



Rākau Rongoā Learning Garden

Reintroducing Rongoā in
Wellington for Community health
and Wellbeing.

Case study report produced as
a Summer Scholarship Project
(2018/2019) in partnership with
Wellington City Council and
Victoria University of Wellington.

By Celia Hall

Project
Supervisors:



Jacqueline McIntosh.
Bruno Marques.
Maria Rodgers.

CONTENTS:

5.	Abstract
7.	Introduction to case study
8.	Literature review Exectutive summary
10.	Key Concerns
12.	Case study overview
14.	Proposed Site Location
	Site Analysis and spatial planning
	Planting Plan
	Signage
	Digital information
	Appendices

ABSTRACT:

Introducing principles of Rongoā into culturally and ecologically sustainable urban design

Authors:

Celia Hall, Bruno Marques, Jacqueline McIntosh and Maria Rodgers

Use of native plant life is a topic of major concern for Aotearoa New Zealand, a nation of significant biodiversity and environmental culture. With the progression of time, colonisation and urbanisation, the erosion of cultural knowledge and traditions are at risk. Both Māori and non-Māori (Pākehā) moved from rural and semi-rural communities to urban environments. Today, more than 86% of New Zealanders and 88% of Māori live in urbanised centres (Statistics New Zealand 2017). The disconnection from their ancestral homelands or tūrangawaewae (a place of standing and being connected) disrupted the way Māori connected to place. Consecutively, the loss of face-to-face oral transfer of knowledge (Mātauranga Māori) deeply impacted traditional practices, knowledge, and values (Vasil 1988). As such, traditional knowledge among younger generations has inevitably diminished while assimilation and environmental change has escalated (Turner et al. 2000). The lack of appreciation toward the natural environment has resulted in the depletion of the abundant and rich ecosystems (Baker and Marques 2017).

The growing interest in Traditional Ecological Knowledge (TEK) (Freeman and Carbyn 1988, Johnson 1992, Berkes 1993, Doubleday 1993, Inglis 1993, Williams and Baines 1993, Berkes et al. 2000, Turner et al. 2000) and Indigenous worldviews have refocused attention on current social institutions, land and resource management systems, and local knowledge of flora and fauna (Alcorn 1993, Hackel 1999, Berkes 2004, Moller et al. 2004, Marques et al. 2018).

While certain native plants have been used or commercialised in western medicine, much of the medicinal use of native New Zealand plants has historically and continues to be practiced by Maori in the form of Rongoā Maori, traditional Maori healing (McGowan, 2015). Maori people believe in a holistic approach, addressing the physical, mental, family, and spiritual components to health (McIntosh et al, 2018). As western medicine often ignores spiritual and mental intricacies of health that can be vital to certain groups of people, finding a balance between western and Indigenous knowledge bases regarding human health is vital to create a culturally and ecologically responsive healthcare for all citizens. At a time where the environment is at risk, the knowledge gained from the revival of Māori culture regarding care for the land offers benefits not only to the land but also to the collective identity and health of the nation of Aotearoa New Zealand.

This paper addresses the growing interest in traditional Maori medicine and Indigenous ecological knowledge as a catalyst for the restoration of urban environments by incorporating the biophysical dimensions of place and environment with social relations and subjective human experiences, in the context of health and wellbeing in Wellington City. Taking a case study approach, it explores the design of a Rongoā learning garden in a public space, extending to the identification of any barriers to implementation and in particular issues relating to plant collection and harvesting. It hereby assists in reconnecting Maori and connecting non-Maori to their natural surroundings, following bicultural and Indigenous constructs.

INTRODUCTION:

This paper addresses the growing interest in traditional Maori medicine and Indigenous ecological knowledge as a catalyst for the restoration of urban environments by incorporating the biophysical dimensions of place and environment with social relations and subjective human experiences, in the context of health and wellbeing in Wellington City.

This design proposal was developed by Victoria University of Wellington alongside Wellington City Council with the aim of creating a space within Wellingtons central business district where the general public could engage with and learn about Maori medicinal plants.

This proposal includes the design of Rongoā Rākau garden that, along with planting plans and signage, could serve as a template or starting point that Council could then develop. Potentially implimenting it in other locations across Wellington. The intention behind this proposal is that: by providing a space where the community can engage with holistic healing and herbal remedies first hand, the project may create more awareness of and respect for indigenous knowledge within the wider public.

Before embarking on any design work, a literature review was first undertaken in order to identify any potential barriers to the implimentation of a Rākau Rongoā learning garden within Wellingtons city centre.

This literature review unpacked the history and development of Rongoā Māori in New Zealand, in order to better understand its application in practice today. The review also engaged with the researchers own concerns surrounding cultural safety and sovereignty over indigenous knowledge by addressing what some of the potential implications and barriers to sharing this knowledge with the general public might be.

The design for this case study was then developed, focusing on key themes of social, cultural and ecological saftety, attempting to navigate the researchers concerns through a carefully considered design strategy. The intention behind the development of this proposal is to assist in reconnecting Maori and connecting non-Maori to their natural surroundings, following bicultural and Indigenous constructs.

A locally based Rongoā practitioner and a cultural advisor for mana whenua were consulted as to how to best to develop a public park within Wellington's central city that would display and inform the general public about Rongoā Rākau. The project developed with a collaborative approach

LITERATURE REVIEW

Executive summary

Objectives:

The objectives of this literature review are to describe the following:

- 1) A brief summary of Rākau Rongoā and the historical impacts that have shaped the way it is understood and practiced today;
- 2) the issues facing the future development of Rongoā Rākau; and
- 3) how this information can be used to develop Rongoā Rākau within an urban environment on a community level while remaining culturally sensitive and appropriate.

Years of cultural suppression, societal prejudices, and a changing environmental landscape have impacted the practice of Rongoā and shaped the way it is understood today. Its practice has been heavily influenced by colonial methodologies and forced into suppression through Governmental policy. Increased urbanisation and deforestation have made it harder for people to access the forests and in turn, plants with medicinal properties. Social and cultural misunderstanding has allowed a stigma to develop around alternative therapies and ethnographic remedies, meaning that people are less willing to put their faith in remedies that have not been clinically tested within the Western medicine paradigm.

An ever changing social and climatic environment has required the practice of Rongoā and those who administer it to adapt to the expectations and pressures of the current day.

Not only has it changed in regard to application of herbal medicines, but also in the way that the subject is learnt. Traditionally the knowledge was only passed to a select a few, taught orally by elders and was a vocation that people took up for life. Information surrounding Rongoā Māori was considered sacred, and to be treated with the utmost respect.

As a result, the general public remains largely unaware of the medicinal proprieties and historical uses of plants endemic to New Zealand.

Numerous people have debated as to how Rongoā Māori should be practiced in the future and the challenges any future development may face.

An indigenous research team in Canterbury (Ahurirr-Driscoll, New Zealand. Ministry of et al. 2008) held interviews with practitioners across the country to discuss issues that and barriers that Māori face in regard to its practice. However, despite these discussions the future of Rongoā remains unclear. As the information belongs to a collective, it is hard to resolve what the next steps should be.

One of the common themes that came out of the workshops held by this team of researchers was a call for decolonising methodologies by having led Maori research teams working with/for Maori. Historically researchers and academics have been criticised for “reaching into Maori culture and pulling out features with which they can identify, taking hold of quite generous portions which, they can try and fit into a Pakeha world view”, (Mead). In her paper ‘Analysing Rongoa Maori and Western Science interactions’ researcher Paige Aichele (2016) emphasises that “Western medicine often ignores spiritual and, to a certain extent, mental intricacies that can be vital to certain groups of people.” She goes on to expand on the intrinsic value of knowledge within a Maori world view, and the importance of practicing a research methodology that is aware of the importance of that comprehensive world view in order to engage in ethical practice. The Health research Council of New Zealand offer guidelines for Maori research: Te Ara Tika: Guidelines for Maori Research Ethics: A Framework for Researchers and Ethics Committee Members. These guidelines are designed to aid researchers engaging with ethics around indigenous practice by outlining best practice through a foundation of tikanga Maori (Maori protocols and practices). These are categorised into four major areas: whakapapa, tika and manaakitanga. The intent behind this is to allow Maori to have greater involvement in any research that concerns their cultural identity. Offering their perspectives, ethical concerns and giving them more autonomy as kaitiaki or guardians over their own intellectual property.

These issues are pertinent to anyone wishing to understand more about Rongoā Rākau, and any other form of Indigenous knowledge approaching the material from an outside perspective. Cultural safety and sensitivity are key, along with a responsibility to ecological and physical sustainable practice. For non-indigenous researchers looking to improve their practices or feel hesitancy to engage with the subject matter due to preconceived ethnocentric views there are a number of useful texts on decolonisation available. Linda Tuhiwai Smiths’ ‘Decolonising methodologies research and indigenous peoples’ outlines a new agenda for Indigenous research.

It is the researcher’s opinion that when unpacking these ideas from an academic standpoint the best approach is caution and humility; listening to others about their experiences and values, rather than assuming authority over the information and claiming to understand how a collective of people feel about a certain subject. When working with iwi a collaborative partnership is best, in this way we can all work together to ensure the continued protection and preservation of knowledge and plant ecology in a rapidly changing world, (Driscoll).

Wellington City Councils commissioned the proposal which was developed through Victoria University of Wellingtons summer scholarship programme. The intention behind the proposal is to reconnect Māori and non-Māori to their natural surroundings by providing information that will spark dialogue about our cultural and ecological history and engage the wider community in this discussion. This project seeks to encourage people to become more invested in New Zealand’s Indigenous heritage and learn about sustainability through the interconnected and holistic approach embedded in Maori values.

The history and practice of Rongoa Maori is multifaceted and complex. Therefore, despite the researcher’s best attempts it must be conceded that this literature review and subsequent proposal will only scrape the surface of a subject that is deep and complex in both emotional, physical and spiritual capacities.

A representative of mana whenua (Pekaira Rei) was consulted over initial conceptualisation of the project and the location of the site to be developed, and a Wellington-based Rongoā practitioner (Arihia Latham) has helped advise and collaborate on this project so as to avoid the appropriation of knowledge and inadvertently reduce it to a tokenistic display of indigenous knowledge.

It is the researchers hope that by investigating this topic with a thoughtful approach, and exploring potential design outcomes for an inner city site, that Council and Mana Whenua can continue to work together to mediate a path toward to future of Rongoā within our urban environment.

KEY CONCERNS:

One of the most important issues raised in the literature review was around the ownership of intellectual property, and how to sufficiently convey the complexities of Rongoā with general public in a way that is culturally, physically and ecologically responsible.

This project needs to ensure emotional/mental safety (protect the intellectual property and cultural sovereignty of mana whenua) and physical safety – in regards to both ecological sustainability (ensuring the plants don't suffer from overharvesting) and social sustainability (don't poison anyone.)

This proposal attempts to navigate these concerns through the carefully considered signage and planting plans. These ideas will be unpacked in further detail throughout this paper.

This flow chart (right) unpacks some of the factors that have shaped the way Rongoā Māori is practiced today

CASE STUDY:

Design Intention, aims and objectives:

This project aims to spark interest in traditional Rongoā Māori practice within Wellington's urban community through the use of informative signage and an educational design strategy. These concepts will be explored through the design methodology. This proposal also recommends specific planting plans using a range of common medicinal plants to serve as an introductory experience for participants, who may then choose to further their depth of understanding as a subsequent result of this engagement.

Brief:

This project will focus on Rākau Rongoā, exploring opportunities for the community to engage and gain a deeper understanding of Maori medicinal plants.

1. Survey existing flora and undertake a site analysis of areas proposed for development
2. Develop a design proposal for a Rongoā learning garden, including a planting plan and furniture design.
3. Design signage to inform visitors about tikanga surrounding Rākau Rongoā as well as individual signs to identify each plant and explain their uses. This may extend to the design of a digital platform.
4. Develop concepts by researching precedents and exploring design strategies to create opportunities

Deliverables:

- Technical plan and renders
- Site analysis and diagrams depicting opportunities and constraints, existing conditions, biophysical analysis and wider context information.
- Existing Rongoā plant location plants
- Proposed planting plans conveyed through plans and sections
- Design proposal including signage and furniture
- List of plants used for Rongoā Maori and their traditional uses and applications

Scope of the project:

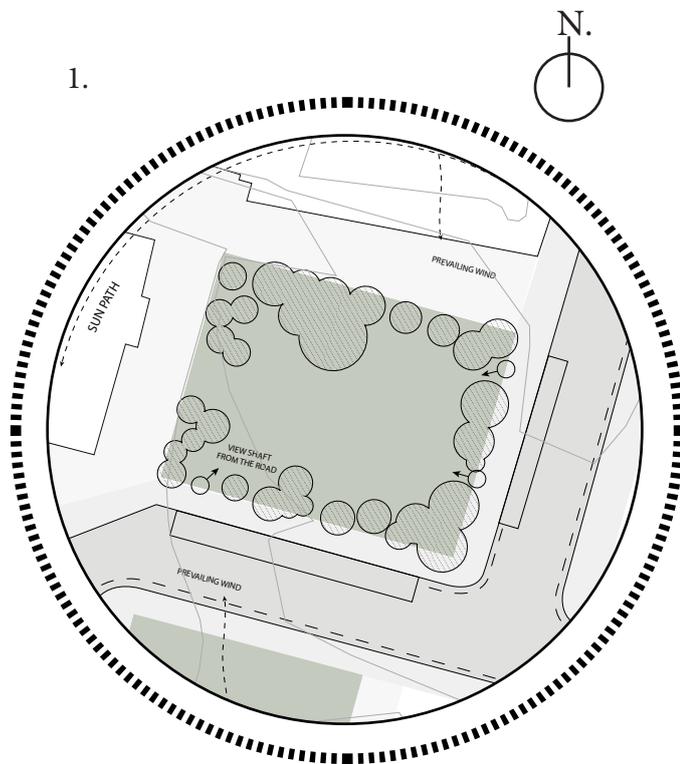
Three sites have been proposed for development:

- Corner of torrens terrace and Arlington St
- Charles Plimmer Park (Mount Victoria)
- The Terrace Garden and Flagstaff Hill

However for the scope of this assignment, only one site was selected for development. This is to be used as an exemplar or framework, in case the council decides to extend the scope of the project. The site selected for this purpose is located on the corner of Torrens Terrace and Arlington st.



