

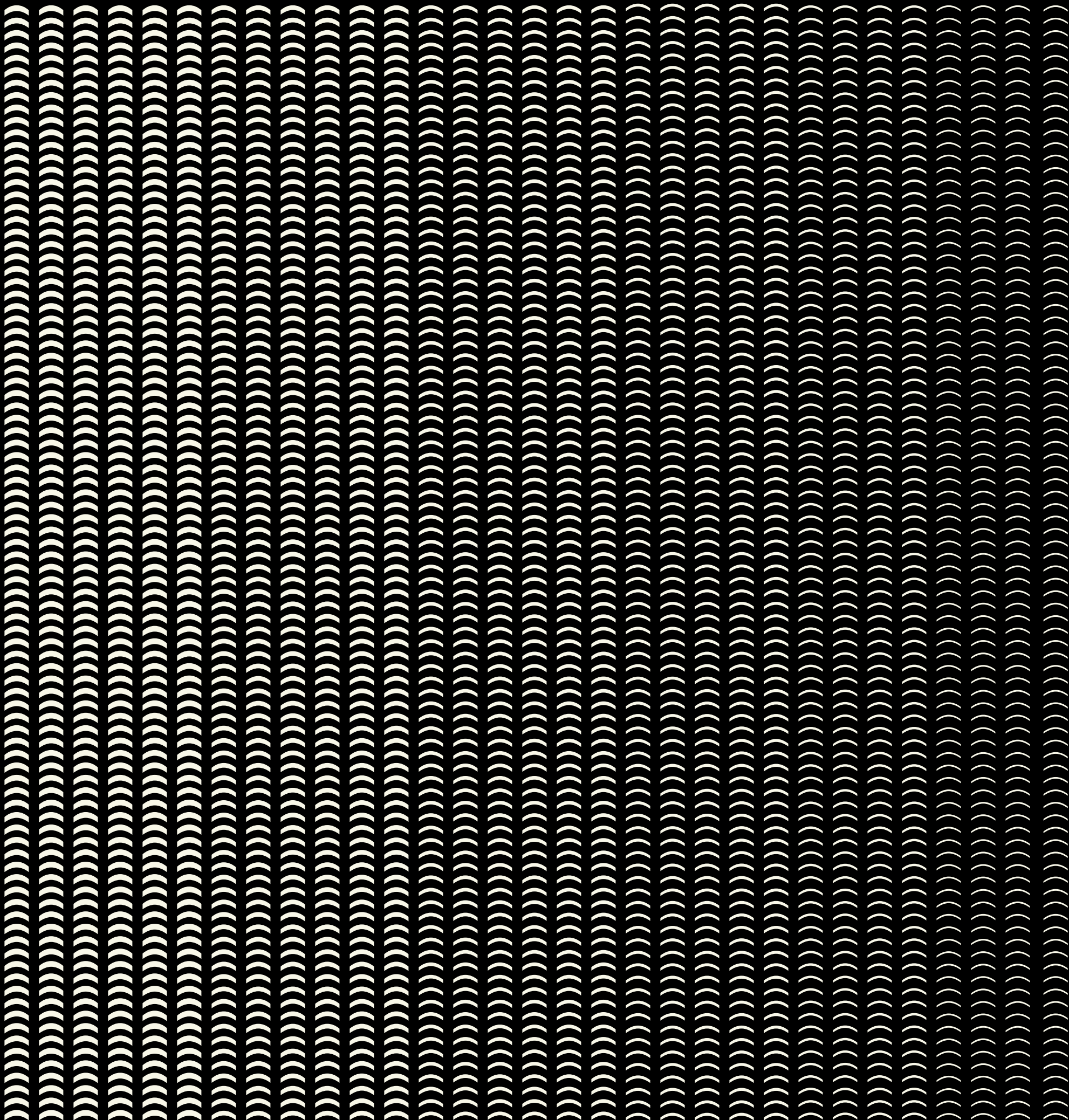
# Retail Quarter Upgrade

Public Realm  
Developed Design Report



Rev A  
Document prepared by the  
Ō3 Collective for Dunedin City  
Council.

March 2022



# Executive Summary

Following on from councils resolution for a one-way south function for George Street, the Ō3 Collective, Dunedin City Council and Aukaha have collaborated to deliver the Developed Design for George Street.

This developed design report has built on the preliminary design and provides greater clarity and detail for the proposed new street layout. This document crystallises the design thinking to date and provides illustrative imagery, plans and 3D views to further explain the layout of the street and the components that are proposed within it. It is supported by a technical set of 1:100 general arrangement plans and keynotes.

The redesign of George Street has been a long time in the making, necessitated by the need to upgrade aging infrastructure as well as aiming to reinvigorate the city centre for the residents of greater Dunedin and those who live nearby or within the Retail Quarter. It looks to compliment the aspiration of the central city plan, to make Dunedin 'one of the worlds great small cities'.

The George Street project aspires to re-think how to move through, and around the city centre safely and comfortably. The wider opportunity for central Dunedin is to provide a main street that re-engages with the natural beauty of the region and reflects the strong sense of place. It also provides a central destination that people want to spend time in and is lively, active and a prosperous place to do business. Streets reflect the people and place in which they are set, and this document reflects considerable effort defining the identity of the city and converting it into the streetscape.

Interwoven throughout the design is a strong presence of Kāi tahu and recognition of mana whenua. Values are imbued at the macro and the micro scales. For example, the individual paving units are bespoke and their shape is based on the very definition of Ōtepoti itself with the larger paving setout referencing the traditional patterns on the windows of Ōtākau marae. The colour palette acknowledges mahika kai species and the proposed catenary lighting is a metaphoric barracouta darting across the street. The proposed design reflects the whakapapa of place.

George Street has a rich colonial heritage which is represented today with many beautiful façades that line the street. The design seeks to showcase and enhance the richness of the beautiful heritage assets by allowing the public to explore the street out beyond the awnings where a better view is enabled as well as framing particular views and selecting locations for trees that compliment the architectural façades.



Historic photo of George Street, early 20th century. Source DCC.





Artist impression of future George Street.



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#### Design partners:

The Ō3 Collective is a consortium formed of the following organisations.

- Jasmax. (Urban design and landscape architecture)
- AECOM. (Engineering)
- Isaacs. (Contractors)

The Ō3 Collective is working in close partnership with Dunedin City Council (DCC) and Aukaha to ensure a cohesive and transparent design process is undertaken to ultimately inform an outstanding result.





# Introduction

## 1.1 Introduction

This report contains the Developed Design phase of the Retail Quarter Project for George Street. The designs contained within the report follow on from the Preliminary Design Report prepared by the O3 Collective dated April 2020 and builds on the Detailed Business Case prepared in 2021.

### 1.1.1 The project background

Dunedin City Council (DCC) and its partners have recognised the need for upgrades to George Street and the Retail Quarter to focus on the future. In 2018-2019 DCC prepared high level look and feel designs for George Street and engaged with stakeholders and the people of Ōtepoti Dunedin to get feedback and input into the design process.

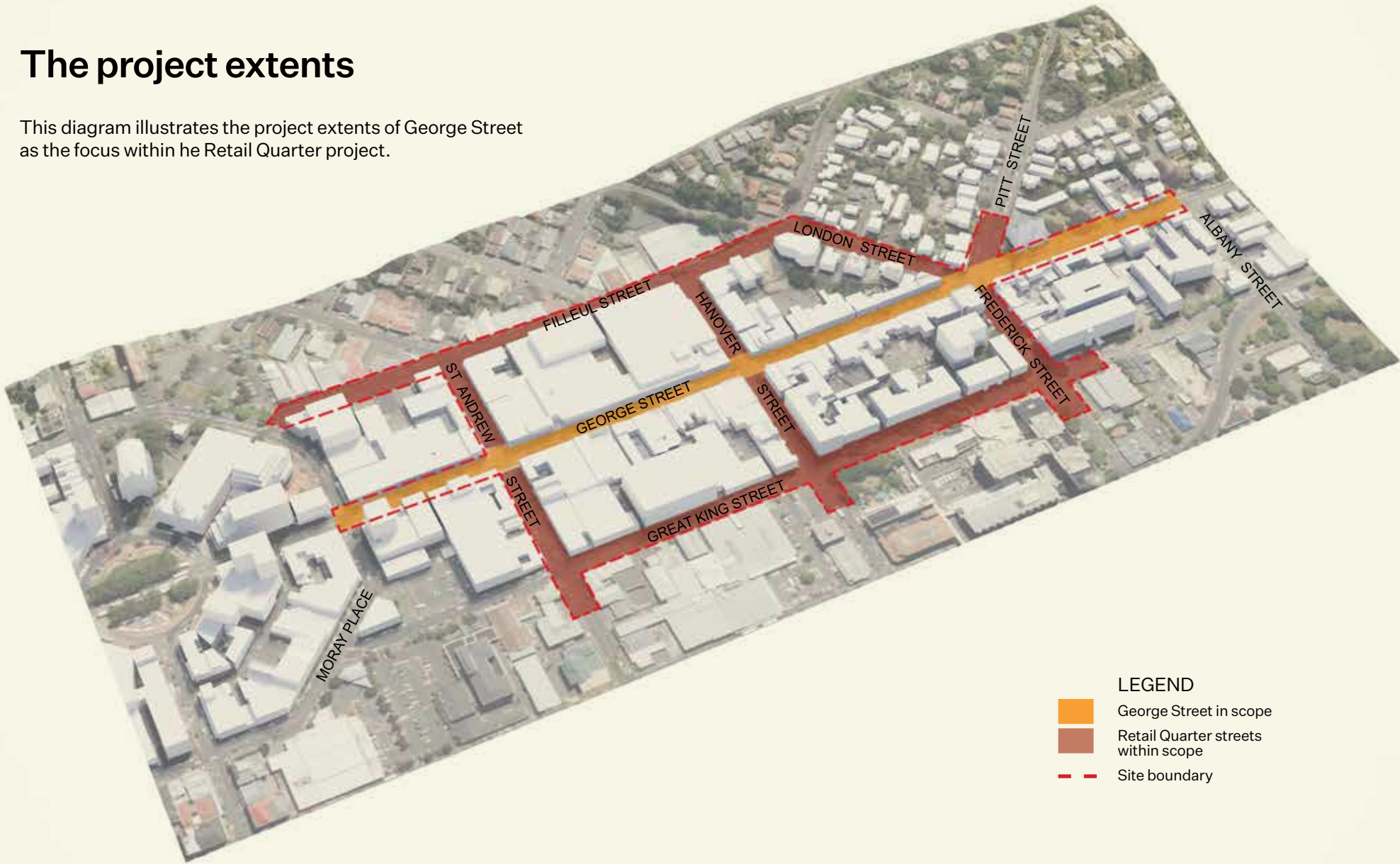
This project’s scope covers four city blocks within the Retail Quarter from Albany Street to Moray Place and Great King Street to Filleul Street. George Street, the traditional retail destination in Ōtepoti Dunedin is the focus of the project. (see map opposite which identifies the project extents).

A key mandate for the project was to partner with Kāi Tahu mana whenua through the life of the project, to share responsibilities in the decision making process and to prepare a shared vision for George Street and the Retail Quarter. The relationship is summed up in this statement prepared by DCC:

**“Dunedin City Council and mana whenua working together in a partnership of shared values to enhance and protect our unique Ōtepoti Dunedin for the future of its people.”**

## The project extents

This diagram illustrates the project extents of George Street as the focus within the Retail Quarter project.



### 1.1.2 Purpose of this document

The intention of this Developed Design is to integrate and review stakeholder feedback from the Detailed Business Case and Preliminary Design for George Street and to take the design thinking forward, applying more detailed consideration.

This report should be read in conjunction with the preliminary design report which provides details on the central city context and background to the proposals.

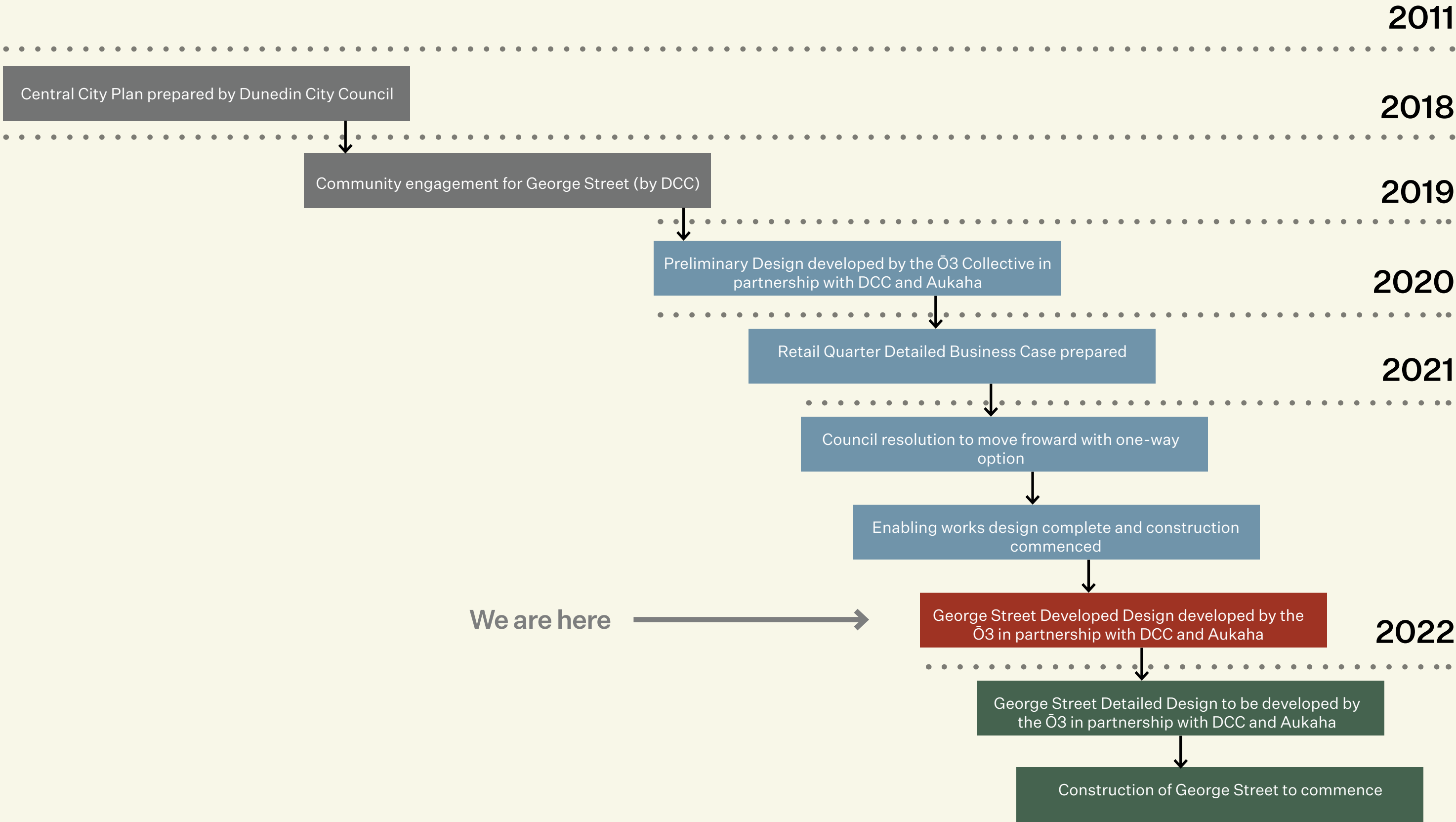
### 1.1.3 The project programme

The diagram opposite illustrates the George Street project programme from the city centre plan inception through to the developed design report and the commencement of construction in the future.

The Developed Design stage is now 100% complete with the submission of this report. The next stage will be the detailed design where construction drawings and specifications will be prepared ready for construction in 2022.



# Programme





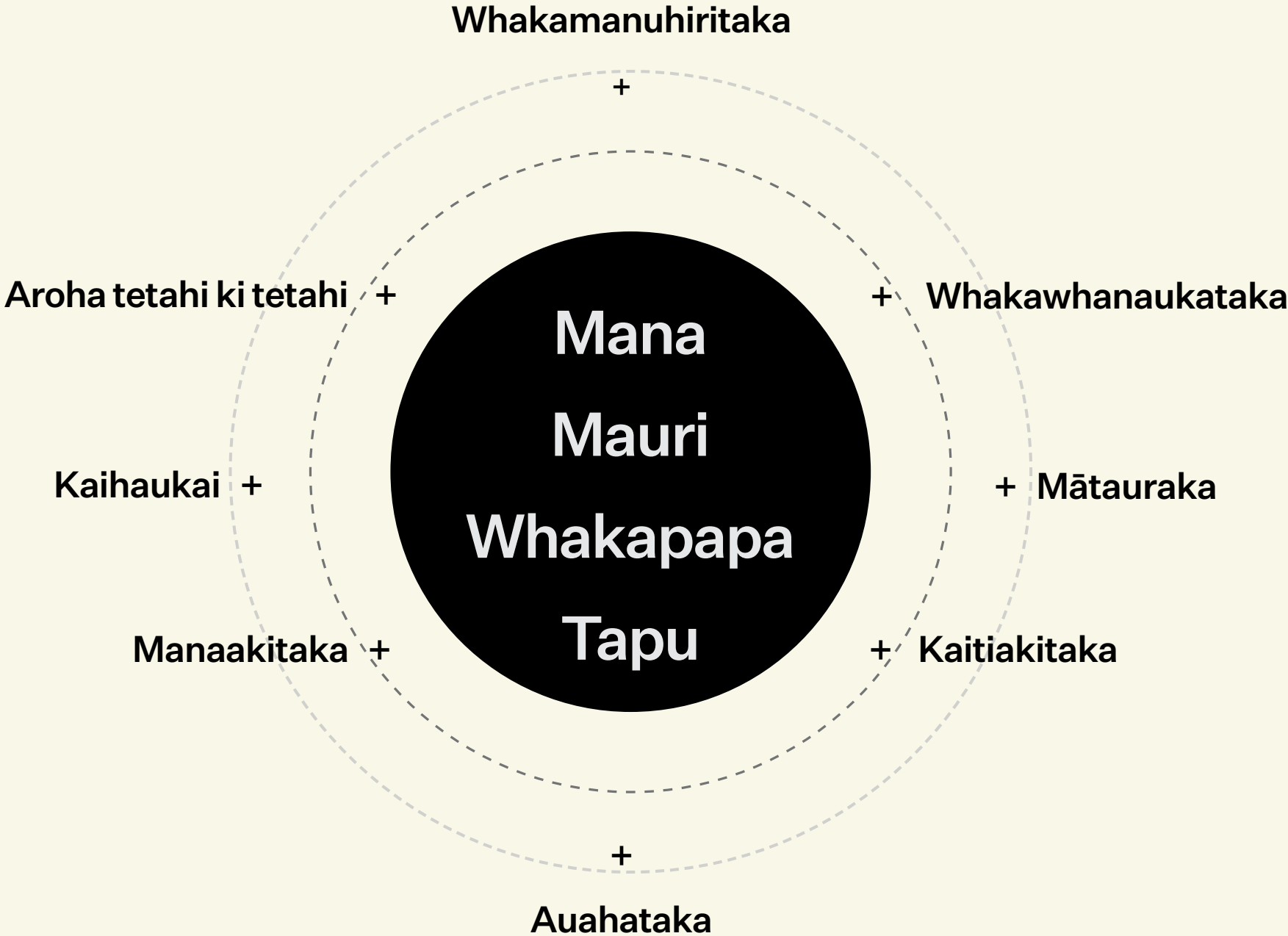
# Kāi Tahu cultural values framework

## 1.2 Kāi Tahu cultural values

Whilst the colonial heritage of Dunedin is well understood and forms the backbone of the city centre’s architectural heritage, the incorporation of Kāi Tahu cultural values are another key element of the project brief. Representatives of mana whenua have been involved in the project process as a partner to DCC and have given guidance and input into the design throughout the preliminary and developed design phase.

The diagram opposite illustrates the cultural values framework developed by mana whenua for projects within their takiwā and adapted for the Retail Quarter and George Street project specifically.

The inner ring provides the four core cultural values of Mana, Mauri, Whakapapa and Tapu that are foundational to a mana whenua world view. The surrounding rings identify other cultural values and concepts that are informed by the four core values. Mana whenua have identified these supporting values to be of a particular relevance to this project. In this diagram only the values that have highest importance for George Street are identified (there are many more that reside in the outer tiers that will be more or less important for other areas and projects in the rohe)





Below is the Kāi Tahu whakatauki that sits above and provides the overall aspiration of mana whenua in Ōtepoti and across Te Wai Pounamu.

**Puritia  
Tawhia  
Kia ita  
Te mana whenua , Te mana tupuna,  
Te mana takata**

*Holdfast  
Steadfast and resolute  
To the authority on land, to the heritage  
bestowed,  
to human right*

1.2.1 Explanation of cultural values

Mana

For Kāi Tahu, mana is inherited from their tupuna, their rights and responsibilities have never been extinguished and it is at the forefront of how they see themselves in the city. How important is it for the city to have mana? This is a discussion about the prestige of Ōtepoti Dunedin and how we enhance it together.

Whakapapa

To acknowledge the whakapapa of place and people is important. It creates a deeper understanding of who we are as individuals and as a community and the recognition of the interconnectedness of ecosystems and humans.

Mauri

Mana whenua acknowledges the existence of Mauri: It is an active phenomena in all things animate and inanimate. Mauri is the protector of the health of a person or place.

Kaitiakitaka

Kaitiakitaka relates to the interconnection and interdependence on our natural environment past, present and future. Guardianship is a responsibility for all of us. Respecting the environment and taking care of our resources as individuals and community.

Mātauraka

Knowing our stories to gather an authentic and informed knowledge of what has happened in the past.

Manaakitaka

In the modern day context can mean to be hospitable, to be generous and show general respect. It is about acknowledging the mana of each individual as a reciprocal process.

Whakamanuhiritaka

Is about hospitality, catering for people when they arrive to a place. To provide sustenance to others and live comfortably in a shared space, sharing resources together.

Aroha tetahi ki tetahi

Is about respect and reciprocation. Considering and caring for others and respecting and acknowledging each other’s customs.

Kaihaukai

Being dependent upon the sustainable harvesting and preservation of local resources (looking after our economy in our own back yard). This is the traditional practise of trading and exchanging. A fundamental component is the building of relationships through regular exchanges that strengthen within and extending out to new communities. It is dependant on tikaka practices to ensure correct procedures are acknowledged in order for exchange to happen.

Whakawhanaukataka

This encompasses relationships, kinship and sense of family connection. It describes relationships through shared experiences and working together providing people with a sense of belonging.

Auahataka

Is the creative essence imbued within a thing or a place that gives it its special presence and uniqueness.





# Background Central City Plan



## 1.3 The Central City Plan

The bold vision that has come from the Central City Plan is make Ōtepoti Dunedin 'One of the world's great small cities'. A significant body of work has been done in the creation of the Central City Plan that sets out how this can be achieved.

The CCP identified a series of 'quarters' and 'precincts' in order to break down the central city and define areas of character, function and land use. The Quarter Plan is illustrated opposite.

The extents of this project covers a significant proportion of the Retail Quarter (the Dunedin Hospital redevelopment makes up the majority of the rest).

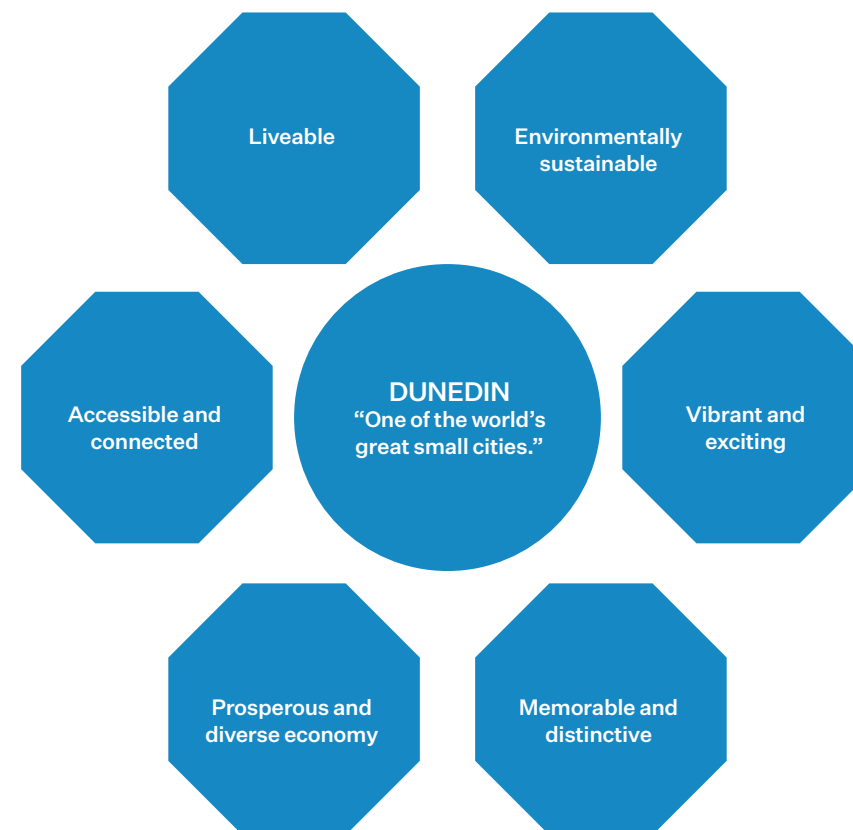
One of the key outputs of the CCP was the establishment of the spatial plan strategic objectives which give the high level direction across the central city. These objectives are listed below:

- A liveable city
- An environmentally sustainable and resilient city
- A city that enables a prosperous and diverse economy
- An accessible and connected city
- A vibrant and exciting city
- A memorable and distinctive city

In addition the CCP objectives a further three objectives were established for the Retail Quarter in the DCC concept design stage. These objectives are listed below:

- Make George Street a more attractive place for people to visit
- Improve the safety and accessibility for pedestrians and other vulnerable road users and reduce crash rates
- Coordinate infrastructure renewals to limit the extent of further disturbances

### Central City Plan objectives



### 1.3.1 The Retail Quarter

The Retail Quarter Objectives and Design Principles were developed by DCC through the development of the Central City Plan in 2011. Extensive engagement with both stakeholders and the public was undertaken at this stage. Feedback received by DCC has informed the Retail Quarter's 3 objectives and 4 design principles generated for consultation from February to April 2019.

These are relevant to both the Retail Quarter as a whole and also as a starting point for the development of specific George Street objectives.



## 3 Objectives

1. Improve safety and accessibility for pedestrians and other vulnerable road users and reduce crash rates
2. Make George Street a more attractive place for people to visit
3. Coordinate infrastructure renewals to limit the extent of further disturbances

## 4 Design Principles

1. Putting people first
2. Expressing an Ōtepoti / Dunedin sense of place
3. Greening the city
4. Streets as places



# Background preliminary design project objectives

## 1.4 Preliminary design objectives

Building on the Central City Plan six project objectives were developed during the Preliminary Design stage of the project. These objectives evolved through a series of workshops with key stakeholders DCC, Aukaha and the O3 Collective (refer to the George Street Preliminary Design Report for further details and explanation of the process of establishing the objectives).

The George Street project objectives are used within the Developed Design and throughout the life of the project as a guide to ensure that these key outcomes are achieved.

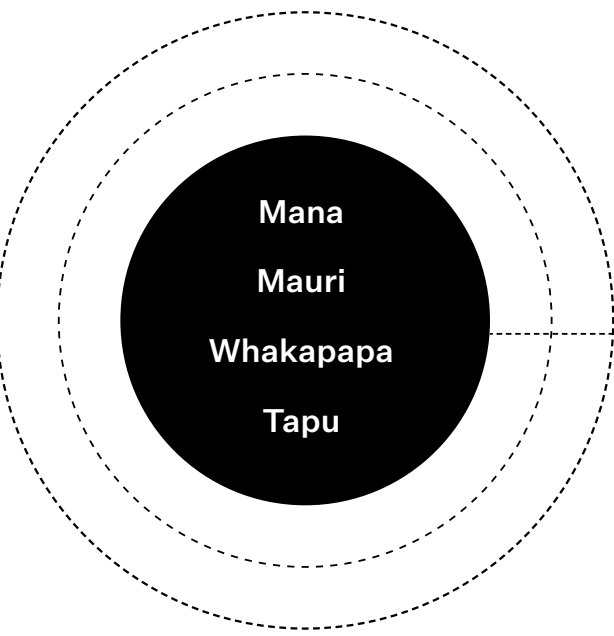


1.4.2 Embedding Kai Tahu values

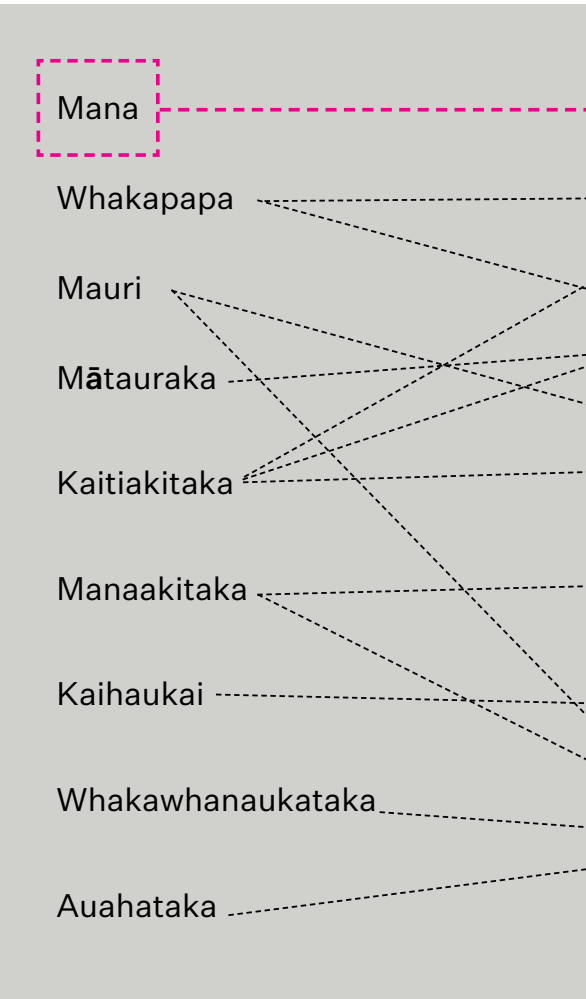
The flow diagram below illustrates the process of embedding the Kāi Tahu cultural values within the George Street project objectives. The diagram also highlights the design response including the Preliminary Design Big Moves and Spatial Framework (refer to the George Street Preliminary Design Report for further details on the Big Moves and Spatial Framework).

Briefing.

Kāi Tahu values.



George Street principles.



Project objectives.



Design response.

Big moves.



Spatial framework.





# Background preliminary design big moves

## 1.5 The big moves

The three big moves were prepared during the Preliminary Design phase which aim to consolidate the Kāi Tahu values, the George Street Principles and the Project Objectives within the design. They provide a way to focus design energy on the things that matter most for the street.



# Kaitiakitaka

A living street

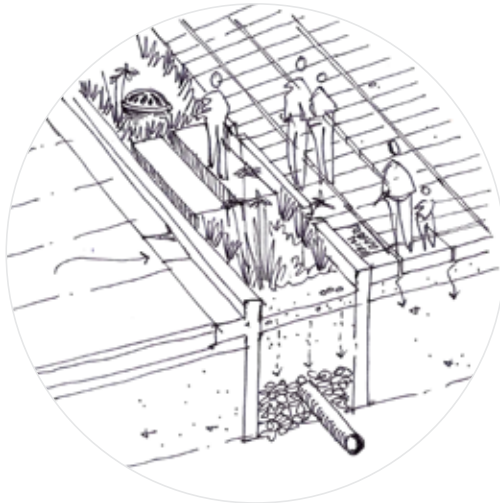
A living street will be full of life and connected with natural systems such as water and the forest ecology that exists in the nearby greenbelt. It will be beautiful so that everyone enjoys its appearance and cares for it.



Taiao - Ecology



Rerehua - Beauty



Mahi - Function

# Whakapapa

An authentic street

Dunedin is unique. Its city centre streets should provide an authentic experience that represents the city’s rich heritage and community of people that are creative, diverse and resilient. People of all ages, abilities and backgrounds will experience a street network that is safe, inclusive and vibrant and reflects their values.



Takata - People



Taoka tuku iho - Heritage

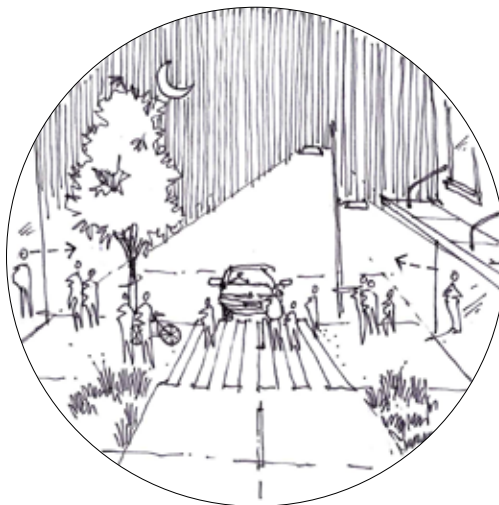


Wheako - Experience

# Manaakitaka

A connected street

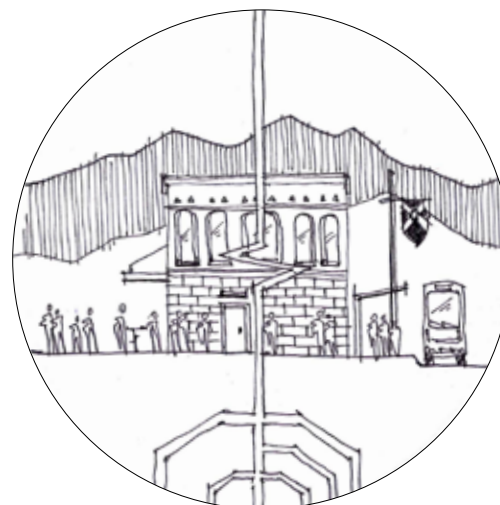
Streets are for everyone, where public life plays out and reflects the personality of the city and its inhabitants. It’s where we receive our guests and citizens, making them feel welcome and respected through the provision of a public realm that is safe and accessible.



Haumaru - Safe



Āheitaka - Accessible



Takiwā - Contextual





# Retail Quarter detailed business case (DBC)

## 1.6 Detailed business case

The Retail Quarter detailed business case was completed in mid 2021 with the aim to provide a body of evidence and analysis of the options developed in the Preliminary Design phase and variations of these options that were proposed in councils peer review processes.

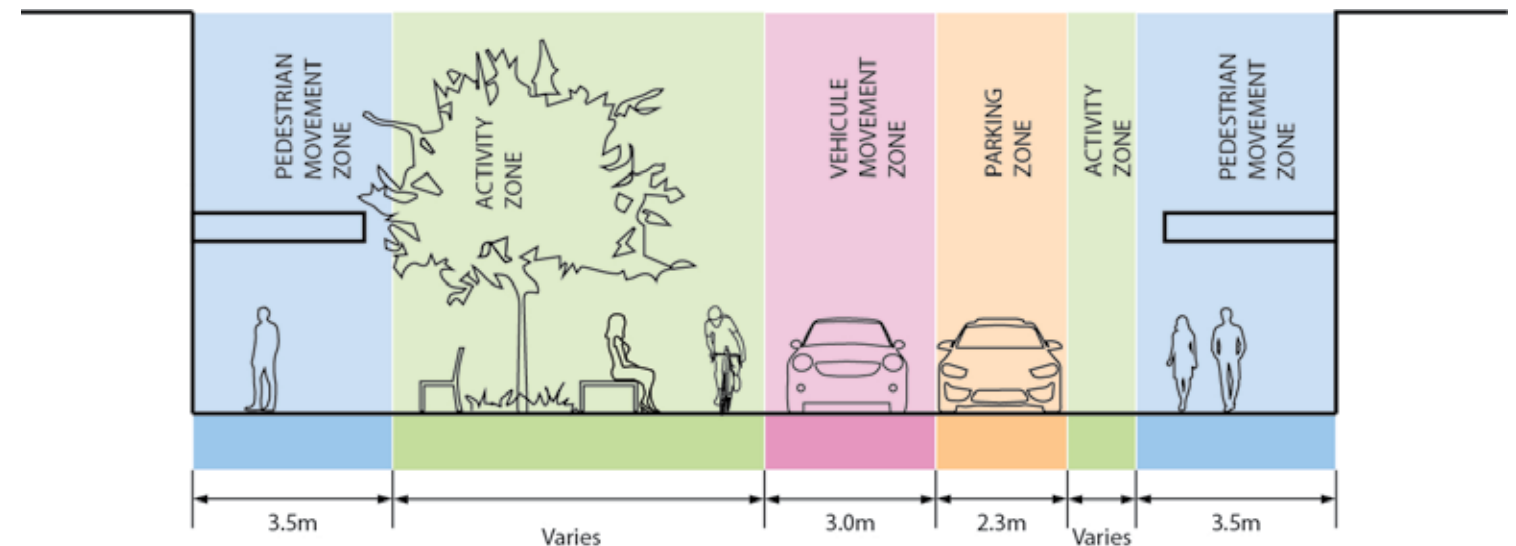
The options considered were based on vehicle movement in the form of two-way or one-way streets as illustrated in the diagrams opposite. The options were

- Do min with limited change
- Two-way slow street
- One-way south shared space
- One-way north shared space

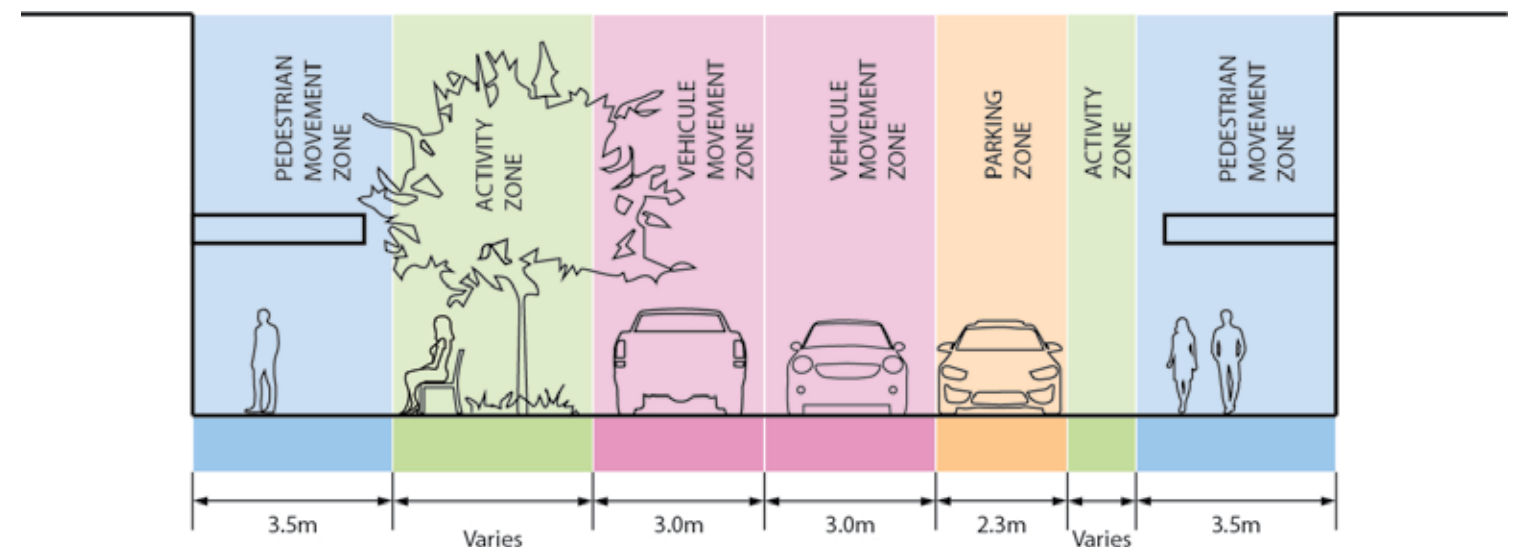
The business case was agnostic on either of the two-way and one-way options as all three had benefits which were relatively equivalent, there was no clear leading option. The business case did determine that the do minimum which was the limited change option was not favourable.

The business case report was then provided to full council to deliberate over the options on the table. Through the voting process the one-way south option was approved to be taken forward into Developed Design and through to construction.

