

SITE INTRODUCTION

Woolston South is a suburb located to the south-east of Christchurch city, approximately 3 kilometers from the central business district. It has developed along Ferry Road and lower Heathcote River- Woolston Loop, serves as a residential, commercial and light industrial area. Its position on the railway line to Lyttelton also has raised its importance. After the earthquakes, some of the industrial factories has been damaged as well as the community infrastructure, such as community library. With the change of the Tannery transformed from an industrial factory to a popular retail centre, it has started to positively affect the surrounding land, communities, and neighborhoods. The Ferry Road Master Plan (stage one), planned by Christchurch City Council, also gives a clear indication of the future development in Woolston Town Center. Therefore, with these range of opportunities in between the town centre and the Tannery, the Woolston South would retrofit the brownfields and flourish along side with Christchurch.

VISION

This project is focused on retrofitting the brownfield into a mixed use land, facilitating this transition in a 20-year long term planning, and celebrating the industrial history of Woolston South. The proposal includes regenerate and enhancement a healthy place where people can live and work together, as well as providing habitat for wildlife.

GOALS

1. To retrofit the brownfield and provide affordable housing, social infrastructure and recreation space for population growth. This would encourage community activities and strengthen community spirit. The site will be a viable employment area with existing industrial jobs and proposed office, workshops and educational opportunities.
2. To provide water management strategies for flooding issues and storm water runoff, such as constructed wetland and water infiltration system.
3. To regenerate natural environment, enhance ecological values and creates interaction opportunities along Woolston Loop.



EXISTING ISSUES

Land Use + Community



1. Lack of community space
2. Gentrification appears around the mixed use area with the establish of the Tannery mall
3. About 600ha industrial land unused
4. 300 population growth in 20 years

Accessibility + Connectivity



1. Poor accessibility to the river
2. No clear connection between all site attractions

Flood + Rainfall



1. Flooding is a key issue
2. Higher average rainfall than Christchurch CBD

Storm Water System



1. Storm water carrying dust, clay and discharge to the river directly by pipe system.

Green Infrastructure



1. Few green infrastructure in industrial area and urbanized area
2. Riparian habitat need improvements to increase biodiversity

River Corridor



1. Channelized river bank loose its natural amenity and ecological values

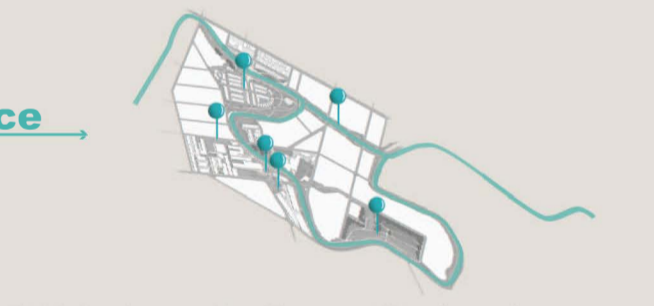
KEY STRATEGIES

Connect



1. Propose footpath bridge to connect key sites
2. New housing development
3. Open the river edge, provide more accesses to the river
4. Retrofit disused industrial land and buildings for community use

Reduce

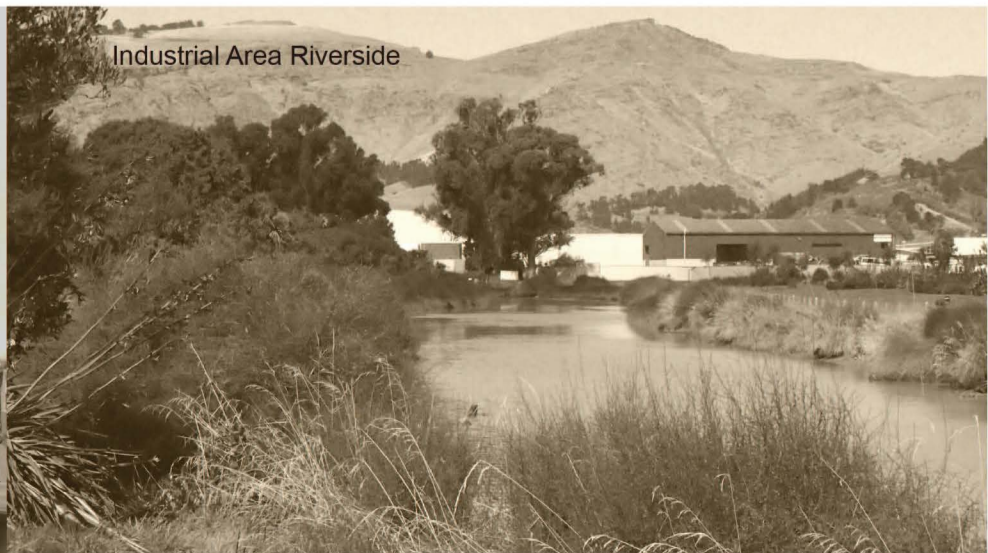
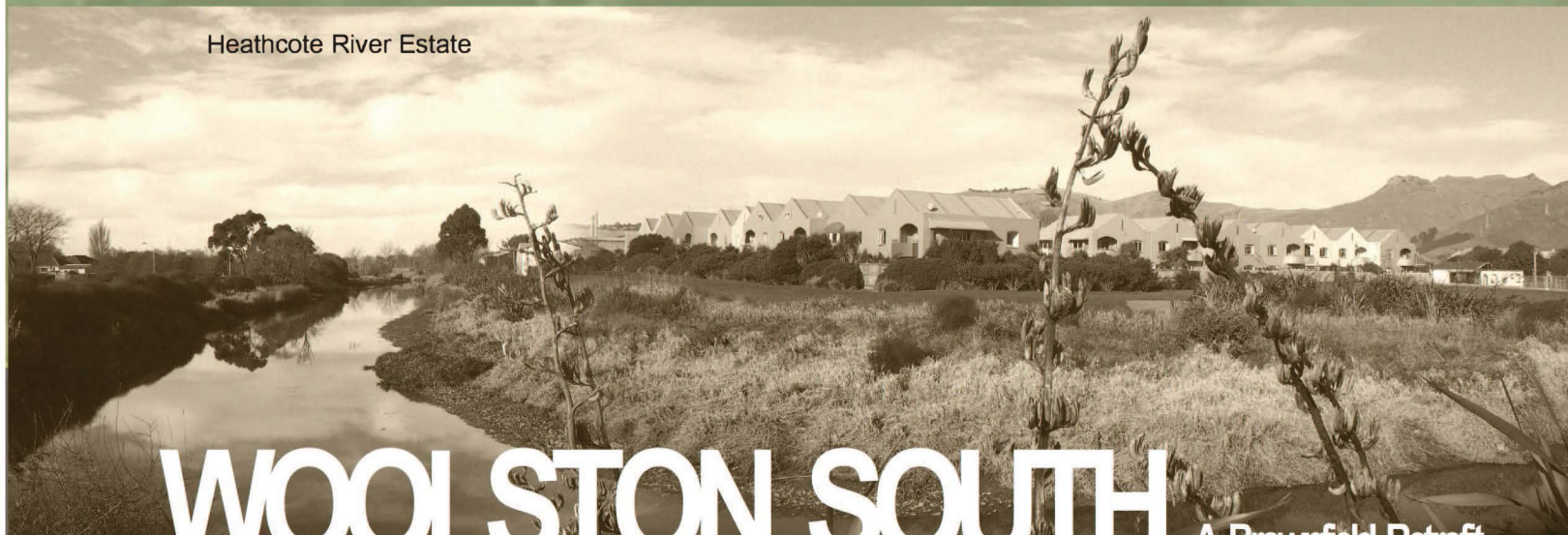


