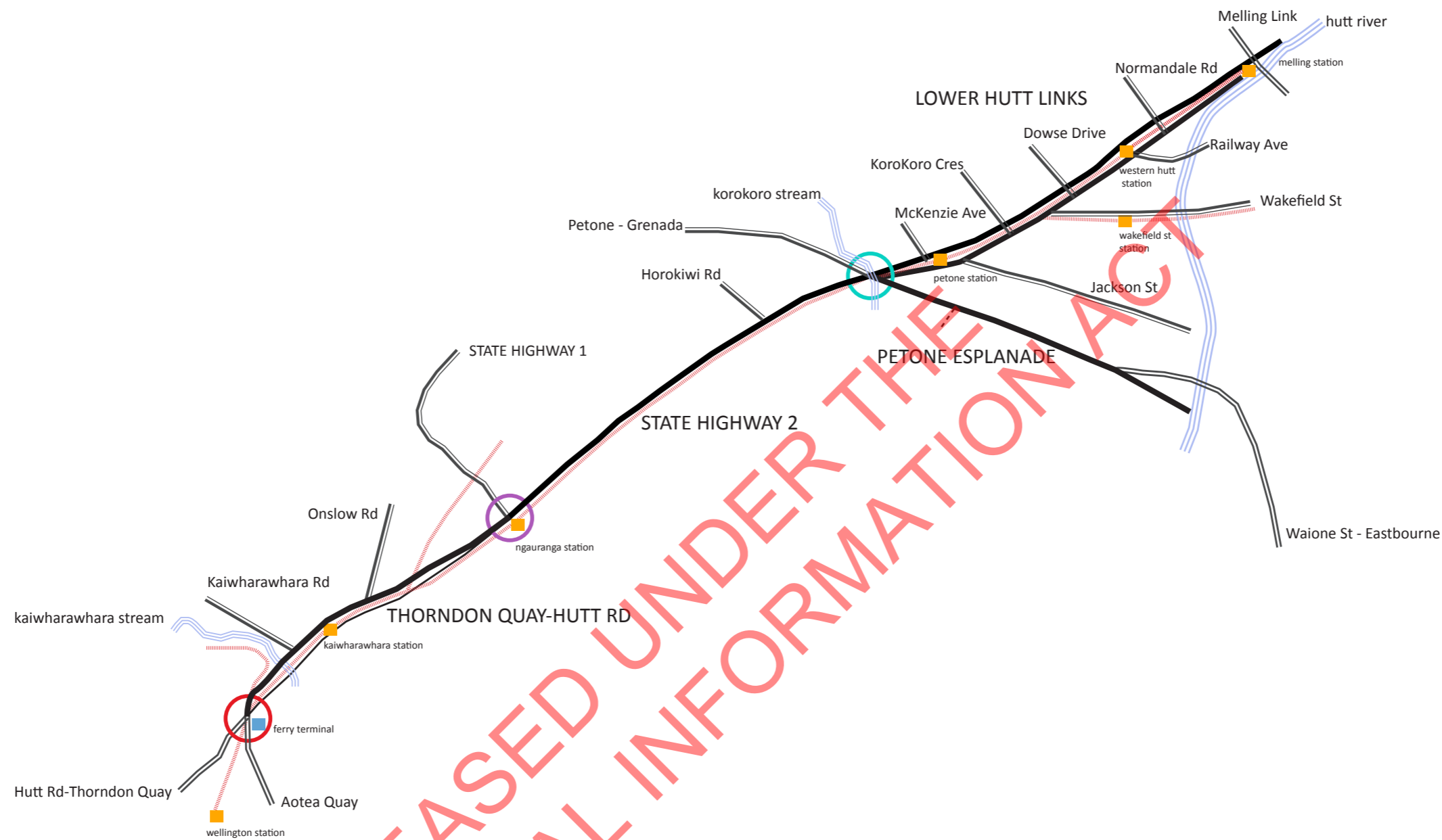


Appendix L

Urban Design and Landscape

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

DESIGN CONCEPT



Design for all pedestrian and cycle user groups and link to other sustainable transport options

challenge/opportunity: prioritising the needs of the 'enthusiastic and interested' without losing the 'confident'; ferry, rail and bus station links