1 Way Street

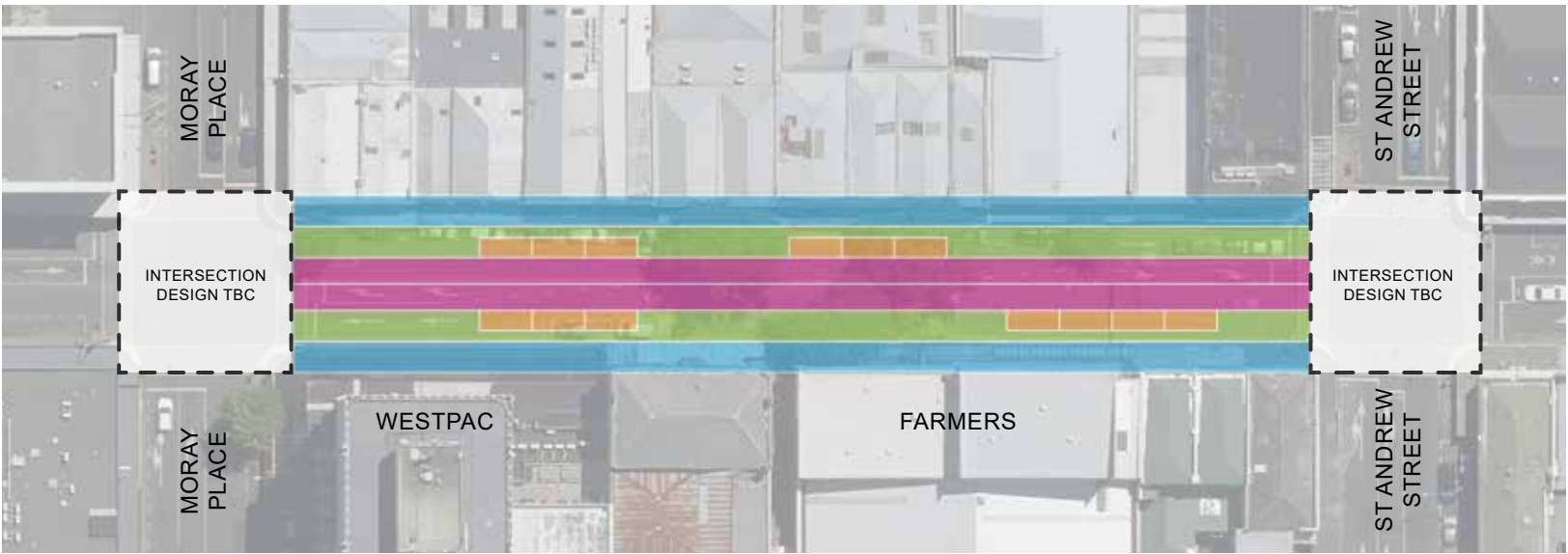


2 Way Street



Diagrams sourced from the Retail Quarter DBC 2021

Farmers Block  
examples



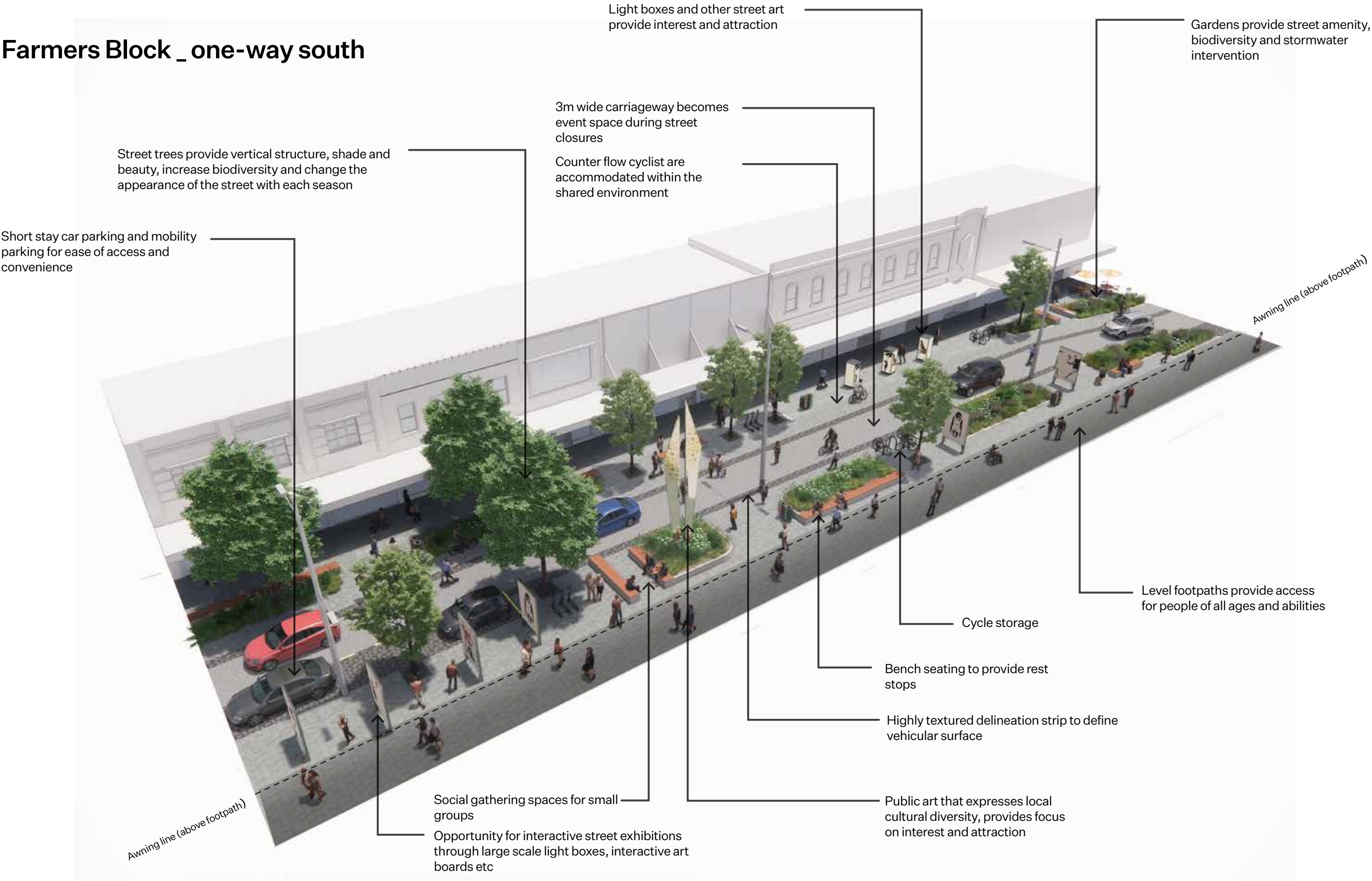
Diagrams sourced from the Retail Quarter DBC 2021



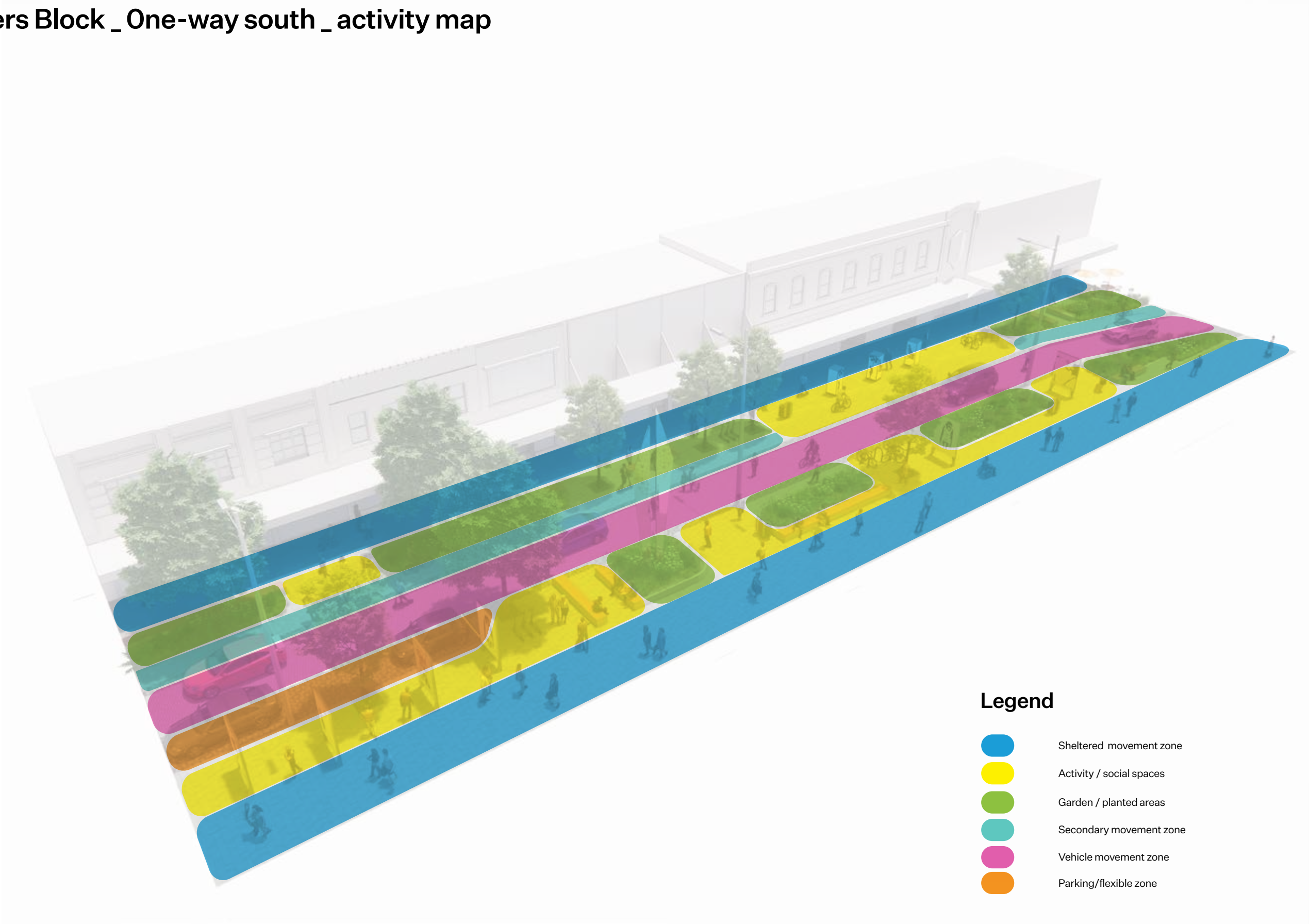


1.6.1 Detailed business case\_ approved option

Farmers Block \_ one-way south



Farmers Block \_ One-way south \_ activity map



# Design strategies

## 2.0

### 2.1 Introduction

This section of the report outlines the key design strategies for George Street. The design strategies build on previous work undertaken in the Preliminary Design phase of the project providing greater detail and refinement of the street layout and elements.



# Mana whenua design strategies

## 2.2 Revealing whakapapa

The revealing of whakapapa refers to storey telling of both tangata and whenua which have importance for mana whenua in this area. It is about addressing the absence of the physical and visual expression of Ōtepoti for mana whenua in the street today. Revealing whakapapa is a key concept that relates to all mana whenua design strategies.

The text written here is based on the cultural narrative titled 'George Street' prepared by Megan Potiki on behalf of Aukaha (refer to appendix A for cultural narrative). The narrative outlines the whakapapa of George Street and wider central city area from the period of early contact between mana whenua and european settlers to the establishment of the city in its current location.

The map opposite provided by Aukaha illustrates the original shoreline with the key landmarks of Ōtepoti, Mataukareao and Te Tutai o Te Matauira. Superimposed are the successive reclamations into the harbour resulting in the waterfront we see today.

The landscape in the area pre-European settlement was a strong contrast of dense enclosed bush and open estuarine wetlands. The whakapapa of the landscape is expressed and explored through concepts illustrated in the design.



Image provided by Aukaha

# Design framework

## 2.2.1 Key narratives

Four key narratives emerged through the Preliminary Design phase which have now been explored in more detail. The diagram on this page identifies these four key narratives, Ōtepoti, Mātauraka, Mahika kai and Kaihaukai and illustrates how each one is related closely to the others.

Ōtepoti is the overarching concept and references the corner of the traditional four cornered kete that it is believed was the origin of the Māori name for Ōtepoti / Dunedin. This project looks at re-establishing the traditional definition of Ōtepoti.

Closely related to this are the ideas of:

- Mātauraka, knowing our stories to gather an authentic and informed knowledge of what has happened in the past
- Mahika kai, the practise of gathering and nurturing resource and food
- Kaihaukai, the traditional practise of trading and exchanging

Essentially, each one of these values supports the next and vice versa, for example, mātauraka as revealing the traditional stories of Ōtepoti with mahika kai as the gathering and use of natures resource which in turn can be used for kaihaukai (trade and exchange) and further connected to the use of the poti as the traditional basket for trade and exchange of goods.

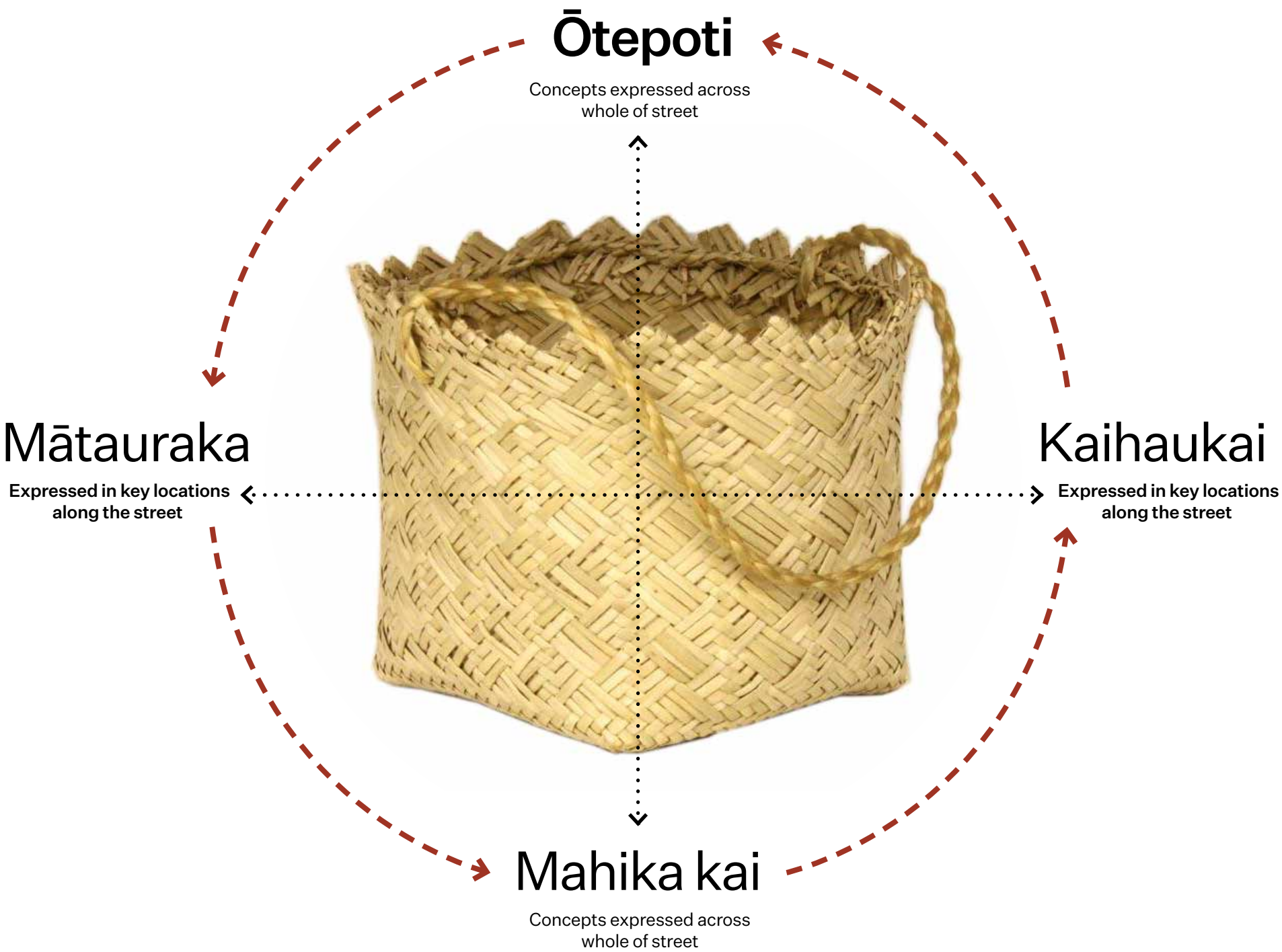
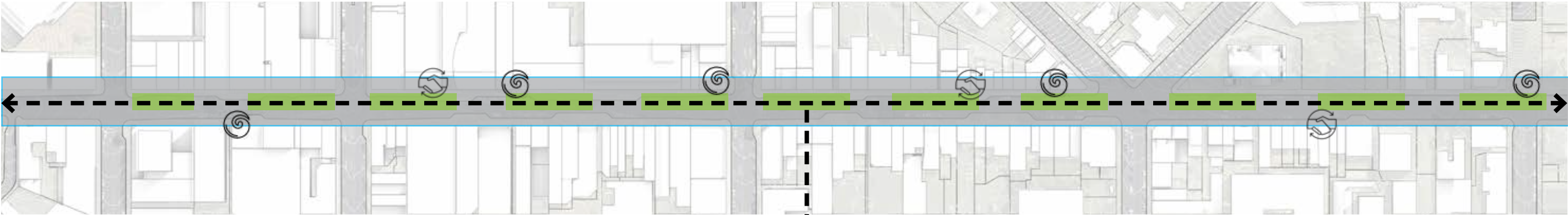


Image provided by Aukaha



The following organisational strategy informs the distribution of the key narratives across the street.



Narratives imbued across the whole of the street

01 - Ōtepoti.

The entire street expresses a geometry that is unique to Ōtepoti and provides a strong sense of place.

02 - Mahika kai

Garden beds are placed throughout the entire street and provide opportunity to present nature's abundant resource.

Episodic moments to express narratives positioned at key locations throughout the street (indicatively shown)



- 03 - Mātauraka

Selected locations to express particular stories within the design of the public realm.
- 04 - Kaihaukai

Selected locations to encourage moments of social and economic trade and exchange.



# Ōtepoti

## 2.2.2 Significance

The meaning of Ō-te-poti is significant here in relation to a number of key Māori histories:

- Landing place of waka
- Food gathering – mahika kai
- The significance of old Māori language
- Maintaining the original place names and reclaiming names.
- The concept of Māori travelling up the Ōtākou awa (harbour) to gather food or exchange food.

The name Ōtepoti itself is an ancient one according to Tahu Pōtiki. He disagreed that it had any meaning related to boats or a port but was in fact the shape of the area that looked like the corner of a Māori woven food basket, known as a poti. This name has a longer history than contact period and European boats.



*Images provided by Aukaha*

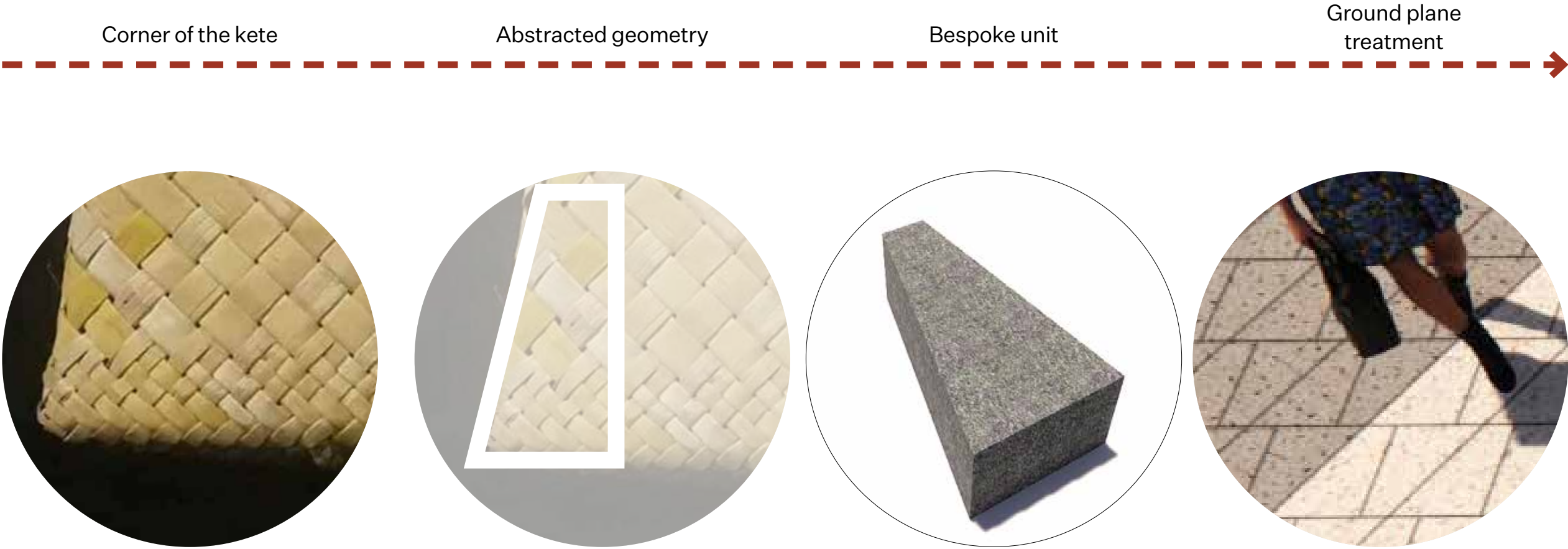
# Poti

## 2.2.3 Informing geometry

The four cornered kete, or poti, is used to drive the geometry of the paving chosen in the ground plane. This surface treatment will be unique and meaningful for Ōtepoti Dunedin.

It is an authentic shape for Ōtepoti and a powerful way of providing a surface treatment that is contextual, meaningful and relates back to the principals of whakapapa.

The diagram opposite shows the evolution of the poti paver from the inspiration of the poti through to the individual paver.

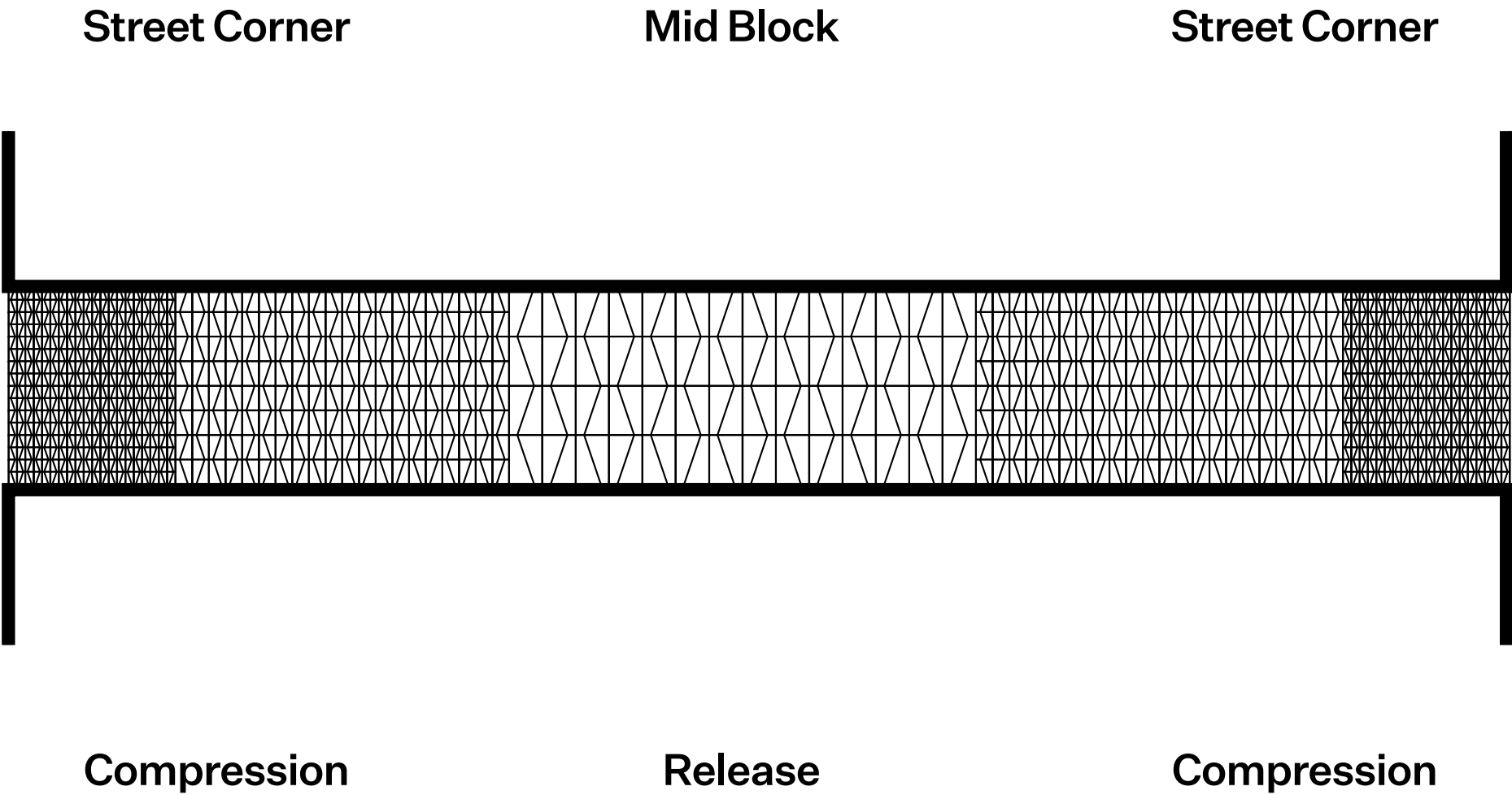
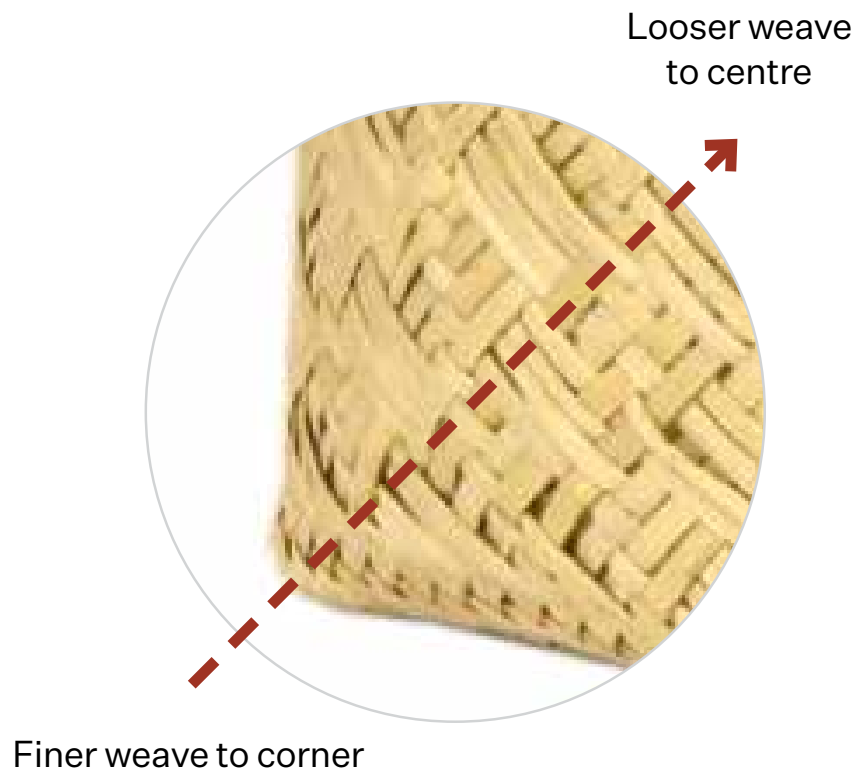


# Poti

## 2.2.4 Grain and scale

The corners of the poti are a critical element in the function and strength of the poti, similar to how the intersections of the city blocks are critical to the strength of the street. The corners hold the kete and have a finer grain with a more complex weave that releases as it moves away from the corner, similar to how a city block works.

The structure of the poti has provided inspiration for the scale and layout of the ground plane and other elements within the street. Compression of form and grain occurs at the street corners and a releasing occurs towards the middle of the block.





# Kaihaukai

## 2.2.5 Trade and exchange

Streets are public places for everyone. They are the canvas for everyday interaction and life. Therefore they should be laid out to allow for a range of social interactions from small spaces to eat lunch and take a phone call through to larger spaces for hosting events and gatherings of people.

The spaces with George Street are designed to provide a platform for daily human life which enable trade and exchange of not just goods and services but of social interaction and information.

### Opportunities:

- Provide a range of opportunities in the design of the public realm that allows urban life to flourish
- Knowledge sharing through interpretive signage and storytelling - for example, interpretive signage to inform of values of plants within the public realm
- Provide a range of street furniture or elements that encourage social interaction of varying scales



Spaces for gathering.  
*South Frame. Image source - Jasmax*



Interpretive signage.  
*South Frame. Image source - Jasmax*



Opportunity to create an urban lounge that provides a venue for social interaction

# Mahika kai

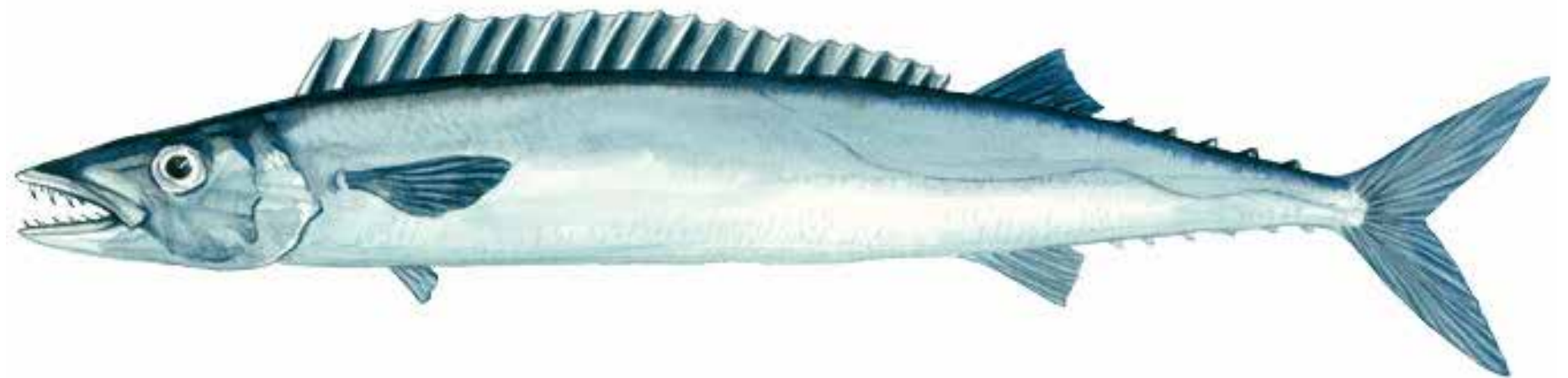
## 2.2.6 Key species

Nature provides an abundant resource basket for Māori. Early Māori were adept at learning the secrets of nature's resources and developed a hard-won knowledge of the native flora and fauna of Ōtepoti which enabled survival and ultimately, the ability to thrive.

The dried form of barracouta was a key trade item during the 1830s and was the most prominent fish supplied to Dunedin's settlers during their lean, early years.

### Opportunities:

- Reveal the intimate and respectful relationship with nature
- Express how Te Wao Nui o Tane (the great forest of Tane) provided everything required to sustain life. From being a food market, a source of medicine, a tool shop, a trade centre and a playground all at once
- Consider how natural cycles of plants and fauna reflect the seasons
- Bring native species and particularly species found in and around Ōtepoti into the design of the public realm



# Mahika kai

## 2.2.7 Colour concept

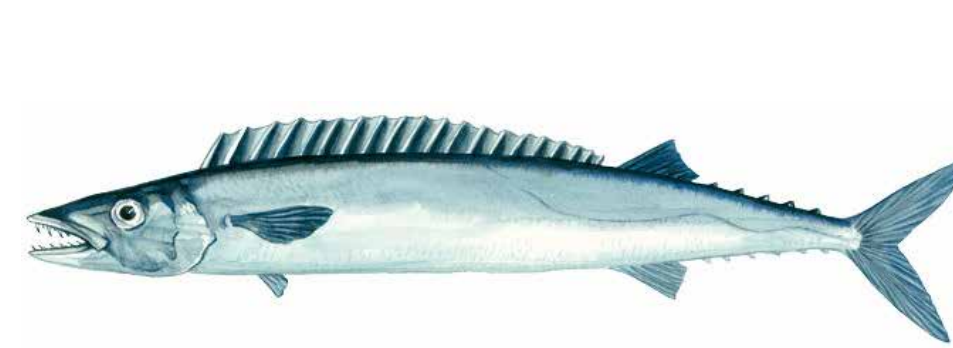
The following colour palette which is used as 'accents' throughout the street has been developed to reflect the natural colours of key mahika kai species as well as providing the connection back to Ōtākou Marae.

### Makā / barracouta

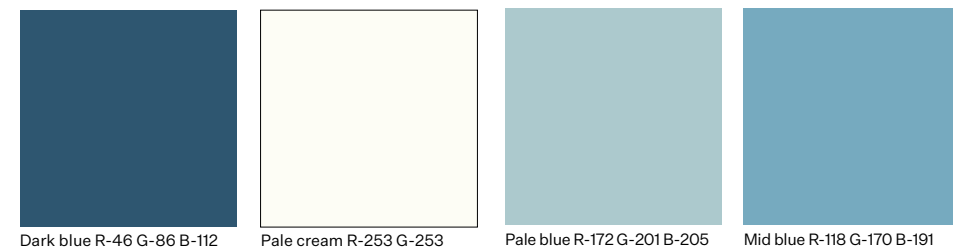
In the past fish sourced around the Ōtepoti coast provided up to 50% of the protein to Maori. The Makā / Barracouta made up around 50% of the catch. Dried barracouta was a key trade commodity in 1830s during early European settlement.

The shimmering silvers of the fish and flashes of blue as it moves through the water provide inspiration for colour accents along the street.

Silver can be incorporated through the use of stainless steel with subtle blues and pale silver whites representing the scales and upper spine of the fish.



Other materials : Stainless Steel

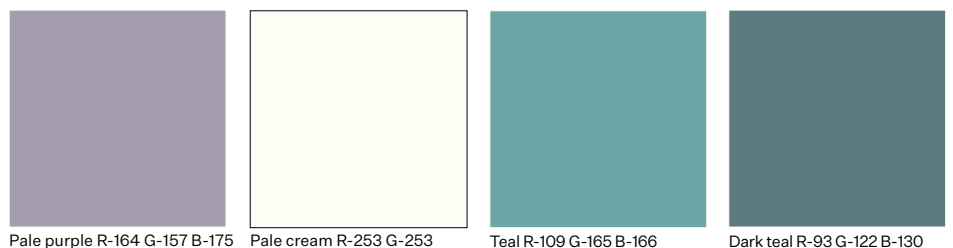


Dark blue R-46 G-86 B-112    Pale cream R-253 G-253    Pale blue R-172 G-201 B-205    Mid blue R-118 G-170 B-191

### Kererū / NZ wood pigeon

There is a strong desire for Kererū to return in numbers to the peninsula and for native birds to return to the central city. New plantings and wider biodiversity initiatives throughout the emerging new CBD will look to encourage habitat for native birds and insects.

The distinctive green hues of the Kererū along with splashes of pale purple and cream are reflective of the feathers of the bird and can provide inspiration for colour accents along the street.

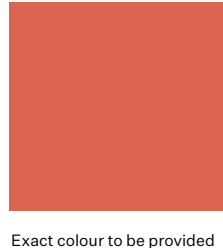


Pale purple R-164 G-157 B-175    Pale cream R-253 G-253    Teal R-109 G-165 B-166    Dark teal R-93 G-122 B-130

### Ōtākou Red

The red shade seen at the Ōtākou Marae has recently been developed and refined into it's own specific colour specification, known as Ōtākou Red.

Ōtākou Red can be incorporated into the new urban street elements to provide a meaningful link between the Marae on the Peninsula with the central city.



Exact colour to be provided





# Mahika kai

## 2.2.8 Paving patterns

The Pātiki and Aramoana are patterns found in the windows of Ōtākou Marae that represent important mahika kai.

These patterns have been used in the design to drive pattern concepts in the ground plane in terms of paving and surface treatments along the street.



Aramoana pattern in stained glass  
*Image supplied by Aukaha*



Pātiki pattern in stained glass  
*Image supplied by Aukaha*

# Mātauraka

## 2.2.9 Art works

The street design considers a number of locations for commissioned artworks to be located.

Mana whenua have expressed a desire for a significant artwork to be commissioned of either an ancestor or event that talks to the whakapapa of place which would be undertaken by a nominated Kāi Tahu artist. The sculpture would be located at the end of the New Edinburgh Way block next to the Frederick Street intersection.

Examples of similar artwork include:

- Ko te Tūhono the waharoa designed by Ayesha Green, installed in the Octagon in 2021
- Maori Chief designed by Molly Macalister, 1967, in Tāmaki on lower Queen Street
- Kurahaupō/ Te Paepaeroa O Kahukura, Ephraim Russel, 2021<
- Te Wahoroa ki te Ao Maarama , Lonnie Hutchenson, 2013, Pembroke Street, Hamilton

The specifics of the commission are yet to be determined including the artist, the brief and scope and orientation of the works.



Ko te Tūhono, Ayesha Green, Octagon Ōtepoti, 2021



Maori Chief, Queen street Tāmaki, Molly Macalister, 1967



Kurahaupō/ Te Paepaeroa O Kahukura, Ephraim Russel



Te Wahoroa ki te Ao Maarama , Lonnie Hutchenson



# Mātauraka

## 2.2.10 Whakataukī / quotes

Quotes and whakataukī (proverbs) are being identified by mana whenua as key narratives to be expressed in the design of paving and street furniture as illustrated in the examples opposite.

Specific text for George Street will be worked through with mana whenua in the detailed design phase for George Street.

Below is a whakataukī example:

**Puritia  
Tawhia  
Kia ita  
Te mana whenua , Te mana tupuna,  
Te mana takata**

*Holdfast  
Steadfast and resolute  
To the authority on land, to the heritage  
bestowed,  
to human right*



Te reo etched into pavers



Whakataukī etched / sand-blasted or cast/  
moulded into pre-cast concrete planters



# Mātauraka

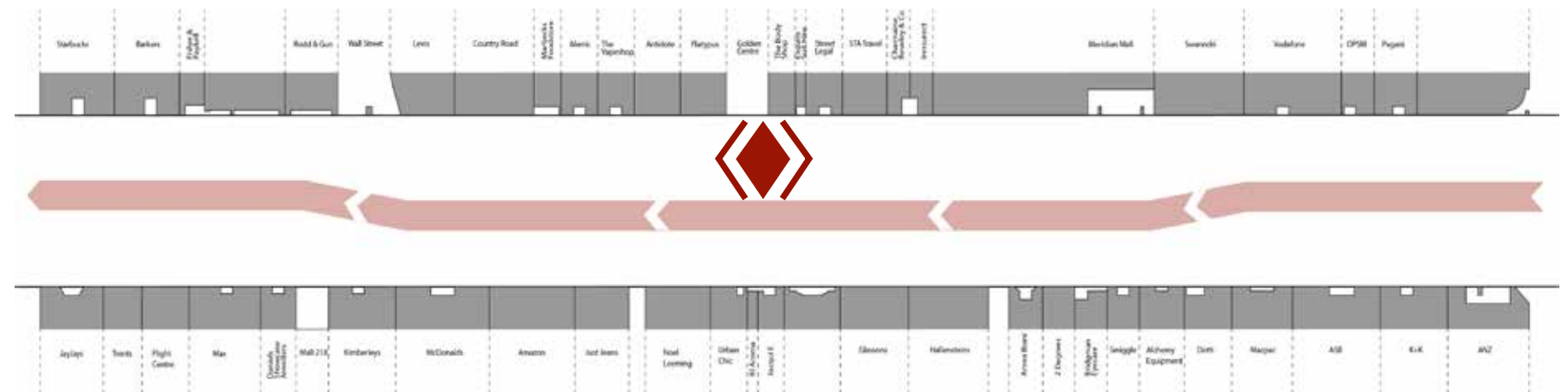
### 2.2.11 Mapping

Drawing inspiration from the Aukaha map a centrally located etching in basalt stone is proposed in the Golden Block. This 'ground map' tells the story of the pre-European shore line, landmarks important to mana whenua, historic reclamation events within the harbour and the street grid of today. The map provides a geographic orientation within the city and connects back to the pre-reclamation shoreline.

