



CANTERBURY EARTHQUAKE NATIONAL MEMORIAL

SELECTION OF DESIGN

EVALUATION PANEL RECOMMENDATION

April 2015

1 BACKGROUND

In July 2014 the Canterbury Earthquake Authority launched a three stage Call for Ideas design process to identify a design to memorialise the 2010/11 earthquakes and particularly 185 lives lost and the devastating impact on the Canterbury region.

Stage One submissions closed in August 2014 with 331 design ideas received. The Evaluation Panel reviewed all the submissions against each of the evaluation criteria and recommended six designs to be shortlisted and proceed to stage two of the design process. This recommendation was accepted by the Memorial Leadership Group and Minister for Canterbury Earthquake Recovery.

With feedback from bereaved families, recovery leaders and the Evaluation Panel, the designers of these six submissions were then invited to further develop their design ideas during stage two of the Call for Ideas process, which they submitted in January 2015.

Bereaved family, seriously injured and survivors of collapsed buildings, first responders, stakeholder and public feedback was then gathered through a series of workshops and a public exhibition, along with technical assessments carried out by independent specialists of each of the six submissions.

On 25 March 2015 the submissions were made available to the Evaluation Panel along with the technical assessment findings and a summary of the stakeholder and public feedback compiled by research analysis company Ipsos. Submissions were assessed by the Evaluation Panel on the 25th and 26th of March.

2 THE OBJECTIVES FOR THE MEMORIAL

As set out in the Call for Ideas to Remember, the objectives of the Memorial are to:

- Honour the 185 people who lost their lives, as well as those who were injured in the Canterbury earthquakes,
- Remember and give thanks to the many organisations from around the country and around the world that assisted in the rescue and recovery,
- Recognise the shared human experiences of those involved in the events, and the effects of the earthquakes on the city and Canterbury including the loss of many treasured heritage buildings, as well as the familiar everyday cityscape,
- Provide a space for hosting formal civic events, such as an annual Memorial gathering on 22 February,
- Allow for reflection and contemplation on a day-to-day basis, including for small groups or individuals, and



- Become the anchor point for remembering in the city and Canterbury and part of the wider context of the impact of the earthquakes.

3 EVALUATION CRITERIA

Responses have been assessed in relation to the criteria below. Overall, the Evaluation Panel were looking for design ideas that will most strongly touch the hearts of those remembering the losses and shared experiences of the Canterbury earthquakes.

The Evaluation Panel considered Responses in terms of the degree to which the design idea conveys:

Design excellence

- Exhibits high quality design that expresses a clear vision now and into the future.

Remembering those lost

- Provides a place for remembering the lives that were lost on 22 February 2011, including connections to sites throughout the city and surroundings, and
- Creates a place of solace that expresses the values and desires of the bereaved families from New Zealand and around the world.

Community acknowledgement

- Acknowledges the particular loss and trauma of those who were injured who survived, and
- Remembers the shared trauma and experiences of the people of Canterbury.

Place and context

- Acknowledges the site context and complements the surrounding environment and values,
- Provides for a range of experiences, scales of interaction, and commemorative events, and
- Represents a practical, buildable and affordable addition to the city's fabric that can be delivered within the required timeframe.

Recovery and identity

- Celebrates and expresses gratitude to those around the world who responded to the Canterbury community in the time of crisis,
- Celebrates the will of the people of Canterbury, their shared experiences and their strength to prosper even in the face of a natural disaster, and
- Promotes the healing and the long-term recovery of the Canterbury region and its people.



4 STAKEHOLDER FEEDBACK

Stakeholders were not asked to vote for a preferred design. Instead, feedback was sought on three specific questions as well as general comments in response to each design submission, and was sought from the following groups:

- Bereaved families, seriously injured and survivors of the collapsed buildings,
- First responders,
- Christchurch City Councillors,
- Ngai Tahu leaders,
- Local consuls of affected countries, and
- The general public.

The Evaluation Panel was also provided with a summary of the stakeholder feedback prepared by independent research analysts IPSOS. The feedback summary provided a statistical comparison of the positive and negative responses, along with the qualitative summary of the feedback themes for each proposal. The summary feedback was reviewed by the Evaluation Panel and taken into consideration.

5 TECHNICAL ASSESSMENT

Technical assessments have been carried out on each of the schemes and were provided to the Evaluation Panel for consideration during the Panel's deliberations. The technical assessments included:

- Flood hazard,
- Statutory Planning,
- Arboriculture,
- Civil & Structural Engineering,
- Geotechnical Engineering,
- Heritage,
- Event management,
- Multi-cultural Sensitivity, and
- Cost Analysis.

The objective of the technical assessments were to provide high level assessments of whether any of the proposals had major issues or 'show stoppers' that could prevent the Memorial from being successfully delivered, or presented an unacceptable impact on the environment, neighbouring properties or public areas.



Overall, no major issues were identified in the technical assessment that would give grounds to rule out any proposals, however a number of matters to be considered were particularly noted, including:

- mitigation of any potential impact on the established trees on the north side of the river,
- impact on upstream flood levels as a result of any new bridges and/or walls,
- construction costs on some proposals, and
- cross-cultural sensitivity, particularly regarding the selection of any tree species.

6 EVALUATION PANEL PROCESS

The Evaluation Panel met on the 25th and 26th of March to evaluate the design submissions. The Panel members first reviewed the Technical Advisory Group's report and stakeholder feedback. They then discussed each of the six submissions in turn and were particularly interested in how each of the concepts shortlisted had been developed since the first stage. The members had recognised the challenge and multifaceted nature of the project; the shortlisted schemes had been selected for the potential to address these.

The Panel considered that all six designs held the potential to provide a fitting Memorial. Particular notice was taken by the Panel of the stakeholder feedback which had shown limited support for some of the concepts and had expressed some strong and divisive views regarding them.

On Thursday 26 March, the Panel members walked the site for the Memorial and discussed the schemes as they appeared in relation to the existing lawn area and trees, the river corridor, orientation to the sun and public safety. This visit was valuable and helped firm up the Panel's views on the schemes.

Finally, the Panel compared notes on the site visit and overnight consideration of the schemes. Importantly also, the Panel reflected on the objectives for the Memorial, as set out in the 'Call for Ideas to Remember' and considered the concepts against each of the detailed evaluation criteria; the most important of these being that the Panel "will be looking for design ideas that most strongly touch the hearts of those remembering the losses and shared experiences of the Canterbury earthquakes".