SITE LOCATION: TORRENS TERRACE



Park design:

This project is designed to be site specific but general enough so that the signage and plants could be used in other locations within Wellington's urban districts.

The chosen site for this project is located on the suburban edges of Wellington's central city.

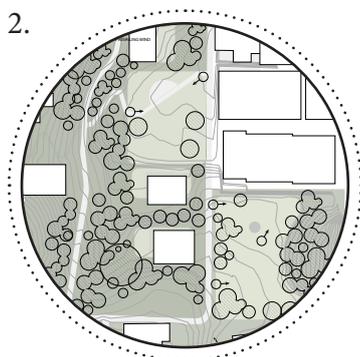
It receives plenty of foot traffic by people passing through on their way from Mt Cook suburbs to the CBD.

Currently the space is underutilised. There is potential to develop a park with a strong sense of community and create a relationship to the neighbouring residential properties.

Two other sites (Charles Plimmer Park on Mount Victoria and the Terrace Gardens) were considered for this project. However, as they are both large sites, for the scope of this project it was decided that Torrens Terrace as a smaller site would hold greater impact. The site could be designed as a space solely dedicated to Rākau Rongoā and the scale of it allowed for a more detailed design within a small time frame.

OTHER SITES CONSIDERED FOR FUTURE DEVELOPMENT:

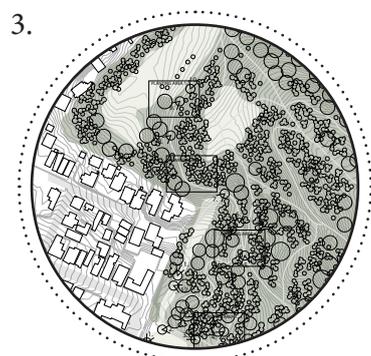
*For contextual analysis of these sites refer to the appendix



TERRACE GARDENS/
FLAGSTAFF HILL:

Too secluded (not enough passive surveillance)

A small, flat, sunny site in a central location, it lends itself well to the project- being easily accessible and walkability. There is also well established existing plants that have Rongoa properties. This provides a good foundation for the development of a rongoa learning garden.



CHARLES PLIMMER PARK
LOOP TRACK

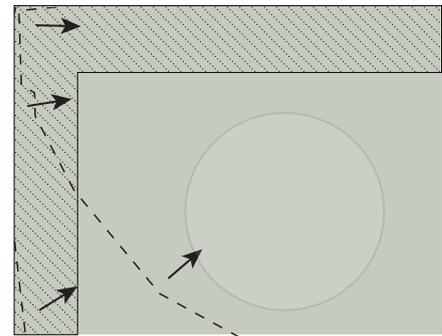
Too large for the scope of this project)

A Social housing development is currently underway across the road (Arlington 2). The influx of new residents may be interested in having the space developed as a community space. They are also likely to have a vested interest in the site. As the new development overlooks the park it should feel safer, more like a community space.

+	S.W.O.T Analysis
STRENGTHS	<ul style="list-style-type: none"> + Central location. + There is a wide range of well-established plants on site. Council is open to removing any that would improve the amenity of the site if needed. + Some existing plants with Rongoā properties. + Sunny, open space. Good morning sun. Sheltered from prevailing wind by neighbouring apartment blocks
WEAKNESSES	<ul style="list-style-type: none"> + Off the main route. Despite its central location it does not get a huge amount of foot traffic (more of a through route). + Trees along the verge stop people from looking in which encourages negative behaviour. + Small site therefore if people are encouraged to harvest material it could severely damage the plant.
OPPORTUNITIES	<ul style="list-style-type: none"> + Underutilised and underdeveloped space. + Social housing development is currently underway across the road (Arlington 2). The influx of new residents may be interested in having the space developed as a community space. + Best site of the three to have as an ‘interactive’ design due to its location and underutilised potential
THREATS	<ul style="list-style-type: none"> + Care needs to be exercised when encouraging people to harvest so that continuing health is ensured for both people and plants as the site is small. + Existing unsavoury behaviour + Potential for the abuse or misinterpretation of Indigenous knowledge if the subject is not communicated effectively.

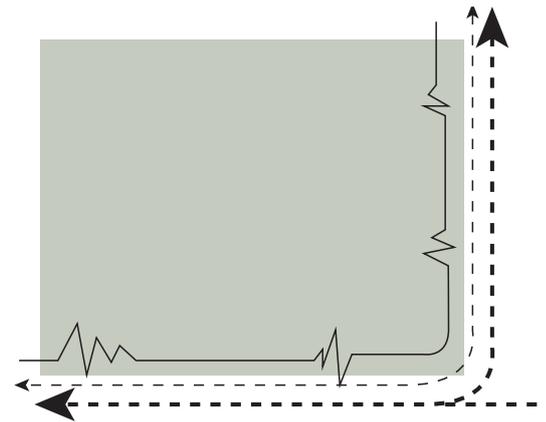
INTERNAL ANALYSIS:

SUN MAPPING, DRAINAGE:



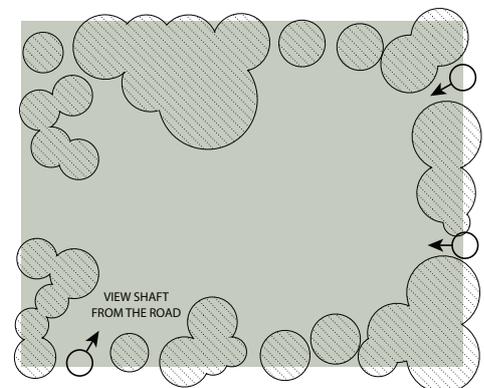
- SHADED AREA
- DRAINAGE
- CONTOURS: 1M
- SUNNIEST AREA

NOISE, PEDESTRIAN AND VEHICULAR FLOWS:



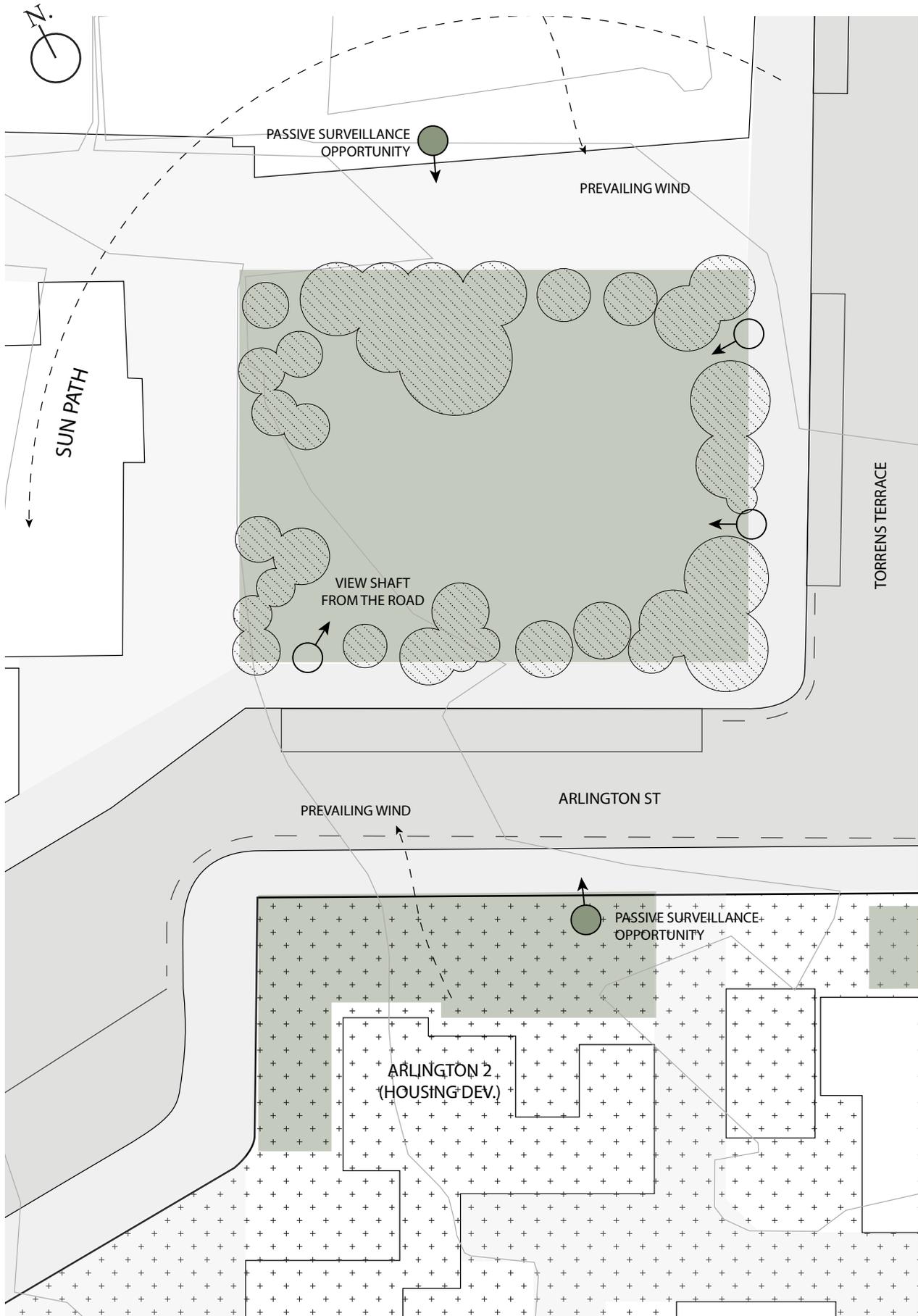
- NOISE
- PEDESTRIAN FLOW
- VEHICULAR FLOW

VEGETATION AND SIGHTLINES:

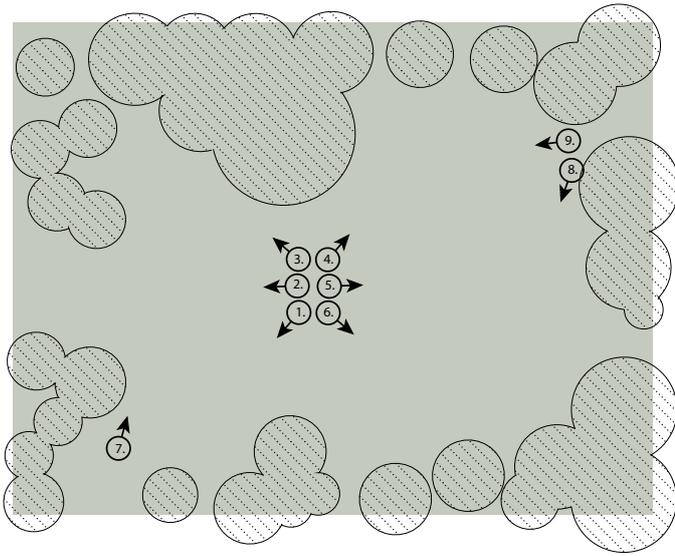


- EXISTING VEGETATION
- VIEW SHAFT FROM THE ROAD

ANALYSIS OF EXTERNAL FACTORS ON SITE:



VISUAL ANALYSIS/ SIGHTLINES:



SITE PHOTOS

ANALYSIS

Currently the interior of the park is screened from street view by planting. Opening up the edge to passive surveillance the park can be developed as a community space for all to enjoy.

A number of plants have been marked for removal (refer to image, left). Most of these plants are exotic or natives that have suffered damage.