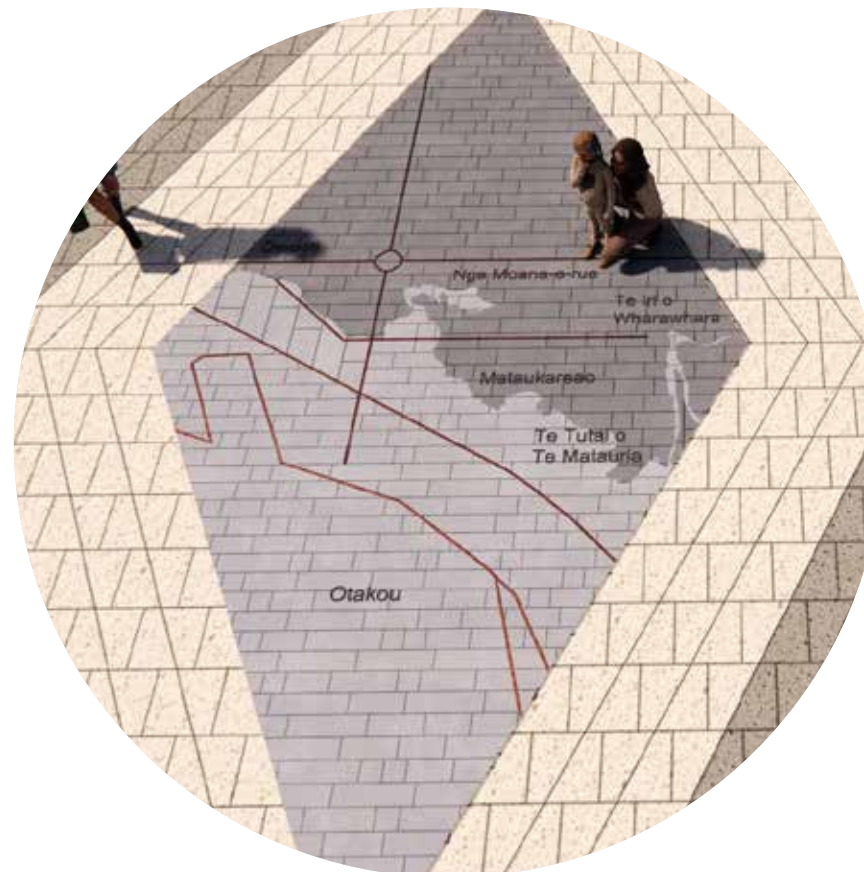
## Opportunities.

- Acknowledging a Māori world view of the significance of landmarks and the ability to locate ones self within the wider context of the landscape
- Identifies te reo place names
- Consideration of the historic waterfront and coastal features within the design of the contemporary context

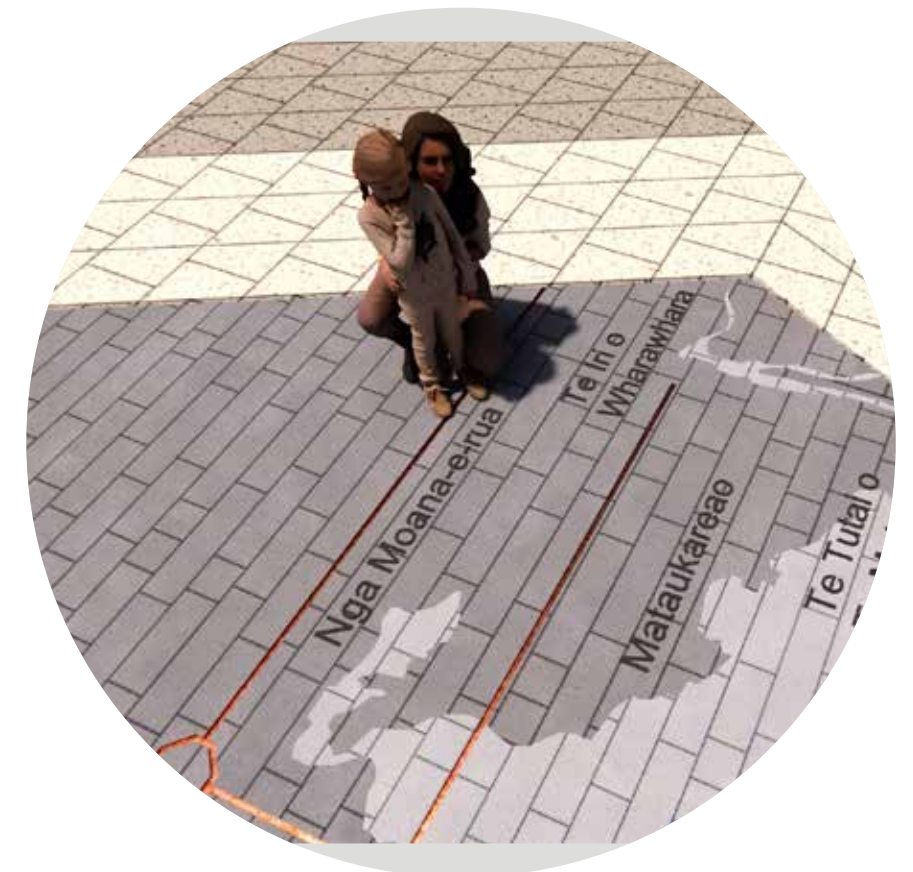
**Location : Golden Block**



Aukaha map



Mapping to be incorporated into the ground plane



Te reo place name text to be incorporated into the ground plane



# Heritage

## 2.3 Heritage - hidden in plain sight

George Street contains a richness of heritage buildings and building façades that are significant contributors to the character and sense of place of the Retail Quarter. However very little is commonly known in terms of the narratives, history and whakapapa of these buildings. There is a opportunity to enhance the experience of the street by providing access to these narratives of the George Street heritage.

### Hidden in plain sight

This concept refers to the desire to provide a means to access the rich history of buildings and places within the street. It is about exploring the whakapapa of place.

### Digital portal (outside this project scope)

It is not practical or desirable to install traditional 'heritage information boards' within the street . Historic buildings and sites are too numerous and this traditional approach would either create significant clutter due to the share number of boards required or not do justice to the richness of heritage along the street.

Therefore the project team recommends that a digital online platform is used to record and provide access to this rich history of place. In this way the information collection can be dynamic, changing and updated over time.

The online resource will be accessed through cues within the street such as QR Codes embedded in pavers adjacent to significant heritage buildings or sites.



Process of accessing the historical information of George Street through and online portal (to be procured separate from the George Street project and would be updated over time)



Place



Access to portal through QR codes



Online resource

## 2.3.1 Framing heritage architecture

### Preserving views of Heritage buildings

The diagrams on the following pages identify heritage buildings along George Street. The DCC scheduled heritage buildings and character contributing façades within George Street are highlighted in pink and blue respectfully.

To coordinate street design with heritage buildings, trees will be placed to avoid screening of the façades. In some cases, tree shape, size and placement will be used to frame buildings, entrance ways or to align with the rhythm of the building facade.

Further detail on the locations of trees in relation to the façades is found in section 2.7 of this report. Examples of heritage architecture in George Street:



Knox Church  
449 George St



Adams Bruce Ltd.  
310 George St



Crown Clothing Co.  
392 George St



2.3.2 Heritage - Farmers Block

- DCC scheduled buildings
- Character contributing building



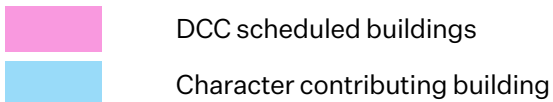
2.3.3 Heritage - Golden Block

- DCC scheduled buildings
- Character contributing building

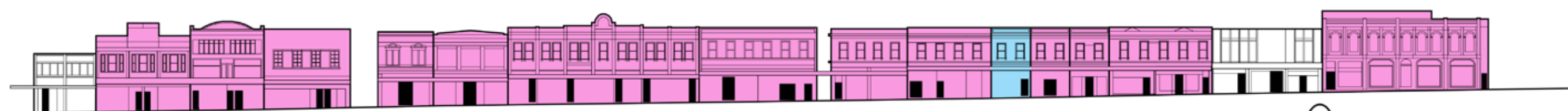




### 2.3.4 Heritage - New Edinburgh Way



Hanover Street



**WEST ELEVATION**

Opportunity for tree placement aligned  
closer to western façades



Frederick Street



Frederick Street



EAST ELEVATION

Opportunity for tree placement aligned  
closer to eastern façades



Hanover Street



2.3.5 Heritage - Knox Block

- DCC scheduled buildings
- Character contributing building



# City of Literature

## 2.4 City of Literature

The George Street project provides an ideal opportunity to celebrate Ōtepoti - Dunedin's status as a 'City of Literature'. It is one of 42 cities worldwide that has been given the UNESCO status celebrating the many past and present writers and poets.

The George Street city of literature strategy is to provide text passages, words and phrases from important writers such as Janet Frame and Hone Tūwhare within the street. Below are some examples of potential text that have been nominated as inspiration and which could be etched into the ground plane, planter walls and street furniture. Specific text will be worked through with DCC in the detailed design phase for George Street.



“Once upon a time (and it happens to this day) there was Late Night in the city, or Friday Night Shopping. On Late Nights the streets and shops, as you know are filled with people hurrying and scurrying and buying things. In the middle of one city stood a large store which was crowded with people every Friday night; for it sold everything, or nearly everything – soap and peppermint cushions and handkerchiefs and electric light bulbs and clothes and skeins of wool and dahlia seeds. One night when so many people were trampling and shoving over the floor, one of the floorboards said in floor-language, ‘Squirk’, which meant ‘Oh dear. Oh dear’.”

**Janet Frame**

(from ‘The Friday Night World’, Gorse is Not People, Janet Frame, Penguin Books, 2012)

“oystercatchers by night, above Knox Church, cluck and chuckle, flying seawards.”

**David Eggleton**

(from ‘Dada Dunedin’ Time of the Icebergs, David Eggleton, Otago University Press, 2010)

“I walked the City last night  
stopping to take everything in:  
.....  
And the City seemed  
the same lovely woman I used  
to know  
grown somewhat more ample  
more assured  
with new baubles on display”

**Hone Tūwhare**

(from ‘Prodigal City’, Deep River Talk, Hone Tuwhare, Godwit Press 1993)

# Movement and parking

## 2.5 Movement and parking

Council approved the one-way south option in September 2021 which is the basis for the design. The one-way portion of the design connects Frederick Street and Moray Place. The 'Knox Block' remains a two way as it provides bus routes into the central city bus hub on Great King Street. Parking numbers are generally similar to existing numbers however the time restrictions have shortened overall to allow more turnover and better access to retail business.

At least two mobility parking spaces are provided in each block and in the case for the Golden Block four mobility parking spaces are provided. This is a significant increase from the existing limited spaces currently along the entire length of the street. The following pages illustrate the location of each space within the blocks of George Street.

LEGEND

Primary

Secondary

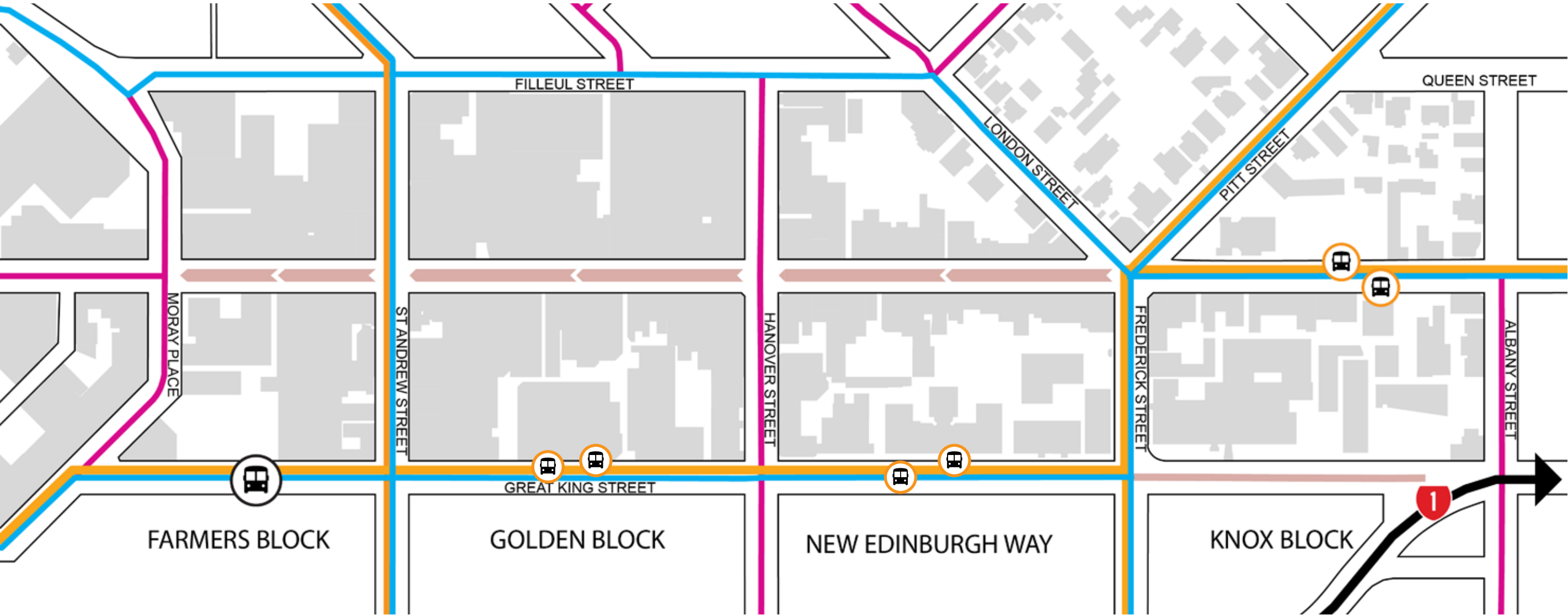
Tertiary

Fourth

Bus route

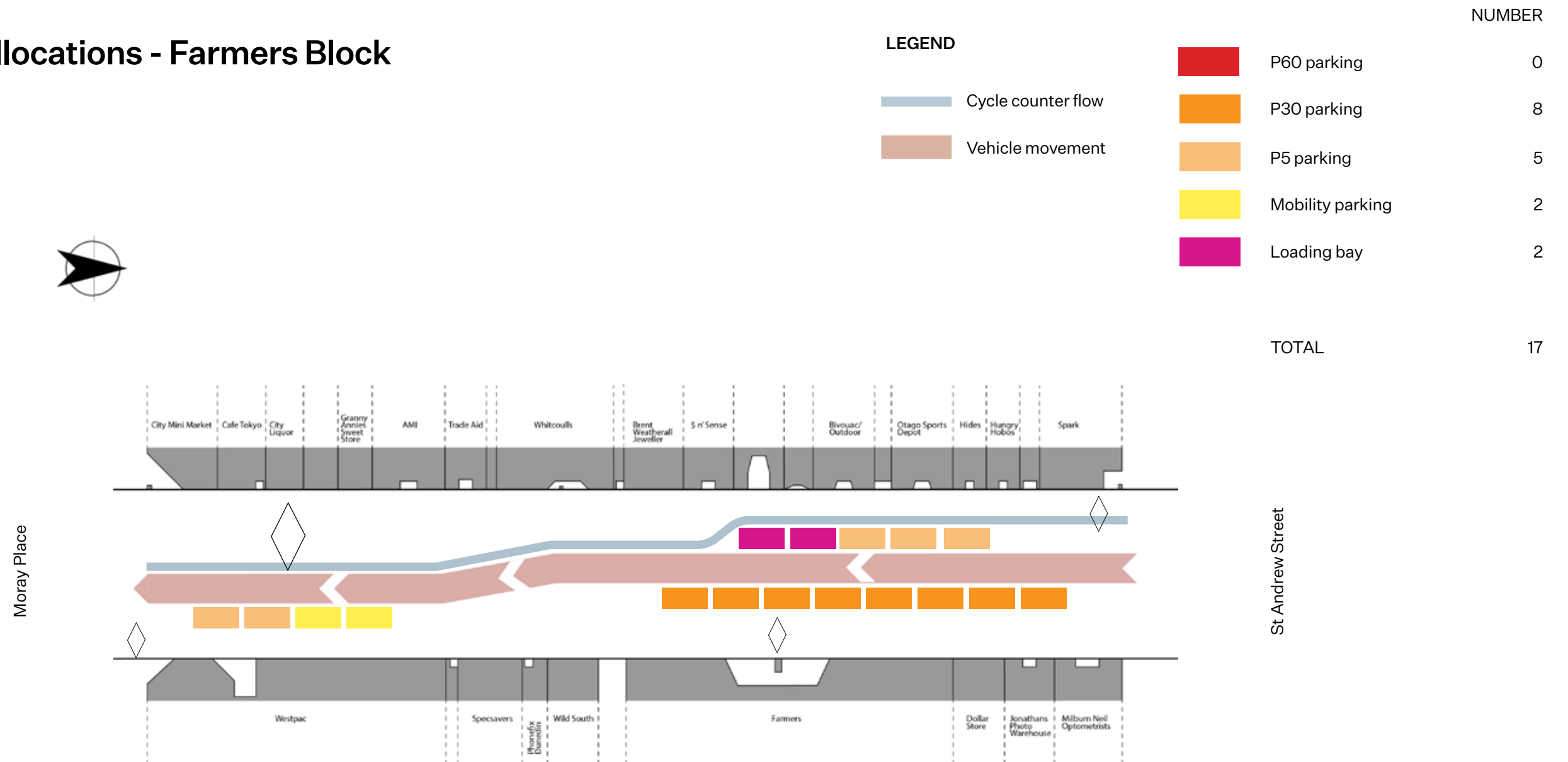
Bus hub

Bus stop

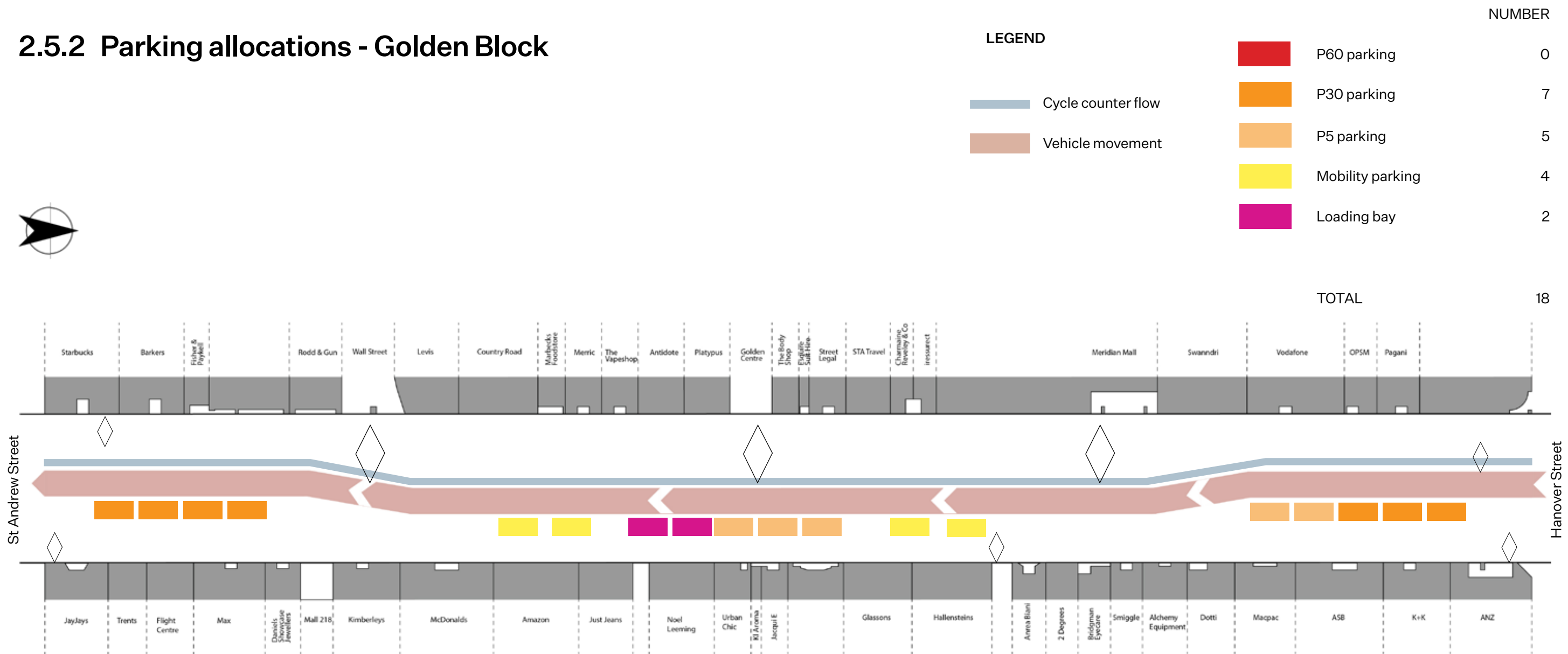




### 2.5.1 Parking allocations - Farmers Block



2.5.2 Parking allocations - Golden Block





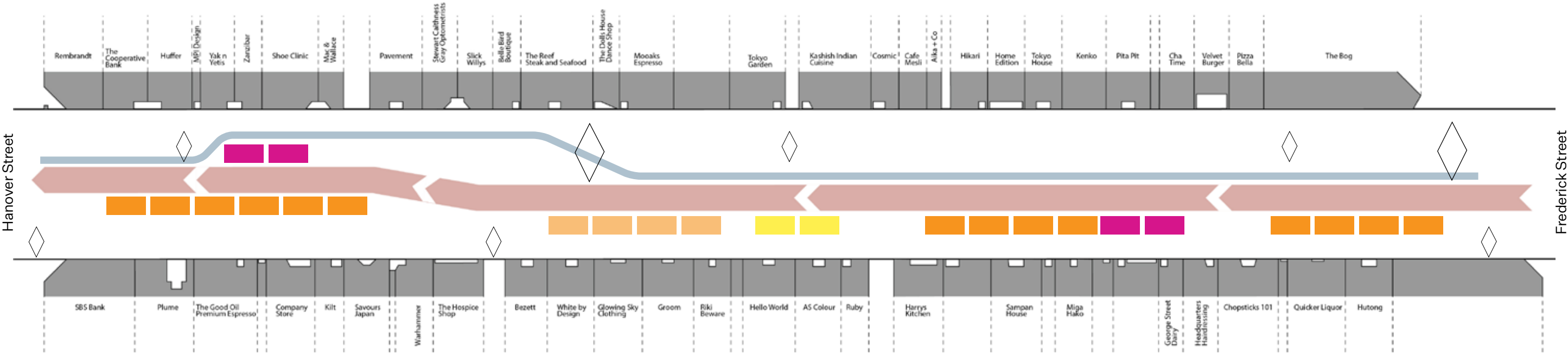
2.5.3 Parking allocations - New Edinburgh Way



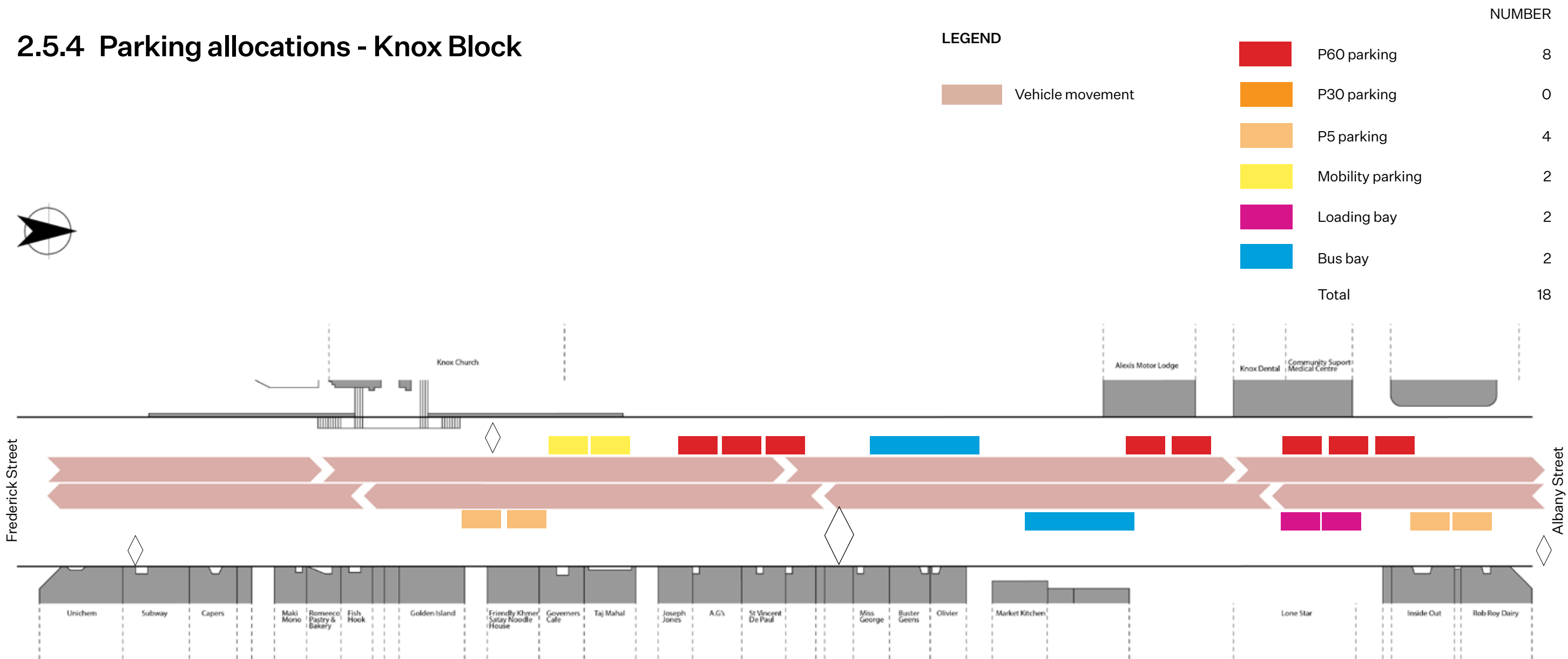
LEGEND

- Cycle counter flow
- Vehicle movement

	P60 parking	0
	P30 parking	14
	P5 parking	4
	Mobility parking	2
	Loading bay	4
	Total	24



2.5.4 Parking allocations - Knox Block



# Materials

## 2.6 Materials selection criteria

Materials both surface treatments and street furniture have been selected based on the following criteria:

**Cost** - Selection of materials and construction methods that are within project budgets.

**Carbon emissions** - Selecting products and suppliers that have sustainability and processes that reduce carbon emissions. This goes hand in hand with sourcing material locally to reduce carbon emissions in transportation.

**Whole of life costs** - Ongoing costs to maintain and operate streetscapes throughout their lifespan.

**Maintenance** - Selecting products that are easy for DCC to maintain (and source) into the future.

**Local** - Ideally, materials will be sourced locally to the Otago region and NZ although with the understanding that some specialty products may need to be imported.

**Appearance** - Selected materials need to be attractive and respond to local context. Surface finishes should perform in accordance with the local conditions, be slip resistant, and able to withstand expected loadings.

**Function** - Ensuring surface finishes perform in accordance with the local conditions. Be slip resistant and able to handle the expected loading put on them.



Cost



Carbon emissions



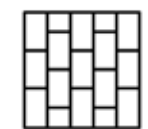
Whole of life costs



Maintenance



Local



Appearance



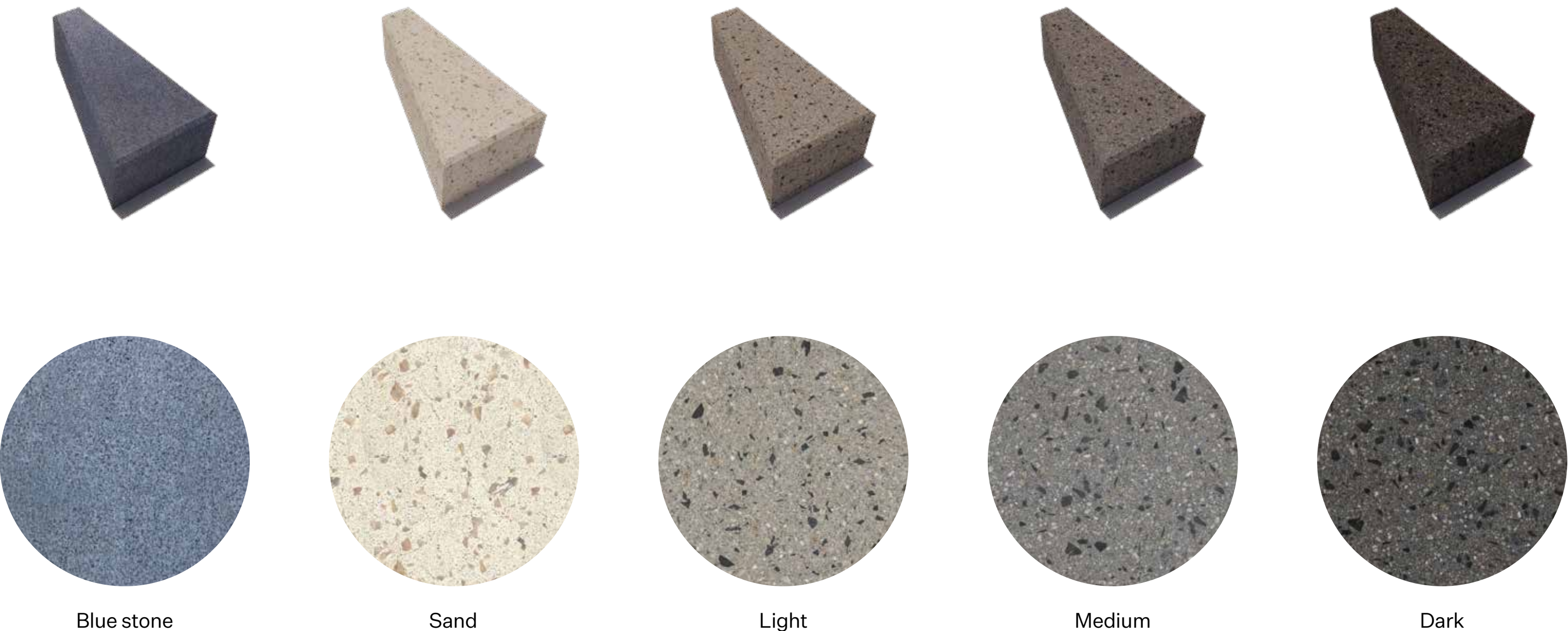
Function



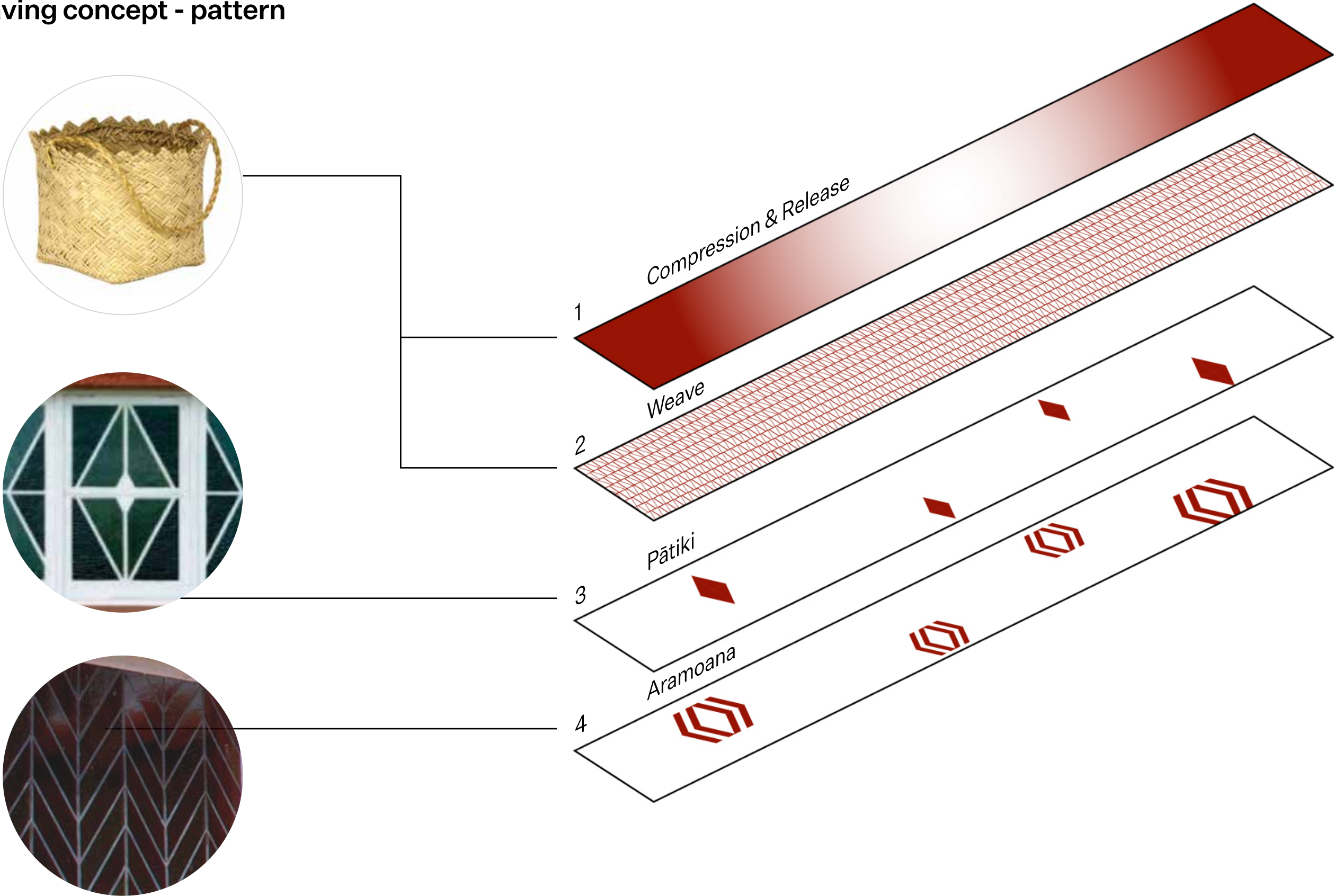
# Paving

A bespoke paving unit has been developed for George Street. It is intended to be used throughout the central city. The paving has been developed with input from mana whenua and is representative of the corner of the poti (kete). As discussed in section 2.2.4 of this report the authentic shape of the paver for Ōtepoti is a powerful way of providing a surface treatment that is contextual, meaningful and relates back to the principal of whakapapa.

## 2.7 Paving concept - Unit paver

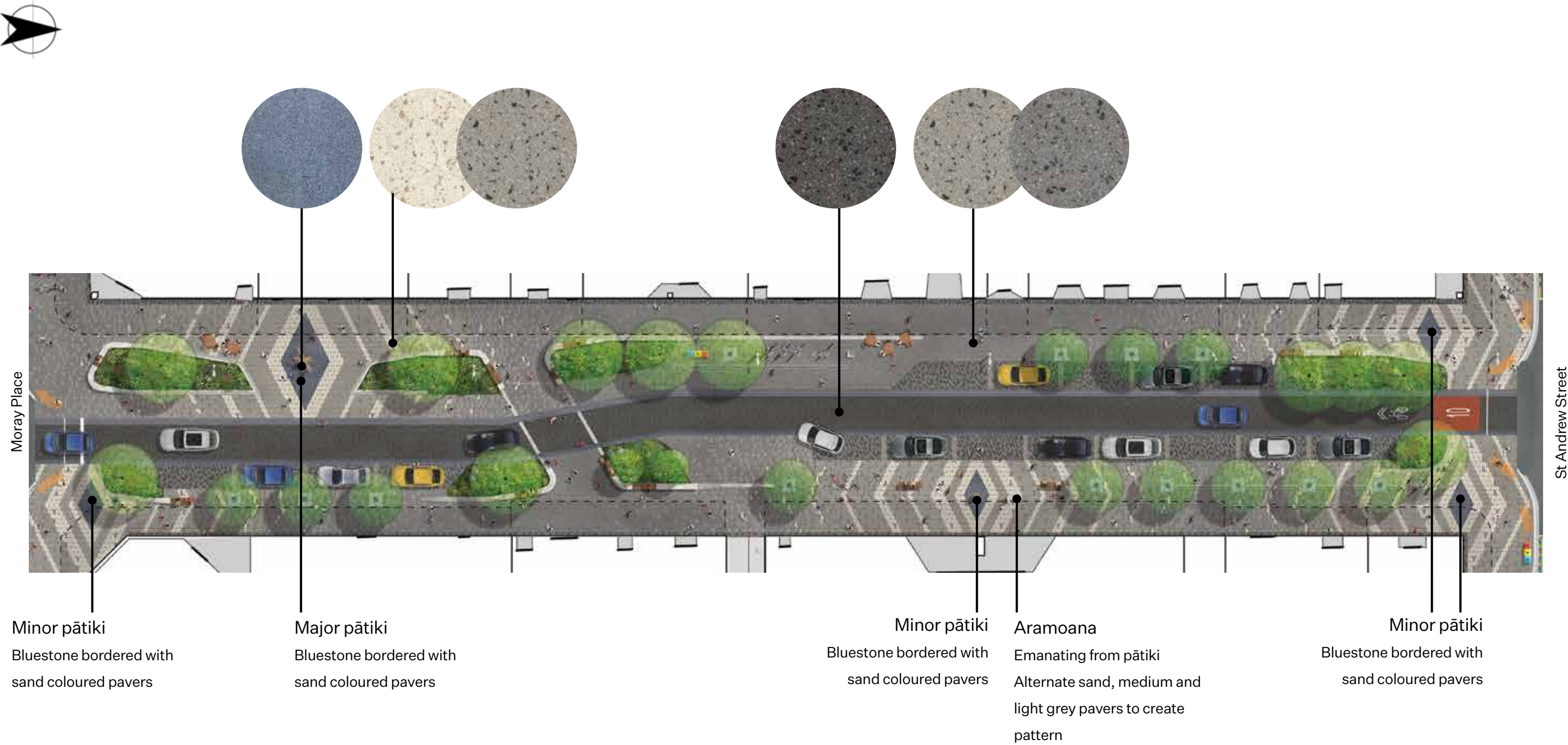


2.7.1 Paving concept - pattern





2.7.2 Paving concept - pattern





2.7.3 Paving concept - pātiki setting the movement within the pattern

Deconstruction of pattern moving away from pātiki sets up a repeating rhythm along the street



Pātiki



Source of movement

Aramoana



The rippling effect emanating from the pātiki

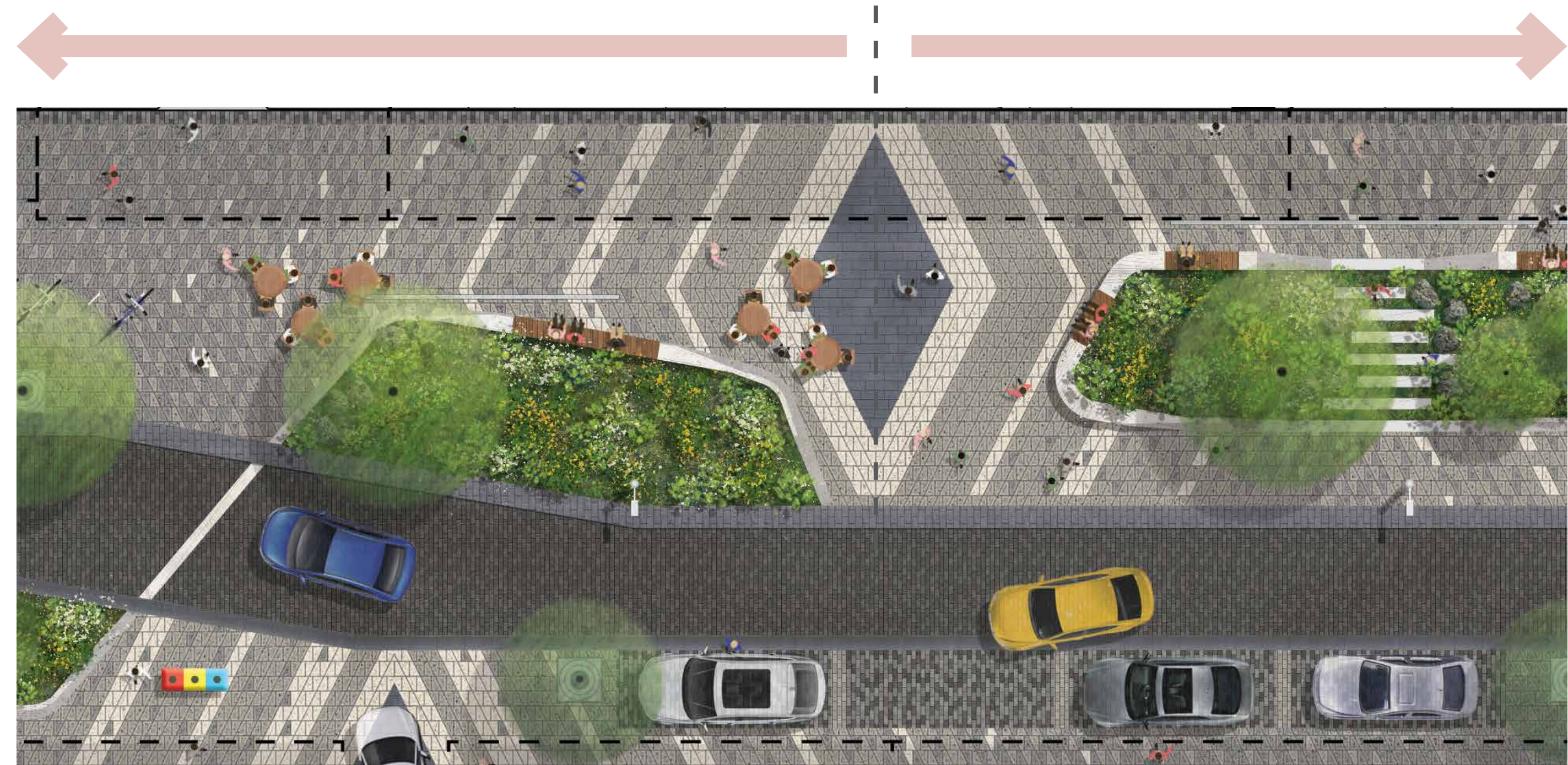
Poti



Movement dissipating into the still water



2.7.4 Paving concept - pattern street view





# Furniture

## 2.8 Components

The following pages identify the type, location and quantum of street furniture proposed throughout the street. In general street furniture can be classified into four main groups, cycle racks, rubbish and recycling bins, seating areas and drinking fountains (see chapter 5 of this report for specific furniture elements proposed).

