning are shown on Sheet 10 of the scheme drawings contained in Appendix 1.

4.5 Chancel Arch Strengthening Works

The chancel arch requires strengthening. The proposal is as shown on Sheet 9 of the scheme drawings contained in Appendix 1.

The proposal is to install a steel plate along the top of the entire lintel length above the arch, and to install post-tensioning strands / rods into the arch lintel central span. In addition, two braced steel frames are to be placed within the existing chancel arch panel walls (sacristy and floor changing room side). The frames will be connected to the existing chancel arch structure.

New foundations will be placed through the floor for the steel braced frame as a precaution in case the existing foundations are not adequate.

The lower steel brace on either side will conflict with the statue alcove / niche, by extending between 20-30mm into the alcove / niche. The back wall of the alcove / niche (as seen from the nave) will be re-rendered, and will still be able to be used as intended, although the depth of the niche will have been reduced slightly.

4.6 Ceiling Strengthening Works

The decorative ceiling was found to have been constructed from asbestos materials and was therefore removed as part of consent 150056. At the present time, the roof trusses and ceiling joists are open and visible from within the Church.

A ceiling diaphragm is to be placed above the ceiling joists and will be the permanent strengthening scheme for the ceiling and roof structure, as shown on Sheets 7 and 8 in Appendix 1. The diaphragm will consist of either:

- A steel cross-bracing system in the ceiling plane (between the trusses); or
- Plywood attached to the top side of the ceiling joists.

Plywood attached to the top side of the ceiling joists is likely to be the preferred option as it essentially closes in the ceiling, which will aid in heating the nave during winter, and provides more protection to the congregation should any of the slate roof tiles become dislodged and fall. No further work will be undertaken on the ceiling until the next stage of works, at which point Gib plasterboard will be installed against the underside of the ceiling joists, along with plastering, painting and reinstatement of the decorative ceiling (refer to section 4.10 below).

Regardless of whether steel bracing or plywood is used, a double layer of plywood is to be placed above the ceiling joists in the fall zone of the front gable end.

4.7 West Gable End

The west (rear) gable end and parapet is to be removed. This will require the removal of the cross, which is to be placed into storage for the interim period.

The gable end will be replaced with a lightweight timber frame and will be clad with exterior ply. The cladding will be waterproofed, but it does not need to be rendered in the short term. The

existing louvres / vents will be reinstated, but not the parapet, as part of the proposed Stage 1 scheme.

The Stage 2 Strengthening scheme will include the reinstatement of the parapet, rendering of the parapet and gable end, and reinstatement of the cross.

4.8 Access Restrictions to Porch and 1st Nave Bay

The front gable end sitting behind the bell tower will be left in place during the Stage 1 Scheme as there is no end truss and the gable supports the roof structure. However, this gable end will still be prone to collapse in a moderate earthquake. Likewise, the porch structure and lower tower are also still prone to collapse in a moderate earthquake.

It will therefore be necessary to ensure access and use restrictions are still in place around the porch internal and external areas. This will require the fencing off of the fall zone external to the remaining tower, and restricting access and use inside the nave where bricks could fall (including from the front gable end). Access and use restrictions inside the nave will be required from the 1st nave bay, and could take the form of a simple roped / cordoned off zone. The front porch area can still be used as an emergency exit in the event of a fire.

4.9 Intrusive Investigations

Some intrusive / destructive investigations will be undertaken during the Stage 1 Scheme. This will likely involve the following:

- Destructive testing of some bricks to test their strength to gain an understanding of the behaviour of the walls when they are tensioned. Bricks that are to be taken from the rear gable will be tested in-situ first, along with some bricks to be taken from under the stairs in the tower area. There are also a number of random bricks discarded within the sub-floor space that will be used for testing
- Core samples will be taken in various places throughout where the brick is currently exposed

4.10 Future Stage 2 Strengthening Works

Future Stage 2 strengthening and reinstatement works will complete the overall strengthening of the entire superstructure. Stage 2 will also reinstate features that have been removed from the Church. It is anticipated the Stage 2 works will be undertaken within a 5 year timeframe following the completion of the Stage 1 works. These future works will involve:

- Strengthening of the remainder of the lower tower left in place following the Stage 1 Scheme, including the porch and front gable, and associated foundation work
- Plasterboard ceiling within the nave and reinstatement of the decorative ceiling
- Reinstatement of the parapet and cross on the rear gable end
- Removal of the remaining access restrictions to and around the Church

The future Stage 2 strengthening and reinstatement works will be the subject of a further resource consent application at the time of those works being undertaken. Stage 2 is noted here for the purpose of identifying that further strengthening works are required to be undertaken to complete

the project and to fully re-open the Church. The Stage 2 scheme is also essential to ensure the Stage 1 Scheme can be fully completed i.e., in order to construct the replica tower.

The target for the future Stage 2 full strengthening works is the full occupancy of the Church, by strengthening of the entire superstructure to increase the overall capacity of the building to at least 34% NBS. It is important to understand that the outcome of the overall strengthening scheme (current Stage 1 and future Stage 2) is limited to the preservation of human life. The building is likely to be damaged beyond repair by anything larger than a moderate local seismic event.

5 Scheme Options Assessment

Various options have been investigated and assessed for the strengthening of St Marys Church. Typically, they have proven to be costly, in excess of several million dollars, a factor that is an unachievable burden for the parish community. A significant portion of the strengthening cost is associated with retention of the heavy bell tower structure.

The Options Assessment Report, attached as Appendix 1 to this consent application, titled “*St Mary’s Catholic Church Hokitika: Consideration of Strengthening Options to Allow Reoccupation*” has been prepared to document the options investigated to date for the strengthening of this church building, to indicate the complexities and costs associated with the options, and to inform the process that has led to the current preferred post-tensioning proposal.

6 Consultation

6.1 Heritage New Zealand

General discussions have been held at various times with HNZ regarding St Mary’s Church as well as a number of other heritage Catholic Churches within Canterbury. These discussions were preliminary in nature and generally discussed the purpose of early opening schemes across the Diocese heritage church portfolio. In general terms, HNZ is supportive of a staged approach to strengthening and repairs of the heritage churches.

The Diocese met again with HNZ in mid-November 2015 to specifically discuss the proposed scheme being applied for in this application. HNZ requested further information to be provided in the form of an assessment of the options that had been considered for the strengthening of St Mary’s Church.

A copy of the draft resource consent application containing the Options Assessment Report (see section 5 above) was forwarded to HNZ on 6th May 2016.

HNZ responded via email on 19th May 2016, noting that they give their ‘*initial support in principle*’ to the proposed partial strengthening and early opening scheme as outlined in this consent application.

The one matter noted by HNZ in their email was that repairs are not being undertaken as part of the consent application, and recommend that repairs are identified and programmed beyond the consented work. This matter is addressed in section 8.2 of this application, but in summary the Diocese does recognise there is an extensive list of repairs that need to be undertaken as part of the general maintenance and up-keep of the Church. Where it is practical and cost-effective to address repair and maintenance issues at the same time as either the Stage 1 or Stage 2 strengthening works, then these particular works will be undertaken at the same time. Otherwise, repairs and

maintenance will need to be addressed by the St Mary's Parish as part of their on-going management of the building and as resources allow.

A copy of the email from HNZ is attached at Appendix 4.

7 Proposal Status

7.1 Summary

The proposal has been assessed against the relevant rules in the District Plan. A summary of resource consent requirements under the District Plan are outlined below:

The site is located within the Hokitika Policy Unit. Rule 5.2.2.1 for the Residential Mixed Zone within the Hokitika Policy Unit sets out that any "...recreational...activity" which complies with the standards for permitted activities for the zone within Table 5.1 and the general rules within Part 8, is a permitted activity.

Table 5.1(j) sets out that in order for an activity to be permitted, there must be "*No modification to Appendix A items / sites*". Standards for discretionary activities are set out in Table 5.2. Table 5.2(j) lists "*Modification to Appendix A items / sites*".

Recreation activities is defined in the Plan as "*any use of land for the purposes of sport, recreation or the assembly of people where this is not a commercial activity*". The use of St Mary's Church is considered to be a recreation activity and therefore permitted within the Residential Mixed Zone, as it is a place that provides for the assembly of people for their spiritual worship and which is not a commercial activity.

Modification is defined in the Plan as "*physical works to a building or site which are outside of those normally expected by minor works and exclude demolition and removal*". Some of the proposed Stage 1 works are considered to fall within the definition of 'modification'. These specific works are the strengthening works to the nave (internal and external post-tensioning), ceiling diaphragm, and the cancel arch strengthening. However, the deconstruction of the bell-tower and removal and reinstatement of the west gable end are considered to be 'demolition' and 'removal' activities. The proposed deconstruction works therefore do not comply with either the permitted or discretionary standards.

Rule 5.2.2.1 for all zones within the Hokitika Policy Unit states that: "*Any activity which does not fall within the permitted, controlled or discretionary categories is deemed to be a non-complying activity*".

The overall status of the proposed works are assessed as being a **non-complying activity**.

8 Assessment of Actual and Potential Effects

Section 88 of the RMA requires the applicant to make an assessment of any actual or potential effects that the proposed works may have on the environment and the ways in which any adverse effects may be avoided, remedied or mitigated, in accordance with the scale and significance of effects.

The actual and potential effects on the environment from the proposed works described in this application are identified as follows:

- Positive Community Effects
- Effects on Heritage Conservation Values
- Effects on Visual and Amenity Values

8.1 Positive Community Effects

The Church was closed to the parish and general public in 2010 due to earthquake vulnerability concerns and its subsequent assessment as being 'earthquake prone'. Through undertaking the Stage 1 works outlined in Section 4, this will allow the parish to once again attend weekday and Sunday mass at the Church.

More significantly though, the Stage 1 Scheme would enable the Church to become operational again since it was closed. This will generate positive effects not only to the community of the Church but the wider community of Hokitika, and it will provide a focus for fundraising activities (such as for the replacement tower). It will also help to restore the routine way of life that was present in the community prior to the church's closure, and restore a sense of community which is common to smaller rural townships throughout New Zealand.

The proposal provides for the early, partial re-opening of the Church, but with access and use restrictions still in place around the porch, internal and external areas. Access and use restrictions inside the nave will be required from the 1st nave bay adjacent to the porch, however the remainder of the church can be used.

The alternative approach would be to leave the church closed for an extended period of time until the full strengthening and repair scheme had been determined. By the time the Diocese had raised the funds required to undertake the full works, it is likely the church would remain closed for many years to come. Furthermore, the closed church would further deteriorate due to no maintenance works being undertaken and the lack of ventilation through being closed. A potential (although unlikely) outcome of this alternative scenario is that the church is mothballed and a new Catholic church is built on an alternative site.

It is therefore considered the proposed Stage 1 strengthening works will have a positive community effect in that the Church will be partially strengthened which allows for the partial re-opening and use of the Church in the short-term.

8.2 Effects on Heritage Conservation Values

A Heritage Impact Assessment (HIA) has been undertaken by Ian Bowman (Architect and Conservator), and is attached at Appendix 2.

The HIA assesses the effects of the proposed Stage 1 Scheme on heritage values of the church against each of the following best practice assessment criteria:

- *ICOMOS NZ Charter 2010:*

A set of widely accepted conservation principles, used in the New Zealand Heritage sector to conserve and manage cultural heritage places

- *New Zealand Historic Places Trust (now Heritage New Zealand) Heritage Sustainable Management of Historic Heritage Guidance Earthquake Series (draft for consultation) Earthquake Strengthening Improving the Structural Performance of Heritage Buildings*

Two assessment criteria being: Sustainable Management of Historic heritage Principles; and Alterations of Historic Buildings Principles

- *New Zealand Historic Places Trust (now Heritage New Zealand) Heritage Sustainable Management of Historic Heritage Guidance Sheet 12 Alterations and Additions to Historic Buildings*

Additional assessment criteria not already mentioned above

- *Other Criteria*

A number of national and international criteria and recommendations for strengthening heritage buildings while retaining heritage values.

The HIA should be referred to for full details regarding the assessment of the proposal against each of the individual criteria found within the above assessment criteria. However the HIA considers that, in general, the proposal is consistent with most criteria in the ICOMOS NZ Charter, Heritage NZ Guidelines and other national and international recommendations in terms of mitigating risk, minimum intervention, understanding of heritage values through a conservation plan, appropriate investigation, research and documentation, maintaining the existing use albeit with a reduced internal area, transparency of action, and working to the community's resources. The proposal is not consistent with these assessment criteria in terms of reducing heritage values and authenticity of materials and it is not reversible although a replica will be built within five years.

The HIA summarises the overall effects of the proposed Stage 1 Strengthening Works as follows:

“St Mary’s Hokitika is a regionally important built heritage asset. The impact of the demolition of the tower and west gable is direct, permanent and irreversible. It affects visual and physical qualities of the building as well as architectural, technological, representativeness, integrity, contextual, and identity values to a major negative extent. Given the regional significance, graded as medium value, of the church and the extent of effects, the overall impact can be summarised as moderate/large and adverse²”.

Based on this summary from the HIA, it is considered that without any mitigation, the proposed removal of the tower and west gable would have a more than minor adverse effect on the heritage values of St Mary’s Church.

The proposed mitigation is to rebuild the west gable immediately (including the louvres / circular ventilator), using lightweight materials. The gable will not necessarily be rendered during this first stage of the strengthening works, however it will be rendered as part of the completion of the second stage of the strengthening works.

The proposed mitigation for the tower is to rebuild it also using lightweight materials, and to have the replacement / replica back onto the church within five years of completion of the Stage 1 works,

² Based on the table in ICOMOS, *Guidance on Heritage Impact Assessment for World Heritage Properties*, Draft May 2010, page 9

as measured from the date at which the majority of the access restrictions are lifted and the church can be partially re-occupied. This does require the Stage 2 strengthening scheme for the lower tower to have been finalised and for the necessary resource consent to be obtained, and for the Stage 2 strengthening works to have been completed in order for the lightweight tower to be replaced. The Diocese is therefore effectively committing to the full strengthening scheme (to at least 34% NBS) to be completed within five years following re-occupation of the church.

Whilst it is the intention of the Diocese to reuse original elements from the bell tower (louvres, windows, doors and bell) in the lightweight replacement tower, this cannot be guaranteed until such time as the lower tower strengthening has been designed and finalised. The weight of these items needs to be taken into account when designing the lower tower strengthening and the upper tower lightweight replacement, recognising the design philosophy to strengthen the building to at least 34% NBS. Notwithstanding this, these specific elements are an integral feature of the bell tower and they will form part of the lightweight replacement whether they be original or replica items.

The 3D scanning technology that has been used to ‘map’ the building enables a highly accurate picture and dimensions (internal and external) of the structure, from which the replica tower can be detailed and produced. Photographs of the structure will also ensure such details as colour, texture, solidity, and durability are reproduced as accurately as possible.

It is expected the project Conservation Architect will be closely involved in the design and construction of the replacement lightweight tower and west gable end. It is also expected the project Conservation Architect and Diocese will liaise with HNZ over the design details of these two features. The Conservation Architect will also be closely involved in developing the construction methodology associated with such matters as localised openings within the nave floor, and the placement of the steel rods (internal and external).

The effectiveness of the proposed mitigation is summarised in the HIA as follows:

“The mitigation proposed of rebuilding the west gable with louvres immediately and the tower within five years both with lightweight materials will mitigate the effects to a certain degree. The degree will depend on how close the replica will match the original in dimension, colour, texture, solidity, durability and the ability to re-use original elements such as the bell, windows, louvres and doors. If this can successfully be achieved the significance of the impact can be reduced such that only the authenticity of the physical fabric is lost. In this case the extent of change will be reduced to negligible and the overall impact will be neutral/slight.

If some or all of the original elements from the bell tower (louvres, doors, windows or bell) cannot be re-used in the lightweight replacement tower, the extent of change would be minor adverse and the overall impact would be slight”

The loss of the tower and west gable end will be a temporary and short term effect until such time as the remainder of the strengthening scheme has been finalised and implemented. Once the tower and west gable end have been replaced, it is expected the loss of authenticity and heritage values will be limited to the loss of the tower fabric.

Therefore, it is considered that whilst the removal of the tower would have a more than minor adverse effect on the heritage values of the St Mary’s Church for a temporary period of time, the

proposed mitigation is to replace the tower with a lightweight replica within five years following the partial re-occupation of the church. The Diocese is happy to accept a condition to give effect to this.

The HIA considers that, if successful, the overall impact of the proposed Stage 1 Scheme will be reduced to neutral/slight where original elements are re-used and slight where these are not re-used. On this basis, it is considered the overall effect of the proposal on the heritage values of St Mary's Church, Hokitika will be less than minor with the mitigation measures proposed.

8.2.1 HIA Recommended Mitigation Measures

To mitigate the negative impacts on heritage values and fabric of the proposed Stage 1 strengthening scheme, the following measures are recommended by the HIA:

1. Confirm the intention of strengthening within five years to enable fund raising, with the full strengthening to include a bell tower matching the profile, colour and texture of the existing but in appropriate lightweight materials. All existing bell tower windows, doors and louvres should be reinstated in the new lightweight replica. The bell should also be reinstated
2. Ensure that data gained from the existing or any further 3-D scans is accurate enough to enable replication of the details on sections of the church to be removed. Where the completed 3-D scans have missed areas or there is insufficient data from it, additional scans or photography is undertaken to ensure thorough documentation of the structure to best practice standards
3. The maintenance plan will be implemented as soon as practicable
4. That a temporary protection plan (TPP) is written and implemented to ensure heritage values and fabric of the church are protected during both stages of strengthening. This should cover fabric to be removed including the bell, bell structure, tower windows, louvres and doors and nave panelling. The fabric already stored following the removal for asbestos should also be covered in the TPP

The extent to which these recommended mitigation measures can be implemented has been addressed throughout this application, and suggested conditions to mitigate any actual or potential adverse effects of the proposal are included section 11. In summary:

1. The Diocese confirms its intention to strengthen the lower tower and to replace the removed bell tower with a lightweight replica that matches the profile, colour and texture of the existing. A draft condition is offered to give effect to this. Whilst the Diocese would like to commit to the re-use of original elements from the bell tower (doors, windows, louvres, bell) in the lightweight replacement, this cannot be guaranteed until the full tower strengthening has been designed and finalised
2. The 3D scanning technology used to 'map' the building enables a highly accurate picture and dimensions (internal and external) of the structure, from which the replica tower can be detailed and produced. Photographs of the structure will also ensure such details as colour, texture, solidity, and durability are reproduced as accurately as possible
3. The purpose of the proposed Stage 1 works is to re-open the church as early as possible by addressing the strength of the building through removing the critical structural weaknesses. As noted in section 6.1 Consultation, the Conservation Plan for St Mary's identifies an extensive list of repairs that need to be undertaken as part of the general up-keep and maintenance of the building. Any specific repairs identified within the Conservation Plan that are best addressed as

part of either the Stage 1 or Stage 2 strengthening works will be addressed at that time. Such repairs are not specifically identified in this consent application as they are considered to fall within the definition of 'minor works' which are a permitted activity. Otherwise, the remainder of the repairs will be addressed by the Parish as part of the on-going management of the building and as resources allow.

4. A draft Temporary Protection Plan has been prepared by the project's Conservation Architect, and is attached at Appendix 3. This TPP will be finalised prior to the works commencing, and all works shall be undertaken in accordance with the TPP.

8.3 Effects on Visual and Amenity Values

As noted in section 3 of this application, St Mary's Church is a dominating and landmark feature within the Hokitika township. The removal of the bell-tower will therefore have an adverse effect on visual and amenity values given that the Church will lose its major dominating feature.

However, the Diocese has committed to a five year timeframe from the completion of the Stage 1 works within which to reconstruct the lightweight bell-tower replacement. Within this timeframe, the lower tower and porch will also need to be strengthened first in order for the lightweight bell-tower replacement to be constructed.

The 3D modelling technology used on the building for design purposes enables a highly accurate model (up to 1mm accuracy) of the building to be created. This means the replacement bell-tower can be accurately reconstructed so that it matches the profile, colour and texture of the existing bell-tower. In addition, original elements from the bell-tower (i.e., louvres, doors, windows, bell and bell structure) form an integral part of the structure and these elements will either be re-used where possible, or replicated in the replacement tower.

Therefore once the replacement bell-tower has been completed, from a visual and amenity perspective the bell-tower will look no different to the original.

The adverse effect on visual and amenity values of the proposed works will therefore be short-term in nature and limited to the temporary removal of the bell-tower. With the proposed mitigation in place, being the replacement of the bell-tower within five years of completion of the Stage 1 works, there will be no on-going adverse effect on visual and amenity values.

9 Statutory Framework

9.1 Part II – Section 9 RMA

Section 9 (1) of the RMA states that no person may use land in a manner that contravenes a rule in a district or a proposed district plan unless that activity is –

- a) *Expressly allowed by a resource consent granted by the territorial authority responsible for the plan*

9.2 Section 104 RMA

The matters contained in s104 and in Part II of the RMA apply to the assessment of all resource consent applications. Matters in s104(1) relevant to this proposal are considered to be:

(1) When considering an application for resource consent and any submissions received, the consent authority must, subject to Part II, have regard to –

- a. Any actual or potential effects on the environment of allowing the activity; and*
- b. Any relevant provisions of –*
 - i. a national environmental standard:*
 - ii. other regulations:*
 - iii. a national policy statement:*
 - iv. a New Zealand Coastal Policy Statement:*
 - v. A regional policy statement or proposed regional policy statement:*
 - vi. A plan or proposed plan ; and*
- c. Any other matter the consent authority considers relevant and reasonably necessary to determine the application.*

All the matters listed in s104 are subject to Part II of the RMA. An assessment of Part II of the RMA is made in section 9.5 of this application.

With respect to s104(1)(a), the actual and potential effects on the environment of the proposed works are assessed in section 8 of this application.

With respect to s104(1)(b)(i)-(vi), it is considered:

- There are no relevant national environmental standards, other regulations or national policy statements. In particular, the site has been associated with the Catholic Church and used continuously since 1865 when the first church was constructed, and therefore no activities relevant to the National Environmental Standards for Assessing and Managing Contaminants in Soil for the Protection of Human Health will have occurred on the site
- The New Zealand Coastal Policy Statement is not of relevance to this application
- The West Coast Regional Policy Statement contains no provisions that are relevant to heritage buildings
- An assessment of the relevant provisions of the Westland District Plan (rules, objectives and policies) is contained in this application.

9.3 Section 104D RMA

The overall proposal is assessed as being a non-complying activity and therefore s104D RMA is relevant.

Section 104D sets out particular restrictions for non-complying activities and provides that a consent authority may only grant a resource consent for a non-complying activity if it is satisfied that either one or both of the 'gateway' tests provided for in sections 104D(1)(a) or (b) is met, as follows:

- (a) the adverse effects of the activity on the environment will be minor; or*

- (b) *the application is for an activity that will not be contrary to the objectives and policies of the relevant plan.*

With respect to s104D(1)(a), the adverse effects of the activity are assessed in section 8 of this application. The assessment shows that whilst the removal of the bell tower would have a more than minor adverse effect on the heritage values of St Mary's Church for a temporary period of time, the proposed mitigation of replacing the tower with a lightweight structure within five years reduces the overall impact of effects to 'neutral / slight' where original elements are reused and 'slight' where these are not reused. The overall impact of the proposal is therefore considered to be 'less than minor' and therefore passes the gateway test of s104D(1)(a).

With respect to s104D(1)(b), the relevant objectives and policies of the Westland District Plan are assessed in section 9.4 of this application.

9.4 Relevant District Plan Objectives and Policies

The relevant objectives and policies in the Westland District Plan are considered to be the following:

Objective 3.2.1 Sustainable Communities

To establish levels of environmental quality for Westland which enable people and communities to provide for their social, economic and cultural well-being, while meeting the principles of sustainable management of natural and physical resources

Objective 3.9.1 and 3.9.2 The Built Resource

3.9.1 To identify, protect and enhance the distinctive Westland character of the District's settlements

3.9.2 To provide for the "intermingling" of land use activities within Westland's settlements and towns, where this does not detrimentally impact on the amenities, health and safety of residents and workers

Policy 4.2 Settlement Character

A. A range of activities should be able to locate in the urban areas provided that any adverse effects on the environment or neighbouring land uses are avoided, remedied or mitigated.

B. The status and importance of historic and cultural settlements and parts of settlements should not be adversely affected by development.

Policy 4.4 Amenity

A. The effects of activities which can have significant adverse effects on amenities and the well-being of residents shall generally be avoided, remedied or mitigated.

Policy 4.5 Heritage

A. Buildings, places and items of significant historic, cultural or scientific interest and their relationship with places in Westland District should be preserved and maintained.

B. The re-use of historic buildings and incorporation of heritage buildings features and/or sites into future developments which are planned on the same site or location shall be encouraged.

C. Activities within historic buildings should generally be in accordance with the zoning requirements, but in recognition of the building's value, where a different activity will help preserve the building, special consideration should be given.

The proposed works will partially strengthen the church and provide the opportunity for its early re-opening and partial reuse. It is recognised the proposed works, and in particular the removal of the bell tower, will have a more than minor adverse effect on the heritage values of the church in the short term and until such time as the lower tower can be strengthened and a lightweight replacement bell tower is constructed. However, the replacement of the bell tower within five years of completion of the Stage 1 construction works will mean the extent of change will be reduced to negligible and the overall impact on heritage values will be slight (as per the HIA).

The proposal is considered to not be contrary to the relevant Objectives 3.2.1, 3.9.1 and 3.9.2 and Policies 4.2, 4.4 and 4.5(A) – (C) of the Westland District Plan in that St Mary's Church will be preserved and maintained into the future as an important heritage building within the District, and that it will continue to remain in use for the purpose for which it was built. The proposal therefore also passes the gateway test of s104D(1)(b).

9.5 Part II RMA

Part II of the RMA contains the purpose and principles to be met when undertaking an activity.

Section 6 of the RMA sets out those matters of national importance that are to be recognised and provided for in achieving the purpose of the RMA. In the context of this application the following matters are relevant to consider:

- f. The protection of historic heritage from the inappropriate subdivision, use, and development*

St Mary's Church is a recognised heritage landmark within Hokitika and is appropriately recognised in the District Plan and within the HNZ list. The protection of St Marys Church from inappropriate use and development is therefore a matter of national importance. However, at the current time the church is closed and cordoned off due to it being assessed as earthquake prone. The proposed Stage 1 Scheme seeks to ensure the early partial re-occupancy of the church and that these re-occupied parts will be strengthened to achieve a building capacity of at least 34% NBS. Further strengthening works during Stage 2 would build upon the current proposed Stage 1 Scheme and will ensure full occupancy and strengthening of the entire superstructure to at least 34% NBS. The long term protection and full use and occupancy of the church requires the staged approach being taken to ensure the Diocese can balance the needs to repair / rebuild all of its heritage churches in a timely manner. This therefore requires the temporary and short term adverse effects on heritage values that will arise from the removal of the bell tower until such time as the Stage 2 strengthening works can be implemented. This overall approach will ensure the protection of the heritage values of St Marys Church and will therefore achieve Section 6(f) of the RMA.

Section 7 of the RMA sets out other matters that Council is to have particular regard to in achieving the purpose of the RMA. In the context of this application there are no Section 7 matters considered to be relevant.

The purpose of the RMA is to promote sustainable management of natural and physical resources. Section 5 states that activities must be managed so that adverse effects on the environment are avoided, remedied or mitigated. It is considered the granting of resource consent for the proposed

activity will achieve the purpose of the RMA. Furthermore, with the mitigation measures implemented as proposed, the overall effects of the proposal are assessed as less than minor.

Based on this assessment and the assessment of effects in Section 6 (above) it is concluded that the proposal will meet the purpose and principles of the RMA.

10 Conclusion

St Mary's Church has been closed to the public since 2010. A seismic assessment determined the majority of the structure is estimated to have a seismic capacity of less than 33% NBS, and is therefore categorised as earthquake-prone. It is likely that in a moderate earthquake the structure could partially collapse.

The Catholic Diocese proposes to undertake a staged approach to structural strengthening and repair works to St Mary's Church, Hokitika. The works proposed within this application are the first stage of works required to remove the critical structural weaknesses and which will allow the church to be partially reopened, albeit with some on-going access and use restrictions. A second future stage of works will complete the strengthening of the building to at least 34% NBS and which will allow all access restrictions to be removed.

St Mary's Church is listed as a Category I heritage building by HNZ, and is listed in the Westland District Plan as a Category II Heritage building. The proposal has been discussed with HNZ. A copy of this application has been forwarded to HNZ and which includes an assessment of the strengthening options that have been considered. An email has been received from HNZ stating their "initial support in principle" to the proposed works.

It is recognised the proposed works, and in particular the removal of the bell tower, will have a more than minor adverse effect on both the heritage values of the church, and visual and amenity values in general, in the short term and until such time as the lower tower can be strengthened and a lightweight replacement bell tower is constructed. However, once the lightweight replacement bell tower has been constructed, the actual or potential adverse effects of the proposal on the heritage values of St Mary's Church have been assessed as being reduced to less than minor.

The proposal outlined in this application is considered to be the most cost-effective means for the Diocese to strengthen and reopen St Mary's Church in the short term. The proposed works will have significant positive effects in that they will protect the future of this important heritage building and will provide for the continued use of the facility for its parish.

The proposed works are assessed as a non-complying activity due to the deconstruction and removal of the bell-tower and west gable. These two features will be replaced as replicas: the west gable immediately; and the bell-tower within five years of the completion of the Stage 1 construction works. As a non-complying activity, Council may only grant resource consent if it is satisfied that either one of the gateway tests provided for in section 104D(1)(a) or (b) are met, being: the adverse effects of the activity will be minor; or that the activity will not be contrary to the objectives and policies of the plan. The proposal is assessed as meeting both of these gateway tests.

The proposal is also assessed as achieving the purpose of the Act.

On this basis, it is considered that resource consent can be granted for the proposed Stage 1 strengthening works of St Mary's Church, Hokitika.