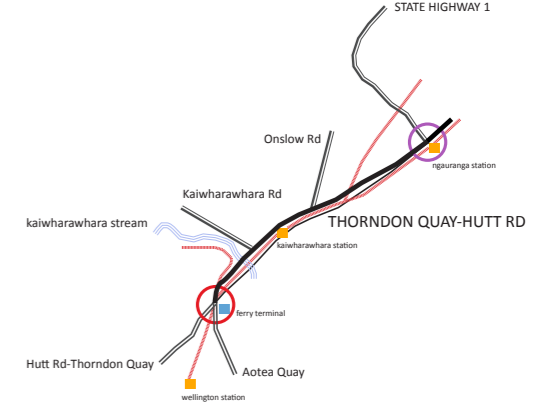
Build in 'other' urban design and landscape benefits

challenge/opportunity: coastal environment; streetscapes; city thresholds; urban centre and recreation/open space links; consistent quality aesthetic - structures and typical details

Design to avoid and reduce adverse effects

challenge/opportunity: outstanding natural features/landscapes; natural character/ecology; archaeological/historic/cultural sites; direct effects on property owners; outlook -visual amenity; streetscapes and connectivity/existing circulation patterns; recreation/openspace values.

THORNDON QUAY - HUTT ROAD CONSTRAINTS AND OPPORTUNITIES



Improve links to the Ferry Terminal , Aotea Quay and possible link to the coast via Kaiwharawhara stream or station

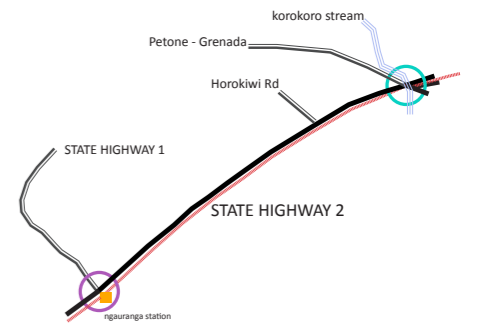


Improve paving condition and provide a clear route with consistent cues and reduced changes in level



Rationalise/reconfigure parking, vehicle access and signage to reduce conflict

STATE HIGHWAY 2 CONSTRAINTS AND OPPORTUNITIES



Improve safety and amenity of the Ngauranga interchange - as a threshold to Wellington City, a new shared and separated route to Petone and a continued 'strong and fearless' shoulder



Complement Kiwirail resilience planning



Design to minimise hazards and maintenance and enhance experience of the coastal environment