7 CONCLUSION

Arising from this quite far reaching discussion, the Panel reached its conclusion that EQM2378: Memorial Wall was strongly favoured for the following reasons:

- provides a particularly evocative and powerful expression of loss and remembrance,
- presents an elegant, contemporary design and a strong civic statement,
- lends itself to implementation using a simple palette of enduring materials,
- well positioned and oriented to be predominantly sun lit and warm,
- the pattern of trees along the River edge will provide welcome shade in summer months for those visiting the Memorial wall,
- its location on the south side of the river and at a level down close to it offers almost unique and broad vistas up and down the water corridor and out to the City beyond not readily apparent on the north side,
- embraces the River and allows close contact with it as desired, in a number of ways,
- complementary activities of a variety of scales can be conducted easily on the northern side of the river aiding both sides of the river being considered as integral parts of the Memorial space,
- suitable for small as well as large gatherings (utilising the northern side of the river) associated with the Memorial,
- the site remains open to and not closed off from the surrounding urban context and the River, avoiding unnecessary isolation of the Memorial from City life around it,
- the location of the Memorial wall and its level close to the River water level almost magically blocks out much of the sound of nearby vehicle movement allowing a quiet ambience to the space not achievable on the north side of the river,
- the Memorial space on the southern side of the river is open to the public but is not a thoroughfare. It is separated by gently inclined ramps and stairs from the shared surface public walkway planned for the Oxford Terrace corridor immediately above it to the south,
- its points of entry can be easily defined and controlled as necessary,
- these points of entry could be easily developed as significant thresholds symbolising entrance to a place of reflection and respect,
- though separated physically from its immediate surroundings it remains open, readily visible and accessible,
- public safety can be easily managed,
- simple and practical to maintain,
- the underlying ground conditions are favourable,
- no development or construction is required in close proximity to the existing mature trees on the north side of the River corridor,
- though there are seven affected trees on the south side of the river, these are a mix of species and not protected: however, at least two would transplant successfully,
- no significant technical issue or environmental impact, and
- allows for simple and attractive night lighting of the Memorial, the River and the existing grass and trees on the north side of the river.



Although this scheme presents a strong design concept, it was considered (as was the case with all schemes) to have some shortcomings, especially in relation to the views expressed by the bereaved families and the public. The Panel, however, considers that EQM2378: Memorial Wall can be successfully adapted to resolve these concerns, and in particular regarding:

- The desire at times for emotional intimacy with the Memorial. It is suggested that the northern side of river could be enhanced to provide an area for seating that is still engaged with the memorial wall but offers a small separation and improves privacy. It is suggested this could be designed in collaboration with the bereaved families.
- Provision for places for reflection and contemplation. Again it is suggested this could be achieved by creating simple area on the northern side of the river to complement the seating close to the wall on the southern side.
- The selection of tree species and materials that are sensitive to all nationalities represented in the Memorial and the New Zealand context. It is suggested that an evergreen New Zealand native species be investigated that is fitting for the New Zealand context and neutral to other nationalities.

At the conclusion of the discussion, all members of the Panel were satisfied that the above concerns should and could be addressed and that there are solutions to these within the recommended scheme EQM2378 that would ensure the desired levels of value and meaning to the Memorial rather than working against the essence of the design.



8 RECOMMENDATION

The Evaluation Panel recommends that EQM2378: Memorial Wall be the design selected for the Canterbury Earthquake National Memorial.

The Panel considers this scheme will be seen as a strong, lasting and sensitive Memorial to those people we lost and those who were severely affected by the devastating earthquake events of 2010 and 2011. It provides a place to remember our shared trauma and acknowledge the courage and selflessness of those who risked their life to help others during that time of tragedy. It will also be a place to celebrate the steadfastness of our community and its ability to prosper in spite of the challenge thrown down to Canterbury by Rūamoko.

In making this recommendation the Panel sees it as essential and strongly recommends that the design is further developed to address the following two issues:

- Development of a special place for quiet contemplation, reflection and intimacy on the north side of the River within the Memorial site to particularly provide for bereaved families to gather and remember, in small groups or in larger gatherings. This might include some simple seating close to the water's edge on the north side of the River and also some slight reshaping of the grass area facing the Memorial on that side helping to link both sections of the Memorial site together. The Panel suggests that the design of this could be done collaboratively between the successful designer and bereaved family members.
- Careful consideration is given to selection of tree species included in the Memorial that is both appropriate for the New Zealand conditions and is sensitive to all nationalities. Again, the Panel suggest that also be done in consultation with bereaved families from all nationalities.

Finally, the Panel wishes to extend its thanks and admiration to the 331 designers who submitted ideas, to the six shortlisted designers who demonstrated their talent, passion and expertise in developing beautiful expressions of what the Memorial could be, and to the many stakeholders and members of the public, especially the bereaved families, for providing their feedback on the design concepts. We believe the outcome will be a fine and evocative Memorial that will touch the hearts of those affected by the earthquake of 22nd February 2011 and remember those we lost that day.

D N Sheppard
Panel Chairman

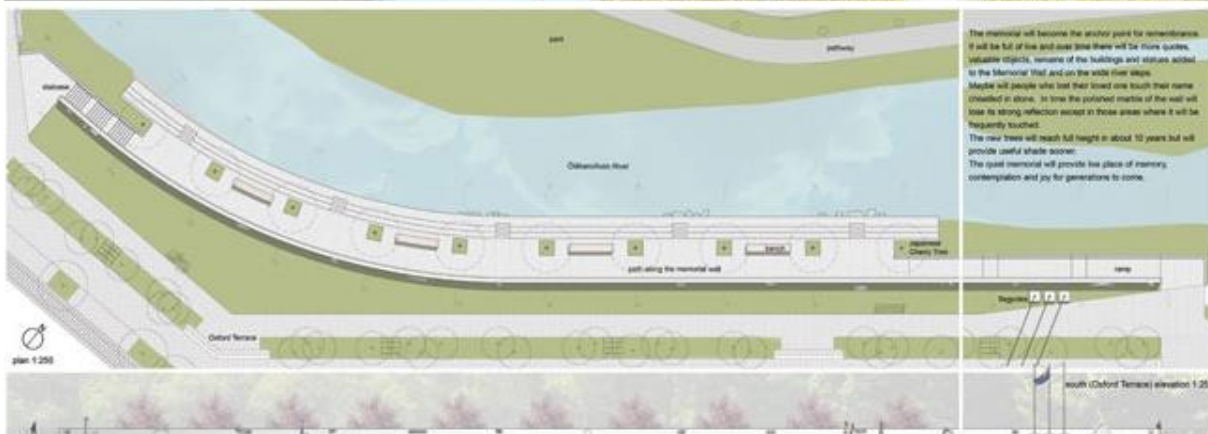


APPENDICES

- A. Recommended design: EQM2378
- B. The recommended design EQM 2378 – Design Report



A. RECOMMENDED DESIGN EQM2378



EQM2378: MEMORIAL WALL

B. EQM2378 – DESIGN REPORT



CANTERBURY EARTHQUAKE MEMORIAL

IDEAS TO REMEMBER - STAGE TWO

PROJECT DESCRIPTION REPORT

EQM 2378

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DESIGN PHILOSOPHY STATEMENT

LOCATION

Christchurch, known as the Garden City for its vast green space, mix of exotic and native planting and priority for public spaces within the city centre, making the chosen location for the memorial along the Avon/Otakaro River that cuts through the city all the more appropriate. The river offers a long, meandering and well used pedestrian pathway that connects users to the memorial site and beyond. Downstream is the Bridge of Remembrance. As part of the development of Te Papa Ōtākaro/Avon River Precinct, Oxford Terrace will be reduced in scale and become a shared street where pedestrians have priority and will connect a place to the city centre. The opposite, north river bank is relatively flat, large and open.

As the river makes a turn toward the Botanic Gardens, there is a large riparian area used for passive recreation and as an active thoroughfare framed by the street. This is a beautiful place with old trees that runs along Cambridge Terrace. From this point the view south is influenced by a variety of commercial buildings that form the façade of Oxford Terrace.

The south bank is sunny and sheltered but is steep and narrow with a few young and old trees that overall looks unresolved as a street edge. It has an amphitheatre form with views up and downstream.