11 Proposed Conditions

1. The Stage 1 works shall be undertaken in general accordance with the details contained in the consent application and as shown on the Stage 1 Strengthening Scheme drawings contained in Appendix 1 of the application
2. The draft Temporary Protection Plan (TPP), prepared by Ian Bowman and dated November 2015, submitted as part of the consent documentation shall be finalised prior to any works being undertaken on the site. The final TPP shall be submitted to Westland District Council and Heritage New Zealand no later than ten days prior to the commencement of the works. All works shall be undertaken in accordance with the finalised TPP
3. No later than ten days prior to the commencement of the works, the following shall be submitted to Westland District Council and Heritage New Zealand:
 - a. A construction methodology to protect all fittings, fixtures and contents that are to be retained or removed during the works, and the reinstatement of such fittings, fixtures and contents where appropriate. This should include but is not limited to: the bell, bell structure, windows, louvres and doors associated with the bell tower; the timber flooring where localised cuts are to be made; the nave walls and timber panelling being disturbed as part of the post-tensioning; any other heritage features as determined by the project Conservation Architect
 - b. Construction drawings, details and specifications for the following aspects of the works covered by this consent:
 - i. The temporary roof
 - ii. The chancel arch strengthening and foundations
 - iii. The nave ceiling strengthening
 - iv. The nave walls strengthening
 - v. The west gable replacement
4. Once foundations beneath the nave walls have been exposed, the applicant shall undertake an assessment of whether additional foundation works or strengthening are required. If foundation works or strengthening are required, a methodology, specification and detailed construction drawings shall be provided to Westland District Council no later than ten days prior to these additional works commencing. A copy of the methodology, specifications and drawings shall also be supplied to HNZ
5. Within five years of completion of the Stage 1 works, as measured from the date at which access restrictions to the nave are lifted and the church can be re-occupied, the bell tower shall be replaced with a lightweight replica which matches the profile, colour and texture of the existing bell tower
6. The consent holder shall take reasonable and practicable steps to re-use the original elements removed from the bell tower (louvres, doors, windows, bell and bell structure) in the lightweight

tower replacement, whilst recognising the design philosophy to strengthen the entire superstructure to increase the overall capacity of the building to at least 34% NBS

7. No later than ten days prior to the commencement of works to construct the replacement bell tower, construction drawings, details and specifications shall be submitted to Westland District Council. A copy of the construction drawings, details and specifications shall be forwarded to Heritage New Zealand

Appendices

Appendix 1: Options Assessment Report and Partial Strengthening and Early Opening Scheme Drawings



St Mary's Catholic Church Hokitika

**Consideration of strengthening options
to allow reoccupation**



St Mary's Catholic Church Hokitika

Consideration of strengthening options to allow reoccupation

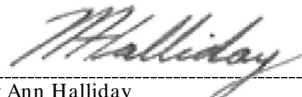
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Executive Summary

Following the February 2010 Christchurch earthquakes the Roman Catholic Bishop of Christchurch (The Bishop) undertook a review of all buildings within the diocese to investigate their expected seismic performance. Initial inspections undertaken by Opus International Structural engineers of St Mary's Catholic Church, Hokitika, lead to the recommendation that the building be closed.

Further investigations confirmed that initial engineering decision and the church remains closed at this time. Refer to the Opus report attached as appendix 1 'St Mary's Church, Hokitika – Initial Engineering Assessment – Stage 1 report'.

Key structural deficiencies are listed below;

- The connection between the gable end walls and the roof is limited and in a moderate earthquake event, it is likely the gable end wall would move away from the roof structure and collapse.
- The columns between the nave and sacristy are assumed to be carrying a masonry structure above. It is unclear how the structure is held in place at the top, and in a moderate earthquake event this element above could fail in a similar manner to the end wall.
- There appears to be a lack of restraining connections from the reinforced concrete tower to the structure below. The base of the tower containing the entrance porch and organ loft was built prior to World War I and is of unreinforced masonry construction while the tower and dome were built post World War I and are constructed of reinforced concrete. In a moderate earthquake event it is likely that the tower would overturn, potentially collapsing into the nave or out onto the entry below.
- Lack of seismic bracing elements at roof and ceiling level.
- Lack of suitable seismic connections between walls, ceiling and roof.

Of significance is the expected long duration of strong shaking from an Alpine Fault earthquake. This would cause liquefaction and differential settlement to occur at less than 67% of an ultimate design earthquake. A scheme to achieve a %NBS in excess of 34% would need to remediate the liquefaction potential; significantly escalating the strengthening cost to allow for foundation strengthening and ground treatment.

The Bishop and the St Mary's parish community are desirous of reoccupying the church building as soon as possible subject to a strengthening methodology that:

- Is financially feasible for the parish community
- Is a structurally sound methodology meeting Building Code requirements
- Maintains the heritage values of the building
- Provides ongoing functionality of the building for use by the parish community

Various strengthening options have been assessed as noted in this report. Typically they have proven to be costly, in excess of several million dollars, a factor that is an unachievable burden for the parish community. A significant portion of the strengthening cost is associated with retention of the heavy bell tower structure.

The Bishop has requested Opus investigate options for a staged strengthening scheme that would allow interim use of the majority of the building at a manageable cost, giving the parish community time to raise funds for the full strengthening of the building over a feasible time period. These interim works could form part of the final strengthening solution.

Opus have prepared draft documents for strengthening called 'Early Open Scheme' that includes;

- Post tensioning of the nave utilising post tension bars which will be visible on the exterior of the building, and chased into the plaster on the interior.
- Post tensioning of the middle section of the Chancel, with steel frames to the sides.
- Removal off the West gable end and replacement with light weight construction.
- Removal of the upper part of the tower, with a temporary roof installed. The tower would eventually be replaced with a light weight replica.
- Provision of a ceiling diaphragm to the roof.
- Additional footings to the Chancel Arch foundations.

The Bishop is preparing an application for a Resource Consent to undertake these works as an interim measure that will allow the use of a significant portion of the church area at an achievable cost to the parish community. This report is written to inform and support this Resource Consent application. It is important to understand that the significant costs involved limit the outcome of the final strengthening scheme to the preservation of human life, the building is likely to be damaged beyond repair by anything larger than a moderate local seismic event.

Opus continue investigations and planning of the medium term permanent structural strengthening scheme for this building, including reinstatement of the Bell Tower with a lightweight replica of the existing tower.

1 Background

Following the February 2010 Christchurch earthquakes the Roman Catholic Bishop of Christchurch (The Bishop) undertook a review of all buildings within the diocese. Opus International structural engineers determined that St Mary's Catholic Church, Hokitika was earthquake prone, and likely to collapse in less than a moderate earthquake. Since then it has been unused.

For the past 5 years the parish community have been unable to use their church. They are undoubtedly keen to reoccupy the building as soon as safely allowable.

Ongoing structural, geotechnical and heritage investigations of this Category 1 listed heritage building have shown that achieving a feasible, functional and affordable strengthening solution is vexed, complex and costly due to the existing building design and construction, the underlying ground condition, and the buildings proximity to the alpine fault. The size and weight of the bell tower structure is a significant factor influencing reasonable outcomes and costs.

The cost of an appropriate complete strengthening solution is a significant burden for the church community and unaffordable at this time.

In 2014 the Bishop, with advice from his engineering and project management consultants, decided to investigate a proposal that would permit displaced parish communities such as St Mary's to gain partial reoccupation of their church buildings by undertaking interim repairs as part of a staged strengthening scheme. All heritage churches were to be strengthened to at least 34% NBS. By the end of 2015 it was decided to apply for a resource consent for the 'Early Open Scheme' shown in Appendix 3.

The St Mary's, Hokitika Parish are supportive of this interim reoccupation plan. The purpose of this proposal is to allow the partial use of facilities while affording parish communities time to raise funds for final strengthening solutions.

2 Purpose of this report

This report is written to document the options investigated to date for the strengthening of this church building, to indicate the complexities and costs associated with the options, and to inform the process that has led to the current preferred post tensioning strengthening proposal "Early Open Scheme" (interim fix). This report is drafted to support an application for a Resource Consent for strengthening works to this building.

3 Initial Engineering Assessment (IEA)

Opus investigated and prepared this report in July 2012. The IEA report is included as Appendix 1 of this report for reference. Key matters covered in the IEA report include:

- Compliance (Building Act, Resource Management Act, engineering standards, District Council requirements).
- Heritage requirements.
- Outline of structural condition based on initial assessment.
- Recommendation of conceptual strengthening scheme.

4 Summary of Investigations and Design Options

4.1 July 2012, Opus Initial Engineering Assessment (IEA) - Stage one report

This report was largely a desk top examination of limited existing information, supported by a visual site inspection. No invasive sampling or testing was undertaken.

The report covered key aspects as follows:

- Compliance (Building Act, Resource Management Act, engineering standards, District Council requirements).
- Heritage requirements.
- Outline of structural condition based on initial assessment.
- Recommendation of conceptual strengthening scheme.

The conceptual strengthening scheme referred to in appendix B of the July 2012 report suggested a strengthening methodology, which included the retention of all significant building elements. The scheme allowed for a structural roof diaphragm, walls strengthened with steel anchors, and steel bracing to the tower area.

Further detailed building investigations were recommended, including the preparation of scaled as built drawings, and a geotechnical investigation, all to assist in determining the extents and condition of the existing structural systems.

This report concluded with a recommendation to prepare a repair and strengthening scheme to not less than 67% NBS.

4.2 December 2012, Reinforcement Scan

This scan, which identified a reasonable amount of reinforcement in wall sections but none in columns and capping beams, was used to inform later strengthening schemes.

4.3 June 2013, Opus geotechnical investigation (report September 2013)

Key findings of this report were:

- CPT tests identified a potential for liquefaction mainly in the first 3.5m of silts and sands from 1.0m below the ground level.
- Free field subsidence has been estimated at 55mm for ULS and 40mm for SLS.
- These values indicate a possible differential settlement of 20 to 30mm in the SLS and ULS cases respectively.
- This foundation system carries a moderate risk of building damage during a major (ULS) earthquake.
- Ultimate Bearing Capacities are estimated at between 300 to 400 kPa.

- It is demonstrated that a ground improvement technique could be employed at the site in order to lower the risk to the building by limiting the amount of differential settlement that would occur.
- Jet compaction grouting would particularly suit this site as the method can be employed under existing foundations without the need of significant alterations. This would be a highly specialised operation with limited nationwide equipment.
- Foundation under pinning/ piling to 3.5m below ground level into Medium Dense to Dense Sands is another option that could be employed in order to limit the effects of liquefaction induced settlements.

Of significance is the expected long duration of strong shaking from an Alpine Fault earthquake. This would cause liquefaction and differential settlement to occur at less than 67% of an ultimate design earthquake. A scheme to achieve a %NBS in excess of 34% would need to remediate the liquefaction potential; significantly escalating the strengthening cost to allow for foundation strengthening and ground treatment.

4.4 September 2013 Conceptual Strengthening Scheme

Opus undertook a concept scheme to bring the building up to 67% NBS. Much of the work was done prior to the release of the geotechnical report and the learnings that developed out of it. The scheme proposed to;

- Strengthen the roof diaphragm with cross bracing.
- Provide positive fixings between the roof diaphragm and the gable end wall
- Provide positive fixings between the roof diaphragm and the concrete ring beam of the masonry wall
- Provide a steel structure internally in the tower to restrain it from overturning
- Place steel anchors in the buttress walls spanning from the ring beam to the foundations
- Connect the nave and tower

The cost of this scheme was estimated to be in the order of \$2 to \$2.3 million. Marriott Consulting Engineers were then commissioned to review the Opus opinion that the building was earthquake prone and that it had specific structural weaknesses. Also to review the recommendation that the building be closed. Marriott's also carried out a high level review of the Opus Conceptual Strengthening Scheme with a view to perhaps finding alternative cheaper strengthening mechanisms.

Key findings from the Marriott Consulting Engineers review were:

- Concurrence with the Opus advice to close the building.
- Noted that the strengthening schemes proposed by Opus are considered to be consistent with current best practice for this type of building and materials.
- The Marriott review also noted "we have looked at other possible solutions such as post tensioned ties and rods, fibre reinforced polymer, carbon strips and other innovative options. These have been discounted largely due to the geometry of the tower making it difficult to achieve a consistent load path from top to bottom of the tower due to the large mass of the walls."

4.5 February 2014 Conceptual Strengthening Scheme

Due to the cost estimates for the Opus conceptual strengthening scheme indicating repair and strengthening works being well beyond the means of the parish community, the Bishop sought an alternative view and cost optioning from Miyamoto engineers. After an initial separate review, Miyamoto engineers concurred with the Opus proposal.

Opus and Miyamoto subsequently worked jointly to devise a concept scheme which proposed to;

- Strengthen the nave by installing a channel over the concrete ring beam, shotcreting two bays, and installing Macalloy bars in the walls.
- Remove the Chancel Arch and replace with a light weight replica
- Install a steel frame tied back to the ring beam at the west gable end
- Strengthen the tower by post tensioning the top and installing a steel brace to the bell cell. The lower walls would be shotcreted and post tensioned, the floors strengthened with steel, and the internal gable end removed.
- Install a plywood diaphragm to the ceiling plane.

The Opus conceptual proposal, “February 2104 Conceptual Strengthening Scheme”, is included at the rear of this report in appendix 2.

Note: During the period between the July 2012 Opus Initial Engineering Assessment (including the conceptual strengthening scheme) and November 2015 the conceptual scheme has been modified as additional research and reporting noted above, provided richer information that could be incorporated into the strengthening proposal. The estimated costs have not decreased.

4.6 July 2014, ‘Temporary Stabilisation Scheme’

It was identified that the cost burden associated with a full repair scheme is unaffordable and unachievable for the St Mary’s parish community, so a scheme was investigated that would give the parish the ability to occupy part of the church while giving them time to work towards the funding requirements for full strengthening to 34% NBS.

The key physical elements of this proposal are:

- Dismantle and remove the upper part of the bell tower.
- Install a timber brace system to the front gable to prevent out of plane collapse.
- Dismantle the parapet of the back gable and define a no access area inside the church allowing an out of plane collapse mechanism to occur while limiting risk of injury to the occupants.
- Provide fencing around external fall zone of the gable wall (restricting access to the garages).
- Install a steel frame connected to the roof truss at each main nave masonry pier and to the external galvanised steel strand.
- Chancel masonry wall panel dismantle the walls from above the existing beam and replace with timber stud walls.
- For columns install a timber strut and a double layer high strength polyester strip along the entire column height.

As many of the works in this scheme are temporary they would need to be removed as part of the permanent works. The costs to stabilise some of these elements was as expensive as a permanent solution. In addition, the amount of ballast would cover most of the ground surrounding the church and be at least two shipping containers high.

4.7 November 2015, 'Early Open Scheme'

All reporting, investigations and the two engineering peer reviews noted above have confirmed the complexity and extent of the strengthening requirements, with the associated cost burden that is unaffordable and unachievable for the St Mary's parish community at this time.

All the while the building sits idle, subject to deterioration, and the parish community have to use alternative accommodation to hold mass.

This staged proposal has been prepared as a result of the Bishop's and the parish community keen desire to retain and reoccupy the church building, even if it does not allow access to the whole building, has reduced aesthetic and amenity and is only an interim solution. This is the wish of the Bishop and the parish community.

This "Early Open Scheme" can be achieved at a portion of the cost of the full conceptual strengthening scheme proposal, a cost likely to be achievable for the parish community. All works undertaken will be part of the permanent solution. Although this will still be a significant financial burden, it will give them time to work towards the funding requirements for the full strengthening, while having the spiritual comfort of being able to worship in their church in the interim.

The Opus conceptual proposal for this "Early Open Scheme" is included at the rear of this report (appendix 3, Early Open Scheme).

The key physical elements of this proposal are;

- Post tensioning of the nave utilising post tension bars which will be visible on the exterior of the building, and chased into the plaster on the interior.
- Post tensioning of the middle section of the chancel arch, with steel frames to the sides.
- Removal off the west gable end and replacement with light weight construction.
- Removal of the upper part of the tower, with a temporary roof installed. The tower would eventually be replaced with a light weight replica.
- Provision of a ceiling diaphragm to the roof.
- Additional footings to the chancel arch foundations.

The Bishop recognises that a Resource Consent will be required to undertake the proposed Early Open Scheme.

Table 1: Tabulated Summary of Investigations and Design Options

Ref #	Name & Date	Nave	Chancel	West gable end	Tower	Roof	Foundation	Comment
4.1	July 2012 IEA Scheme	Steel anchors		Steel anchors	Steel bracing around walls and floors	Roof diaphragm with steel braces		First thoughts based on very limited information
4.2	December 2012 Reinforcement scan	Reasonable amount of reinforcement in wall sections but none in columns and capping beams						
4.3	September 2013 Geotechnical report	The church is sitting on estuary deposits: There is potential for liquefaction mainly in the first 3.5m of silts and sands from 1.0m below the ground. Existing bearing capacity is low with a low margin above self weight.						
4.4	September 2013 Conceptual Strengthening Scheme	Shotcrete and post tension walls		Steel bracing to ceiling level		Diaphragm in ceiling plane		67% NBS. Reviewed by Marriott
4.5	February 2014 Conceptual Strengthening Scheme	Channel over concrete ring beam, shotcrete two bays, Macalloy bars in wall	Remove and replace with lightweight	Steel frame tied back into ring beams	Post tension top, then steel brace bell cell. Shotcrete and post tension lower walls. Strengthen floors with steel. Remove internal gable end	Plywood diaphragm in ceiling plane		67%NBS. Prepared in conjunction with Miyamoto.
4.6	1 July 2014 Temporary Stabilisation Scheme	Steel portal frames tied to exterior ballast	Remove panel walls	Remove parapet section, limit access in this area	Remove upper part, brace to gable. Wrap entry columns.		Add foundation pads under portal frames	34% NBS. Explore temporary option with exterior ballast but quantity needed would obscure building and would be expensive. Access to some areas limited. Not feasible to remove tower intact.
4.7	November 2015 Early Open Scheme	Post tension bars outside wall (chased into plaster on interior)	Post tension middle section. Steel frames to the sides.	Remove and replace with lightweight	Remove upper part	Provide ceiling diaphragm	Add footing under chancel arch	34% NBS. No access around lower tower and gable end fall zone. Elements can be utilized in the long term solution.

* Budget Estimates are approximate estimates made based on concept schemes only, and have not been adjusted for inflation. The estimates for the 67% NBS schemes (5.4 and 5.5) do not include foundation strengthening or ground remediation- these items would add a significant amount to the estimates.

5 Summary

St Mary's Church is an historic building constructed of an unusual combination of brick and reinforced concrete. It is technically challenging to design a scheme that fits within the parameters required to meet heritage, strength, functional and financial requirements. A range of schemes have been proposed over the last four years none of which have been taken through to detail design. The current 'Early Open Scheme' represents a compromise of all of these parameters. It is hoped that this will be acceptable to all parties given that the outstanding issues will be addressed in time as the final strengthening is designed.

6 Recommendation

That the Bishop proceed with an application for a Resource Consent to undertake the proposed "Early Open Scheme" to allow an interim reoccupation of the church building while funding is raised over time for the full strengthening and reinstatement works.

Appendix 1 – St Mary’s Hokitika – Initial Engineering Assessment Report Final



St Mary's Church, Hokitika
Initial Engineering Assessment
Stage One Report

Catholic Diocese



Catholic Diocese

St Mary's Church, Hokitika

Initial Engineering Assessment

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Executive Summary

The Catholic Diocese appointed Opus International Consultants to carry out a detailed seismic assessment of St Mary's Church, Hokitika. The key outcome of this assessment was to ascertain the anticipated seismic performance of the structure and to compare this performance with current design standards. Findings of the assessment are:

- (a) The seismic performance of the building is assessed at less than 33%NBS therefore, the building is deemed to be earthquake prone. Some of the structural elements have less than 10% NBS.
- (b) A number of structural deficiencies have been identified that in a moderate earthquake are likely to cause partial collapse.
- (c) The failure mechanisms identified are similar to those seen in buildings of the same construction in Canterbury.
- (d) A number of large assumptions have been made due to lack of detailed structural drawings. We have since commissioned a measured survey to be carried out to produce as built drawings.
- (e) A conceptual strengthening scheme has been proposed see *Appendix B* however, at this stage this is based on Engineering judgement and the drawings and documentation that has been made available. Further, investigation and information will need to be provided to provide a more accurate and detailed scheme.

Our recommendations are:

- Further detailed investigation is carried out to determine the extents and condition of the existing reinforcement, connections between the roof and walls, existing foundations and confirm some of the assumptions made within the initial assessment.
- Conceptual repair and strengthening scheme be developed to repair damage and increase seismic capacity to not less than 67% NBS.
- A measured survey is carried out to produce as built drawings. This will help further understand the structure and provide a valuable resource for any future work carried out on the building.
- Church is to remain closed.
- A geotechnical investigation is to be undertaken.

1 Background

Opus International Consultants Limited (Opus) has been engaged by the Catholic Diocese to undertake a detailed engineering evaluation of St Mary's Church, Hokitika.

This report is a Stage One initial assessment of the building structure, and is based on the Detailed Engineering Evaluation Procedure document (draft) issued by the Structural Engineering Society (SESOC) on 19 July 2011.

This assessment involves a desktop review of existing structural and geotechnical information, including existing drawings and calculations, and undertaking some non-intrusive site investigation. The purpose of the assessment is to determine the likely building performance and damage patterns, to identify any potential critical structural weaknesses or collapse hazards, and to make an initial assessment of the likely building strength in terms of percentage of new building standard (% NBS).

At the time of writing this report, no intrusive site investigation, and detailed analysis or modelling of the building structure had been carried out.

2 Compliance

This section contains a brief summary of the requirements of the various statutes and authorities that control activities in relation to buildings in Hokitika at present.

2.1 Building Act – Structural Requirements

Several sections of the Building Act are relevant when considering structural requirements:

Section 112 - Alterations

This section requires that an existing building complies with the relevant sections of the Building Code to at least the extent that it did prior to the alteration.

This effectively means that a building cannot be weakened as a result of an alteration (including partial demolition).

Section 115 – Change of Use

This section requires that the territorial authority (in this case Westland District Council (WDC)) is satisfied that the building with a new use complies with the relevant sections of the Building Code 'as near as is reasonably practicable'.

2.2.1 Section 121 – Dangerous Buildings

This section was extended by the Canterbury Earthquake (Building Act) Order 2010, and defines a building as dangerous if:

1. In the ordinary course of events (excluding the occurrence of an earthquake), the building is likely to cause injury or death or damage to other property; or
2. In the event of fire, injury or death to any persons in the building or on other property is likely because of fire hazard or the occupancy of the building; or

3. There is a risk that the building could collapse or otherwise cause injury or death as a result of earthquake shaking that is less than a 'moderate earthquake' (refer to Section 122 below); or
4. There is a risk that other property could collapse or otherwise cause injury or death; or
5. A territorial authority has not been able to undertake an inspection to determine whether the building is dangerous.

Section 122 – Earthquake Prone Buildings

This section defines a building as earthquake prone if its ultimate capacity would be exceeded in a 'moderate earthquake' and it would be likely to collapse causing injury or death, or damage to other property.

A moderate earthquake is defined by the building regulations as one that would generate loads 33% of those used to design an equivalent new building.

Section 124 – Powers of Territorial Authorities

This section gives the territorial authority the power to require strengthening work within specified timeframes or to close and prevent occupancy to any building defined as dangerous or earthquake prone.

Section 131 – Earthquake Prone Building Policy

This section requires the territorial authority to adopt a specific policy for earthquake prone, dangerous and insanitary buildings.

2.2 Westland District Council Policy

Westland District Council adopted their Dangerous, Earthquake Prone and Insanitary Building Policy in 2006. This policy was amended immediately following the Darfield Earthquake in 2011.

Where a building is formally identified as being earthquake-prone, the Westland District Council will apply the following strengthening criteria:

"B Buildings" that contain people in crowds or contents of high value to the community as defined in AS/NZS 1170.0: 2002, Importance Level 3, to be strengthened to a minimum of 34% of New Building Standard, with strengthening to 67% of New Building Standard to be strongly encouraged.

3 Heritage

3.1 Description

St Mary's Catholic Church, designed by Alfred and Sidney Luttrell, is the largest and tallest building in Hokitika. As the only neo-classical (Roman) styled church along the West Coast of the South Island, the design reflects a transition from the Gothic style previously used and generally employed in Protestant churches; and a new trend being set for Catholic churches in New Zealand at that time. The construction of St Mary's Catholic Church, interrupted by the First World War, represents a 'feat of conception and vision during an era of few available resources' (Burgess 2010).

3.2 Construction chronology

1914	Construction of nave
1921	Construction of portico and tower
1928	Cement render of exterior
1978	Refurbishment of interior
1989	Refurbishment of interior
2011	Refurbishment of exterior (Burgess 2010).

3.3 Significance values

The New Zealand Historic Places Trust significance values are reprinted here from Burgess¹ 2010.

St Mary's Catholic Church has social and spiritual significance as the centre of Catholic worship in Hokitika and its environs for 95 years. It is built in close proximity to the sites of two earlier St Mary's churches (1865 and 1866), each built on Hokitika's 'Roman Catholic reserve'. It is historically and aesthetically important in Hokitika as a dominating feature in the town representing the strong presence of the Irish Catholic community. It has architectural value as an unusual West Coast example of a classically inspired design by a prominent Edwardian architectural practice, the Luttrell brothers.

3.4 Heritage Listing

St Mary's Catholic Church (1914-1928) is registered with the New Zealand Historic Places Trust as a Cat I Historic Place (Register Number 1705). It is also listed on the Westland District Plan Schedule of Historic Places and Trees as Ref 22.

3.5 Conservation plan

A conservation plan, *St Mary's Church, Hokitika*, was prepared by Ian Bowman, architect and conservator, in June 2010. All future works to St Mary's should be carried out with due regard to this document.

3.6 Legislative overview

In conjunction with regional and district plans, several pieces of legislation help protect and manage archaeological and heritage sites. Legislation that is relevant to St Mary's Catholic Church includes the Historic Places Act 1993, Resource Management Act 1991 and the Building Act 2004

¹ Burgess R. *Review Report for a Historic Place: St Mary's Catholic Church, Hokitika*. 2010. New Zealand Historic Places Trust Pouhere Taonga.

3.6.1 Historic Places Act 1993

The Historic Places Act 1993 (HPA) protects all archaeological sites, historic areas, historic places, wahi tapu and wahi tapu areas. An archaeological site is defined under Section 2 of the Act as any place in New Zealand that—

- a) Either—
 - (i) was associated with human activity that occurred before 1900; or
 - (ii) Is the site of the wreck of any vessel where that wreck occurred before 1900; and
- b) Is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand

The HPA 'makes it unlawful for any person to destroy damage or modify the whole or any part of an archaeological site without the prior authority of the New Zealand Historic Places Trust. This is the case regardless of whether the land on which the site is located is designated, or the activity is permitted under the District or Regional Plan or a resource or building consent has been granted, the Act also provides for substantial penalties for unauthorised destruction, damage or modification' (<http://www.historic.org.nz>).

Any person wishing to undertake work that may damage, modify or destroy an archaeological site must first obtain an authority from the New Zealand Historic Places Trust (NZHPT) for that work. This is a legal requirement.

St Mary's Catholic Church is built in close proximity to the sites of two earlier churches (1865 and 1866) on Hokitika's 'Roman Catholic reserve'. As such archaeological potential exists, and should any sub surface work be required, an authority for these works should be obtained.

3.6.2 Resource Management Act 1991

Under the RMA historic heritage is defined as:

Historic heritage:

- a) Means those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, deriving from any of the following qualities:
 - 1. Archaeological:
 - 2. Architectural:
 - 3. Cultural:
 - 4. Historic:
 - 5. Scientific:
- b) Technological; and includes—

1. Historic sites, structures, places, and areas; and
2. Archaeological sites; and
3. Sites of significance to Māori, including wāhi tapu; and
4. Surroundings associated with the natural and physical resources

Historic heritage under the RMA is considered a matter of National Importance under S6 (f). Any future work at St Mary's Catholic Church will require resource consent.

3.7 Building Act 2004 - Heritage

In administering its functions under the Building Act, the territorial authority can adopt a flexible approach with heritage buildings (www.historic.org.nz).

The Building Act 2004 regulates buildings in New Zealand. The Building Act requires local authorities to ensure that buildings are safe, promote physical independence and wellbeing, have adequate fire escape and seismic provisions, and are designed, constructed and able to be used in ways that promote sustainable development. Local authorities are also required to take into account section 4(2) (f) which includes the need to facilitate the preservation of buildings of significant cultural, historical or heritage value. In applying the purpose of the Building Act 2004 the relevant heritage principles are:

- a) The importance of recognizing any special tradition and cultural aspects of the intended use of the building;
- b) The need to facilitate the preservation of buildings of cultural, historical or heritage value.

Where the Building Act code requirements conflict with heritage values, dispensation applications (through the Department of Building and Housing) or alternatives should be considered. Any future work at St Mary's Catholic Church will require a building consent.

4 Earthquake Resistance Standards

For this assessment, the building's earthquake resistance is compared with the current New Zealand Building Code requirements for a new building constructed on the site. This is expressed as a percentage of new building standard (%NBS). The loadings are in accordance with the current earthquake loading standard NZS1170.5 [1].

A generally accepted classification of earthquake risk for existing buildings in terms of %NBS that has been proposed by the NZSEE 2006 [2] is presented in Figure 1 below.