1. Main storm water storage will be the water resource for constructed wetland
2. Rain garden and wetland infiltrate the storm water
3. Permeable pavers in suitable urban area
4. Increase water capacity of Woolston Cut
5. New housing needs 1.5m of floor level above ground

Regenerate



1. Soften channelized river bank, and increase the ecological value and quality of Woolston Cut
2. Improve riparian habitat to increase biodiversity
3. Introduce green infrastructure to industrial and urban area. It also strengthen the relationship of the riparian green corridor

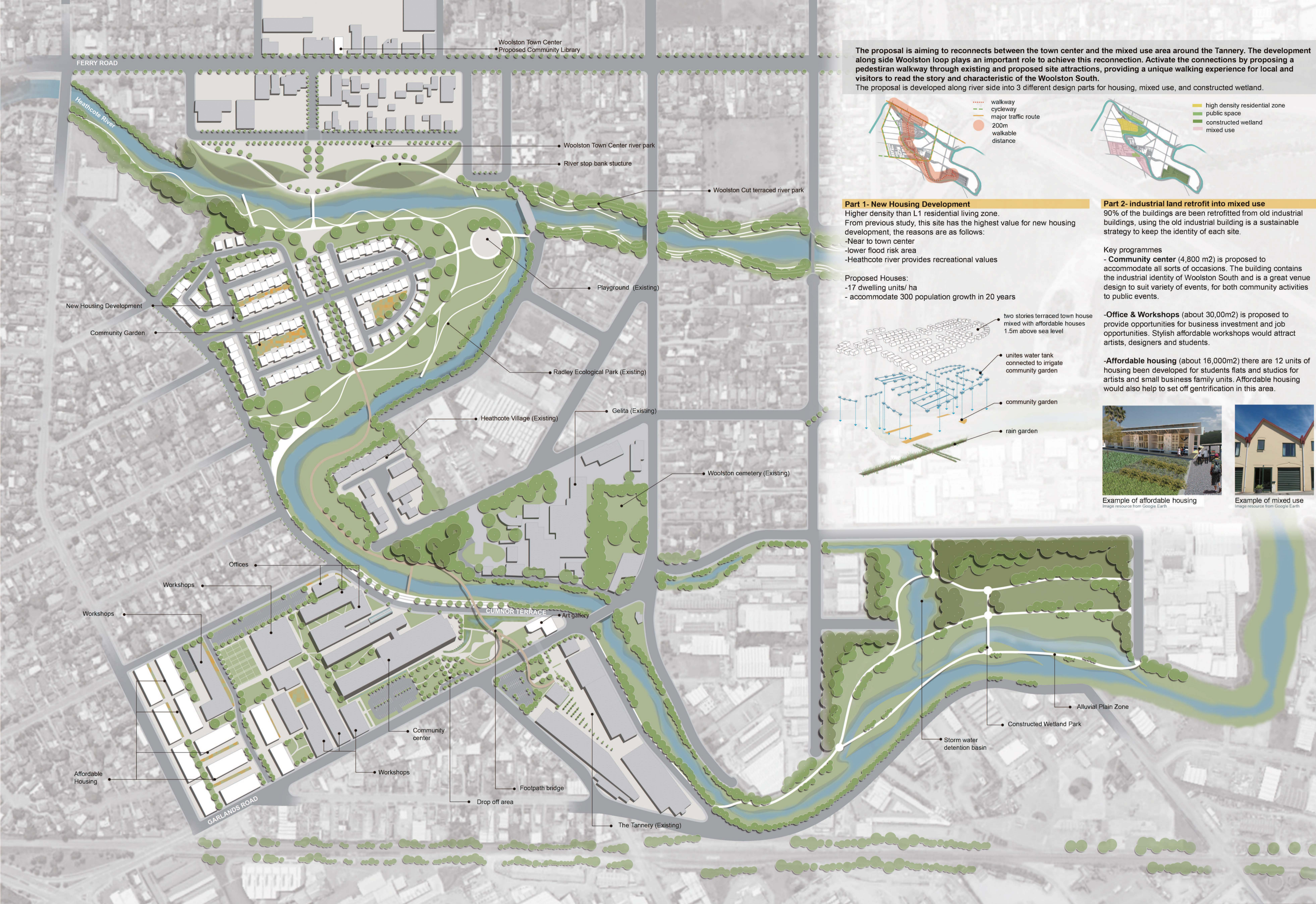


WOOLSTON SOUTH A Brownfield Retrofit

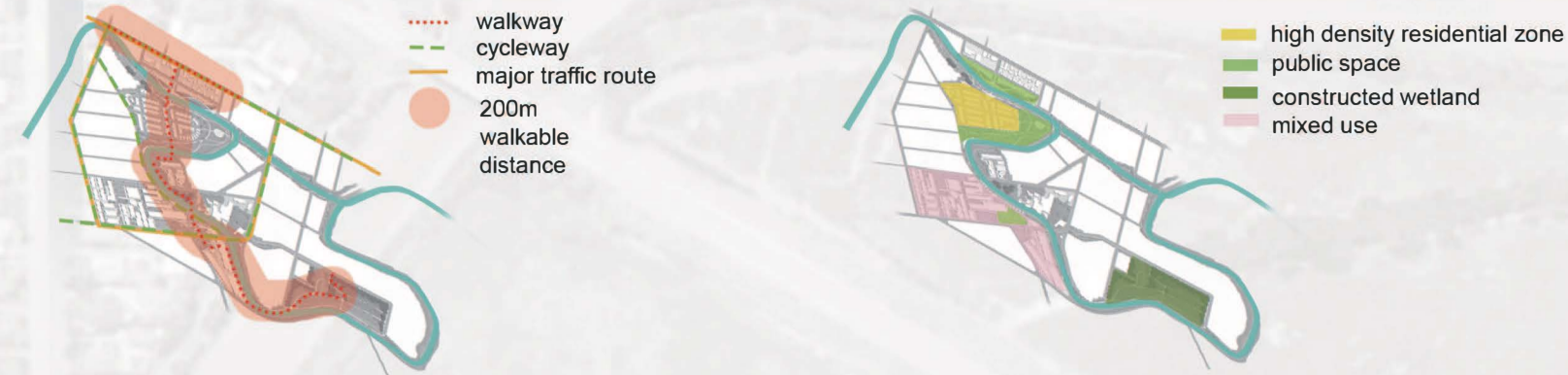
SCALE 1: 2000



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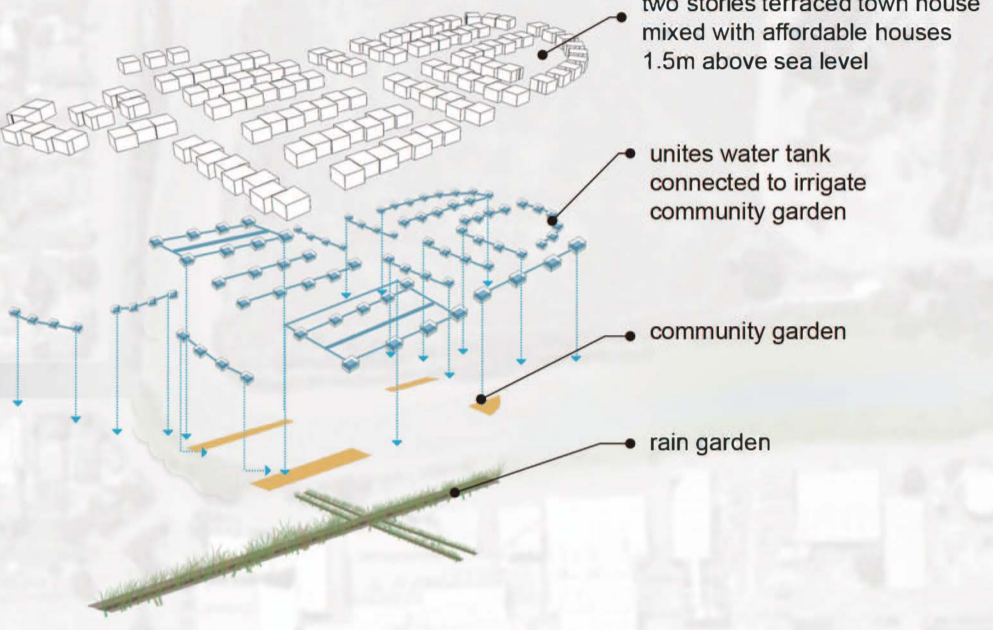