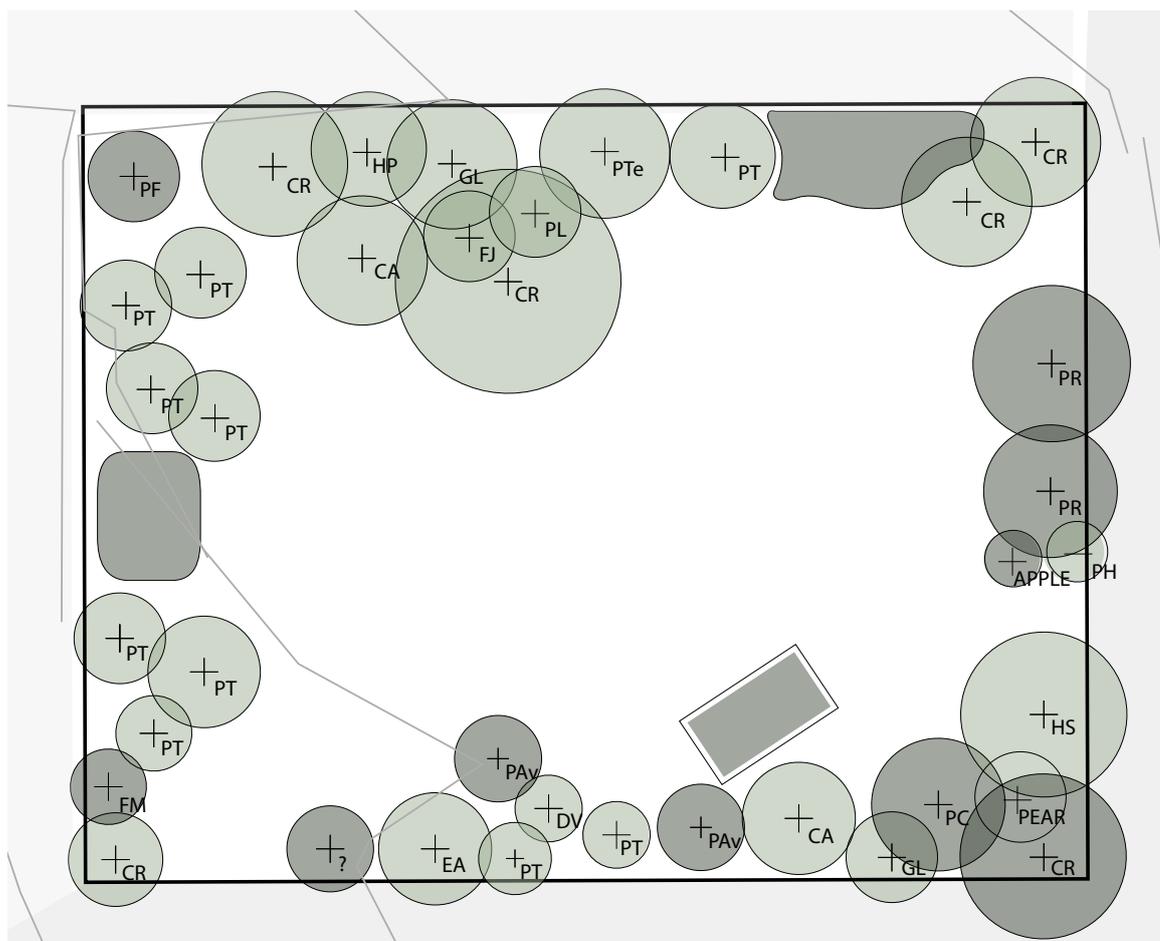
The remaining plants growing along the road front will need to have their lower branches pruned to open up sightlines through to the road, thereby increasing passive surveillance within the site.





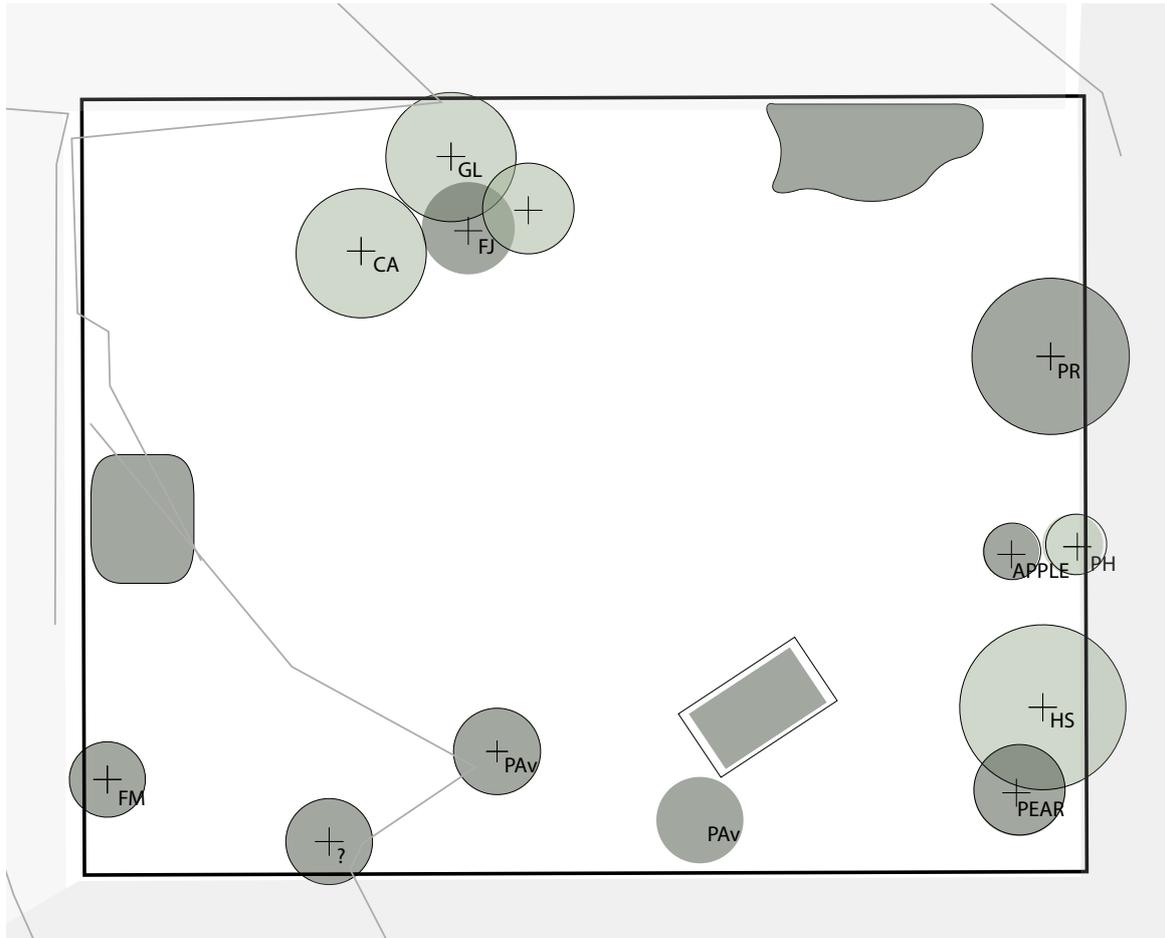
ANALYSIS OF VEGETATION:

EXISTING PLANTS ON SITE:



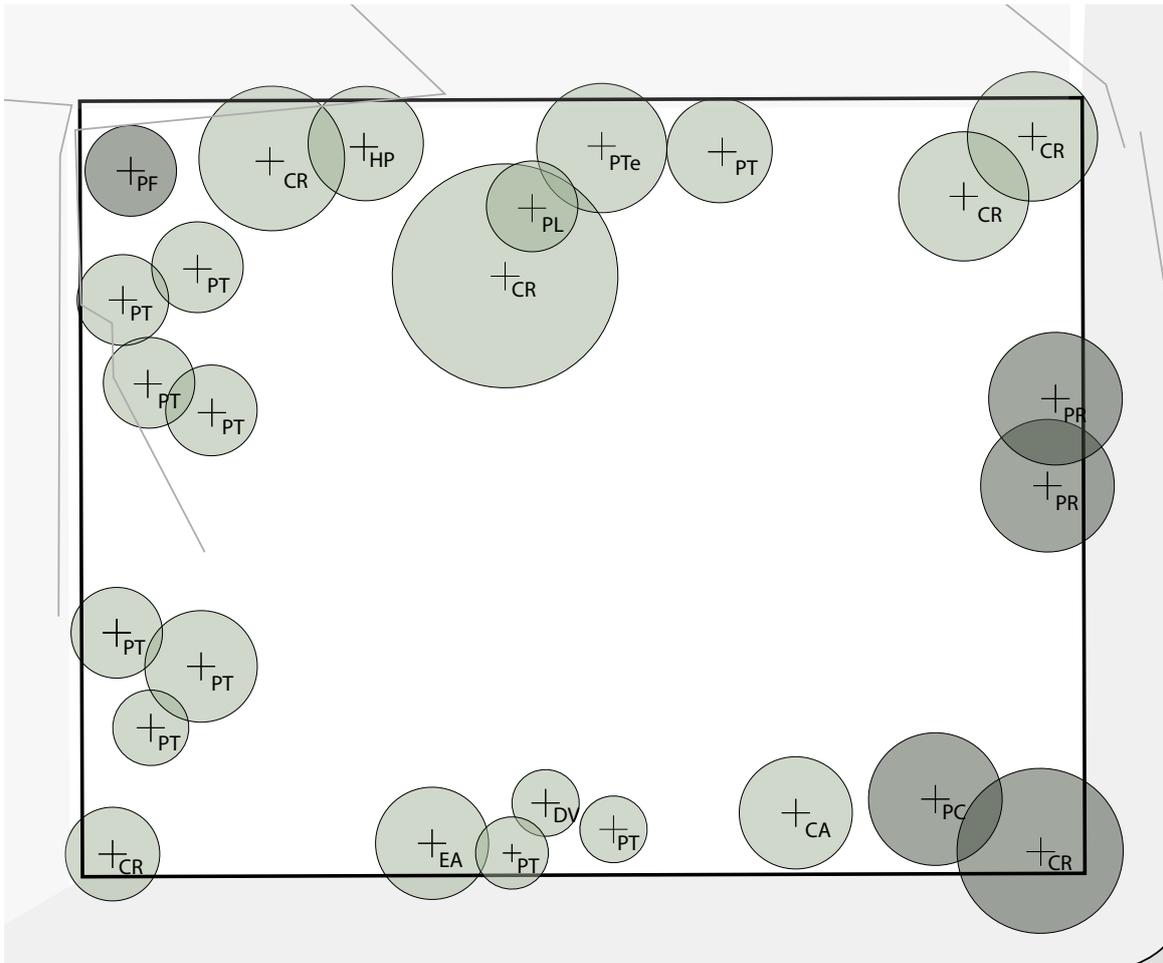
Symbol	Latin Name	Common name
CA	<i>Cordyline australis</i>	tī kōuka
CR	<i>Coprosma repens</i>	karamū
CR	<i>Coprosma robusta</i>	taupata
DV	<i>Dodonaea viscosa</i>	akeake
EA	<i>Entelea arborescens</i>	whau
FJ	<i>Fatsia japonica</i>	Japanese aralia
GL	<i>Griselinia lucida</i>	akapuka
HP	<i>Hoheria populnea</i>	lacebark, houhere
HS	<i>Hebe stricta</i> var. <i>atkinsonii</i>	koromiko
PA	<i>Pseudopanax arboreus</i>	five finger, tauparapara
PAV	<i>Prunus avium</i>	flowering cherry tree
PF	<i>Prumnopitys ferruginea</i>	miro
PH	<i>Pelargonium</i> × <i>hortorum</i>	pink geranium
PR	<i>Pittosporum ralphii</i>	karo
PT	<i>Phormium tenax</i>	harekeke
PTe	<i>Pittosporum tenuifolium</i>	kōhuhu
SM	<i>Sophora microphylla</i>	kowhai

PLANTS FOR REMOVAL:



Symbol	Latin Name	Common name
CA	<i>Cordyline australis</i>	tī kōuka
FJ	<i>Fatsia japonica</i>	Japanese aralia
GL	<i>Griselinia lucida</i>	akapuka
HS	<i>Hebe stricta</i> var. <i>atkinsonii</i>	koromiko
PAV	<i>Prunus avium</i>	cherry tree
PH	<i>Pelargonium × hortorum</i>	pink geranium
PR	<i>Pittosporum ralphii</i>	karo

PLANTS TO REMAIN:



Symbol	Latin Name	Common name
CA	<i>Cordyline australis</i>	tī kōuka
CR	<i>Coprosma repens</i>	karamū
DV	<i>Dodonaea viscosa</i>	akeake
EA	<i>Entelea arborescens</i>	whau
HP	<i>Hoheria populnea</i>	lacebark, houhere
HS	<i>Hebe stricta var. atkinsonii</i>	koromiko
PA	<i>Pseudopanax arboreus</i>	five finger
PF	<i>Prumnopitys ferruginea</i>	miro
PR	<i>Pittosporum ralphii</i>	karo
PT	<i>Phormium tenax</i>	harekeke
PTe	<i>Pittosporum tenuifolium</i>	kōhūhū
SM	<i>Sophora microphylla</i>	kōwhai