Description	Grade	Risk	%NBS	Existing Building Structural Performance	Improvement of Structural Performance	
					Legal Requirement	NZSEE Recommendation
Low Risk Building	A or B	Low	Above 67	Acceptable (improvement may be desirable)	The Building Act sets no required level of structural improvement (unless change in use) This is for each TA to decide. Improvement is not limited to 34%NBS.	100%NBS desirable. Improvement should achieve at least 67%NBS
Moderate Risk Building	B or C	Moderate	34 to 66	Acceptable legally. Improvement recommended		Not recommended. Acceptable only in exceptional circumstances
Risk Building	D or E	High	33 or lower	Unacceptable (Improvement required under Act)	Unacceptable	Unacceptable

Figure 1: NZSEE Risk Classifications Extracted from Table 2.2 of the NZSEE 2006 AISPBE Guidelines

Table 1 below compares the percentage NBS to the relative risk of the building failing in a seismic event with a 10% risk of exceedance in 50 years (i.e. 0.2% in the next year). It is noted that the current seismic risk in Christchurch results in a 6% risk of exceedance in the next year.

Percentage of New Building Standard (%NBS)	Relative Risk (Approximate)
>100	<1 time
80-100	1-2 times
67-80	2-5 times
33-67	5-10 times
20-33	10-25 times
<20	>25 times

Table 1: %NBS compared to relative risk of failure

5 Building Description

5.1 General

Construction on St Mary's Church began in 1914 and completed in the same year with the opening of the nave. It was not until after the First World War, that the porch and tower were constructed; see *Figure 2 and 3* for general photos. The church that stands today was completely finished in 1928. St Mary's Church is located on the corner of Stafford and Sewell Street, Hokitika shown *Figure 4*.

The church is constructed from two principle materials; the nave from un-reinforced load bearing masonry walls bonded together with cement mortar. This in turn supports a concrete ring beam which carries the timber truss roof. In contrast the tower above the porch is constructed from reinforced concrete walls from the first floor upwards. The church is currently closed to the public due to it being identified as potentially earthquake prone.



Figure 2 – East Elevation



Figure 3 – South Elevation



Figure 4 – Location of St Mary's Church, Hokitika

Opus carried out an initial non-intrusive structural inspection on St Mary's Church on the 19th June 2012. The intention of the visit was to gain an initial understanding of the existing capacity in terms of %NBS (percentage capacity of the New Building Standard) of the building and to propose a conceptual strengthening scheme.

5.2 General plan and definitions

The plan of the church shown in *Figure 5* denotes the location of key areas that are mentioned within this report:

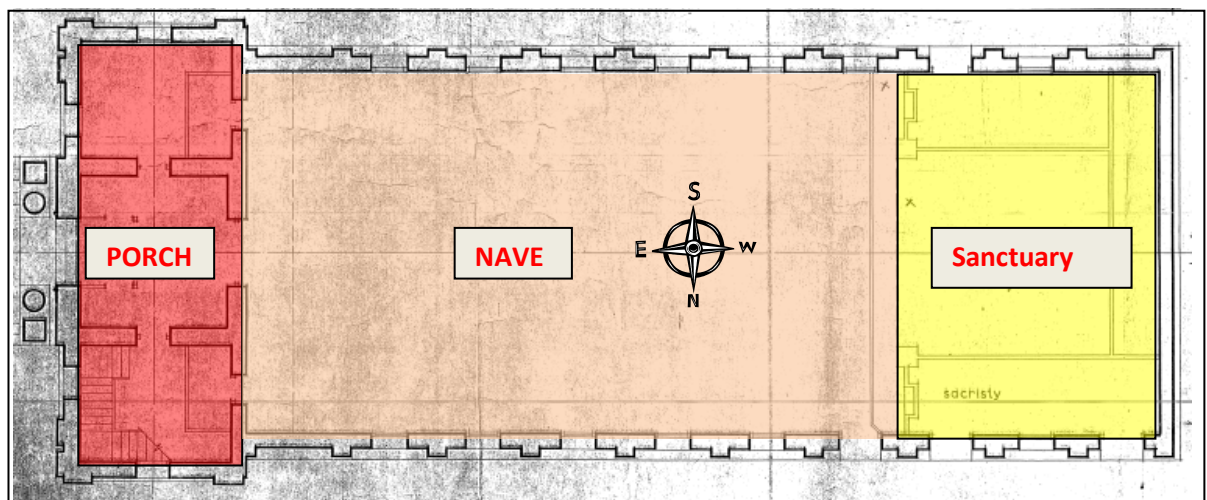


Figure 5 – General plan layout

5.3 Gravity Load Resisting System

The gravity loads from the roof (clad with slates) are transmitted to the concrete ring beam located on top of the 400mm thick load bearing masonry nave walls. This in turn carries the load down to the concrete strip footings and subsequently to the ground, shown *Figure 6*.

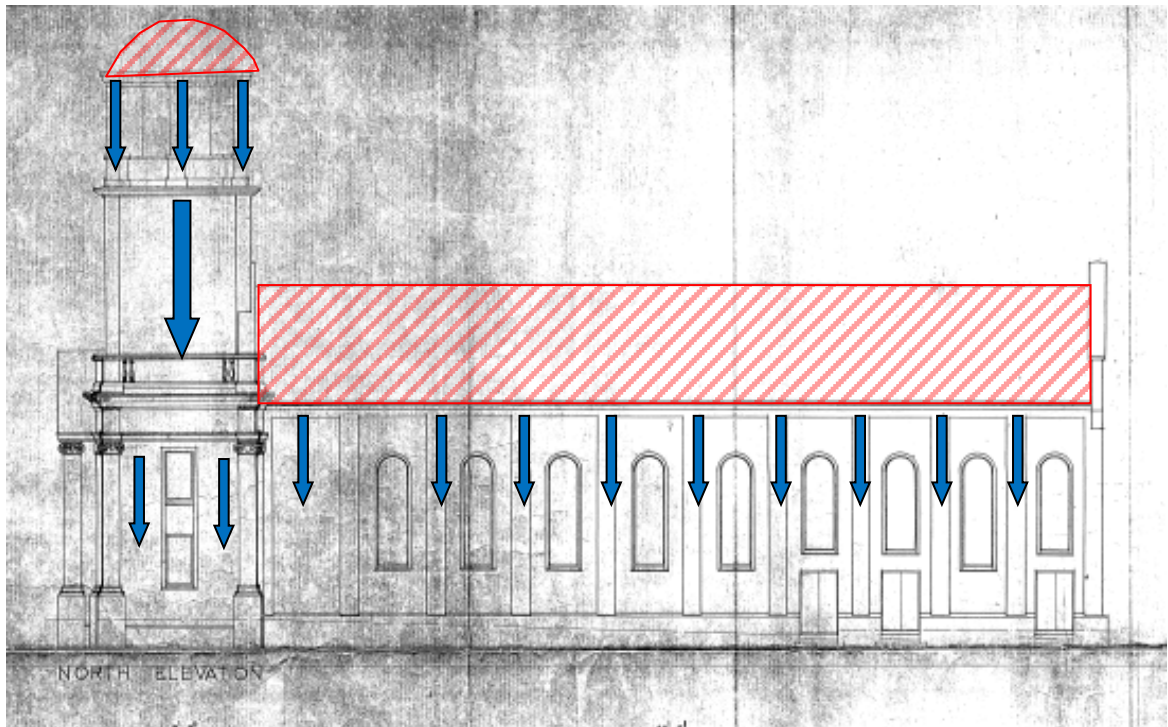


Figure 6 – Gravity system

The large openings over the porch and sanctuary are supported by assumed reinforced concrete beams that carry the loads to the load bearing masonry walls.

The tower above the porch is constructed from reinforced concrete with walls approximately 120mm thick. The gravity loads are transmitted down the reinforced concrete walls to the load bearing masonry walls which finish at first floor level and span to the ground on (assumed) strip footings.

The suspended timber ground floor supported off pile foundations, it has been laid at a gradient to enhance the visual perspectives of the congregation.

5.4 Seismic Load Resisting System

The building structurally appears to be similar to the plan (King and Jamieson), no seismic strengthening was observed. We have shown the seismic load resisting system below both for the longitudinal (East to West) and lateral direction (North to South).

5.4.1 Longitudinal seismic restraint (East to West)

Horizontal seismic loads within the roof are transmitted through the purlins and sarking to the nave walls. Some horizontal load will be transmitted to the gable ends shown with the green arrows on *Figure 7*. The gable ends are attached to the purlins with steel straps.

The remainder of the seismic loads is transmitted to the concrete ring beam, reliant on the bond strength between the ring beam and the masonry load bearing walls shown in the red hatch on *Figure 7* these loads are carried through the masonry walls in plane and eventually to the ground.

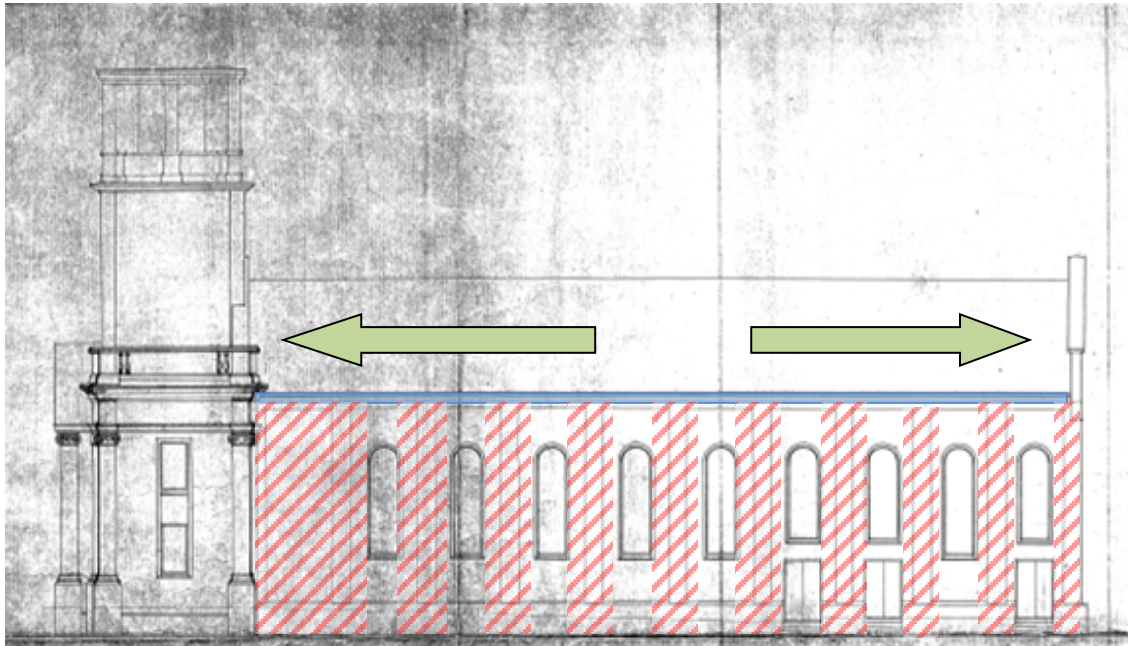


Figure 7 – Seismic load resisting system longitudinal

Applied seismic load acting on the tower over the porch will result in overturning of the tower. The reinforced concrete tower resists this overturning by the assumed reinforcement in the concrete. The reinforcement acts in tension however at the mezzanine floor level where the wall becomes un-reinforced masonry there is no tension reinforcement to resist the overturning force. It is assumed that the towers rigid shape in plan this will provide some resistance from overturning. This is an area that will require further investigation to gain an understanding of how the tower is connected to the structure below.

5.4.2 Transverse seismic restraint (North to South)

The transverse seismic loads are transmitted through the flexible ceiling diaphragm shown in blue on *Figure 8* to the concrete ring beam above the Nave walls. These loads are transmitted to the red areas denoting the external buttress walls and shear walls.

The green area denotes the mezzanine floor which is constructed from reinforced concrete and transmits lateral seismic loads to the internal and external shear walls, these loads are transmitted to the strip footings and eventually to the ground.

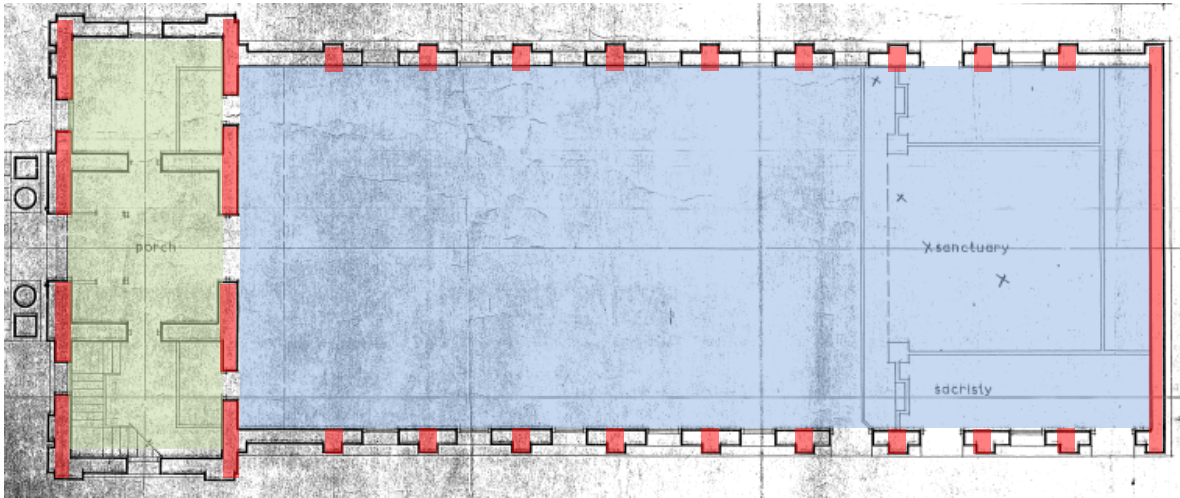


Figure 8 - seismic load resisting system transverse

6 Survey

A structural assessment of the building was undertaken on 19th June 2012 by Opus International Consultants. The whole building was assessed during this inspection. The inspection included external and internal visual inspections of all structural elements above foundation level, and any areas of damage to structural and non-structural elements.

Limited drawings have been provided to assist with the structural assessment of St Mary's Church. Copies of the following drawings and documents were provided by the Hokitika Parish and Westland District Council:

- King and Jamieson, Registered Architects (no date) architectural drawing of the church
- Conservation Plan Ian Bowman, Architect
- Photos courtesy of Ian Bowman prior to the 2011 renovation works being carried out
- Previous specifications for works carried out on the church during its restoration in 2011

The drawing and documentation were used to increase our understanding of the structural systems, investigate potential critical structural weaknesses (CSW's) and identify details which required particular attention. No copies of the construction drawings, design calculations or specification have been obtained as part of the documentation set.

7 General Observations

The building generally appears to be in good condition; this is expected since it was recently renovated in 2011 which included but not limited to re-roofing and painting the exterior walls. However, there are some cracks that are likely to be a result of historic earthquakes; in particular in the west facing gable wall.

Photos taken before the renovation works were made available to Opus courtesy of Ian Bowman, who wrote the conservation plan. These photos alongside our onsite observations gave a better understanding of the extents of the structural condition of St Mary's Church.

Internally, the masonry is showing signs of severe amount of efflorescent furthermore, there is potentially a lack of ventilation in the nave area evident from the damp smell.

A selection of photos from the June 2012 visit and from Ian Bowman's collection are shown in Appendix A.

8 Geotechnical

A visual inspection of the site was carried out on the 19th June 2012, the findings from the inspection showed no signs of recent ground movement. However, a levels survey would need to be carried out to determine whether there has been a significant change in ground levels.

From our desktop study we have determined that the soils onsite have been shown to be made up of estuarine sand and silts, fluvial gravel and cemented gravel. Further, geotechnical investigation should be carried out to determine the likely hood of any future ground related issues.

9 Initial Capacity Assessment

9.1 General

The initial strength assessment has been completed by using the initial Detailed Engineering Evaluation (DEE) procedure. The original seismic coefficient is based on the knowledge of the structure and engineering judgement.

9.2 Seismic Coefficient Parameters

The seismic design parameters based on current design requirements from NZS1170.5:2004 and the NZBC clause B1 for this building are:

- Site soil class C, clause 3.1.3 NZS 1170.5:2004
- Site hazard factor, $Z=0.45$, B1/VM1 clause 2.2.14B
- Return period factor $R_u = 1.3$ from table 3.5, NZS 1170.5:2004, for an Importance Level 3 structure with a 50 year design life.

9.3 Expected Ductility Factor

Based on our assessment of the structural drawing, our initial estimates for the expected maximum structural ductility factors for the main seismic resisting systems are:

- $\mu_{max} = 1$ for the un-reinforced masonry walls in both the east-west and north-south directions.

9.4 Estimated Structural Capacity

Based on the initial assessment carried out on the building the capacity is less than 33% NBS. Some elements are less than 10% NBS. This is characterised by the structural deficiencies that have been identified. The weakness identified also relate to the typical types of failure mechanisms observed in the Feb 2011 earthquake in Christchurch.

A number of structural deficiencies are listed below:

- The connection between the gable walls and the roof is limited and in a moderate earthquake event, it is likely the gable end wall would fail out of plane.
- The columns between the nave and sacristy are assumed to be carrying a masonry wall above. It is unclear how the wall is restrained at the top and in a moderate earthquake event the masonry above could fail out of plane.
- Discontinuity of connections, from the reinforced concrete tower to the structure below. In a moderate earthquake event it is likely that the tower would overturn.
- Roof/ceiling diaphragm capacity and flexibility
- Transfer elements between walls and diaphragms

Our analysis has been based on very limited existing documentation and drawings and therefore, further investigation will be required to refine the results and determine a more precise building capacity.

9.5 Discussion of Results

Based on the DEE assessment the majority of the structure is estimated to have a seismic capacity of less than 33% NBS. Some of the structural elements have less than 10% NBS. Hence, the building is categorised as Earthquake Prone. It is likely in a moderate earthquake that the structure could partially collapse.

Strengthening works will be required to improve the building capacity such that it exceeds 33% NBS as required by the WDC Earthquake Prone Buildings Policy. However, we strongly advise that the building be strengthened to at least 67% NBS.

10 Conclusions

- (a) The seismic performance of the building is assessed at less than 33% NBS therefore, the building is deemed to be earthquake prone. Some of the structural elements have less than 10% NBS.
- (b) A number of structural deficiencies have been identified that in a moderate earthquake are likely to cause partial collapse.
- (c) The failure mechanisms identified are similar to those seen in buildings of the same construction in Canterbury.

- (d) A number of large assumptions have been made due to lack of detailed structural drawings. We have since commissioned a measured survey to be carried out to produce as built drawings.
- (e) A conceptual strengthening scheme has been proposed see *Appendix B* however, at this stage this is based on Engineering judgement and the drawings and documentation that has been made available. Further, investigation and information will need to be provided to give a more accurate and detailed scheme.

11 Recommendations

It is recommended that:

- (a) Further detailed investigation is carried out to determine the extents and condition of the existing reinforcement, connections between the roof and walls, existing foundations and confirm some of the assumptions made within the initial assessment.
- (b) Conceptual repair and strengthening scheme be developed to repair damage and increase seismic capacity to not less than 67% NBS.
- (c) A measured survey is carried out to produce as built drawings. This will help further understand the structure and provide a valuable resource for any future work carried out on the building.
- (d) Church to remain closed.
- (e) A geotechnical investigation be undertaken

12 Limitations

- (a) This report is based on an inspection of the structure with a focus on identifying critical structural weaknesses and deficiencies. Some non-structural damage is mentioned but this is not intended to be a comprehensive list of non-structural items.
- (b) Our investigations have been visual and non-intrusive, no linings or finishes were removed to expose structural elements. Calculations have been limited to simple assessments and comparisons of seismic coefficients. No other analyses have been performed.
- (c) This report is prepared for the Catholic Diocese to assist with assessing remedial works required for this church. It is not intended for any other party or purpose.

Appendix A – Photographs



Photo 1 – General front Elevation



Photo 2 – Roof looking West



Photo 3 – Damage to the beam above the mezzanine floor prior to restoration works



Photo 4 – Typical connection between purlin and gable wall

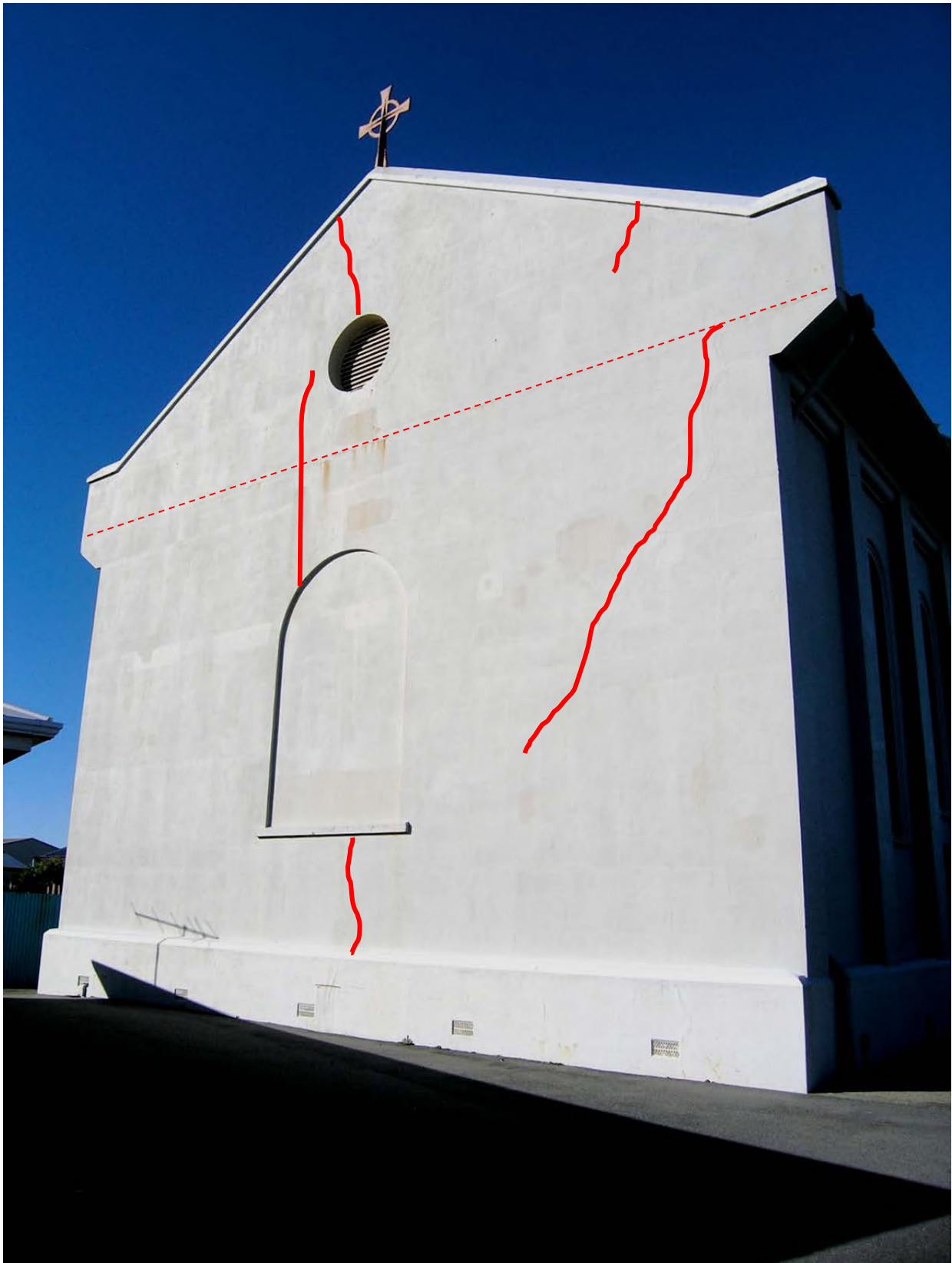


Photo 5 – Showing cracking pattern on the west gable. The dashed red line highlights the line of the existing concrete ring beam



Photo



Photo 7 – Reinforced concrete tower sat on unreinforced masonry wall at mezzanine floor level



Photo 8 – Internal shot showing columns supporting masonry wall between the sanctuary and the nave



Photo 9 – Internal masonry wall sat on columns in photo 8



Photo 9 – External columns prior to the restoration works showing vertical cracks



Photo 10 – Internal floor void

Appendix B – Structural concept strengthening proposal:




13 Concept Strengthening Scheme proposal

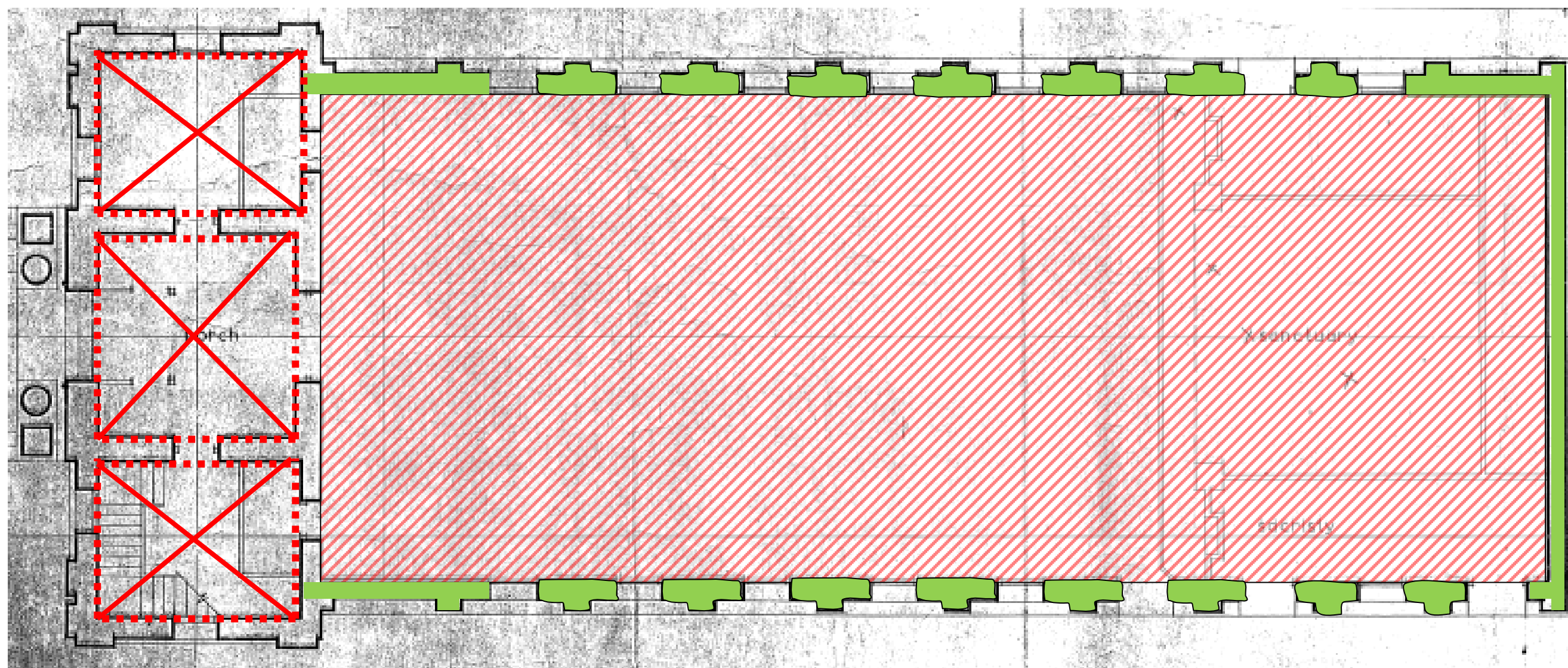
We have identified the areas at this stage that we anticipate requiring strengthening to meet 67% NBS. However, this is a conceptual strengthening scheme based on Engineering judgement and the drawings and documentation made available to us.