The proposal is aiming to reconnects between the town center and the mixed use area around the Tannery. The development along side Woolston loop plays an important role to achieve this reconnection. Activate the connections by proposing a pedestrian walkway through existing and proposed site attractions, providing a unique walking experience for local and visitors to read the story and characteristic of the Woolston South. The proposal is developed along river side into 3 different design parts for housing, mixed use, and constructed wetland.



Part 1- New Housing Development
Higher density than L1 residential living zone. From previous study, this site has the highest value for new housing development, the reasons are as follows:
-Near to town center
-lower flood risk area
-Heathcote river provides recreational values

Proposed Houses:
-17 dwelling units/ ha
-accommodate 300 population growth in 20 years



Part 2- industrial land retrofit into mixed use
90% of the buildings are been retrofitted from old industrial buildings, using the old industrial building is a sustainable strategy to keep the identity of each site.

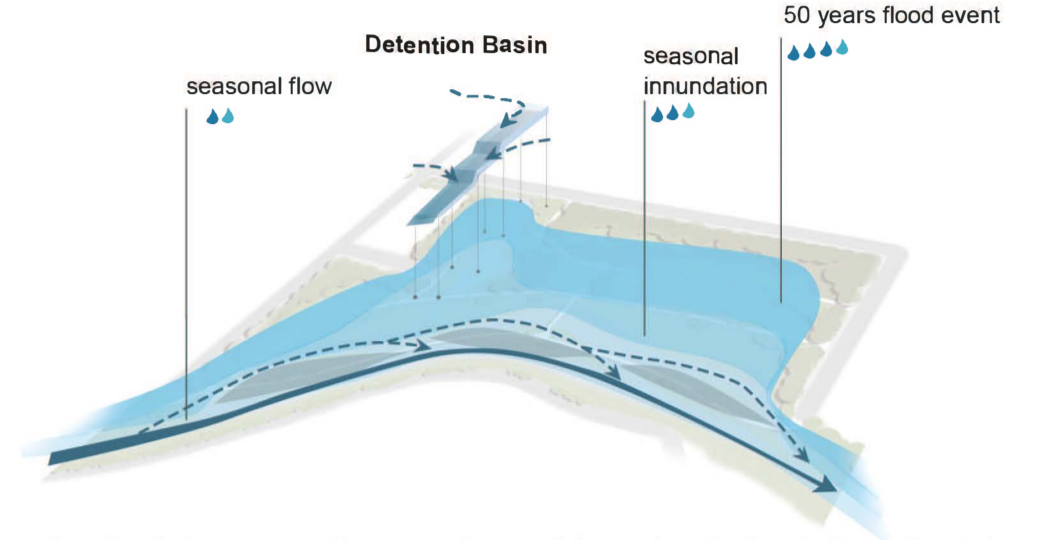
Key programmes
- **Community center** (4,800 m2) is proposed to accommodate all sorts of occasions. The building contains the industrial identity of Woolston South and is a great venue design to suit variety of events, for both community activities to public events.

-**Office & Workshops** (about 30,00m2) is proposed to provide opportunities for business investment and job opportunities. Stylish affordable workshops would attract artists, designers and students.

-**Affordable housing** (about 16,000m2) there are 12 units of housing been developed for students flats and studios for artists and small business family units. Affordable housing would also help to set off gentrification in this area.