By placing the memorial on the south bank we improve both sides. It does not interrupt the recreational pathway along the river on a north bank. Memorial is enrichment for the new and unformed promenade on Oxford Terrace. There it is well integrated in the city fabric, accessible to the city and can take advantage of shared promenade place during public gatherings. Memorial offers sunny sheltered space close to water with a view on a park. The river curve provides safety and support. Long outer river bank allows everybody to have equal intimate place by the river facing the park and the sun. Here is a place that can be enjoyed in peace.

DESIGN AND MEANING

With the analysis of these location factors and the existing plans to develop Oxford Terrace into a promenade, the decision to look at the memorial as a linear object rather than a traditional gathering point was made. This was achieved by leaving the street level to its existing scheme and cutting into the earth altering the level of the south bank to match and reflect that of the north prompting a platform offering adequate space for reflection and relaxation in a sheltered and peaceful environment. The Memorial Wall is introduced to hold the mass of the earth and protect the memorial space. The design also provides a connection closer to the water, symbolic of life and its infinite nature. This leaves the north bank unchanged but enhanced as an informal gathering and viewing space toward the memorial as an element of intrigue. The intact north bank can still function as a thoroughfare and place for recreation.

The wall as the focus of the memorial space is designed to be symbolic of both heavy and strong but light and delicate in form. The heaviness of the wall, emphasised by the cut into the earth and the retaining of the bank along Oxford Terrace represents the balance of forces acting between man and nature, much like the marble itself formed by the immense pressure and heat of the metamorphism similar to the forces of an earthquake. The wall contrasts this by evoking the sense of light and delicate through design and materiality.

Wall runs parallel with the river and curves with the flow transitioning into the existing topography at each end complimented by the lightness of the Japanese Cherry trees and the soft and subtle polished texture of marble. These two contrasts reveal the notion that we must work with nature, not against it.

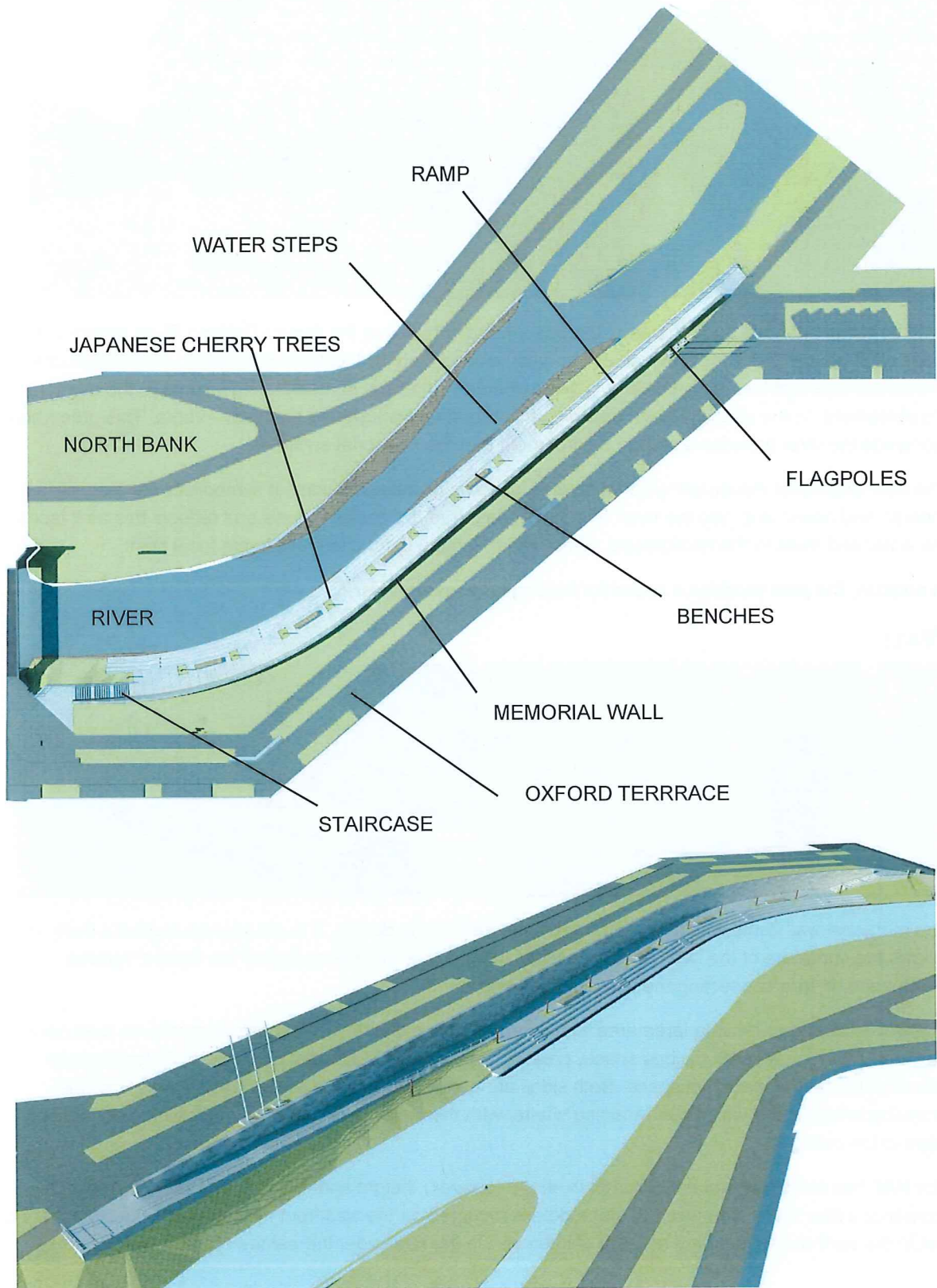
Walking along the river flow the wall starts with a staircase. The staircase *shakes* and *breaks* with our level ground and *throws* us down to a different level. At this point the change of direction also starts. The wall curves. At the bottom the names of those whose lives were lost in the earthquake appear chiselled in polished stone wall, memorialising them in time for families and future generations to comprehend the loss of this tragedy. The curved wall provides safe protected place that offers an area to mourn and reflect along the river. Although this place is one of sadness it is also a place of beauty, graced by the gentle river flow, full sun and the delicate shadows cast by Japanese Cherry trees, the space is also a celebration of life. Blossoming tree represents beauty but also the transience of life. The polished wall with sky and sun reflections is dematerialised representing eternity with names on it. Wall offers long walk by the river accompanied with trees and benches to sit, contemplate and reflect. Ahead the Wall has a straight line, which begins to rise slowly. Because of perspective it looks that it will never end. We are walking slowly, rising on the ramp back to the city.

On the Oxford side of the Memorial Wall facade details from demolished heritage buildings that were damaged in the earthquakes create a place to remember the city as it was. At the area of a staircase and a ramp there are chiselled in stone wall organisations and individuals thanked for their involvement in the rescue and recovery effort and also those seriously injured.

By building the memorial we must take the opportunity to offer the best place for remembering as well to benefit the recovering city.



