ST LEONARDS SOUTH LANDSCAPE MASTER PLAN REPORT

SEPTEMBER 2017

O C U L U S
landscape architecture // urban design

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01

INTRODUCTION

INTRODUCTION

State policies, specifically A Plan for Growing Sydney, identify the types of areas suitable for higher residential and employment densities as being those around transport and shopping hubs.

The St Leonards South Precinct has significant strategic potential in terms of increased densities and the application of sustainable planning principles of integrating residential and employment land use and transport, given its proximity to the St Leonards Strategic Centre and the rail-bus hub around St Leonards Station and the future Sydney Metro Crows Nest Station.

Inner city living provides access to the CBD and other centres, retail, jobs, education, health facilities and recreational activities. At the same time there is increased demand for parklands, child care centres and other infrastructure to provide services and amenity in response to population growth.

A St Leonards South Master Plan for this precinct was recently adopted by Council to provide for high residential density based on transit-orientated development principles. Urban planning, traffic and economic studies were undertaken to support the plan. The Master Plan envisaged the Landscape Master Plan to be an important feature of the community's amenity.

This Master Plan is to be read in conjunction with Lane Cove Council's:

- Local Environment Plan 2009
- Development Control Plan 2010

02

SITE ANALYSIS

SITE ANALYSIS

SITE CONTEXT

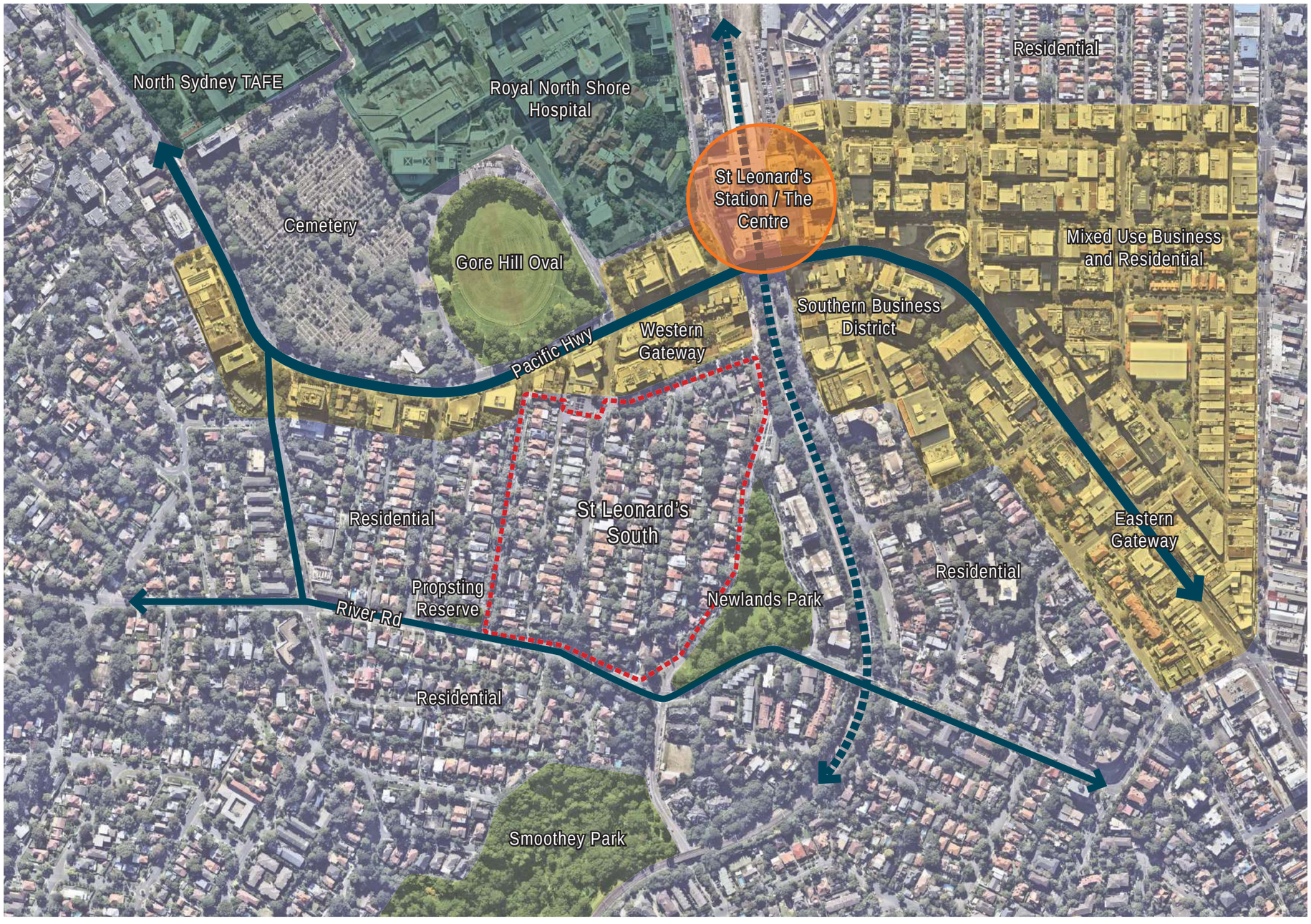
The precinct, comprising approximately 6 hectares (including local roads and development), is located immediately south-west of the St Leonards Strategic Centre as identified in A Plan for Growing Sydney, six kilometers from Sydney CBD and on a major rail-bus transport network. It is proposed to be rezoned from a low density residential precinct to R4 High Density Residential.

The existing housing precinct, proposed to be rezoned for high density apartment development, is bounded by:

- the rail line south of St Leonards Station
- Marshall Avenue
- the eastern side of Park Road and
- the northern side of River Road.

The following areas are not part of the precinct or of the Landscape Master Plan project, but form the surrounding visual and physical context:

- North (closest to the station): The north side of Marshall Avenue is currently under development for a 29-storey residential tower at the eastern end closest to the rail line, with townhouses and up to 7-storey flats westwards, on the northern side of Marshall Avenue. The scale of development is intended to act as a catalyst for the revitalization of the southern side of St Leonards.
- North-East: The proposed St Leonards Plaza is a substantial public domain project is to be constructed over the rail line between Pacific Highway, Canberra Avenue and Lithgow Street and ending at Marshall Avenue. The aim is to introduce a major and vibrant open space area for the St Leonards centre, and this 5,000m2 urban park/ plaza will be important in terms of its social and functional role, pedestrian and bus/ rail connectivity and other matters, in complementing the St Leonards South precinct's lower-key residential landscaping character.
- East: Duntroon Avenue comprises 5-7-storey apartments. Newlands Park is a valued park of 1 hectare on the eastern end of the precinct.
- South and west: Low density residential precincts extend south of River Road and west of Park Road. The retention of the substantial existing street trees will be important in softening the visual interface between the houses and new 2-8 storey apartments.



SITE ANALYSIS
OPEN SPACE CONTEXT

The local open space context includes the following areas of existing open space in close proximity to the site:

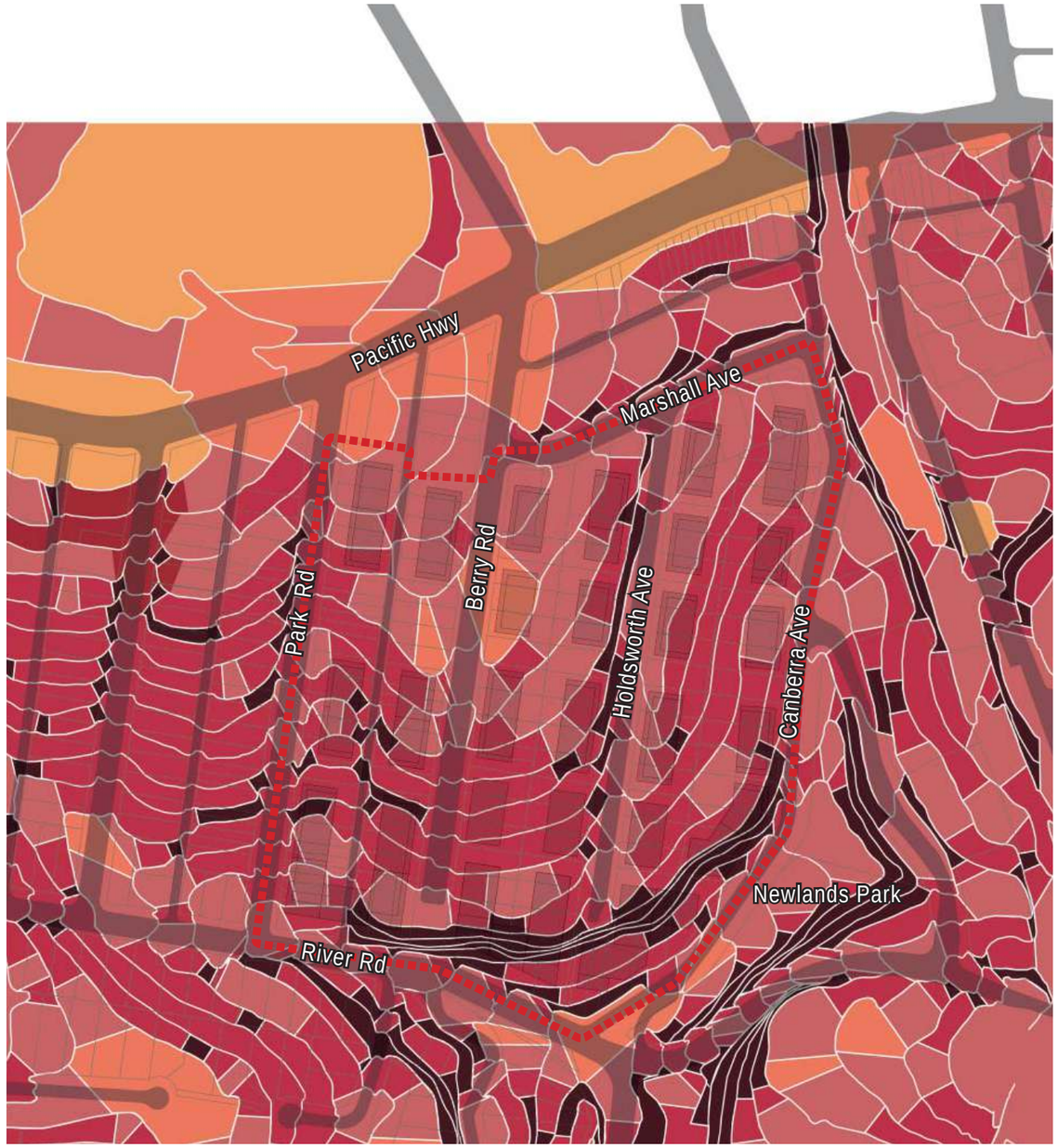
- Gore Hill Oval (3.3 Ha): a sports oval surrounded by mature trees which is subject to a potential upgrade by Willoughby Council including play area, half court, fitness equipment, picnic shelter and possible indoor multi-use sports facility;
- Newlands Park (1 Ha): including open lawn areas and a playground within a setting of mature trees;
- Propsting Reserve (0.09 Ha): a pocket park with small playground and mature trees; and
- Smoothey Park (2.1 Ha): a bushland reserve which includes a pedestrian pathway to Wollstonecraft Station.