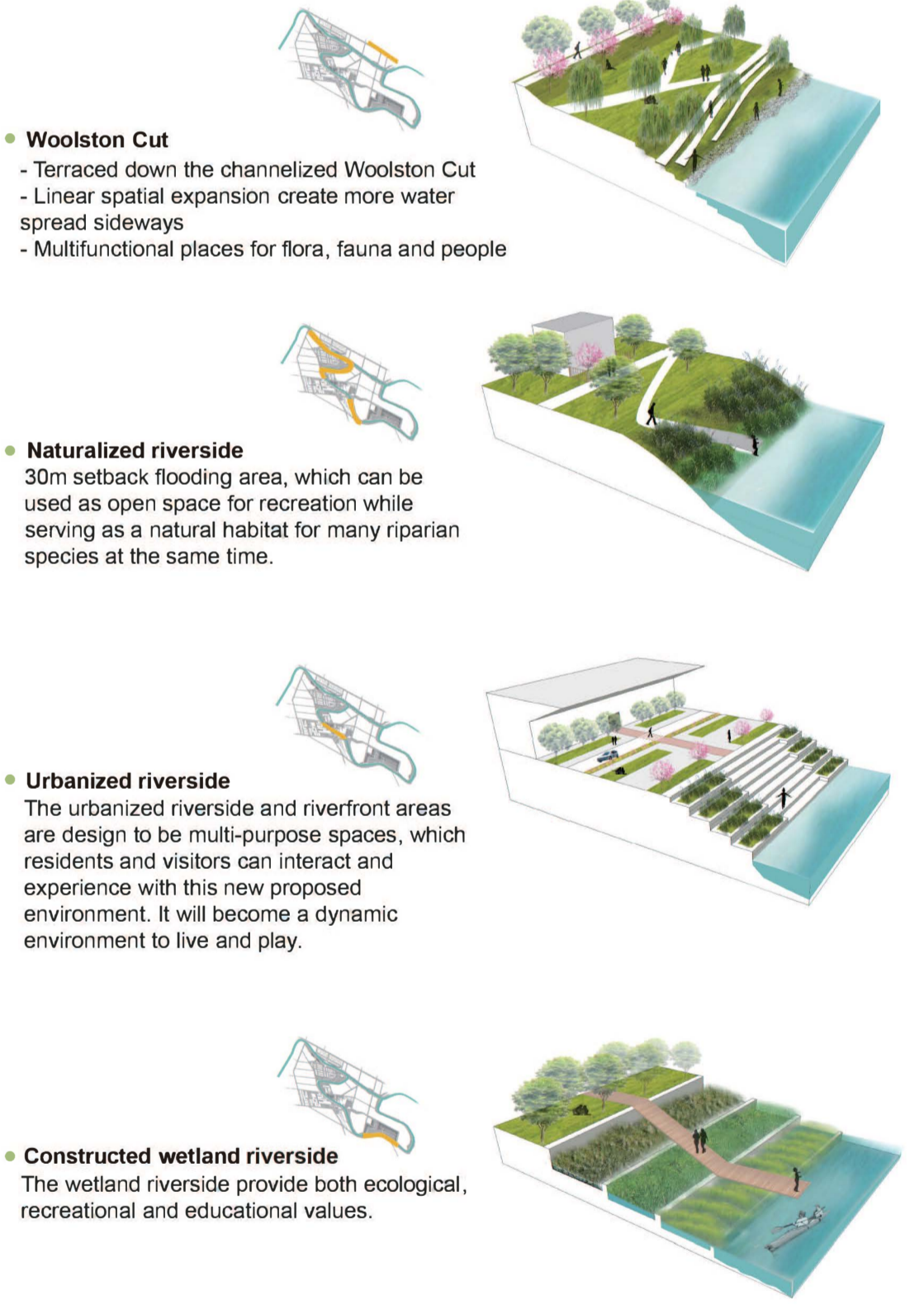
Part 3- Constructed Wetland



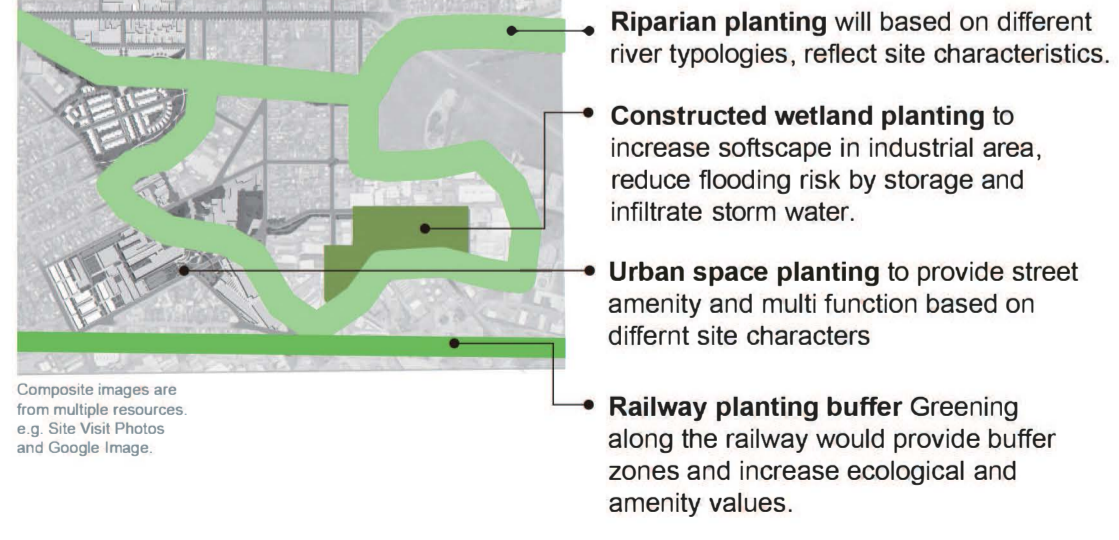
Detention Basin is proposed to store the peak intensity of rains in the industrial area. Following the formula from Christchurch City Council ($Q=2.78CiA$), the detention basin size is proposed to be 1ha, therefore, the average depth of the basins is 1.2m.

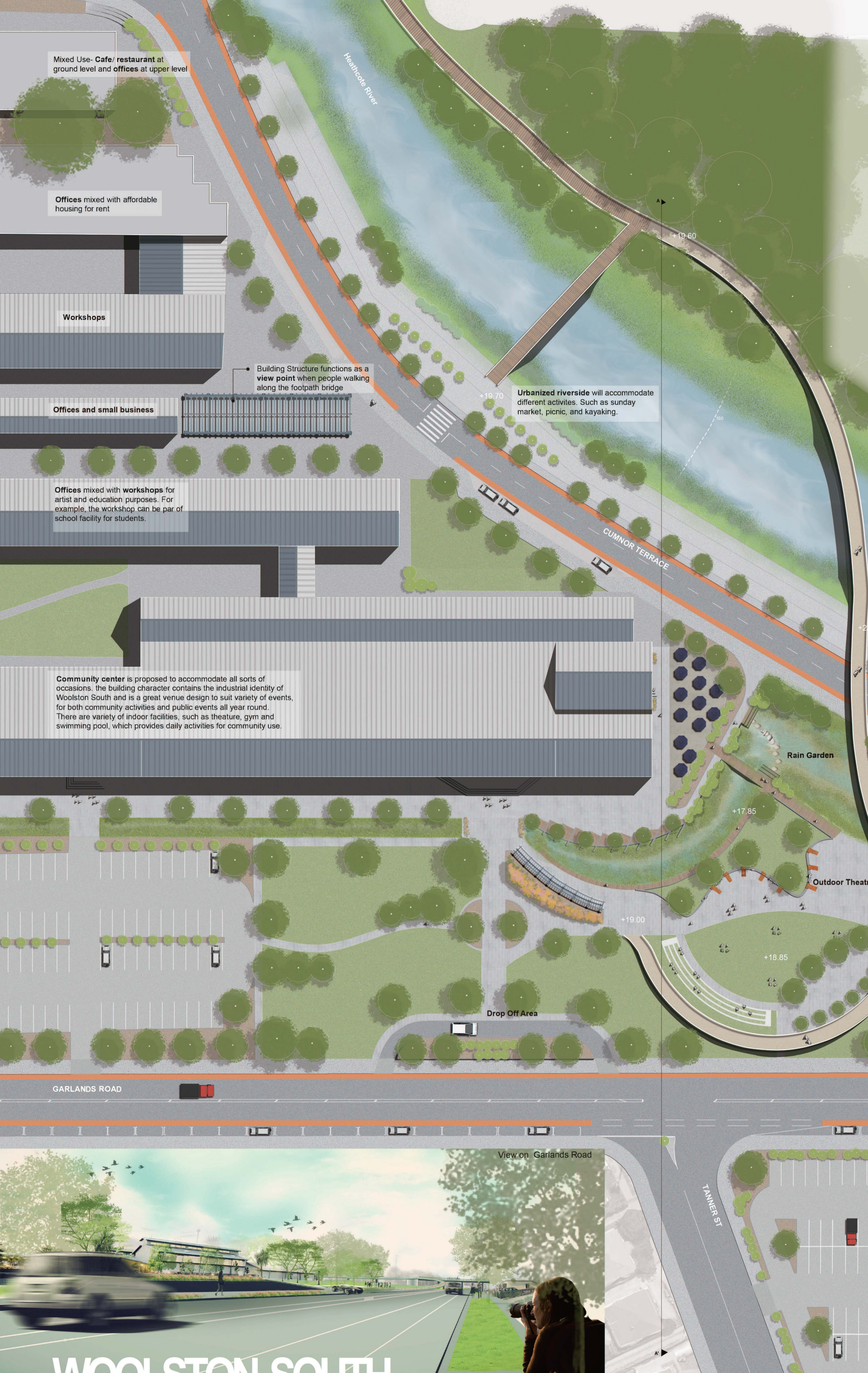
This design concept would help reduce flooding risk, while starting a new century for regeneration on an industrial land.

Part 4- River Typologies



General planting strategies





Mixed Use- Cafe/ restaurant at ground level and offices at upper level

Offices mixed with affordable housing for rent

Workshops

Building Structure functions as a view point when people walking along the footpath bridge

Offices and small business

Offices mixed with workshops for artist and education purposes. For example, the workshop can be par of school facility for students.

Community center is proposed to accommodate all sorts of occasions, the building character contains the industrial identity of Woolston South and is a great venue design to suit variety of events, for both community activities and public events all year round. There are variety of indoor facilities, such as theatre, gym and swimming pool, which provides daily activities for community use.

GARLANDS ROAD

View on Garlands Road

New Community Area

The design is to strongly connect the river, mixed use area and the Tannery through series of design interventions which evoke and celebrate the character and narrative of Woolston South.