The lighting strategy is covered in the separate section 2.10.



### Cycle racks

Cycle rack are provided in convenient locations that do not disrupt pedestrian areas within each block. They are placed both centrally within the street adjacent to movement zones and at the junctions of east west streets. The capacity of each cycle rack area is 6-10 cycles.



### Rubbish & recycling bins

Rubbish and recycling bins 'multi bins' are strategically located along the street based on need and convenience. Extra bins are located in areas that are anticipated to generate higher waste.



### Seating areas

Seating is provided in abundance along the street with a variety of types and uses. This will include seats with arm and back rests. Bench seating integrated on top of planter walls and large platform seating for groups of people.

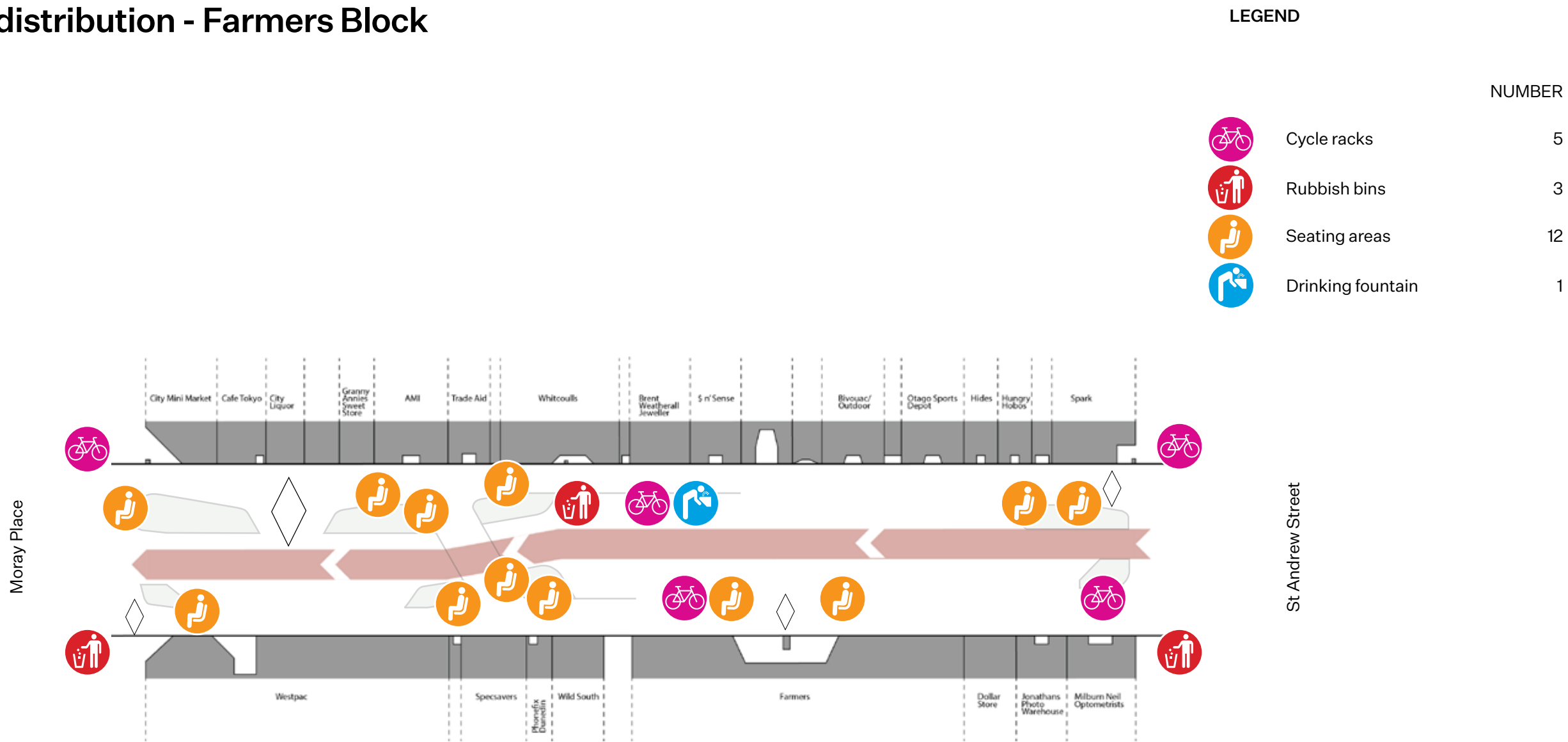


### Drinking fountains

Access to water is important and will be provided in each block. Water fountains are located in high use areas where a mixture of movement along the street and seating areas are provided.







2.8.1 Furniture distribution - Farmers Block

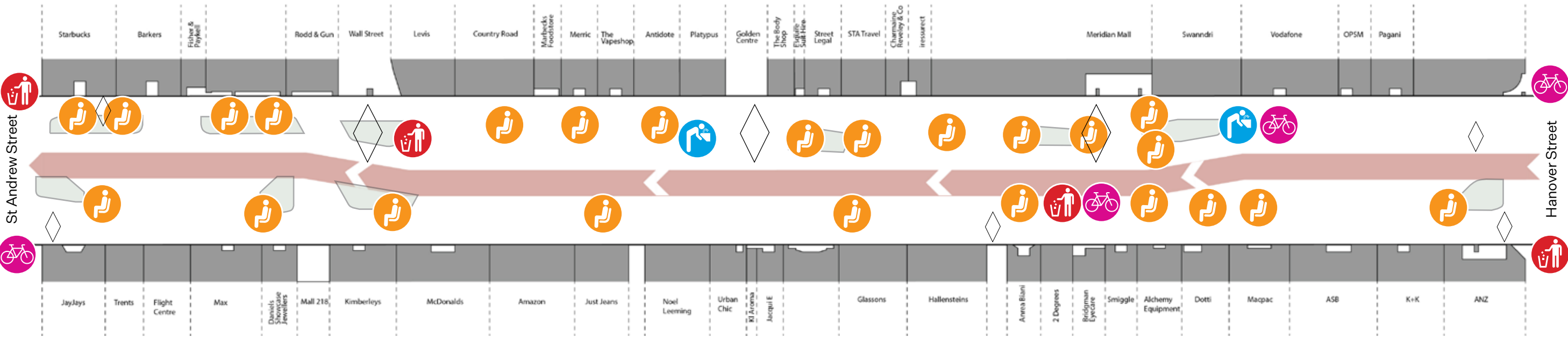


2.8.2 Furniture distribution- Golden Block



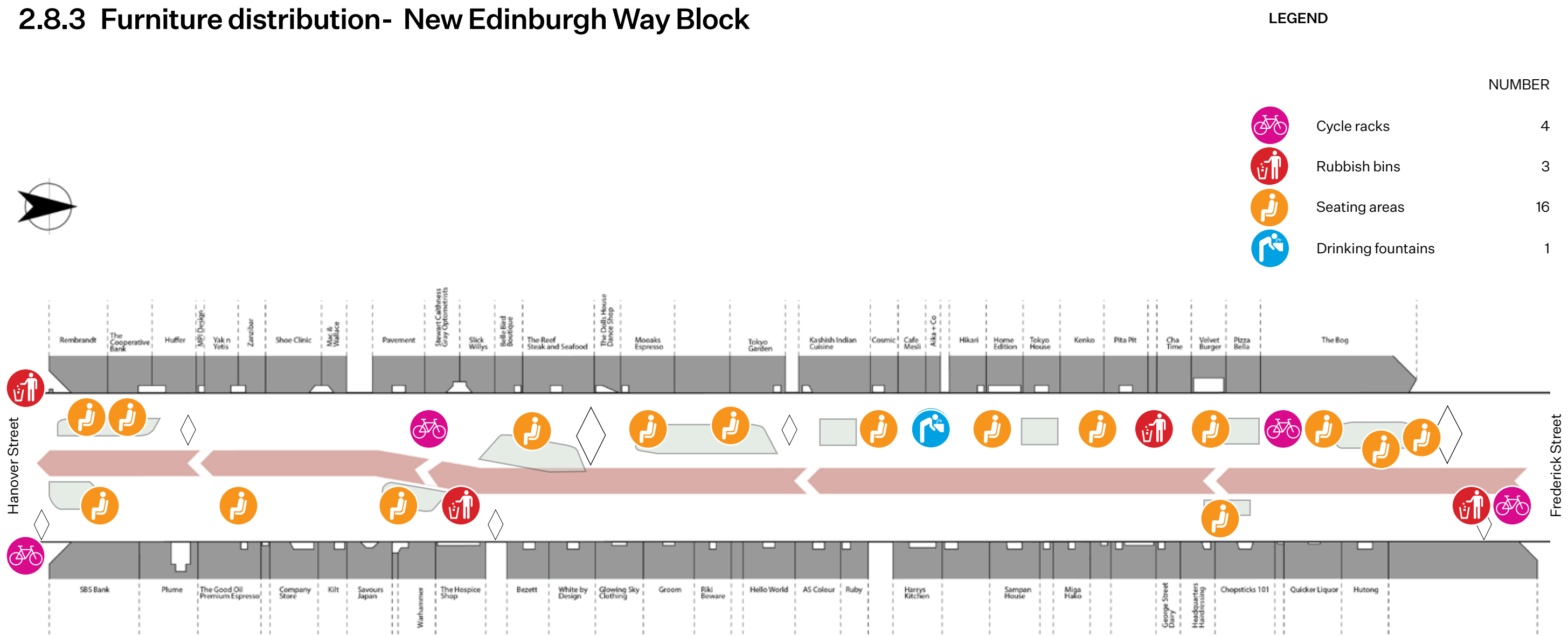
LEGEND

	NUMBER
	Cycle racks 4
	Rubbish bins 4
	Seating areas 24
	Drinking fountain 2

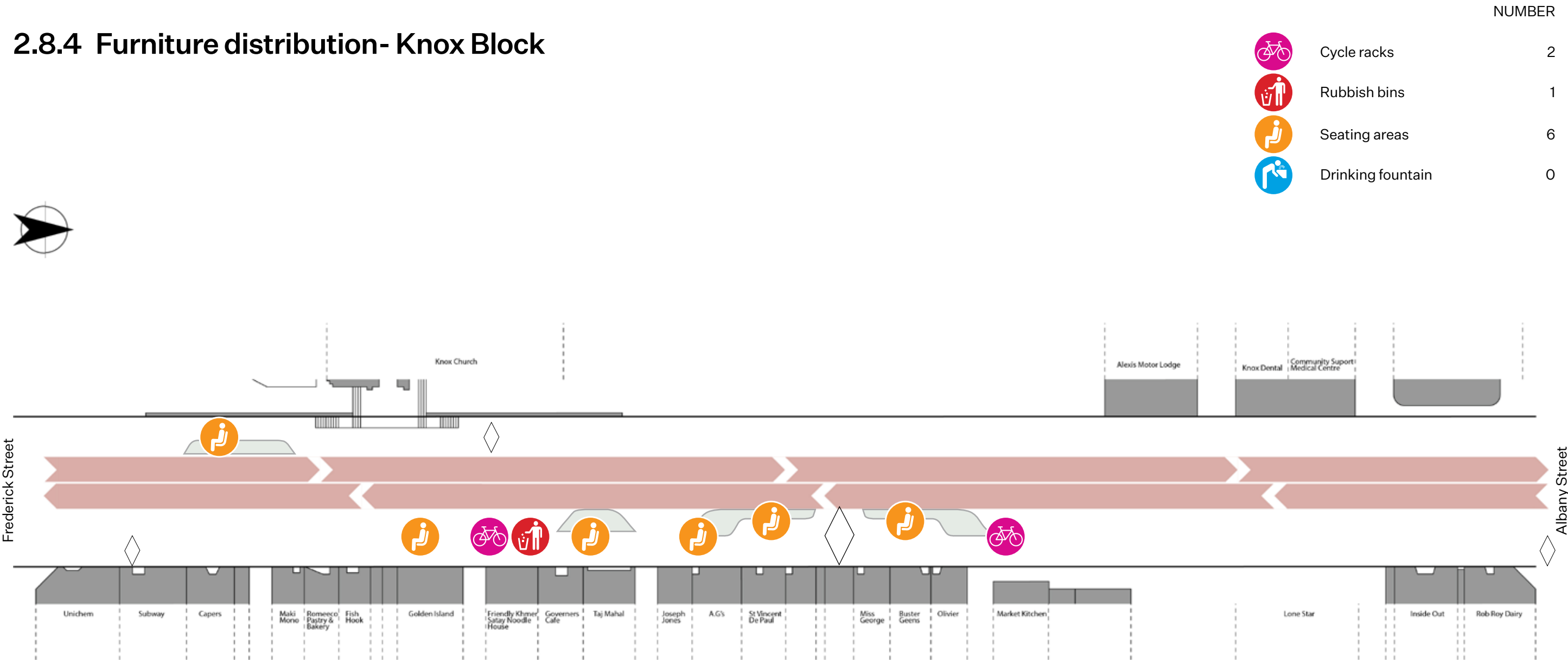




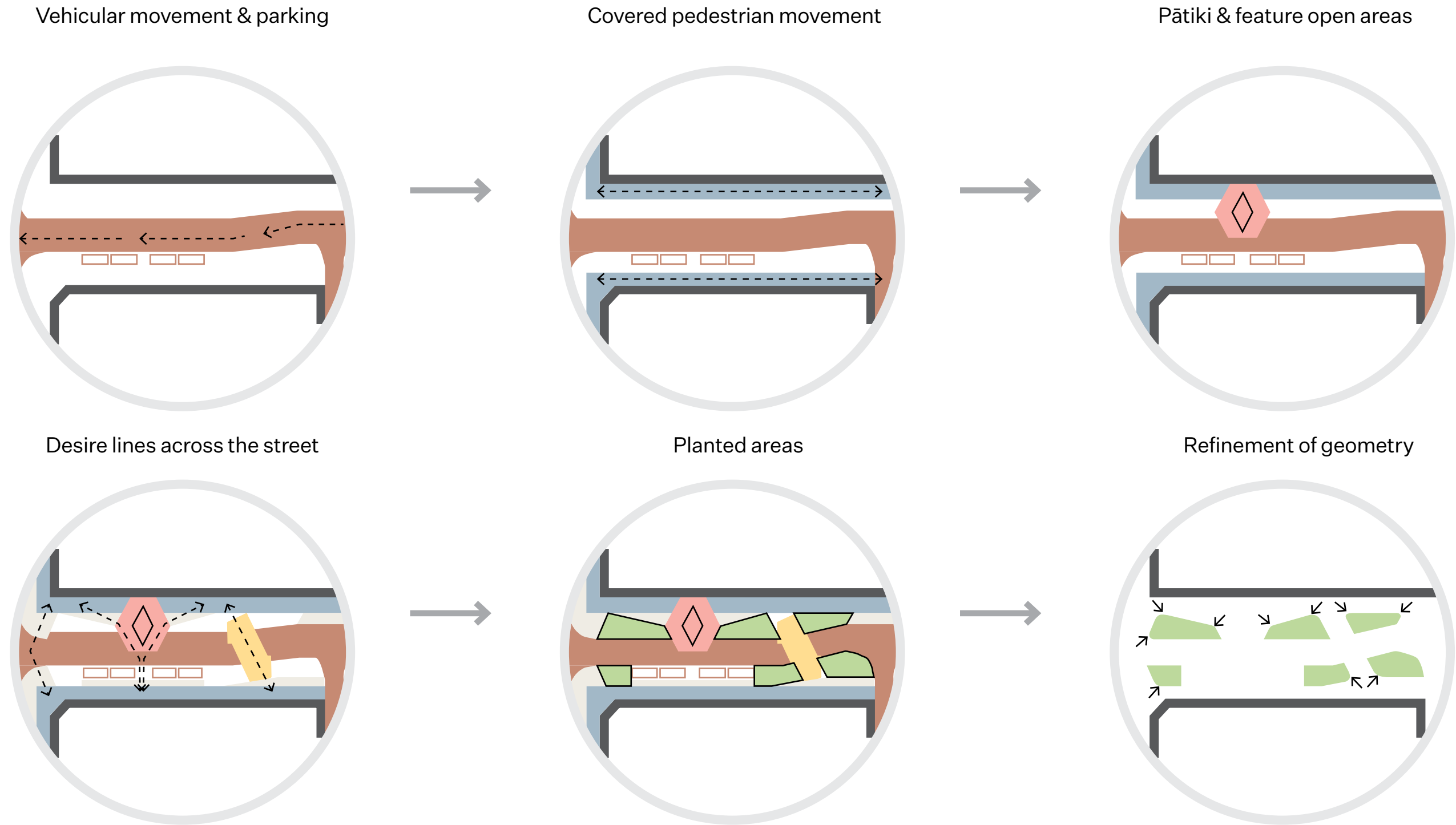
2.8.3 Furniture distribution- New Edinburgh Way Block



2.8.4 Furniture distribution- Knox Block

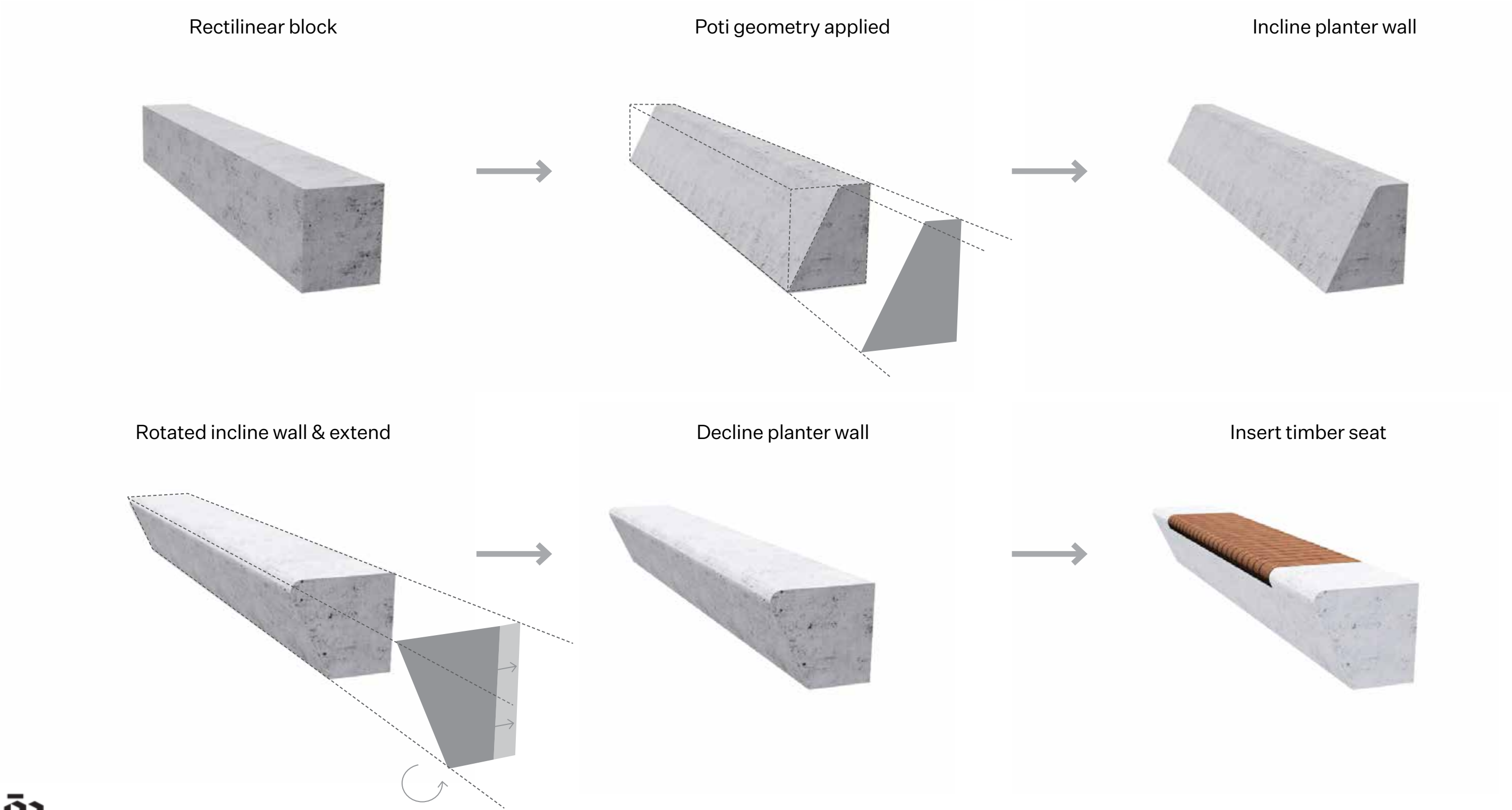


2.8.5 Planter bed geometry -informing layout / carving out space





2.8.6 Planter bed geometry-informing components



2.8.7 Planter bed geometry examples

Raised garden



Transition garden  
(raised to flush with  
internal crossing)



Flush garden





# Planting

## 2.9 Planting

**The three key objectives for the planting are to:**

1. Create a verdant “Green Street” that is full of life
2. Provide planting that reflects the natural and cultural heritage of Ōtepoti
3. Arrange the planting so that they frame and enhance the architectural heritage of George Street

**In order to achieve these objectives we need to:**

- Use plants that connect the town belt with George Street, to attract birds and insects
- Arrange clusters of various sized and shaped planting beds and trees, to create an overall appearance of a verdant “Green Street”
- Use locally sourced native plants that reinforce local ecology, sense of place and are resilient to local conditions
- Employ ecosystem services to treat stormwater, prior to entering the ground water and harbour
- Employ a diverse palette of tree shapes and sizes to align with immediate context (architectural heritage and the grain of the built form) and to produce seasonal interest
- Augment plantings with non-local species that enhance the visual appearance of plantings, so that they can be enjoyed by everyone
- Employ a methodology that is suited to urban plantings; enabling fast close out, robust and low maintenance species and arrangements that won’t interfere with sight-lines, services or pavements



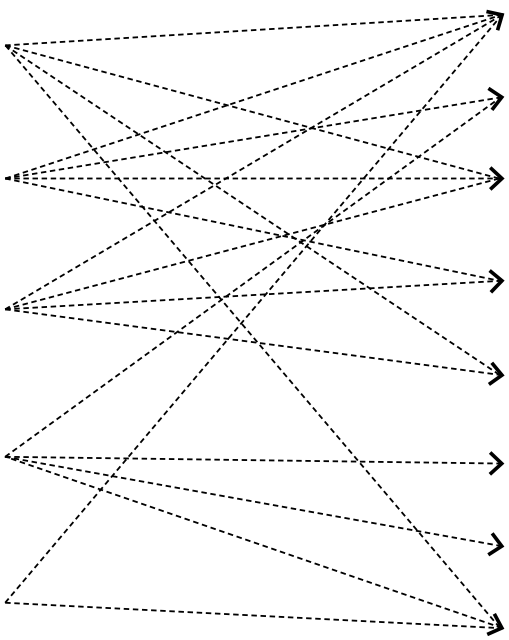


# 2.9.1 Planting - strategy

Ecosystem services are widely defined as the benefits that nature provides humans. Various planting attributes will be designed with to provide ecosystem services, which are aligned with the Kāi Tahu values and project objectives.

## Ecosystem services

- Whakapapa**  
Identity + sense of place
- Taiao**  
Ecology + wildlife
- Rerehua**  
Beauty + wellbeing
- Mahi**  
Function + sustainability
- Mahika kai**  
Natures resource



## Planting attributes

- Local ecosystem**
- Water purification**
- Flowering**
- Fruiting**
- Foliage**
- Evergreen**
- Deciduous**
- Productive use**

## Planting attributes



**Local ecosystem**  
Plants native to the Dunedin ecosystem will reflect local identity, have traditional uses for Māori and Kāi Tahu, be resilient to the environmental conditions and provide natural habitats for native wildlife.



**Water purification**  
Use specific plants in rain gardens that function to polish the water from the pavements, prior to releasing into the groundwater and harbour.



**Flowering**  
Use a variety of flowering plants to add beauty and vibrancy along the streets. Express seasonal change and provide for plant pollination, habitats and food sources for birds and insects.



**Berries and seeds**  
Encourage wildlife corridors to form with the town belt, pulling nature through the city by using some fruit and seed producing plants, which birds and insects will flourish upon.



**Foliage**  
Use a range of different shaped and textured plants to compose interesting and appealing garden mixes, creating variety along the streets.



**Evergreen**  
A high proportion of evergreen plants will ensure a full foliage cover all year round.



**Deciduous**  
Locate deciduous trees to maximise urban comfort by providing summer shade and winter sun. Choreograph the timing of autumn leaves for a prolonged seasonal display.



**Productive use**  
Include plants that provide mahika kai and rokoa values, for uses such as food, craft and medicine.








# 2.9.2 Planting - concept

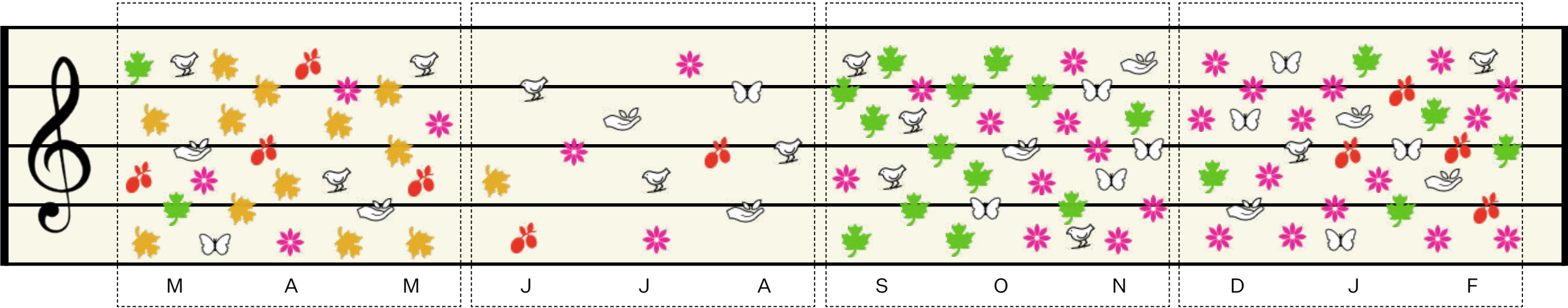
## A 'seasonal symphony'

The drama of each season can be related to the four movements of a symphony. The planting concept for the Retail Quarter will carefully select plants and combine them in mixes to create a choreographed dance and display of flowering, fruiting and coloured foliage. This will provide a continual change throughout the year and along the streets. Like a backdrop, a high proportion of evergreen plants will ensure a permanent planting presence.

The planting selections will consider each plants temporal cycles to prolong and emphasise the effect of each season. This will provide an abundance of ecological habitats and corridors for birds and insects, productive value for people to engage with and a healthy, verdant 'Green Street' that is full of life.

### LEGEND

Plant activity		Human and wildlife activity	
	Flowering		Productive
	Berries and seeds		Birds
	Tree foliage (Green)		Insects
	Tree foliage (Coloured)		



**Movement 1: Autumn**  
Allegro: Brisk and lively

**Movement 2: Winter**  
Adagio: Slow and lyrical

**Movement 3: Spring**  
Minuet/scherzo: Dancy

**Movement 4: Summer**  
Rondo: Rollicking



# 2.9.3 Planting layout

## Planting Layout Concept

Street trees and planting are proposed to reinforce the general spatial concept of George Street. The layout has three parts, thresholds at the street entrances, activity areas where programmed spaces are located, and clear zones where the sense of openness is intended.

Several lines of trees are aligned along the street to reduce visual clutter but to also help make the street look full.

### LEGEND



Vehicular route



Thresholds

Trees and planting frame the street entrances and provide enclosure



Informal social spaces

Trees and planting provide a beautiful and attractive setting for social gathering spaces



Clear zones

Mid block areas where programmed activities are located, limited planting and trees are proposed. Views to and from heritage façades are maintained

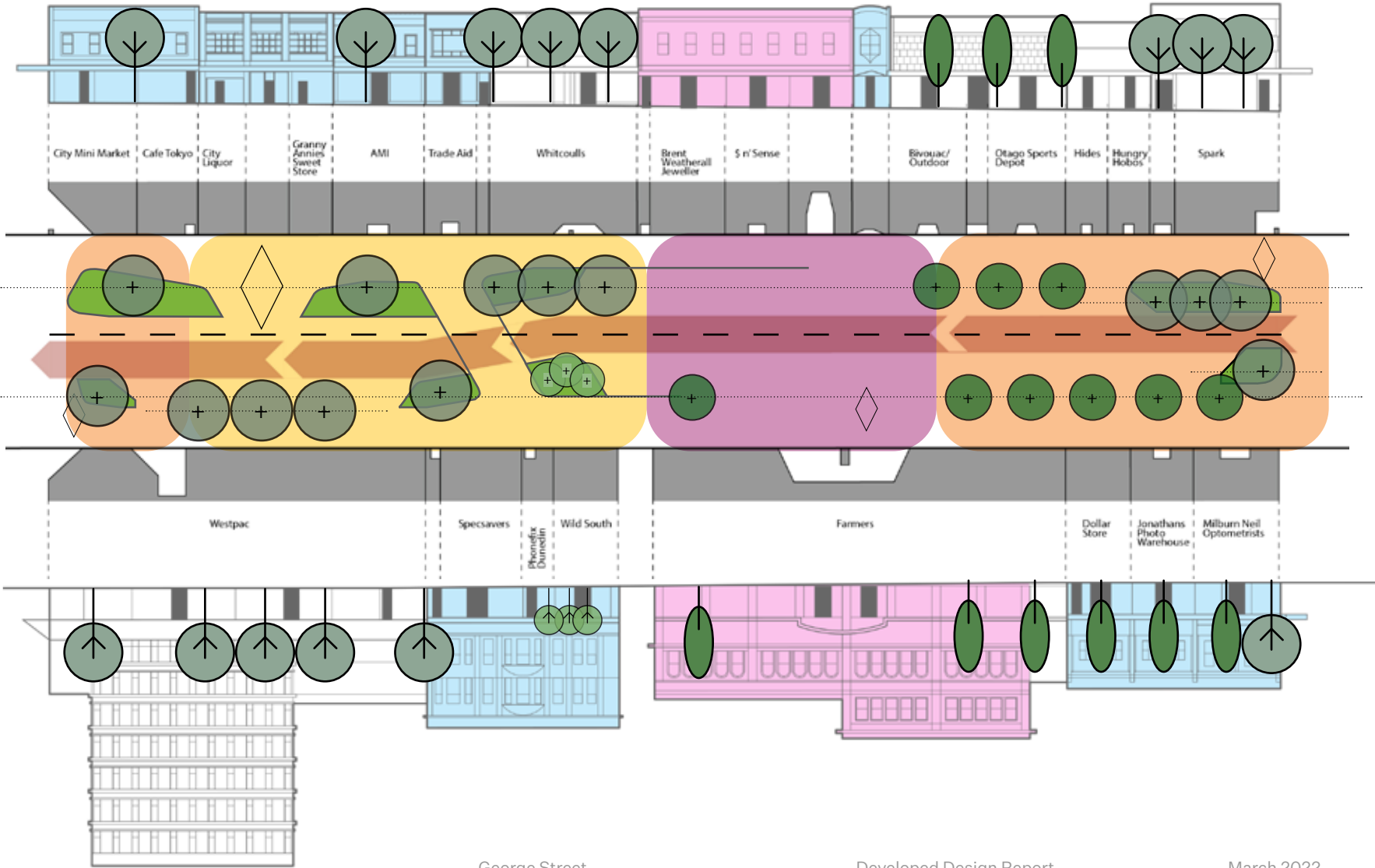




# 2.9.4 Planting layout - Farmers Block



Moray Place



George Street

Developed Design Report

March 2022

Rev A

64

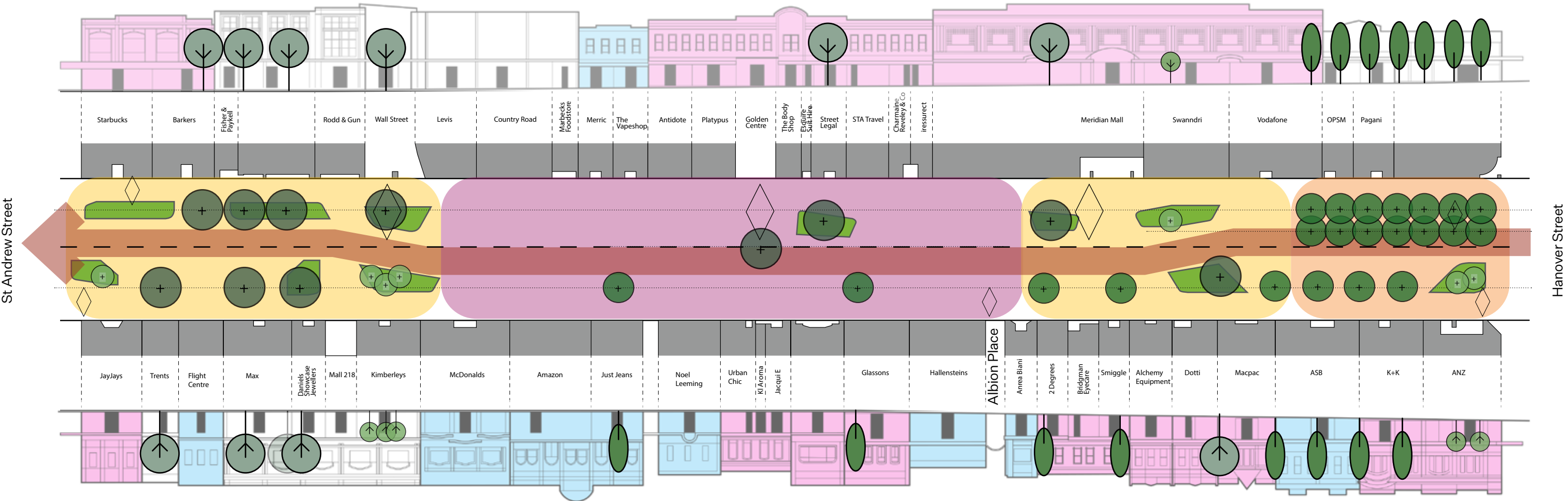
## LEGEND

- Thresholds
- Trees and planting frame the street entrances and provide enclosure
- Informal social spaces
- Trees and planting provide a beautiful and attractive setting for social gathering spaces
- Clear zones
- Mid block areas where limited planting and trees are proposed and where views to and from heritage façades are located
- DCC scheduled buildings
- Character contributing building
- Vehicular route (one way)
- Proposed tree locations
- Planting / rain gardens

2.9.5 Tree layout - Golden Block

LEGEND

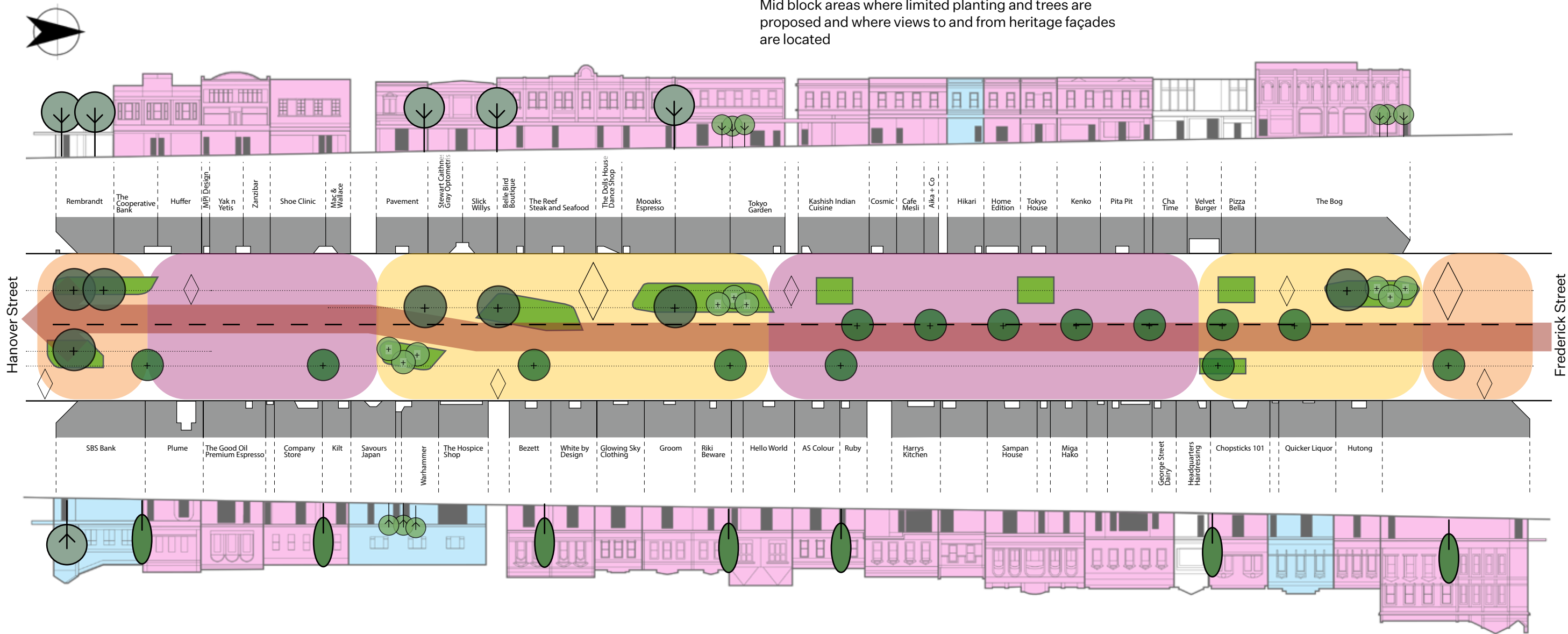
- Thresholds
- Trees and planting frame the street entrances and provide enclosure
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- DCC scheduled buildings
- Character contributing building
- Vehicular route (one way)
- Proposed tree locations
- Planting / rain gardens



2.9.6 Tree layout - New Edinburgh Way

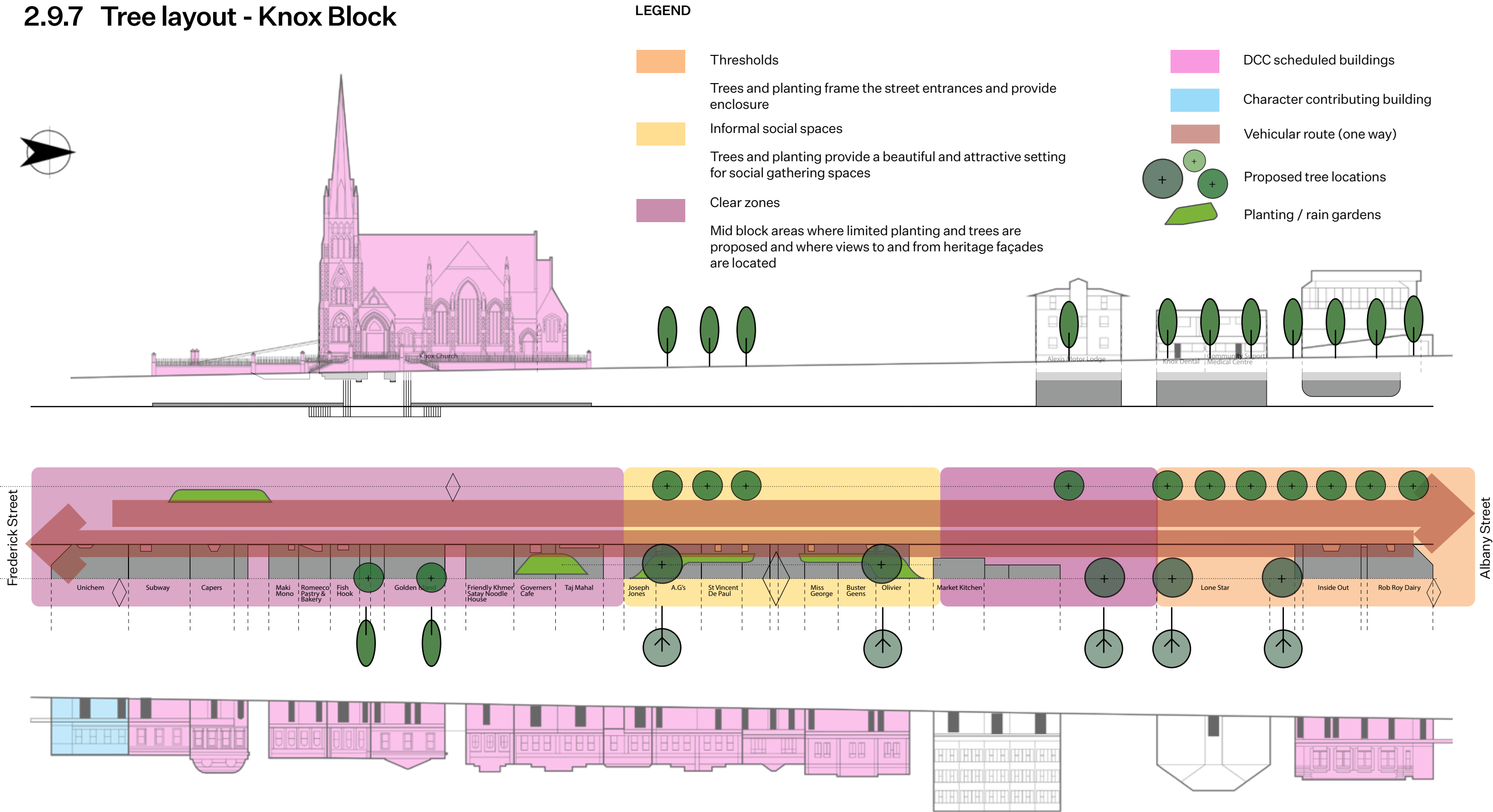
LEGEND

- Thresholds
- Trees and planting frame the street entrances and provide enclosure
- Informal social spaces
- Trees and planting provide a beautiful and attractive setting for social gathering spaces
- Clear zones
- Mid block areas where limited planting and trees are proposed and where views to and from heritage façades are located
- DCC scheduled buildings
- Character contributing building
- Vehicular route (one way)
- Proposed tree locations
- Planting / rain gardens





2.9.7 Tree layout - Knox Block



LEGEND

- Thresholds
- Trees and planting frame the street entrances and provide enclosure
- Informal social spaces
- Trees and planting provide a beautiful and attractive setting for social gathering spaces
- Clear zones
- Mid block areas where limited planting and trees are proposed and where views to and from heritage façades are located
- DCC scheduled buildings
- Character contributing building
- Vehicular route (one way)
- Proposed tree locations
- Planting / rain gardens

# Stormwater management

## 2.10 Stormwater management

Urban stormwater run-off can have adverse effects on the drainage, ecological, cultural, recreational, landscape and heritage values of waterways. Discharge of untreated stormwater to groundwater can also affect the quality of shallow groundwater.