These areas of existing open space need to be considered in developing the landscape master plan as their catchments overlap the site. It will be important that there is no duplication of recreational facilities with the proposed open space within the site. The landscape master plan may also include proposals to upgrade areas of existing open space if it is considered important to do so in order to meet the recreational needs of the existing and new population.

SITE ANALYSIS
TOPOGRAPHY

The existing site topography falls from the Pacific Highway north-south to River Road and also west-east to Canberra Avenue and Newlands Park. Grades are generally steep with the majority of the site being between 1:20 and 1:5 with localised slopes exceeding 1:5, particularly in the south part of the site.

The existing topography presents a number of issues in relation to the master plan including accessibility, solar access and how the built form responds to the often steep grade changes.



SITE ANALYSIS
EXISTING CHARACTER

The existing character of the site is largely determined by its topography, vegetation and built form. The significant grade changes both north-south and west-east provide for varied views, elevated in places. The existing tree cover, in both public and private ownerships, creates a green, leafy character. Street tree planting, where well established, tends to limit expansive views in some directions whilst focusing views down the streets.

The suburb generally has a leafy and relatively tranquil character and, although this will be changed by the proposed high rise redevelopment, it is hoped that some of the existing landscape quality will be retained, including significant tree planting along streets and in public and private open space.

The heritage properties on the west side of Park Road (Nos.3-7) contribute in an important way to the character of this street and it will be important that their heritage value is not compromised by the master plan.

SITE ANALYSIS

EXISTING TREES

- Mature street trees define the character of the area;
- Trees have been greatly impacted by overhead wires on one side of streets due to pruning;
- Generally native with a few exceptions dotted throughout such as Jacarandas and Crepe Myrtles;
- Holdsworthy Avenue has the strongest street tree character with generous verges and mature Brushbox tree planting creating a strong avenue;
- Park Road Melaleucas are well established, however in poor condition on the eastern side due to pruning to clear overhead wires;
- Berry Road has less well established street trees;
- Canberra Avenue has Eucalypt species on the west side but a number of these have failed or had to be removed;
- There are numerous existing trees in backyards of varying sizes/species including several large Eucalypt species;
- There are several significant trees located in front yards, including several along the south side of Marshall Avenue.

Existing trees:

- road reserve / public domain
- private property

0 20 40 60 80 100 200

NORTH

SITE ANALYSIS

TRANSPORT & LINKS

The site lies in close proximity to the rail-bus hub around St Leonards Station and the future Sydney Metro Crows Nest Station.

The steep topography rising from south to north makes pedestrian and cycle access to public transport centred around the station from the south part of the site more difficult.

The current access to the station from the south side of the Pacific Highway is also not ideal with a degree of back-tracking required due to the current location of signalised crossings in relation to the station and Canberra Avenue. The proposed public plaza over the railway lines south of the Pacific Highway may assist with access to the station by allowing pedestrians to cross over the railway from the west side and access the existing underpass on the east.

A number of cycle routes pass through or adjacent to the site (as identified in the Lane Cove Bike Plan 2013) including east-west along River Road, and north-south along Canberra Ave to connect with Herbert St or via Marshall Ave to connect to Reserve Rd.

The existing streets all typically have on-street car parking although this is somewhat limited by driveways.

Transport:

- Cycle route Lane Cove Bike Plan 2013
- Train line
- Train station
- On street parking
- Bus stops

0 20 40 60 80 100 200

NORTH

03

DESIGN PRINCIPLES

DESIGN PRINCIPLES

TOPOGRAPHY & LEVELS

Design Principles related to topography and levels include:

- Working with the existing topography and grades as far as possible to minimise earthworks and difficult interfaces or level transitions and retain existing trees;
- Creating reasonably level areas that are usable as communal open space;
- Minimising changes in level between apartments and adjacent open space or streets;
- Integrating stairs and ramps into the landscape design of open space to ensure the usability and amenity of public and private open space.

ACCESSIBILITY

Design Principles related to accessibility include:

- Making the primary east-west public link between Canberra Ave and Park Road accessible by means of 1/20 walkways in combination with public lifts located in the two community buildings;
- Ensuring that the local park located between Park Road and Berry Road has accessible routes through it;
- Making the north-south green links accessible between adjacent development sites as far as possible;
- Making the communal open space in the north-south green links accessible from the adjacent apartment buildings;
- Ensuring that the pocket parks are accessible from Marshall Avenue (where pocket parks are adjacent to Marshall Ave).

DESIGN PRINCIPLES

CONNECTIONS

Design Principles related to connections include:

- The creation of a continuous east-west public accessible pedestrian route from Canberra Ave to Park Road through the proposed local park;
- The creation of secondary publicly accessible east-west pedestrian links between Canberra Ave and Berry Road, and between Holdsworth Ave and Berry Road;
- The provision of a shared street between Berry Road and Park Road;
- The creation of continuous north-south accessible pedestrian routes along the green spines as far as possible for private residents use;
- The provision of private resident access between the two pocket parks on Marshall Ave and the north-south green links;
- Maintaining and upgrading the existing pedestrian connections from the south ends of Holdsworth Ave and Berry Road to River Road;
- Investigating the potential for a new signalised pedestrian crossing of River Road at the intersection with Canberra Ave and Russell St.

STREETS

Design Principles related to streets include:

- Maintaining and enhancing the current street network including footpath upgrades, street lighting improvements, the undergrounding of power lines, and additional/replacement street tree planting;
- The provision of two new low-speed, pedestrian-friendly shared streets between Berry Road and Park Road;
- Providing new pedestrian crossings at the point where the new east-west links cross each of the public streets, including pram ramps, carriageway narrowing, planted blisters, signage and lighting.

DESIGN PRINCIPLES

OPEN SPACE NETWORK

Design Principles related to open space include:

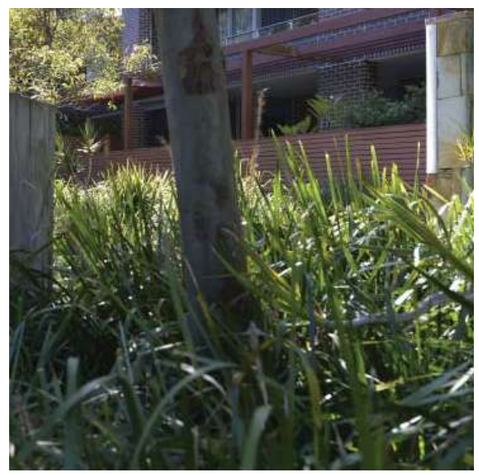
- Creating a new public local park located between Park Road and Berry Road;
- Creating two new publicly accessible pocket parks on the south side of Marshall Ave (on private land but publicly accessible);
- Enhancing and expanding the two existing pocket parks at the ends of Berry Road and Holdsworth Ave;
- The creation of a continuous east-west public accessible pedestrian route from Canberra Ave to Park Road through the proposed local park;
- The creation of secondary publicly accessible east-west pedestrian links between Canberra Ave and Berry Road, and between Holdsworth Ave and Berry Road;
- The provision of a shared street between Berry Road and Park Road;
- The creation of three continuous north-south green spines located to the rear of the current residential lots (on private land and for residents use only);
- Upgrading the existing open space areas of Newlands Park and Propsting Reserve in order to provide improved or additional recreational facilities for the precinct.