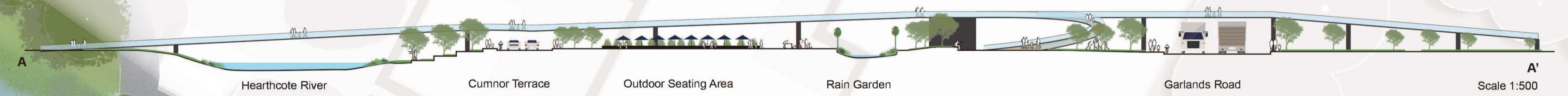
The design of the mixed use area is oriented on the existing unused industrial buildings, which aims to keep the industrial building character of Woolston South.

The proposed linear footpath bridge provides strong connection between the river, mixed use area and the Tannery. The bridge offers a safer pedestrian crossing, also create a different perspective of experience to the river and through out Woolston South.



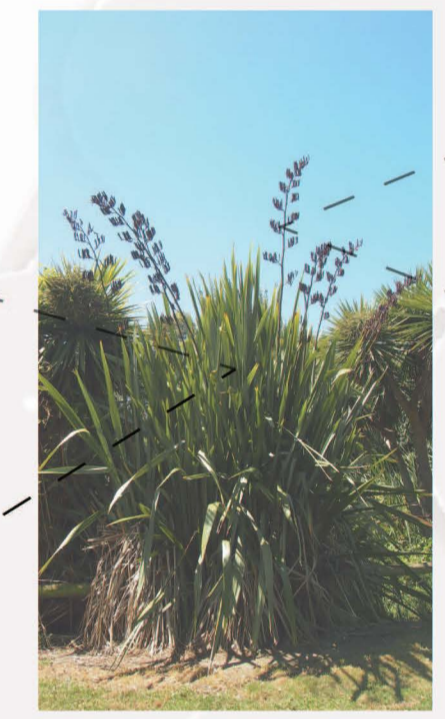
View on Cumnor Terrace

Composite images are from multiple resources, e.g. Site Visit Photos and Google Image

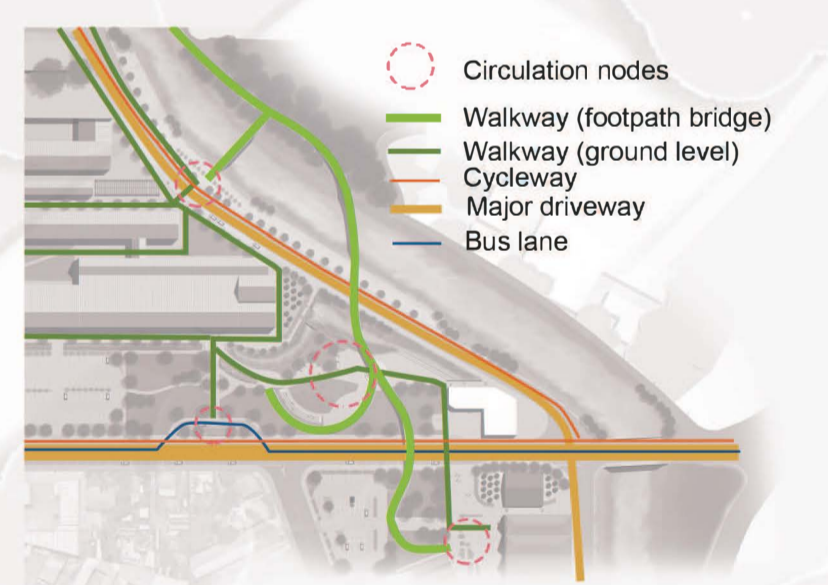


Iconic Footpath Bridge Design Inspiration

Phormium tenax (NZ flax) grows along Heathcote River, the form of the plant gives a good inspiration to the bridge form. The footpath bridge ramp inspired from the strong weeping form of the flax leaves. The linear form of the bridge is inspired by the structure of the flower stalk, with stalks heading different directions.

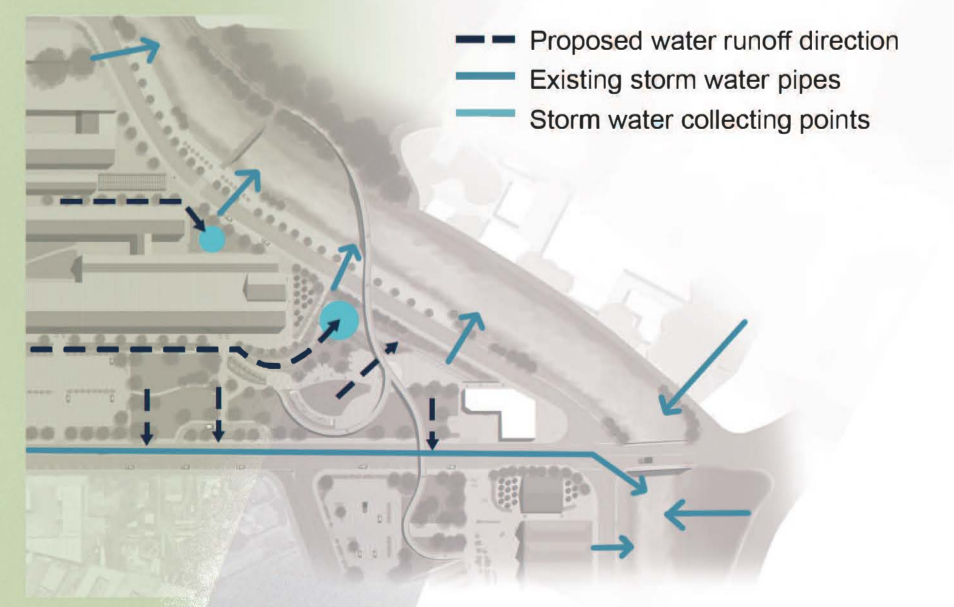


Circulation
This circulation provides pedestrian access in priority, and increase the safety for both pedestrian and cyclist. The drop off area is designed based on the existing land form of the diesel station.



Storm water management

The first flush will be collected by drainage and overflow system, store by rain garden and then direct to the storm water channel. There are full collecting and storage system throughout the whole design, the collected storm water will be filtered through rain garden and wetland before discharge to the river. The 1 in 50 year storm, the rain garden will collect about 38m³ of storm water with 85mm depth of water on site. Following the calculation formular from Christchurch City Council's resource.



Art Gallery for temporary art exhibition and also function as a small art workshop for community.

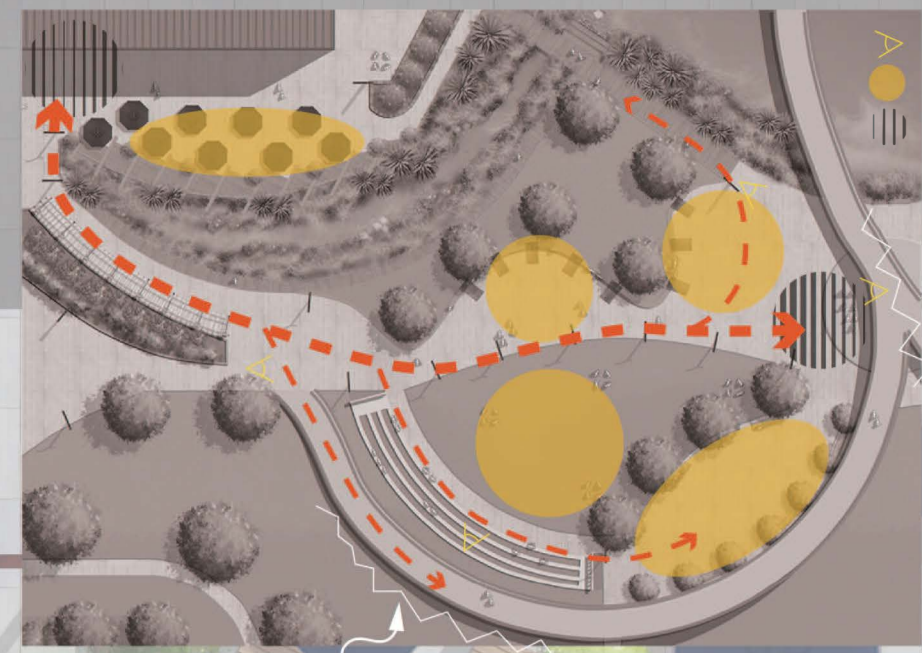
TANNER ST

The Brewery

The Tannery

CUMNOR TERRACE

The design provides a unique urban center for community, offers variety of multi-purpose spaces. This open space been divided into smaller, yet well-design spaces to accommodate range of activities or events.



key view point
sunny area
shady area

Wind from sea
bridge pier
helps to block
wind for the
outdoor theatre

Wind from Port Hill

Seating area and rain garden
This outdoor seating area provides an opportunity for people to interact and learn about the system and vegetation of the rain garden. The phase of the material is from cold concrete to warm timber mix with steel and leads to the green vegetations. The steel reaches out towards the rain garden that let people to sit on and provide a different physical sensation.