The areas of the building requiring strengthen are listed below and shown on SK-01 and 02 attached:

1. Strengthen the roof diaphragm with steel cross bracing
2. Provide positive fixings between the purlins and the gable end wall
3. Positive fixings between the roof diaphragm and the concrete ring beam, masonry wall
4. Provide a steel structure internally in the tower to restrain it from overturning
5. Steel anchors in the buttress walls spanning from the ring beam to the foundations
6. Connect nave and tower




KEY

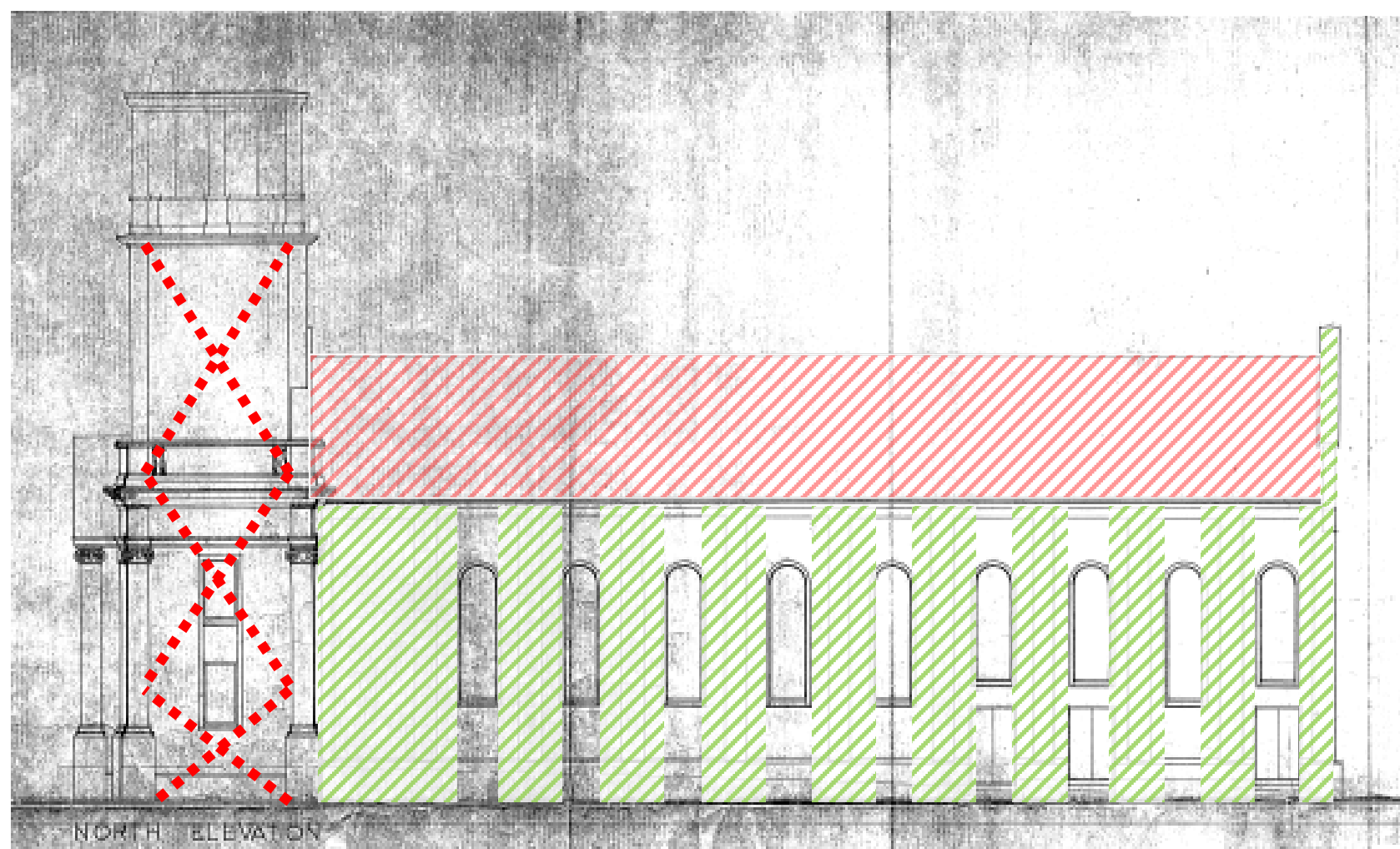
-  Denotes roof diaphragm constructed from steel braces
-  Denotes walls to be strengthened with steel anchors spanning between the concrete ring beam and foundations
-  Steel bracing to be placed in the tower



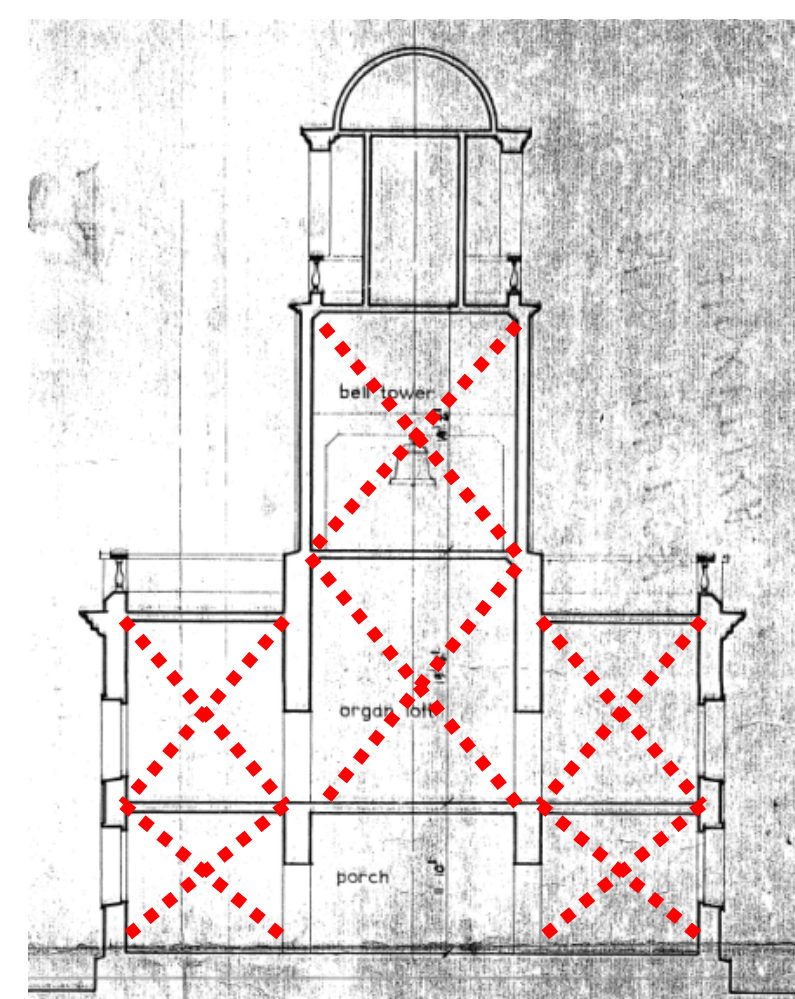
Plan A - General arrangement of the strengthening scheme

KEY

-  Denotes roof diaphragm constructed from steel braces
-  Denotes walls to be strengthened with steel anchors spanning between the concrete ring beam and foundations
-  Steel bracing to be placed in the tower



Elevation 1 - Elevation of the strengthening scheme

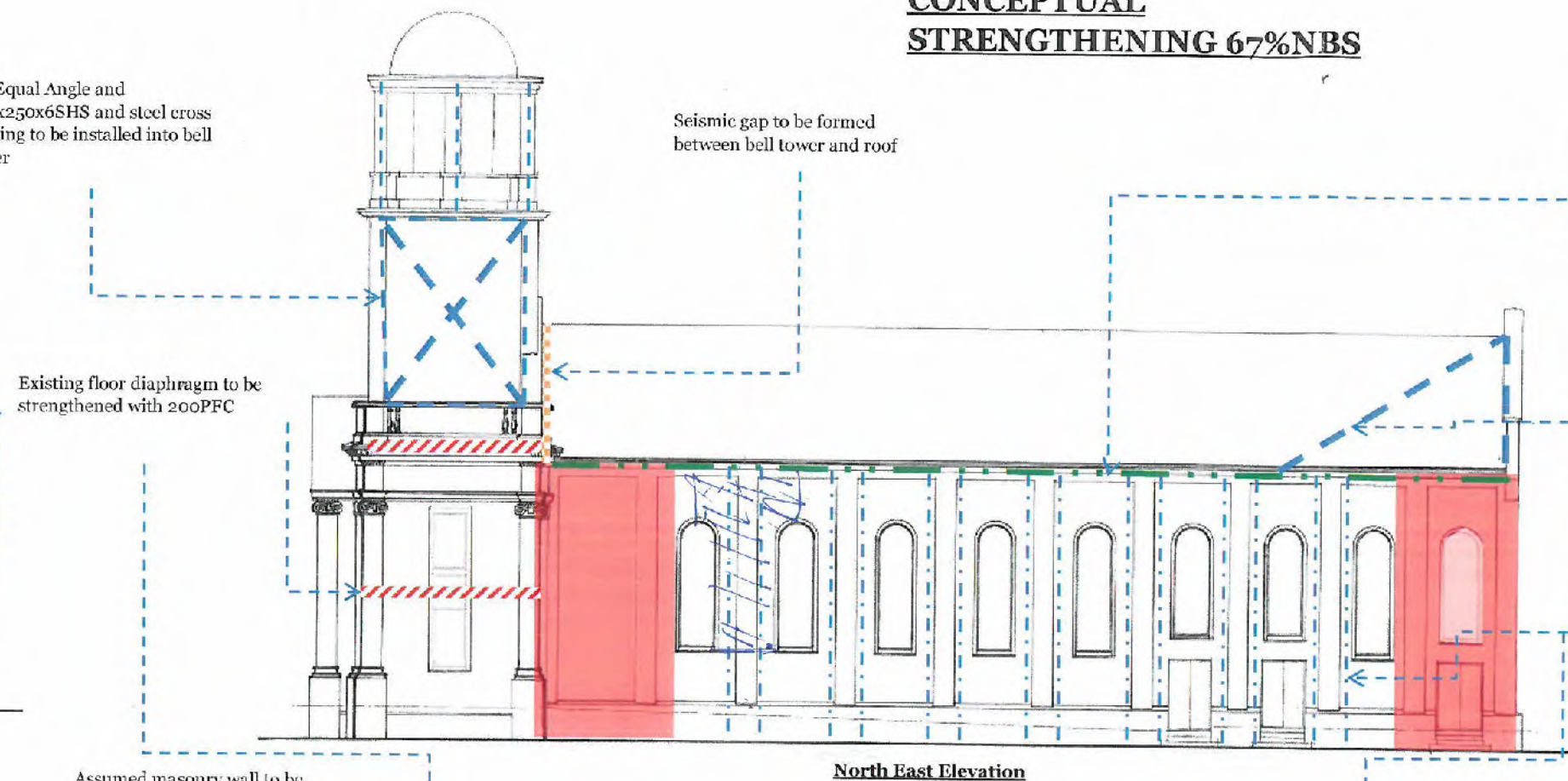
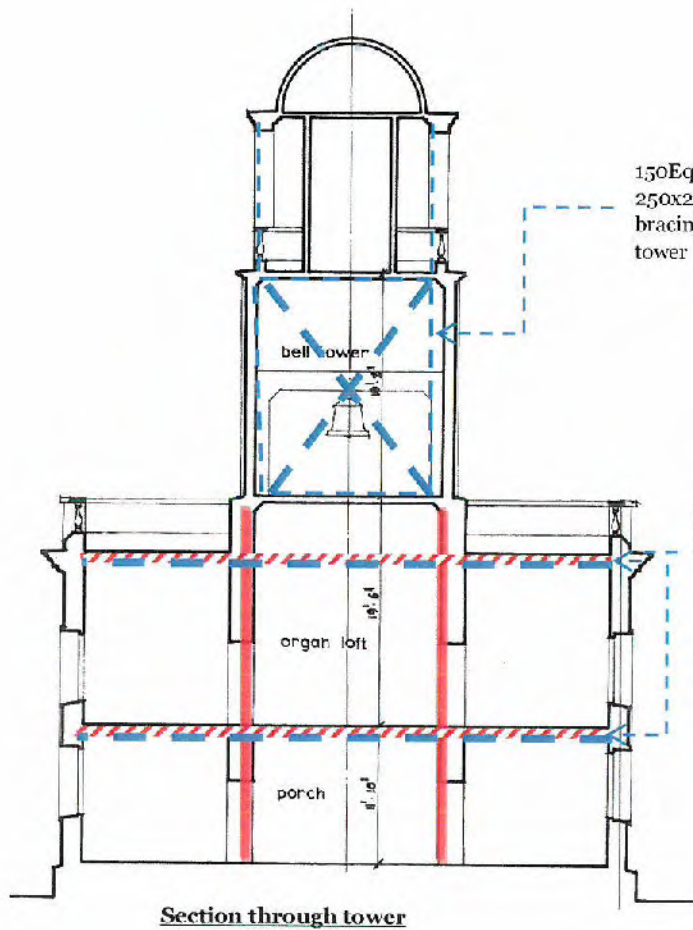


Section A- section through the East face of the tower and porch



Appendix 2 – February 2104, Conceptual Strengthening Scheme– St Mary’s Church

**CONCEPTUAL
STRENGTHENING 67%NBS**



Notes:

Denotes 150mm shotcrete applied to the inner face of existing masonry. 150mm of existing masonry to be carefully removed and shotcrete applied. Shotcrete to not infill existing openings with D20's @ 150 c/c horiz and vert

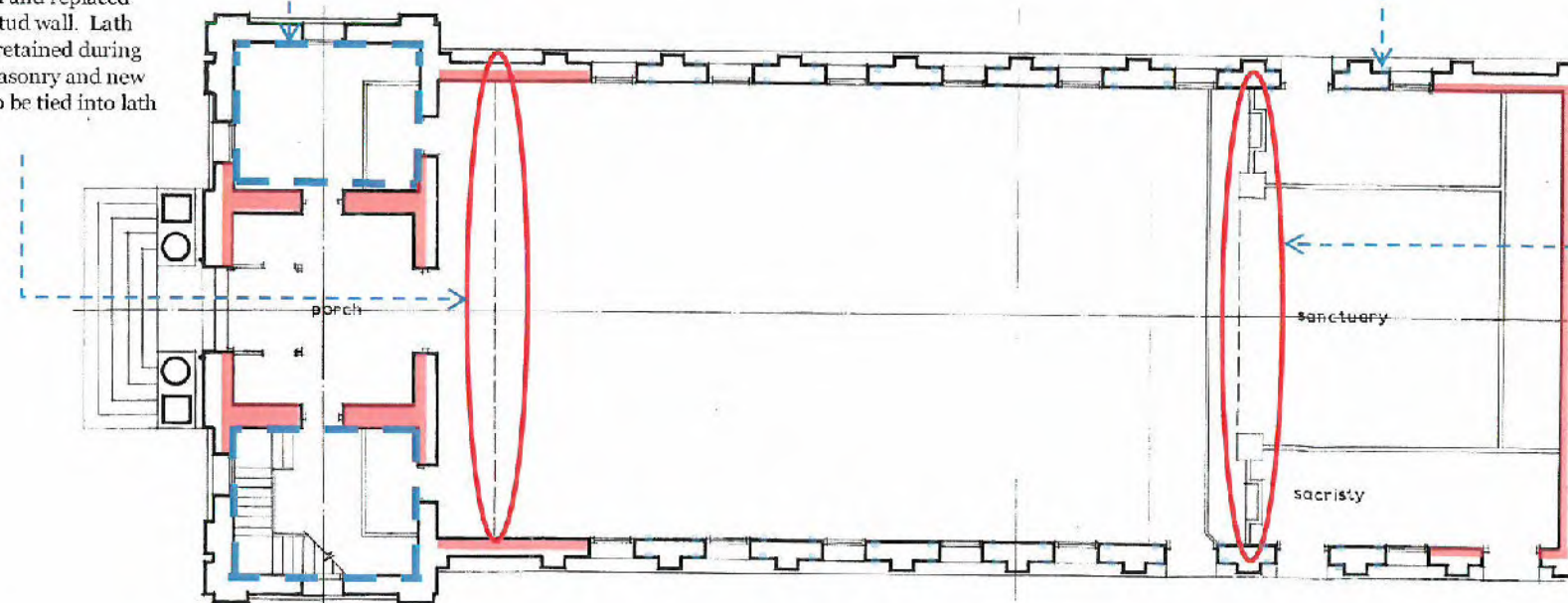
Denotes Post tensioning cables 20mm dia Macalloy bar installed into centre of wall.

Steel PFC 200 to be installed onto top of reinforced concrete beam. Post tensioning cables attached through PFC and wall through to existing footings below

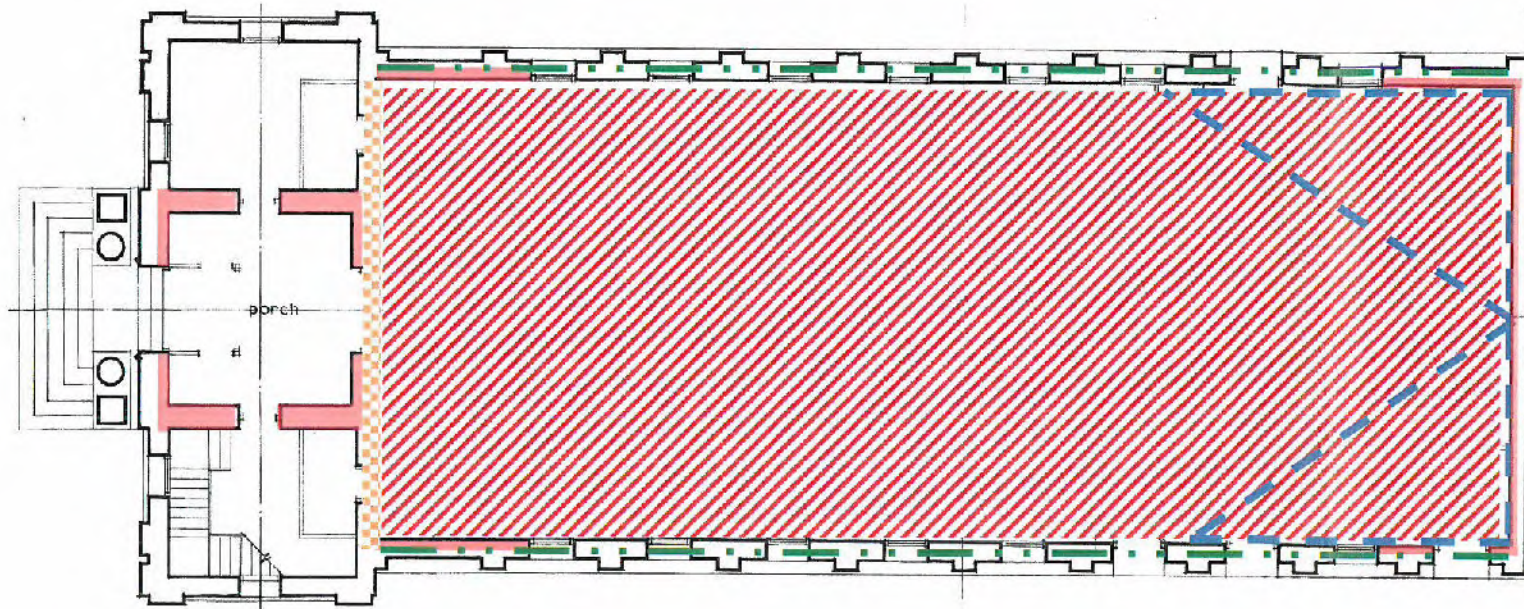
Allow for further site investigations to confirm extents of steel reinforcement within the c concrete ring beam.

Allow for investigation of the existing foundations we have assumed for this stage of the works that there is no damage to the footings.

Assumed masonry wall to be removed from above the existing beam and replaced with timber stud wall. Lath plaster to be retained during removal of masonry and new timber wall to be tied into lath plaster







Masonry wall to be removed from above the existing beam and replaced with timber stud wall. Lath plaster to be retained during removal of masonry and new timber wall to be tied into lath plaster



General arrangement - Roof

Notes:

-  Denotes 18mm plywood timber diaphragm to be nailed down to existing ceiling joists
-  Denotes steel SHS frame to be installed and tied to gable end wall
-  Denotes 150mm shotcrete applied to the inner face of existing masonry. 150mm of existing masonry to be carefully removed and shotcrete applied.
-  Steel PFC 200 to be installed onto top of reinforced concrete beam. Post tensioning cables attached through PFC and wall through to existing footings below

**CONCEPTUAL
STRENGTHENING 67%NBS**

Appendix 3 – Early Open Scheme – St Mary’s Church

DESIGN OVERVIEW / PHILOSOPHY

THE BUILDING OWNER, IN CONSULTATION WITH OPUS and the PARISH, HAS DECIDED TO STAGE THE STRENGTHENING WORKS OVER SEVERAL YEARS, ENABLING PARTIAL REOCCUPATION IN THE SHORT TERM and PROVIDING TIME for FUND-RAISING.

A SUMMARY of the INTENTION of the STAGES is SHOWN in the FOLLOWING TABLE.

Third Floor Level
16350

Bell Level
13650

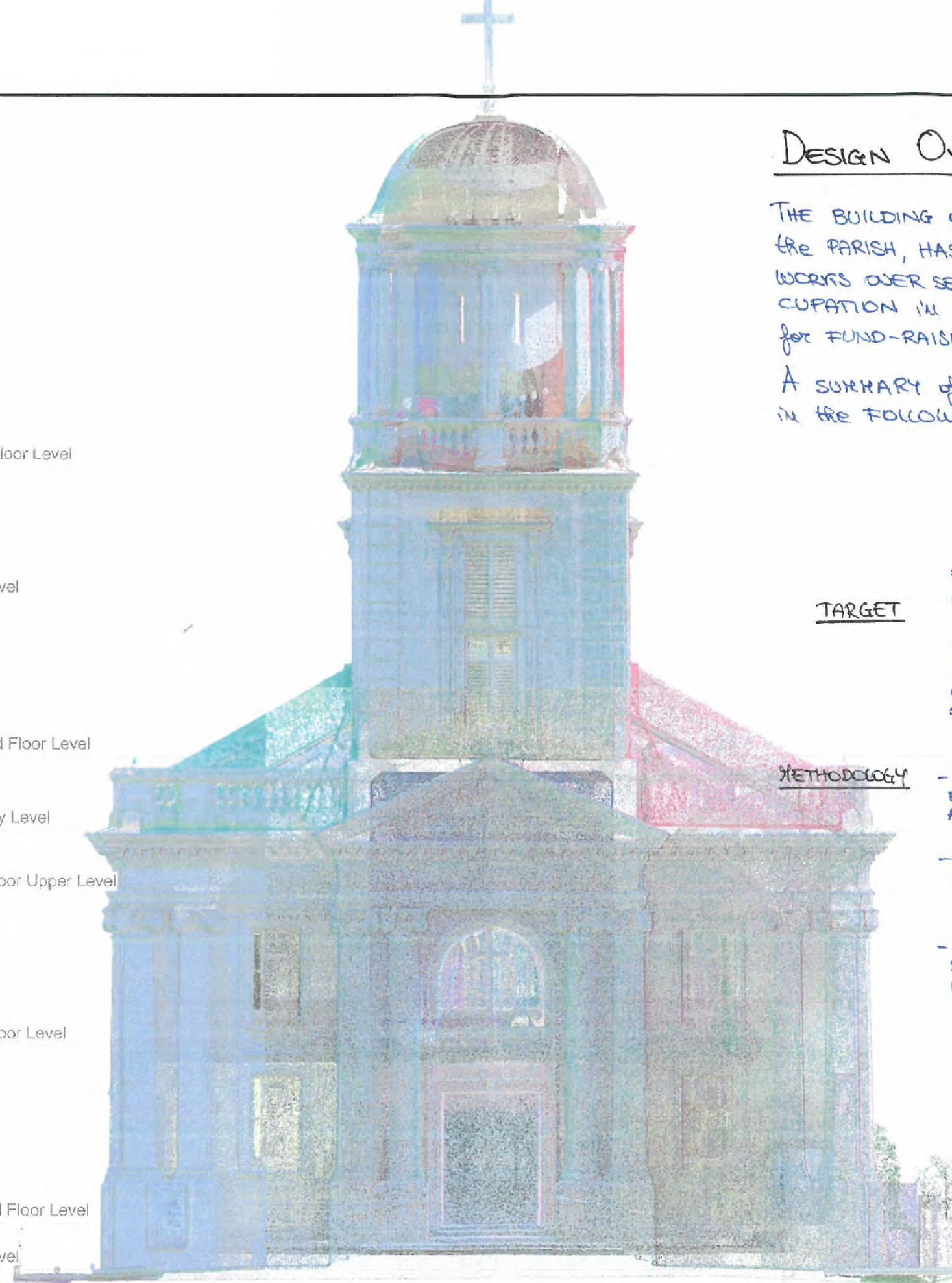
Second Floor Level
10450

Balcony Level
8950

First Floor Upper Level
7650

First Floor Level
4550

Ground Floor Level
950
Site Level
0



TARGET

STAGE 1

EARLY PARTIAL OCCUPANCY of the CHURCH.
ALLOWING PART of the CHURCH to be REOPENED and ACHIEVING a BUILDING CAPACITY for these PARTS of at LEAST 34% NBS.

METHODOLOGY

- ACCESS RESTRICTION on SOME EXTERNAL and INTERNAL AREAS;
- MITIGATION of the SEISMIC HAZARD THROUGH REMOVAL/ DECONSTRUCTION WORKS.
- INSTALLATION of TEMPORARY STRENGTHENING and SECURING WORKS;

STAGE 2

FULL OCCUPANCY of the CHURCH.
STRENGTHENING of the ENTIRE SUPERSTRUCTURE to INCREASE the OVERALL CAPACITY of the BUILDING to at LEAST 34% NBS

- NO ACCESS RESTRICTION!
- RECONSTRUCTION of the ELEMENTS REMOVE USING LIGHT-WEIGHT MATERIALS;
- INSTALLATION of PERMANENT STRENGTHENING and SECURING WORKS;

1st Strengthening
BELL TOWER

- REMOVE EXISTING BELL TOWER;
- PROVIDE a WATER-PROOF PROTECTION for the EXISTING BELL CELL FLOOR;

2nd Strengthening
REAR GABLE END

- REMOVE EXISTING REAR GABLE END;
- REPLACE with a LIGHT-WEIGHT STRUCTURE;

3rd Strengthening
NAVE WALLS

- INSTALL a POST-TENSIONING SYSTEM CONSISTING of 4-36mm DIA HACCALLOY BARS per EACH PIER. THE BARS SHALL BE INSTALLED EXTERNAL to the ORIGINAL FABRIC EXTERNALLY and CHASED into PLASTER INTERNALLY

3rd

2nd

Third Floor Level
16350

Bell Level
13650

Second Floor Level
10450

Balcony Level
8950

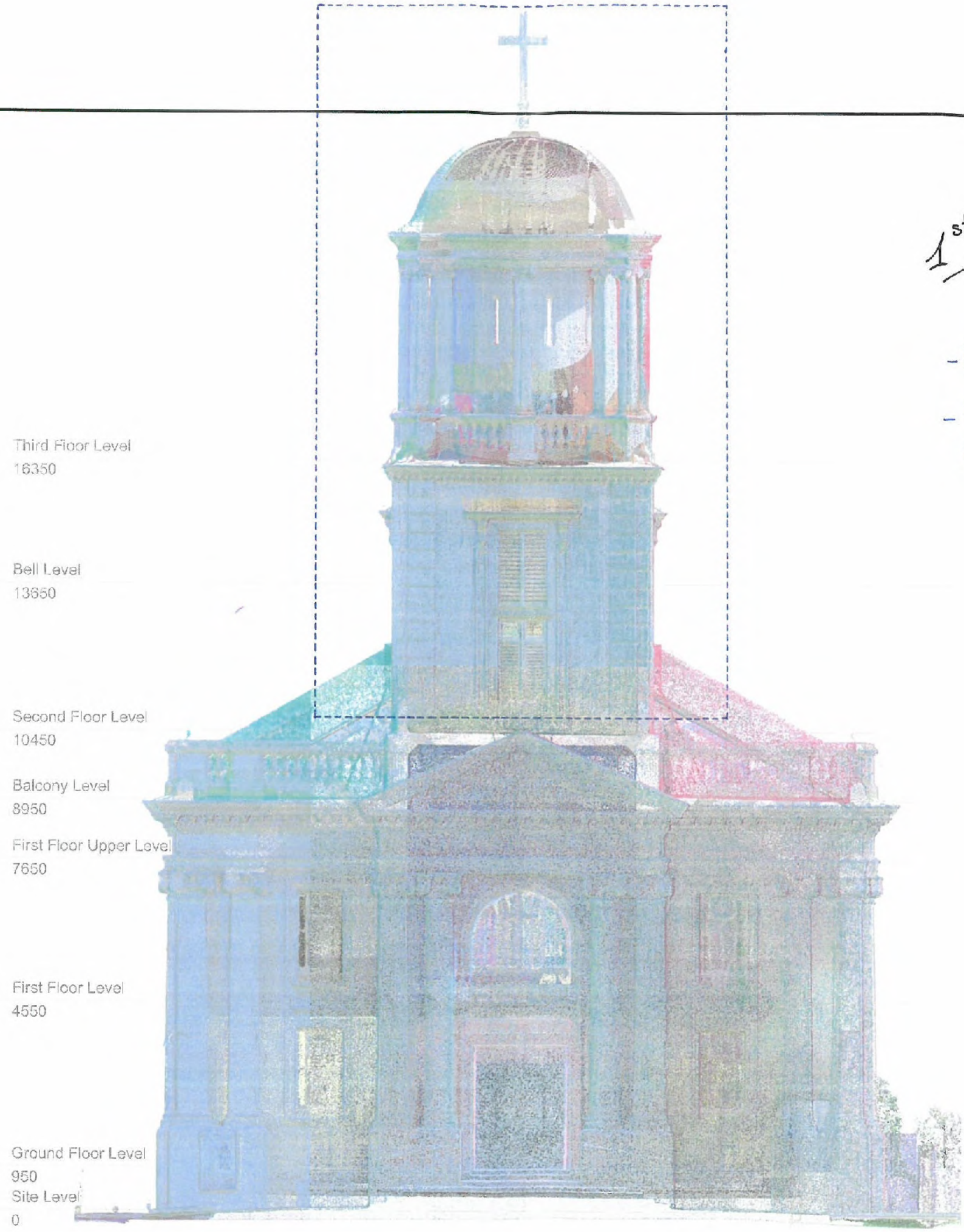
First Floor Upper Level
7650

First Floor Level
4550

Ground Floor Level
50
Site Level



Existing North East Elevation



Third Floor Level
18350

Bell Level
13650

Second Floor Level
10450

Balcony Level
8950

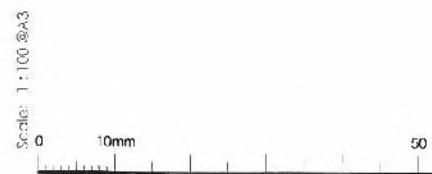
First Floor Upper Level
7650

First Floor Level
4550

Ground Floor Level
950
Site Level
0

1st Strengthening
BELL TOWER

- REMOVE EXISTING BELL TOWER;
- PROVIDE a WATER-PROOF PROTECTION for the EXISTING BELL CELL FLOOR;



Existing North West Elevation

~~2nd Strengthening~~

REAR GABLE END

- REMOVE EXISTING GABLE END;
- REPLACE WITH LIGHT-WEIGHT STRUCTURE (eg. TIMBER FRAMED WALL WITH EXTERIOR PLY.