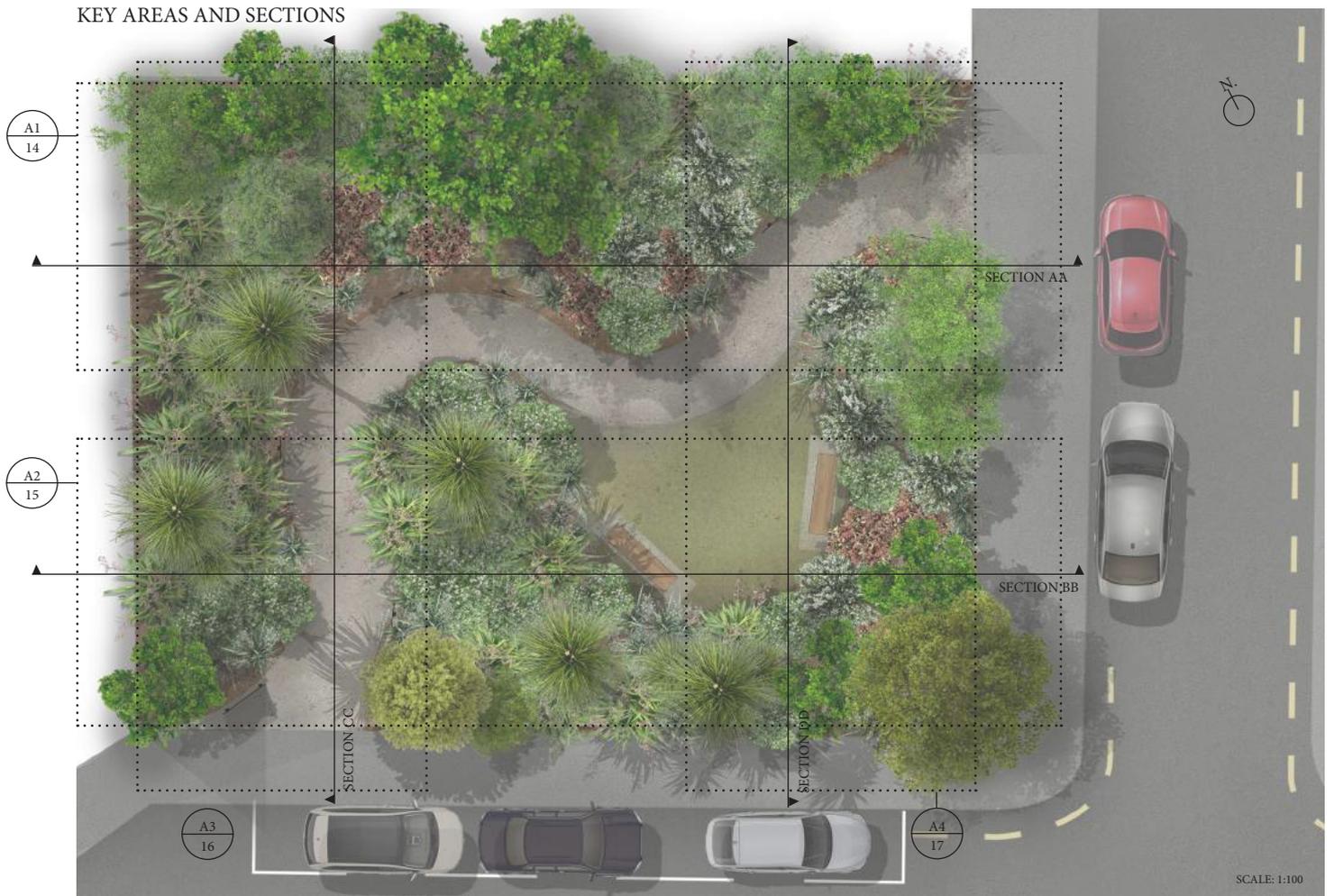
DESIGN INTENTIONS:

The following points unpack the designers intentions behind the development of the site, and the aspects that have been carefully considered in order to maximise the health and wellbeing of Wellingtons residents through its construction.

- + Engage the public with information about Aotearoa, New Zealand's cultural heritage.
- + Provide enough information to spark the visitors interest but not too much so that they rush into using the plants without engaging with the history/background of Rākau Rongoā
- + Restore the biophysical qualities of the urban environment by 'greening' an underutilised inner city park using native species.
- + Reconnect people with nature: immersion within a biophilic space helps balance mental and spiritual wellbeing.
- + Developing the park as a community space aids social relations through a sense of community (consider safety: how do people engage with plants, passive surveillance)
- + Create a space that could be used for Rākau Rongoā workshops in the future.
- + Allow for phasing: potential for future development to include a tea house/garden and pa harakeke.



MASTERPLAN:





A1
13









SECTION DD

A4
13



SECTION DD

PLANTING PLAN:

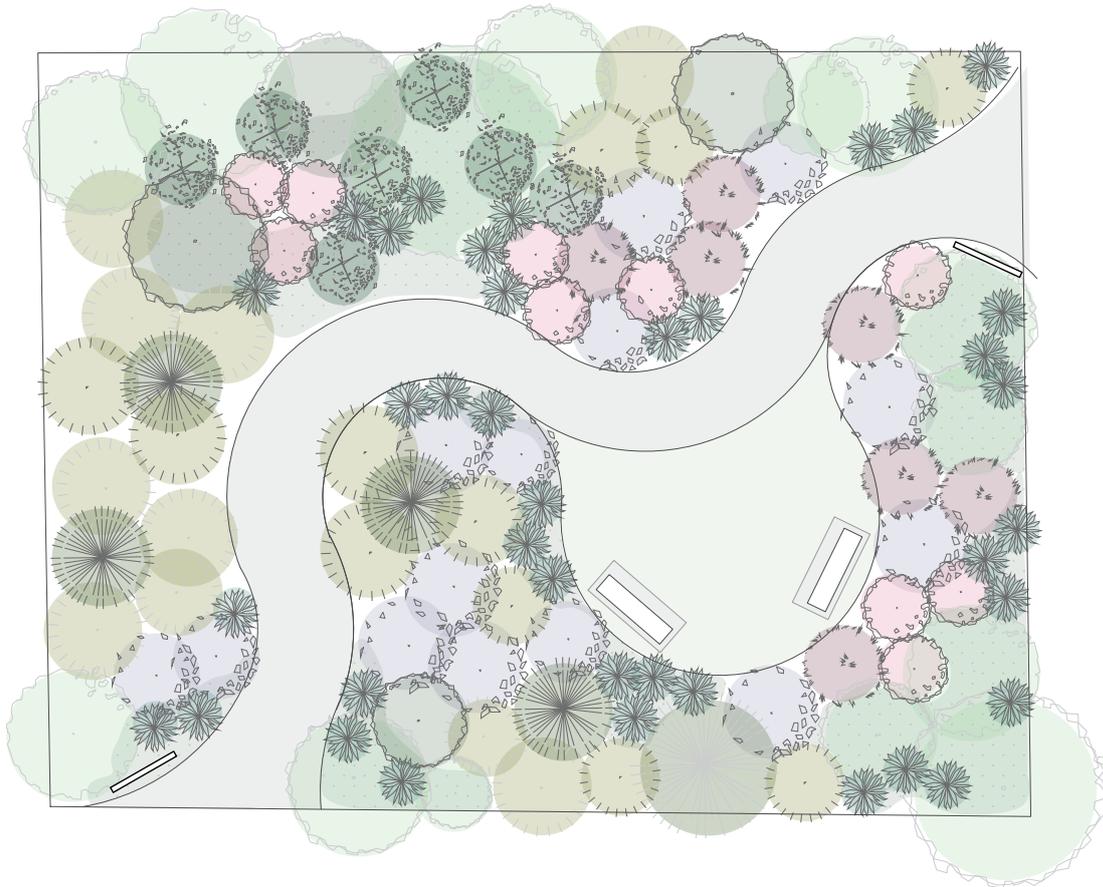
Care was given when selecting plants with medicinal properties that any plants used in the garden are unlikely poison people even if used inappropriately. The signs advise people not to harvest on site and do not provide instructions or 'recipes' as to how to use the plant. However, there is the chance that the signs could be disregarded and as the site is unsupervised, there is no way of ensuring that people will not harvest on site.

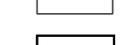
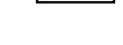
By choosing plants that are non-toxic there is less risk that people will harm themselves or other, reducing the council's liability.

These plants chosen have been selected as good introductory species for those wanting to learn more about Rākau Rongoā. Their forms are distinctive so they cannot be mistaken for one another, and they provide remedies for common ailments. These are plants that will also survive well within Wellington's climate, to ensure longevity in growth.

For the scope of this project the core plants that have been used are: harakeke, manuka, karamu, kawakawa and koromiko. Other plants such as horopito, rengarenga and te kouka (cabbage tree) have Rongoā properties, but their use is supplementary to the core plants.

All information provided about the plants uses and application has been supplied by local Rongoā practitioner, Arihia Latham. The plants that were selected for this site were based off her recommendations.



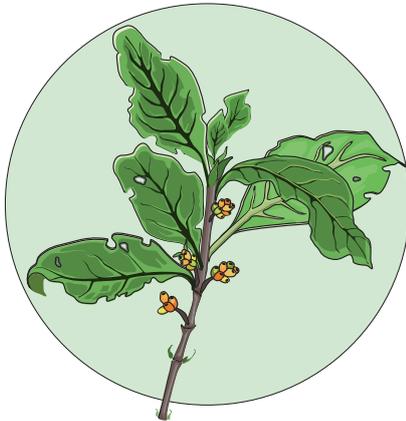
- | | | | | | |
|---|---|--|--|--|---|
|  |  | Koromiko
<i>Hebe salicifolia</i> |  |  | Houhere
<i>Hoheria populnea</i> |
|  |  | Manuka
<i>Leptospermum scoparium</i> |  |  | Cabbage Tree
<i>Cordyline australis</i> |
|  |  | Horopito
<i>Pseudowintera colorata</i> |  |  | Rengarenga
<i>Arthropodium cirratum</i> |
|  |  | Harakeke
<i>Phormium tenax</i> |  |  | Panakenake
<i>Pratia angulata</i> |
|  |  | Kawakawa
<i>Piper excelsum</i> |  | GRASS | |
|  |  | Taupata
<i>Coprosma repens</i> |  | CRUSHED SHELL PATH | |
| | | |  | SEAT | |
| | | |  | SIGN | |



HARAKEKE

Phormium tenax

- The thick fluid from the base of the leaves can be used for burns, rashes, stings.
- The roots are a heavy purgative and should not be consumed
- The leaves are commonly used for weaving or threshed and the fibres used for rope



KARAMU

Coprosma robusta

- Taken as a tea to treat kidney issues
- Also helps with stomach and bladder complaints
- Easing pain in bones and muscles externally



KOROMIKO

Veronica stricta

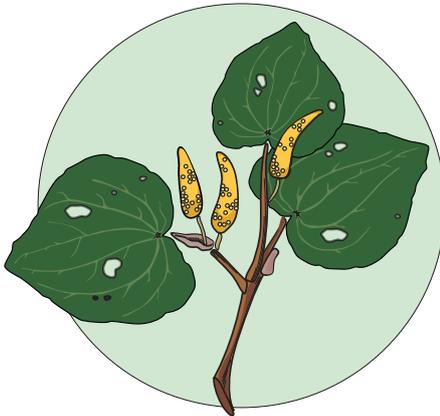
- Relieves pain and spasms of the digestive system (bitter)
- Leaves chewed for diarrhoea and dysentery
* do not take if constipated
- Can stop bleeding
- Drinking the liquid of boiled leaves can restore an appetite



MANUKA

Leptospermum scoparium

- Leaves can be boiled and drunk as a tea to relieve fever and colds and coughs
- Inner bark can be boiled and gargled for a sore throat
- Antibacterial
- Boil the leaves and bark for pain relief



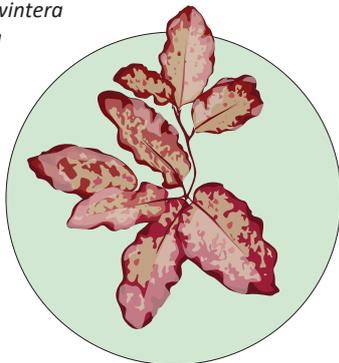
KAWAKAWA

Piper excelsum

- Good for digestion and circulation
- Relieves cold and flu symptoms
- Eases toothache pain and sore throats
- Nature's plaster: stops bleeding, eases pain, is an antibacterial. Apply to bee-stings and grazes

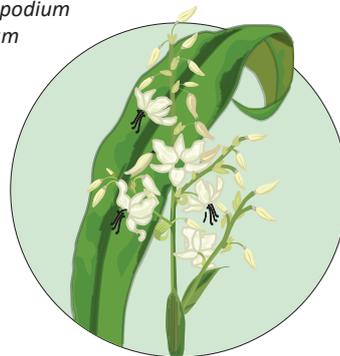
HOROPITO:

Pseudowintera colorata



RENGARENGA:

Arthropodium cirratum



SIGNAGE:

The fundamentals of Rākau Rongoā cannot be properly understood without first learning about the origins of Rongoā Māori and the impacts that have shaped the way it is practiced today. The designers concern is that, without a proper understanding of Rongoā, people who attempt to use the plants as herbal medicine without understanding the proper tikanga, could unwittingly create harm – both to others and to the environment.