Rain garden shrubs
e.g. sedge, *Juncus spp.*

Rain garden tall shrubs
e.g. nz flax

Rain garden tree
e.g. cabbage tree

Small shrubs
e.g. *Hebe spp.*

Rain Garden
-Reduce flooding risk in urbanized area
-Create habitat for birds and insects
-Increase enjoyment and amenity within community space
-Low maintenance

Ground lighting
-Ground lighting covered by 2mm translucent polycarbonate sheet, and 2mm corten steel sheet.
-Laser cut on corten steel telling narratives of the site e.g. "Skellerup 1919" "Woolston Brass 1880"

Concrete seating wall
-Linear shape concrete wall express the river character.
-The attached thick corten steel express the industrial character of the site, and prevent damage from skaters.

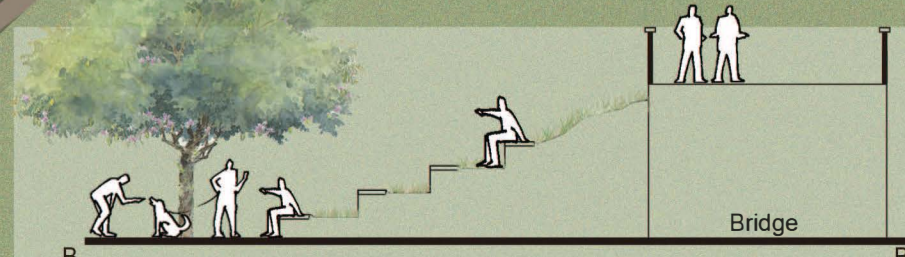
Lighting
-2.5m facility with corten steel texture, which evoke the industrial and tree character of the site.

Pergola
-steel structured with glass on top
-function as a indication to lead people walk to the outdoor lawn space.

Outdoor theatre

Materials
The materials used in outdoor community area and throughout the local townscape will be evoke with the industrial identity and the linear character of the Heathcote River. Corten steel, concrete and timber will be the key materials in landscape structure design.
Colors
Natural material color would be kept. The reddish brown color of corten steel and gray concrete paver evoke the industrial identity of the site. While the evergreen and deciduous plantings would soften the hardscape and provide color change in different seasons.

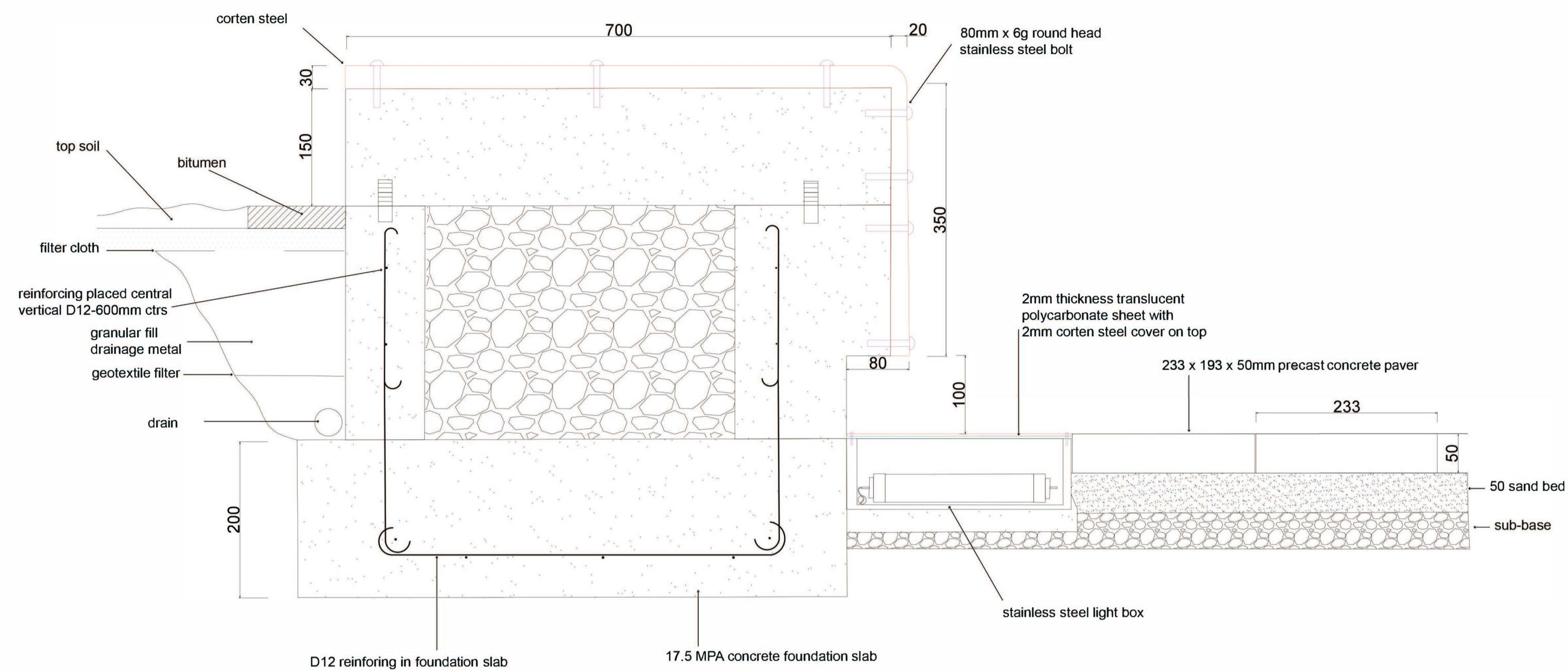
Legend
TW Top of Wall
BW Bottom of Wall
TS Top of Step
BS Bottom of Step
TR Top of Ramp
BR Bottom of Ramp
FFL Finished Floor Level