Rain gardens are engineered gardens designed to harness the natural ability of vegetation and soils to treat stormwater. Treatment occurs through sedimentation, filtration, adsorption and uptake by vegetation. They can be used to reduce the effects of stormwater volumes, peak flows and contaminant loads on waterways.

This project aim is to achieve for full road and footpath coverage within the corridor being discharged to rain gardens.

LEGEND

- Location of rain gardens
- Overland flow path and direction of flow



# Lighting

## 2.11 Lighting strategy

The lighting strategy is to provide V3 lighting category. This is primarily for safety, to ensure all objects can be easily seen at night. A colour temperature of 4000K along the street will enable good colour rendition and facial recognition is achieved in all locations. In certain locations, a higher colour temperature and luminance levels may be applied to increase visibility and achieve a more festive atmosphere.

Light poles with high performance and long life LED luminaires set at 10m high at nominal 20-25m spacings will light the carriageway and footpaths under awnings.

Lighting proposed is in two categories:

- 1. Functional lighting, in the form of poles along the street providing levels of light that is welcoming and safe, facial recognition and visual access across the street is achieved
- 2. Feature lighting, providing an attractive and dynamic night-time atmosphere which will highlight specific areas such as the pātiki, ground plane or planter lighting to emphasise movement, and catenary lighting above



Functional

WE - EF VFL Luminaire with 1.0m outreach arm on slimline pole in Tauranga.  
*Image source - Jasmax*



Catenary

Overhead catenary lighting system.  
*Image source - Ronstan*



Feature

In ground lighting, Cathedral's Apse, Square, Tortosa, Spain



# 2.11.1 Lighting concept - Farmers Block

Note: light poles and feature lighting shown here are indicative, refer to technical drawings set for locations to be finalised in Detailed Design



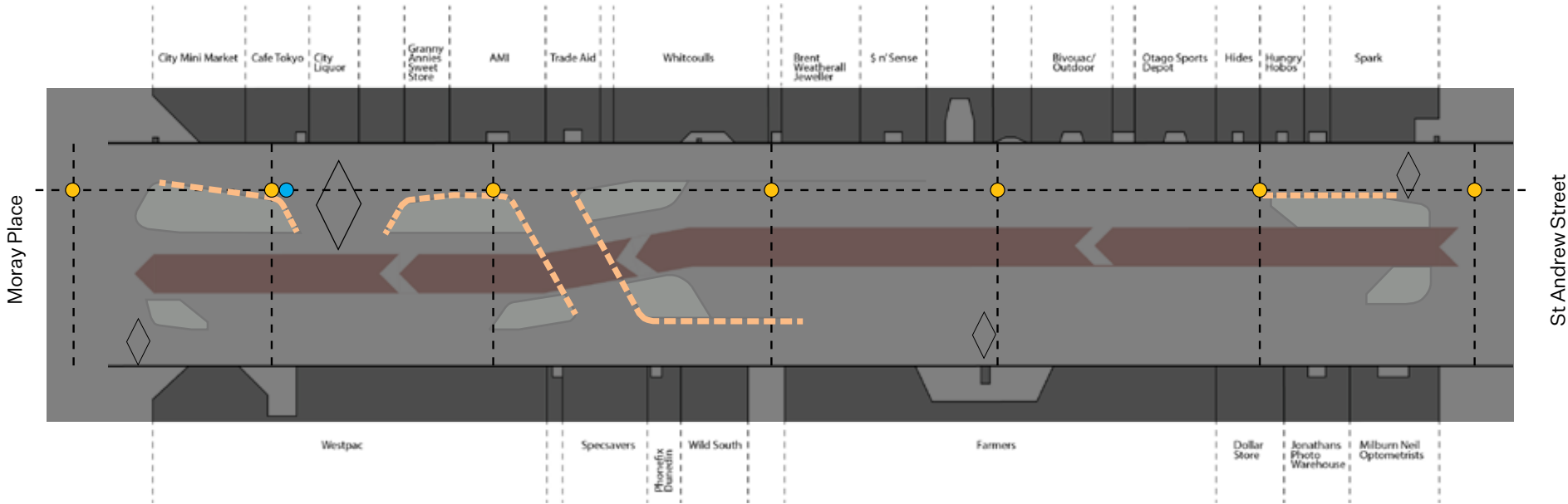
LEGEND

Pole light

Planter / seating lighting

Catenary lighting

Feature spot on pole light



# 2.11.2 Lighting concept - Golden Block

Note: light poles and feature lighting shown here are indicative, refer to technical drawings set for locations to be finalised in Detailed Design

- LEGEND
- Pole light

Planter / seating lighting





Catenary lighting

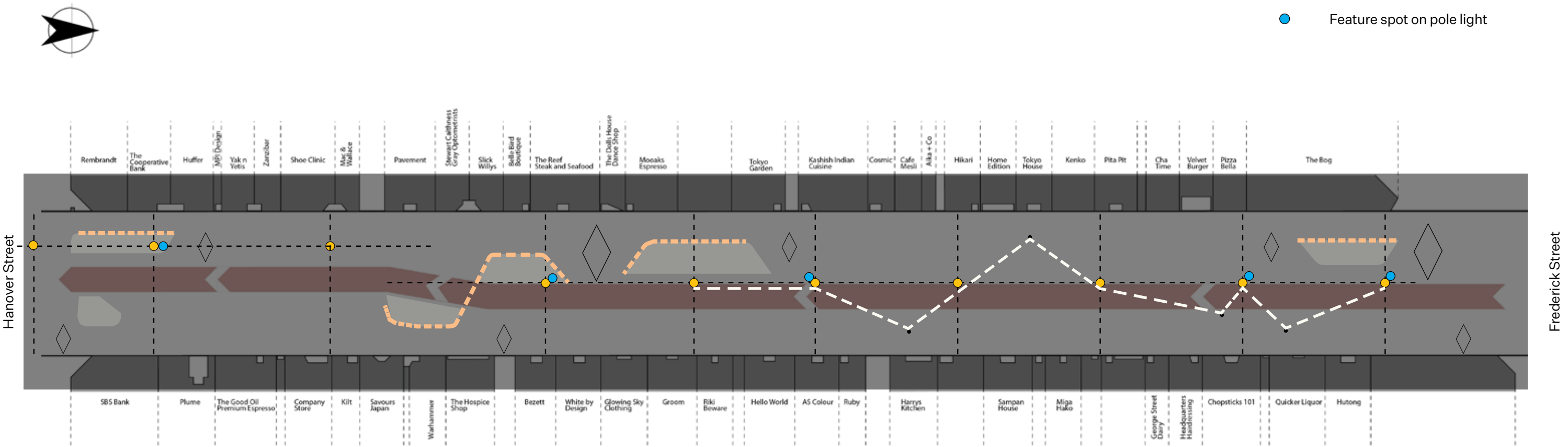
Feature spot on pole light
- 
- 
- George Street
- Developed Design Report
- March 2022
- Rev A
- 71

# 2.11.3 Lighting concept - New Edinburgh Way Block

Note: light poles and feature lighting shown here are indicative, refer to technical drawings set for locations to be finalised in Detailed Design

## LEGEND

-  Pole light
-  Planter / seating lighting
-  Catenary lighting
-  Feature spot on pole light



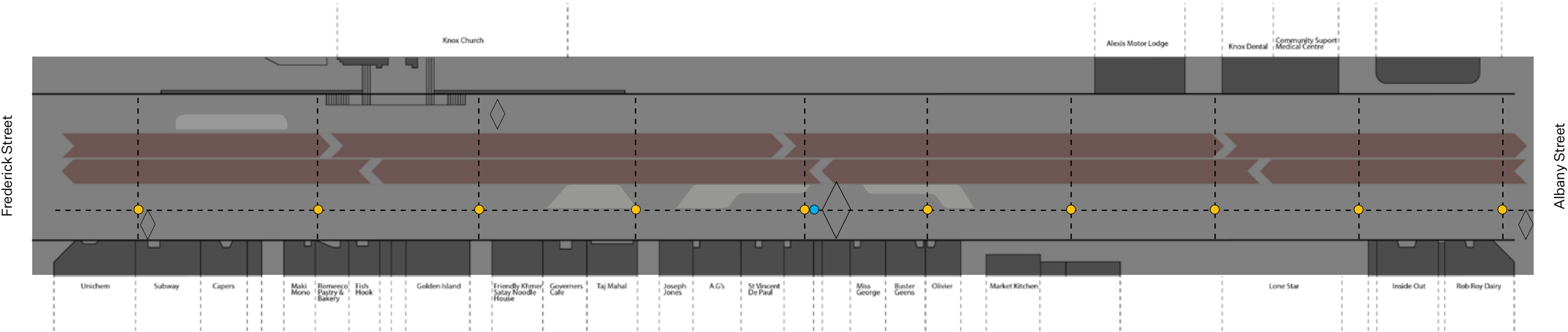


# 2.11.4 Lighting concept - Knox Block

Note: light poles and feature lighting shown here are indicative, refer to technical drawings set for locations to be finalised in Detailed Design



- LEGEND
- Pole light
- Planter / seating lighting
- Catenary lighting
- Feature spot on pole light



# Play

## 2.12 Play strategy

The play strategy for George Street is to provide a diversity of informal and formal play opportunities along the street.

The focus will be the play space located in the Golden Block between the entrances of the malls. It is located here to provide an opportunity for children to have fun in the city while out with their parents and guardians.

It is true that play is not just for kids and this play space is also for adults and therefore the structures and activities proposed are suitable for all ages. Consideration has been made in terms of safety standards and setbacks, soft-fall materials and fall distances.

Informal play is considered along the street, the planters themselves offer opportunities to 'walk the edge' as they undulate up and down the street. Stepping stones and boulders are proposed as alternative ways to cross the planters in various locations.



Informal play - elements throughout the street



Play surface treatments- soft fall



Play space -programmed play space within the Golden Block

# 2.12.1 Play activities

Play in George will consist of a number of activities that can be considered passive or active in nature. The approach to play will allow for as many of these activities as possible such that a dynamic and rich opportunity of play is accessible for ages and abilities within the street. Below are some of the possible passive and active play activities for George Street:

## Active activities

- Climbing - on obstacles such as planter edges or on cargo nets
- Swinging - from dedicated elements
- Balancing - on boulders, beams and ledges
- Running - between activities
- Jumping - on spring mats and between obstacles



Active climbing



Active balancing



Passive lounging



Passive listening



# 2.12.2 Golden Block play space

The concept for the Golden Block play space is inspired from the kareao (or supplejack) vine which according to mana whenua was common in the dense bush that occupied the foreshore of Ōtepoti before the city was settled. The intertwining vines formed a near impenetrable barrier within the forest.

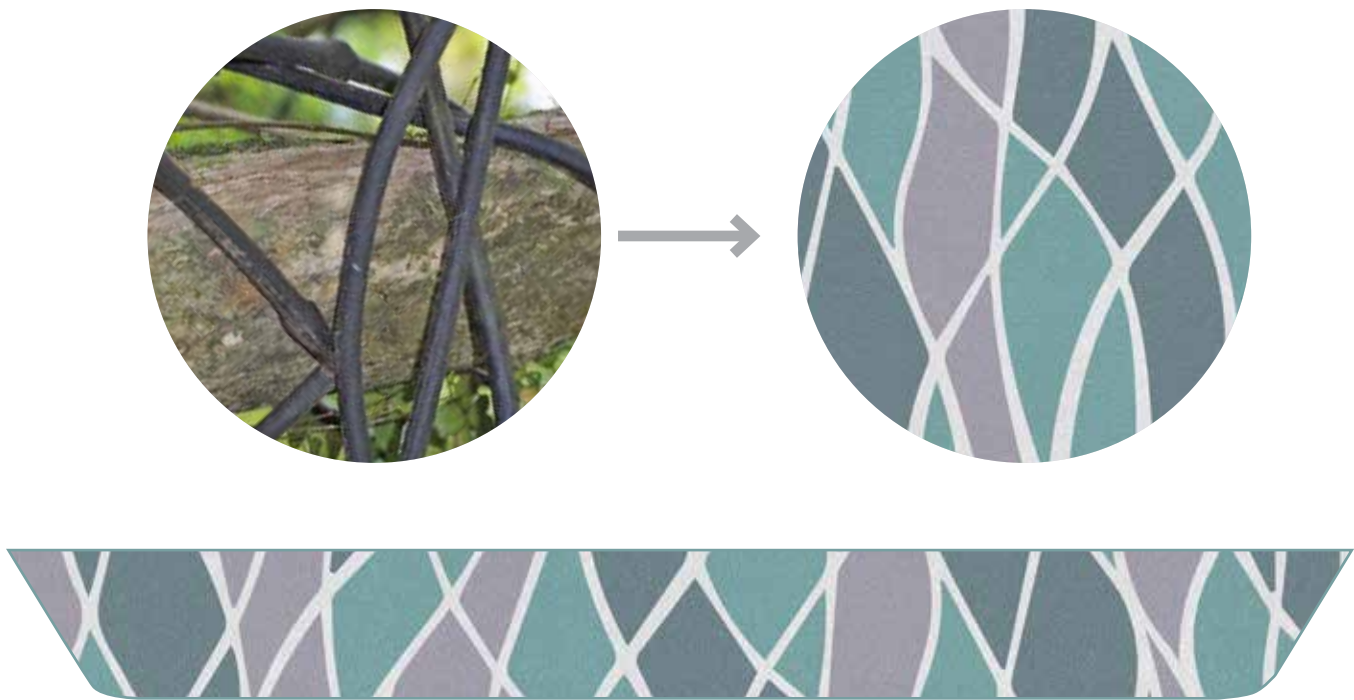
The play concept is derived from forging a pathway through the kareao labyrinth.

The three key components of the play space are:

- Ground plane - surface treatment is an abstraction of the complex lattice of kareao vines
- Journey - a playful element that is multi dimensional enables navigation through the space
- Obstacles - episodic play elements that occur along the journey that are conquered as you pass through

Ground plane

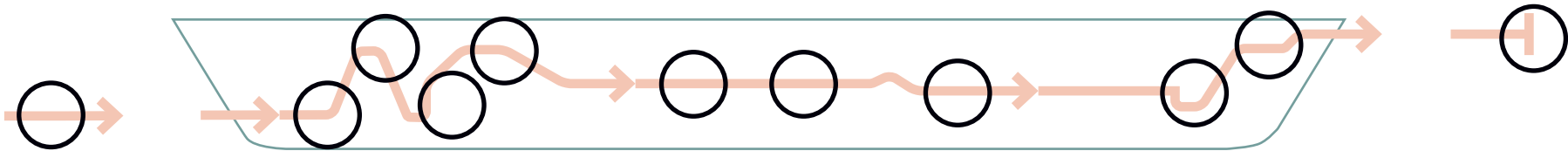
Kareao vines informing the geometry of the ground plane



Journey



Obstacles



2.12.3 Golden Block play space views



# Street Programming

## 3.0

### 3.1 Street programming

As Dunedin's premier retail street George Street needs to deliver value at all levels for the whole community and their guests. Attracting people to spend time in the street will contribute to the economic performance of the businesses that line the street and promote activities that will keep the street occupied and feeling safe.

Activities in the buildings that line the street will be reflected in the layout of the street - to frame them and enhance views to reinforce identity. Crossings and sitting areas will be associated with natural movements and sunny places to stop and watch the world go by, perform and play. Areas where food and entertainment is clustered will enable outdoor dining to extend businesses and enliven the street.

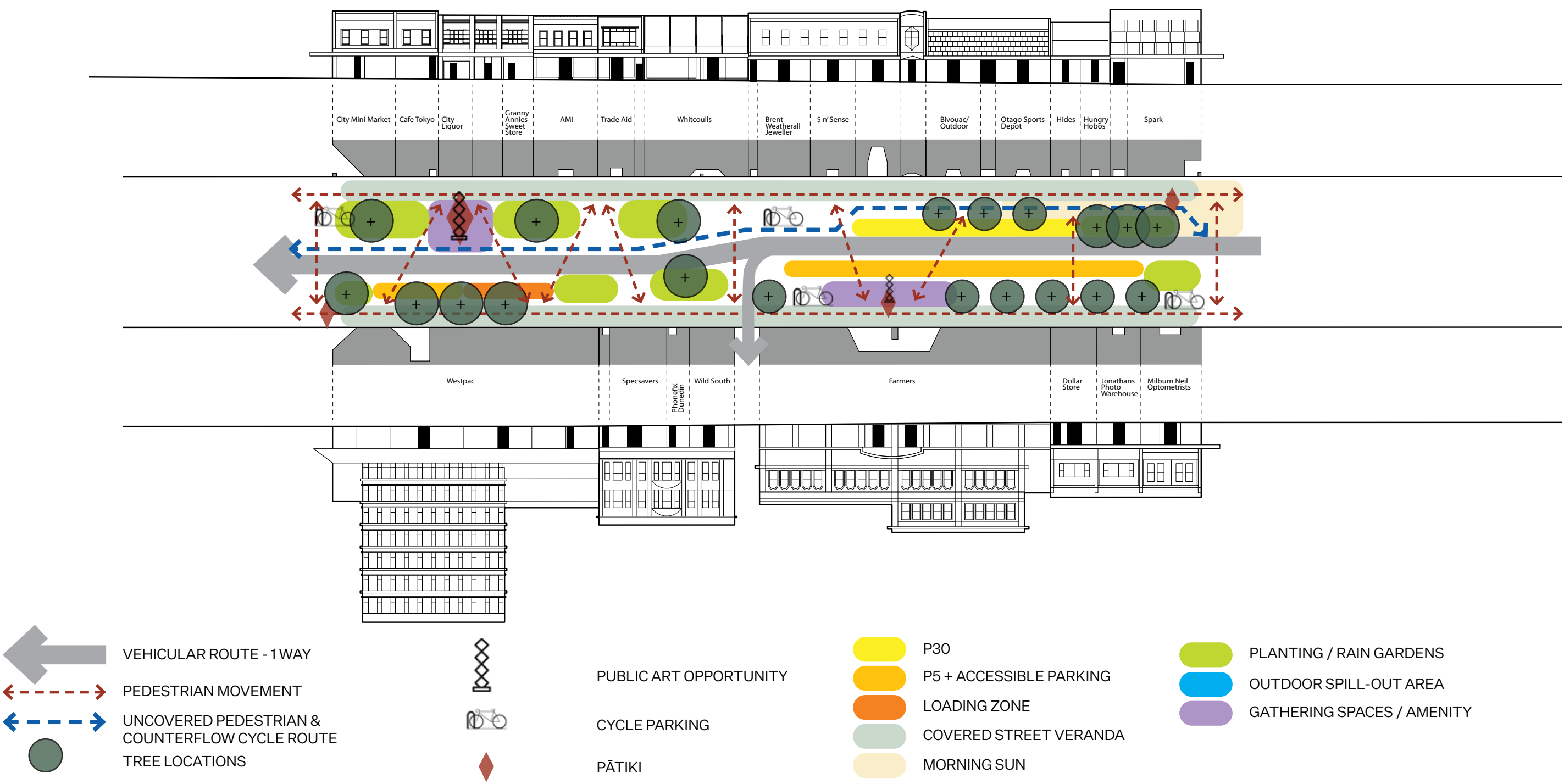
The following pages explore how the street is 'programmed' to ensure a balance is achieved between movement and destination social space.

#### Considerations

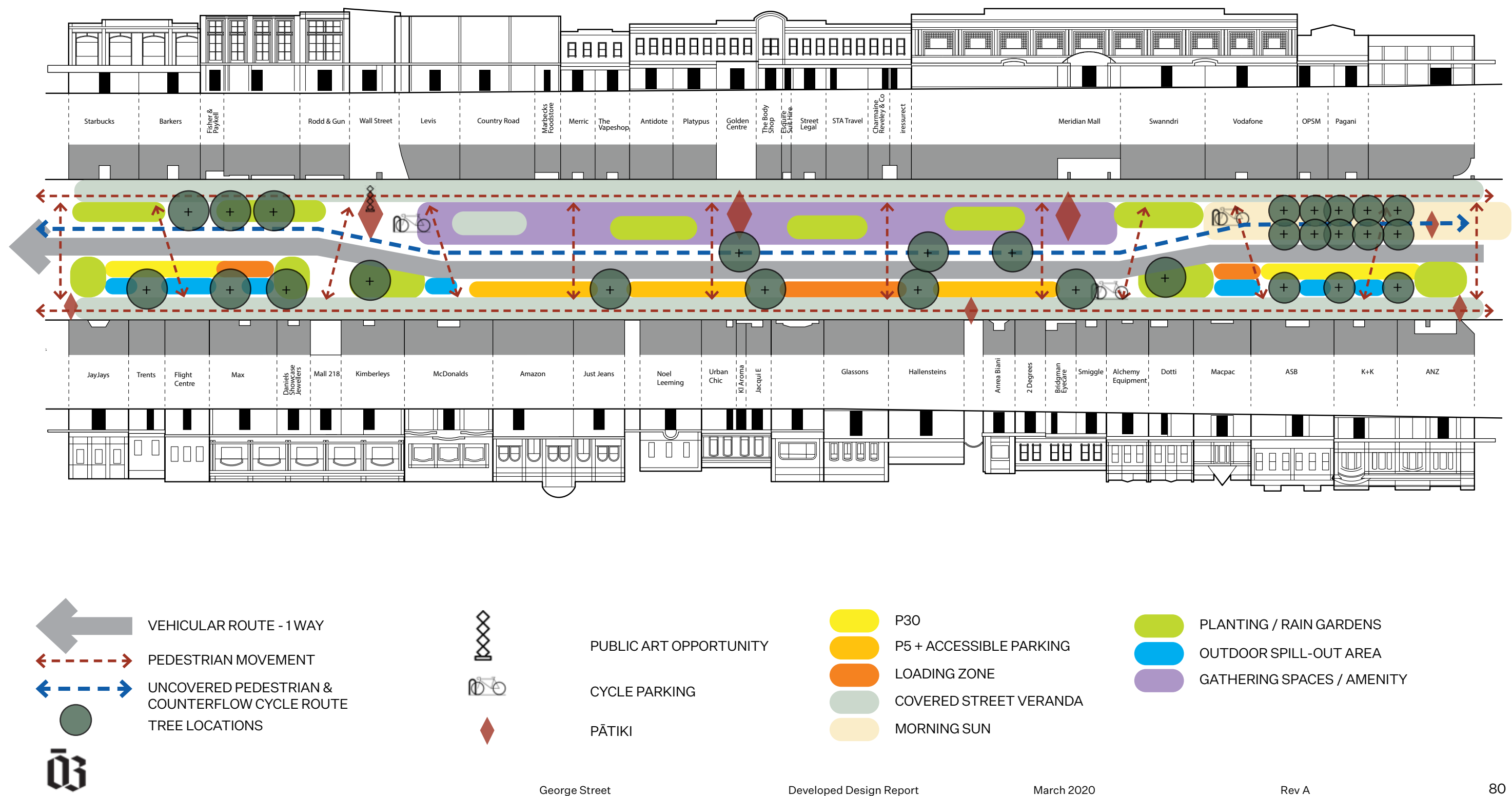
- Shade and sun access to provide warmth and shelter where its needed
- Heritage and character buildings - to frame and protect views of façades
- Location of trees and planting
- Location of public art installations
- Location of Pātiki and other breakout spaces
- Entry points into buildings where people will be moving
- Desire lines for pedestrians crossing
- Vehicle movement, parking and loading
- Adjacent use (food and beverage, retail, commercial)
- Access to lane-ways and service routes
- Cycle routes and parking stands
- Placement of street furniture



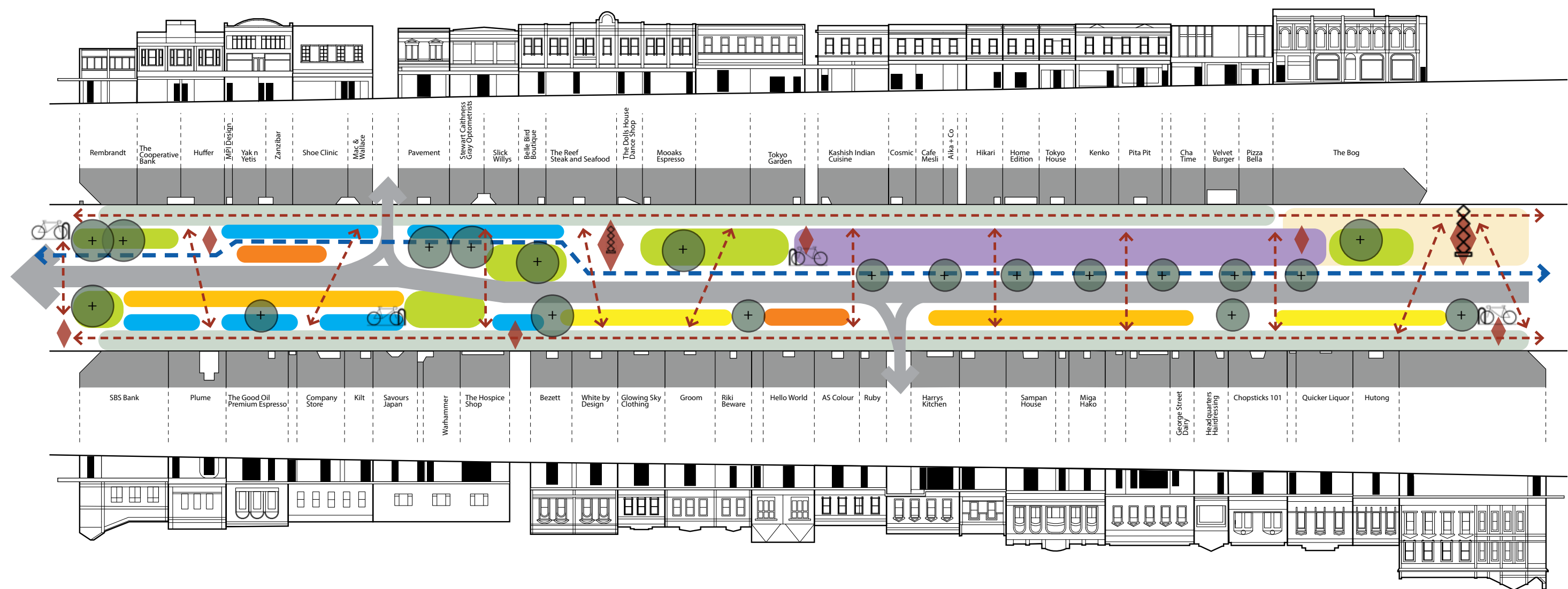
### 3.2 Farmers Block Programme



3.3 Golden Block Programme



3.4 New Edinburgh Way Programme



VEHICULAR ROUTE - 1WAY

PEDESTRIAN MOVEMENT

UNCOVERED PEDESTRIAN & COUNTERFLOW CYCLE ROUTE

TREE LOCATIONS

PUBLIC ART OPPORTUNITY

CYCLE PARKING

PĀTIKĪ

P30

P5 + ACCESSIBLE PARKING

LOADING ZONE

COVERED STREET VERANDA

MORNING SUN

PLANTING / RAIN GARDENS

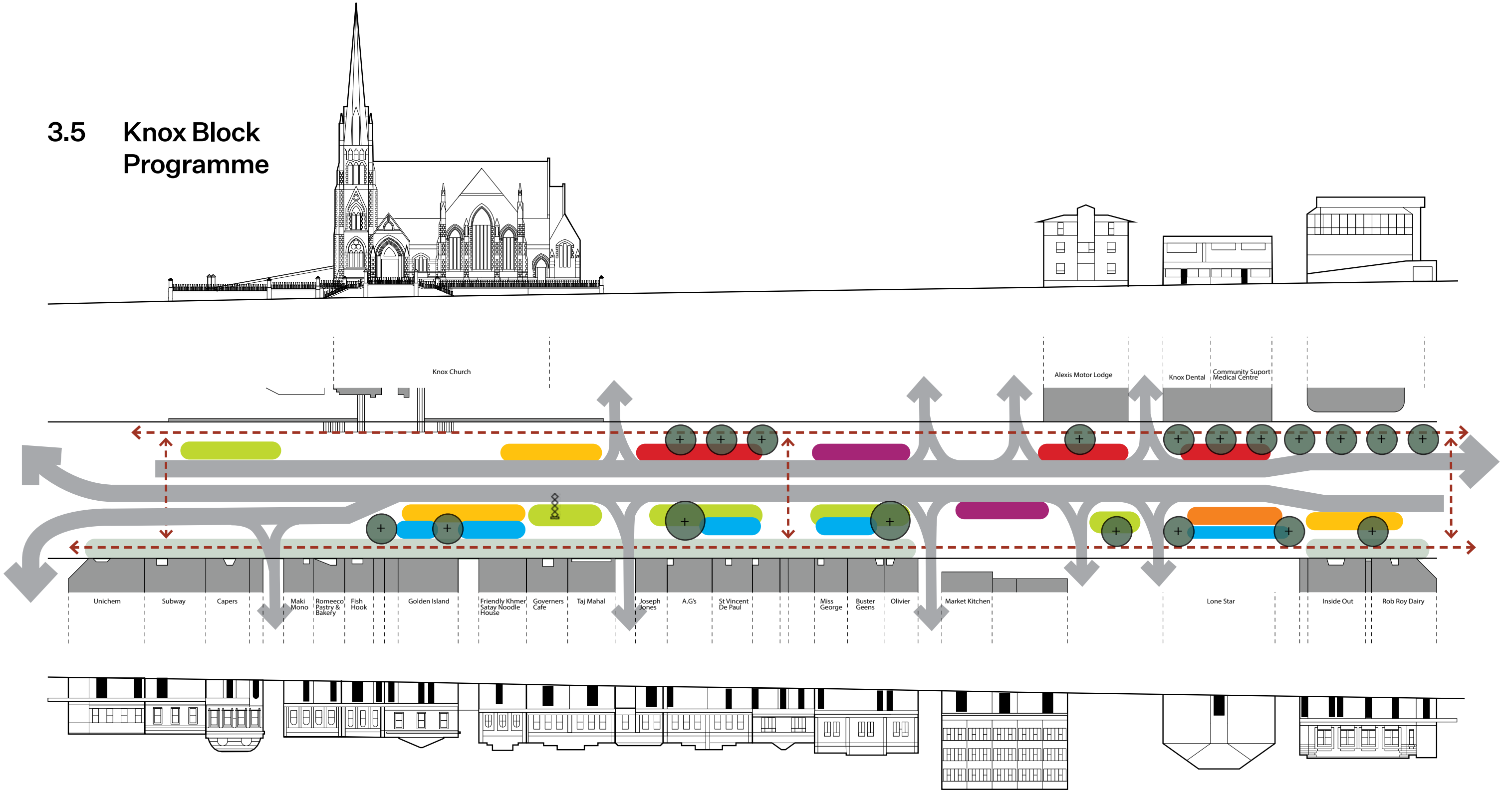
OUTDOOR SPILL-OUT AREA

GATHERING SPACES / AMENITY





# 3.5 Knox Block Programme



VEHICULAR ROUTE - 1 WAY



PEDESTRIAN MOVEMENT



TREE LOCATIONS



PUBLIC ART OPPORTUNITY



CYCLE PARKING



PĀIKI



P60



P5 + ACCESSIBLE PARKING



LOADING ZONE



BUS STOP



COVERED STREET VERANDA



MORNING SUN



PLANTING / RAIN GARDENS



OUTDOOR SPILL-OUT AREA



GATHERING SPACES / AMENITY

# Design Drawings

## 4.0 Design Drawings

This section provides rendered street views, illustrative plans and axonometric drawings of the Developed Designs for George Street.

These drawings are to be read in conjunction with the technical drawings which provide more detailed set-outs and information on tree, planting, features and furniture placements.

Paving geometry is to be further fine tuned during detailed design.





4.1 New Edinburgh Way view





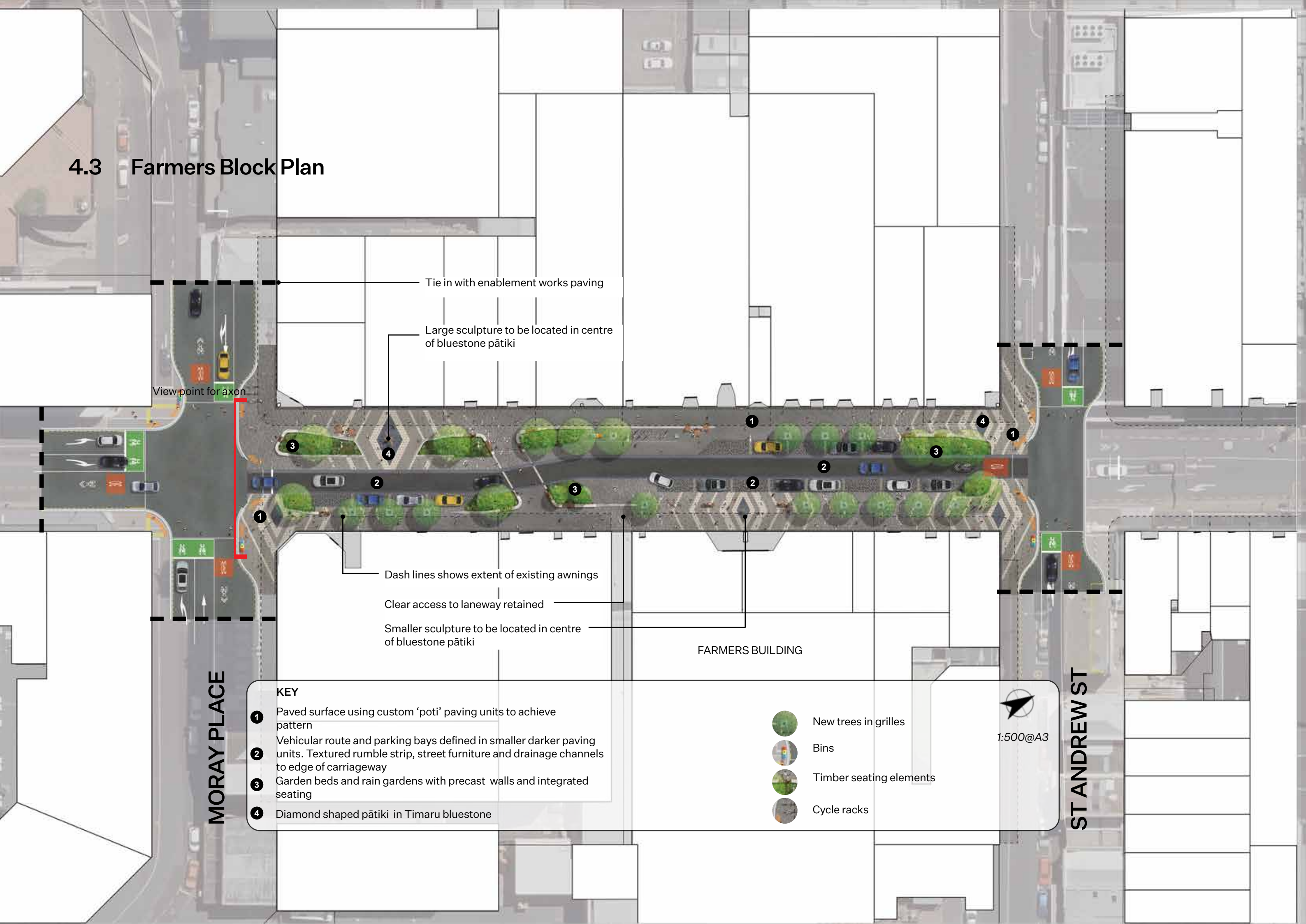


## 4.1 Golden Block view





4.3 Farmers Block Plan



View point for axon

Tie in with enablement works paving

Large sculpture to be located in centre of bluestone pātiki

Dash lines shows extent of existing awnings

Clear access to laneway retained

Smaller sculpture to be located in centre of bluestone pātiki

FARMERS BUILDING

MORAY PLACE

ST ANDREW ST

KEY

- 1 Paved surface using custom 'poti' paving units to achieve pattern
- 2 Vehicular route and parking bays defined in smaller darker paving units. Textured rumble strip, street furniture and drainage channels to edge of carriageway
- 3 Garden beds and rain gardens with precast walls and integrated seating
- 4 Diamond shaped pātiki in Timaru bluestone