TREES & PLANTING

To be read in conjunction with Lane Cove Council's DCP, Part J - Landscaping.

Design Principles related to planting include:

- Maintaining and enhancing the existing green character of the precinct through planting, particularly of trees, in public and private open space;
- Retaining existing trees, especially within Green Spines and setback zones;
- Enhancing existing street tree planting, particularly where currently in poor condition (eg. east side of Park Road, Berry Road, west side of Canberra Ave) in association with the undergrounding of power lines;
- Providing tree and other planting in areas of public open space including the local park and along pedestrian links;
- Providing tree and other planting in areas of private open space including the north-south green links, pocket parks, and along pedestrian links;
- Providing significant areas of deep soil planting within private development sites;
- Providing planting within building setbacks particularly in front setbacks to the street;
- Providing planting for amenity and shade to any communal open space located on rooftops.



DESIGN PRINCIPLES

PUBLIC & PRIVATE SPACE

Design Principles related to public and private space include:

- Ensure there is clear definition and distinction between public and private open space;
- Ensure that transitions between public and private space are clear and legible;
- Provide adequate privacy to private apartments and terraces/ courtyards;
- The design of external spaces should follow CPTED principles;, including allowing adequate passive surveillance;
- External spaces should be adequately lit without being over-lit or resulting in light spill issues.

SETBACKS

Design Principles related to open setbacks include:

- Provide adequate front, side and rear setbacks to buildings with appropriate landscape treatments;
- Ensure that the landscape treatment of setbacks provides adequate privacy to private apartments and terraces/ courtyards;
- Use landscaped setbacks to provide amenity, privacy and accommodate level changes;
- Provide deep soil planting within landscaped setbacks;
- Landscaped setbacks should be used to help mitigate the impact of basement car park structures where these emerge above ground level.

DESIGN PRINCIPLES
SUSTAINABILITY

Design Principles related to sustainability include:

- Promoting active transport and physical activity through the provision of convenient and comfortable walking / cycling paths and attractive outdoor spaces with a range of recreation facilities;
- Incorporating water sensitive urban design measures such as rain gardens and bioretention swales within public and private open space;
- Explore opportunities to provide communal gardens as part of the communal open space;
- Explore opportunities to provide extensive or intensive green roofs on new buildings;
- Using materials with low VOC content, low embodied energy, high recycled content, the ability to be recycled, and are locally sourced wherever possible;
- Explore opportunities to retain existing features such as existing trees and sandstone walls;
- Ensuring all timber is either sourced from sustainable sources (with relevant certification) or is recycled;
- Using energy efficient lighting such as LED and solar powered.

04

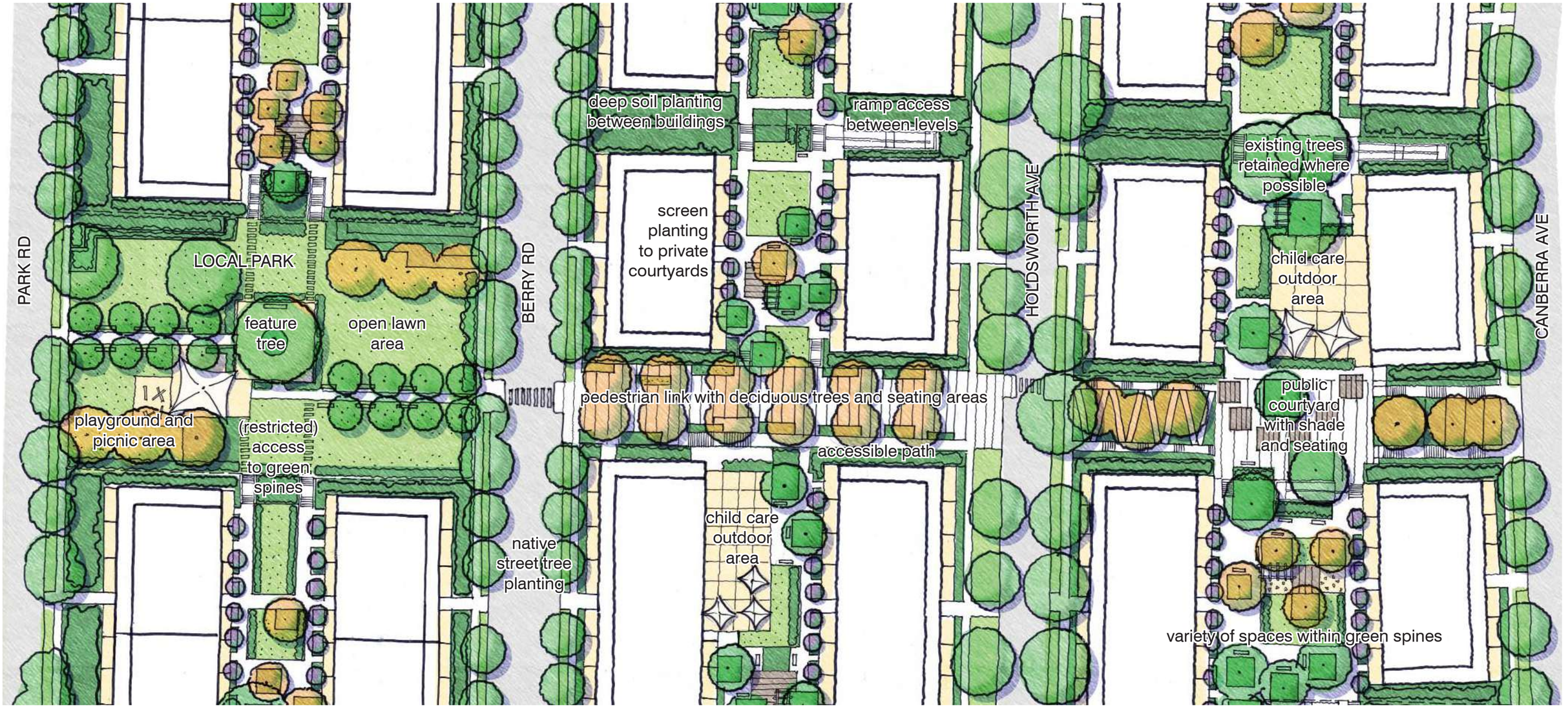
MASTERPLAN

MASTERPLAN

OPTION 1 - FORMAL / URBAN

- Formal character guides the arrangement of spaces for a structured and more ‘urban’ aesthetic
- A mixture of native and exotic vegetation creates a variety of colours and textures and highlights seasonal change
- The vegetation and more formal arrangement of spaces creates a distinct difference in character between the development (including shareways and pedestrian links) and the more naturalistic streets and parks of the surrounding areas.
- Deciduous trees allow for summer shading with solar access to open space during winter months
- Mix of high quality and robust materials suited to an urban environment - concrete, stone/precast unit paving, steel and select use of hardwood timber