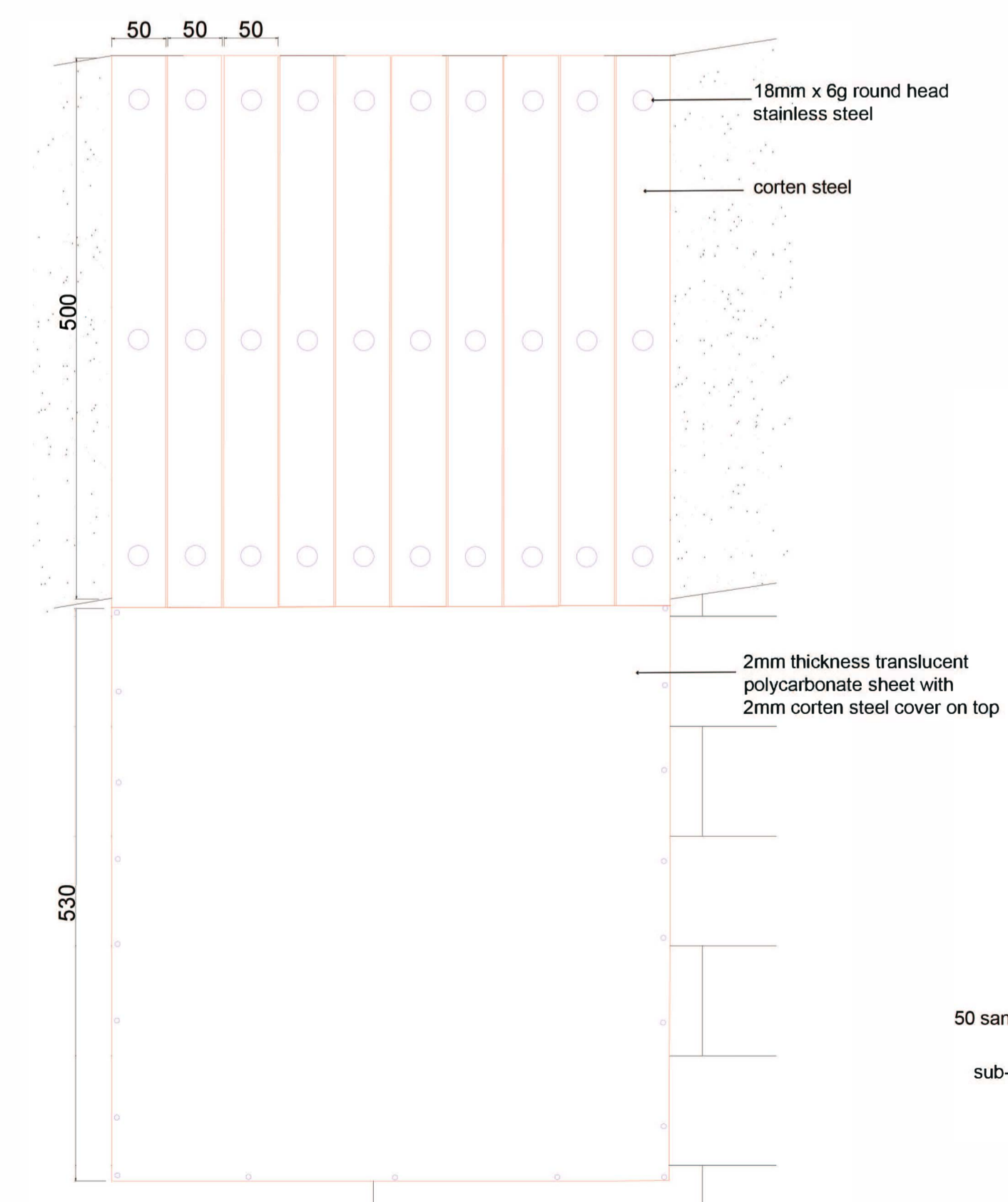
Overall strategy

The overall design strategy of Woolston South area will be using the materials that evoke with the industrial identity and the linear characteristics of the Heathcote River. These proposed materials will reflect the industrial characteristic of the local townscape and Woolston South. For example, the reddish colour and texture of corten steel release the characteristic of the history from an industry area.

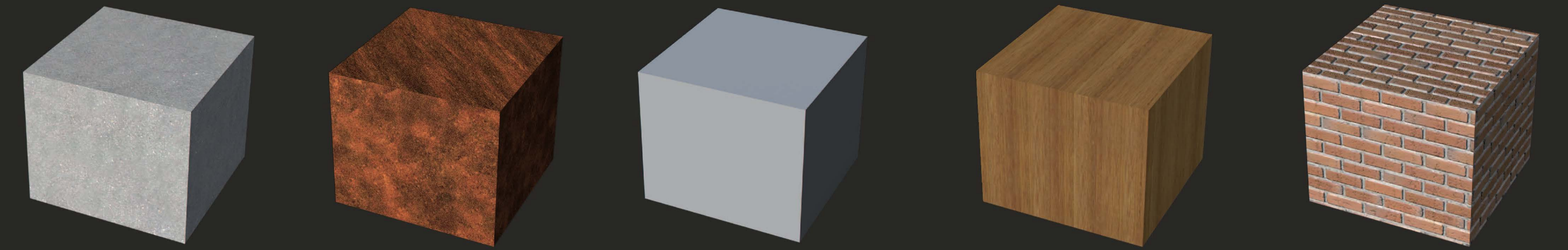
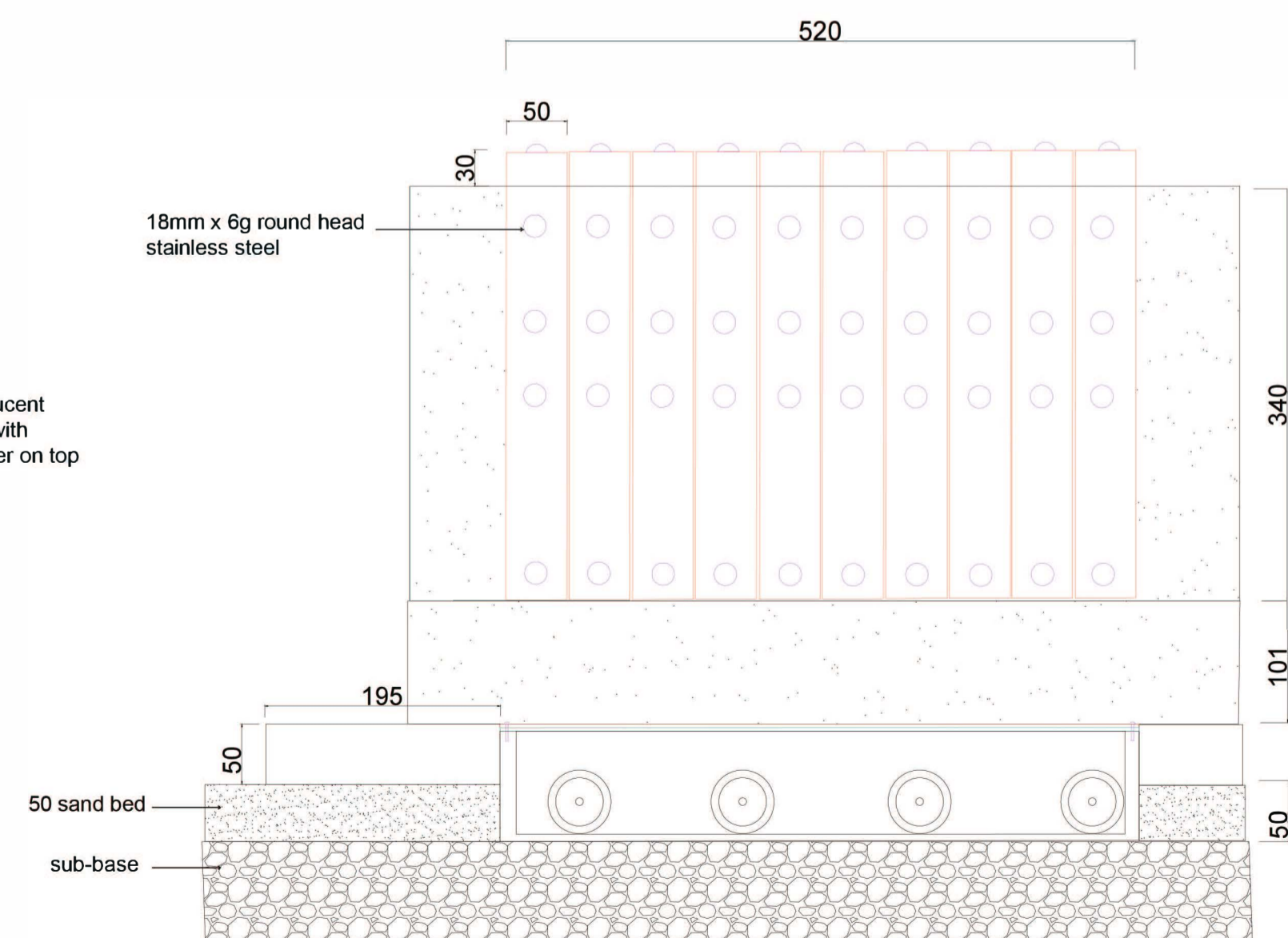
1 Cross Section - Concrete Seat Wall
Scale 1:20