~~1st Strengthening~~

BELL TOWER

- REMOVE EXISTING BELL TOWER;
- PROVIDE a WATER-PROOF PROTECTION for the EXISTING BELL CELL FLOOR;

~~5th Strengthening~~

CEILING DIAPHRAGM

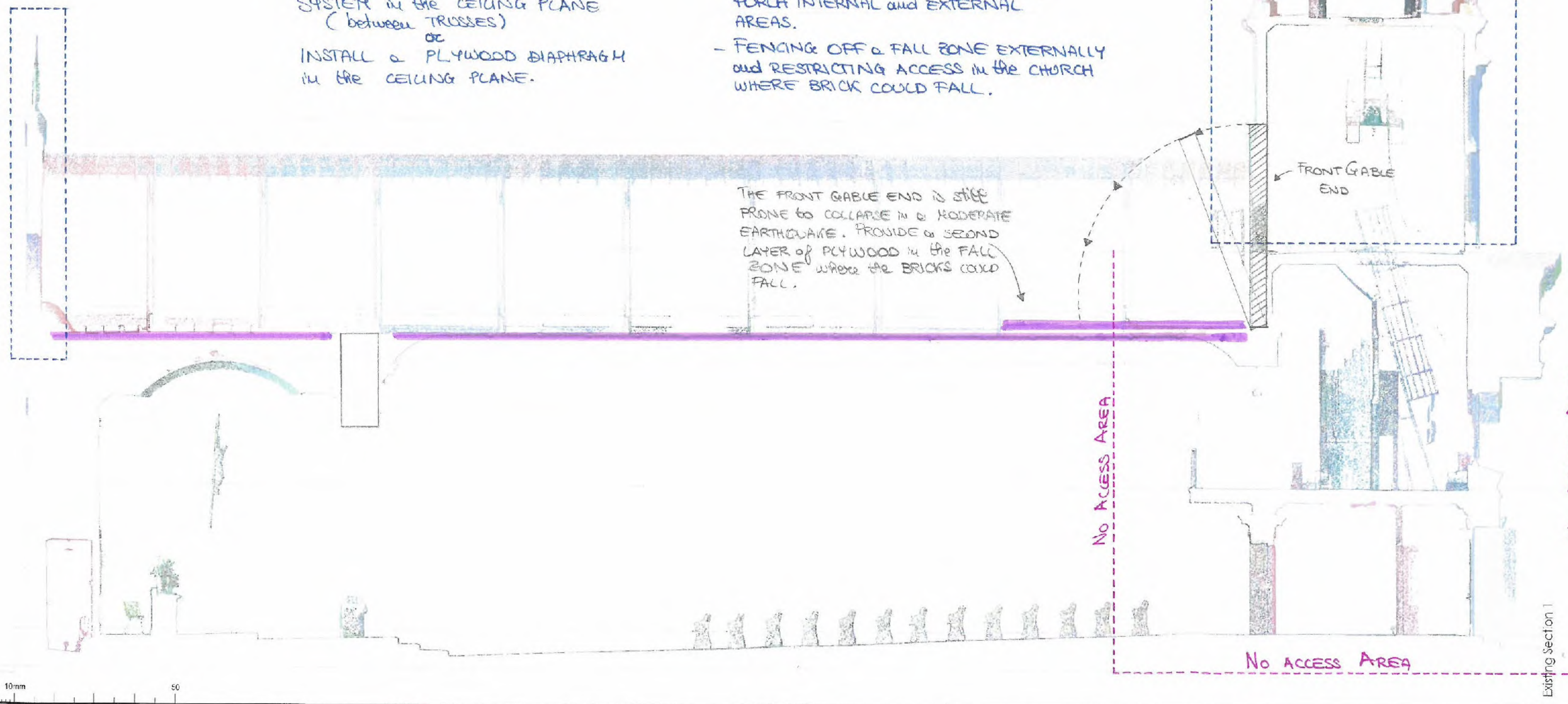
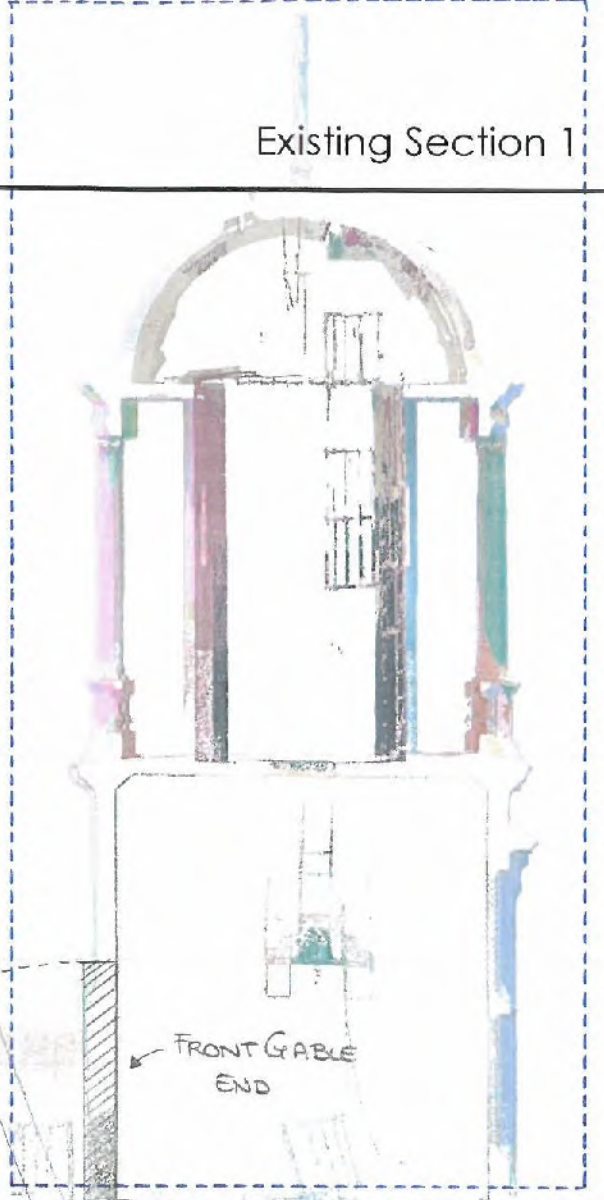
- INSTALL STEEL CROSS BRACING SYSTEM in the CEILING PLANE (between TRUSSES) OR
- INSTALL a PLYWOOD DIAPHRAGM in the CEILING PLANE.

~~4th Strengthening~~

PORCH & 1st NAIVE BAY

- PROVIDE ACCESS RESTRICTION on PORCH INTERNAL and EXTERNAL AREAS.
- FENCING OFF a FALL ZONE EXTERNALLY and RESTRICTING ACCESS in the CHURCH WHERE BRICK COULD FALL.

THE FRONT GABLE END IS STILL PRONE TO COLLAPSE in a MODERATE EARTHQUAKE. PROVIDE a SECOND LAYER of PLYWOOD in the FALL ZONE where the BRICKS COULD FALL.



Level

el



Existing Section 1

Third Floor Level
16350

Bell Level
13650

Second Floor Level
10450

Balcony Level
8950

First Floor Upper Level
7650

First Floor Level
4550

Ground Floor Level
950
Site Level
0



Load Strengthening

REAR GABLE END

- REMOVE EXISTING REAR GABLE END;
- REPLACE WITH LIGHT-WEIGHT STRUCTURE (eg. TIMBER FRAMED WALL WITH EXTERIOR PLY.)



3rd Strengthening

NAVE WALLS

- INSTALL a POST-TENSIONING SYSTEM CONSISTING of 4 - 36mm dia MACCALOY BARS per EACH PIER. TWO BARS SHALL BE INSTALLED EXTERNALLY to the ORIGINAL FABRIC, TWO BARS INSIDE to be CHASED INTO PLASTER.

4th Strengthening

PORCH & 1st NAVE BAY

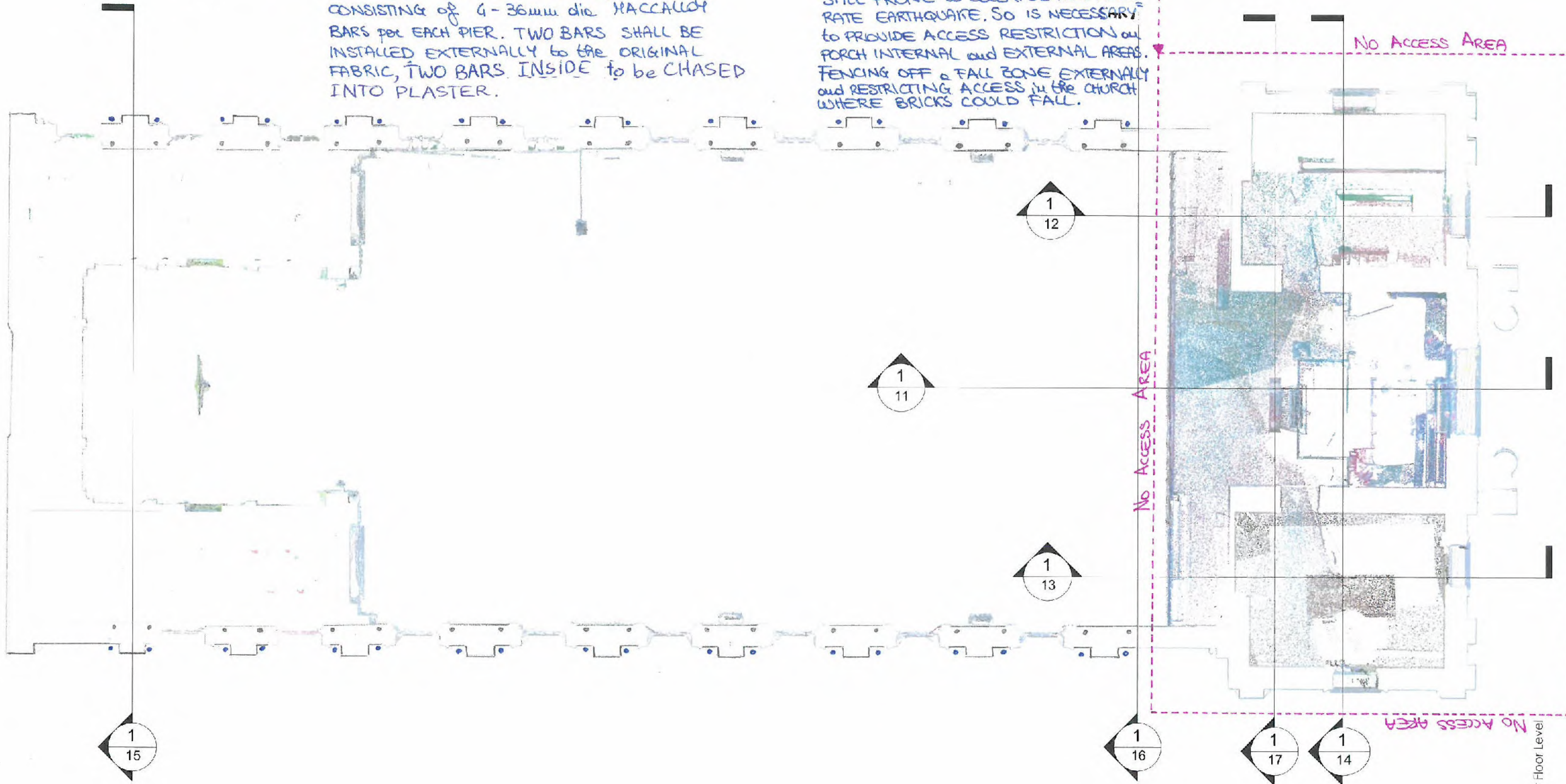
- PARTS of the PORCH STRUCTURE ARE STILL PRONE to COLLAPSE in a MODE RATE EARTHQUAKE. SO IS NECESSARY to PROVIDE ACCESS RESTRICTION on PORCH INTERNAL and EXTERNAL AREAS. FENCING OFF a FALL ZONE EXTERNALLY and RESTRICTING ACCESS in the CHURCH WHERE BRICKS COULD FALL.

No Access Area

No Access Area

No Access Area

No Access Area



Scale: 1:100 GRA3

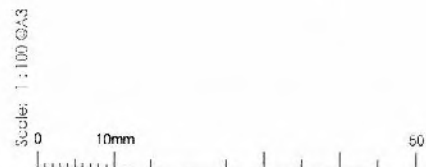
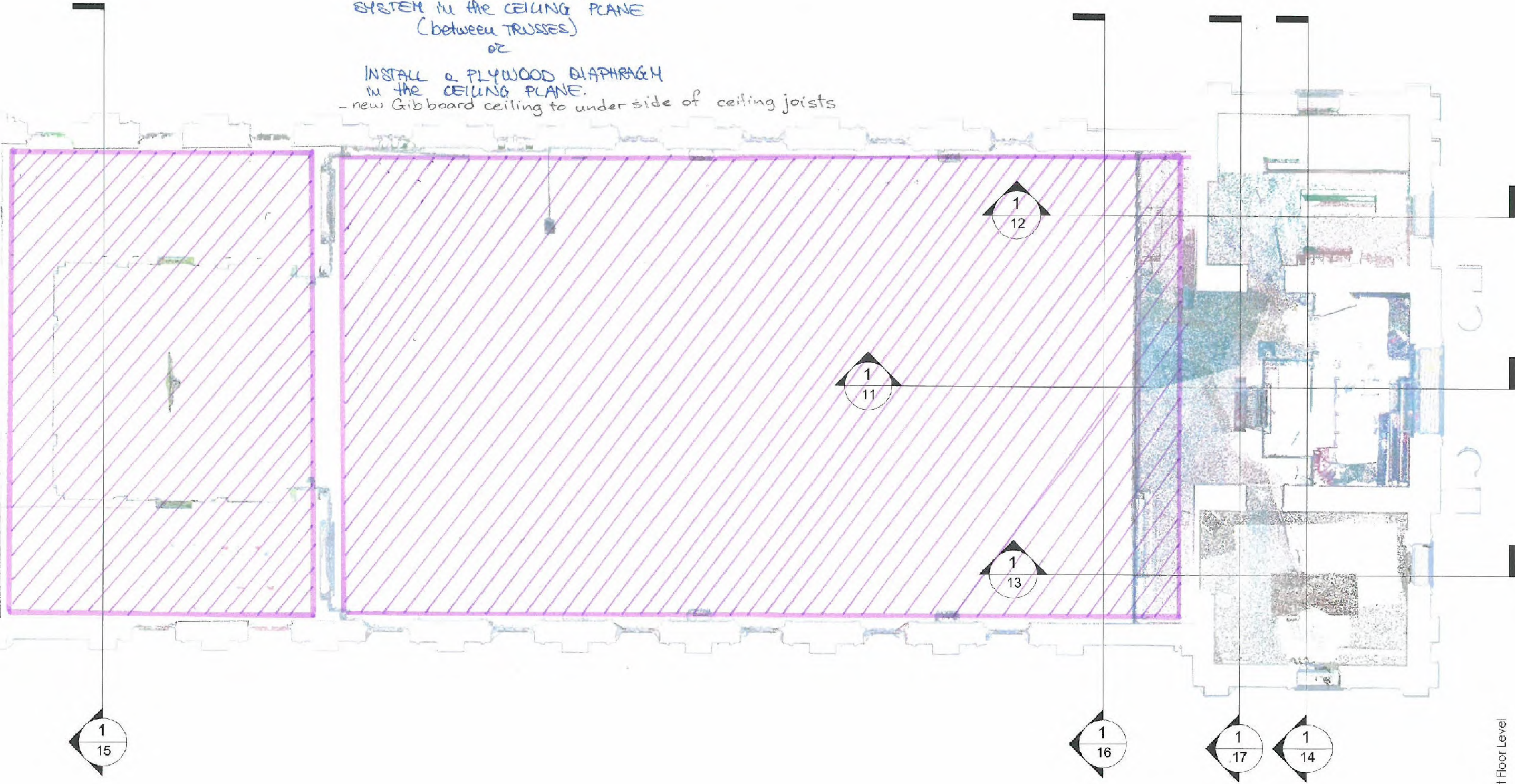
0 10mm 50

5th Strengthening

CEILING DIAPHRAGM - above ceiling joists

- INSTALL STEEL CROSS BRACING SYSTEM IN THE CEILING PLANE (between TRUSSES)
OR

INSTALL a PLYWOOD DIAPHRAGM IN THE CEILING PLANE.
- new Gypsumboard ceiling to under side of ceiling joists



3rd Strengthening
NAVE WALLS

- INSTALL a POST-TENSIONING SYSTEM CONSISTING OF 4-36 mm dia MACCALLOY BARS PER EACH PIER.
- TWO BARS SHALL BE INSTALLED EXTERNALLY TO THE ORIGINAL FABRIC, TWO BARS INSIDE TO BE CHASED INTO PLASTER

5th Strengthening
CEILING DIAPHRAGM

- INSTALL STEEL CROSS BRACING SYSTEM IN THE CEILING PLANE (between trusses)
- OR
- INSTALL a PLYWOOD DIAPHRAGM IN THE CEILING PLANE.

Third Floor Level
16350

Bell Level
13650

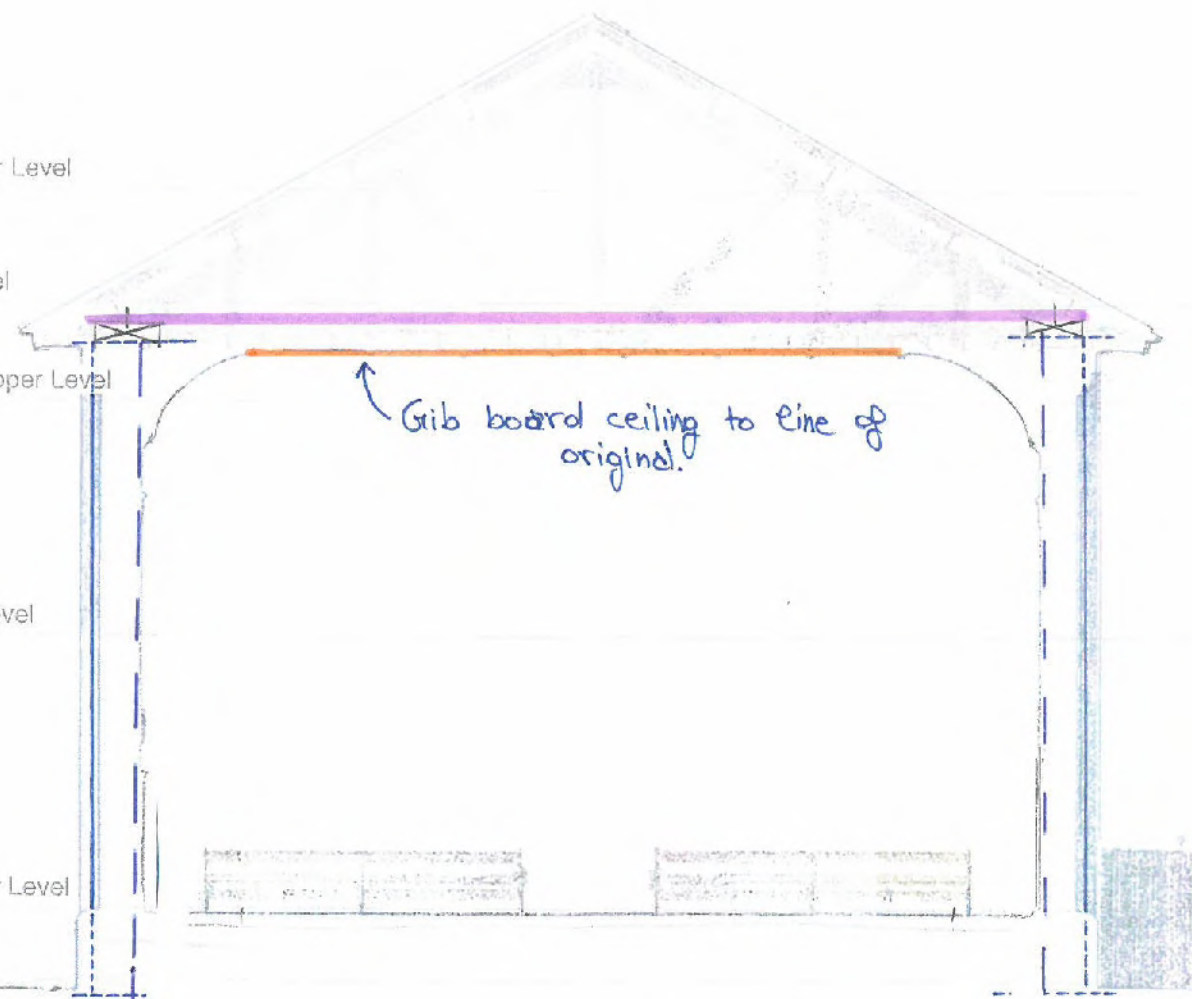
Second Floor Level
10450

Balcony Level
8950

First Floor Upper Level
7650

First Floor Level
4550

Ground Floor Level
950
Site Level
0



6th Strengthening

CHANCEL ARCH

- INSTALL A STEEL PLATE ALONG THE TOP OF THE ENTIRE LINTEL LENGTH,
- INSTALL POST-TENSIONING STRANDS INTO THE ARCH LINTEL CENTRAL SPAN;
- INSTALL 2 BRACED STEEL FRAMES IN THE EXISTING CHANCEL ARCH PANEL WALLS (SACRISTY AND FLOOR CHANGING ROOM SIDE).
- CONNECT THE NEW STEEL FRAMES TO THE EXISTING CHANCEL ARCH STRUCTURE;
- INSTALL NEW FOUNDATIONS FOR THE STEEL BRACED FRAME IN CASE THE EXISTING ONES ARE NOT ADEQUATE;

Third Floor Level
16350

Bell Level
13650

Second Floor Level
10450

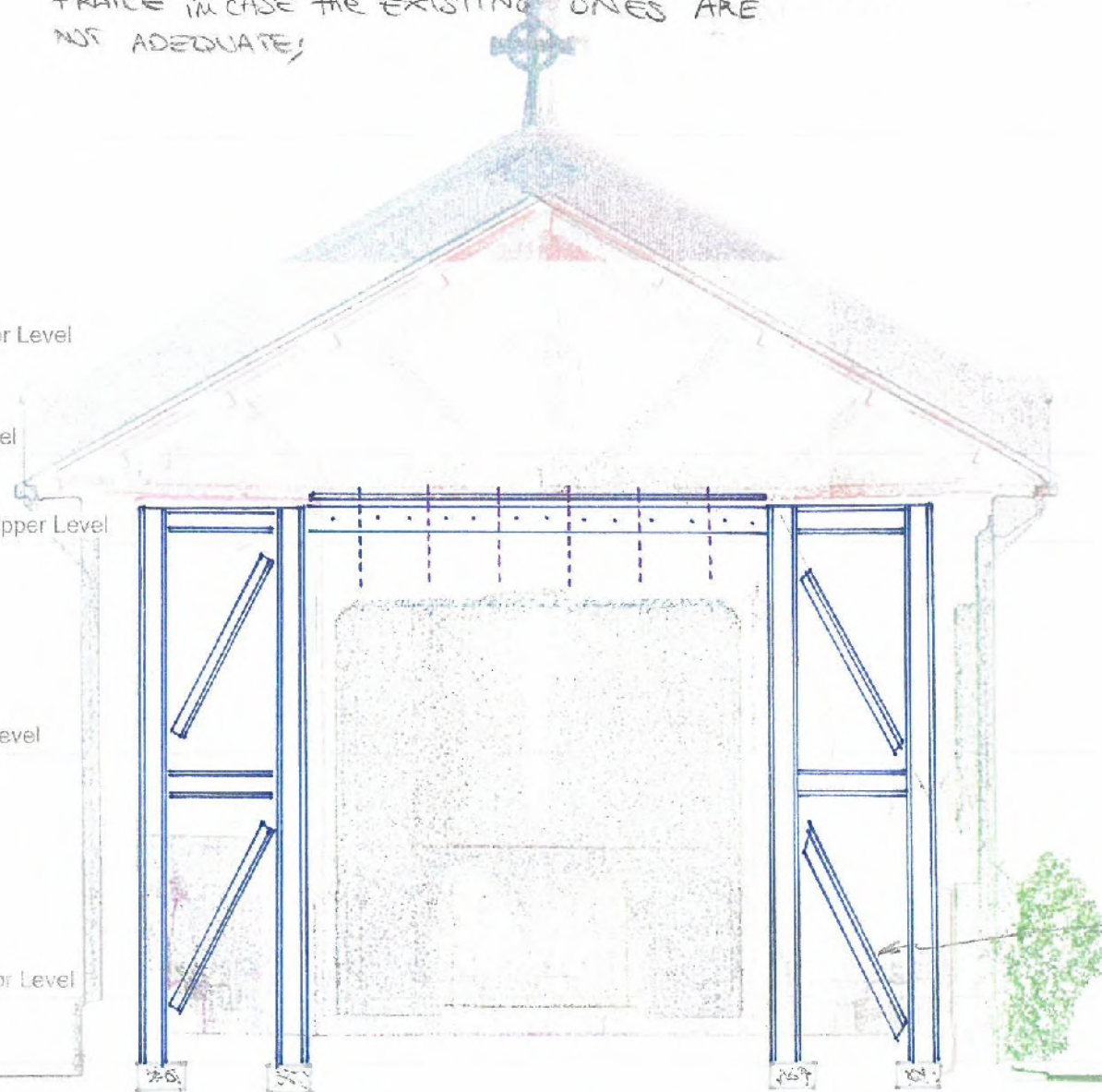
Balcony Level
8950

First Floor Upper Level
7650

First Floor Level
4550

Ground Floor Level
950

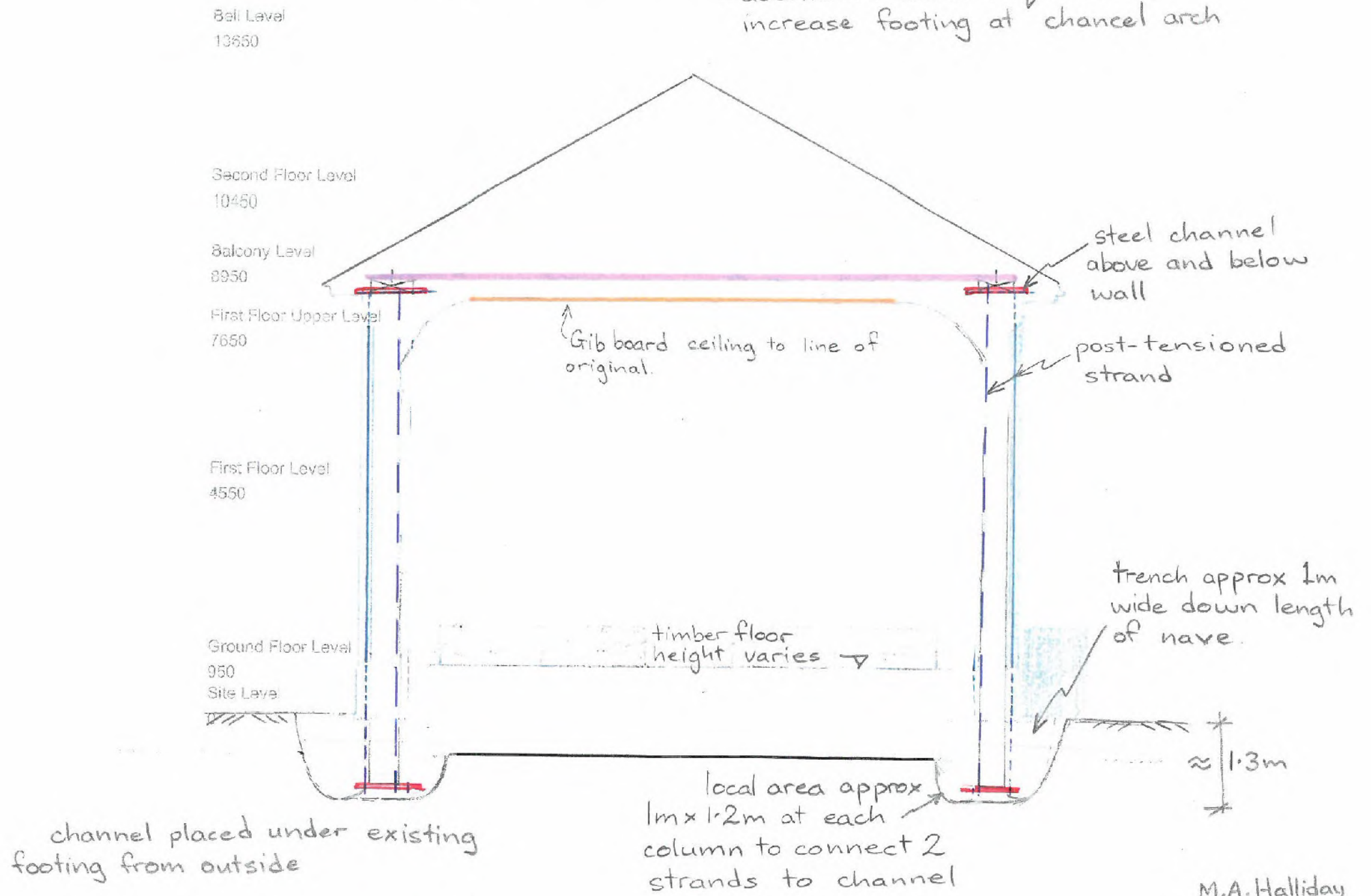
Site Level
0



this brace conflicts with the back of the statue alcove.



CROSS-SECTION THROUGH ST MARYS CHURCH, HOKITIKA
 Early Open Scheme - extent of earthworks
 - additional work required to increase footing at chancel arch



M.A. Halliday
 27 April 2016



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Appendix 2: Heritage Impact Assessment

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HERITAGE IMPACT ASSESSMENT

St Mary's Catholic Church, Hokitika

Proposed strengthening

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1.0 Introduction

1.1 Commission

This report has been commissioned by the Catholic Diocese of Christchurch to assess the effects of the proposed strengthening of St Mary's Catholic Church, Hokitika.