OPTION 1 - FORMAL / URBAN



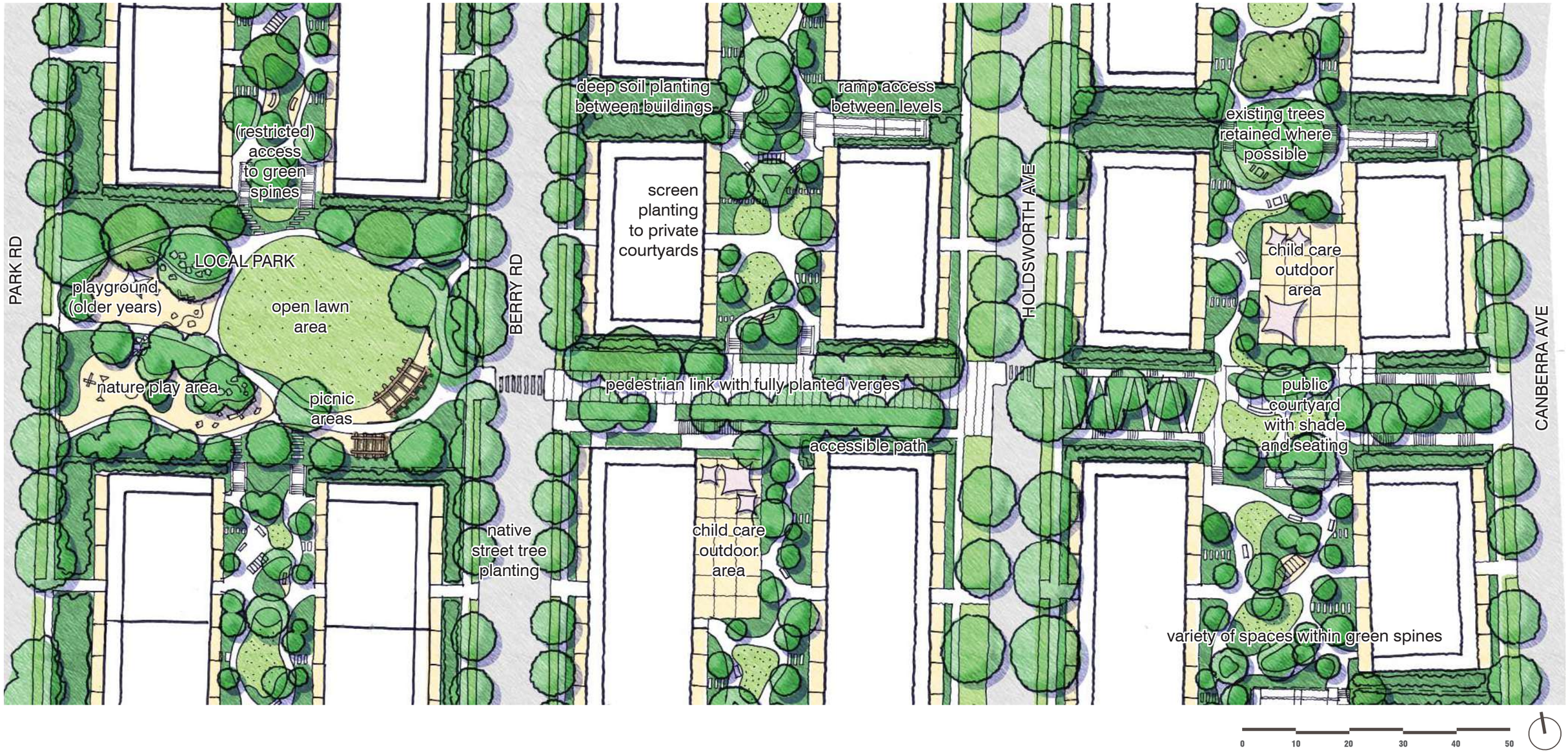
MASTERPLAN

OPTION 2 - NATURAL / INFORMAL

- The emphasis is on weaving native vegetation and an informal character through all landscape areas across the new development.
- Vegetation to be predominantly native with the exception of retained existing trees and the occasional feature tree.
- The native vegetation and more informal arrangement of spaces ensures new development is in keeping with the existing character of the area and surrounding parks
- A mixture of native trees and planting still allows for variety in texture and seasonal colour - large swathes of single species to be avoided
- Local and robust material palette - concrete, sandstone, hardwood timber, decomposed granite gravel

MASTERPLAN

OPTION 2 - NATURAL / INFORMAL

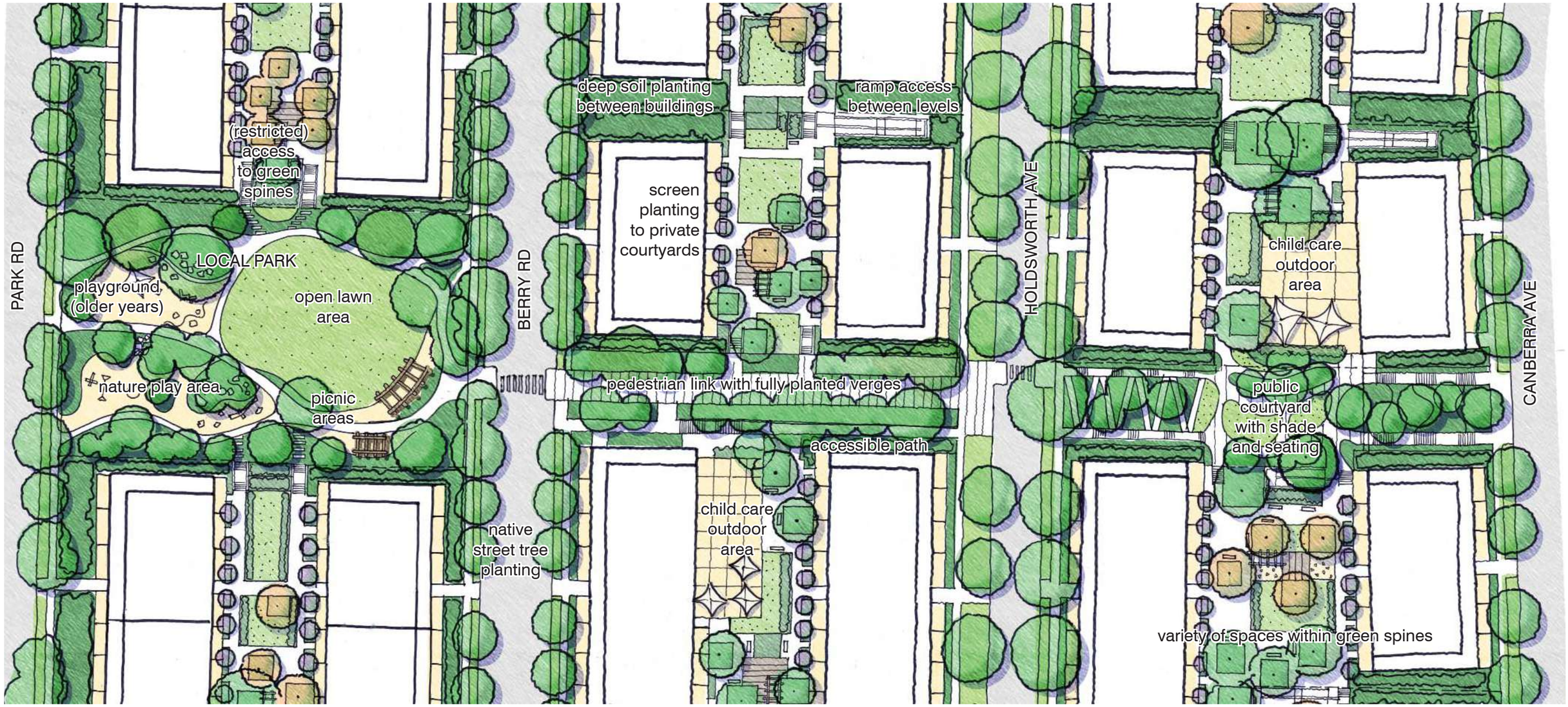


MASTERPLAN

OPTION 3 - COMBINED APPROACH

- This approach takes elements of Options 1 and 2 to allow for a clear distinction between the private communal spaces and the public domain.
- The public spaces are in keeping with the existing native / informal character of the area and surrounding parks, tying together the overall development
- There is greater flexibility within the green spines which will allow for more individual expression between developments
- Deciduous trees in the private areas provide greater winter solar access to largely overshadowed communal areas
- Material palettes to be high quality and robust while providing a distinction between public and private areas