ELEMENTS OF THE DESIGN



RIVER AND PARK

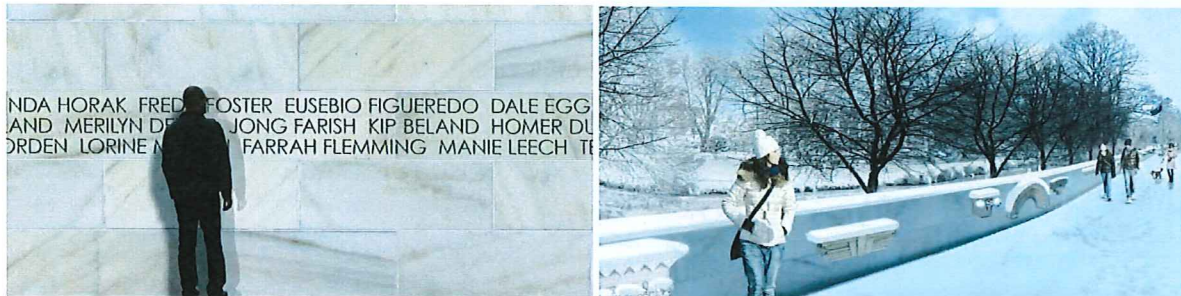


With beautiful old trees and footpaths, the park on the left bank of the Avon / Otakaro River provides a first class open space that is indispensable. The park is used daily by locals for recreation, so the memorial should not interrupt their activities and likewise shouldn't interrupt contemplating visitors to the memorial. It's placement on the opposite bank provides an interesting background and vice – versa. This green area alongside the river provides a serene environment that the memorial encircles.

The river and water movement creates an area of ease, grace and fluidity. It symbolises life that will last forever, and never stop, like the river. It is appropriate that the design follows and reflects this as it faces the water and trees in the background. Although left largely untouched, this is the focal point.

In addition, the park provides a space for hosting large gatherings.

WALL



The memorial wall is the single most important element of the design. It is cut into the southern bank and follows the curvature of the river, starting and finishing in line with the design of the Oxford Terrace promenade, in turn connecting the two as one space.

The wall is placed to retain a large area of the bank allowing a sunny and spacious memorial area near the river. Although the wall divides space, creating two sides with different characters, Oxford terrace promenade and the memorial space. Both sides are connected at each end offering a view from the promenade above the wall whilst retaining shelter with the memorials curved form creating a formalised edge to the park.

The Wall has two sides that are different in shape (convex), height and with different programmes. On promenade side there are pieces of stone details mounted on the wall from heritage buildings, which were lost in the earthquake, creating an area of interest. On the river side, the names of those who lost their

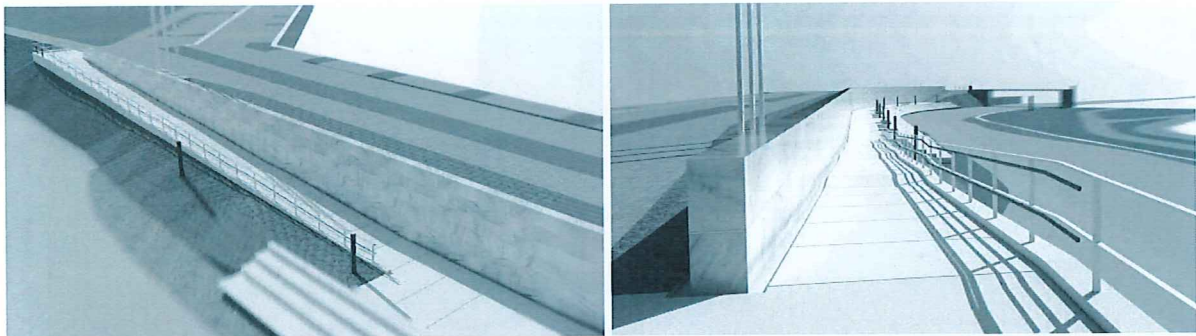
lives in the earthquake chiselled in stone, creating an area of reflection. In the entry areas, there can be expressions of gratitude to the many organisations that assisted in the rescue and recovery and for those who were injured a commemorative plaque on the stone wall chiselled in stone.



The wall in its entirety is 150 m long and in the middle is 3.6 m high reducing it's to 1 m at the beginning. It is made of reinforced concrete structure and stone clad with stone slabs on the edges. The stone proposed is marble (like Takaka marble or similar) with polished finish.

The length of the wall is to be lit by ground mounted feature under-lightning to create a safe and visible space at night. It produces gentle and surreal effect of shining marble wall contrasted by the chiselled names in stone as they become visible by deep inner shadows produced by the ground lighting.

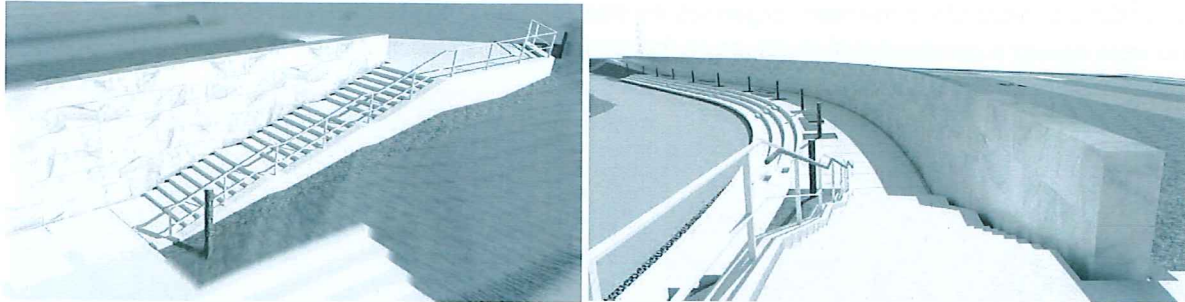
RAMP



Where the Oxford Terrace veers right and intersects the pathway along the river begins the entry ramp to the memorial space. The ramp is straight with a stainless steel and timber handrail on the side open to the river and runs parallel to the wall.

The width of a ramp is 2.4 m, with an accessible gradient of 1 in 14. It has 3 rest areas 1.8 m long and 4 ramp-runs between landings 9 m long. Its surface is reinforced concrete with a heavy grind finish.

STAIRCASE



On the western side, where the Oxford Terrace meets the Montreal Bridge, is the staircase leading to the memorial space. Stairs, similarly to the ramp, run parallel to the memorial wall and could also include text referencing the recovery/rescue effort as mentioned above.

This is a straight staircase from which one begins to see the whole memorial. Placed on the bank it is 2.4 m wide and has 3 flights of 7 steps 125 mm rise / 400 mm tread with 2 landings. It has stainless steel railing and timber handrail. Steps are made in precast concrete with the same finish as the ramp.

WATER STEPS



Terraced steps connect the memorial space and the river, creating a space where users can walk down to interact with or step into the water as well as sit in the sun, with views to the river and the northern bank.

Steps regulate contact of the memorial with water based on a water level through the year.

The memorial steps have theatre-like design. They can be used for summer cultural events.

Just above the stones of the river is the landing, used also for walking along the water. It is 1.2 m wide. There are 3 double-high steps of 300/700 mm used for sitting. 5 sets of normal walking steps (350/150 mm) are placed in-between. These are 1.8 m wide. The last, third step, is above the lower bank level to be usable in high water level. Steps are made of precast reinforced concrete with a heavy grind finish.