To convey all of this information on a sign and communicate the importance of emotional and spiritual nuances effectively is a difficult task. It is likely that information would be misinterpreted or misused despite best intentions.

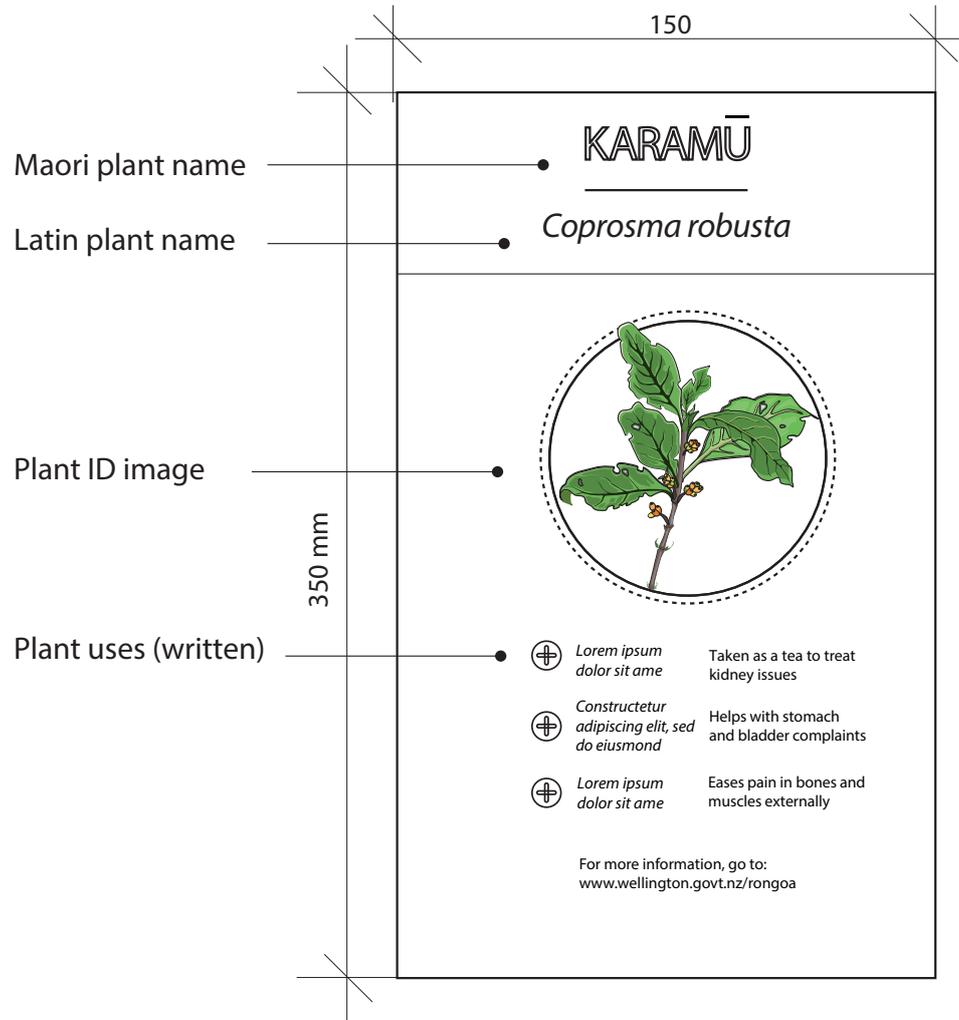
Therefore this project attempts to navigate these issues by limiting the amount of information on the signs. The signs are designed to be visually appealing and engaging, in a way that sparks interest in the casual passer-by.

They communicate the qualities of the plants, but intentionally leave out which parts to harvest or how their application. By providing only small amount of information, the hope is that those who are interested will seek out further information and those who aren't won't try and skim through the information to find out how to use the plant, and then apply it without proper protocol or tikanga being adhered to. A link on the sign will direct those interested to learn more to the Council website page, deferring the content to another platform in which will be able to expand on the content more fully.



LAYOUT OPTIONS:

OPTION 1:



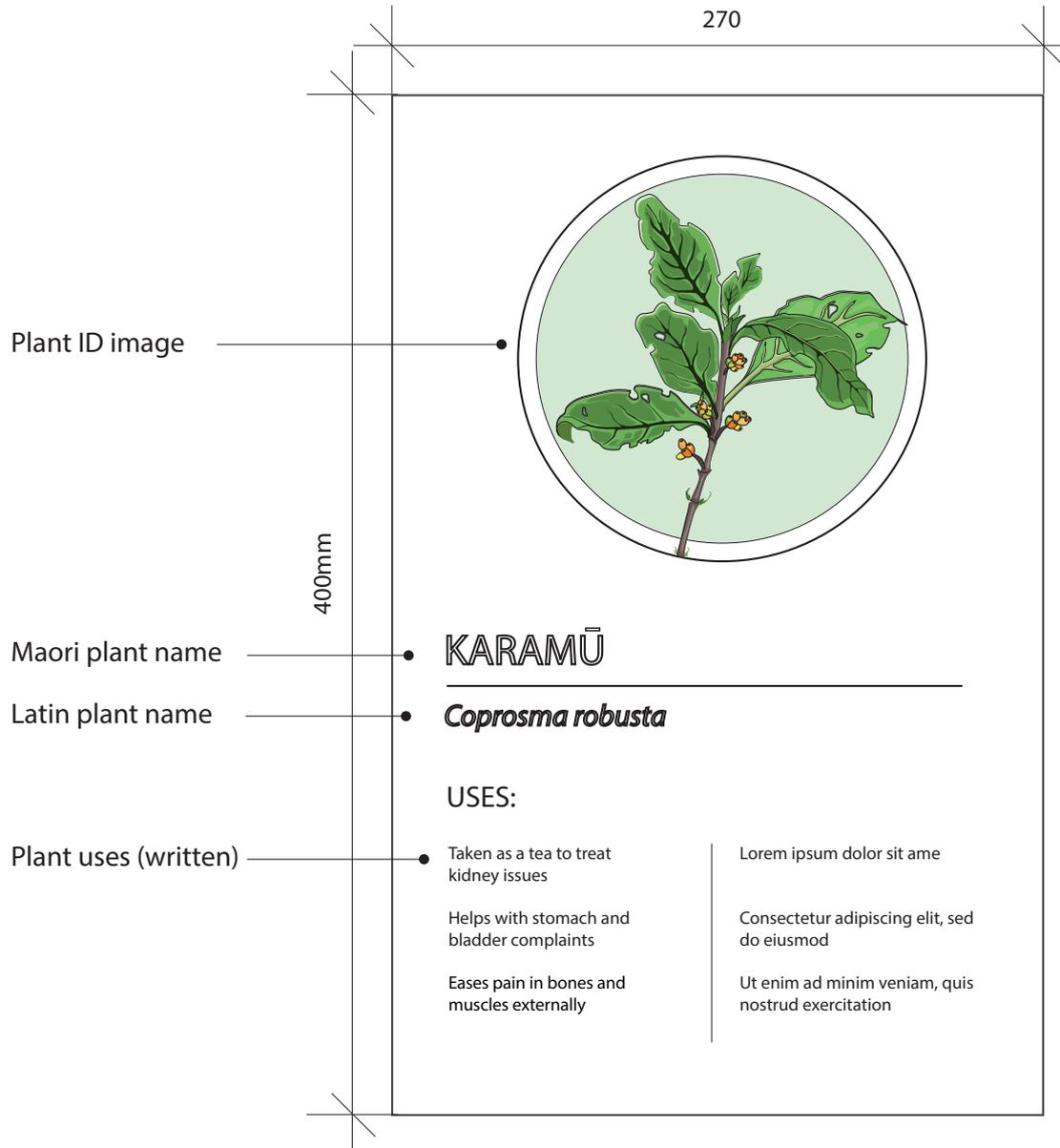
*Information displayed should communicate facts about the plants but not be too specific about how to harvest or use the plants. The intention behind this is that people will be engaged and spark interest but will need to seek more information about the plant in order to apply the remedy. This way they won't be able to bypass tikanga.

OPTION 2:

<p><u>KARAMŪ</u></p> <p><i>Coprosma robusta</i></p>		<p>Maori plant name</p> <p>Latin plant name</p>
	<p>+</p> <p>Taken as a tea to treat kidney issues <i>Lorem ipsum dolor sit ame</i></p> <p>+</p> <p>Helps with stomach and bladder complaints <i>Consectetur adipiscing elit, sed do eiusmod</i></p> <p>+</p> <p>Eases pain in bones and muscles externally <i>Lorem ipsum dolor sit ame</i></p>	<p>Plant uses (written)</p> <p>350 mm</p>
<p>For more information, go to: www.wellington.govt.nz/rongoa</p>		<p>Plant ID image</p> <p>Council information</p>

350 mm

OPTION 1:

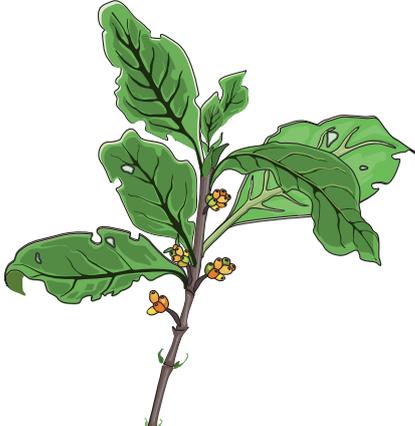


*Lorem ipsum has been used here as a temporary text block- this is where the Te Reo Māori translation will be.

OPTION 2:

KARAMŪ

Coprosma robusta



400 mm

300

Maori plant name

Latin plant name

Plant ID image

Plant uses symbols

Plant uses (written)

Council information

Taken as a tea to treat kidney issues

Helps with stomach and bladder complaints

Eases pain in bones and muscles externally

>Lorem ipsum dolor sit ame

Constructetur adipiscing elit, sed do eiusmod

Ut enim ad minim veniam, quis nostrud exercitation

For more information, go to: www.wellington.govt.nz/rongoa

SIGN MEASUREMENT OPTIONS

OPTION 1:

OPTION 2:

SCALE: 270X400

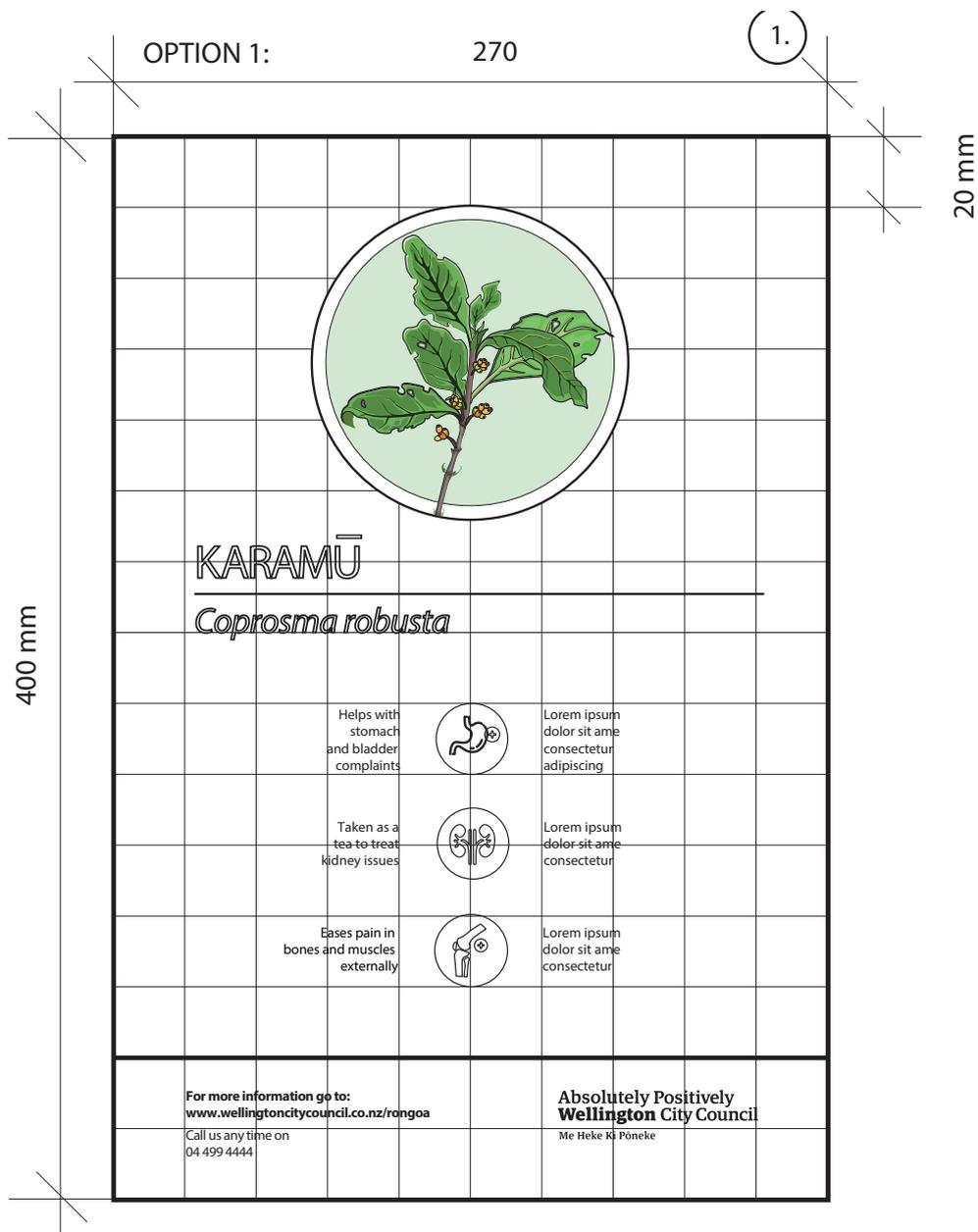
SCALE: 400X600

HEADING TEXT: 55PT, 40PT

HEADING TEXT: 75PT, 55PT

BODY TEXT: 16PT

BODY TEXT: 18PT



OPTION 2:

400 mm

2.