HUTT ROAD LINKS

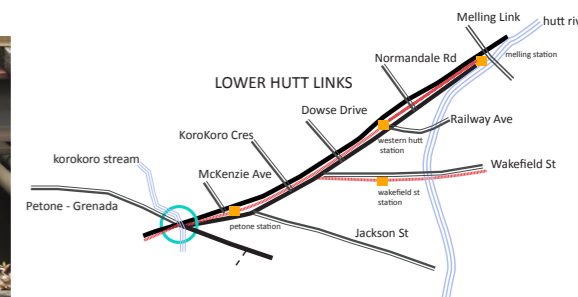
CONSTRAINTS AND OPPORTUNITIES



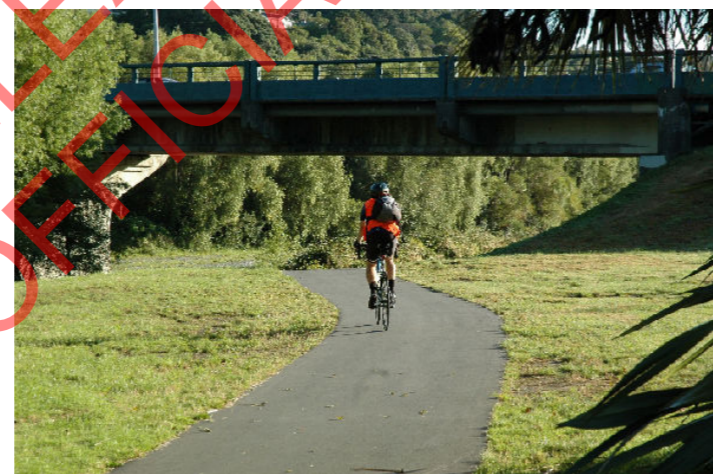
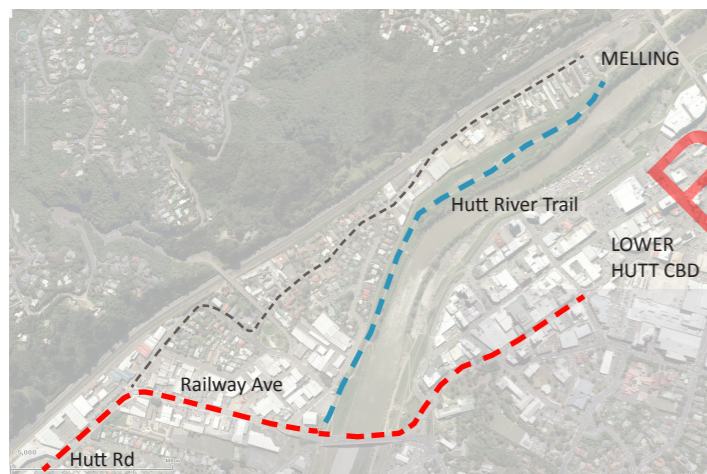
Improve safety, alignment and amenity of the Petone interchange - as a threshold to the Petone CBD and foreshore



Hutt Rd-Thorndon Quay



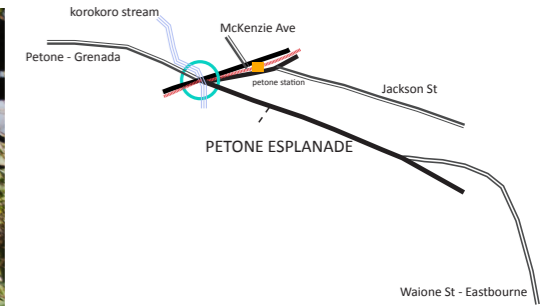
Reconfigure the existing path, parking and rail corridor along Hutt Rd - Jackson St to provide a safer commuting environment and improved connections to bus, rail and the Petone/Lower Hutt



Improve connections to the river trail network and other recreation opportunities

PETONE ESPLANADE

CONSTRAINTS AND OPPORTUNITIES



Rationalise parking and adjacent landuse in consultation with key stakeholders to provide consistent 3m+ shared path along the coastal edge



Improve paving condition and recess furniture to provide a clear paved route that is easy to maintain



Complement the Korokoro Gateway project and the wider heritage and river trail network

BRIDGES - NGAURANGA & MCKENZIE AVE LINK

URBAN AND LANDSCAPE DESIGN PRINCIPLES

To enhance amenity and landscape experience* and as per required and best practice CPTED, traffic and engineering standards:

* for cyclist and pedestrians, adjacent residents/properties with an open outlook, motorists & train passengers

LOCATION

1. Locate the pedestrian/cycle bridge in close proximity to other structures to provide an appropriate visual context and passive surveillance whilst ensuring adequate deceleration distance. For example, existing flyover structures, at Ngauranga., Petone and McKenzie Ave, can be used to provide an appropriate setting
2. Ensure ramp and bridge structure location minimises obstruction of views across the harbour for motorists and train passengers

EXPERIENCE AND ACCESSIBILITY

3. Ramp gradients should encourage easy access by all cyclists and pedestrians with gradients no steeper than 8% (1:12) and ideally 5%(1:20). Limit steep sections to the shortest distance possible
4. Ramp and bridge width and the angle of approach/ transition should reduce likelihood for collision with minimum width of 3m (4m at handlebar height)
5. Bridge lighting/utilities should be integrated within the structure leaving the external surfaces free of services and include protection against vandalism. Avoid light spill/nuisance for surrounding residents and other users of the corridor
6. Safety rails and screens should be integrated within the structure and maximise protection from the wind and views of the surrounding coastal escarpment, city and harbour. Avoid snag hazards by e.g. using an outward splay on the balustrade
7. Provide off line viewing /seating areas for a lookout over the harbour and a response to the heritage values of Ngauranga and Petone