TREES



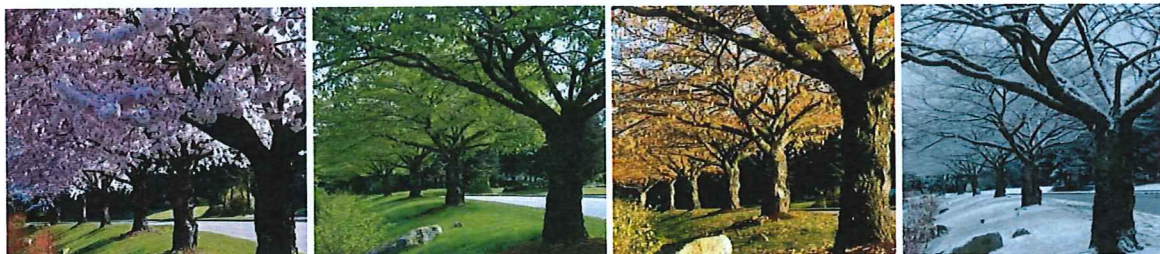
Trees are ever changing, interesting and alive and in combination with the wind, shadows and changing seasons make for a dynamic environment. Cherry trees have been chosen to attract people with its beautiful spring blossoms, bold green leaves in summer and striking autumn colour contrasted by its bare branches in winter. They create a variety of conditions encouraging use throughout the seasons.

The memorial has a row of 10 deciduous cherry trees planted every 10.8 m. Their sparse branch distribution and light canopy provide shade when needed. They divide the memorial platform from the water steps, provide rhythm, separation between seating as well as introduce a colour to the banks of the Avon River.

Prunus serrulata is a small deciduous tree with a short single trunk, with a crown reaching a height of 8–12 m. At the start of autumn, the green leaves turn yellow, red or crimson. The flowers are produced in racemose clusters of two to five together at nodes on short spurs in spring at the same time as the new leaves appear; they are white to pink, with five petals in the exotic tree.

Prunus serrulata is widely grown as a flowering ornamental tree, both in its native countries and throughout the temperate regions of the world.

In Japan, cherry blossoms symbolise clouds due to their nature of blooming mass, besides being an enduring metaphor for the ephemeral nature of life. The transience of the blossoms, the extreme beauty and quick death, has often been associated with mortality; for this reason, cherry blossoms are richly symbolic. (Wikipedia)



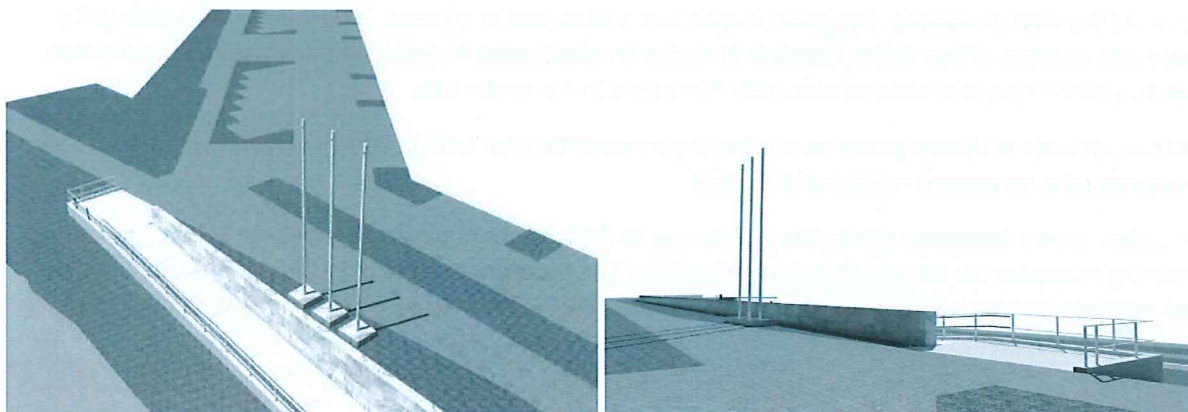
BENCHES



Benches provide a place to rest, to gather, to reflect, to contemplate. They appear to float, like a boat on a river, because visitors to the memorial are not there to stay, unlike names on the heavy wall.

Four benches are spaced in line with trees, offering shelter from the sun as well as the movement of people. They also provide views toward the river or the memorial wall with names. Seats are designed to accommodate for a range of seating arrangements either back to back on both sides, or as an ottoman to use as a group or individually in lying position. The benches are made of weather resistant timber slats that sit atop a precast concrete plinth giving the illusion of floating. They are 5.4 m long and 0.9 m wide.

FLAGPOLES



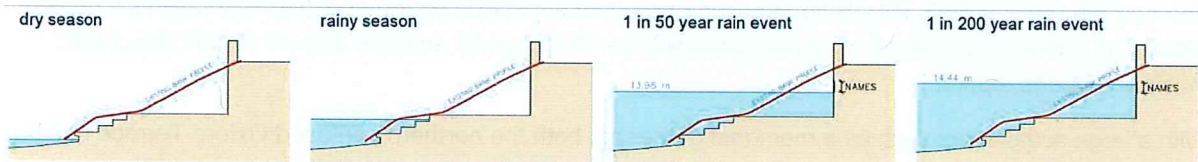
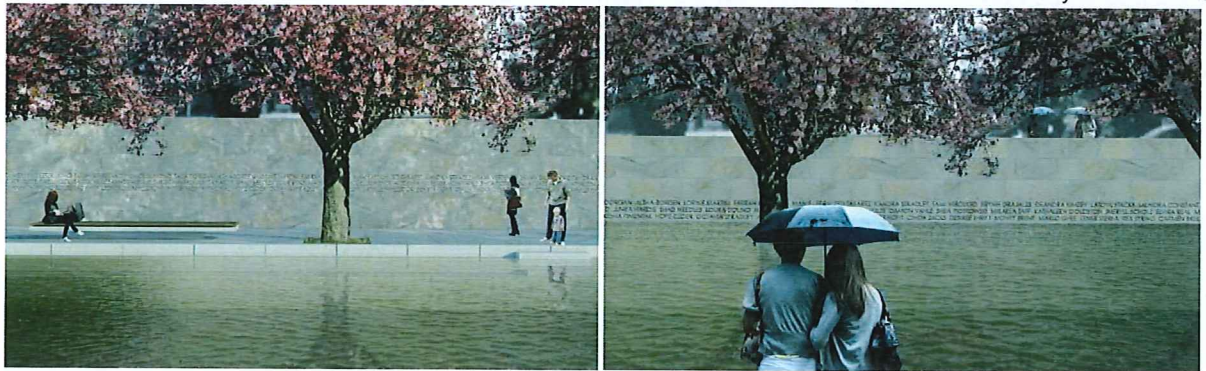
The memorial is located in a city with flagpoles. 3 flagpoles mark the ramp entrance to the memorial from the city centre. They are in line with orthogonal street fabric, therefore can be seen from distance. They are placed where Oxford Terrace changes direction, seen from both ends and from riverside footpath.

There are 3 flagpoles for different events (such as state visits) and can be used as protocol rules dictate; two flags should not be flown on the same flagpole and the flagpoles should be of identical height, the flag of honour, which is the nation's flag in most cases, is flown on the centre mast if possible.

They could be used as a permanent feature or just for memorial gatherings, and/or other significant occasions, depending on protocol.

Flagpoles are constructed from steel tubes 9 m high set on a low plinth made of polished stone block 1.3 x 1.3 x 0.3 m.

HOW THE DESIGN CATERS FOR FLUVIAL FLOOD EVENTS



The memorial design benefits the city during flood events, as the cross section of the memorial is cut into the bank. It does not narrow, but widens the river profile.

The design follows the flow of the river and does not interrupt it. By excavating into the bank it widens space between the banks and allows more water to pass during flood events. The wall and steps protect the bank preventing damage from high water flows.