1.2 Proposal

Engineers have determined that the strength level of the church is below the requirement under the New Building Standards (NBS) and it requires strengthening. The church has been closed because of the risk to users. This application covers the first stage of a staged programme to make the building safe and most of it habitable. The first stage of the strengthening comprises:

- the removal of the bell tower to just above the entry parapet level/bell level floor and the construction of a temporary roof fixed atop the concrete floor
- reconstruction of a lightweight bell tower following strengthening of the tower base
- installing temporary cladding to the gable revealed with the demolition of the bell tower
- removal of the gable to the west end above the gutter line and replacement with lightweight construction, clad and waterproofed. The existing circular ventilator will be reinstated
- post tensioning of the north and south walls with an exposed external rod either side of each pilaster and two matching rod on the interior let into chases cut into the plaster
- metal cross bracing (or plywood) above ceiling level to the nave to provide a diaphragm
- chancel arch strengthening works including braced steel frames either side, and post tensioned rods above, the opening
- restricting access to the western two thirds of the nave, away from the entry.

The second and last stage is likely to include:

- strengthening of the remainder of the lower tower and entry area, including porch and front gable

Non-strengthening works proposed include:

- possible installation of west stained glass window
- Gib ceiling board installed in the nave (as original asbestos ceiling has been removed for health and safety reasons) and reconstruction of the ceiling decoration to the nave
- Reinstatement of the parapet and cross on the rear (west) gable and rendered to match the existing
- Removal of remaining access restrictions in and around the church.

1.3 Documentation

This assessment is based on the drawings prepared by Opus International Consulting Ltd “St Mary’s Hokitika Temporary Strengthening Scheme” undated, 8 sheets.

1.4 Heritage recognition

The building was listed with Heritage New Zealand, category I, record number 1705, on 2 April, 2004.

The church is listed in the Westland District Council (WDC) Operative District Plan, dated 1 June 2002: Ref. 22 in Appendix A.

2.0 Heritage values and significance

The following assessment of heritage values and significance is taken from Bowman, I., *Conservation Plan, St Mary's Church, Hokitika*, 2010.

2.1 Physical values

- **Archaeological information**

The church community has used the site of the building since the first church on the site in 1865. It is therefore an archaeological site under the Historic Places Act.
- **Architecture**

The church has significance for its neo-Classical Basilica design, linking it stylistically with a number of well recognised Catholic churches in New Zealand and throughout the history of the Catholic church since its founding. It's height, scale, location and setting contribute to its very prominent landmark status in Hokitika. Its simple planning, dignified exterior elevations, uncomplicated interior design and use of materials have created a simple but unified architectural design that suits the functioning of church.
- **Technology and engineering**

The building is constructed of rendered and plastered brickwork and concrete walls with timber roof, plaster ceilings and timber flooring and framing. The roofing is slates. These materials were common in the period of construction as was the craftsmanship involved.
- **Scientific**

-
- **Rarity**

The building is the only neo-Classical church on the West Coast and is the only such building designed by the Luttrell Brothers in the style. The building is likely to be the most recognised and iconic building in Hokitika.
- **Representativeness**

The building is representative of New Zealand Edwardian church design, particularly that of the Catholic Church, which preferred neo-Classical styles for its more significant buildings. The building is representative of building materials and technologies of the period.

Many Catholic communities build whole complexes often comprising offices, presbyteries, schools, halls and other buildings. St Mary's has a number of these buildings within its boundaries.
- **Integrity**

The building is largely authentic with modifications to the interior to comply with Vatican II, with the minor addition of the confessional and suspended ceilings in the sacristy and vestry.
- **Vulnerability**

Being constructed with a timber roof and floor, the building is vulnerable to fire, while its main structure is of brickwork and concrete, it is vulnerable to earthquake damage. Being a large church in a rural township, the costs of maintaining the building will be high.

- Context or group

The building is set within the complex of buildings including the presbytery, offices and other buildings, all of which occupy a relatively large area of land.

The church is one of eight registered churches on the West Coast and is one of three registered in Hokitika. All three registered churches in Hokitika are now category I.

2.2 Historic values

- People

The site has been associated with the local Catholic congregation since the first church was built in 1865, while the congregation and clergy has been associated with this church since its construction in 1914.

In a wider sense, the church is also associated with the local Irish population, most of whom were Catholics for whom it was built. There were also a number of Italian settlers on the Coast who were also Catholic.

The Luttrell brothers, whose work in Canterbury and elsewhere, is widely recognised, were the architects for the church.

- Events

The expansion of the population in Hokitika was largely a result of the gold rushes with many gold miners and others connected to the industry settling in the township. There was a consequent demand for new buildings, among which were church buildings.

Specific major events associated with the church include its initial establishment, foundation laying and opening ceremony, and various additions to complete the design. Although not major, the usual services, weddings and funerals that take place as a matter of course have a significance in reflecting the normal life of an active Catholic community.

- Patterns

The growth and development of the Catholic Church is reflected in the construction of the church and surrounding parish complex, mirroring many such complexes throughout New Zealand.

The origins of the parishioners of the church also reflect the pattern of immigration of Irish Catholics all over the world in the mid to late nineteenth century, with many coming to the Canterbury and West Coast regions.

2.3 Cultural values

- Identity

The building has a strong physical identity in the surrounding area because of the scale of the building and its high, neo-Classical tower. The building and

complex have had a strong spiritual identity in the area for nearly 100 years.

- Public esteem

The church is held in high local esteem as a place of worship, a place of community, as an example of well recognised religious architecture, and for its place in the history of Hokitika and the Catholic faith.

- Commemorative

The building is associated with and commemorates the early settlement of the area by Irish immigrants.

- Education

The building and complex have a didactic value for students of the Catholic Church in New Zealand, national religious architecture and students of local history.

- Tangata whenua

-

- Statutory recognition

The building is registered category I with the NZHPT and is listed on the Westland District Council's District Plan.

2.4 Authenticity

Authenticity

Form and design

The plan form, scale, style and detailing of the church are largely intact from the original construction in 1914 and subsequent design completion between 1920-28, but with the minor addition of a confessional, and suspended ceilings to the sacristy and vestry.

Materials and substance

The original external and internal materials have been retained from the extended completion date of the church in 1928.

The condition of the building is generally acceptable but with areas of cracking on the exterior and interior, peeling paintwork, leaking roof and damaged slates.

Use and functions

The original use of the building, as a church, has been retained.

Tradition, techniques, and workmanship

The construction methods, technology and workmanship of the exterior and interior have all been retained from the original construction.

Location and setting

The location, function and setting have been retained along with the administration building and presbytery. The surrounding area continues to be residential.

Spirit and feeling

The skyline, external and internal form, style, and fittings of the church clearly communicate the spiritual function of the building, while the separation from and contrast in scale of the church with adjacent buildings achieves a sense of nobility and permanence. The interior of the building has an openness and simplicity typical of the Basilica style. The style, use of materials and its form contribute to a sense of history, permanence, and continuity.

2.5 Summary statement of heritage significance

The building is a physical and historical landmark in Hokitika as a substantial Basilica styled Church, maintaining a stylistic consistency of design for major Catholic Churches in New Zealand. It is the only neo-Classical design prepared by highly esteemed Christchurch architects, Luttrell Brothers, and the only such styled Church on the West Coast. The former churches and current Church on the site reflects the high numbers of Irish immigrants who brought their faith to New Zealand.

The ICOMOS *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties*, May 2010 assessment of values for heritage assets, lists six potential levels from very high (World Heritage listed) to unknown potential. Buildings of regional significance are considered as of medium value.

2.6 Heritage assessment of the exterior and interior spaces

The elevations, interior spaces and fabric are assessed according to the following levels of significance:

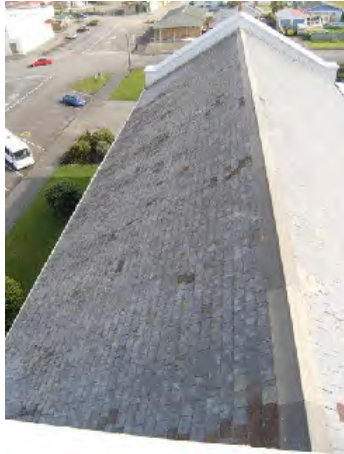


- Exceptional significance (E) indicates that the space or element has a primary role in understanding the heritage significance of the place;
- High significance (H), indicates that the space or element has a secondary role in understanding the heritage significance of the place;
- Some significance (S), signifies a minor role in understanding the heritage significance of the place;
- Little significance (L), indicates that there is little or no contribution in an understanding the heritage significance of the place;




Physical significance may also be assessed as intrusive.

- Intrusive (I), indicates that the heritage significance is adversely affected by the inclusion of the space or element.

The elevations are also assessed according to the relative levels of authenticity as Exceptional (E), High (H), Some (S) or Little or none (L) where appropriate.

Fabric used to construct and line the structure is listed with each space and is defined as original or early historic fabric (hf), reproduction/replacement fabric (rf), old but not original fabric (of), and non-historic fabric (nhf).

Space	physical	historic	cultural	authenticity
Exterior				
Roof	E	E	E	E
	Slates, hf			
	Painted timber fascia, hf			
	Painted asbestos sheet soffit, hf			
	Painted copper gutters, hf			
	Galvanised steel rainwater heads, hf?			
North elevation				
	Painted plastered brickwork, tower, hf			
	Painted timber semi-circular headed windows with bottom hung casements at base, hf			
	Painted timber square headed windows, hf			
	Cast iron vents, hf			
East elevation				
	Painted plastered brickwork, tower, columned and plastered entry, hf			
	Painted timber square and semi-circular headed windows, hf			
	Painted timber entry doors, hf			
	Concrete steps, hf			

South elevation	E	E	E	E
	Painted plastered brickwork, tower, hf			
	Painted timber semi-circular headed windows with bottom hung casements at base, hf			
	Painted timber square headed windows, hf			
	Cast iron vents, hf			
	Concrete path, hf			
	Granite tablet, hf			
West elevation	E	E	E	E
	Painted plastered brickwork, hf			
	Painted timber vent, hf			
	Painted cast iron vents, hf			
	Concrete path, hf			
Interior				
Wind lobby	S	L	L	S
	<u>Ceiling</u>			
	Painted plywood?, of?			
	Painted plastered cornice above entry door, hf			
	<u>Wall</u>			
	Clear coated timber panelling, of			
	Clear coated timber skirtings and architraves, of			
	<u>Floor</u>			
Terrazzo, hf				

	<u>Windows</u>
	-
	<u>Doors</u>
	1 x Clear coated timber double with leaded panels and toplights, of
	2 x Clear coated timber panelled and glazed with toplights, of
	1 x Painted timber panelled double entry, hf?
	<u>Fixtures and fittings</u>
-	

Children's Sunday liturgy locked

Foyer

E

E

E

E



Ceiling

Painted asbestos sheet? with moulded battens, hf

Painted plastered cornice, hf

Wall

Clear coated timber paneling, skirtings and architraves, hf

Clear coated timber over door to entry to nave, hf

Painted plaster above paneling, hf

Floor

Terrazzo with decorative stone inlay to centre, hf


Windows

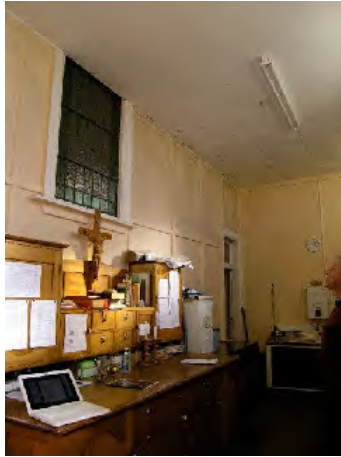
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Doors


2 x Clear coated timber panelled to north and south, hf


Fixtures and fittings




	Statue, hf
	Carved timber station of the cross, hf
Nave	E E E E
	<u>Ceiling</u>
	Painted fibrous plaster with battens and ventilation panels, hf
	Painted plaster cornice, hf
	Painted plaster domed ceiling to sanctuary with plaster mouldings, hf
	<u>Wall</u>
	Painted plaster, hf
	Painted plaster string course in the style of art deco, hf
	Clear coated timber paneling, skirting, architraves and over doors, hf
	Painted plaster ionic pilasters to chancel/sanctuary with plaster niches, and pediments, hf
	Painted plaster Corinthian pilasters to sanctuary, hf
	Marble bases to niches for statue, hf
	<u>Floor</u>
	Carpet over timber strip, hf
	<u>Windows</u>
	12 x painted timber framed semi-circular headed windows with bottom hung casement at bottom, hf
	2 x clear coated timber semi-circular headed leaded and coloured glass windows to sanctuary, hf
	<u>Doors</u>
	2 x clear coated timber paneled double to east


	wall, hf
	1 x painted timber double ledged and panelled, to north, hf
	<u>Fittings and fixtures</u>
	Clear coated timber pews, hf
	Timber stations of the cross, hf
	Wall mounted heaters, nhf
	Marble alter, hf
	Plaster statues, hf
	Clear coated timber lectern, hf
	Pulpit, hf
	Clear coated timber cross with painted plaster statue, hf
	Clear coated timber railings either side of sanctuary, hf
	Marble holy water fonts either side of entry, hf
	Brass plaques above fonts, hf
Sacristy (north west)	H E E S
	<u>Ceiling</u>
	Painted hardboard, hf
	<u>Wall</u>
	Painted asbestos sheet? With timber battens to south wall, hf?
	Painted hardboard to west and north walls, nhf
	Painted plaster to east wall, hf
	Painted softboard above panelling, hf?
	Painted timber panelling, skirtings and architraves, hf
	<u>Floor</u>
	Carpet on timber strip, hf

Vestry	S	S	H	S
	<u>Ceiling</u>			
	Painted softboard, nhf			
	<u>Wall</u>			
	Painted plywood with timber battens to north wall, hf?			
	Painted softboard above panelling, hf?			
	Painted timber panelling, skirtings and architraves, hf			
	<u>Floor</u>			
	Carpet on timber strip, hf			
	<u>Windows</u>			
	Painted timber bottom hung casement, hf			
	<u>Doors</u>			
	1 x clear coated timber paneled from sanctuary, hf			
	1 x painted timber paneled to west, hf			
	1 x painted timber double ledged and panelled to exterior south, hf			
	<u>Fixtures and fittings</u>			
-				
South west space	S	S	H	H
	<u>Ceiling</u>			
	Painted asbestos sheet with clear coated timber battens, hf			
	<u>Wall</u>			
	Painted plaster, hf			
Uncoated asbestos sheet with clear coated				

	timber battens to north wall, hf
	Clear coated timber panelling to south and west, hf
	Painted softboard above panelling, hf?
	Painted timber panelling, skirtings and architraves, hf
	<u>Floor</u>
	Carpet on timber strip, hf
	<u>Windows</u>
	Pained timber bottom hung casement, hf
	<u>Doors</u>
	1 x clear coated timber paneled from sanctuary, hf
	1 x painted timber panelled to west, hf
	1 x pained timber double ledged and panelled to exterior south, hf
	<u>Fixtures and fittings</u>
	-
Confessional, north east corner	S L L L
	<u>Ceiling</u>
	Painted softboard tiles, nhf
	<u>Wall</u>
	Painted softboard tiles, nhf
	<u>Floor</u>
	Carpet over timber strip, hf
	<u>Windows</u>
	Sliding obscure, nhf
	<u>Doors</u>
Clear coated timber double paneled and glazed,	

	hf
	<u>Fixtures and fittings</u>
	Painted timber and softboard tiled lined partition, nhf
Stair, north east corner	S L L L
	<u>Ceiling</u>
	Painted plasterboard with timber battens, hf
	<u>Wall</u>
	Painted plaster, hf
	Painted timber paneling with architraves and skirtings to stair, hf
	Painted timber architraves, hf
	<u>Floor</u>
	Carpet over timber strip, hf
	<u>Windows</u>
	Painted timber fixed with coloured glass, hf
	<u>Doors</u>
	Clear coated timber paneled, hf
	<u>Fixtures and fittings</u>
	Painted timber stair, newel posts, handrail, balusters, hf
First floor	
Stair, north east corner	S L L L
	<u>Ceiling</u>
	Painted plaster, hf
	<u>Wall</u>
	Painted plaster, hf
	Painted timber architraves, hf

	<u>Floor</u>			
	Carpet over timber strip, hf			
	<u>Windows</u>			
	2 x Painted timber fixed with coloured glass, hf			
	<u>Doors</u>			
	Painted timber paneled, hf			
	<u>Fixtures and fittings</u>			
Painted timber stair, newel posts, handrail, balusters, hf				
Balcony and space behind				
	E	E	E	E
	<u>Ceiling</u>			
	Painted plaster, hf			
	Painted plasterboard with timber battens, hf			
	Uncoated concrete, hf			
	<u>Wall</u>			
	Painted plaster, hf			
	Clear coated timber skirtings, hf			
	Uncoated brickwork, hf			
	Lath and plaster partition, hf			
	<u>Floor</u>			
	Carpet over timber strip, hf			
	Uncoated concrete, hf			
	<u>Windows</u>			
	Painted timber fixed semi-circular, hf			
	<u>Doors</u>			
	2 x clear coated timber paneled with south door boarded over toplight, hf			
	1 x clear coated timber panelled, hf			

	<u>Fixtures and fittings</u>				
	Organ, hf				
	Clear coated timber pews, hf				
	Light fittings, hf				
	Clear-coated timber and steel rail, hf				
Tower levels 2 and 3		H	H	H	E
	<u>Ceiling</u>				
	Uncoated concrete, hf				
	<u>Wall</u>				
	Uncoated concrete, hf				
	<u>Floor</u>				
	Uncoated concrete, hf				
	<u>Windows</u>				
	Painted timber, louvred, hf				
	<u>Doors</u>				
	Painted timber panelled, hf				
	<u>Fixtures and fittings</u>				
	Timber ladder, hf				

3.0 Regulatory assessment

The church is listed in Appendix A (Ref 22) of the Westland Operative District Plan. Appendix A lists buildings controlled by the plan's rules. Part 4.5 of the District Plan discusses the policies and methods of caring for heritage. The plan states:

“(j) Heritage Sites and Buildings scheduled in Appendix A, are protected by the standards. Modification (excluding normal maintenance works) is a discretionary activity. Historic and cultural items and sites, including buildings make a significant contribution to the District's identity and character. Any proposal to modify any of these scheduled sites will be publicly notified.”

WDC's policy on stabilisation for earthquake strengthening is as follows:

“Heritage buildings are those listed in Councils District Plan Schedule, Marae and buildings listed in the New Zealand Historic Places Trust Register. The Building Act 2004 recognises that special provision shall be made for such buildings. Westland District Council believes it is important that its heritage buildings have a good chance of surviving a major earthquake in order to retain these important connections to the District's history and unique character.

However, Westland District Council does not wish to see the intrinsic heritage values of these buildings adversely affected by structural improvement measures.

Heritage buildings will be assessed in the same manner as other potentially dangerous, earthquake-prone or insanitary buildings and as per ss121-123 of the Act and discussions will be entered into with the owner and the New Zealand Historic Places Trust (pursuant to s125(2)(f) where the building is contained in their Register) to identify a mutually acceptable way forward which meets heritage objectives and Building Act requirements included in this Policy as near as is reasonably practicable in the circumstances.

Council will serve notices requiring upgrading or demolition within specified timeframes, in consultation with building owners. A copy of any notice issued under s124 of the Act will be sent to the Historic Places Trust in the case of all heritage buildings. Any upgrading work must take into account the principles of the International Council on Monuments and sites (ICOMOS) NZ Charter, any advice from Council's heritage staff or other heritage professionals or organisations, where applicable and should be designed to involve minimal loss to heritage fabric.

Waivers of modifications of the building code will be considered on a case by case basis and seismic strengthening methods that respect heritage values will be supported.

It is not expected that Council Funding of Structural Strength Assessments and Strengthening Works will occur. The Councils' Funding Policy will also be relevant to this matter.

Demolition is an option of last resort for heritage buildings.”¹

¹ Westland District Council, Dangerous, Earthquake Prone and Insanitary Buildings Policy, Westland District Council, 2006, pages 15 to 16.

4.0 Best practice assessment criteria

4.1 ICOMOS NZ Charter, 2010

The ICOMOS New Zealand Charter, 2010, is a set of widely accepted conservation principles, used in the New Zealand Heritage sector to conserve and manage cultural heritage places. This is attached in appendix 2.

The key principles relevant to this assessment include the following:

Respect for surviving evidence and knowledge	The authenticity and integrity of a place should be retained through the least possible loss of heritage fabric. The removal or obscuring of physical evidence should be minimised.
Minimum Intervention	Intervention should be the minimum necessary and reversible where possible.
Use	Any changes should retain the significance of the place.
Risk mitigation	Risk mitigation from natural events is necessary.
Fixtures, fitting and contents	Fixtures, fittings and contents integral to the heritage value should be retained and conserved, this may include surface decoration, window feature glass, furniture etc.
Conservation Processes and Practice	Work should be carried out in accordance with a conservation plan.
Preservation	Repair should use matching or similar materials. Where it is necessary to use new materials they should be distinguishable from the old. Repair of a technically higher standard than that achieved with the existing materials or construction practices may be justified only where the stability or life expectancy of the site or material is increased, where the new material is compatible with the old, and where the cultural heritage value is not diminished.
Reconstruction	Reconstruction is appropriate if it is essential to the function and integrity of the place but it should not compromise the majority of the place
Adaptation	Any change should be the minimum necessary, should be substantially reversible, and should have little or no adverse effect on the cultural heritage value of the place.

4.2 New Zealand Historic Places Trust (now Heritage New Zealand) Heritage Sustainable Management of Historic Heritage Guidance Earthquake Series (draft for consultation) Earthquake Strengthening Improving the Structural Performance of Heritage Buildings

This guide has two assessment criteria as follows.

Assessment criteria 1. Sustainable management of historic heritage principles

The relevant principles are:

Matters to consider		
1.1	Sustainability	Taking a precautionary approach in order to safeguard the options for present and future generations.
1.2	Research and documentation	Ensuring interventions are informed by sufficient research, documentation and recording, where culturally appropriate.
		All changes should be fully documented in drawings and photographs.
1.3	Respect for physical evidence	The degree that the intervention involves the least possible loss of heritage significance and the least loss of material of heritage value, including any irreversible or cumulative effects.
1.4	Understanding significance	Whether the values of the place are clearly understood before decisions are taken that may result in change.
		Decision making, where change is being contemplated, should take into account all relevant values, cultural knowledge and disciplines.
		Understanding significance should be assisted by methods such as preparation of heritage assessments and conservation plans.
1.5	Respect for contents, setting and curtilage	The extent to which interventions respect the contents and surroundings associated with the place
1.6	Add other relevant values as relevant	Respect values; Diversity and community resources; Maori heritage.

Assessment criteria 2. Alterations of historic buildings principles

The relevant principles are:

2.1	Do not remove, obscure or alter significant heritage fabric and features.
2.2	Retain ceiling heights, surface and decoration. Earthquake strengthening should not alter

	significant interior volumes by raising floor levels or creating partitions
2.3	Significant interior finishes (i.e. original or early wall paper, paint, stencilling, marbling, wood graining, panelling plastering and ceramic tile surfaces) are retained and conserved
2.4	Discretely installing engineering work. Any earthquake strengthening using a transparent approach should be compatible with the heritage values of the building.
2.5	Seismic bracing should not be visible through prominent windows
2.6	Strengthening parapets, towers and chimneys and other elements. Replacement of original elements with replicas in plastered polystyrene or glass reinforced plaster or concrete is not ideal.
2.7	Reconstruction in lightweight materials is acceptable where elements such as towers and parapets have been lost over time.

4.3 New Zealand Historic Places Trust (now Heritage New Zealand) Heritage Sustainable Management of Historic Heritage Guidance Sheet 12 Alterations and Additions to Historic Buildings

While the assessment criteria in 4.2 above has been based on Guidance Sheet 12, these additional criteria, not mentioned, are also relevant.

•	Historic patterns of access and movement (i.e. entrances, hallways, stairways and passageways) are retained.
•	Retain the original form of the roof, significant roofing materials, chimneys, gutter and downpipes.
•	Engineering work is discreetly installed. For example, seismic bracing should not be visible through prominent windows
•	Alterations to historic walls match the original with regard to colour, texture, composition, dimensions and detailing
•	New cladding should match the original
•	Secondary elements of the exterior (such as windows and doors) should be repaired rather than replaced.
•	Significant doors, original or early hardware (doorknobs, locks etc.), and door surrounds (fanlights, pilasters, sidelights etc.) should be retained and repaired appropriately.
•	The installation of new openings (such as windows and doors) to principal facades and elevations should be generally avoided. Any new window or door opening should be sympathetically designed but clearly distinguishable as a new alteration.
•	principal facades and elevations should be generally avoided. Any new window or door opening should

4.4 Other criteria

There are a number of national and international criteria and recommendations for strengthening heritage buildings while retaining heritage values. These can be summarised as follows:

•	An appropriate strength level
•	Reversibility
•	Retention of heritage values and significant fabric
•	An understanding for and respect for the character and integrity of the building
•	Enhancing the existing structure rather than replacing it
•	Visual transparency
•	Using the current and best technology

5.0 Assessment of Heritage Effects

5.1 ICOMOS NZ Charter, 2010

Criterion	Assessment
Respect for surviving evidence and knowledge	The bell tower will be removed which will negatively affect heritage values by reducing its landmark status and authenticity of design, style and fabric. Within a five-year period it is intended to reconstruct a lightweight replica of the tower as part of the strengthening design regaining landmark status and authenticity of design and style, but not of fabric.
Minimum Intervention	Intervention is considered by engineers to be the minimum necessary to reduce the risk to a level consistent with the NBS.
Use	The proposal will allow the church to be occupied again, retaining most areas of significance but with negative impacts on physical architectural values and authenticity.
Risk mitigation	The proposal is designed to mitigate risk from earthquakes by meeting above minimum NBS standards.
Fixtures, fitting and contents	The only internal features likely to be affected by the proposal are the nave timber panelling and timber flooring. The whole of the panelling and areas of flooring will be temporarily removed prior to cutting chases for the post tensioning bars and will be reinstated after completion of this work. The removal and reinstatement will be carried out in accordance with a Temporary Protection Plan. The plaster finish will be reinstated to match the existing colour, texture and material. Other items have been moved and off site when asbestos was removed from the church.
Conservation Processes and Practice	The proposal is consistent with the conservation plan written by the author in 2010 with respect to the following policies: General policies ii, iii, iv Intervention policies i, ii, iii, v, vi, vii, viii, x, xiii
Preservation	Repair, apart from making good interventions for strengthening, is not part of the project.
Reconstruction	Reconstruction of the bell tower is anticipated within five years of the completion of this project, depending on fundraising.
Adaptation	No adaptation is proposed.

5.2 HNZ Earthquake Strengthening Improving the Structure performance of Heritage Buildings - assessment criteria 1 (Guidelines 1)

Criterion	Assessment
Taking a precautionary approach in order to safeguard the options for present and future generations.	The proposal is the first of a two stage strengthening process so that it can be opened and used while funding can be raised for stage two strengthening. The removal of the bell tower and restricting access away from the fall zone of the tower is precautionary.
Ensuring interventions are informed by sufficient research, documentation and recording, where culturally appropriate	It is presumed engineers have carried out appropriate levels of research and documentation to determine the necessity of the proposed interventions.
All changes should be fully documented in drawings and photographs	It is presumed that all interventions will be documented to gain building consents and building contracts. A TPP will be written and implemented prior during the project, which will include requirements for documentation.
The degree that the intervention involves the least possible loss of heritage significance and the least loss of material of heritage value, including any irreversible or cumulative effects	The church will lose some heritage significance with the loss of the bell tower, which will be irreversible and will reduce authenticity. The tower has been assessed as having exceptional heritage significance in the conservation plan because it is a landmark in the area and is consistent with and contributes to the design style of the church. This loss will be somewhat reversed when the tower is rebuilt, albeit in modern, lightweight materials.
Whether the values of the place are clearly understood before decisions are taken that may result in change	Values of the building have been defined in the conservation plan prepared by the author and these are listed above in 2.5 and 2.6.
Decision making, where change is being contemplated, should take into account all relevant values, cultural knowledge and disciplines	The church has been consulted and has approved the proposal.
The extent to which interventions respect the contents and surroundings associated with the place	The bell, windows, louvres, doors, metal gable cross, and all associated hardware and fittings will be carefully removed and stored for reinstatement when the elements they are associated with are reconstructed. Moveable heritage fabric such as statues, altar, pews, organ, stations of the cross, fonts etc. have already been removed and stored for the asbestos ceiling removal. These will continue to be stored and protected until they can safely be reinstated.

Respect values; Diversity and community resources; Maori heritage	A major principle behind the staged strengthening proposal is the resources of the local Catholic community, which are insufficient to allow for the full strengthening in the short term.
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5.3 Guidelines on strengthening heritage buildings – assessment criteria 2 (Guidelines 2)

Criterion	Assessment
Do not remove, obscure or alter significant heritage fabric and features.	The bell tower and west gable will be removed as the first stage of strengthening. These elements are of high heritage significance but will be rebuilt in lightweight materials within five years. Temporary cladding will be fixed to the exposed eastern gable until the tower is rebuilt. The post stressed bars will involve drilling through the horizontal moulding in the upper part of the external wall and fixing into the existing foundations, while the internal nave wall will be chased to house each bar, and the timber panelling and sections of flooring will be temporarily removed to allow for this work. Cross bracing will be fixed to the upper surfaces of the ceiling structure.
Retain ceiling heights, surface and decoration.	Ceiling heights will be unchanged but the external wall moulding and internal nave wall surfaces will be affected as described above.
Significant interior finishes (i.e. original or early wall paper, paint, stencilling, marbling, wood graining, panelling plastering and ceramic tile surfaces) are retained and conserved	As above.
Discretely installing engineering work. Any earthquake strengthening using a transparent approach should be compatible with the heritage values of the building	Removal of the bell tower will not be discrete however the tie bars on the exterior will be as discrete as possible by being close to the corners of each pilaster and of a minimum diameter. Neither the internal bars nor the cross bracing will be visible from the interior of the nave.
Seismic bracing should not be visible through prominent windows	No strengthening will be inserted across openings.
Strengthening parapets, towers and chimneys and other elements. Replacement of original elements with replicas in plastered	It is intended that the bell tower will be replaced in lightweight materials matching the original within five years. The material has not yet been determined, however I would not support the use of polystyrene nor fibreglass.

polystyrene or glass reinforced plaster or concrete is not ideal	Neither of these materials has sufficient longevity. This is to reduce weight in the most vulnerable location and to minimise the need and cost of additional strengthening within the tower.
Reconstruction in lightweight materials is acceptable where elements such as towers and parapets have been lost over time	The bell tower will be demolished as part of the strengthening proposal. However, within five years it will be reinstated designed to match the existing but in lightweight materials to limit weight at high levels.