- New trees in grilles
- Bins
- Timber seating elements
- Cycle racks



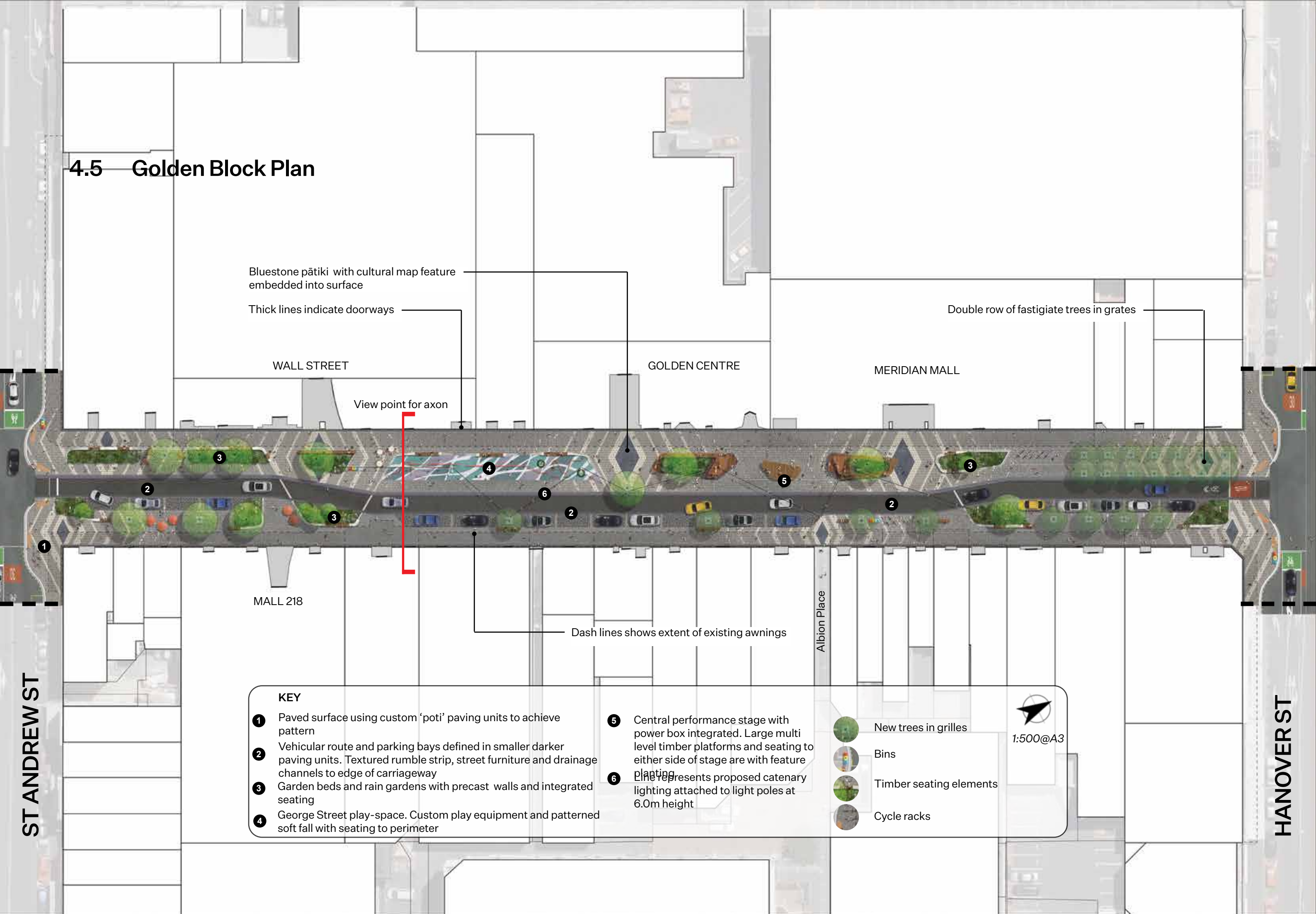
1:500@A3

4.4 Farmers Block Axon





## 4.5 Golden Block Plan

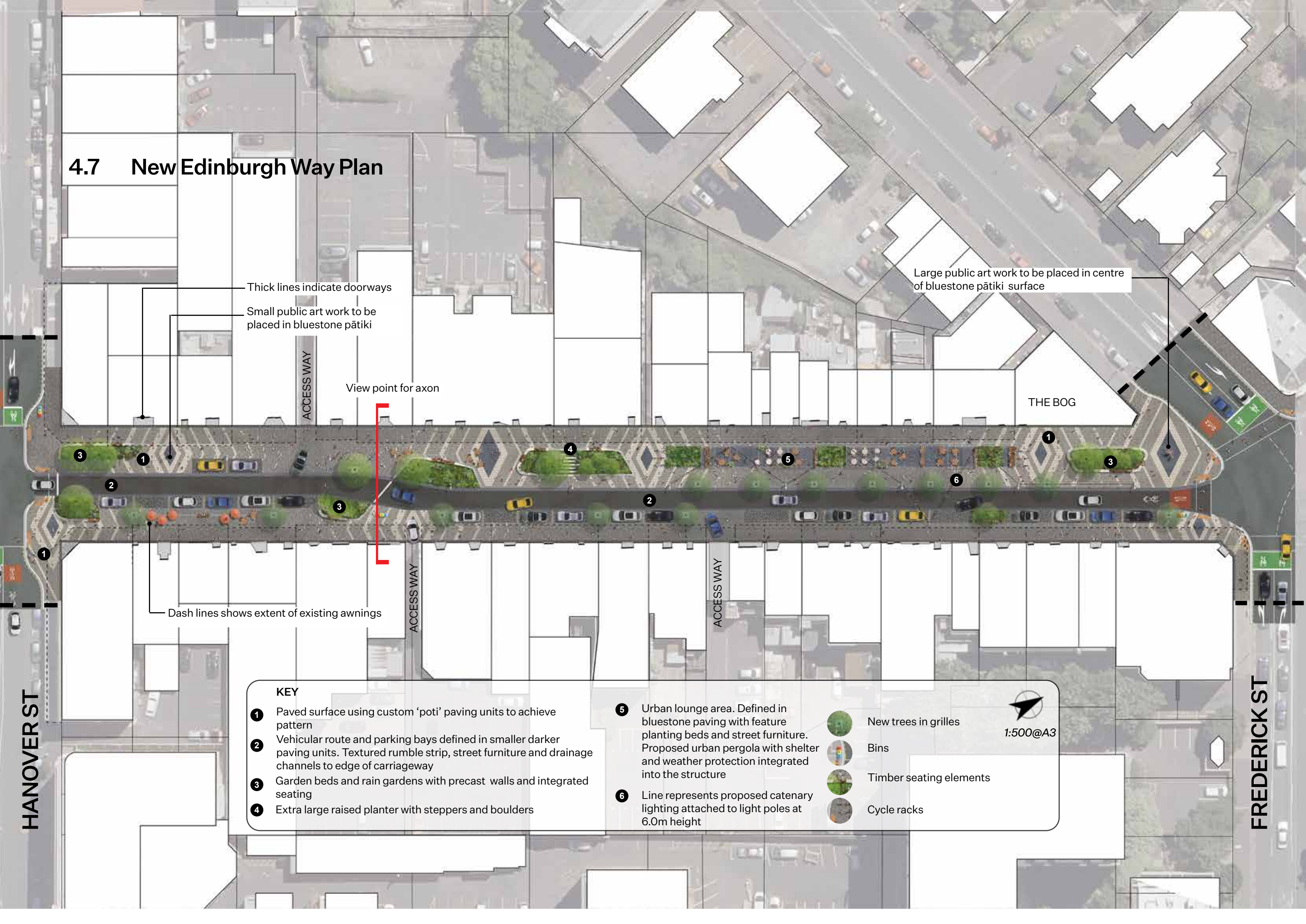


4.6 Golden Block Axon





## 4.7 New Edinburgh Way Plan



**KEY**

- 1 Paved surface using custom ‘poti’ paving units to achieve pattern
- 2 Vehicular route and parking bays defined in smaller darker paving units. Textured rumble strip, street furniture and drainage channels to edge of carriageway
- 3 Garden beds and rain gardens with precast walls and integrated seating
- 4 Extra large raised planter with steppers and boulders
- 5 Urban lounge area. Defined in bluestone paving with feature planting beds and street furniture. Proposed urban pergola with shelter and weather protection integrated into the structure
- 6 Line represents proposed catenary lighting attached to light poles at 6.0m height

- New trees in grilles
- Bins
- Timber seating elements
- Cycle racks

1:500@A3

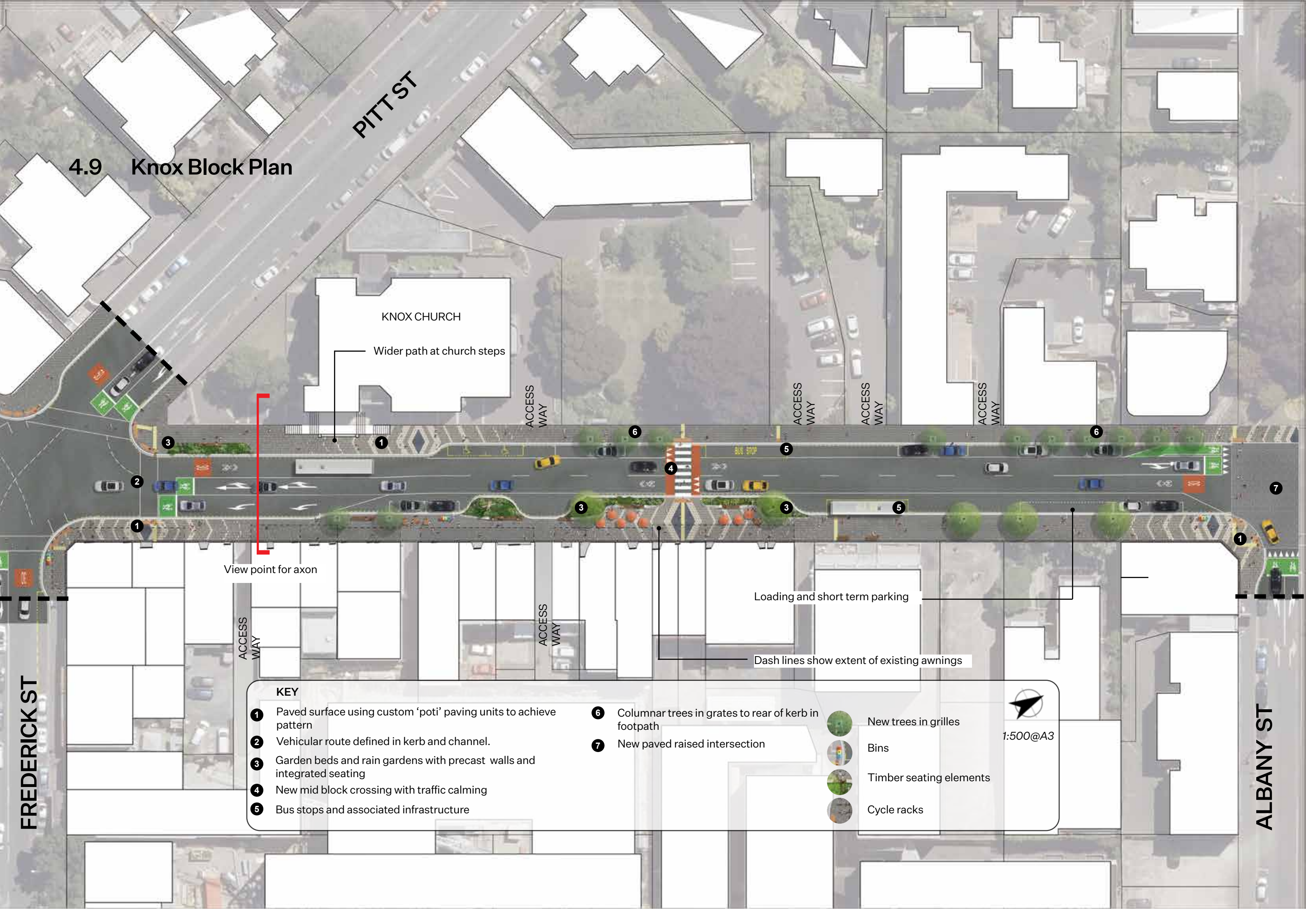


4.8 New Edinburgh Way Axon





# 4.9 Knox Block Plan



KNOX CHURCH

Wider path at church steps

View point for axon

Loading and short term parking

Dash lines show extent of existing awnings

## KEY

- 1 Paved surface using custom 'poti' paving units to achieve pattern
- 2 Vehicular route defined in kerb and channel.
- 3 Garden beds and rain gardens with precast walls and integrated seating
- 4 New mid block crossing with traffic calming
- 5 Bus stops and associated infrastructure

- 6 Columnar trees in grates to rear of kerb in footpath
- 7 New paved raised intersection



New trees in grilles

Bins

Timber seating elements

Cycle racks



1:500@A3



## 4.10 Knox Block Axon





# Project Components

## 5.0

### 5.1 Introduction

This section of the report provides drawings and descriptions of the key components within the design for George Street. It covers the proposed paving materials, infrastructure / drainage, street furniture and planting. Key notes are cross referenced with the technical drawing set in section 6 of this report.

5.2 Surface material nominations



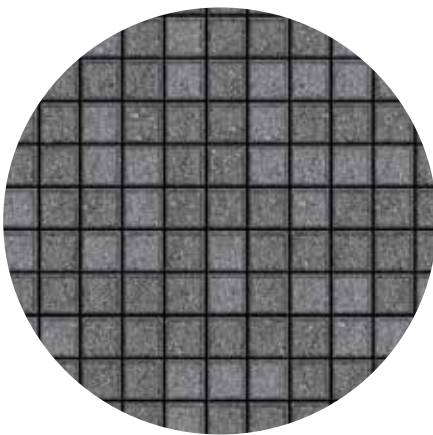
AC ASPHALT FOOTPATH



P01 CONCRETE UNIT PAVERS  
MOVEMENT ROUTE

Firth Piazza Pavers

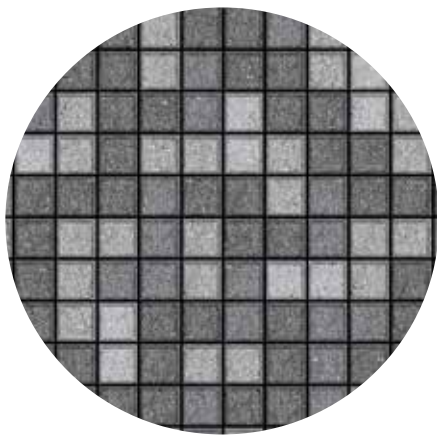
SIZE 397 x 197 x 80mm  
COLOUR Volcanic Ash  
FINISH Bush Hammered  
Honed



P02 CONCRETE PAVERS  
MAKE UP STRIP

Firth Holland ‘Sett’ Pavers

SIZE 197 x 97 x 80mm  
COLOUR Black Sands  
Volcanic Ask  
FINISH Bush Hammered  
Honed



P03 CONCRETE PAVERS  
INFRASTRUCTURE STRIP

Firth Holland ‘Sett’ Pavers

SIZE 197 x 97 x 80mm  
COLOUR Black Sands  
Volcanic Ask  
FINISH Bush Hammered  
Honed



P04 BLUESTONE PAVING  
PATAKI

Timaru Bluestone

SIZE Varies: 200mm  
Wide x 80mm Thick  
COLOUR Natural  
FINISH First Rub



P05 BLUESTONE PAVING  
RUMBLE STRIP

Timaru Bluestone

SIZE 300 x 150 x 60mm  
COLOUR Natural  
FINISH Split Face



P06 CONCRETE UNIT PAVING  
VEHICLE CORRIDOR

Concrete unit paver

SIZE 200 x 100 x 80mm  
COLOUR Dark Grey  
Black Sands  
FINISH Varies



P07 CONCRETE UNIT PAVING  
PARKING BAYS

Concrete unit paver

SIZE 200 x 100 x 80mm  
COLOUR Mid Grey  
Light Grey  
FINISH Bush Hammered  
Honed

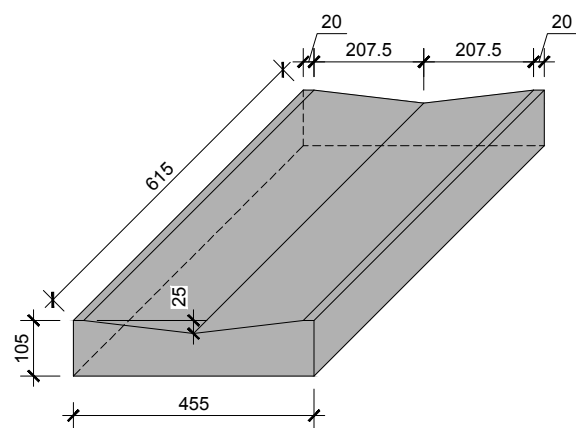


POTI-1 POTI PAVER  
CUSTOM PAVING UNIT

COLOUR ‘Dunedin Light’  
‘Dunedin Mid’  
‘Dunedin Dark’  
‘Dunedin Gold’  
FINISH Bush Hammered  
Honed



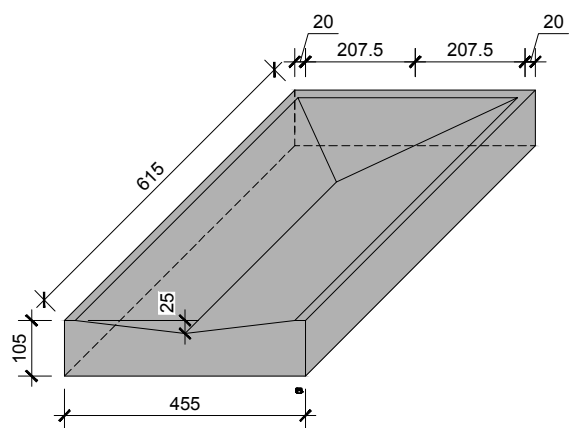
5.3 Street infrastructure nominations



D-01 BASALT DISH CHANNEL

Timaru Bluestone

SIZE	455x615x105mm
COLOUR	Natural
FINISH	First Rub



D-02 BASALT DISH CHANNEL -  
END UNIT

Timaru Bluestone

SIZE	455x615x105mm
COLOUR	Natural
FINISH	First Rub



INFILL SERVICE LIDS

MATERIAL	S/S (given proximity to coast)
DIMENSIONS	Varies depending on utility
INFILL	Infilled with adjacent material
TYPE	Wundercover (or similar)

- Coordination with utility providers and DCC required to clearly identify service cover type and requirements



TACTILE GROUND SURFACE INDICATORS

DIMENSIONS	300x300x80/60mm
COLOUR	Yellow
TYPE	Precast concrete tactile paver combination of warning pavers (circles) and directional (elongated bars) depending on location

- To meet NZ standards

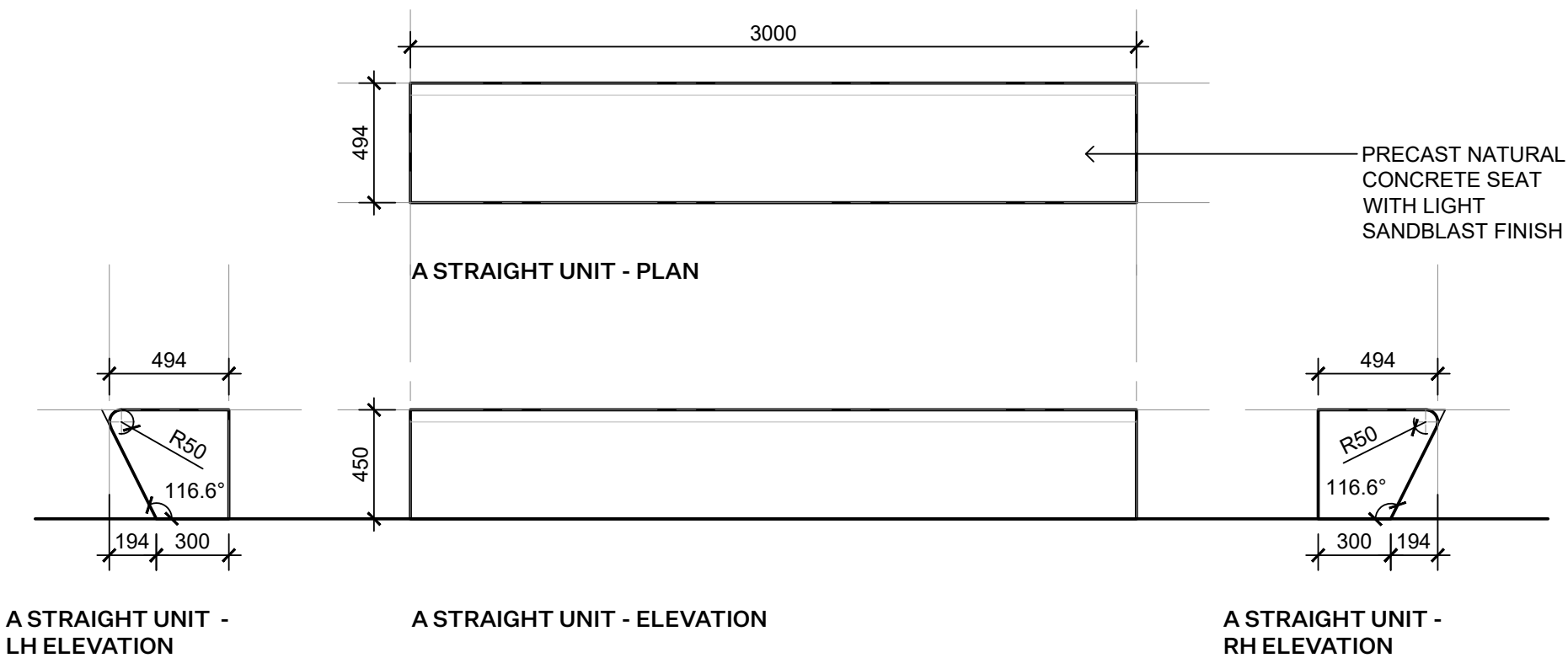
# 5.4 Furniture - precast modules

## PROFILE A - STRAIGHT UNIT

3.0m long raised concrete precast unit to form edging to garden beds with wide flat top. Further development of units to allow for lifting provisions and to accommodate change in levels within ground plane to occur during detailed design.



PROFILE A STRAIGHT - RENDER



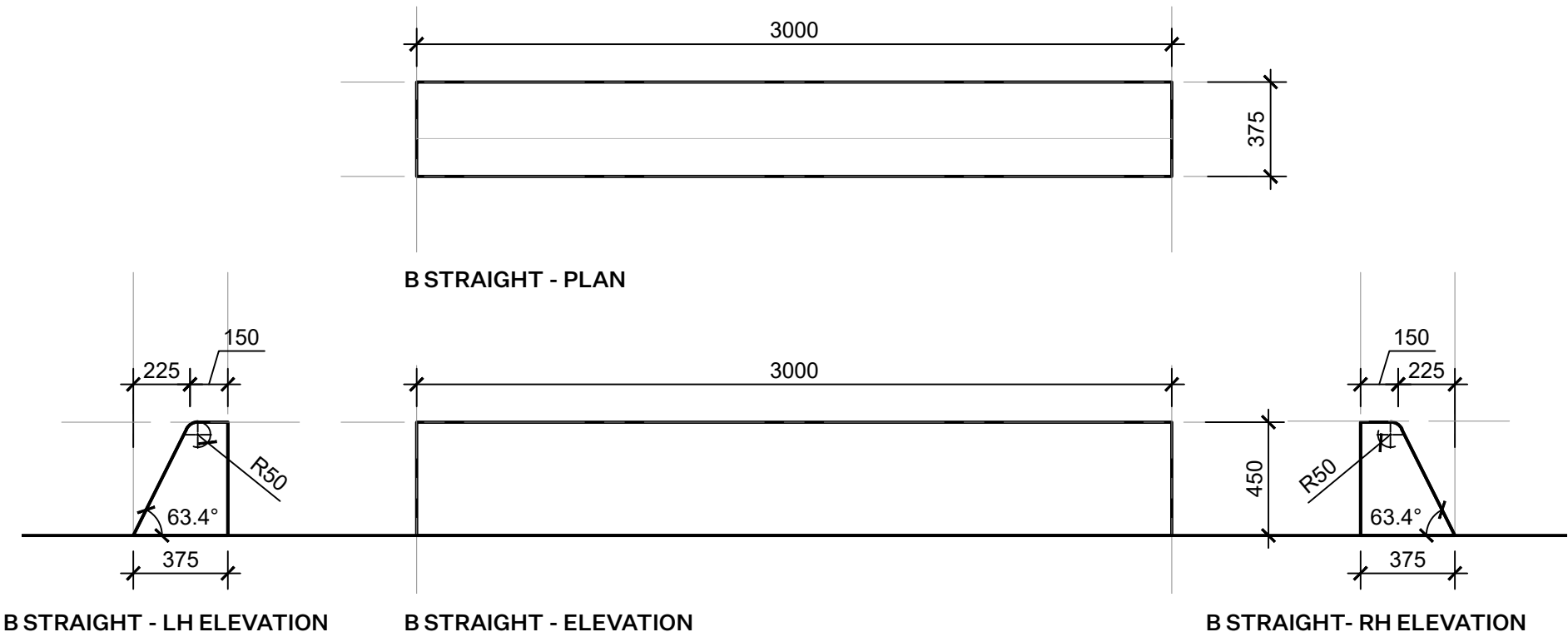


PROFILE B - STRAIGHT UNIT

3.0m long raised concrete precast unit to form edging to garden beds with narrow flat top. Further development of units to allow for lifting provisions and to accommodate change in levels within ground plane to occur during detailed design.



PROFILE B STRAIGHT- RENDER

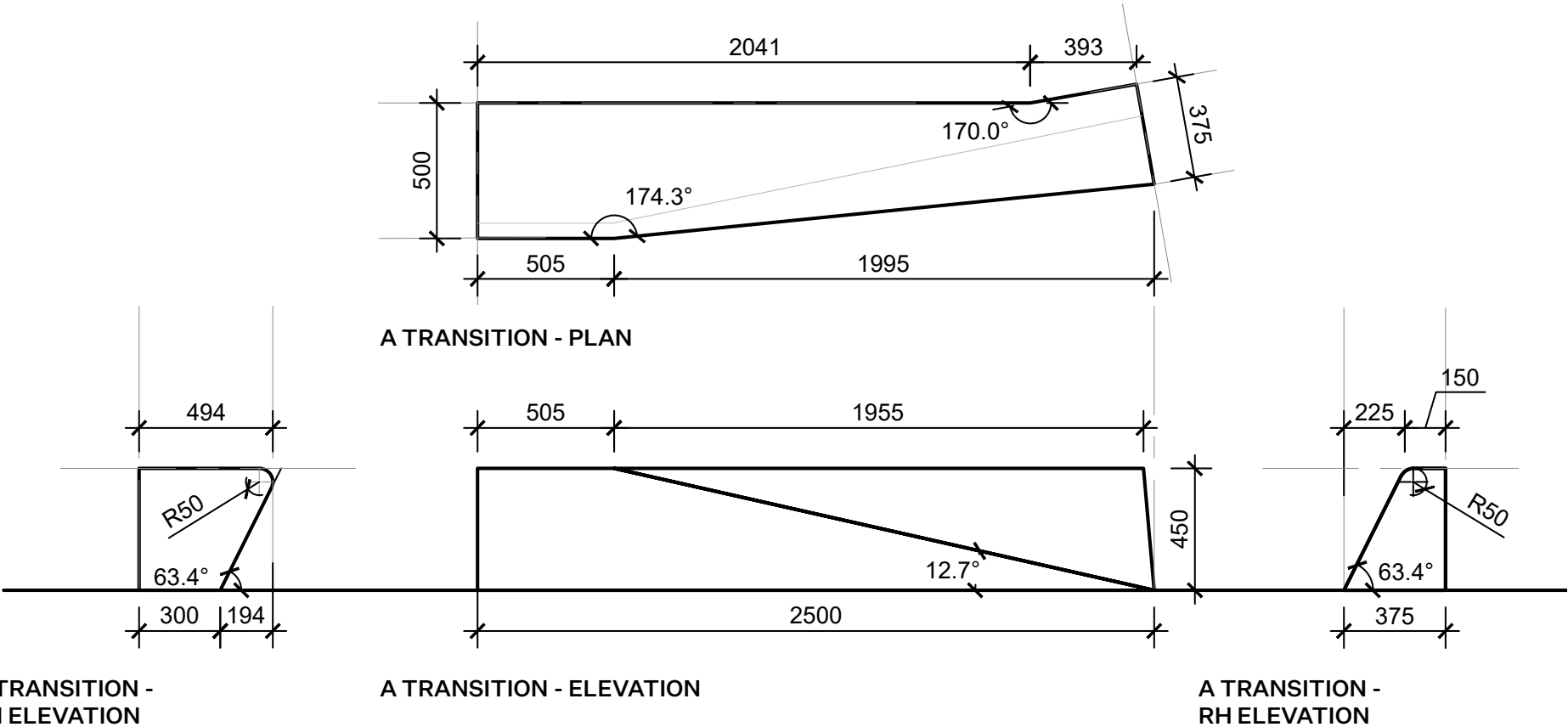


PROFILE A - TRANSITION UNIT

Unit to transition between profile A and profile B. Further development of units to allow for lifting provisions and to accommodate change in levels within ground plane to occur during detailed design.



PROFILE A TRANSITION- RENDER



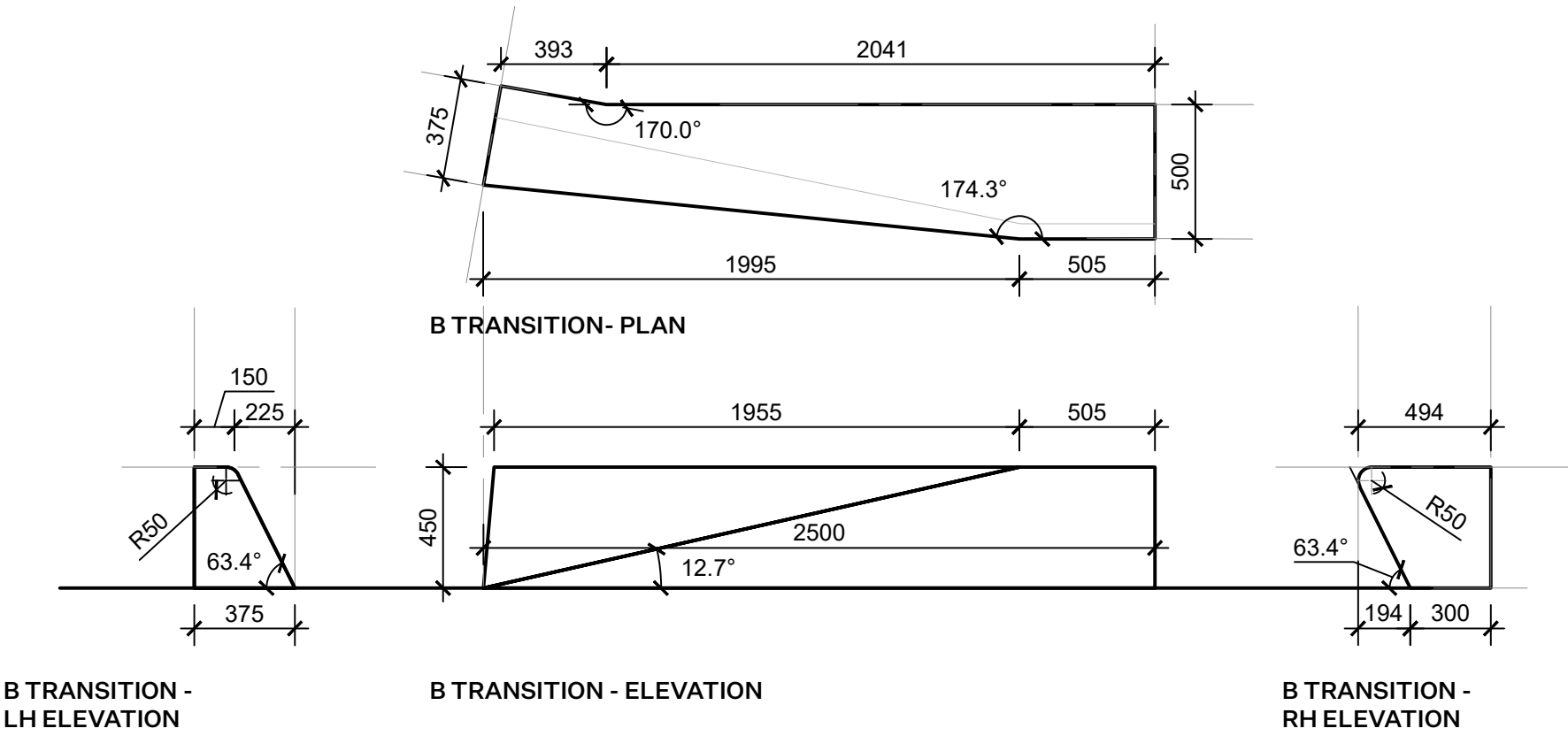


PROFILE B - TRANSITION UNIT

Unit to transition between profile B and profile A. Further development of units to allow for lifting provisions and to accommodate change in levels within ground plane to occur during detailed design.

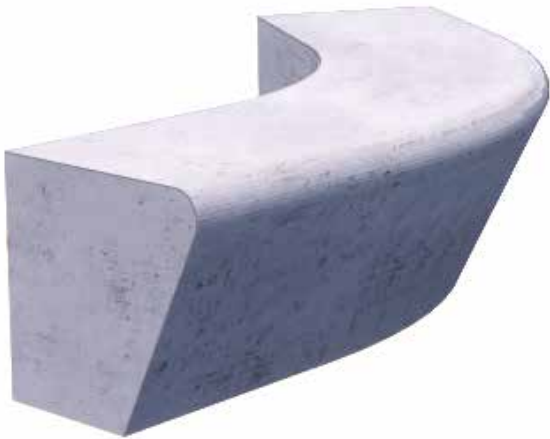


PROFILE B TRANSITION - RENDER

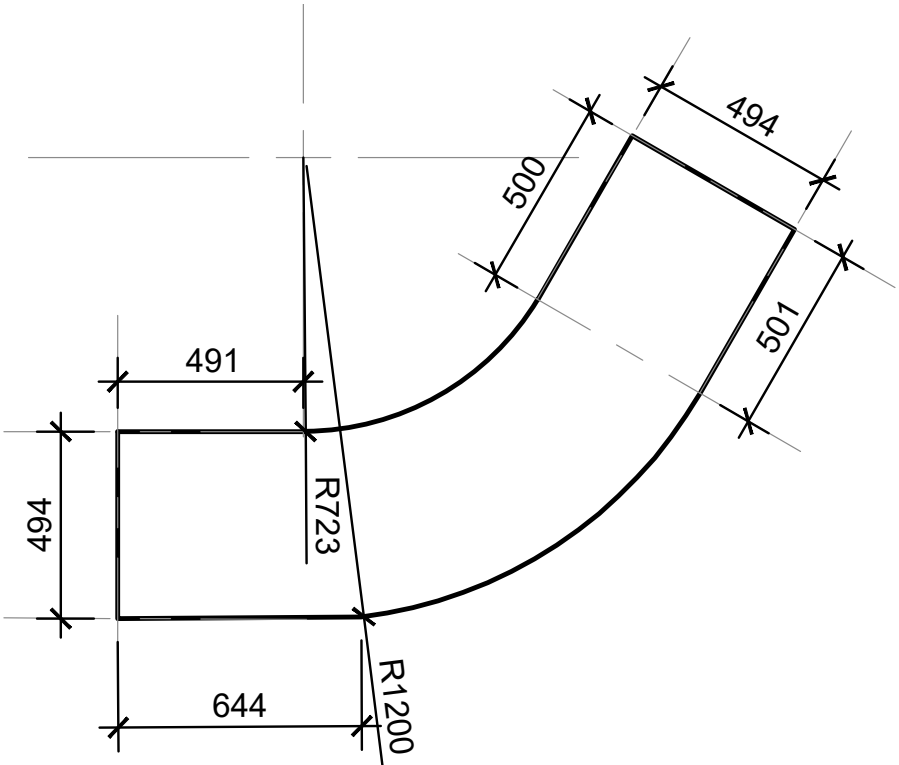


PROFILE A - 1200 60D CURVE UNIT

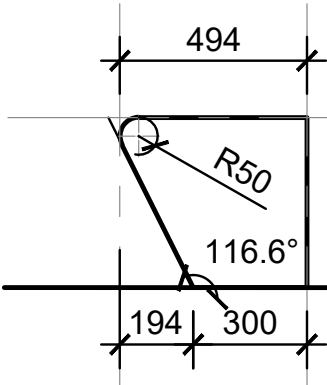
Corner unit to allow radial curves to be created. Further development of units to allow for lifting provisions and to accommodate change in levels within ground plane to occur during detailed design.



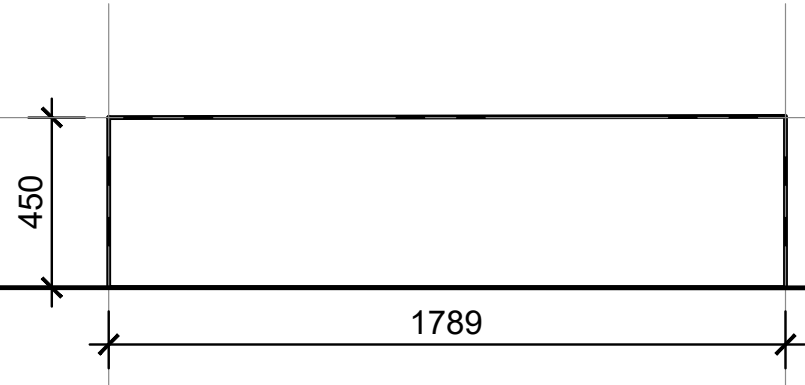
PROFILE A - 1200 60D CURVE UNIT RENDER



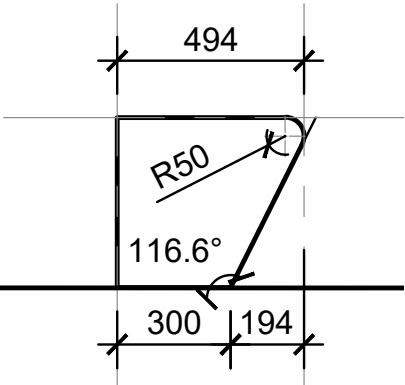
A TRANSITION - PLAN



A TRANSITION - LH ELEVATION



A TRANSITION - ELEVATION



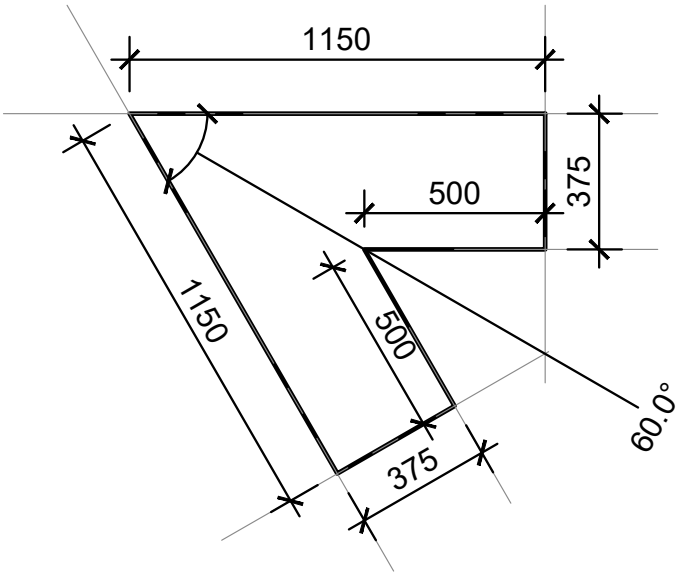
A TRANSITION - RH ELEVATION

**PROFILE B - 60D CORNER UNIT**

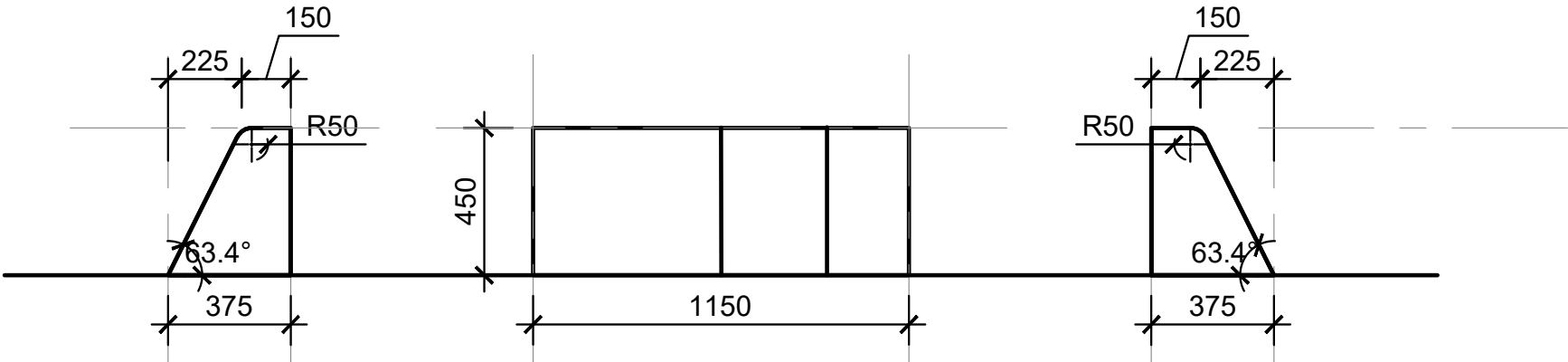
Corner unit to allow sharper profile corners to be created. Further development of units to allow for lifting provisions and to accommodate change in levels within ground plane to occur during detailed design.