The stepped design allows the memorial to be used at different water levels. The memorial platform is above high water level.

During a 1 in 50 year rain event when water level reaches 13.98 m and all areas of the park on the opposite bank are covered with water, the names of those who died in the earthquake are still above water level.

During 1 in 200 year rain event, when water level reaches 14.44 m, the Memorial Wall is still accessible from the Oxford terrace promenade, which runs along the top of the memorial wall.

The flood events do not cause damage to the memorial for it is made of durable concrete and stone. The lighting to be used is waterproof and can be submerged. The Memorial will require only cleaning after a flood recedes.

LARGE CIVIC EVENTS

The memorial in its context provides a unique place for hosting civic events, such as an annual memorial gathering on 22 February, but also other cultural events. The lay of the land in combination with the surrounding streetscape allows for a variety of different arrangements, depending on the event character and number of people attending. It provides:

- occupying the streetscape of Oxford Terrace where the large numbers of participants can gather,
- an open arrangement on the Northern bank park with no obstacles for people to gather orientated facing the memorial acting as a background or a stage, with podium on a memorial platform or on the river bank;
- theatre-like sitting steps to be used for smaller or larger events along the memorial platform with access routes on both ends;

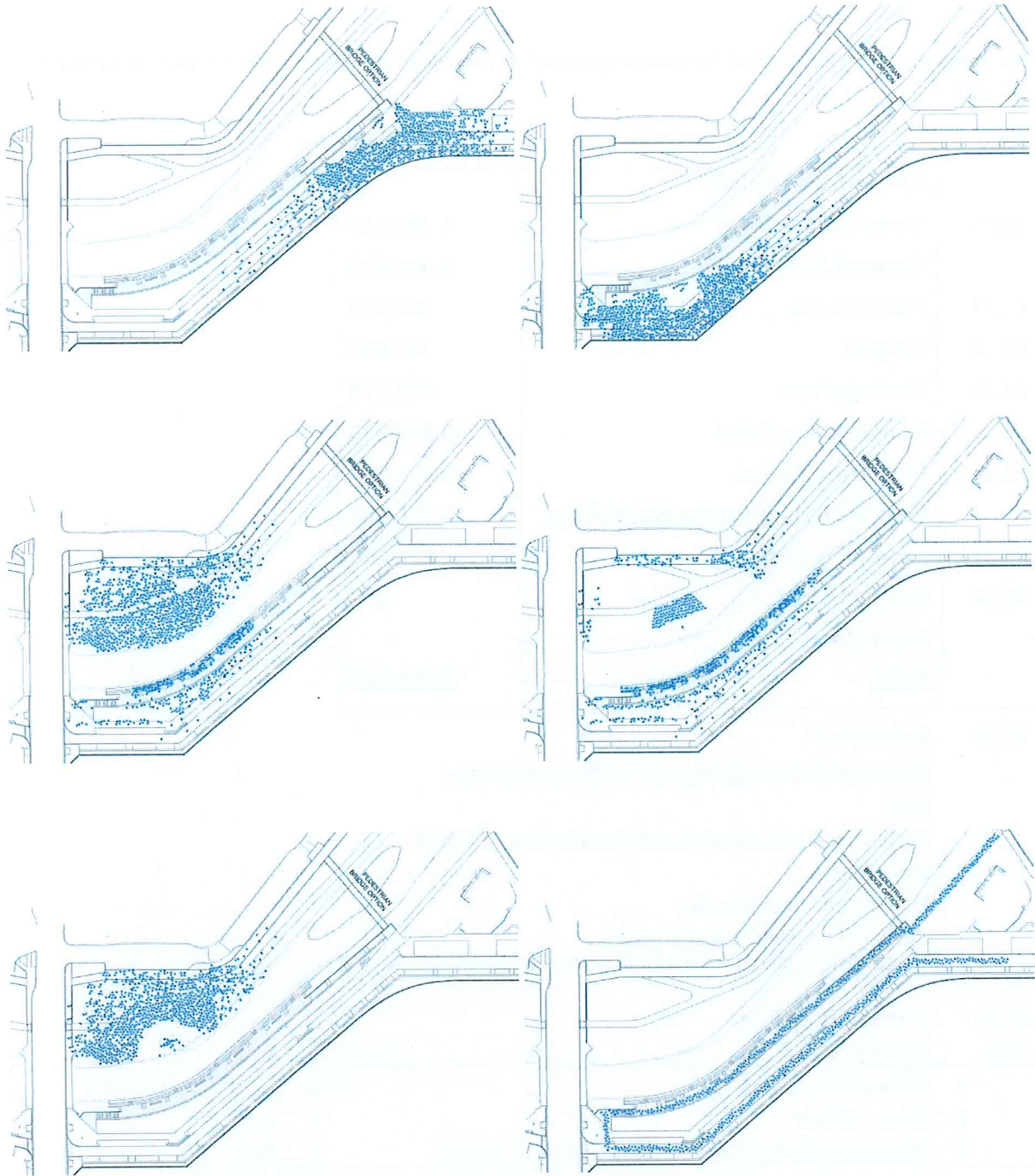
The northern bank with its largely flat grassed open area separated by the river acts naturally as a gather space and can be also utilised in combination with the Memorial for summer cultural events like classic musical concerts, opera...

With a large scale event such as a memorial gathering, both the northern bank and Oxford Terrace can be used. Alternatively, at events that don't require vast area only the memorial platform is used. The event space can expand from the central Memorial Wall. The river contributes unique symbolic element, but also provide important viewing and safety distance space, required for large gatherings. Not to mention night reflections in the water for special events.

A pedestrian bridge is an option on the eastern side of the memorial starting at the top of the ramp to enhance access.



Some of large civic event options:



AN ESTIMATE OF THE TOTAL PROJECT COST

The summary of the estimate of the total project cost as provided by the New Zealand quantity surveying company:

Item	Description	Total
	Land Area: 1168m2	
EL01	Construction Works	4,408,530
	Element Sub-Total	4,408,530
EL11	Preliminaries	529,024
EL12	Margins	740,633
EL13	Contingencies	851,728
	Construction Total	6,529,915
EL21	Professional Fees	1,340,684
	Total Including Professional Fees	7,870,598
EL31	Escalation Costs	629,648
EL32	Rounding	-247
	Estimate	
	Total	8,500,000

EL40 Exclusions :

- Area outside the retaining wall, walkway and steps
- GST
- Escalation and currency fluctuations beyond mid 2016
- Legal fees
- Finance and interest costs
- Resource consent fees and costs
- Transformer (assumes adequate power readily available)

EL21 Professional Fees

Item	Description	Quantity	Unit	Rate	Total
1	Professional Fees	19.0	%	1,240,684	
2	Fees - Other	1	item		Included
3	Allowance for building consent fees and levies	1	item	100,000.00	100
					1,340,684

AN ASSESSMENT AGAINST THE CHRISTCHURCH CITY PLAN AND ENVIRONMENT CANTERBURY PLANS

The site is zoned Conservation 5. Although part of the site is shown on the planning maps to be located within the Special Purpose Road Reserve, Volume 3 Part 8 Clause 4.3 of the City Plan expressly excludes any land shown on the planning maps as Conservation 5 zone. Accordingly, the Conservation 5 zone rules apply to the site.