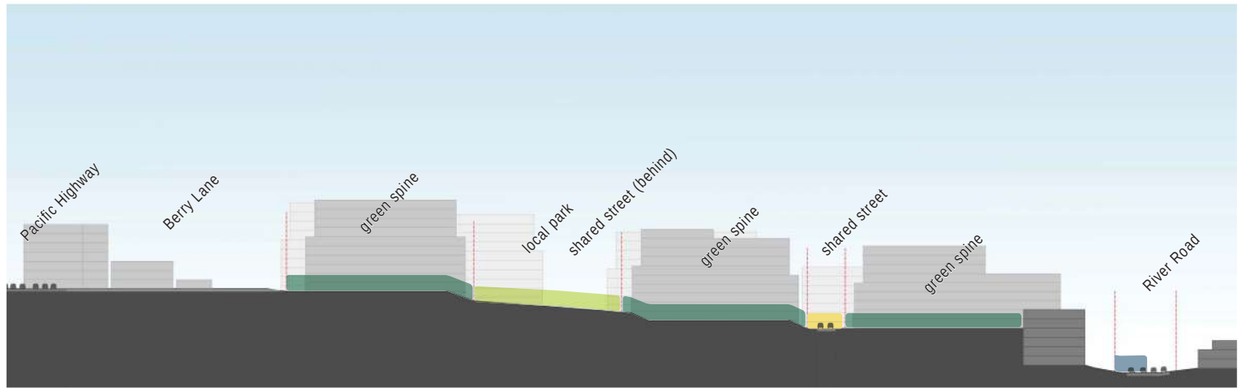
OPTION 3 - COMBINED APPROACH



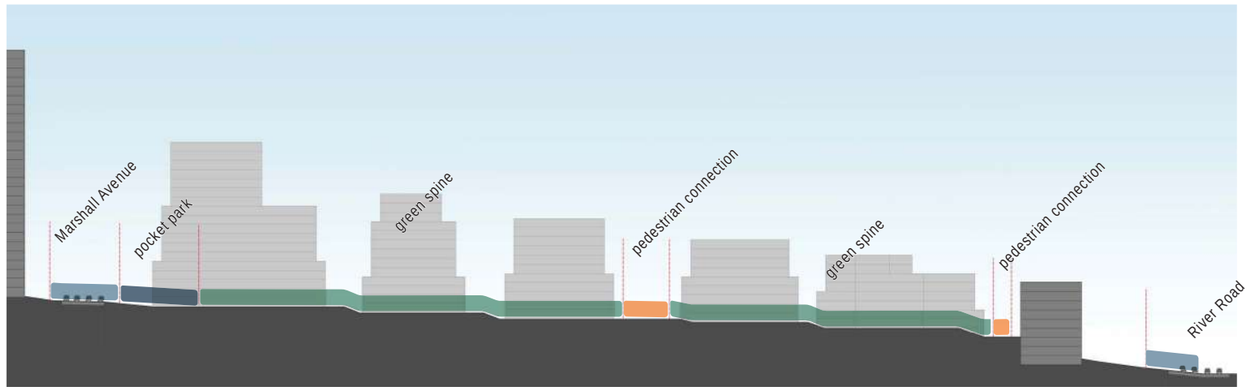
AERIAL PERSPECTIVE

LANDSCAPE SECTIONS

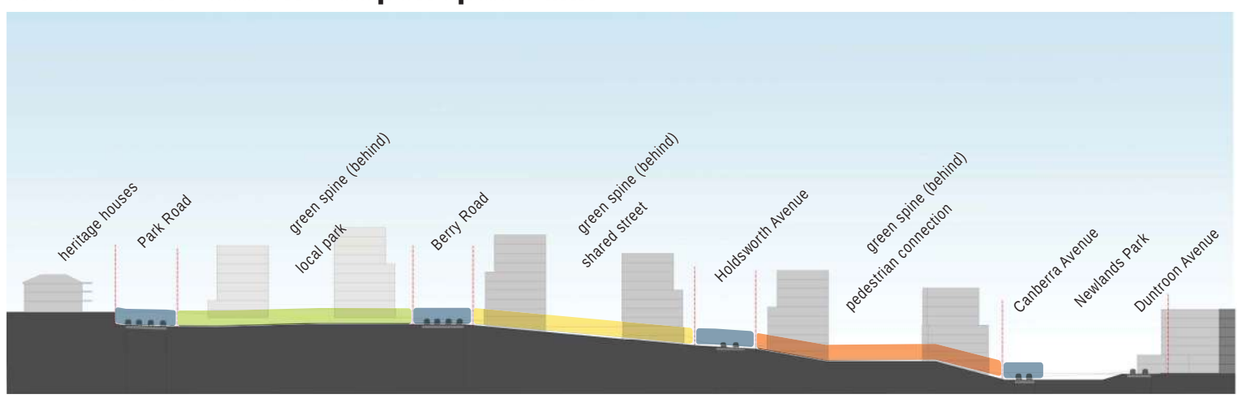
Site Section - north-south green spine (existing Berry Lane)



Site Section - north-south green spine



Site Section - east-west open space link



New Connections:

- Cycle route Lane Cove Bike Plan 2013
- Green spine connections (restricted access)
- Shared street connections
- Pedestrian connections
- Future plaza/station connection

0 20 40 60 80 100 200

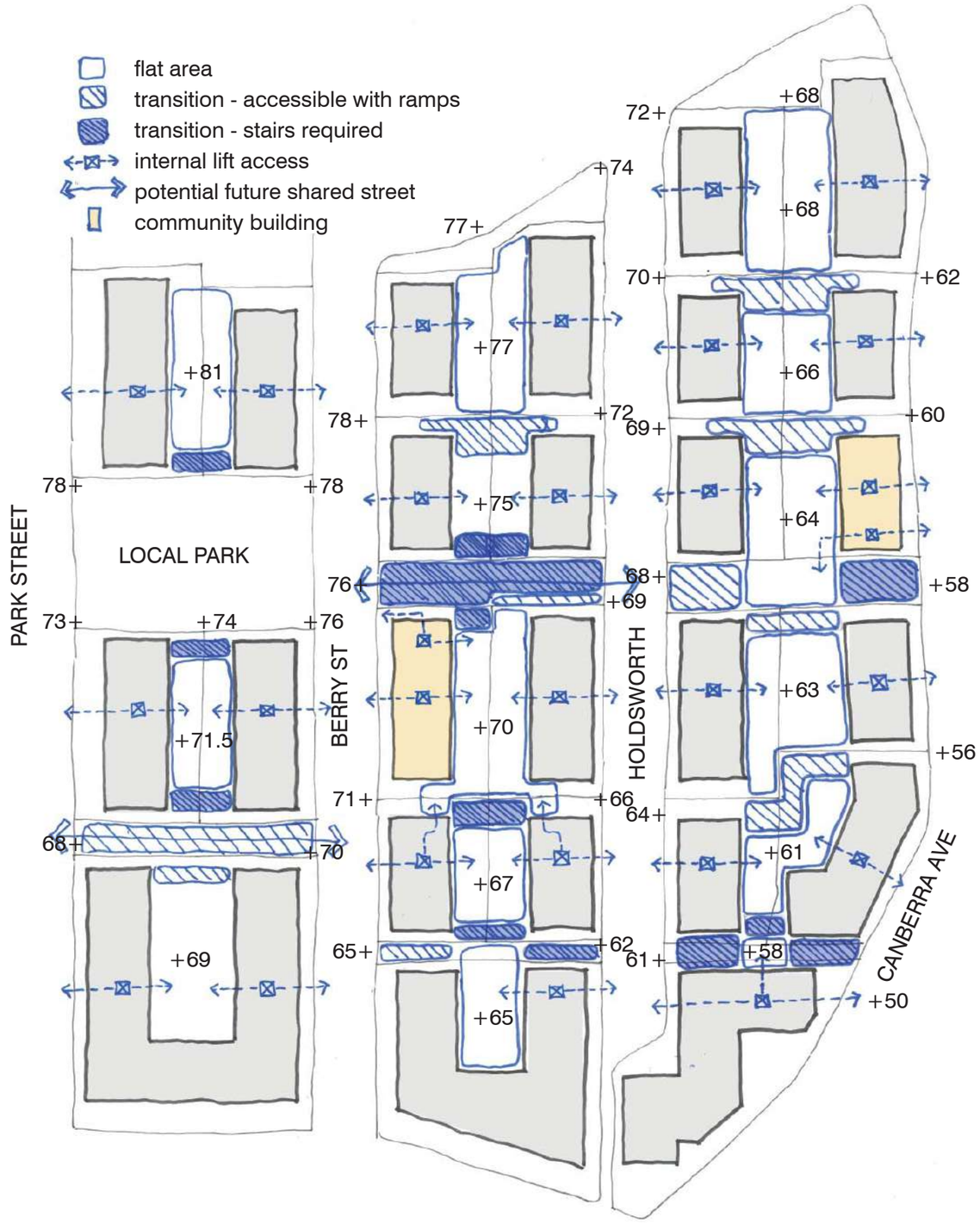
NORTH

MASTERPLAN
LEVELS

The site presents significant challenges in terms of levels and as a result, accessibility across the precinct. Most of the existing streets and proposed development sites have steep grades which exceed those required for universal accessibility.

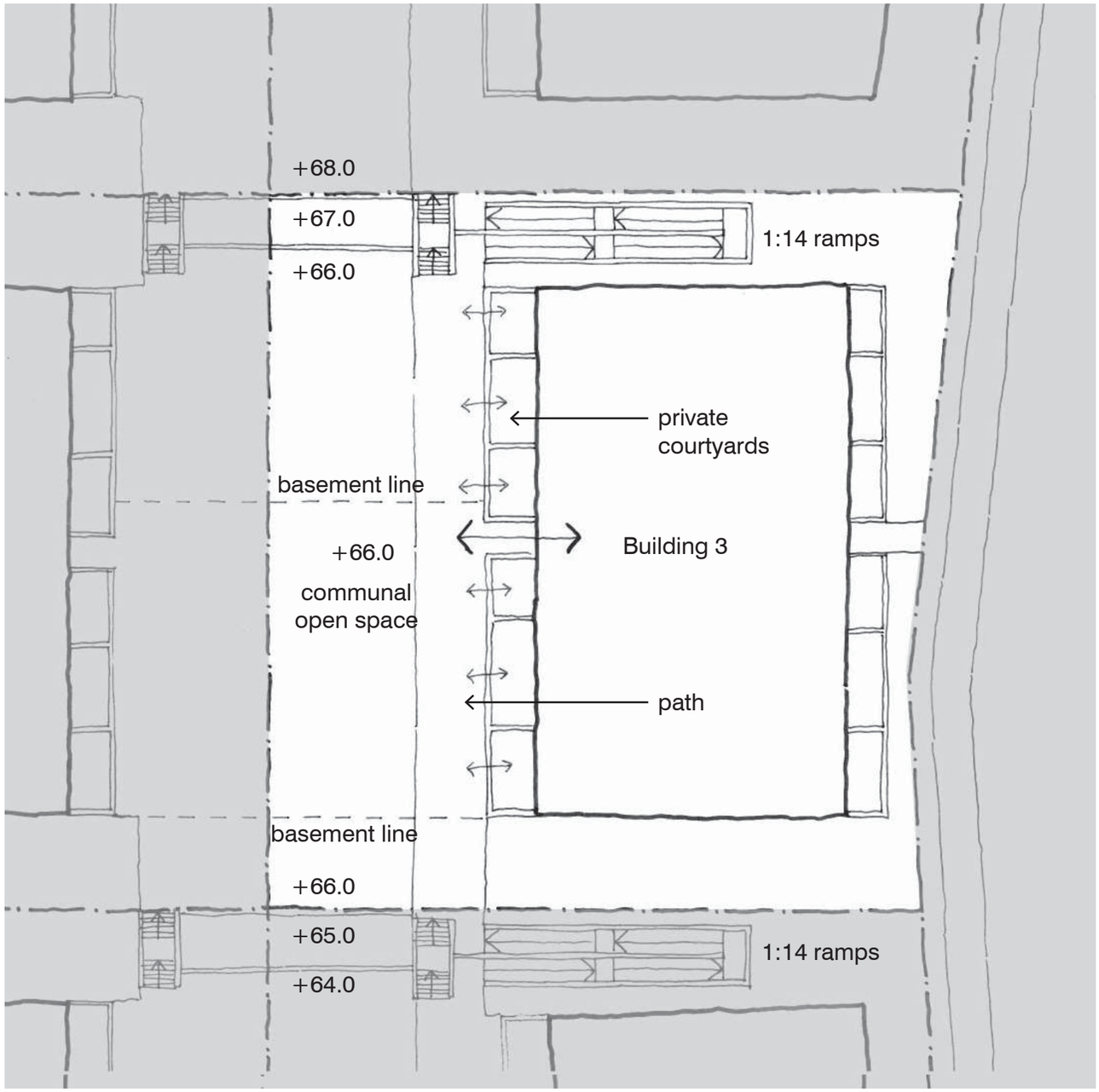
The approach taken in the landscape masterplan has been to prioritise providing an accessible public route along the main east-west open space link between Canberra Ave and Park Road through the proposed new local park. The master plan also aims to provide as much accessibility as possible along the north-south green links between adjacent development sites.