2 Plan View - Concrete Seat Wall
Scale 1:20



3 Front Elevation - Concrete Seat Wall
Scale 1:20



Concrete

The fine texture with sense of man made material, its dense and cold expression creates a great contrast with fluent and soft textures. The surface varies on its uses. For example, the surface will be smooth for people to sit on or coarse on footpath.

Corten Steel

The reddish brown color of corten steel also evokes the beauty of industrial character. The steel is economical, long-lasting and fully recyclable material.

Stainless steel

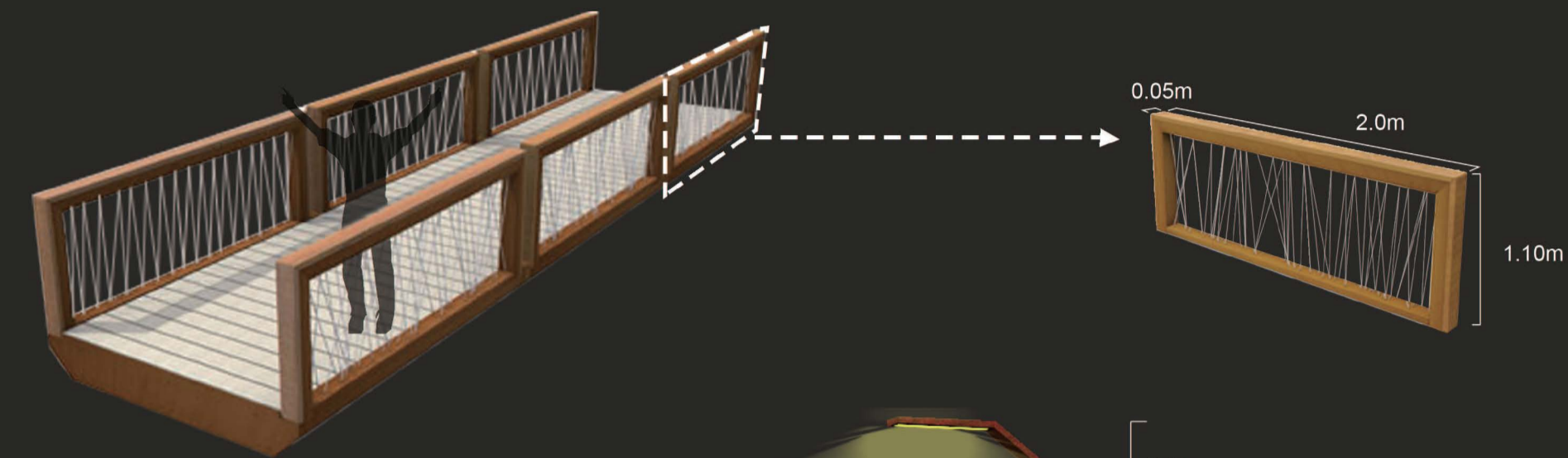
Best materials for handrails in public spaces. Construction material.

Treated Timber

Timber is the best material for seating and decking, which provides soft warm feeling.

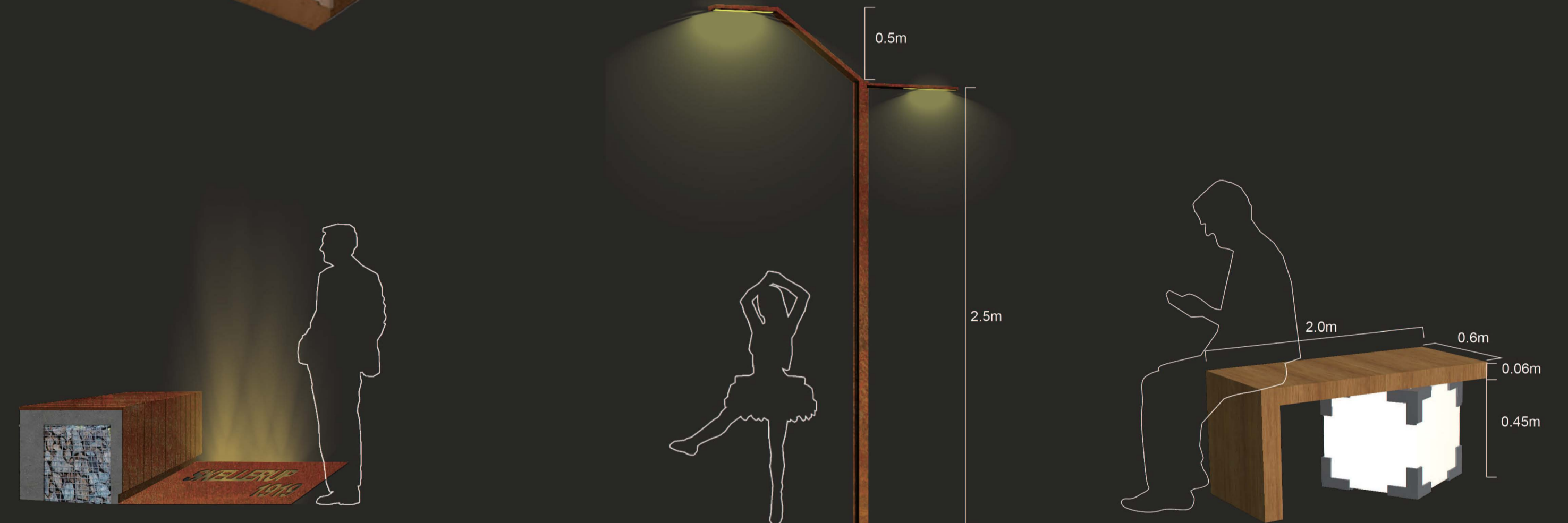
Clay-bricks

Clay brick offers an enormous range of natural colors for lasting beauty. Inspiration from The Tannery building material. Introducing the existing landmark key construction materials to the community area, and create a unique character of the site. This material will be used for garden planter retaining walls.



1. Foot path bridge

The key construction materials for the foot path bridge are concrete, corten steels and timber. Concrete and corten steels are for the condation and supporting structure. While timber is mainly used for bridge floor and fence frame, with iron wires knitting around. It reflects both industrial and naturalized river character of the site.



2. Concrete Seating Wall with Underground lighting

The linear shape concrete seating wall with corten steel attached, express the characteristic of industry. The seatings are installed along the fluent linear concrete structure, which reflect the nature form of the river.

3. Corten texture lighting

The lighting design was inspired by both tree brunch (nature) and building frame (industry) on site. The structure shows the beauty of simplification, also display the balance between nature and industry, from linear shape, rust colour and rough texture.

4. Bench Seat

The seating around the community center area are mainly timber texture seat with H3 treatment, which gives a warm and welcoming feeling of the site. This design concept, is the timber seating structured on a light box, with LED lights.