FORMS AND MATERIALS

8. Use forms that complement the character and scale of the surrounding urban area and landscape. Respond to the forms of the coastal environment and escarpment, existing flyover and rail corridor structures and the proposed northern gateway sculpture
9. Use clean lines and proportions that minimise the bridge profile
10. Use light and shadow to reduce apparent scale. For example, barriers/facades that slope inwards and extend below the deck and recessed beams will create shadow lines and reinforce the horizontal lines
11. Use simple details and connections e.g. drop the pile to column connection below ground & avoid cap beams
12. Use durable materials and finishes suitable for a harsh coastal environment and to reduce graffiti, maintenance and minimise life costs
13. Use colour/patterns/texture and/or lighting as part of a coherent route wide treatment and to emphasise the bridges landmark qualities and to celebrate the sites natural and cultural context. Avoid visual clutter and token motifs



Resolution Point - Auckland | Location - Experience and Accessibility - Forms and Materials



Jacobs Ladder - Victoria Park | Experience and accessibility - Forms and Materials



Granville Island - Vancouver | Location - Experience and accessibility - Forms and Materials

BRIDGES - NGAURANGA

URBAN AND LANDSCAPE DESIGN STATEMENT

PRINCIPLES	RECOMMENDED DESIGN PARAMETERS
LOCATION	
<p>1. Locate the pedestrian/cycle bridge in close proximity to other structures to provide an appropriate visual context and passive surveillance whilst ensuring adequate deceleration distance. For example, existing flyover structures, at Ngauranga., Petone and McKenzie Ave, can be used to provide an appropriate setting</p>	<p>1a The bridge structure should be located in close proximity to SH1 to ensure the least impact on existing views and an appropriate setting; so that the structure can be viewed as an integrated part of the Ngauranga interchange. Aligning the end of the cycle/pedestrian bridge ramps with the SH2 on and off ramps would provide an appropriate urban design setting. This would provide approximately 200m for deceleration before the approach to the Ngauranga underpass</p>
<p>2. Ensure ramp and bridge location minimises obstruction of views across the harbour for motorists and train passengers</p>	<p>2a Provide steeper ramp gradients (with landings and no steeper than 8%) and a sharper turning angle onto the bridge to reduce the overall length of the structure. Note: a 5% gradient would require a ramp length of approximately 120m with 7 landings. An 8% gradient would require a ramp length of approximately 75m with 7 landings and a hand rail at the height of 1m. The balustrade upstand and its extension below the deck of the ramp can be used to provide the appearance of a consistent gradient from the road corridor</p> <p>2b Design elements to maximise visibility under the ramps and bridge by using slim line concrete/steel columns in the substructure with wider and equally spaced or balanced spans and simple connections into the ground and the superstructure. Avoid earth embankments where the ramp height is above 1.8m.</p> <p>2c Use superstructure elements that contribute to an overall light and airy appearance by using a simple palette of components including a visually permeable facade/balustrade (mesh/glass/etc).</p>
EXPERIENCE AND ACCESSIBILITY	
<p>3. Ramp gradients should encourage easy access by all cyclists and pedestrians with gradients no steeper than 8% (1:12) and ideally 5%(1:20). Limit steep sections to the shortest distance possible</p>	<p>3a Ramp gradients should be designed to a maximum of 8% preferably less than 5%. See note above</p> <p>3b Ramp to bridge alignment (turn areas) should provide for good cycle flows, visibility and a safe speed for the start of the descent (10km/hr, tbc)</p> <p>3b Ramp paving should have a relatively smooth anti slip finish (NZS 4586:2006)with cross fall and ongoing maintenance provided to maximise accessibility including during wet weather</p>
<p>4. Ramp and bridge width and the angle of approach/ transition should reduce likelihood for collision with minimum width of 3m (4m at handlebar height)</p>	<p>4a Provide a minimum ramp and bridge envelope (clear zone at handlebar height) of 4m</p> <p>4b Design for reduced cyclist speed over the bridge (20km/hr is recommended on the San Francisco Bay Bridge Trail, for example) through alignment of ramp to bridge turning area and other 'calming' elements such as changes in paving (exposed aggregate, timber decking inserts), supergraphics (as used on other 'slow zone' sections of the route) and rest areas with seating elements.</p>
<p>5. Bridge lighting/utilities should be integrated within the structure leaving the external surfaces free of services and include protection against vandalism. Avoid light spill/nuisance for surrounding residents and other users of the corridor</p>	<p>5a Power cables and other services should be integrated within structure using duct system with flush covers for servicing. An LED lighting system is recommended with fixtures to form part of, or be attached to, other design elements such as balustrades/deck/seating elements.</p> <p>5b Stormwater components should be integrated/screened from pedestrian/cyclist and rail/road corridor users with any channels required to be set below the ramp and bridge deck.</p>