5.4 Sustainable Management of Historic Heritage Guidance Sheet 12 Alterations and Additions to Historic Buildings (Sheet 12)

Criterion	Assessment
Historic patterns of access and movement (i.e. entrances, hallways, stairways and passageways) are retained.	The entrance into the church will be retained but access will be restricted to areas away from the tower as it may collapse in a moderate earthquake. The main entrance will still be available for emergency egress.
Retain the original form of the roof, significant roofing materials, chimneys, gutter and downpipes.	The roof form will be changed for a maximum period of five years with the demolition of the bell tower. The remainder of the roof, materials, gutters and downpipes will be maintained. A horizontal band of slates will need to be temporarily removed to fit the post tensioned bars, but the slates will be reinstated once these have been installed.
Engineering work is discreetly installed. For example, seismic bracing should not be visible through prominent windows.	The engineering design requires the removal of the bell tower, which is a visible intervention. Other strengthening work is described above.
Alterations to historic walls match the original with regard to colour, texture, composition, dimensions and detailing.	The intervention necessary to install the tie bars into the interior nave walls will be repaired to match the existing in all respects.
New cladding should match the original.	It is intended that there will be temporary waterproofing where the bell tower is removed. The fabric has not been determined but, because of its level, it will not be seen from the ground.
Secondary elements of the exterior (such as windows and doors) should be repaired rather than replaced.	No work is proposed that affects ground floor doors or windows, however, louvres, doors and windows in the bell tower will be removed prior to demolition and will be reused in the reconstruction.
Significant doors, original or early hardware (doorknobs, locks etc.), and door surrounds (fanlights, pilasters,	No work is proposed that affects ground floor doors or windows, however, louvres, doors and windows in the bell tower will be removed prior to demolition and

sidelights etc.) should be retained and repaired appropriately.	will be reused in the reconstruction. This will include all original hardware and furniture where salvageable.
The installation of new openings (such as windows and doors) to principal facades and elevations should be generally avoided. Any new window or door opening should be sympathetically designed but clearly distinguishable as a new alteration.	No new openings are proposed.

5.5 Other criteria

An appropriate strength level	The reopened parts of the building will be strengthened to at least 34% NBS
Reversibility	The removal (demolition) of the bell tower will not be reversible. The replacement tower will be a replica in lightweight materials. The installation of tie bars and cross bracing is reversible but with some repair work needed.
Retention of heritage values and significant fabric	The bell tower will be permanently removed and this will have a negative impact on the heritage values and authenticity of the church. Its reinstatement in a lightweight form at a later stage will regain authenticity of design, style and external colour and finish. It is possible that the bell, doors, windows and louvres will be reinstated within the new lightweight structure but this cannot be guaranteed at this stage. Other heritage values and fabric will be retained.
An understanding for and respect for the character and integrity of the building	The character and integrity of the building has been researched and described in the conservation plan prepared in 2010. The main areas of heritage value are included in section 2.0.
Enhancing the existing structure rather than replacing it	The bell tower structure and fabric will be removed, but all other structure will be retained and its strength enhanced by post tensioned tie rods and cross bracing.
Visual transparency	The removal of the bell tower will be transparent.
Using the current and best technology	It is understood that the engineering design uses current and best technology.

5.6 Summary of effects on heritage values

St Mary's Hokitika is a regionally important built heritage asset. The impact of the demolition of the tower and west gable is direct, permanent and irreversible. It affects visual and physical qualities of the building as well as architectural, technological, representativeness, integrity, contextual, and identity values to a major negative extent. Given the regional significance graded as medium value, of the church and the extent of effects, the overall impact can be summarised as moderate/large and adverse².

The mitigation proposed of rebuilding the west gable with louvres immediately and the tower within five years both with lightweight materials will mitigate the effects to a certain degree. The degree will depend on how close the replica will match the original in dimension, colour, texture, solidity, durability and the ability to re-use original element such as the bell, windows, louvres and doors. If this can successfully be achieved the significance of the impact can be reduced such that only the authenticity of the physical fabric is lost. In this case the extent of change will be reduced to negligible and the overall impact will be neutral/slight.

If some or all of the original elements from the bell tower (louvres, doors, windows or bell) cannot be re-used in the lightweight replacement tower, the extent of change would minor adverse and the overall impact would be slight.

² Based on the table in ICOMOS, *Guidance on Heritage Impact Assessment for World Heritage Properties*, Draft May 2010, page 9

6.0 Conclusions

The proposal is the first stage to strengthen the building and raise its earthquake resistance with respect to the National Building Standard and to enable use of at least two thirds of the building. It is understood that the completion of the strengthening involving strengthening the entry and reconstruction of the bell tower in lightweight materials will be undertaken within five years.

The proposal removes the bell tower, a heritage element of exceptional significance, and the western gable. It also includes installing post-tensioned tie bars at regular intervals on the exterior, which will be visible, and matching rods on the interior, which will not be visible. Cross bracing will also be installed within the ceiling and will not be visible. The entry and eastern part of the nave will be cordoned off to reduce the risk to users of any collapse in a future earthquake. A temporary roof will be constructed over the remaining section of the tower while the western gable will be rebuilt in this first stage.

As with many strengthening schemes there are positive effects in reducing risks to users but some negative effects on heritage fabric and heritage values. The removal of the bell tower and west gable is a moderate/large negative effect. However, as it is intended that they will be reconstructed in lightweight materials, the gable partially immediately and the tower within five years, the loss is temporary and limits the loss of authenticity and heritage values to the loss of original fabric.

Positive effects include the reduction of risk from earthquakes..

In general the proposal is consistent with most criteria in the ICOMOS NZ Charter, Heritage NZ Guidelines and other national and international recommendations in terms of mitigating risk, minimum intervention, understanding of heritage values through a conservation plan, appropriate investigation, research and documentation, maintaining the existing use albeit with a reduced internal area, transparency of action, and working to the community's resources.

However, the proposal is not consistent with these assessment criteria in terms of reducing heritage values and authenticity of materials and it is not reversible although a replica will be built within five years. If this is successfully rebuilt the overall impact of the proposal will be reduced to neutral/slight where original elements are re-used and slight where these are not re-used.

Some historic patterns of access and movement will be restricted until the next stage of strengthening.

7.0 Mitigation measures

To mitigate the negative impacts on heritage values and fabric of the first stage of strengthening, the following measures are suggested:

- 1 confirm the intention of strengthening within five years to enable fund raising, with the full strengthening to include a bell tower matching the profile, colour and texture of the existing but in appropriate lightweight materials. All existing bell tower windows, doors and louvres should be reinstated in the new lightweight replica. The bell should also be reinstated
- 2 ensure that data gained from the existing or any further 3-D scans is accurate enough to enable replication of the details on sections of the church to be removed. Where the completed 3-D scans have missed areas or there is insufficient data from it, additional scans or photography is undertaken to ensure thorough documentation of the structure to best practice standards
- 3 the maintenance plan will be implemented as soon as practicable
- 4 that a temporary protection plan (TPP) is written and implemented to ensure heritage values and fabric of the church are protected during both stages of strengthening. This should cover fabric to be removed including the bell, bell structure, tower windows, louvres and doors and nave panelling. The fabric already stored following the removal for asbestos should also be covered in the TPP.

Ian Bowman

6 May 2016

APPENDIX 1

ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value

Revised 2010

Preamble

New Zealand retains a unique assemblage of **places of cultural heritage value** relating to its indigenous and more recent peoples. These areas, **cultural landscapes** and features, buildings and **structures**, gardens, archaeological sites, traditional sites, monuments, and sacred **places** are treasures of distinctive value that have accrued meanings over time. New Zealand shares a general responsibility with the rest of humanity to safeguard its cultural heritage **places** for present and future generations. More specifically, the people of New Zealand have particular ways of perceiving, relating to, and conserving their cultural heritage **places**.

Following the spirit of the International Charter for the Conservation and Restoration of Monuments and Sites (the Venice Charter - 1964), this charter sets out principles to guide the **conservation of places of cultural heritage value** in New Zealand. It is a statement of professional principles for members of ICOMOS New Zealand.

This charter is also intended to guide all those involved in the various aspects of **conservation** work, including owners, guardians, managers, developers, planners, architects, engineers, craftspeople and those in the construction trades, heritage practitioners and advisors, and local and central government authorities. It offers guidance for communities, organisations, and individuals involved with the **conservation** and management of cultural heritage **places**.

This charter should be made an integral part of statutory or regulatory heritage management policies or plans, and should provide support for decision makers in statutory or regulatory processes.

Each article of this charter must be read in the light of all the others. Words in bold in the text are defined in the definitions section of this charter.

This revised charter was adopted by the New Zealand National Committee of the International Council on Monuments and Sites at its meeting on 4 September 2010.

Purpose of conservation

1. The purpose of conservation

The purpose of **conservation** is to care for **places of cultural heritage value**.

In general, such **places**:

- (i) have lasting values and can be appreciated in their own right;
- (ii) inform us about the past and the cultures of those who came before us;
- (iii) provide tangible evidence of the continuity between past, present, and future;
- (iv) underpin and reinforce community identity and relationships to ancestors and the land; and
- (v) provide a measure against which the achievements of the present can be compared.

It is the purpose of **conservation** to retain and reveal such values, and to support the ongoing meanings and functions of **places of cultural heritage value**, in the interests of present and future generations.

Conservation principles

2. Understanding cultural heritage value

Conservation of a **place** should be based on an understanding and appreciation of all aspects of its **cultural heritage value**, both **tangible** and **intangible**. All available forms of knowledge and evidence provide the means of understanding a **place** and its **cultural heritage value** and **cultural heritage significance**. **Cultural heritage value** should be understood through consultation with **connected people**, systematic documentary and oral research, physical investigation and **recording** of the **place**, and other relevant methods.

All relevant **cultural heritage values** should be recognised, respected, and, where appropriate, revealed, including values which differ, conflict, or compete.

The policy for managing all aspects of a **place**, including its **conservation** and its **use**, and the implementation of the policy, must be based on an understanding of its **cultural heritage value**.

3. Indigenous cultural heritage

The indigenous cultural heritage of **tangata whenua** relates to **whanau**, **hapu**, and **iwi** groups. It shapes identity and enhances well-being, and it has particular cultural meanings and values for the present, and associations with those who have gone before. Indigenous cultural heritage brings with it responsibilities of guardianship and the practical application and passing on of associated knowledge, traditional skills, and practices.

The Treaty of Waitangi is the founding document of our nation. Article 2 of the Treaty recognises and guarantees the protection of **tino rangatiratanga**, and so empowers **kaitiakitanga** as customary trusteeship to be exercised by **tangata whenua**. This customary trusteeship is exercised over their **taonga**, such as sacred and traditional **places**, built heritage, traditional practices, and other cultural heritage resources. This obligation extends beyond current legal ownership wherever such cultural heritage exists.

Particular **matauranga**, or knowledge of cultural heritage meaning, value, and practice, is associated with **places**. **Matauranga** is sustained and transmitted through oral, written, and physical forms determined by **tangata whenua**. The **conservation** of such **places** is therefore conditional on decisions made in associated **tangata whenua** communities, and should proceed only in this context. In particular, protocols of access, authority, ritual, and practice are determined at a local level and should be respected.

4. Planning for conservation

Conservation should be subject to prior documented assessment and planning.

All **conservation** work should be based on a **conservation plan** which identifies the **cultural heritage value** and **cultural heritage significance** of the **place**, the **conservation** policies, and the extent of the recommended works.

The **conservation plan** should give the highest priority to the **authenticity** and **integrity** of the **place**.

Other guiding documents such as, but not limited to, management plans, cyclical **maintenance** plans, specifications for **conservation** work, interpretation plans, risk mitigation plans, or emergency plans should be guided by a **conservation plan**.

5. Respect for surviving evidence and knowledge

Conservation maintains and reveals the **authenticity** and **integrity** of a **place**, and involves the least possible loss of **fabric** or evidence of **cultural heritage value**. Respect for all forms of knowledge and existing evidence, of both **tangible** and **intangible values**, is essential to the **authenticity** and **integrity** of the **place**.

Conservation recognises the evidence of time and the contributions of all periods. The **conservation** of a **place** should identify and respect all aspects of its **cultural heritage value** without unwarranted emphasis on any one value at the expense of others.

The removal or obscuring of any physical evidence of any period or activity should be minimised, and should be explicitly justified where it does occur. The **fabric** of a particular period or activity may be obscured or removed if assessment shows that its removal would not diminish the **cultural heritage value** of the **place**.

In **conservation**, evidence of the functions and intangible meanings of **places** of **cultural heritage value** should be respected.

6. Minimum intervention

Work undertaken at a **place** of **cultural heritage value** should involve the least degree of **intervention** consistent with **conservation** and the principles of this charter.

Intervention should be the minimum necessary to ensure the retention of **tangible** and **intangible values** and the continuation of **uses** integral to those values. The removal of **fabric** or the alteration of features and spaces that have **cultural heritage value** should be avoided.

7. Physical investigation

Physical investigation of a **place** provides primary evidence that cannot be gained from any other source. Physical investigation should be carried out according to currently accepted professional standards, and should be documented through systematic **recording**.

Invasive investigation of **fabric** of any period should be carried out only where knowledge may be significantly extended, or where it is necessary to establish the existence of **fabric** of **cultural heritage value**, or where it is necessary for **conservation** work, or where such **fabric** is about to be damaged or destroyed or made inaccessible. The extent of invasive investigation should minimise the disturbance of significant **fabric**.

8. Use

The **conservation** of a **place** of **cultural heritage value** is usually facilitated by the **place** serving a useful purpose.

Where the **use** of a **place** is integral to its **cultural heritage value**, that **use** should be retained.

Where a change of **use** is proposed, the new **use** should be compatible with the **cultural heritage value** of the **place**, and should have little or no adverse effect on the **cultural heritage value**.

9. Setting

Where the **setting** of a **place** is integral to its **cultural heritage value**, that **setting** should be conserved with the **place** itself. If the **setting** no longer contributes to the **cultural heritage value** of the **place**, and if **reconstruction** of the **setting** can be justified, any **reconstruction** of the **setting** should be based on an understanding of all aspects of the **cultural heritage value** of the **place**.

10. Relocation

The on-going association of a **structure** or feature of **cultural heritage value** with its location, site, curtilage, and **setting** is essential to its **authenticity** and **integrity**. Therefore, a **structure** or feature of **cultural heritage value** should remain on its original site.

Relocation of a **structure** or feature of **cultural heritage value**, where its removal is required in order to clear its site for a different purpose or construction, or where its removal is required to enable its **use** on a different site, is not a desirable outcome and is not a **conservation** process.

In exceptional circumstances, a **structure** of **cultural heritage value** may be relocated if its current site is in imminent danger, and if all other means of retaining the **structure** in its current location have been exhausted. In this event, the new location should provide a **setting** compatible with the **cultural heritage value** of the **structure**.

11. Documentation and archiving

The **cultural heritage value** and **cultural heritage significance** of a **place**, and all aspects of its **conservation**, should be fully documented to ensure that this information is available to present and future generations.

Documentation includes information about all changes to the **place** and any decisions made during the **conservation** process.

Documentation should be carried out to archival standards to maximise the longevity of the record, and should be placed in an appropriate archival repository.

Documentation should be made available to **connected people** and other interested parties. Where reasons for confidentiality exist, such as security, privacy, or cultural appropriateness, some information may not always be publicly accessible.

12. Recording

Evidence provided by the **fabric** of a **place** should be identified and understood through systematic research, **recording**, and analysis.

Recording is an essential part of the physical investigation of a **place**. It informs and guides the **conservation** process and its planning. Systematic **recording** should occur prior to, during, and following any **intervention**. It should include the **recording** of new evidence revealed, and any **fabric** obscured or removed.

Recording of the changes to a **place** should continue throughout its life.

13. Fixtures, fittings, and contents

Fixtures, fittings, and **contents** that are integral to the **cultural heritage value** of a **place** should be retained and conserved with the **place**. Such fixtures, fittings, and **contents** may include carving, painting, weaving, stained glass, wallpaper, surface decoration, works of art, equipment and machinery, furniture, and personal belongings.

Conservation of any such material should involve specialist **conservation** expertise appropriate to the material. Where it is necessary to remove any such material, it should be recorded, retained, and protected, until such time as it can be reinstated.

Conservation processes and practice

14. Conservation plans

A **conservation plan**, based on the principles of this charter, should:

- (i) be based on a comprehensive understanding of the **cultural heritage value** of the **place** and assessment of its **cultural heritage significance**;
- (ii) include an assessment of the **fabric** of the **place**, and its condition;
- (iii) give the highest priority to the **authenticity** and **integrity** of the **place**;

- (iv) include the entirety of the **place**, including the **setting**;
- (v) be prepared by objective professionals in appropriate disciplines;
- (vi) consider the needs, abilities, and resources of **connected people**;
- (vii) not be influenced by prior expectations of change or development;
- (viii) specify **conservation** policies to guide decision making and to guide any work to be undertaken;
- (ix) make recommendations for the **conservation** of the **place**; and
- (x) be regularly revised and kept up to date.

15. Conservation projects

Conservation projects should include the following:

- (i) consultation with interested parties and **connected people**, continuing throughout the project;
- (ii) opportunities for interested parties and **connected people** to contribute to and participate in the project;
- (iii) research into documentary and oral history, using all relevant sources and repositories of knowledge;
- (iv) physical investigation of the **place** as appropriate;
- (v) use of all appropriate methods of **recording**, such as written, drawn, and photographic;
- (vi) the preparation of a **conservation plan** which meets the principles of this charter;
- (vii) guidance on appropriate **use** of the **place**;
- (viii) the implementation of any planned **conservation** work;
- (ix) the **documentation** of the **conservation** work as it proceeds; and
- (x) where appropriate, the deposit of all records in an archival repository.

A **conservation** project must not be commenced until any required statutory authorisation has been granted.

16. Professional, trade, and craft skills

All aspects of **conservation** work should be planned, directed, supervised, and undertaken by people with appropriate **conservation** training and experience directly relevant to the project.

All **conservation** disciplines, arts, crafts, trades, and traditional skills and practices that are relevant to the project should be applied and promoted.

17. Degrees of intervention for conservation purposes

Following research, **recording**, assessment, and planning, **intervention** for **conservation** purposes may include, in increasing degrees of **intervention**:

- (i) **preservation**, through **stabilisation**, **maintenance**, or **repair**;
- (ii) **restoration**, through **reassembly**, **reinstatement**, or removal;
- (iii) **reconstruction**; and
- (iv) **adaptation**.

In many **conservation** projects a range of processes may be utilised. Where appropriate, **conservation** processes may be applied to individual parts or components of a **place** of **cultural heritage value**.

The extent of any **intervention** for **conservation** purposes should be guided by the **cultural heritage value** of a **place** and the policies for its management as identified in a **conservation plan**. Any **intervention** which would reduce or compromise **cultural heritage value** is undesirable and should not occur.

Preference should be given to the least degree of **intervention**, consistent with this charter.

Re-creation, meaning the conjectural **reconstruction** of a **structure** or **place**; replication, meaning to make a copy of an existing or former **structure** or **place**; or the construction of generalised representations of typical features or **structures**, are not **conservation** processes and are outside the scope of this charter.

18. Preservation

Preservation of a **place** involves as little **intervention** as possible, to ensure its long-term survival and the continuation of its **cultural heritage value**.

Preservation processes should not obscure or remove the patina of age, particularly where it contributes to the **authenticity** and **integrity** of the **place**, or where it contributes to the structural stability of materials.

i. Stabilisation

Processes of decay should be slowed by providing treatment or support.

ii. Maintenance

A **place** of **cultural heritage value** should be maintained regularly. **Maintenance** should be carried out according to a plan or work programme.

iii. Repair

Repair of a **place** of **cultural heritage value** should utilise matching or similar materials. Where it is necessary to employ new materials, they should be distinguishable by experts, and should be documented. Traditional methods and materials should be given preference in **conservation** work.

Repair of a technically higher standard than that achieved with the existing materials or construction practices may be justified only where the stability or life expectancy of the site or material is increased, where the new material is compatible with the old, and where the **cultural heritage value** is not diminished.

19. Restoration

The process of **restoration** typically involves **reassembly** and **reinstatement**, and may involve the removal of accretions that detract from the **cultural heritage value** of a **place**.

Restoration is based on respect for existing **fabric**, and on the identification and analysis of all available evidence, so that the **cultural heritage value** of a **place** is recovered or revealed. **Restoration** should be carried out only if the **cultural heritage value** of the **place** is recovered or revealed by the process.

Restoration does not involve conjecture.

i. Reassembly and reinstatement

Reassembly uses existing material and, through the process of **reinstatement**, returns it to its former position. **Reassembly** is more likely to involve work on part of a **place** rather than the whole **place**.

ii. Removal

Occasionally, existing **fabric** may need to be permanently removed from a **place**. This may be for reasons of advanced decay, or loss of structural **integrity**, or because particular **fabric** has been identified in a **conservation plan** as detracting from the **cultural heritage value** of the **place**.

The **fabric** removed should be systematically **recorded** before and during its removal. In some cases it may be appropriate to store, on a long-term basis, material of evidential value that has been removed.

20. Reconstruction

Reconstruction is distinguished from **restoration** by the introduction of new material to replace material that has been lost.

Reconstruction is appropriate if it is essential to the function, **integrity**, **intangible value**, or understanding of a **place**, if sufficient physical and documentary evidence exists to minimise conjecture, and if surviving **cultural heritage value** is preserved.

Reconstructed elements should not usually constitute the majority of a **place** or **structure**.

21. Adaptation

The **conservation** of a **place** of **cultural heritage value** is usually facilitated by the **place** serving a useful purpose. Proposals for **adaptation** of a **place** may arise from maintaining its continuing **use**, or from a proposed change of **use**.

Alterations and additions may be acceptable where they are necessary for a **compatible use** of the **place**. Any change should be the minimum necessary, should be substantially reversible, and should have little or no adverse effect on the **cultural heritage value** of the **place**.

Any alterations or additions should be compatible with the original form and **fabric** of the **place**, and should avoid inappropriate or incompatible contrasts of form, scale, mass, colour, and material. **Adaptation** should not dominate or substantially obscure the original form and **fabric**, and should not adversely affect the **setting** of a **place** of **cultural heritage value**. New work should complement the original form and **fabric**.

22. Non-intervention

In some circumstances, assessment of the **cultural heritage value** of a **place** may show that it is not desirable to undertake any **conservation intervention** at that time. This approach may be appropriate where undisturbed constancy of **intangible values**, such as the spiritual associations of a sacred **place**, may be more important than its physical attributes.

23. Interpretation

Interpretation actively enhances public understanding of all aspects of **places** of **cultural heritage value** and their **conservation**. Relevant cultural protocols are integral to that understanding, and should be identified and observed.

Where appropriate, interpretation should assist the understanding of **tangible** and **intangible values** of a **place** which may not be readily perceived, such as the sequence of construction and change, and the meanings and associations of the **place** for **connected people**.

Any interpretation should respect the **cultural heritage value** of a **place**. Interpretation methods should be appropriate to the **place**. Physical **interventions** for interpretation purposes should not detract from the experience of the **place**, and should not have an adverse effect on its **tangible** or **intangible values**.

24. Risk mitigation

Places of **cultural heritage value** may be vulnerable to natural disasters such as flood, storm, or earthquake; or to humanly induced threats and risks such as those arising from earthworks, subdivision and development, buildings works, or wilful

damage or neglect. In order to safeguard **cultural heritage value**, planning for risk mitigation and emergency management is necessary.

Potential risks to any **place of cultural heritage value** should be assessed. Where appropriate, a risk mitigation plan, an emergency plan, and/or a protection plan should be prepared, and implemented as far as possible, with reference to a conservation plan.

Definitions

For the purposes of this charter:

Adaptation means the process(es) of modifying a **place** for a **compatible use** while retaining its **cultural heritage value**.
Adaptation processes include alteration and addition.

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 based on identification and analysis of relevant evidence and knowledge, and respect for its cultural context.

Compatible use means a **use** which is consistent with the **cultural heritage value** of a **place**, and which has little or no adverse impact on its **authenticity** and **integrity**.

Connected people means any groups, organisations, or individuals having a sense of association with or responsibility for a **place of cultural heritage value**.

Conservation means all the processes of understanding and caring for a **place** so as to safeguard its **cultural heritage value**.
Conservation is based on respect for the existing **fabric**, associations, meanings, and **use** of the **place**. It requires a cautious approach of doing as much work as necessary but as little as possible, and retaining **authenticity** and **integrity**, to ensure that the **place** and its values are passed on to future generations.

Conservation plan means an objective report which documents the history, **fabric**, and **cultural heritage value** of a **place**, assesses its **cultural heritage significance**, describes the condition of the **place**, outlines **conservation** policies for managing the **place**, and makes recommendations for the **conservation** of the **place**.

Contents means moveable objects, collections, chattels, documents, works of art, and ephemera that are not fixed or fitted to a **place**, and which have been assessed as being integral to its **cultural heritage value**.

Cultural heritage significance means the **cultural heritage value** of a **place** relative to other similar or comparable **places**, recognising the particular cultural context of the **place**.

Cultural heritage value/s means possessing aesthetic, archaeological, architectural, commemorative, functional, historical, landscape, monumental, scientific, social, spiritual, symbolic, technological, traditional, or other **tangible** or **intangible values**, associated with human activity.

Cultural landscapes means an area possessing **cultural heritage value** arising from the relationships between people and the environment. **Cultural landscapes** may have been designed, such as gardens, or may have evolved from human settlement and land use over time, resulting in a diversity of distinctive landscapes in different areas. Associative **cultural landscapes**, such as sacred mountains, may lack **tangible** cultural elements but may have strong **intangible** cultural or spiritual associations.

Documentation means collecting, **recording**, keeping, and managing information about a **place** and its **cultural heritage value**, including information about its history, **fabric**, and meaning; information about decisions taken; and information about physical changes and **interventions** made to the **place**.

Fabric means all the physical material of a **place**, including subsurface material, **structures**, and interior and exterior surfaces including the patina of age; and including fixtures and fittings, and gardens and plantings.

Hapu means a section of a large tribe of the **tangata whenua**.

Intangible value means the abstract **cultural heritage value** of the meanings or associations of a **place**, including commemorative, historical, social, spiritual, symbolic, or traditional values.

Integrity means the wholeness or intactness of a **place**, including its meaning and sense of **place**, and all the **tangible** and **intangible** attributes and elements necessary to express its **cultural heritage value**.

Intervention means any activity that causes disturbance of or alteration to a **place** or its **fabric**. **Intervention** includes archaeological excavation, invasive investigation of built **structures**, and any **intervention** for **conservation** purposes.

Iwi means a tribe of the **tangata whenua**.

Kaitiakitanga means the duty of customary trusteeship, stewardship, guardianship, and protection of land, resources, or **taonga**.

Maintenance means regular and on-going protective care of a **place** to prevent deterioration and to retain its **cultural heritage value**.

Matauranga means traditional or cultural knowledge of the **tangata whenua**.

Non-intervention means to choose not to undertake any activity that causes disturbance of or alteration to a **place** or its **fabric**.

Place means any land having **cultural heritage value** in New Zealand, including areas; **cultural landscapes**; buildings, **structures**, and monuments; groups of buildings, **structures**, or monuments; gardens and plantings; archaeological sites and features; traditional sites; sacred **places**; townscapes and streetscapes; and settlements. **Place** may also include land covered by water, and any body of water. **Place** includes the **setting** of any such **place**.

Preservation means to maintain a **place** with as little change as possible.

Reassembly means to put existing but disarticulated parts of a **structure** back together.

Reconstruction means to build again as closely as possible to a documented earlier form, using new materials.

Recording means the process of capturing information and creating an archival record of the **fabric** and **setting** of a **place**, including its configuration, condition, **use**, and change over time.

Reinstatement means to put material components of a **place**, including the products of **reassembly**, back in position.

Repair means to make good decayed or damaged **fabric** using identical, closely similar, or otherwise appropriate material.

Restoration means to return a **place** to a known earlier form, by **reassembly** and **reinstatement**, and/or by removal of elements that detract from its **cultural heritage value**.

Setting means the area around and/or adjacent to a **place** of **cultural heritage value** that is integral to its function, meaning, and relationships. **Setting** includes the **structures**, outbuildings, features, gardens, curtilage, airspace, and accessways forming the spatial context of the **place** or used in association with the **place**. **Setting** also includes **cultural landscapes**, townscapes, and streetscapes; perspectives, views, and viewshafts to and from a **place**; and relationships with other **places** which contribute to the **cultural heritage value** of the **place**. **Setting** may extend beyond the area defined by legal title, and may include a buffer zone necessary for the long-term protection of the **cultural heritage value** of the **place**.

Stabilisation means the arrest or slowing of the processes of decay.

Structure means any building, standing remains, equipment, device, or other facility made by people and which is fixed to the land.

Tangata whenua means generally the original indigenous inhabitants of the land; and means specifically the people exercising **kaitiakitanga** over particular land, resources, or **taonga**.

Tangible value means the physically observable **cultural heritage value** of a **place**, including archaeological, architectural, landscape, monumental, scientific, or technological values.

Taonga means anything highly prized for its cultural, economic, historical, spiritual, or traditional value, including land and natural and cultural resources.

Tino rangatiratanga means the exercise of full chieftainship, authority, and responsibility.

Use means the functions of a **place**, and the activities and practices that may occur at the **place**. The functions, activities, and practices may in themselves be of **cultural heritage value**.

Whanau means an extended family which is part of a **hapu** or **iwi**.