Indicative proposed levels of the communal green spines are shown in the adjacent diagram, along with the existing street levels, whether transitions are accessible via ramps or stairs, and where lift access within buildings is required to provide access to external spaces.

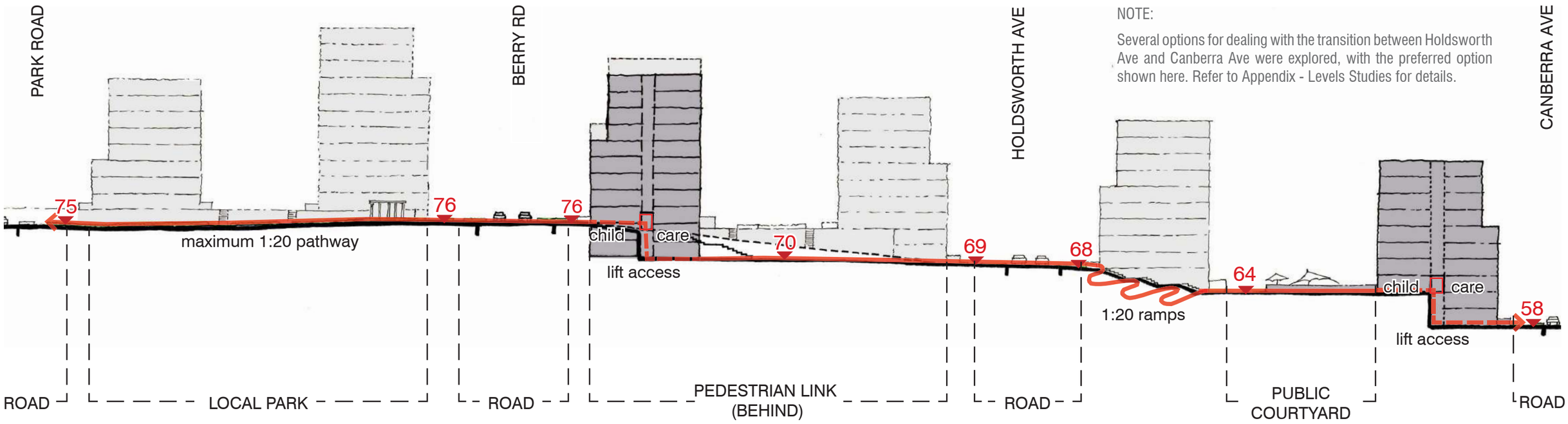


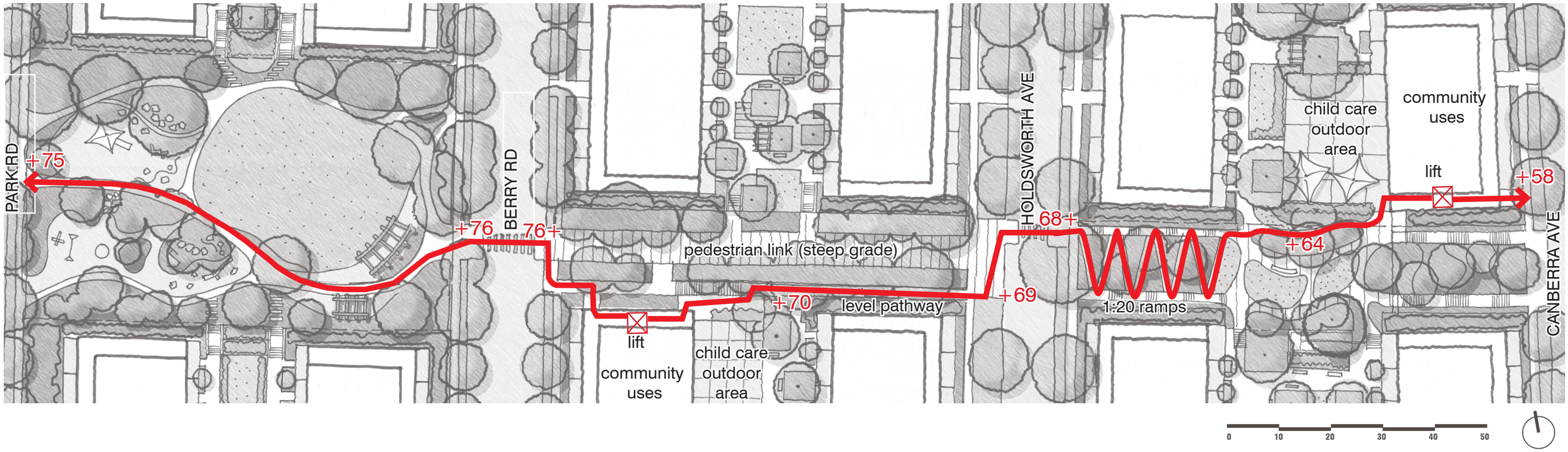
LEVELS - NORTH-SOUTH TRANSITIONS

- Grade changes taken up in one location with accessible ramps, stairs and 1m (max) retaining walls
- Only one set of ramps required between north-south development lots, to be provided within the first of the 2 east-west adjacent lots to be developed
- Grade transition generally located to the north of the development lot. Developments are not required to step down to their southern neighbours unless they are connecting to public space.
- Minimum 1:14 ramps with handrails located outside of the main green spine area with direct access from main pathways
- If the ramps are required within the main green spine area, 1:20 ramps (no handrails required) are preferred.
- Direct access enabled between private courtyards and communal open space
- Consolidated communal open space