Of relevance, the Conservation 5 zone rules require the following:

- a maximum building height of 5 metres
- that the erection of any building shall be a discretionary activity (this excludes boardwalks and poles under 6 metres in height, some smaller structures and public artwork in the Central City, but includes walls over 2 metres in height - see City Plan definition of 'Building').

The maximum height of the proposed wall is 3.6 metres; therefore resource consent would be required for a discretionary activity if it is classified as a building. However, the definition of a building under the City Plan excludes public artwork and the proposal may be considered consistent with the definition of public artwork under the plan. If the proposal can be successfully argued to be public artwork then resource consent will not be required for the erection of a building.

The City Plan assessment matters dictate that the following summarised factors would be taken into consideration in assessing an application for the erection of a building:

- impact on natural or heritage values or the degree to which land is enjoyed by the public
- disturbance caused to site vegetation or features
- visual impacts
- proposed use of the building, numbers of people and suitability of building for the site
- effects on public access and appreciation of its values
- effects on waterway and flood plain management and functions including erosion
- whether regard has been given to any approved Park Master Plan.

In addition to the above, the Avon River is identified within the City Plan as a downstream river. Volume 3 Part 9 Clause 5.2.4 requires that any filling or excavation, or the erection of buildings is a restricted discretionary activity within 30 metres of the bank of the waterway. Resource consent is required for a restricted discretionary activity. There is also a requirement to consult with tangata whenua upon non-compliance with this standard.

The site is also located on the site of Rhododendron Island, which is listed in the City Plan as a Group 4 protected place. Tudor House (Group 4 building) is also located adjacent to the site. The City Plan requires that the erection of new buildings on a site that adjoins a site containing a Group 4 heritage item, and is within 30 metres of the heritage item, is a controlled activity with the Council's discretion reserved to consideration of potential effects on heritage values (Volume 3, Part 10, Clause 1.3.3). If the proposal is considered to be a building, resource consent will be required for a controlled activity – but this consent must be granted by the council.

As the site is located within a Flood Management Area resource consent may be required for the erection of a building within this area (see Volume 3 Part 9 Clause 5.3.3 and 5.3.4). If the proposal is considered to be a building, resource consent will be required for a restricted discretionary activity, with council discretion limited to the floor level of the building in relation to:

- (a) The effectiveness and environmental impact of any proposed mitigation methods.
- (b) Any likelihood that the proposed activity may exacerbate inundation or erosion upstream or downstream of the site.
- (c) The extent to which other properties will be adversely affected as a result of disturbances to surface drainage patterns.

- (d) Any benefits associated with flood management.
- (e) Any likelihood that the proposed activity may disturb sites of potential archaeological value requiring the imposition of conditions for an Accidental Discovery Protocol, the training of contractors in the recognition of archaeological sites, monitoring by a suitably qualified archaeologist and notification to Tangata Whenua of the commencement, staging and duration of works.

Additional criteria with respect to buildings:

- (f) Whether the floor level of the building is above the predicted 0.5% Annual Exceedance probability flood level plus an allowance for freeboard not exceeding 400mm;
- (g) If the building is in a location where the height of flood waters may be influenced by tides, whether the floor level of the building is 11.8m above CCC datum.
- (h) The way in which the building is sited and constructed and its intended use.
- (i) The frequency at which the building or addition is predicted to be inundated by floodwaters and the extent of damage that is likely to occur in such an event.

Attention is also drawn to the requirement for any works in or adjacent to the beds of rivers as specified in section 13 of the RMA, which are subject to rules administered by the Canterbury Regional Council (ECan). There are two regional plans that require consideration – the Natural Resources Regional Plan (NRRP) and the Proposed Land and Water Regional Plan (PLWRP). The relevant provisions of these plans are as follows:

Rule 5.167 of the PLWRP and Rule WQL29 of the NRRP apply to vegetation clearance within 5 metres of a river. If vegetation clearance results in an area of bare ground which exceeds 10% of the 5 metre setback zone within the site, or felled trees are going to enter the waterway, then resource consent may be required for a restricted discretionary activity.

Rule 5.168 of the PLWRP and Rule WQL30 of the NRRP apply to earthworks within 5 metres of a river. If the extent of earthworks exceeds 500m² of the setback area, or 10% of the setback area, whichever is the lesser, or if the earthworks result in sediment being discharged into the river for over 8 hours in any 24 hour period, or 24 hours total in any 6 month period, then resource consent may be required for a restricted discretionary activity.

The site has also been checked against ECan's Listed Land Use Register and no information is held in relation to any contamination on the site.

In summary, resource consent is potentially required for the following:

- The erection of a building within the Conservation 5 zone (discretionary activity), if the proposal is not considered to be a public artwork.
- Filling, excavation and the erection of a building within 30 metres of the Avon River (restricted discretionary activity), if the proposal is considered to be a building.
- The erection of a building within a Flood Management Area (restricted discretionary activity), if the proposal is considered to be a building.
- The erection of a new building adjacent to a Group Four heritage site, if the proposal is considered to be a building and is within 30 metres of the heritage item (controlled activity).
- Additional consents may also be required under the Canterbury Regional Council Regional Plans for earthworks and vegetation clearance adjacent to a river.

The memorial is a discreet low design from the street side. When viewed from north bank the trees and natural material (stone) of the wall softens the visual effect. The design follows the river curve. The memorial wall is just around 1 m high on when viewed from Oxford terrace and 3.6 m on river side. Its design fits within the natural and built environment and provides quality addition to central city fabric. The memorial provides a feature public space that can be used for both everyday recreation and as a site of significance to New Zealanders and others affected by this tragedy.

The memorial design is placed besides the Oxford terrace and avoids completely any disturbance to the park on the Northern bank of the river. The park with its established trees is left untouched. The design requires development of a segment of the south bank and the removal or transplanting of a few young trees, but aims to replace these trees with a more appropriate specimen. The design also offers riparian improvements in regards to mitigating issues as a result of flood events.

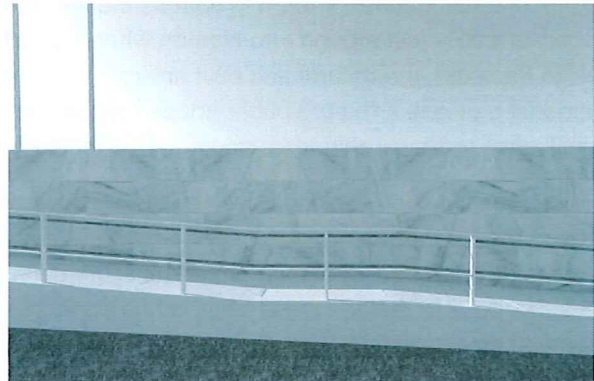
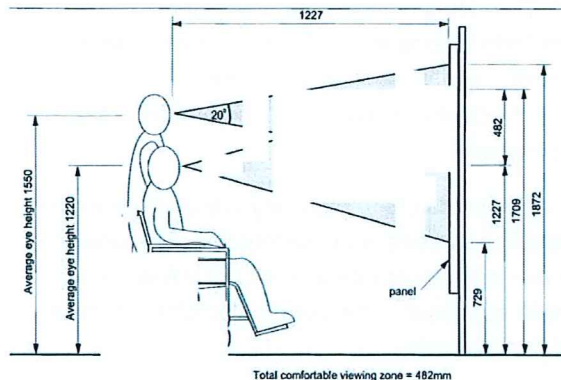
The memorial, although changes the existing landscape significantly, has a positive impact both visually and functionally in the surrounding area. It is cut into the southern bank below the street level so it causes no disturbance to the movement of the street whilst retaining an accessible and visually connected encouraging pedestrian flow. It has a soft and subtle design when viewed from Oxford Terrace, hailing from the low stone wall and backdrop of trees. From the North bank, the design is heavy, but introduces an element of intrigue that is not often seen in New Zealand, drawing people into the space, not only as a memorial but as an inhabitable space for relaxation that is engaging. The design aims to soften the appearance of this bulk by meandering and transitioning with the river, which in conjunction with the material palette appears light for a stone structure. The memorial spaces also utilises the steep south bank space that was otherwise unoccupiable prior.