40 mm

600 mm

KARAMŪ

Coprosma robusta



Helps with stomach and bladder complaints

—
Lorem ipsum dolor sit ame consectetur adipiscing



Taken as a tea to treat kidney issues

—
Lorem ipsum dolor sit ame consectetur



Eases pain in bones and muscles externally

—
Lorem ipsum dolor sit ame consectetur

For more information go to:
www.wellingtoncitycouncil.co.nz/rongoa

Call us any time on
04 499 4444

Absolutely Positively
Wellington City Council

Me Heke Ki Pōneke

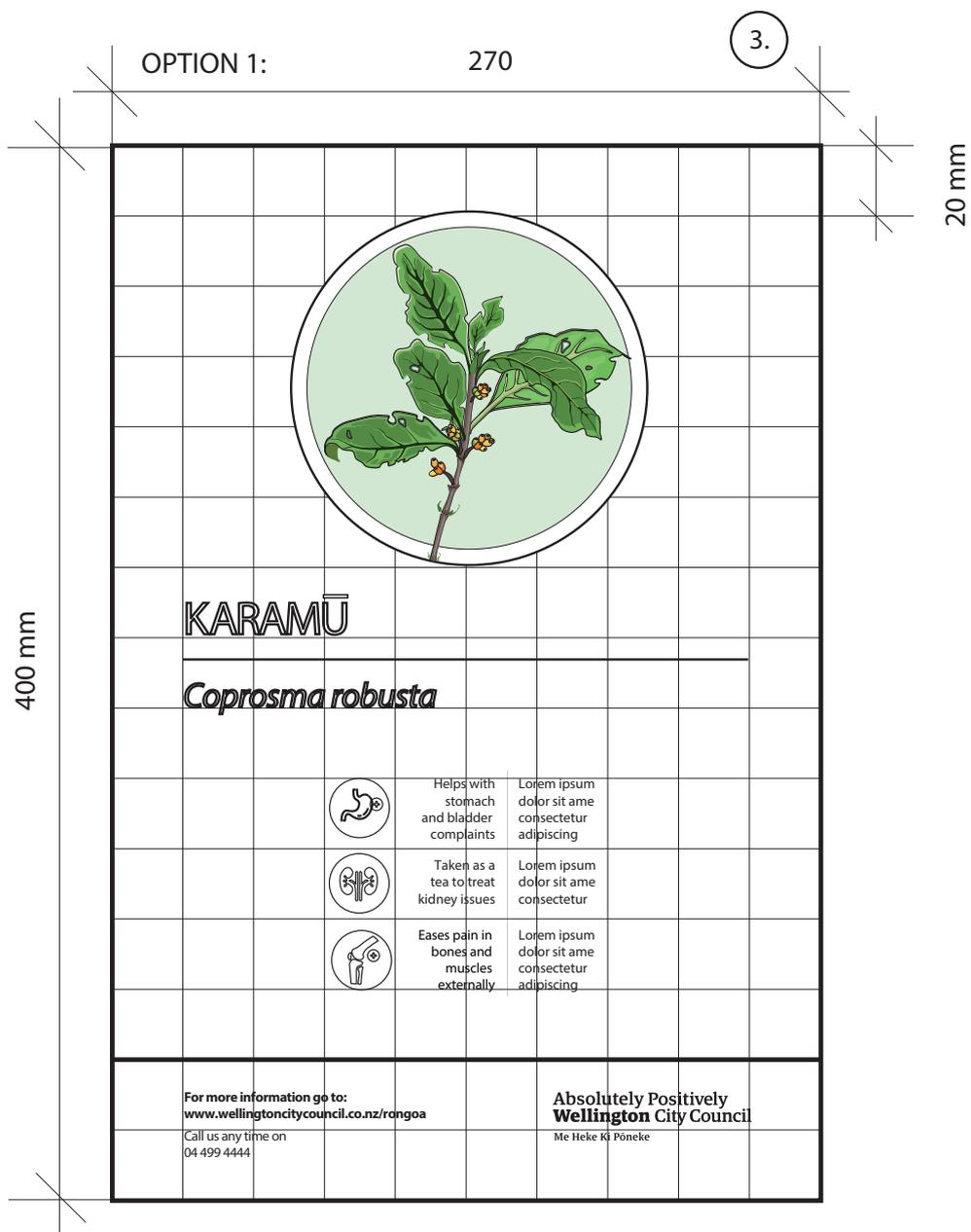
SIGN LAYOUT OPTIONS

1. OPTION 1-

3. OPTION 3-

2. OPTION 2-

4. OPTION 4-



OPTION 2:

400 mm

4.

40 mm

600 mm



KARAMŪ

Coprosma robusta



Helps with stomach and bladder complaints

Lorem ipsum dolor sit ame consectetur adipiscing



Taken as a tea to treat kidney issues

Lorem ipsum dolor sit ame consectetur



Eases pain in bones and muscles externally

Lorem ipsum dolor sit ame consectetur adipiscing

For more information go to:
www.wellingtoncitycouncil.co.nz/rongoa

Call us any time on
04 499 4444

**Absolutely Positively
Wellington City Council**

Me Heke Ki Pōneke

MATERIAL TESTING:

OPTIONS

Graphic printed directly on powdercoated aluminium base

COST:

5 @ 400mm x 600mm and 1 @ 800mm x 600mm: \$800.56

*Price excludes installation (and GST)

CONSTRAINTS/ISSUES:

- The most expensive option

BENEFITS:

- Long lasting
- Really sharp, clean aesthetic. Thin material looks polished.
- Visually dynamic. Coloured graphic of the plant is eye catching on a dark background and the clear colour blocking reduces the visual noise when reading the sign.
- Long lasting material. Vandalism resistant.

*Lorem ipsum has been used here as a temporary text block- this is where the Te Reo Māori translation will be.



KARAMŪ

Coprosma robusta

USES:

Taken as a tea to treat kidney issues

Helps with stomach and bladder complaints

Eases pain in bones and muscles externally

laboris nisi ut aliquip ex ea commodo consequat.

Duis aute irure dolor in reprehenderit in voluptate

Velit esse cillum dolore Eu fugiat nulla pariatur



KAWAKAWA

Phormium tenax

USES:

Boosts immune system

Relieves cold and flu symptoms

Relieves toothache pain and sore throats

Nature's plaster. Antiseptic. Apply to bee-stings and grazes

Eases digestive pain/ indigestion

Lorem ipsum dolor sit amet

Consectetur adipiscing elit, sed

Do eiusmod tempor incididunt ut labore

Et dolore magna aliqua. Ut enim ad minim veniam

Quis nostrud exercitation ullamco



HARAKEKE

Phormium tenax

USES:

The thick fluid from the base of the leaves can be used for burns, rashes and stings.

The roots are a heavy purgative and should not be consumed

The leaves are commonly used for weaving or threshed and the fibres used for rope

aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt.

Neque porro quisquam est, qui dolorem ipsum

Quia dolor sit amet, consectetur, adipisci veli



MĀNUKA

Leptospermum scoparium

USES:

Can relieve fever, colds and coughs

Aids sore throats

Antibacterial

Excepteur sint occaecat cupidatat non proident, sunt in culpa qui

Officia deserunt mollit anim id est laborum

Sed ut perspiciatis unde omni



KOROMIKO

Veronica stricta

USES:

Can restore appetite

Use to relieve diarrhoea and dysentery

*Do not take if constipated

Relieves pain and spasms of the digestive system

Can stop bleeding

iste natus error sit voluptatem

Laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto

beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem

Quia voluptas sit aspernatur

Printed directly onto a plywood base, sealed.

COST:

5 @ 400mm x 600mm and 1 @ 800mm x 600mm: \$761.27

*Price excludes installation (and GST)

CONSTRAINTS/ISSUES:

- The material is less durable than aluminium or ACM
- Susceptible to vandalism and harder to restore it once it has been tagged or carved into
- The wood needs to be sealed to slow the weathering process, however once the wood is treated it is no longer a 'sustainable' option as it cannot be recycled and burning it would release toxic fumes.

BENEFITS:

- Natural material looks 'softer' than the other options.
- Plywood is a cheap material base
- Coloured image 'pops' and the text looks clean so it looks polished, however the wood still has a soft finish.

<p>KARAMŪ</p> <hr/> <p><i>Coprosma robusta</i></p>	
	<ul style="list-style-type: none"> Taken as a tea to treat kidney issues Helps with stomach and bladder complaints Eases pain in bones and muscles externally
<p>For more information, go to: wellington.govt.nz/rongoa</p>	

HARAKEKE

Phormium tenax



For more information, go to:
wellington.govt.nz/rongoa

- + Can be used to heal burns, rashes and stings
- + Roots are a heavy purgative and should not be consumed
- + Leaves commonly used for weaving

KAWAKAWA

Piper excelsum



For more information, go to:
wellington.govt.nz/rongoa

- + Boosts immune system
- + Relieves cold and flu symptoms
- + Natures plaster. Antiseptic. Apply to bee-stings and grazes
- + Relieves toothache pain and sore throats
- + Eases digestive pain / indigestion

MANUKĀ

Leptospermum scoparium



For more information, go to:
wellington.govt.nz/rongoa

- + Can relieve fever, colds and coughs
- + Antibacterial
- + Aids sore throats

KOROMIKO

Veronica stricta



For more information, go to:
wellington.govt.nz/rongoa

- + Can restore an appetite
- + Used to relieve diarrhoea and dysentery *Do not take if constipated
- + Relieves pain and spasms of the digestive system
- + Can stop bleeding

ACM: Aluminium Composite Material
(Two thin coil-coated aluminium sheets
bonded to a non aluminium core)

COST:

5 @ 400mm x 600mm and 1 @ 800mm
x 600mm: \$389.44

*Price excludes installation (and GST)

CONSTRAINTS/ISSUES:

- Unsustainable, creates a large carbon footprint. Council is trying to move away from using this material as a result.
- The finish can sometimes look a little 'tacky'.

BENEFITS:

- Very cheap to fabricate
- Long lasting
- The material resists vandalism. It is hard to carve into and the glossy finish acts like a whiteboard so it is easy to clean off tagging.
- Fine text and lines are easily legible.

KARAMŪ

Coprosma robusta



Taken as a tea
to treat kidney
issues



Helps with stomach
and bladder
complaints

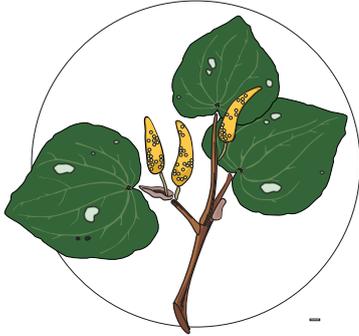


Eases pain in
bones and muscles
externally

For more information, go to: wellington.govt.nz/rongoa

KAWAKAWA

Piper excelsum



Boosts immune system



Relieves cold and flu symptoms



Relieves toothache pain and sore throats



Nature's plaster. Antiseptic. Apply to bee-stings and grazes



Eases digestive pain / indigestion

For more information, go to: wellington.govt.nz/rongoa

HARAKEKE

Phormium tenax



Can be used to heal burns, rashes and stings



Roots are a heavy purgative and should not be consumed

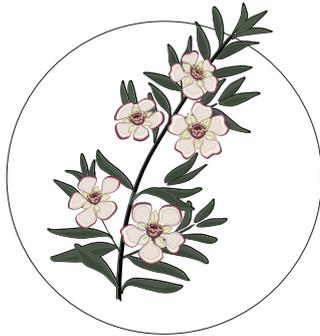


Leaves commonly used for weaving

For more information, go to: wellington.govt.nz/rongoa

MĀNUKA

Leptospermum scoparium



Antibacterial



Can relieve fever, colds and coughs



Aids sore throats

For more information, go to: wellington.govt.nz/rongoa

KOROMIKO

Veronica stricta



Can restore appetite



Used to relieve diarrhoea and dysentery
*Do not take if constipated



Relieves pain and spasms of the digestive system



Can stop bleeding

For more information, go to: wellington.govt.nz/rongoa

Laser cut/ CNC routed
information on
Plywood sealed with laminate

COST: *Concept signage does not offer this service. To have this fabricated council would have to look for another supplier.