**PROFILE B - 60D CORNER UNIT RENDER**



**A TRANSITION - PLAN**



**A TRANSITION - LH ELEVATION**

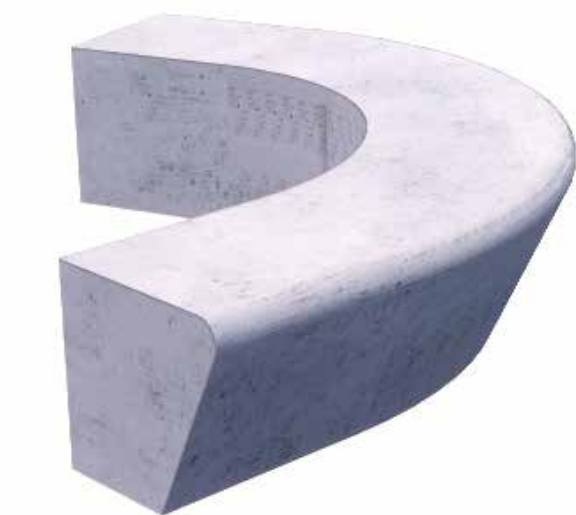
**A TRANSITION - ELEVATION**

**A TRANSITION - RH ELEVATION**

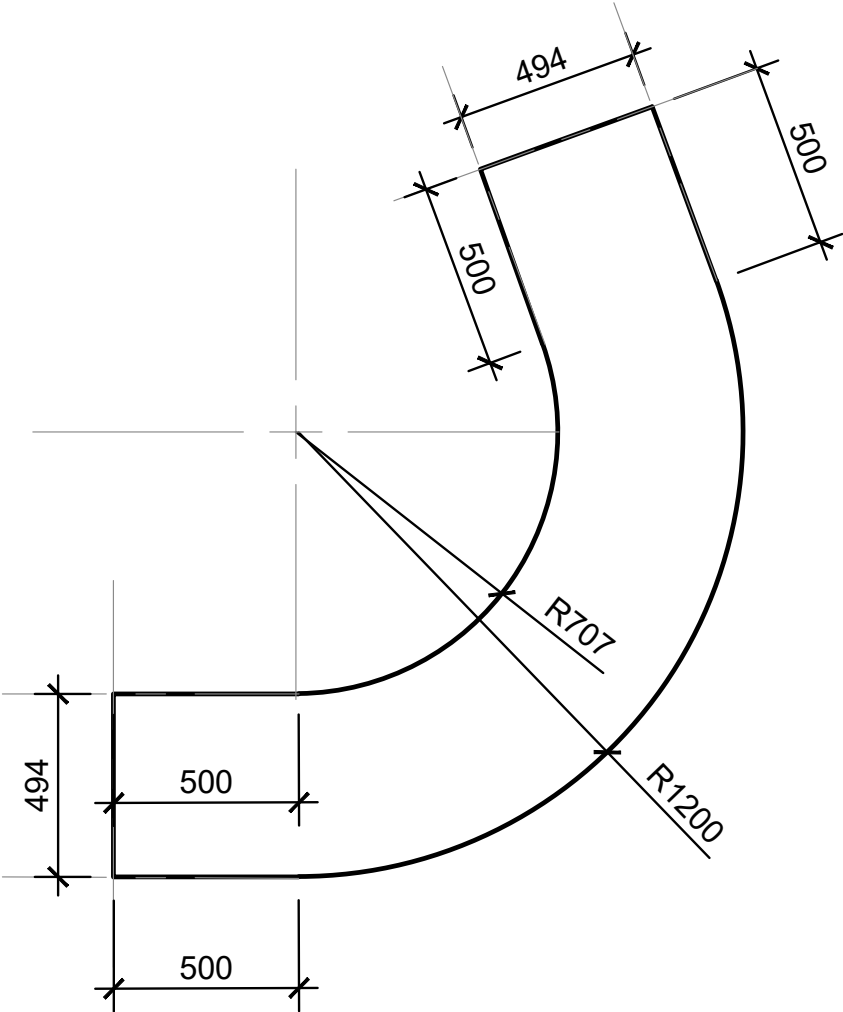


PROFILE A - 1200 110D CURVE UNIT

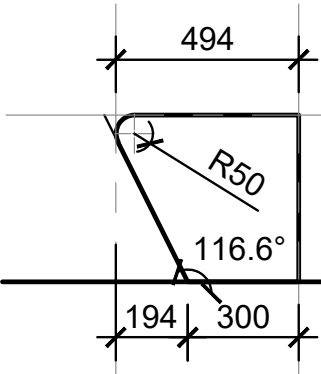
Corner unit to allow radial curves to be created. Further development of units to allow for lifting provisions and to accommodate change in levels within ground plane to occur during detailed design.



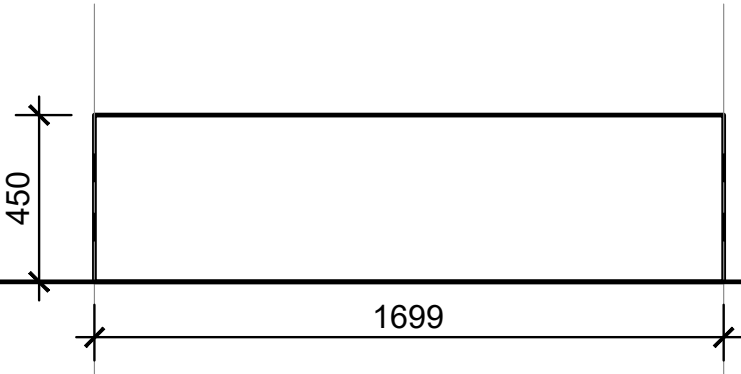
PROFILE A - 1200 110D CURVE UNIT RENDER



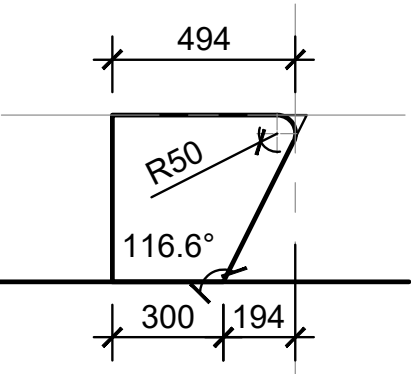
A 1200 110D CURVE UNIT - PLAN



A 1200 110D CURVE UNIT - LH ELEVATION



A 1200 110D CURVE UNIT - ELEVATION



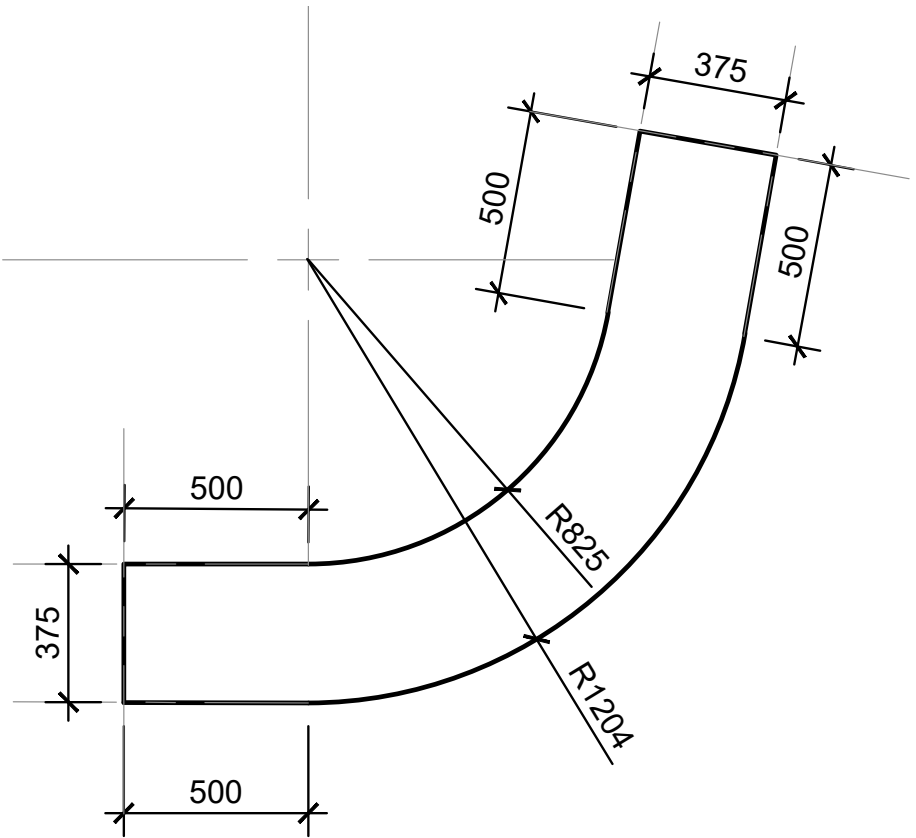
A 1200 110D CURVE UNIT - RH ELEVATION

**PROFILE B - 1200 80D CURVED UNIT**

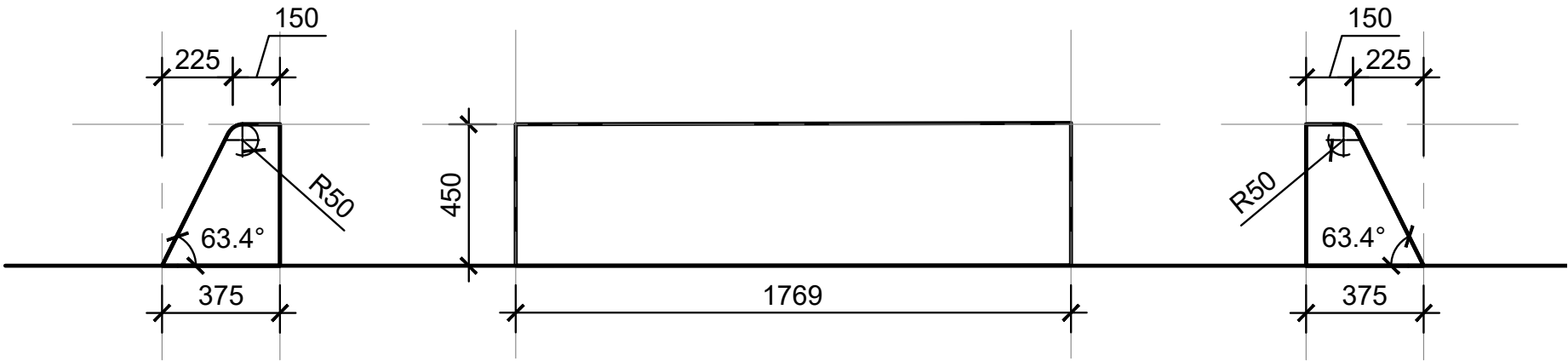
Corner unit to allow sharper profile corners to be created. Further development of units to allow for lifting provisions and to accommodate change in levels within ground plane to occur during detailed design.



**PROFILE B - 1200 80D CURVED UNIT RENDER**



**B 1200 80D CURVED UNIT - PLAN**



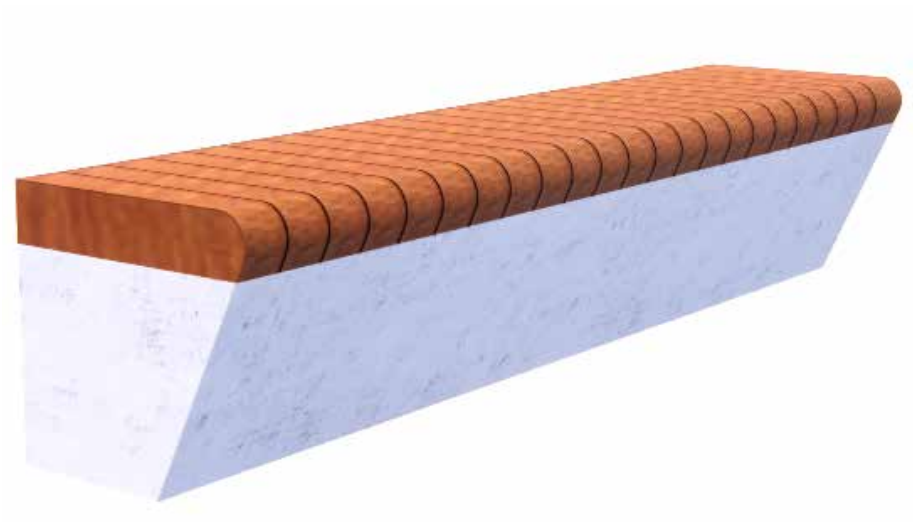
**B 1200 80D CURVED UNIT -  
LH ELEVATION**

**B 1200 80D CURVED UNIT -  
ELEVATION**

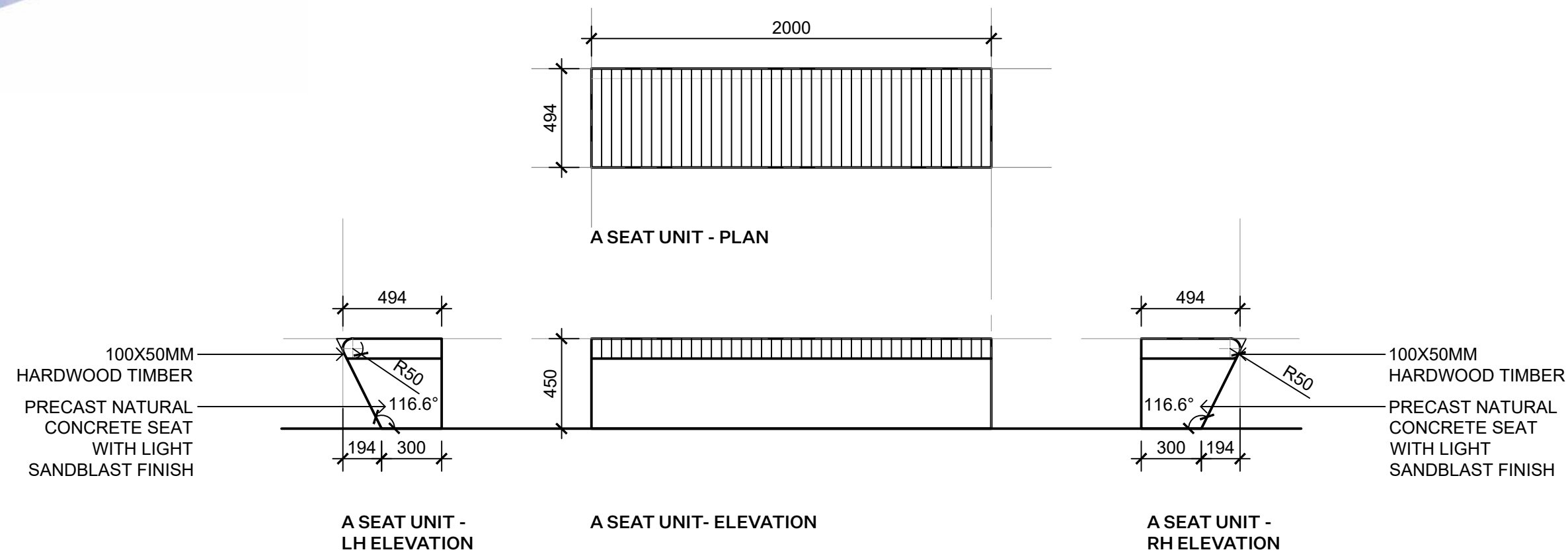
**B 1200 80D CURVED UNIT -  
RH ELEVATION**

PROFILE A - SEAT UNIT

Timber seating slats to be incorporated into the profile of the precast units. Further development of units to determine extent of seating to have back and arm rests to occur during detailed design.



PROFILE A - SEAT UNIT RENDER



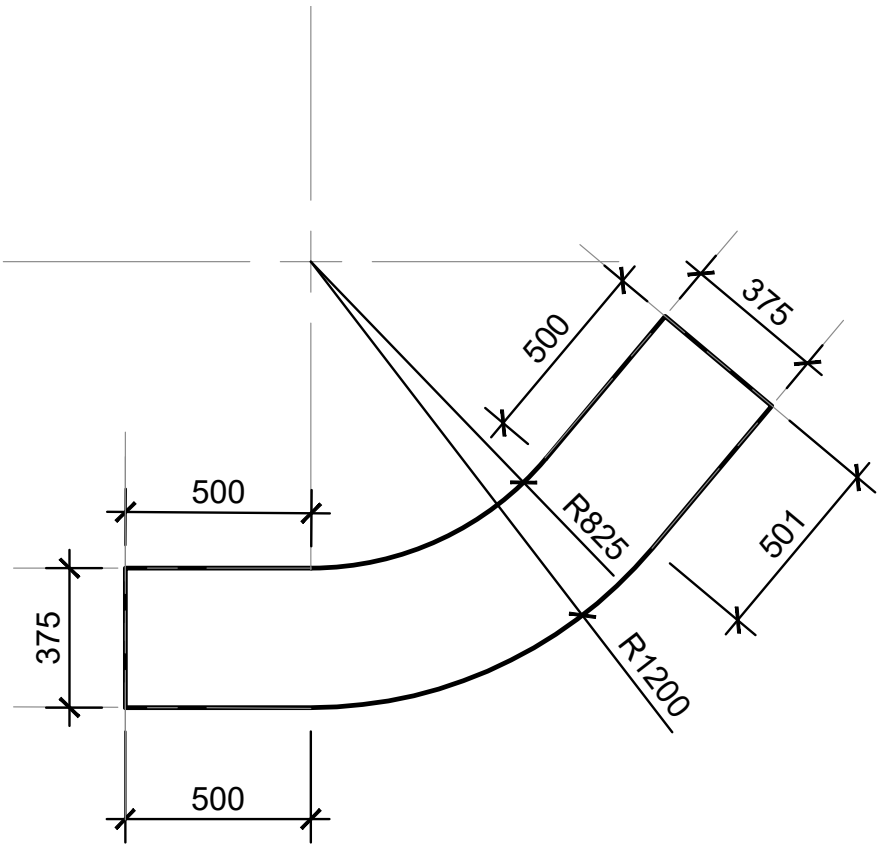


**PROFILE B - 1200 50D UNIT**

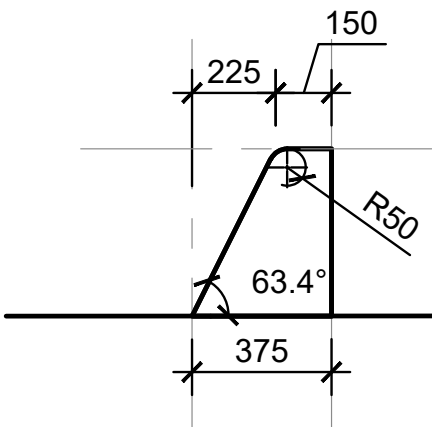
Corner unit to allow radial curves to be created. Further development of units to allow for lifting provisions and to accommodate change in levels within ground plane to occur during detailed design.



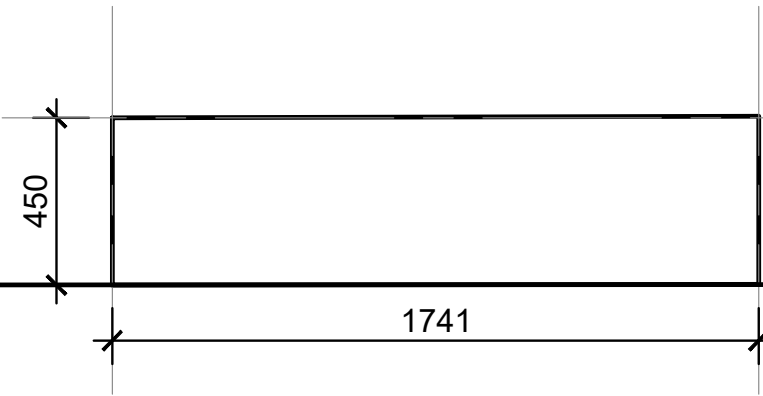
**PROFILE B - 1200 50D UNIT RENDER**



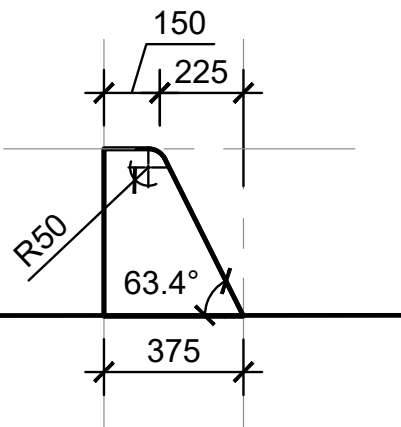
**B 1200 50D CURVED UNIT - PLAN**



**B 1200 50D CURVED UNIT - LH ELEVATION**



**B 1200 50D CURVED UNIT - ELEVATION**



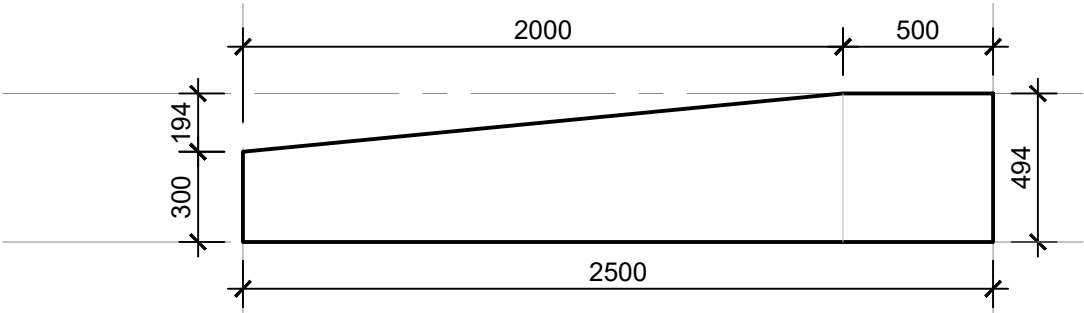
**B 1200 50D CURVED UNIT - RH ELEVATION**

PROFILE A - FLUSH TRANSITION UNIT

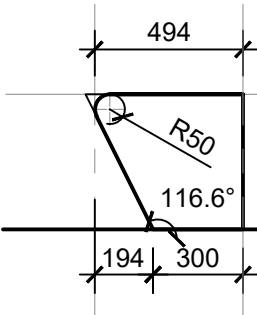
Unit to taper down from finished seat wall height to flush with ground plane. Further development of units to occur during detailed design.



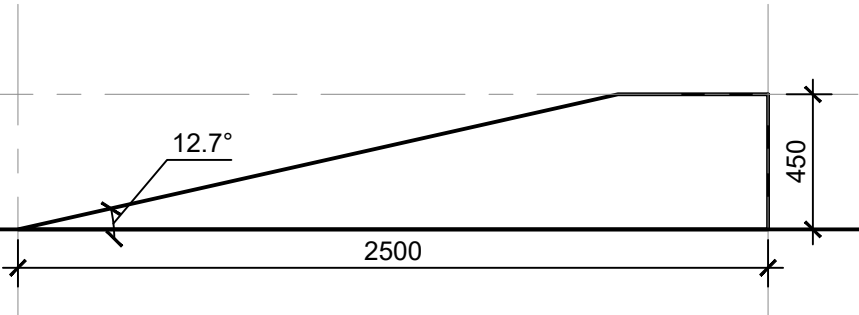
PROFILE A - FLUSH TRANSITION UNIT RENDER



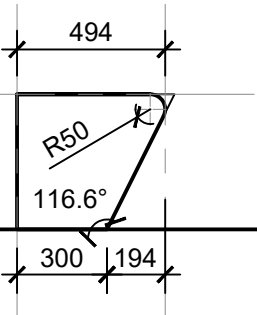
A FLUSH TRANSITION UNIT - PLAN



A FLUSH TRANSITION UNIT - LH ELEVATION



A FLUSH TRANSITION UNIT - ELEVATION



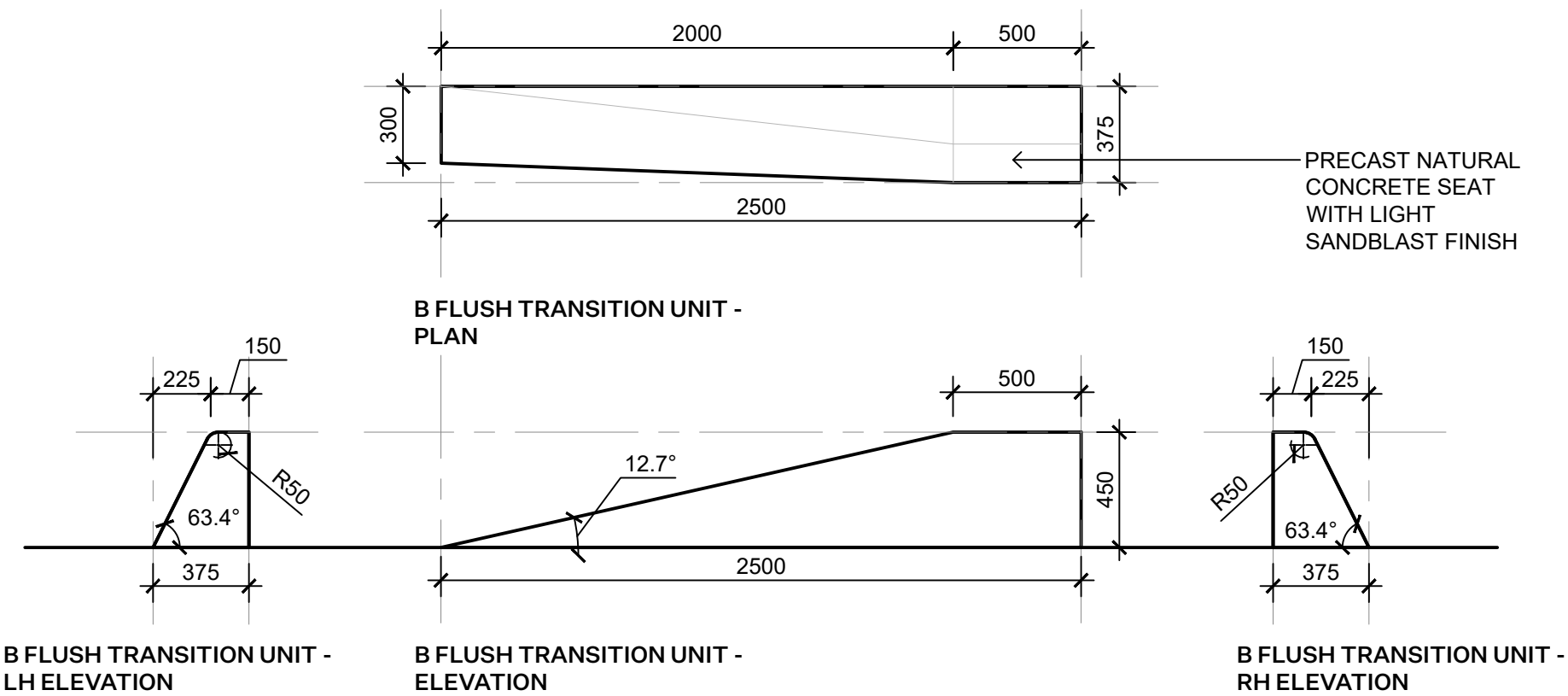
A FLUSH TRANSITION UNIT - RH ELEVATION

**PROFILE B - FLUSH TRANSITION UNIT**

Unit to taper down from finished seat wall height to flush with ground plane. Further development of units to occur during detailed design.



**PROFILE B - FLUSH TRANSITION UNIT RENDER**

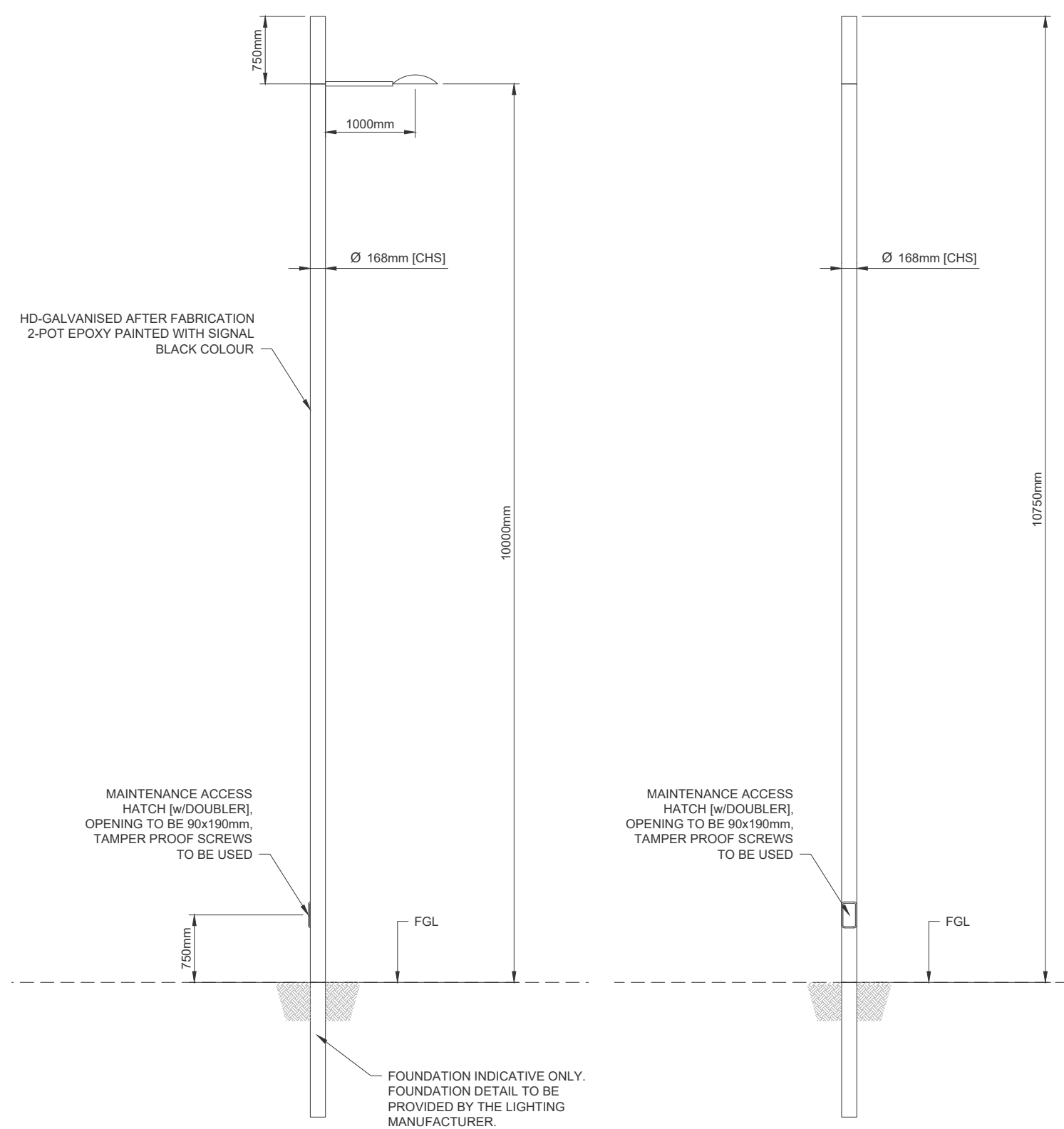




# 5.5 Furniture - light poles

## LP01 LIGHT POLE

10.75m high light pole painted Resene 'Blast Grey 3'.  
  
Single luminaire to be mounted on carriage side of pole at 10.0m height orientated perpendicular to the carriage. Banner Arm to mounted at 6.0m height - specifications to be confirmed with DCC.



LP01 ELEVATIONS



LP01 RENDER

### LP02 LIGHT POLE

10.75m high light pole painted Resene 'Blast Grey 3'.

Typical luminaire to be mounted on carriage side of pole at 10.0m height orientated perpendicular to the carriage. Additional feature directional spot lighting to be mounted on poles to be directed at street features. Spot luminaire and mounting details to be confirmed in detailed design.



LP02 RENDER

### LP03 LIGHT POLE

10.75m high light pole painted Resene 'Blast Grey 3'.

Typical luminaire to be mounted on carriage side of pole at 10.0m height orientated perpendicular to the carriage. Catenary lighting wire and luminaires to be strung between these poles.



LP03 RENDER

### LP04 LIGHT POLE

10.75m high light pole painted Resene 'Blast Grey 3'.

Typical luminaire to be mounted on carriage side of pole at 10.0m height orientated perpendicular to the carriage. Additional feature directional spot lighting to be mounted on poles to be directed at street features. Catenary lighting wire and luminaires to be strung between these poles. Spot luminaire and catenary lighting mounting details to be confirmed in detailed design.



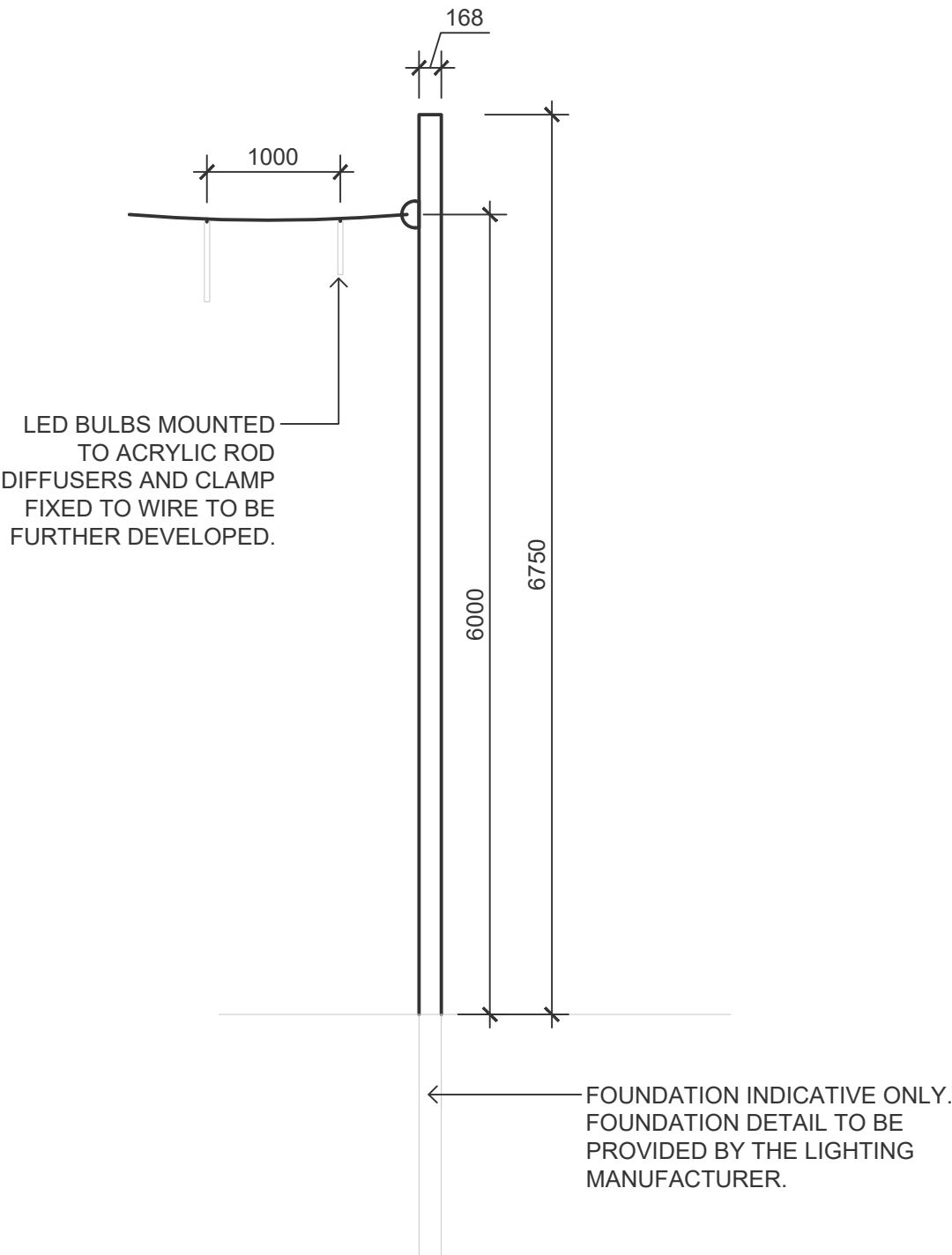
LP04 RENDER

**LP-CAT CATENARY SUPPORT POLE**

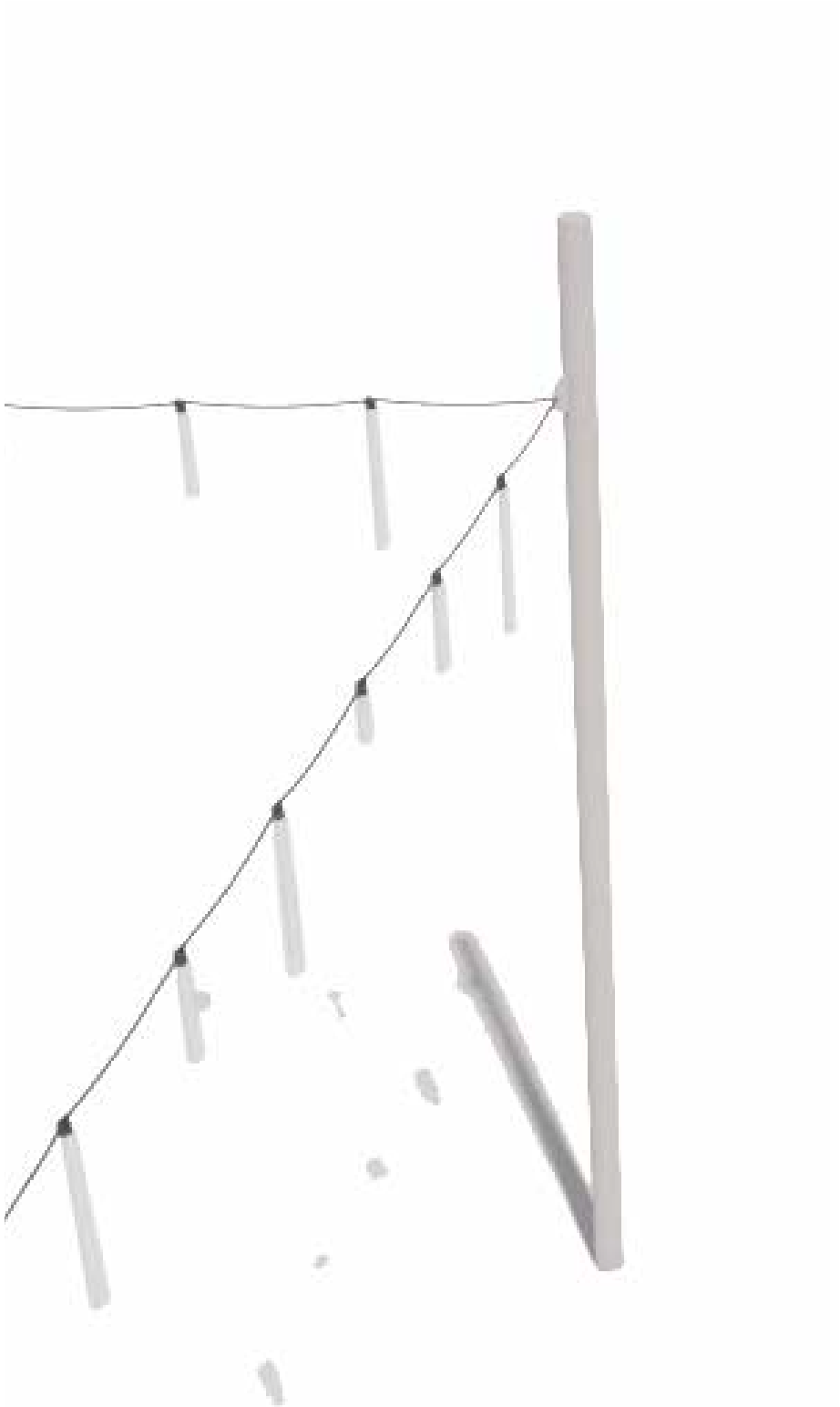
6.75m high catenary light pole painted Resene ‘Blast Grey 3’ with catenary lighting mounted at 6.0m above finished ground level. Power supply requirements, fixing details and wiring details to be confirmed and coordinated with supplier and electrical engineer.

**CAT CATENARY LIGHTING**

LED bulbs mounted to acrylic rod diffusers and clamp fixed to stainless steel catenary wire. Lighting to be installed as per suppliers details.