The design addresses the gap in the river side pathway by providing an additional and interesting alternative to walking along the street. The memorial is accessible via ramp for wheelchair users and provides a suitable platform for access to the river.

The retained section of bank has positive effects on waterway. It creates a wider channel to accept a larger volume of water, whilst protecting the bank from erosion and acting as a flood wall.

Overall it is considered that the proposal is readily consent able due to the sensitive design and location within the Central City.

THE NEEDS OF THE SERIOUSLY INJURED



The memorial is designed to be easily accessed by everybody, including disabled. The memorial platform is accessible from the ramp located on the eastern side of Oxford terrace. The platform itself is about 2.6 m below the Oxford Terrace and offers stair access back to Oxford Terrace at the junction with the Montreal Street Bridge.

From the city centre approaching from the east, users descend along a slow slight ramp. The ramp is straight and designed to blend into the bank topography shrouded by planting. It has wide approach of 5.4 m on the street and a gradient of 1 in 14. The width of a ramp is 2.4 m with 3 rest areas, 1.8 m long followed by a 9 m long run. Users are protected from falling by a safety rail and handrail on the other.

The memorial platform width along the wall is constant at 2.7 m. There are 4 large benches to rest every 21.6 m. On the memorial wall there are names of those whose lives were lost in the earthquake chiselled in stone in a large font type that is readable from a distance. Names are placed linear in height from 1.25 to 1.75 m so that is in comfortable viewing zone of people who stand and those in a wheelchair.

On the western side there is a comfortable staircase allowing access from the Montreal Street Bridge intersection with Oxford terrace or as an egress for pedestrians to continue west along the river. It is straight, 2.4 m wide. There are 2 landings between 3 flights of 7 steps totalling 21 steps together. Risers are only 125mm high and a generous tread 400 mm. The staircase is also protected by a handrail to prevent falls. It is cut into the river bank to blend into the landscape with planting on the side.

All walking surfaces are concrete with a heavy grind finish to prevent slipping and are usable by all people with disabilities as per accessibility standards (including NZS 4121).

HOW THE DESIGN IS TO BE MAINTAINED AND HOW THE MATERIALS SUPPORT THE EXPECTED LIFESPAN OF 50 YEARS

The design of the memorial is simple and utilises traditional techniques and materials with long life spans that require little maintenance.

The wall would require a geotechnical assessment, seismic and structural input toward the design. However, this area performed well in the earthquakes, with little ground damage such as liquefaction and lateral spreading, indicating that ground conditions are relatively favourable.

Materials used are reinforce concrete for structure, marble stone for wall cladding, precast heavy grind concrete for floor surfaces, treated timber for benches and stainless steel handrails. All materials are durable and in conjunction with regular maintenance with far exceed the lifespan of 50 years.

In the case of failure or wearing of materials, the nature of the materials used in the design allow for replacement or maintenance picked up in scheduled inspections.

Naturally the design will require a level of regular maintenance from landscaping to cleaning of the wall and platform area when necessary.

HOW THE DESIGN ACHIEVES THE MINIMUM REQUIREMENTS

- The "Estimate of the total project cost" is 8,500,000 NZ\$.
The Outline Project Budget (including allowances for contractor's margin, professional services fees, regulatory consenting costs and contingency) is 9 000 000 NZ\$.
The "Estimate of the total project cost" is within the Outline Project Budget.
(See chapter An estimate of the total project cost);
- The design proposal is able to achieve regulatory approval (building consent and resource consent) (see chapter An assessment against the Christchurch city plan);
- The design achieves accessibility (universal access) standards (including NZS 4121) (see chapter The needs of the seriously injured)
- The Memorial will have a minimum lifespan of 50 years. Memorial is designed to last centuries with no special maintenance with its strong reinforce concrete structure and long lasting surface materials (see chapter How the design is to be maintained and how the materials support the expected lifespan of 50 years).

THE OBJECTIVES FOR THE MEMORIAL

The design respects and takes great consideration of the desired objectives for the memorial. Drawing on respect to context, character in the city, unique spatial arrangement and movement, symbolism, the experience users within the space and everyday use have been taken into account to achieve the memorial objectives.

The memorial first and foremost acknowledges all affected and injured by the Christchurch earthquake and especially honouring the 185 people who lost their lives with their names chiselled in stone on the memorial wall. In a similar fashion, an expression of gratitude to the many organisations and people that assisted in the rescue and recovery effort both national and internationally could be included either as a commemorative plaque or chiselled in stone along the wall at the ramp entrance. On the Oxford Terrace side of the memorial wall building debris or façade details from treasured heritage buildings that were severely damaged or demolished in the event could be utilised as features or as seating familiar to locals as a way to remember and recognise the loss.

The memorial provides a space with a variety of arrangements for hosting formal or other cultural civic events. It provides a long paved surface by the river, which is connected at both ends to the proposed Oxford Terrace development, which provides plenty of space and is well connected to the city centre. A pedestrian bridge is an option on the eastern side of the memorial starting at the top of the ramp to enhance access to the north bank. The design provides a large space on the north bank in the park with the memorial acting as a stage or backdrop. All these spaces could be used simultaneously or separately to cater for a range of civic gatherings.

The memorial design with its proximity to some of the more severely damaged parts of the city centre evoke the feeling of stepping into different world. The design of the memorial wall shrouds the platform and seating area which in conjunction with the surrounding open spaces makes for a quiet and peaceful space that allows for reflection and contemplation on a day-to-day basis, for both small groups and individuals. With its generous monumental design, distinctive appearance and integration in the city's fabric the memorial will become the anchor point for remembrance for Cantabrians and people of the world affected by natural disasters.



AN ACKNOWLEDGEMENT OF THE FEEDBACK

The feedback from the first stage was welcomed and taken into consideration in developing the design. Based on thoroughly deliberation of the feedback provided from all involved, evaluation panel, bereaved families, the injured and survivors the following adjustments were made:

- the design scheme has been simplified in order to lower constructions costs and in the same time to enhance access. The separate memorial wall and bank wall have been joined together with a new approach to access. This has been achieved without loss of the merits of the concept since the newly proposed single wall is even longer and simple design is more powerful;
- the memorial wall has been considerably reduced in height for leaving the Oxford terrace open to the north and for construction costs;
- a ramp has been introduced at the eastern end and a staircase at the western end of the memorial to enhance access and movement across the site;
- the intervention in the park environment was recognised as unnecessary and disruptive and has been removed to benefit the park and overall design;
- the species of trees has been replaced to *Prunus serrulata* (*Japanese Cherry*);
- the memorial platform has been reconsidered to retain interaction and access to the river and account for fluctuations in water level;
- the steps to the river offer additional sitting place;
- The bulk and form of the design has been reduced to retain the connection to nature.