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This revised text replaces the 1993 and 1995 versions and should be referenced as the *ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value* (ICOMOS New Zealand Charter 2010).

This revision incorporates changes in conservation philosophy and best practice since 1993 and is the only version of the ICOMOS New Zealand Charter approved by ICOMOS New Zealand (Inc) for use.

Copies of this charter may be obtained from

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Appendix 3: Temporary Protection Plan



Temporary Protection Plan
St Mary's Church, Hokitika
November, 2015

IAN BOWMAN
Architect and conservator

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1.

Purpose

1.1 Brief and scope of works

Herman Wismeyer commissioned this Temporary Protection Plan (TPP) in a meeting of 29 October, 2015.

1.2 The site Location, legal description and ownership details

The location of the church is Corner, Sewell Street and Stafford Street, HOKITIKA

The legal description of the land on which the church stands is Lot 1 DP 3795 (CT WS8C/670), Westland Land District.

The ownership of the church is vested in the Roman Catholic Bishop of Christchurch. The Hokitika Parish is part of the charitable entity, the Roman Catholic Diocese of Christchurch Trust, the Bishop being the sole trustee of the Trust. The Trust registration number is CC30321.

1.3 Heritage status

The building was registered with Heritage New Zealand, category I, record number 1705, on 2 April, 2004.

The church is listed in the Westland District Council Operative District Plan on 1 June 2002. Ref. 22 in Appendix A.

1.4 Heritage significance

The author prepared a conservation plan for the church in June 2010. The following is the statement of significance from the plan.

The building is a physical and historical landmark in Hokitika as a substantial Basilica styled Church, maintaining a stylistic consistency of design for major Catholic Churches in New Zealand. It is the only neo-Classical design prepared by highly esteemed Christchurch architects, Luttrell Brothers, and the only such styled Church on the West Coast. The former churches and current Church on the site reflects the high numbers of Irish immigrants who brought their faith to New Zealand.

The relative heritage values of each space and significance of elements is identified in the heritage inventory included in appendix 2.

1.5 Methodology

This report has been prepared in accordance with the following two documents:

Christchurch City Council, *Heritage Information, Guideline 14: Temporary Protection of Heritage Items*, Christchurch City Council, n.d;

Frens, Dale H., *Temporary Protection Number 2, Specifying Temporary Protection of Historic Interiors during Construction and Repair*, US National Park Service Cultural Resources, 1993.

It is assumed that all demolition works will be internal only. Should this not be the case, then the author shall be notified prior to works beginning, for further instructions. It is understood that all moveable items of heritage fabric have been removed. This includes pews, altar, statues, lecterns etc.

1.6 Project team

Project manager:

Herman Wismeyer,
Principal Project Manager,
Opus International Consultants Ltd.,
P.O. Box 1482,
Christchurch
Phone 0274 917906

Architect/conservator:

Ian Bowman,
Architect and conservator,
P.O. Box 19252,
Wellington
Phone 0274 457 813

1.7 Constraints and limitations

This TPP identifies monitoring methods to be used during the course of the demolition works. Should there be any changes required to the described processes, works should cease and the heritage consultant and project manager approached for further instruction.

1.8 Archaeology

Any archaeological work should be carried out in accordance with an archaeological authority issued by Heritage New Zealand (HNZ).

2 Temporary protection plan

The following table outlines measures to reduce the potential for damage to heritage and archaeological fabric during demolition and deconstruction works. It also identifies the mitigating measures to be used during the course of the works.

Activity	Potential risk	Mitigating measures
Documentation deconstruction, recording,	Loss or damage to heritage fabric.	<p>Develop a full photographic record of the affected areas. Photographs to include a survey rod to indicate scale where appropriate.</p> <ul style="list-style-type: none"> • Prior to commencement of the works areas of weakness and special areas are to be identified and recorded with copies of documentation sent to the project manager and architect/conservator. Appropriate protection measures are to be put in place to mitigate identified areas of weakness with approval by the project manager to be gained prior to installation. • Record (photograph and/or sketch) all areas implicated by the works. Monitor and develop a photographic record of the works. Digital photography is acceptable. Each photograph shall be of high definition (eg 2 MB) able to be magnified with little loss of detail. The location of each photograph shall be readily identified. The proposal for identification of photographs shall be approved by the architect/conservator. An acceptable method is each photograph being identified with a unique number on a plan showing the location and angle from which the photograph was taken. • The whole of the tower, inside and out and the western gable to be demolished, inside and out shall be recorded if all details are not obvious from the 3-D scans. The recording shall be in sufficient detail to reconstruct exactly the tower and gable matching the existing in all respects including form, dimension, details and any surface texture and ornamentation.
Documentation	Evidence of removed	<ul style="list-style-type: none"> • The tower bells and associated

Activity	Potential risk	Mitigating measures
and storage	heritage fabric is lost.	<p>structure, doors, windows, louvres, their frames, furniture and hardware shall be carefully removed and stored. The metal cross and louvre and frame on the western gable shall also be similarly carefully removed and stored.</p> <ul style="list-style-type: none"> • The fabric store shall be secure, weather proof, and with appropriate environmental conditions. Items shall be uniquely identified, logged when stored and when removed from the store for reinstatement or for conservation. There shall be one person only in charge of the store and log for the duration of the contract. • Where slates are to be removed from the roof, check that they are all of the same dimension, and, if so, these can be stored with other heritage fabric together without being numbered individually.
Communication	<p>Heritage fabric (known or unknown) may be at risk if intentions and subsequent actions are not discussed and actions confirmed by the contractor, client and architect/conservator.</p> <p>All site instructions are to come from a single source.</p>	<p>Initiate a heritage site briefing to the contractor.</p> <ul style="list-style-type: none"> • Establish communication procedures <ul style="list-style-type: none"> <input type="checkbox"/> for issues arising between site meetings. • The Opus project manager shall issue all site instructions. • Where the contractor has any queries regarding heritage fabric they are to immediately contact the architect/conservator for a direction on the matter. The architect/conservator will inform the project manager who will issue a site instruction. <p>All trades attending site are to be briefed on heritage aspects and protection pertaining to the site by the contractor's site manager.</p>
Nearby construction	<p>Vibration and impact during demolition may place heritage fabric at risk.</p> <ul style="list-style-type: none"> • Scaffolding erection and use can damage heritage fabric by overloading 	<p>Access.</p> <ul style="list-style-type: none"> • Scaffolding is to be freestanding with no fixings to the building. All scaffolding ends shall be covered with suitably moulded rubber or

Activity	Potential risk	Mitigating measures
	surfaces, hitting or scratching surfaces, or falling on heritage fabric	<p>plastic.</p> <ul style="list-style-type: none"> • Scaffolding shall not be stacked inside the building to avoid overloading the floor. • All windows are to be protected by plywood fitted into the jambs prior to the erection of scaffolding. Ply shall be securely wedged in place or otherwise fixed without any permanent fixings such as nails or screws that can damage fabric. • Loadings of scaffolding shall spread so that there is no chance of the point loads damaging the floor. An engineer's report of the design to show how this will be avoided shall be supplied prior to any work taking place. • Scaffolding shall be brought in through doors that have sills, heads, jambs, architraves, and skirtings fully protect. Scaffolding is not to be brought in through windows. • Provide kickboard at all levels to assist with the prevention of items falling.
Protection of fabric	Surfaces can be damaged by water ingress, impacts, debris, dust and grit during the works	<p>Protection</p> <ul style="list-style-type: none"> • All fabric at risk from impacts, dust, falling debris, equipment, spilled liquids, vibration or any other damage shall be adequately protected. This includes but is not limited to all items below the section of tower and west gable to be demolished as well as any preparation, cutting, drilling and installing required for seismic strengthening. • All retained windows and other openings are to be protected by plywood fitted into the jambs prior to any work in close proximity. Ply shall be securely wedged in place or otherwise fixed without any permanent fixings such as nails or screws that can damage fabric. • The area from where the tower is to be removed shall be protected from

Activity	Potential risk	Mitigating measures
		<p>the weather at all times. The form and type of protection shall be approved by the architect/conservator.</p> <ul style="list-style-type: none"> • Similarly, where the slates are to be removed, the area shall be protected from the weather at all times. The form and type of protection shall be approved by the architect/conservator. • Where fabric is required to be temporarily removed, fixings shall be removed with least damage. For example nails shall be hacksawed off and punched through, screws shall be unscrewed, bolts unbolted. Do not use lubrication on bolts etc. that may stain surfaces. • The methodology for removal of fabric shall be approved in writing prior by the architect/conservator to any removal taking place Any unavoidably damaged materials shall be replaced matching in all respects including material, profile, colour, texture, strength. • Only hand demolition measures are to be employed where there is a risk of damaging heritage fabric. • Do not install fasteners into historic fabric unless with prior approval in writing of the architect/conservator except where this has been detailed and specified by the engineer. • Any machinery that requires the use of water or other lubricant that may harm or stain heritage fabric, shall have a methodology for use, particularly means of containment, approved in writing by the architect/conservator prior to use. The agreed methodology shall be implemented unchanged for the duration of the contract. • The engineer shall confirm that any activities that involve vibration will not cause harm to fabric. If necessary vibration monitors will be located at points identified by the engineer in consultation with the

Activity	Potential risk	Mitigating measures
		<p>architect/conservator to ensure no damage</p> <ul style="list-style-type: none"> All works to be undertaken in accordance with the ICOMOS New Zealand Charter.
Hazardous materials and environment	Hazardous materials may be present on site	<p>Check for hazardous materials.</p> <ul style="list-style-type: none"> Where hazardous materials are found, their removal and clean-up shall be carried out in accordance with statutory requirements. All heritage fabric shall be cleaned carefully to avoid any damage to historic fabric. Develop an emergency plan for the site that includes for possible emergency situations and responses. Exit and entry point to site to include measures to prevent vehicle wheels tracking dirt and mud onto the public road.
Fire and protection systems	The use of open flame operations may be a source of fire.	<p>Ensure that permanent access to water supply for fire fighting is provided during the works and provision made for its ready use. □</p> <ul style="list-style-type: none"> In addition to access to water for fire fighting purposes the contractor is to provide sufficient onsite fire extinguishers of types relating to the risk. The contractor is to investigate potential for direct fire alarm to the local fire station during the works. No open flame operations are permitted. No on-site welding or flame cutting is permitted. All sections to be manufactured off site and bolted in place. Where there is the use of internal combustion engines, all combustible materials will be stored off site, equipment will not be serviced on site and all exhausts shall be discharged to the exterior.

Activity	Potential risk	Mitigating measures
		<ul style="list-style-type: none"> • All combustible material to be suitably and securely stored away from the building. • No portable heaters are to be used on site. • No naked flame, hot air guns or similar are to be used for paint removal. • This is a 'No Smoking' site.
Security	After hours construction sites are potential targets to damage and subsequent loss of heritage fabric	<p>Ensure the whole site is secure with fencing and or hoardings during the works.</p> <ul style="list-style-type: none"> • Provide locked security to all stored material to prevent theft. • The security of the contractors works and all storage areas are the contractor's responsibility. • Where deemed necessary night lighting, patrols and movement-triggered alarms are to be installed.
Monitoring	There is risk that work will proceed undocumented or without prior agreement resulting in damage and/or loss of heritage fabric	The architect/conservator is to be informed of any issues raised. The project manager will decide whether a site visit is warranted and will issue any consequent instructions.

Appendix 1

ICOMOS New Zealand Charter for the conservation of places of cultural heritage value

Preamble

New Zealand retains a unique assemblage of places of cultural heritage value relating to its indigenous and its more recent peoples. These areas, landscapes and features, buildings, structures and gardens, archaeological and traditional sites and sacred places and monuments are treasures of distinctive value. New Zealand shares a general responsibility with the rest of humanity to safeguard its cultural heritage for present and future generations. More specifically, New Zealand peoples have particular ways of perceiving, conserving and relating to their cultural heritage.

Following the spirit of the International Charter for the Conservation and Restoration of Monuments and Sites (the Venice Charter 1966), this Charter sets our principles to guide the conservation of places of cultural heritage value in New Zealand. It is intended as a frame of reference for all those who, as owners, territorial authorities, trades persons or professionals, are involved in the different aspects of such work. It aims to provide guidelines for community leaders, organisations and individuals concerned with conservation issues. It is a statement of professional practice for members of ICOMOS New Zealand.

Each section of the Charter should be read in the light of all the others. Definitions of terms used are provided in section 22.

Accordingly this Charter has been adopted by the New Zealand National Committee of the International Council on Monuments and Sites at its Annual General Meeting on 4 October 1992.

1. The purpose of conservation

The purpose of conservation is to care for places of cultural heritage value, their structures, materials and cultural meaning. In general, such places:

- (i) have lasting values and can be appreciated in their own right;
- (ii) teach us about the past and the culture of those who came before us;
- (iii) provide the context for community identity whereby people relate to the land and to those who have gone before;
- (iv) provide variety and contrast in the modern world and a measure against which we can compare the achievements of today; and
- (v) provide visible evidence of the continuity between past, present and future.

2. Indigenous cultural heritage

The indigenous heritage of Maori and Moriori relates to family, local and tribal groups and associations. It is inseparable from identity and well-being and has particular cultural meanings.

The Treaty of Waitangi is the historical basis for indigenous guardianship. It

recognises the indigenous people as exercising responsibility for their treasures, monuments and sacred places. This interest extends beyond current legal ownership wherever such heritage exists. Particular knowledge of heritage values is entrusted to chosen guardians. The conservation of places of indigenous cultural heritage value therefore is conditional on decisions made in the indigenous community and should proceed only in this context. Indigenous conservation precepts are fluid and take account of the continuity of life and the needs of the present as well as the responsibilities of guardianship and association with those who have gone before. In particular, protocols of access, authority and ritual are handled at a local level. General principles of ethics and social respect affirm that such protocols should be observed.

3. Conservation practice

Appropriate conservation professionals should be involved in all aspects of conservation work. Indigenous methodologies should be applied as appropriate and may vary from place to place. Conservation results should be in keeping with their cultural content. All necessary consents and permits should be obtained.

Conservation projects should include the following:

- (i) definition of the cultural heritage value of the place, which requires prior researching of any documentary and oral history, a detailed examination of the place and the recording of its physical condition;
- (ii) community consultation, continuing throughout a project as appropriate;
- (iii) preparation of a plan, which meets the conservation principles of this Charter;
- (iv) the implementation of any planned work; and
- (v) the documentation of any research, recording and conservation work, as it proceeds.

General principles

4. Conservation method

Conservation should:

- (i) make use of all relevant conservation values, knowledge, disciplines, arts and crafts;
- (ii) show the greatest respect for and involve the least possible loss of, material of cultural heritage value;
- (iii) involve the least degree of intervention consistent with long term care and the principles of this Charter;
- (iv) take into account the needs, abilities and resources of the particular communities; and
- (v) be fully documented and recorded.

5. Respect for existing evidence

The evidence of time and the contributions of all periods should be

respected in conservation. The material of a particular period may be obscured or removed if assessment shows that this would not diminish the cultural heritage value of the place. In these circumstances such material should be documented before it is obscured or removed.

6. Setting

The historical setting of a place should be conserved with the place itself. If the historical setting no longer exists, construction of a setting based on physical and documentary evidence should be the aim. The extent of the appropriate setting may be affected by constraints other than heritage value.

7. Risk mitigation

All places of cultural heritage value should be assessed as to their potential risk from any natural process or event. Where a significant risk is determined, appropriate action to minimise the risk should be undertaken. Where appropriate, a risk mitigation plan should be prepared.

8. Relocation

The site of an historic structure is usually an integral part of its cultural heritage value. Relocation, however, can be a legitimate part of the conservation process where assessment shows that:

- (i) the site is not of associated value (an exceptional circumstance); or
- (ii) relocation is the only means of saving the structure; or
- (iii) relocation provides continuity of cultural heritage value.

A new site should provide a setting compatible with cultural heritage value.

9. Invasive investigation

Invasive investigation of a place can provide knowledge that is not likely to be gained from any other source. Archaeological or structural investigation can be justified where such evidence is about to be lost, or where knowledge may be significantly extended, or where it is necessary to establish the existence of material of cultural heritage value, or where it is necessary for conservation work. The examination should be carried out according to accepted scientific standards. Such investigation should leave the maximum amount of material undisturbed for study by future generations.

10. Contents

Where the contents of a place contribute to its cultural heritage value, they should be regarded as an integral part of the place and be conserved with it.

11. Works of art and special fabric

Carving, painting, weaving, stained glass and other arts associated with a place should be considered integral with a place. Where it is necessary to carry out maintenance and repair of any such material, specialist conservation advice appropriate to the material should be sought.

12. Records

Records of the research and conservation of places of cultural heritage value should be placed in an appropriate archive. Some knowledge of place of

indigenous heritage value is not a matter of public record, but is entrusted to guardians within the indigenous community.

Conservation processes

13. Degrees of intervention

Conservation may involve, in increasing extent of intervention: non-intervention, maintenance, stabilisation, repair, restoration, reconstruction or adaptation. Where appropriate, conservation processes may be applied to parts or components of a structure or site. Recreation, meaning the conjectural reconstruction of a place, and replication, meaning to make a copy of an existing place, are outside the scope of this Charter.

14. Non-intervention

In some circumstances, assessment may show that any intervention is undesirable. In particular, undisturbed constancy of spiritual association may be more important than the physical aspects of some places of indigenous heritage value.

15. Maintenance

A place of cultural heritage value should be maintained regularly and according to a plan, except in circumstances where it may be appropriate for places to remain without intervention.

16. Stabilisation

Places of cultural heritage value should be protected from processes of decay, except where decay is appropriate to their value. Although deterioration cannot be totally prevented, it should be slowed by providing stabilisation or support.

17. Repair

Repair of material or of a site should be with original or similar materials. Repair of a technically higher standard than the original workmanship or materials may be justified where the life expectancy of the site or material is increased, the new material is compatible with the old and the cultural heritage value is not diminished. New material should be identifiable.

18. Restoration

Restoration should be based on respect for existing material and on the logical interpretation of all available evidence, so that the place is consistent with its earlier form and meaning. It should only be carried out if the cultural heritage value of the place is recovered or revealed by the process.

The restoration process typically involves reassembly and reinstatement and may involve the removal of accretions.

19. Reconstruction

Reconstruction is distinguished from restoration by the introduction of additional materials where loss has occurred. Reconstruction may be appropriate if it is essential to the function or understanding of a place, if sufficient physical and documentary evidence exists to minimise conjecture and if surviving heritage valued are preserved. Reconstruction should not

normally constitute the majority of a place. Generalised representations of typical features or structures should be avoided.

20. Adaptation

The conservation of a place of cultural heritage value is usually facilitated by it serving a socially, culturally or economically useful purpose. In some cases, alterations and additions may be acceptable where they are essential to continued use, or where they are culturally desirable, or where the conservation of the place cannot otherwise be achieved. Any change, however, should be the minimum necessary and should not detract from the cultural heritage value of the place. Any conditions and alterations should be compatible with original fabric but should be sufficiently distinct that they can be read as new work.

21. Interpretation

Interpretation of a place may be appropriate if enhancement of public understanding is required. Relevant protocol should be complied with. Any interpretation should not compromise the values, appearance, structure or materials of a place, or intrude upon the experience of the place.

22. Definitions

For the purposes of this Charter:

adaptation means modifying a place to suit it to a compatible use, involving the least possible loss of cultural heritage value

conservation means the processes of caring for a place so as to safeguard its cultural heritage value

cultural heritage value means possessing historical, archaeological, architectural, technological, aesthetic, scientific, spiritual, social, traditional or other special cultural significance, associated with human activity

maintenance means the protective care of a place

material means physical matter which is the product of human activity or has been modified by human activity

place means any land, including land covered by water and the airspace forming the spatial context to such land, including any landscape, traditional site or sacred place and anything fixed to the land including any archaeological site, garden, building or structure and any body of water, whether fresh or seawater, that forms part of the historical and cultural heritage of New Zealand

preservation means maintaining a place with as little change as possible

reassembly (anastylosis) means putting existing but dismembered parts back together

reconstruction means to build again in the original form using old or new material

reinstatement means putting components of earlier material back in position

repair means making good decayed or damaged material

restoration means returning a place as nearly as possible to a known earlier state by reassembly, reinstatement and/or the removal of extraneous additions

stabilisation means the arrest of the processes of decay

structure means any building, equipment, device or other facility made by people and which is fixed to the land.

13 January 1996

draft

Appendix 2

Schedule of significant elements and fabric

Fabric used to construct and line the building is listed with each space and is defined as original or early historic fabric (hf), reproduction or renewed fabric (rf), old but not original fabric (of), and non-historic fabric (nhf).

The assessments are made on the basis of the information available when writing this plan and where additional information becomes available, the assessment of spaces and fabric may have to be revised.

draft

Space

physical historic cultural authenticity

Exterior

Roof

E

E

E

E

Slates, hf

Painted timber fascia, hf

Painted asbestos sheet soffit, hf

Painted copper gutters, hf

Galvanised steel rainwater heads, hf?



North elevation

E

E

E

E

Painted plastered brickwork, tower, hf

Painted timber semi-circular headed windows with bottom hung casements at base, hf

Painted timber square headed windows, hf

Cast iron vents, hf



East elevation

E

E

E

H

Painted plastered brickwork, tower, columned and pilastered entry, hf

Painted timber square and semi-circular headed windows, hf

Painted timber entry doors, hf

Concrete steps, hf



Space

physical historic cultural authenticity

South elevation

E E E E

Painted plastered brickwork, tower, hf

Painted timber semi-circular headed windows with bottom hung casements at base, hf

Painted timber square headed windows, hf

Cast iron vents, hf

Concrete path, hf

Granite tablet, hf



West elevation

E E E E

Painted plastered brickwork, hf

Painted timber vent, hf

Painted cast iron vents, hf

Concrete path, hf



Interior

Wind lobby

S L L S

Ceiling

Painted plywood?, of?

Painted plastered cornice above entry door, hf

Wall

Clear coated timber panelling, of

Clear coated timber skirtings and architraves, of

Floor

Terrazzo, hf

Windows

-

Doors

1 x Clear coated timber double with leaded panels and toplights, of

2 x Clear coated timber panelled and glazed with toplights, of



Space

physical historic culturalauthenticity

1 x Painted timber panelled double entry, hf?

Fixtures and fittings

-

Children's Sunday liturgy locked

Foyer

E

E

E

E

Ceiling

Painted asbestos sheet? with moulded battens, hf

Painted plastered cornice, hf

Wall

Clear coated timber paneling, skirtings and architraves, hf

Clear coated timber over door to entry to nave, hf

Painted plaster above paneling, hf

Floor

Terrazzo with decorative stone inlay to centre, hf

Windows

-

Doors

2 x Clear coated timber panelled to north and south, hf

Fixtures and fittings

Statue, hf

Carved timber station of the cross, hf

Nave

E

E

E

E

Ceiling

Painted fibrous plaster with battens and ventilation panels, hf

Painted plaster cornice, hf

Painted plaster domed ceiling to sanctuary with plaster mouldings, hf

Wall

Painted plaster, hf

Painted plaster string course in the style of art deco, hf

Clear coated timber paneling, skirting, architraves and over doors, hf



Space

physical historic culturalauthenticity

Painted plaster ionic pilasters to chancel/sanctuary with plaster niches, and pediments, hf

Painted plaster Corinthian pilasters to sanctuary, hf

Marble bases to niches for statue, hf

Floor

Carpet over timber strip, hf

Windows

12 x painted timber framed semi-circular headed windows with bottom hung casement at bottom, hf

2 x clear coated timber semi-circular headed leaded and coloured glass windows to sanctuary, hf

Doors

2 x clear coated timber paneled double to east wall, hf

1 x painted timber double ledged and panelled, to north, hf

Fittings and fixtures

Clear coated timber pews, hf

Timber stations of the cross, hf

Wall mounted heaters, nhf

Marble alter, hf

Plaster statues, hf

Clear coated timber lectern, hf

Pulpit, hf

Clear coated timber cross with painted plaster statue, hf

Clear coated timber railings either side of sanctuary, hf

Marble holy water fonts either side of entry, hf

Brass plaques above fonts, hf

Sacristy (north west)

H

E

E

S

Ceiling

Painted hardboard, hf

Wall

Painted asbestos sheet? With timber battens to south wall, hf?



Space

physical historic culturalauthenticity

Pained timber bottom hung casement, hf

Doors

1 x clear coated timber paneled from sanctuary,
hf

1 x painted timber panelled to west, hf

1 x pained timber double ledged and panelled to
exterior south, hf

Fixtures and fittings

-

Confessional, north east corner

S

L

L

L

Ceiling

Painted softboard tiles, nhf

Wall

Painted softboard tiles, nhf

Floor

Carpet over timber strip, hf

Windows

Sliding obscure, nhf

Doors

Clear coated timber double paneled and glazed,
hf

Fixtures and fittings

Painted timber and softboard tiled lined partition,
nhf

Stair, north east corner

S

L

L

L

Ceiling

Painted plasterboard with timber battens, hf

Wall

Painted plaster, hf

Painted timber paneling with architraves and
skirtings to stair, hf

Painted timber architraves, hf

Floor

Carpet over timber strip, hf

Windows

Painted timber fixed with coloured glass, hf



Space

physical historic culturalauthenticity

Doors

Clear coated timber paneled, hf

Fixtures and fittings

Painted timber stair, newel posts, handrail, balusters, hf

First floor

Stair, north east corner

S L L L

Ceiling

Painted plaster, hf

Wall

Painted plaster, hf

Painted timber architraves, hf

Floor

Carpet over timber strip, hf

Windows

2 x Painted timber fixed with coloured glass, hf

Doors

Painted timber paneled, hf

Fixtures and fittings

Painted timber stair, newel posts, handrail, balusters, hf



Balcony and space behind

E E E E

Ceiling

Painted plaster, hf

Painted plasterboard with timber battens, hf

Uncoated concrete, hf

Wall

Painted plaster, hf

Clear coated timber skirtings, hf

Uncoated brickwork, hf

Lath and plaster partition, hf

Floor

Carpet over timber strip, hf



Space

physical historic culturalauthenticity

Uncoated concrete, hf

Windows

Painted timber fixed semi-circular, hf

Doors

2 x clear coated timber paneled with south door boarded over toplight, hf

1 x clear coated timber panelled, hf

Fixtures and fittings

Organ, hf

Clear coated timber pews, hf

Light fittings, hf

Clear-coated timber and steel rail, hf

Tower levels 2 and 3

H H H E

Ceiling

Uncoated concrete, hf

Wall

Uncoated concrete, hf

Floor

Uncoated concrete, hf

Windows

Painted timber, louvred, hf

Doors

Painted timber panelled, hf

Fixtures and fittings

Timber



Appendix 4: Consultation with Heritage New Zealand

Steve Baker

From: Dave Margetts <dmargetts@heritage.org.nz>
Sent: Thursday, 19 May 2016 3:52 p.m.
To: Steve Baker
Cc: Sheila Watson; Mike Vincent
Subject: RE: St Marys Hokitika Catholic Church - Draft Resource Consent Application (Email 1 of 2)

Steve,

Thank you for the copy of the resource consent application for the structural upgrade of St Marys Hokitika which is listed with Heritage New Zealand as Category 1, List no 1705. Heritage New Zealand supports the remedying of earthquake prone listed buildings as resources allow and as required by earthquake prone legislation.

We have been involved and kept informed during the Diocese initial stages of a project to strengthen the church and have supported the consideration of options during this preliminary engineering design phase. Heritage New Zealand recommended that the options considered be documented as part of this consent application, and this information has now been provided within the OPUS report 'Consideration of strengthening options to allow reoccupation'.

The proposed works will be informed by the conservation plan and will be generally not intrusive, although the loss of original fabric will occur, particularly the tower removal and west gable replacement. The intention however is to reinstate the gable in lighter weight construction and replace the tower within 5 years of granting consent.

It is noted that repair is not part of this project, as this will be managed by the parish as resources allow. We recommend that repairs are identified and programmed beyond the consented work to be carried out in accordance with the conservation plan.

Investigations into the structure to date have been visual and non-intrusive, and we support further investigation to inform the detail and necessity of any particular engineering solutions.

Therefore, Heritage New Zealand can provide its initial support in principle to the 'Partial strengthening and early opening scheme', noting the above comment.

Regards

Dave Margetts | Heritage advisor architecture | **Heritage New Zealand** Pouhere Taonga | PO Box 4403, 64 Gloucester Street, Christchurch 8140 | 027 231 6753 | Visit www.heritage.org.nz and learn more about New Zealand's heritage places

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From: Steve Baker [mailto:SBaker@chch.catholic.org.nz]
Sent: Friday, 6 May 2016 12:55 p.m.
To: Dave Margetts
Cc: Keith Beal
Subject: St Marys Hokitika Catholic Church - Draft Resource Consent Application (Email 1 of 2)

Hi Dave

Further to our discussion earlier this week, please find attached a copy of the draft resource consent application for the St Mary's Church, Hokitika.

This email contains the consent application, with Appendix 2 (HIA) and Appendix 3 (TPP) included. A second email will be sent through to you shortly containing Appendix 1 – being the Options Assessment Report. This is being sent through as a separate email due to its size (13MB).

The documentation is water marked as “final draft” as this is currently what we are proposing to lodge with Westland District Council. However, prior to being lodged we would like to obtain feedback from HNZ on the proposal for St Marys. Depending upon the nature of any comments / feedback you might give, we would like to meet to discuss how any specific matters might be addressed. We are aware this application will be notified by Westland DC, and we would like to be in a position, if possible, where we are lodging with the support of HNZ.

If you have any immediate questions or queries, please do not hesitate to contact me. Otherwise I look forward to receiving your comments / feedback in due course. We are happy to meet at any time that suits to discuss this application.

Kind regards

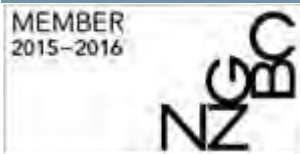
Steve

Steve Baker
Planning and Consent - Rebuild

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