**LP-CAT CATENARY SUPPORT POLE ELEVATION**



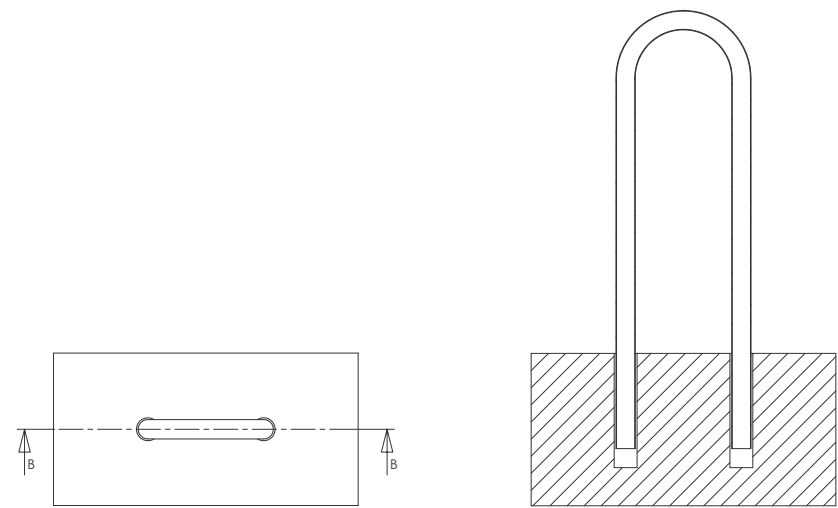
**LP-CAT + CAT RENDER**



# 5.6 Furniture - bins and cycle stands

## BIKE - Bicycle Rack

TYPE: BR\_01  
MATERIAL: Stainless Steel 304  
DIMENSIONS: W300xH900xdia 50mm  
FINISH: Satin Linish  
FIXING: Surface mounted to concrete paving - as per manufacturers details  
SUPPLIER: Walkspace (or approved alternative)



BIKE PLAN

BIKE ELEVATION



BIKE RENDER

## BINS - Rubbish Bins

TYPE: DCC Triple Waste Splitting Bin  
Supplier: DCC approved supplier  
FIXING: Sub-surface mounted to concreter pad as per suppliers details

- Continue to roll out larger waste splitting bins city wide



BINS RENDER

## GRATE - Tree Grate

TYPE: DCC Custom Tree Grate  
SUPPLIER: TBC  
FIXING: Sub-surface mounted to concrete support structure  
MATERIAL: Steel

- opportunity to customise pattern on grates
- sizes modular with paving units to reduce cutting and wastage

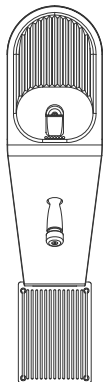


TREE GRATE PRECEDENT

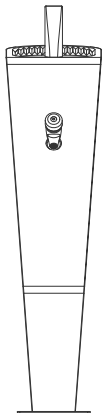
# 5.7 Furniture - drinking fountains

**AQUA - Drink fountain and bottle filler**

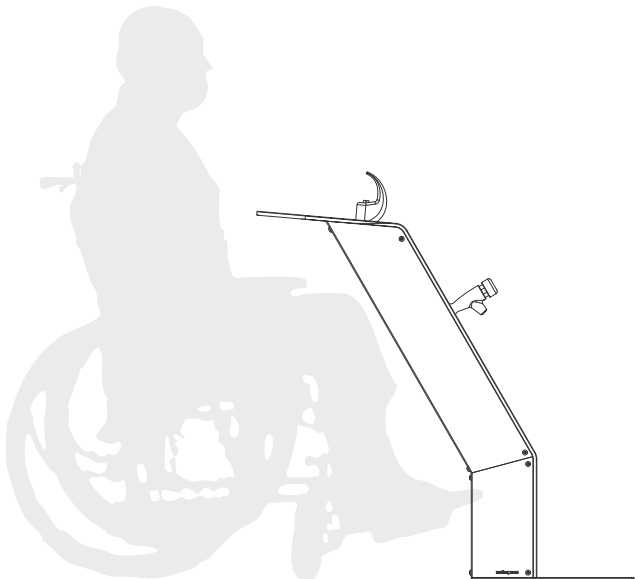
- TYPE: DF\_02 accessible drink fountain
- MATERIAL: 316 Stainless steel
- DIMENSIONS: D775xW150xH775
- FINISHES: Linish stainless steel
- FIXING: Sub-surface mounted to suppliers details
- DRAIN: In ground drainage grate
- SUPPLIER: Walkspace (or approved alternative)



AQUA PLAN



AQUA ELEVATION



AQUA RENDER

# 5.8 Urban lounge

## FULL STRUCTURE

Urban lounge with overhead shade structure, fixed pots, precast concrete seat units and catenary lighting overhead.





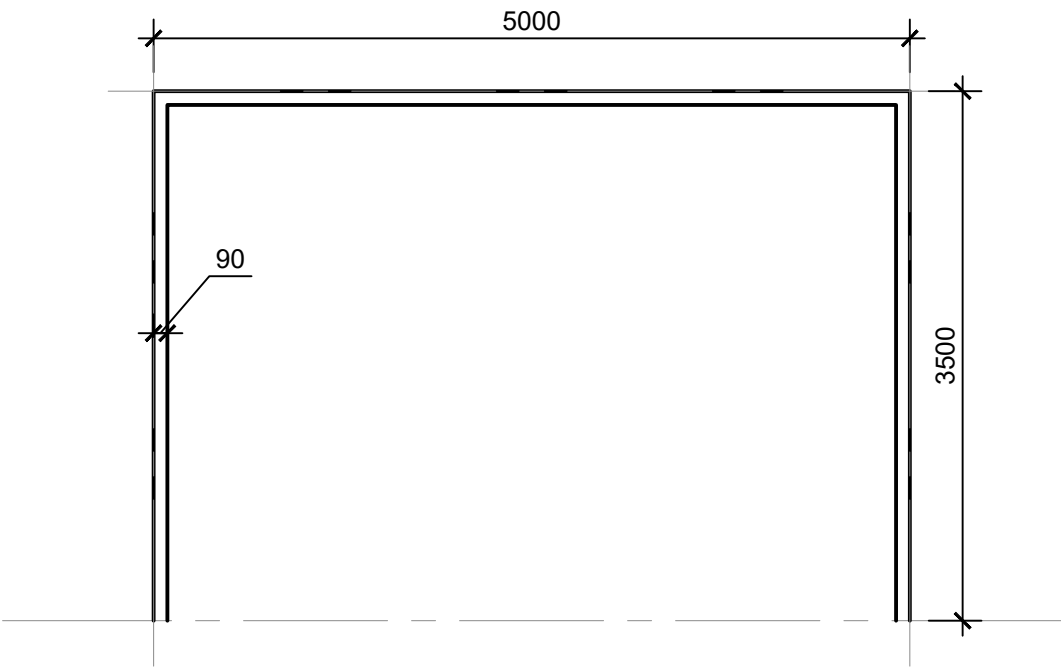
# 5.8.1 Urban lounge components

## PERG URBAN PERGOLA STRUCTURE

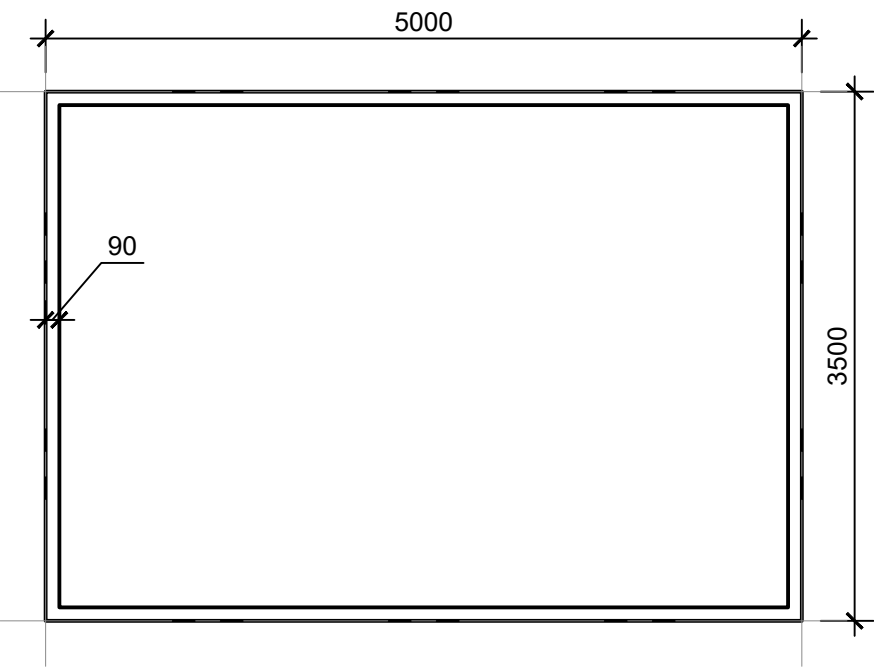
Urban pergolas modules to be 3.5m high x 3.5m wide x 5.0m long. Frame to be constructed using 89 x 89 x9mm SHS grade steel butt welded on site. 2 Pot epoxy paint finish to all steel in Resene ‘blast grey 3’. Ground planted columns to engineers specifications. Tempered glass panels with concealed fixings to top rails of structure. Coloured and fritted panels to cast light pattern to surfaces below. Details to be confirmed in detailed design.



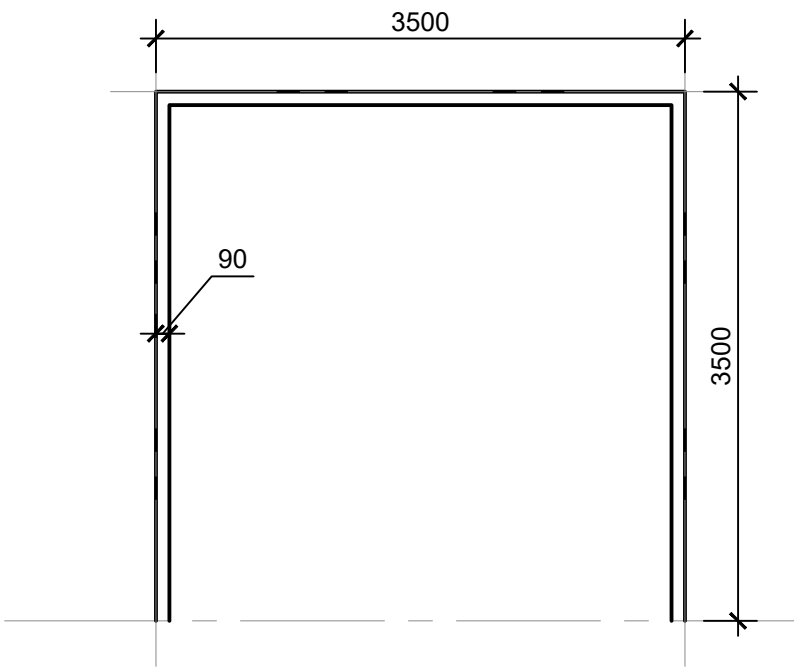
PERG RENDER



PERG ELEVATION



PERG PLAN



PERG END ELEVATION

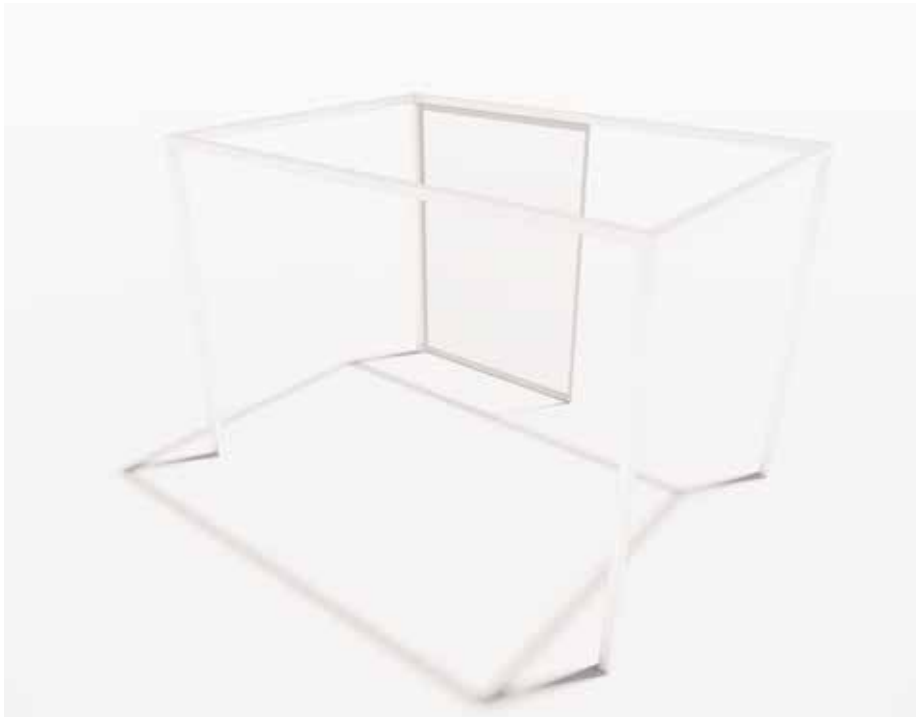
5.8.1 Urban lounge components



**PERG RENDER - HEATER**

Outdoor heaters mounted internally on framework as per manufacturers specifications.

- TYPE: SL40 4.0km  
Slimline  
SUPPLIER: Infratech (or similar approved)



**PERG RENDER - SIDE SCREEN**

Calido clear PVC zip screen internally mounted within modules. End screens to span full width. Details TBC in detailed design.



**PERG RENDER - TENSIONED STAINLESS STEEL WIRE**

5.0mm stainless steel tensioned wire eye hooked to top rail of structure module an sub surface mounted within paving using 304 stainless steel turnbuckles. Details TBC in detailed design.

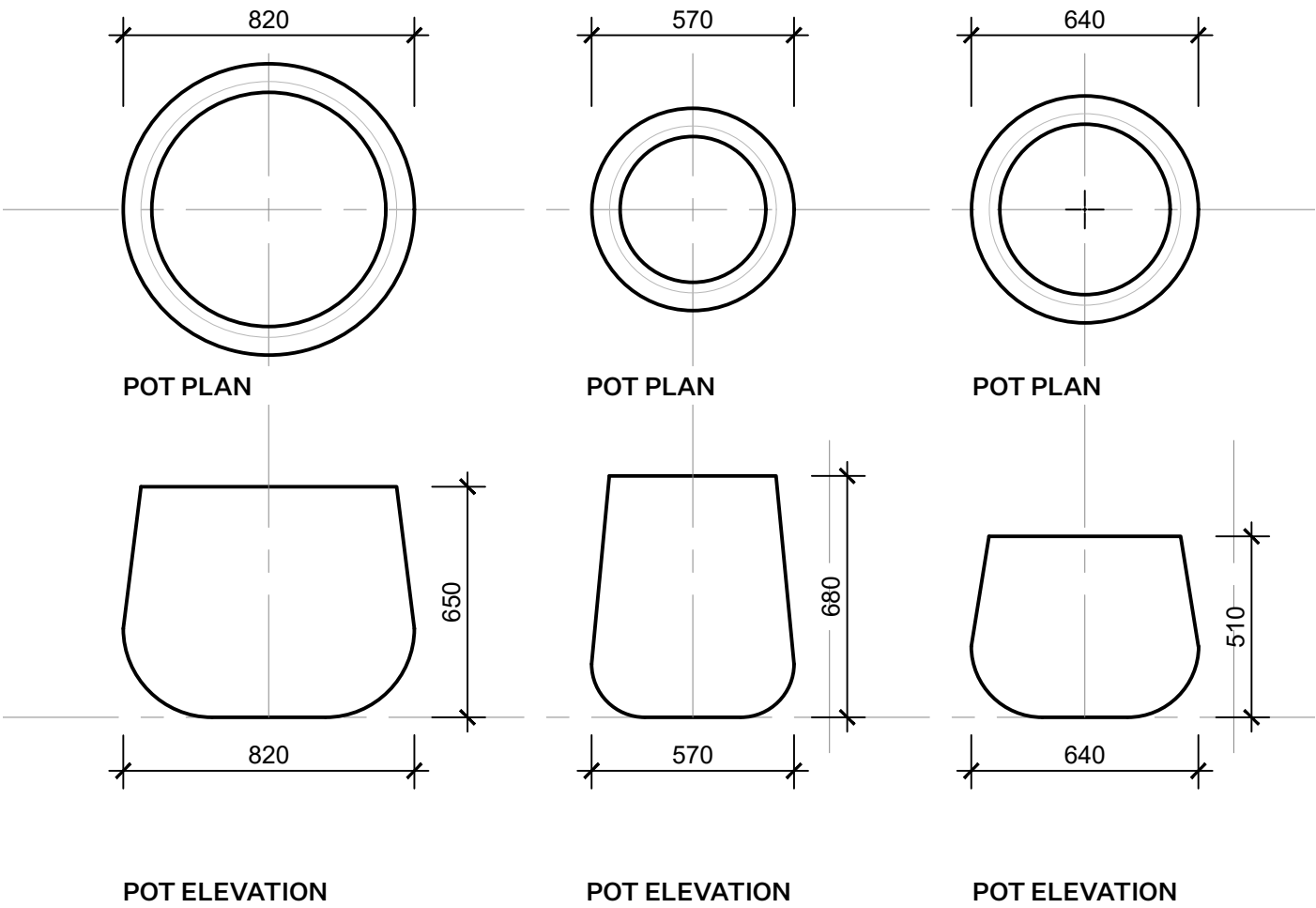
# 5.8.1 Urban lounge components

## CYLINDRICAL PLANTERS

TYPE: Urban Planter / urban tall planter  
MATERIAL: Glass reinforced concrete  
DIMENSIONS: 680Hx570W (large)  
510Hx640W (Medium)  
650Hx820W (small)  
FINISH: 2-Pot epoxy paint  
finish white  
SUPPLIER: Urban effects



POTS RENDER





# 5.9 Planting - selection criteria

## STREET TREE PLANTING DESIGN

Street trees add considerable value to urban environments, although they need to mature before their full value can be realised. Too often street trees are removed too early due to complications with their management, poor planting practices or being the wrong shapes and sizes for their locations.

In selecting the long list of street trees for George Street, we have prioritised the following:

### 1. Longevity.

We want street trees to be multi-generational, outliving us all and going on to shade and beautify the street for decades. Trees that are typically short lived have been selected out, as have trees that have roots that are known to damage underground services and pavements, drop branches, block drains, have allergens or are toxic, or don't have a track record of thriving in tough urban environments.

### 2. Responding to context.

The shape, size, habit, and provenance of trees will suit their final locations. We don't want to march trees down the street at regular spacings, ignoring adjacent context and making each block look the same, regardless of changes in context.

### 3. Creating a 'gardened' environment.

Each block is different with regards to land uses and architectural style and scale. The composition of the street should change as you move through it and view it from different vantage points. And it should change through the day and through the seasons too.









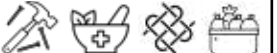

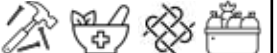





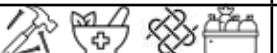





There is **beauty in diversity**. We have chosen to break from tradition and provide diversity of shape, size, habit, and provenance. Street trees will be selected and located to:

- frame valued buildings, doorways, and views
- shade parts of the footpath, and let light and warmth through to others
- create shape and volumes in the street that are proportional to human scale and the built environment
- create seasonal interest with deciduous trees, and hold the street together in the cooler months with a framework of evergreen trees
- reinforce local identity and make connections between cultural heritage and the built environment
- support local birds and insects through the seasons
- collectively green the street, being purposefully offset rather than inline to fill the street out when viewing it longitudinally, but spacious when amongst them.

Street trees aren't easy to establish and retain over the long term. The following forms part of our philosophical and technical design response:


- Prepare trees ahead of time in the nursery ready for planting out, achieving strong root growth in favour of height and girth
- Create ideal conditions that will support each tree through to maturity and beyond, allowing 12 – 15 cubic metres of tree pit volume and using strata vault tree pit cells under pavements
- Aggregate tree pits in common trenches to enable trees to 'talk to each other' through their roots and the mycorrhizal network
- Passively irrigate trees wherever possible
- Structurally separate tree pits from raingardens so tree roots aren't disturbed during maintenance.

## 5.10 Planting - Street trees evaluation criteria


BOTANICAL NAME	MAORI/COMMON NAME	PROVENANCE	LEAF RETENTION	TREE SIZE	MAHINGA KAI	ECOLOGICAL	SEASONALITY	LONGEVITY (YEARS)
		<ul style="list-style-type: none"> <li>LOCAL</li> <li>NATIVE</li> <li>EXOTIC</li> </ul>	 DECIDUOUS  EVERGREEN	XL L M S 			W S S A 	Long (>100) Moderate (50-100) Short (<50)
<i>Acer campestre</i> cvs.	field maple	●						L
<i>Acer cappadocicum</i> 'Rubrum'	red cappadocian maple	●						M
<i>Acer palmatum</i> cvs.	Japanese maple	●						M
<i>Carpinus betulus</i> 'Fastigiata'	upright hornbeam	●						M
<i>Cordyline australis</i>	ti kouka, cabbage tree	●						L
<i>Fagus sylvatica</i> 'dawyck'	upright european beech	●						L
<i>Dacrydium cupressinum</i>	rimu, red pine	●						L
<i>Fraxinus excelsior</i> 'Green glow'	european ash	●						M
<i>Fuscopora cliffortioides</i>	tawhai rauriki, mountain beech	●						L
<i>Ginkgo biloba</i>	maidenhair tree	●						L
<i>Ginkgo biloba</i> 'Fastigiata'	upright maidenhair tree	●						L
<i>Kunzea ericoides</i>	kānuka, white tea tree	●						L
<i>Liriodendron tulipifera</i> 'fastigiata'	upright tulip tree	●						L
<i>Nyssa sylvatica</i>	sourgum, tupelo	●						M
<i>Pistacia chinensis</i>	Chinese pistachio	●						M
<i>Podocarpus laetus</i>	hall's tōtara	●						L
<i>Podocarpus totara</i>	tōtara	●						L
<i>Prumnopitys ferruginea</i>	miro	●						L
<i>Metrosideros umbellata</i>	Southern Rata	●						L
<i>Sophora microphylla</i>	south island kowhai	●						L
<i>Tilia cordata</i>	linden lime	●						M
<i>Tilia cordata</i> 'Spring Glow'	golden small leaved lime	●						M
<i>Zelkova serrata</i>	Japanese zelkova	●						L

# 5.11 Planting - Proposed tree palette


## PROPOSED STREET TREE SPECIES OPTIONS




FIELD MAPLE  
*Acer campestre* cvs.




CAPPADOCIAN MAPLE  
*Acer cappadocicum*  
'*Rubrum*'




JAPANESE MAPLE  
*Acer palmatum* cvs.




UPRIGHT HORNBEAM  
*Carpinus betulus* '*Fastigiata*'




TĪ KŌUKA  
*Cordyline australis*




RIMU  
*Dacrydium cupressinum*




UPRIGHT BEECH  
*Fagus sylvatica* '*dawyck*'  
(purple, green or gold)




EUROPEAN ASH  
*Fraxinus excelsior*  
'*Green glow*'




TAWHAI RAURIKI  
*Fuscopora cliffortioides*




MAIDENHAIR TREE  
*Ginkgo biloba* '*Fastigiata*'




KĀNUKA  
*Kunzea ericoides*




TULIP TREE  
*Liriodendron tulipifera*  
'*fastigiata*'




SOURGUM  
*Nyssa sylvatica*




CHINESE PISTACHIO  
*Pistacia chinensis*




HALL'S TŌTARA  
*Podocarpus laetus*




TŌTARA  
*Podocarpus totara*




MIRO  
*Prumnopitys ferruginea*




SOUTHERN RATA  
*Metrosideros umbellata*




KŌWHAI  
*Sophora microphylla*



LINDEN LIME  
*Tilia cordata*



SMALL LEAVED LIME  
*Tilia cordata* '*Spring Glow*'



JAPANESE ZELKOVA  
*Zelkova serrata*

**LEGEND**

taiao/ecology: integrate nature  
attract native wildlife and insects

rerehua/beauty: reflect the seasons  
seasonal interest

taoka/tuku iho/heritage: reinforce identity  
mahinga kai valuehinga kai

03

George Street

Developed Design Report

March 2020

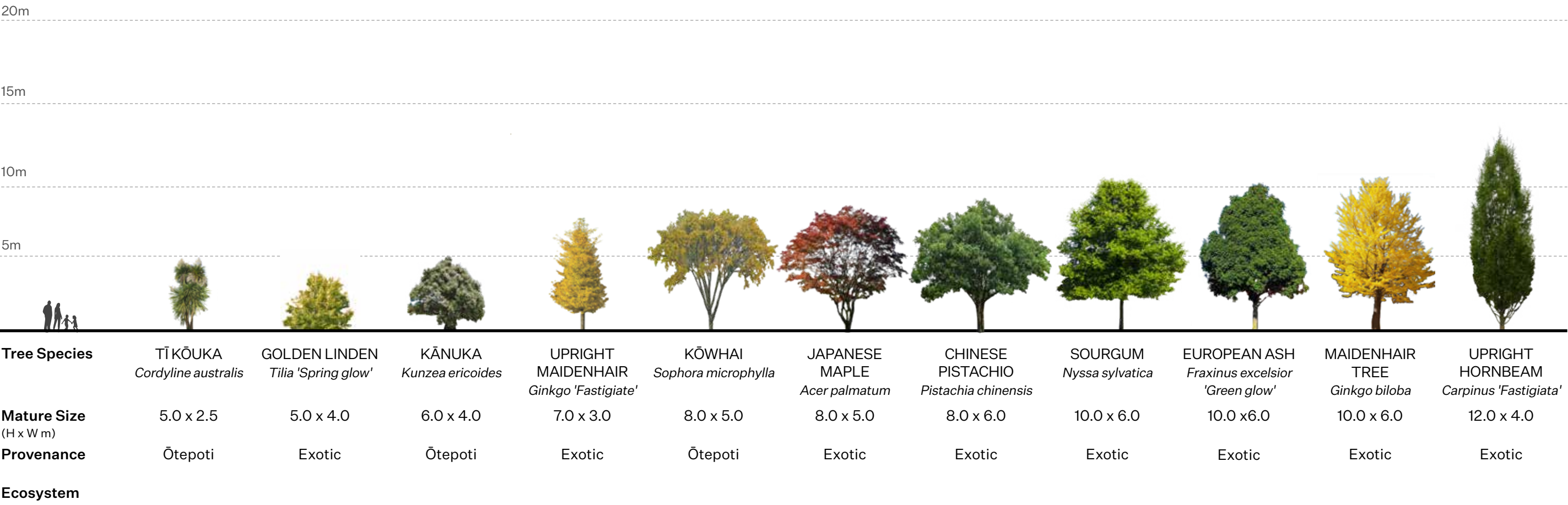
Rev A

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# 5.12 Planting - Tree height comparison

STREET TREES - FULL SIZE COMPARISON (INDICATIVE)



STREET TREES - FULL SIZE COMPARISON (INDICATIVE)



STREET TREES - FULL SIZE COMPARISON (INDICATIVE)






































































































## 5.13 Planting - Shrub selection criterea

BOTANICAL NAME	MAORI/COMMON NAME	PROVENANCE	LEAF RETENTION	PLANT FORM	MAHINGA KAI	ECOLOGICAL	SEASONALITY
		<div> <div>● LOCAL</div> <div>● NATIVE</div> <div>● EXOTIC</div> </div>	<div> <div> DECIDUOUS</div> <div> EVERGREEN</div> </div>	<div> <div> SHRUB</div> <div> G/COVER</div> <div> FERN</div> <div> GRASS/STRAPPY</div> </div>	<div> <div> BUILDING</div> <div> MEDICINE</div> <div> CRAFT</div> <div> FOOD</div> </div>	<div> <div> BIRD</div> <div> INSECT</div> <div> LIZARD</div> </div>	<div> <div> FRUIT</div> <div> FLOWER</div> <div> AUTUMN COLOUR</div> </div>
<i>Coprosma acerosa</i>	tarakupenga, sand coprosma	●					
<i>Euphorbia glauca</i>	waiūatua, shore spurge	●					
<i>Euphorbia 'Polychroma'</i>	cushion spurge	●					
<i>Gaura lindheimeri</i>	pink butterfly bush	●					
<i>Hebe albicans</i>	koromiko, mt arthur hebe	●					
<i>Hebe pimeleoides 'Quicksilver'</i>	quicksilver hebe	●					
<i>Hebe propinqua</i>	whipcord hebe	●					
<i>Hebe 'Wiri Mist'</i>	koromiko	●					
<i>Hebe 'Wiri Prince'</i>	koromiko	●					
<i>Leptospermum scoparium 'Red Falls'</i>	mānuka, prostrate tea tree	●					
<i>Leucophyta brownii 'Silver nugget'</i>	silver cushion bush	●					
<i>Podocarpus nivalis</i>	snow totara	●					
<i>Sedum spectabile</i>	stone crop	●					
<i>Sophora prostrata 'Little Twister'</i>	prostrate kowhai	●					
<i>Acaena caesiiglauc</i>	piripiri, glaucous bidibidi	●					
<i>Acaena inermis 'Purpurea'</i>	piripiri, purple bidibid	●					
<i>Acaena novae-zelandiae</i>	piripiri, red bidibidi	●					
<i>Anaphalioides bellidioides</i>	everlasting daisy	●					
<i>Bergenia 'Bressingham White'</i>	siberian tea, elephant ears	●					
<i>Coprosma acerosa 'Hawera'</i>	sand coprosma	●					
<i>Coprosma acerosa 'Red Rocks'</i>	sand coprosma	●					
<i>Disphyma australe</i>	horokaka, NZ ice plant	●					
<i>Fuchsia procumbens</i>	creeping fuchsia	●					

BOTANICAL NAME	MAORI/Common Name	PROVENANCE	LEAF RETENTION	PLANT FORM	MAHINGA KAI	ECOLOGICAL	SEASONALITY
		<div>● LOCAL</div> <div>● NATIVE</div> <div>● EXOTIC</div>	<div>🍂 DECIDUOUS</div> <div>🌲 EVERGREEN</div>	<div>🌳 SHRUB</div> <div>🌿 G/COVER</div> <div>🌿 FERN</div> <div>🌿 GRASS/STRAPPY</div>	<div>🔨 BUILDING</div> <div>🥣 MEDICINE</div> <div>🌀 CRAFT</div> <div>🍷 FOOD</div>	<div>🐦 BIRD</div> <div>🦋 INSECT</div> <div>🦎 LIZARD</div>	<div>🍎 FRUIT</div> <div>🌸 FLOWER</div> <div>🍂 AUTUMN COLOUR</div>
<i>Gunnera prorepens</i>	gunnera	●	🌲	🌿		🦋	🍎 🍂
<i>Leptinella dioica</i>	shore leptinella, cotula	●	🌲	🌿		🦋	🍎 🌸
<i>Ligularia reniformis</i>	tractor seat	●	🌲	🌿		🦋	🌸
<i>Linum monogynum</i>	rauhua, native linen flax	●	🌲	🌿		🦋	🌸
<i>Lobelia angulata</i>	panakenake	●	🍂	🌿	🍷	🐦 🦋 🦎	🌸
<i>Muehlenbeckia axillaris</i>	creeping pohuehue	●	🍂	🌿		🐦 🦋 🦎	🌸
<i>Pachystegia insignis</i>	marlborough rock daisy	●	🌲	🌿		🦋	🌸
<i>Pimelea prostrata</i>	pinātoro, NZ daphne	●	🌲	🌿	🥣 🍷	🦋 🦎	🌸
<i>Pimelea urvilleana</i>	NZ daphne	●	🌲	🌿		🐦 🦋	🌸
<i>Tetragonia implexicoma</i>	kōkihi, native spinach	●	🌲	🌿	🥣 🌀 🍷	🐦 🦎	🍎 🌸
<i>Thymus serpyllum 'Coccineus'</i>	creeping thyme	●	🌲	🌿		🦋	🌸
<i>Asplenium bulbiferum</i>	mouku, hen and chicken fern	●	🌲	🌿	🥣 🌀 🍷	🦎	
<i>Hypolepis ambigua</i>	rough pig fern	●	🌲	🌿		🦎	
<i>Polystichum vestitum</i>	pūniu, prickly shield fern	●	🌲	🌿		🦎	
<i>Arthropodium 'Matapouri Bay'</i>	rengarenga	●	🌲	🌿	🥣 🍷	🦋 🦎	🌸
<i>Astelia fragrans</i>	kakaha, bush lily	●	🌲	🌿	🌀	🐦 🦋 🦎	🍎 🌸
<i>Astelia nervosa</i>	mountain astelia	●	🌲	🌿	🥣 🌀 🍷	🐦 🦋 🦎	🍎 🌸 🍂
<i>Dianella revoluta 'Little Rev'</i>	little rev turf lily	●	🌲	🌿	🔨 🥣 🌀 🍷	🐦 🦋	🍎 🌸
<i>Dianella nigra</i>	turutu, nz blueberry	●	🌲	🌿		🐦 🦋	🍎 🌸
<i>Dietes grandiflora</i>	fairy iris	●	🌲	🌿	🌀	🦋	🍎 🌸
<i>Libertia grandiflora</i>	mikoikoi, NZ iris	●	🌲	🌿		🐦 🦋	🍎 🌸
<i>Libertia ixioides</i>	mikoikoi, NZ iris	●	🌲	🌿		🐦 🦋	🍎 🌸
<i>Libertia peregrinans</i>	creeping iris	●	🌲	🌿		🐦 🦋	🍎 🌸

BOTANICAL NAME	MAORI/Common Name	PROVENANCE	LEAF RETENTION	PLANT FORM	MAHINGA KAI	ECOLOGICAL	SEASONALITY
		<div> <div>● LOCAL</div> <div>● NATIVE</div> <div>● EXOTIC</div> </div>	<div> <div>  DECIDUOUS </div> <div>  EVERGREEN </div> </div>	<div> <div>  SHRUB </div> <div>  G/COVER </div> <div>  FERN </div> <div>  GRASS/STRAPPY </div> </div>	<div> <div>  BUILDING </div> <div>  MEDICINE </div> <div>  CRAFT </div> <div>  FOOD </div> </div>	<div> <div>  BIRD </div> <div>  INSECT </div> <div>  LIZARD </div> </div>	<div> <div>  FRUIT </div> <div>  FLOWER </div> <div>  AUTUMN COLOUR </div> </div>
<i>Phormium cookianum</i> 'Emerald Gem'	wharariki, mountain flax	●			 	  	 
<i>Carex buechananii</i>	buechanan's sedge	●					
<i>Carex solandri</i>	forest sedge	●					
<i>Carex virgata</i>	swamp sedge	●				 	
<i>Chionochloa flavicans</i>	haumata, miniature toe toe	●					
<i>Chionochloa rigida</i>	wī kura, narrow-leaved snow tussock	●					
<i>Festuca novae-zelandiae</i>	fescue tussock, hard tussock	●				 	
<i>Poa cita</i>	wī, silver tussock	●			 		
<i>Achillea millefolium</i> 'Terracotta'	common yarrow	●					
<i>Agastache foeniculum</i>	anise hyssop	●					
<i>Echinacea purpurea</i> 'Magnus'	purple coneflower	●					 
<i>Felicia amelloides</i>	blue marguerite	●					
<i>Helleborus orientalis</i>	lenten rose	●					
<i>Rudbeckia fulgida</i> 'Goldstrum'	black eyed susan	●					
<i>Colchicim speciosum</i>	autumn crocus, naked ladies	●					
<i>Galanthus nivalis</i>	snowdrops	●					
<i>Muscari armeniacum</i> 'Touch of snow'	grape hyacinth	●					
<i>Narcissus</i> 'Carlton'	carlton daffodil	●					
<i>Zephyranthes candida</i>	rain lily	●					



5.14 Planting - Planter bed palette


LEGEND

- taiao/ecology: integrate nature  
attract native wildlife and insects
- rerehua/beauty: reflect the seasons  
seasonal interest
- taoka tuku iho/heritage: reinforce identity  
mahinga kai value


SHRUBS



TARAKUPENGA  
*Coprosma acerosa*



WAIŪATUA  
*Euphorbia glauca*



CUSHION SPURGE  
*Euphorbia 'Polychroma'*



BUTTERFLY BUSH  
*Gaura lindheimeri*



MT ARTHUR HEBE  
*Hebe albicans*



QUICKSILVER HEBE  
*Hebe pimeleoides 'Quicksilver'*



WHIPCORD HEBE  
*Hebe propinqua*



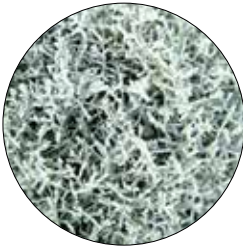
WIRI MIST HEBE  
*Hebe 'Wiri Mist'*



WIRI PRINCE  
*Hebe 'Wiri Prince'*



MĀNUKA  
*Leptospermum scoparium 'Red Falls'*



SILVER CUSHION  
*Leucophyta brownii 'Silver nugget'*



SNOW TOTARA  
*Podocarpus nivalis*



STONE CROP  
*Sedum spectabile 'Autumn Joy'*



PROSTRATE KŌWHAI  
*Sophora prostrata 'Little Twister'*

FERN



MOUKU  
*Asplenium bulbiferum*



ROUGH PIG FERN  
*Hypolepis ambigua*



PUNIU  
*Polystichum vestitum*



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GROUNDCOVERS


<div><div><div></div><div></div></div></div>	<div><div><div></div><div></div></div></div>	<div><div><div></div><div></div></div></div>	<div><div><div></div><div></div></div></div>	<div><div><div></div><div></div></div></div>	<div><div><div></div><div></div><div></div></div></div>	<div><div><div></div><div></div><div></div></div></div>	<div><div><div></div><div></div><div></div></div></div>
<div><div><div></div><div></div></div><p>GLAUCOUS BIDI BIDI <i>Acaena caesiiglauca</i></p></div>	<div><div><div></div><div></div></div><p>PURPLE BIDIBIDI <i>Acaena inermis 'Purpurea'</i></p></div>	<div><div><div></div><div></div></div><p>RED BIDIBIDI <i>Acaena novae-zelandiae</i></p></div>	<div><div><div></div><div></div></div><p>EVERLASTING DAISY <i>Anaphaloides bellidioides</i></p></div>	<div><div><div></div><div></div></div><p>SIBERIAN TEA <i>Bergenia cordifolia</i> 'Bressingham White'</p></div>	<div><div><div></div><div></div><div></div></div><p>SAND COPROSMA <i>Coprosma acerosa</i> 'Hawera'</p></div>	<div><div><div></div><div></div><div></div></div><p>SAND COPROSMA <i>Coprosma acerosa</i> 'Red rock'</p></div>	<div><div><div></div><div></div><div></div></div><p>HOROKAHA <i>Disphyma australe</i></p></div>
<div><div><div></div><div></div></div></div>	<div><div><div></div><div></div></div></div>	<div><div><div></div></div></div>	<div><div><div></div><div></div></div></div>	<div><div><div></div><div></div></div></div>	<div><div><div></div><div></div><div></div></div></div>	<div><div><div></div><div></div></div></div>	<div><div><div></div><div></div></div></div>
<div><div><div></div><div></div><div></div></div><p>CREeping FUCHSIA <i>Fuchsia procumbens</i></p></div>	<div><div><div></div><div></div></div><p>GUNNERA <i>Gunnera prorepens</i></p></div>	<div><div><div></div></div><p>SHORE LEPTINELLA <i>Leptinella dioica</i></p></div>	<div><div><div></div><div></div></div><p>TRACTOR SEAT <i>Ligularia reniformis</i></p></div>	<div><div><div></div><div></div></div><p>RAUHUIA <i>Linum monogynum</i></p></div>	<div><div><div></div><div></div><div></div></div><p>PĀNAKENAKE <i>Lobelia angulata</i></p></div>	<div><div><div></div><div></div></div><p>CREeping POHUEHUE <i>Muehlenbeckia axillaris</i></p></div>	<div><div><div></div><div></div></div><p>MARLBOROUGH ROCK DAISY <i>Pachystegia insignis</i></p></div>
<div><div><div></div><div></div><div></div></div></div>	<div><div><div></div><div></div></div></div>	<div><div><div></div><div></div><div></div></div></div>	<div><div><div></div><div></div></div></div>				
<div><div><div></div><div></div><div></div></div><p>PINĀTORO <i>Pimelea prostrata</i></p></div>	<div><div><div></div><div></div></div><p>NZ DAPHNE <i>Pimelea urvilleana</i></p></div>	<div><div><div></div><div></div><div></div></div><p>KŌKIHI <i>Tetragonia implexicoma</i></p></div>	<div><div><div></div><div></div></div><p>CREeping THYME <i>Thymus serpyllum</i> 'Coccineus'</p></div>				




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mahinga kai value


FLAX & STRAPPY PLANTS




RENGARENGA  
*Arthropodium cirratum*  
'Matapouri Bay'




KAKAHA  
*Astelia fragrans*




MOUNTAIN ASTELIA  
*Astelia nervosa*




TURF LILY  
*Dianella revoluta* 'Little Rev'




TURUTU  
*Dianella nigra*




FAIRY IRIS  
*Dietes grandiflora*




MIKOIKOI  
*Libertia grandiflora*




MIKOIKOI  
*Libertia ixioides*



CREEPING IRIS  
*Libertia peregrinans*



PURPLE LILY TURF  
*Liriope muscari*  
'Royal purple'



WHARARIKI  
*Phormium cookianum*  
'Emerald Gem'

GRASS, SEDGE & RUSH



BUCHANAN'S  
SEDE  
*Carex buchananii*



FOREST SEDGE  
*Carex solandri*



SWAMP SEDGE  
*Carex virgata*



HAUMATA  
*Chionochloa flavicans*



WI KURA  
*Chionochloa rigida*



FESCUE TUSOCK  
*Festuca novae-zelandiae*



WI  
*Poa cita*






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seasonal interest
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mahinga kai value

SEASONAL COLOUR




COMMON YARROW  
*Achillea millefolium*  
'Terracotta'



ANISE HYSSOP  
*Agastache foeniculum*



PURPLE CONE FLOWER  
*Echinacea purpurea*  
'Magnus'



BLUE MARGUERITE  
*Felicia amelloides*




LENTEN ROSE  
*Helleborus orientalis*




BLACK-EYED SUSAN  
*Rudbeckia fulgida*  
'Goldstrum'


BULBS




AUTUMN CROCUS  
*Colchicim speciosum*



SNOWDROPS  
*Galanthus nivalis*



GRAPE HYACINTH  
*Muscari armeniacum*  
'Touch of snow'



CARLTON DAFFODIL  
*Narcissus 'Carlton'*

# Appendices

## 6.0

This section provides the technical appendices for the George Street Developed Design.

6.1    **Appendix A - Aukaha Cultural Narrative**





6.1    **Appendix B - Technical drawings**