CONSTRAINTS/ISSUES:

- The material is less durable than aluminium or ACM
- Susceptible to vandalism and harder to restore it once it has been tagged or carved into
- The wood needs to be sealed to slow the weathering process, however once the wood is treated it is no longer a 'sustainable' option as it cannot be recycled and burning it would release toxic fumes.
- The text can be quite hard to read when it is laser cut, even when the font is large.
- No colour, may be harder to identify the plant.

BENEFITS:

- Natural material looks softer than the other options.
- Plywood is the cheapest material base
- Laser cut wireframe looks clean and sharp.

KARAMŪ

Coprosma robusta

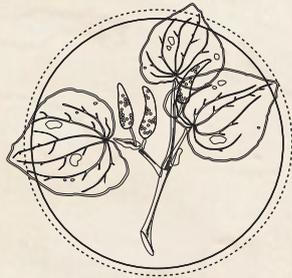


- ⊕ Taken as a tea to treat kidney issues
- ⊕ Helps with stomach and bladder complaints
- ⊕ Eases pain in bones and muscles externally

For more information, go to:
wellington.govt.nz/rongoa

KAWAKAWA

Piper excelsum



- ⊕ Boosts immune system
- ⊕ Relieves cold and flu symptoms
- ⊕ Natures plaster. Antiseptic. Apply to bee-stings and grazes
- ⊕ Relieves toothache pain and sore throats
- ⊕ Eases digestive pain / indigestion

For more information, go to:
wellington.govt.nz/rongoa

HARAKEKE

Phormium tenax



- ⊕ Can be used to heal burns, rashes and stings
- ⊕ Roots are a heavy purgative and should not be consumed
- ⊕ Leaves commonly used for weaving

For more information, go to:
wellington.govt.nz/rongoa

MĀNUKA

Leptospermum scoparium



- ⊕ Can relieve fever, colds and coughs
- ⊕ Antibacterial
- ⊕ Aids sore throats

For more information, go to:
wellington.govt.nz/rongoa

KOROMIKO

Veronica Stricta



- ⊕ Can restore appetite
- ⊕ Use to relieve diarrhoea and dysentery *Do not take if constipated
- ⊕ Relieves pain and spasms of the digestive system
- ⊕ Can stop bleeding

For more information, go to:
wellington.govt.nz/rongoa

DEVELOPED DESIGNS:

Following the Wellington City Council signage guidelines



GRID LAYOUT AND SIGN MEASUREMENT OPTIONS

OPTION 1:

SCALE: 400X600

HEADING TEXT: 130PT

SUB HEADING TEXT: 55PT

BODY TEXT: 45PT 40PT

OPTION 2:

SCALE: 800X600

HEADING TEXT: 130PT

SUB HEADING TEXT: 55PT

BODY TEXT: 45PT 40PT

OPTION 2:

800 mm

40 mm

600 mm

RAKĀU RONGOĀ GARDEN

RAKĀU RONGOĀ IS THE PRACTICE OF TRADITIONAL
MĀORI HERBAL MEDICINE.
THIS GARDEN IS DEDICATED TO ITS PRACTICE.

YOU ARE NOW ENTERING A
LEARNING SPACE.

*LOREM IPSUM DOLOR SIT AMET, CONSECTETUR
ADIPISCING ELIT,
SED DO EIUSMOD TEMPOR INCIDIDUNT UT LABORE.*

PLEASE:



NO FOOD OR DRINK.
LOREM IPSUM DOLOR SIT AMET



DON'T PICK THE PLANTS, TAKE A PHOTO INSTEAD.
*LOREM IPSUM DOLOR SIT AMET, CONSECTETUR
ADIPISCING ELIT*



BE RESPECTFUL.
LOREM IPSUM

For more information go to:
www.wellingtoncitycouncil.co.nz/rongoa
Call us any time on
04 499 4444

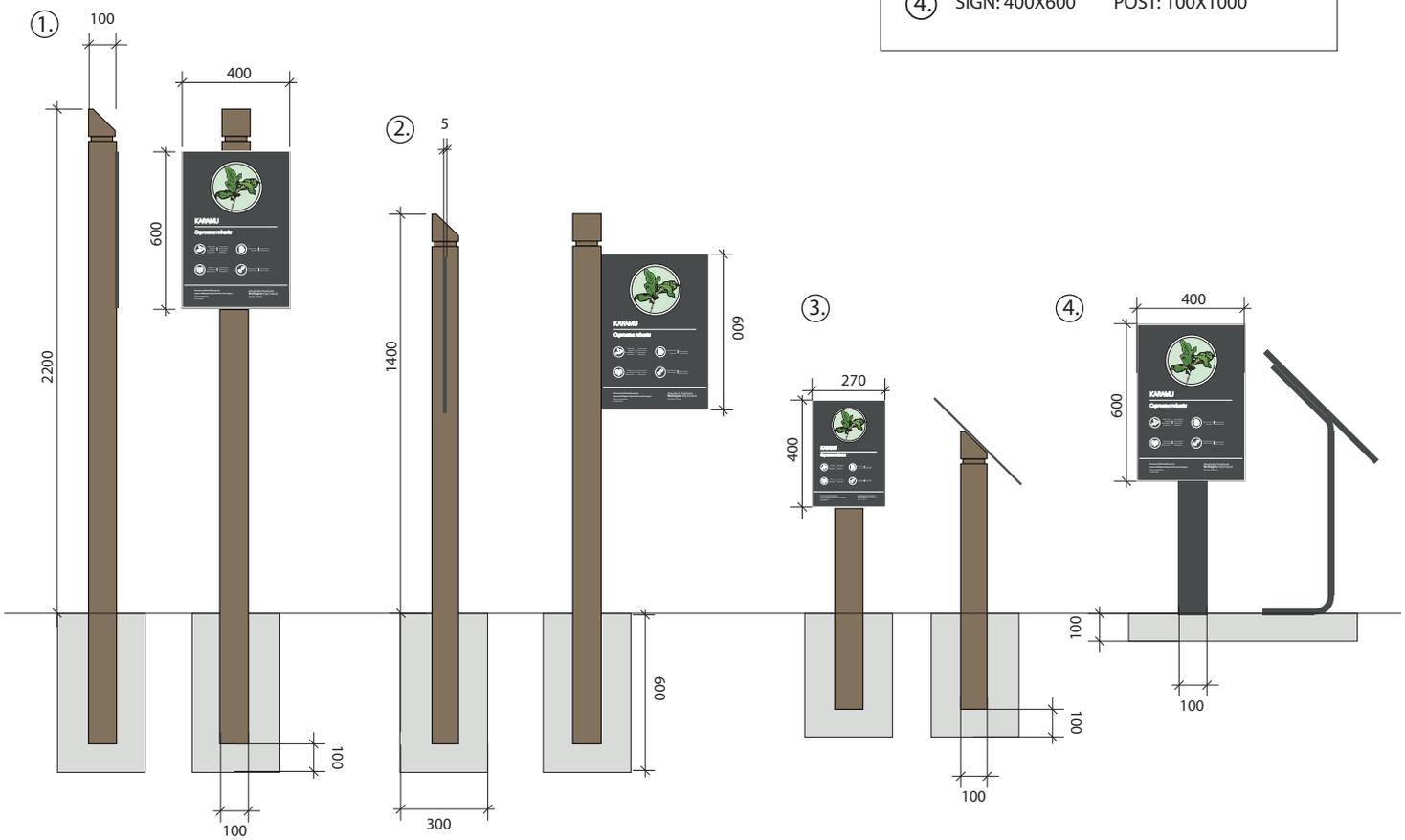
**Absolutely Positively
Wellington City Council**
Me Heke Ki Pōneke

SIGNPOST FABRICATION:

PLANT ID SIGNS

SIGN OPTIONS:

- ① SIGN: 400X600 POST: 100X2200
- ② SIGN: 400X600 POST: 100X1400
- ③ SIGN: 270X400 POST: 100X800
- ④ SIGN: 400X600 POST: 100X1000

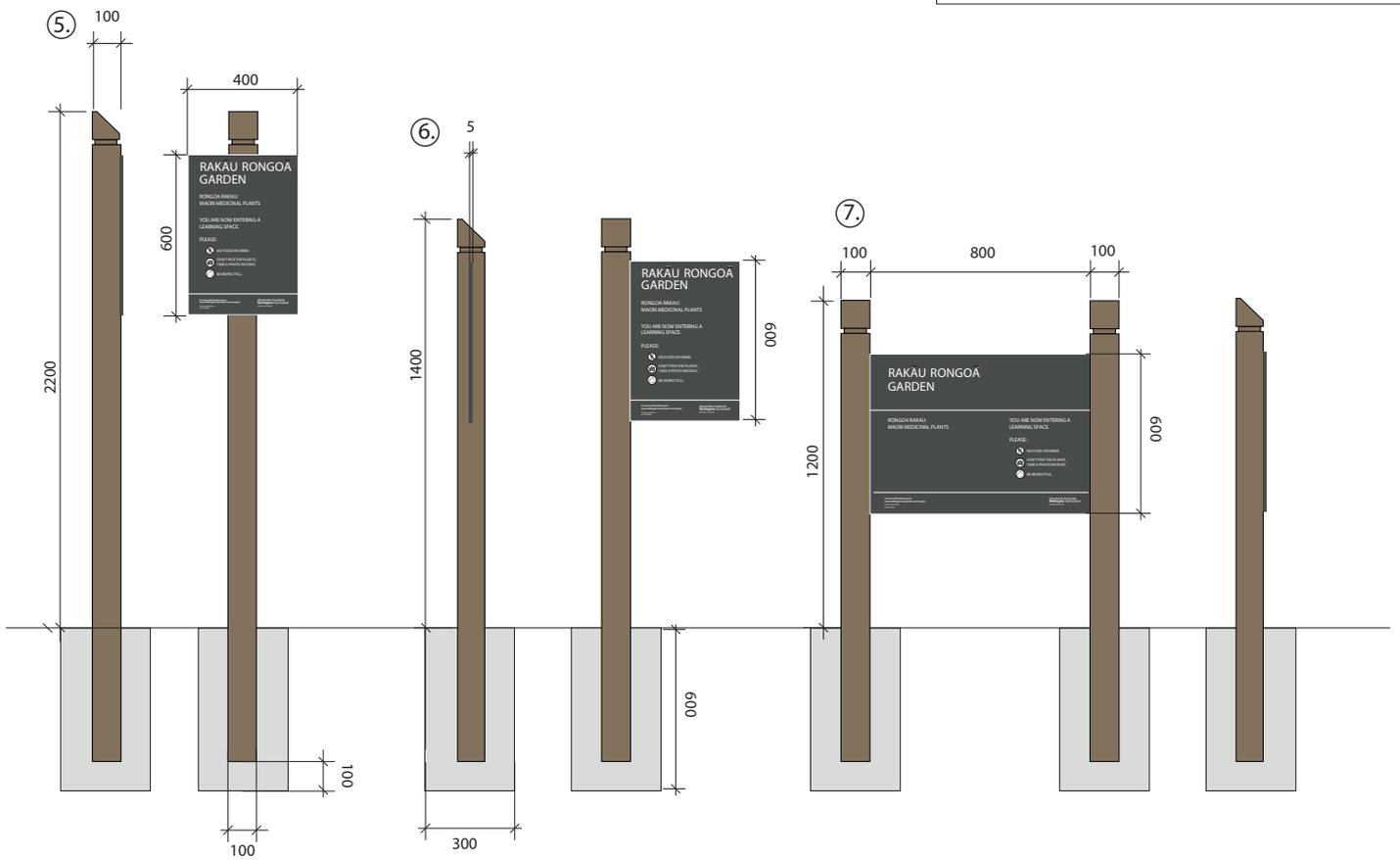


QUOTE PRICES FOR THE FABRICATION OF THESE SIGNS STILL TO COME

PARK ENTRANCE SIGNS

SIGN OPTIONS:

- ⑤. SIGN: 400X600 POST: 100X2200
- ⑥. SIGN: 400X600 POST: 100X1400
- ⑦. SIGN: 800X600 POST: 100X1200



DIGITAL INFORMATION:

Currently the design proposal only extends to the use of audio clips on the council website, however other technological systems could be used to further enhance the space. Things such as apps, Q.R. codes, beacons or speakers built directly into the signage could be used to break down the interface between the person receiving information and the difficulty of accessing it. This makes it far more likely for people to engage with the material in further depth. It also makes it more accessible for those without smartphones (often children or older demographics). These strategies could be potentially be incorporated going forward.



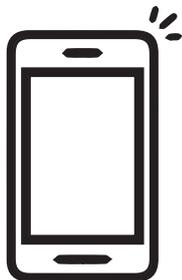
FOR FUTURE DEVELOPMENT:

These additional options could be incorporated to convey supplementary information:



Beacon device:

This hardware transmitter could be built into the fabrication of the plant I.D. signs. Its function is to broadcast its location and alert portable electronic devices (cell phones) of its location. This could then be used to convey information about each plant to visitors.



App:

The technology could be built into an app rather than a website, thus making the interface more directly accessible than the user having to type in a website address.