BRIDGES - NGAURANGA

URBAN AND LANDSCAPE DESIGN STATEMENT CONT'D

PRINCIPLES	RECOMMENDED DESIGN PARAMETERS
EXPERIENCE AND ACCESSIBILITY cont'd	
<p>6. Safety rails and screens should be integrated within the structure and maximise protection from the wind and views of the surrounding coastal escarpment, city and harbour. Avoid snag hazards by e.g. using an outward splay on the balustrade and integrated handrail.</p>	<p>6a The ramp and bridge facade should provide a minimum 1.4m balustrade and be constructed from a visually permeable material that also provides good shelter from the wind (mesh/glass/etc.)</p> <p>6b Final height of the balustrade is to avoid obstruction at eye level; increased heights may be appropriate to ensure reduced impact on sightlines for typical range of pedestrians/cyclists</p> <p>6b Integrate hand/leaning rail into balustrade with splay to reduce risk of snag hazard for cyclists and improve accessibility</p>
<p>7. Provide off line viewing /seating areas for a lookout over the harbour and a response to the heritage values of Ngauranga and Petone</p>	<p>7a Provide for a minimum of one offline area (e.g. cantilevered viewing platform offline at the end of the coastal ramp) with seating, improved shelter (screen height increased along exposed edges and to frame view) and possible interpretation/signage elements.</p> <p>7b Ensure deck width, balustrade height and hand rail provide for informal rest areas along the bridge extent with a minimum 2m central 'clearway' for commuting traffic and possible additional seating elements and angled viewing 'buildouts' mid way across the bridge.</p>
FORMS AND MATERIALS	
<p>8. Use forms that complement the character and scale of the surrounding urban area and landscape. Respond to the forms of the coastal environment and escarpment, existing flyover and rail corridor structures and the proposed northern gateway sculpture</p>	<p>8a Use steel and concrete in the construction of the main components of the bridge and ramp super/sub structure with a 100 year design life (tbc). Fewer, larger elements are recommended (e.g. larger substructure columns at increased spacing), in keeping with the road and rail corridor structures</p>
<p>9. Use clean lines and proportions that minimise the bridge profile</p>	<p>9a Use simple forms/angles and a smooth finish for the majority components in the structure</p>
<p>10. Use light and shadow to reduce apparent scale. For example, barriers/facades that slope inwards and extend below the deck and recessed beams will create shadow lines and reinforce the horizontal lines</p>	<p>10a Provide for bespoke balustrade and beam design options to be confirmed during detailed design; as a minimum allow for an extended facade and recessed beams in preliminary costing</p>
<p>11. Use simple details and connections e.g. drop the pile to column connection below ground & avoid cap beams</p>	<p>11a Connections tbc during detail design. As a minimum, preliminary costing should provide for below ground column connections and simple joints (no cap beam) between columns and the main beams of the structure</p>
<p>12. Use durable materials and finishes suitable for a harsh coastal environment and to reduce graffiti, maintenance and minimise life costs</p>	<p>12a Provide for an enhanced specification for all materials, finishes, fixtures, paint systems etc. to include protection from salt laden strong winds (ref NZS 2312:2002), sun damage and vandalism (e.g. matte clear coat protectant to all columns, walls and balustrade). Provide for appropriate maintenance schedule including washing to reduce salt buildup and corrosion.</p>
<p>13. Use colour/patterns/texture and/or lighting as part of a coherent route wide treatment and to emphasise the bridges landmark qualities and to celebrate the sites natural and cultural context. Avoid visual clutter and token motifs</p>	<p>13a. Detailed design to provide for bespoke facade/bridge balustrade including consultation, possible artist/specialist architectural input and specialist fabrication/installation requirements.</p>