QR code:

A QR code could be located on each sign. Although, this is something that would have to be built into the apps system as Council has found in the past that people are unlikely to have downloaded a general QR code scanner and therefore less likely to read the QR code.

These are options that could be considered going forward but are beyond the scope of this project.



PAKAU BONGGA
GARDEN

PAKAU BONGGA
GARDEN

PAKAU BONGGA
GARDEN

PAKAU BONGGA
GARDEN

WEBSITE:

The website further expands on the history and uses of each plant. This will be communicated through text and an audio bite recorded by local Rongoā Practitioner – Arihia Latham. This audio bite should credit Arihia directly. One way of doing this could be to have a link (embedded) to a sound cloud bite on a platform run by Arihia so that the information she is communicating remains her intellectual property.

A design mock-up of what this might look like is located on the following page. This has been modelled off Wellington City Council's existing webpage – backyard biodiversity, which communicates ways in which residents can improve diversity in their backyards, by way of close up zooms which focus in on different areas within a wider image.

This design follows a similar strategy with zooms singling out each individual plant within the site for photo identification alongside the illustrated image of the plant for clarity.



Rākau Rongoā Garden

Find out more about Māori medicinal plants



Context:

Traditional Māori healing, or Rongoā Māori, is a practice embedded in the cultural history of Māori. A holistic practice, it encompasses physical, social and spiritual methodologies. Treatments comprise of a range of different modalities including: massage (mirimiri), prayer (karakia) and plant-based medicines (Rākau Rongoā).



(scroll for more)



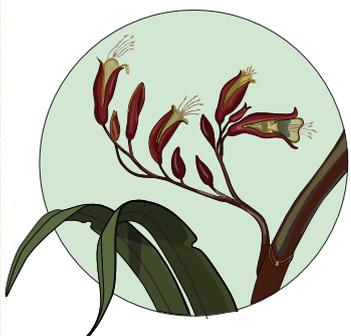
KARAMU

Coprosma robusta

- Taken as a tea to treat kidney issues
- Also helps with stomach and bladder complaints
- Eases pain in bones and muscles externally



Karamu - Arihia Latham



HARAKEKE

Phormium tenax

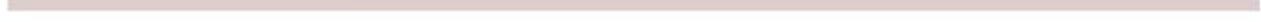
- The thick fluid from the base of the leaves can be used for burns, rashes, stings.
- The roots are a heavy purgative and should not be consumed
- The leaves are commonly used for weaving or threshed and the fibres used for rope



KOROMIKO

Veronica stricta

- Relieves pain and spasms of the digestive system (bitter)
- Leaves chewed for diarrhoea and dysentery. * do not take if constipated
- Can stop bleeding
- Drinking the liquid of boiled leaves can restore an appetite





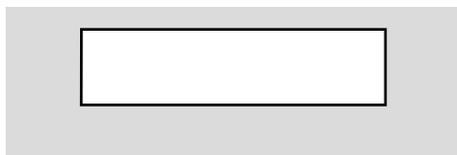


APPENDIX:

PLANT:	LATIN NAME	MAORI NAME	EXISTING	QUANTITY
AC	<i>Arthropodium cirratum</i>	rengarenga	-	38
CA	<i>Cordyline australis</i>	cabbage tree	1	4
CM	<i>Myrsine australis</i>	mapou	5	-
CR	<i>Coprosma repens</i>	karamu	1	-
DV	<i>Dodonaea viscosa</i>	akeake	1	-
EA	<i>Entelea arborescens</i>	whau	1	-
HS	<i>Hebe stricta</i>	koromiko	-	14
LA	<i>Lobelia angulata</i>	panakenake	-	-
LS	<i>Leptospermum scoparium</i>	manuka	-	7
PC	<i>Pseudowintera colorata</i>	horopito	-	10
PCr	<i>Pittosporum crassifolium</i>	karo	2	-
PE	<i>Piper excelsum</i>	kawakawa	-	7
PF	<i>Prumnopitys ferruginea</i>	miro	1	-
PT	<i>Phormium tenax</i>	harakeke	10	11

SEATING DESIGN:

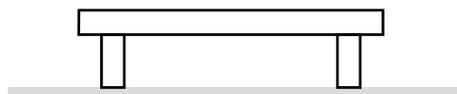
TOP VIEW:



TIMBER TOP SLAB:
2000mm x 500mm x 150mm

LEGS:
150mm x 300mm x 350mm

ELEVATION



CRUSHED SHELL BASE:
3000mm x 1000mm x 50mm

ELEVATION



TREATED TIMBER

CRUSHED SHELL BASE

SEATING- 1:50

REFERENCES:

Alcorn, J.B., 1993. Indigenous peoples and conservation. *Conservation Biology*, 7 (2), 424–426.

Ahuriri-Driscoll, A., et al. (2008). The future of rongoā Māori wellbeing and sustainability : a summary / Annabel Ahuriri-Driscoll ... [et al.]. Wellington, N.Z.], Wellington, N.Z. : Institute of Environmental Science & Research.

Ahuriri-Driscoll, A. H., M.; Baker, V.; Hepi, M.; Mika, C.; Tiakiwai, S.J. (2008). Service in practice, practice in service, negotiating a path to the future. *Te Tatau Pounamu: The Greenstone Door: Traditional knowledge and gateways to balanced relationships*,. Auckland, New Zealand, University of Canterbury. Health Sciences Centre: 122-130.

Aichele, P. E. (2016). *Medicinal Use of Native Plant Life in New Zealand: Analyzing Rongoa Maori and Western Science Interactions*, University of Minnesota Digital Conservancy.

Baker, A. and Marques, B., 2017. Out of place: rewriting the signatures of a landscape. *Spaces and flows: an international journal of urban and extraurban studies*, 8 (4), 1–12.

Berkes, F., 1993. Traditional ecological knowledge in perspective. In: J.T. Inglis, ed. *Traditional ecological knowledge: concepts and cases*. Ottawa, ON: International Program on Traditional Ecological Knowledge, Canadian Museum of Nature, 1–9.

Berkes, F., 2004. Rethinking community-based conservation. *Conservation biology*, 18 (3), 621–630.

Berkes, F., Colding, J., and Folke, C., 2000. Rediscovery of traditional ecological knowledge as adaptive management. *Ecological applications*, 10 (5), 1251–1262. *Intercultural Relations* 62: 93-102. 5(2).

Bennett, S. T. and J. H. Liu (2018). “Historical trajectories for reclaiming an indigenous identity in mental health interventions for Aotearoa/New Zealand—Māori values, biculturalism, and multiculturalism.” *International Journal of Intercultural Relations* 62: 93-102.

Boulton, A., et al. (2014). “Enacting Kaitiakitanga Challenges and Complexities in the Governance and Ownership of Rongoā Research Information.” *The International Indigenous Policy Journal* 5(2).

Brooker, S. G., et al. (1987). *New Zealand medicinal plants*, Reed.

Clarke, A. (2007). *The Great Sacred Forest of Tane*, Reed Books.

Dana, L. P. and W. Hipango Jr (2011). “Planting seeds of enterprise: Understanding Māori perspectives on the economic application of flora and fauna in Aotearoa (New Zealand).” *Journal of Enterprising Communities* 5(3): 199-211.

Doubleday, N.C., 1993. Finding common ground: natural law and collective wisdom. In: J.T. Inglis, ed. *Traditional ecological knowledge: concepts and cases*. Ottawa, ON: International Program on Traditional Ecological Knowledge, Canadian Museum of Nature, 41–53.

Dow, D. A. (2001). “‘Pruned of Its Dangers’: The Tohunga Suppression Act 1907.” *Health and History* 3(1): 41-64.

Durie, M. (2010). “Traditional healing and mental health: measuring the effectiveness of rongoa.” *Best Practice Journal*(28): 5-7.

Hackel, J.D., 1999. Community conservation
Freeman, M.R. and Carbyn, L.N., 1988.
Traditional knowledge and renewable
resource management in northern regions.
Edmonton, AL: International Union for the
Conservation of Nature, Commission on
Ecology and Boreal Institute for Northern
Studies.

Glenis Mark, K. C., Amohia Boulton (2017).
“Acknowledging the Māori cultural values
and beliefs embedded in rongoā Māori
healing.” *International Journal of Indigenous
Health* 121(1): 75 - 92.

and the future of Africa’s wildlife.
Conservation biology, 13 (4), 726–734.

Hatton, W., et al. (2017). *Mātauranga Maori
and Therapeutic Landscapes*.

Inglis, J.T., ed., 1993. *Traditional ecological
knowledge: concepts and cases*. Ottawa,
ON: International Program on Traditional
Ecological Knowledge, Canadian Museum
of Nature.

Johnson, M., ed., 1992. *LORE: capturing
traditional environmental knowledge*.
Ottawa, ON: International Development
Research Centre.

Johnson, M. (2012). *Adapting the Principles
of Te Rongoa into ecologically and culturally
sustainable farm practice*, University of
Otago.

Kerridge, D. (2012). “Introduction to
Rongoa Maori.” *Jornal of the New Zealand
Association of Medcinal Herbalists*: 22-30.

Macdonald, C. (1973). *Medicines of the
Maori : from their trees, shrubs, and other
plants, together with foods from the same
sources / [by] Christina Macdonald
illustrations by Lorna McArtney
introduction by Hammond Innes*. Auckland,
N.Z., Auckland, N.Z. : Collins.

Marques, B., Grabasch, G., and
McIntosh, J., 2018. *Fostering landscape
identity through participatory design
with indigenous cultures of Australia
and Aotearoa/New Zealand*. *Space and
culture*, 21 (4), 1–16.

Mark, G. (2012). *Rongoā Māori (traditional
Māori healing) through the eyes of Māori
healers : sharing the healing while keeping
the tapu : a thesis presented in partial
fulfilment of the requirements for the degree
of Doctor of Philosophy in Psychology at
Massey University, Albany, New Zealand,
Massey University. Doctor of Philosophy
(Ph.D.)*.

Mark, G. T. and A. C. Lyons (2010). *Maori
healers’ views on wellbeing: The importance
of mind, body, spirit, family and land*.

Marques, B., Grabasch, G., and
McIntosh, J., 2018. *Fostering landscape
identity through participatory design
with indigenous cultures of Australia
and Aotearoa/New Zealand*. *Space and
culture*, 21 (4), 1–16.

McGown, R. (2014). *Rongoa Maori: A
Practical Guide to Traditional Maori
Medicine*.

McIntosh, J., Marques, B., and Hatton, W.,
2018. *Indigenous cultural knowledge and
therapeutic landscape design*. In: I.S. Rosa,
et al., eds. *Handbook of research methods
and tools for assessing cultural landscape
adaptation*. Hershey, PA: IGI Global, 28–52.

Moller, H., et al., 2004. *Combining science
and traditional ecological knowledge:
monitoring populations for co-management*.
Ecology and society, 9 (3), 1-15.

- New Zealand. Ministry of, H., et al. (2008). *The future of rongoā Māori wellbeing and sustainability : a report for Te Kete Hauora, Ministry of Health / Institute of Environmental Science and Research, Te Whare Wānanga o Awanuiārangi, in partnership with Ngā Whakahaere o Te Iwi Māori. Wellbeing and sustainability. Auckland [N.Z.], Auckland N.Z. : Institute of Environmental Science & Research.*
- Paul, T. (1987). *Nga taonga o te ngahere = Treasures of the forest / by Tom Paul. Treasures of the forest. C. New Zealand. Department of. Wellington, N.Z., Wellington, N.Z. : Dept. of Conservation.*
- Riley, M. (2018). *Māori healing remedies = Rongoā Māori / Murdoch Riley photos by Phil Bendle, Paraparaumu, New Zealand : Viking Sevensseas NZ.*
- Smith, L. T. (1999). *Decolonizing Methodologies: Research and Indigenous Peoples, Zed Books.*
- Statistics New Zealand, 2017. *Urban and rural migration [online]. Stats NZ. Available from: http://archive.stats.govt.nz/browse_for_stats/population/Migration/internal-migration/urban-rural-migration.aspx [Accessed 09 November 2018].*
- Turner, N.J., Ignace, M.B., and Ignace, R., 2000. *Traditional ecological knowledge and wisdom of aboriginal peoples in British Columbia. Ecological applications, 10 (5), 1275–1287.*
- Vasil, R.K., 1988. *Biculturalism: reconciling Aotearoa with New Zealand. Wellington, N.Z.: Victoria University Press for the Institute of Policy Studies.*
- Zed Books, London.” *Social Policy Journal of New Zealand(17).*
- Williams, N.M. and Baines, G., eds., 1993. *Traditional ecological knowledge: wisdom for sustainable development. Canberra, Australia: Centre for Resource and Environmental Studies, Australian National University, Canberra.*
- Voyce, M. (1989). “Maori Healers in New Zealand: The Tohunga Suppression Act 1907.” *Oceania 60(2): 99-123.*
- Wilson, C. (2001). “Review: DECOLONIZING METHODOLOGIES: RESEARCH AND INDIGENOUS PEOPLES by Linda Tuhiwai Smith, 1999, Zed Books, London.” *Social Policy Journal of New Zealand(17).*