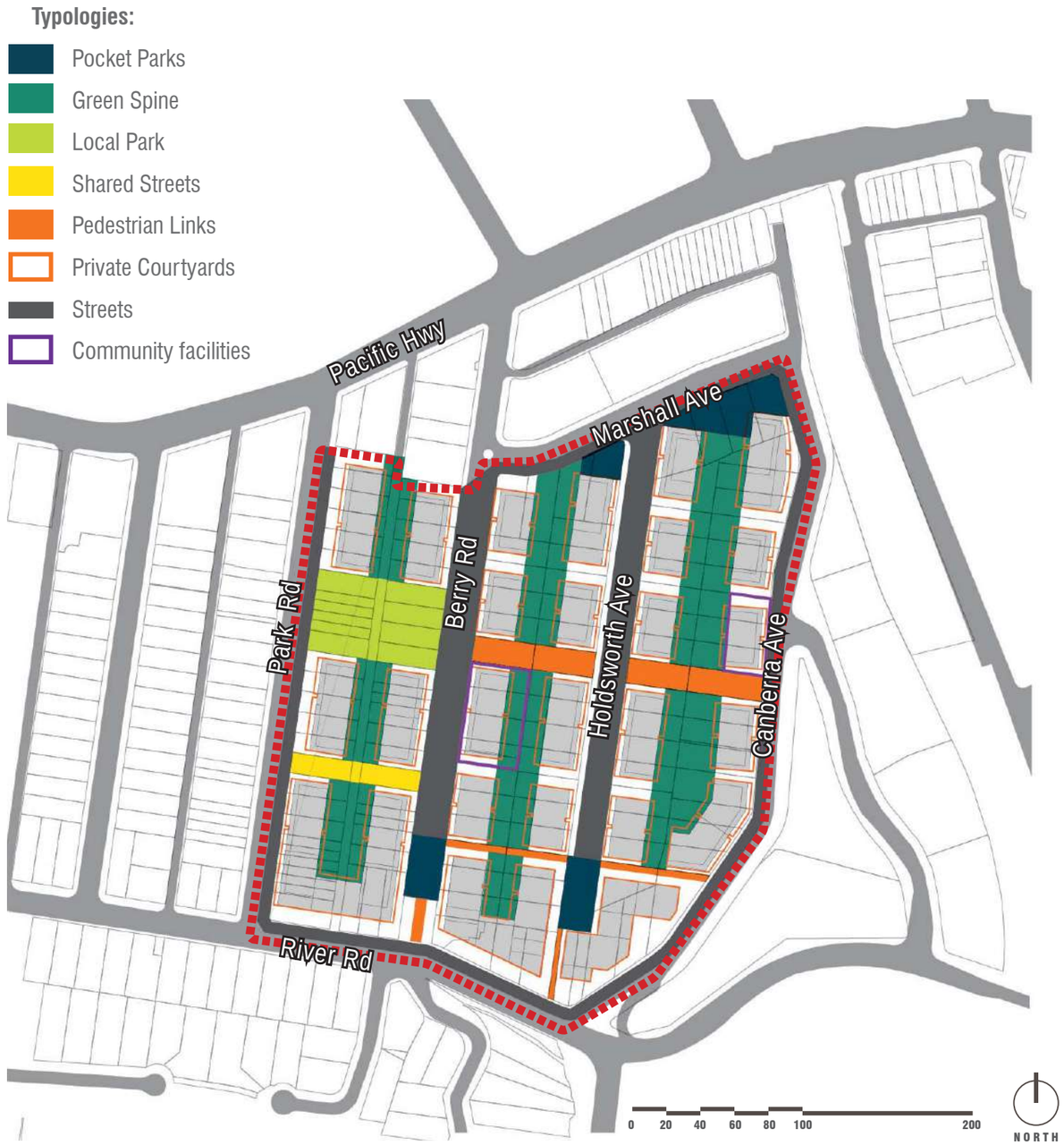


LEVELS - EAST-WEST ACCESSIBLE CONNECTION





OPEN SPACE TYPOLOGIES



OPEN SPACE TYPOLOGIES - FACILITIES MATRIX

TYPE	SIZE & CATCHMENT		USE & CHARACTER																																		
	Catchment	Size	Function	Character	Toilets	Shelters/shade structures	Pathways	Power	Wi-fi	Lighting	Signage	Irrigation	Water features	Multi-purpose courts	Fitness stations	Informal kick-about	Bike paths/circuit	Adventure play	Children's play	Informal play	Community garden	BBQs	Picnic tables	Seating	Bike racks	Litter bins	Drinking fountains	Performances	Interpretation	Public art	Open lawn	Shade trees	Feature planting	Rain gardens/bioswales	Bushland	
Newlands Park (existing)	1000m+	1ha	Passive recreation, informal sports, community gatherings, urban tree canopy	Informal	●		●			●	●			●	●	●	●	●	●	●		●	●	●	●	●	●				●	●		●	●	
Local Park	1000m+	3775m2	Passive recreation, informal sports, events, community gatherings	Informal	●	●	●	●	●	●	●			●	●	●	●		●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Propsting Reserve (existing)	400m	950m2	Passive recreation, urban tree canopy	Informal			●			●									●	●					●		●					●	●	●	●	●	
Pocket Parks	400m	500-1250m2	Passive recreation, urban tree canopy	Informal			●			●										●					●		●	●				●	●	●	●		
Shared Streets	n/a	15m wide	Pedestrian, cycle & vehicle circulation	Informal						●	●														●								●		●		
Pedestrian Links	n/a	6m wide	Pedestrian circulation	Informal			●			●	●														●								●				
Green Spine	Adjoining Apt buildings	25-30m wide	Passive recreation, urban tree canopy	Formal		●	●	●	●	●		●	●			●			●	●		●	●	●		●			●	●	●	●	●			
Roof Gardens	Apt building below	varies	Passive receation, community gardens	Formal		●	●	●	●	●		●	●							●	●		●	●	●		●		●			●	●	●			

Legend

● Required or Existing

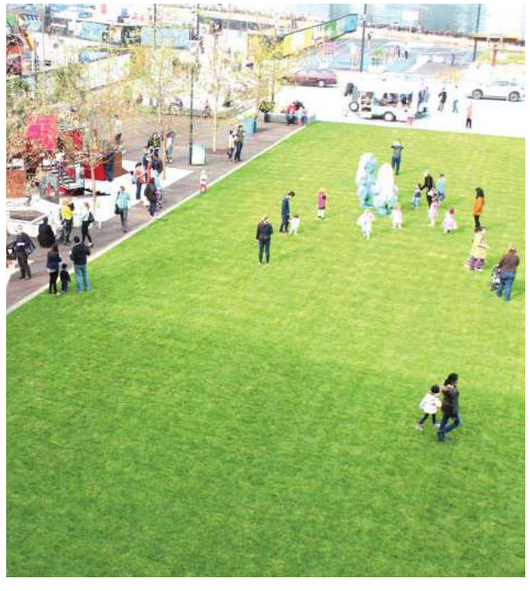
● Desirable

MASTERPLAN

PUBLIC OPEN SPACE TYPOLOGIES - LOCAL PARK

The new local park is intended to have the following attributes and facilities:

- accessible shared pedestrian/cycle path between Park and Berry Roads
- multi-use open lawn area and possible multi-purpose courts and fitness stations
- playground with play elements for a range of age groups
- public toilets and shelter or shade structure with bbq, picnic tables, drinking fountains, litter bins and seating
- shade trees and feature planting
- park lighting
- relocate local rocks; retain elements of the natural enivironment



MASTERPLAN

PUBLIC OPEN SPACE TYPOLOGIES - EXISTING PARKS

The following upgrades are proposed to Newlands Park:

- upgraded playground with play elements for a range of age groups
- new multi-purpose sports court with fencing and fitness station
- upgraded park lighting and furniture

The following upgrades are proposed to Propsting Reserve:

- upgraded playground with play elements for a range of age groups
- upgraded park lighting and furniture

PUBLIC OPEN SPACE TYPOLOGIES - POCKET PARKS

The new pocket parks are intended to have the following attributes and facilities:

- accessible pedestrian access from Marshall Ave (where adjacent to Marshall Ave)
- access to adjoining green link (for residents only)
- open lawn areas
- seating, drinking fountain, litter bin and other park furniture
- shade trees and feature planting
- park lighting
- relocate local rocks; retain elements of the natural enivironment

MASTERPLAN

PUBLIC OPEN SPACE TYPOLOGIES - STREETS

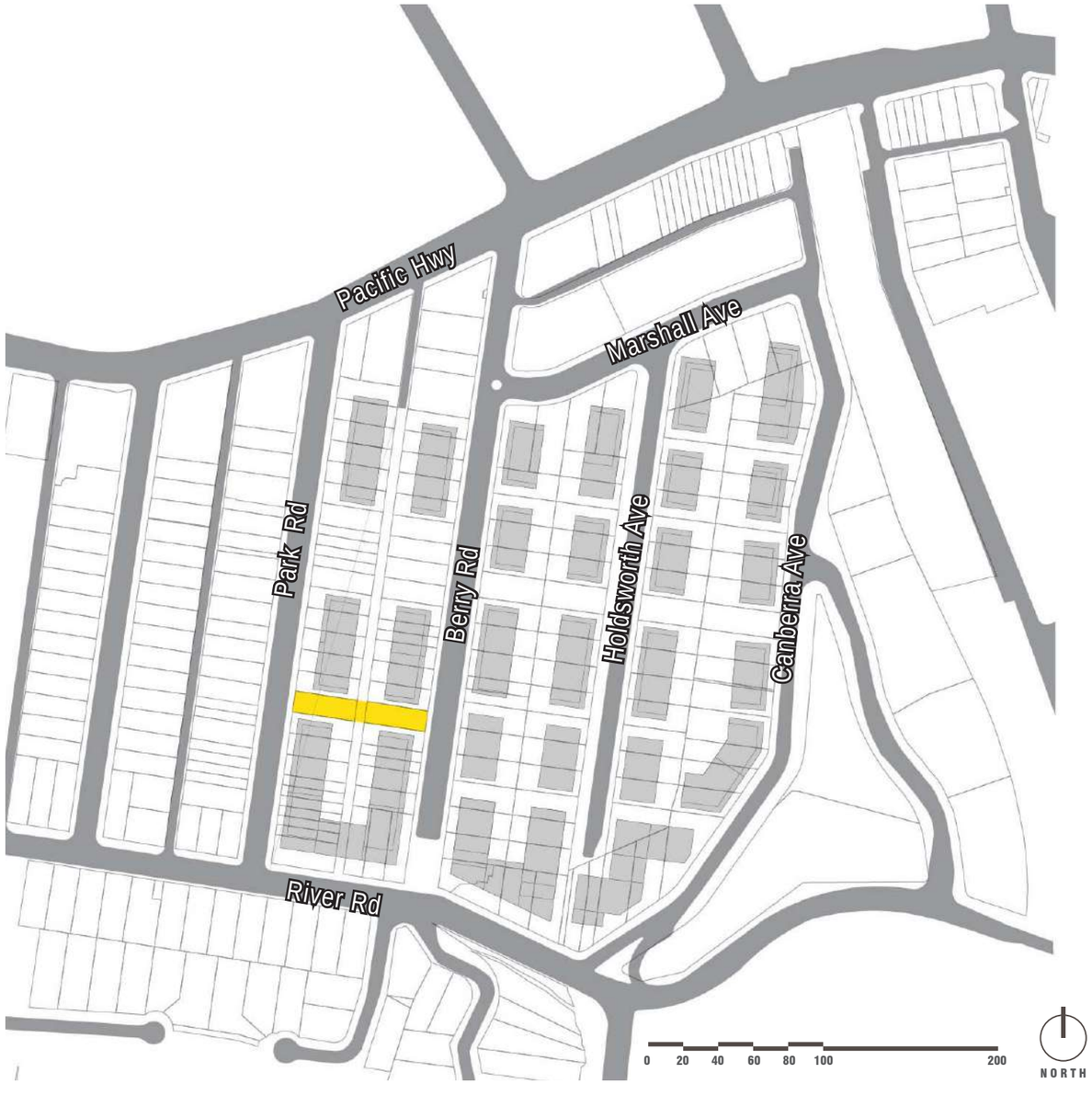
The streets are intended to have the following attributes and character:

- pedestrian footpaths min 1.5m and ideally 1.8m wide
- formal pedestrian crossings where east-west links cross the streets
- underground power lines
- regular formal street tree planting
- adequate street lighting

PUBLIC OPEN SPACE TYPOLOGIES - SHARED STREETS

The new shared street is intended to have the following attributes and character:

- designed for shared pedestrian and vehicle use in compliance with RMS guidelines
- encourage low vehicle speeds and clear visibility
- paving treatment to reinforce shared priority without kerbs
- entry thresholds where they adjoin public roads
- shade trees and feature planting along edges
- adequate street lighting



MASTERPLAN

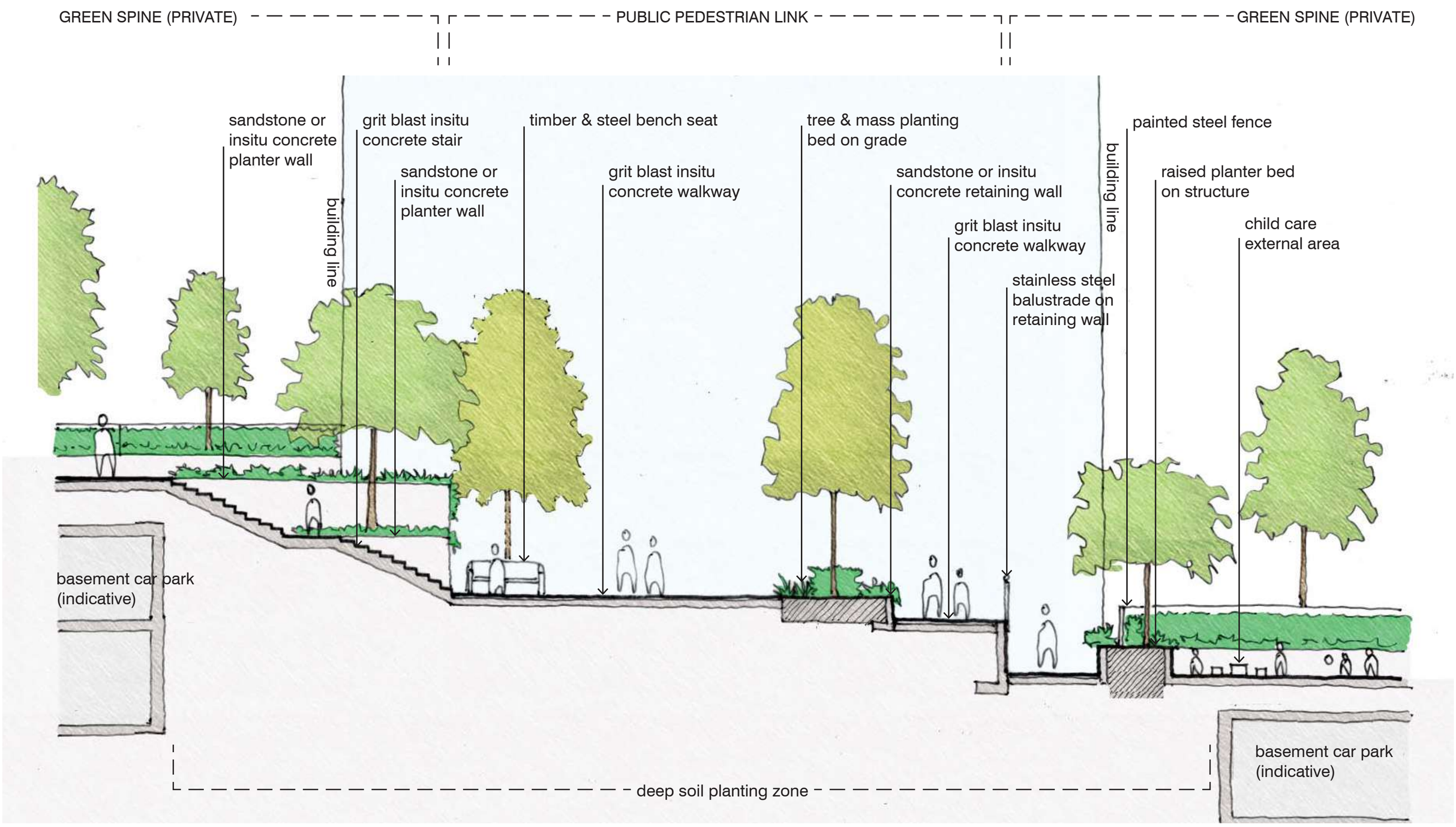
PUBLIC OPEN SPACE TYPOLOGIES - PEDESTRIAN LINKS

The new pedestrian links are intended to have the following attributes and character:

- shared pedestrian/cycle links
- accessible (max 1:20 grade) where possible
- min 2.5m wide shared pathway
- shade trees and feature planting along edges
- adequate pedestrian lighting

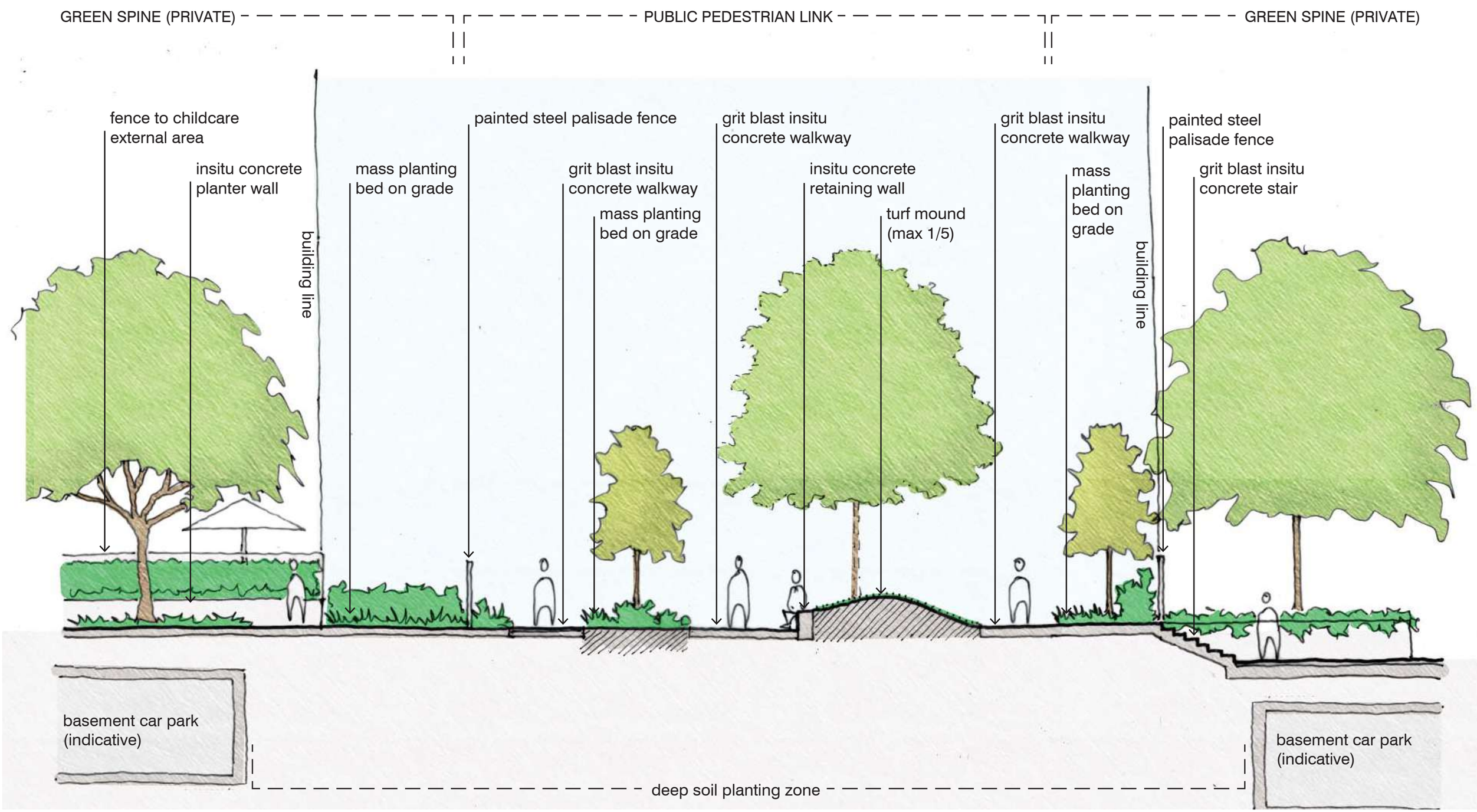
PUBLIC OPEN SPACE TYPOLOGIES - PEDESTRIAN LINKS

EAST-WEST PEDESTRIAN LINK - CROSS SECTION



PUBLIC OPEN SPACE TYPOLOGIES - PEDESTRIAN LINKS

EAST-WEST PEDESTRIAN LINK - CROSS SECTION



PUBLIC OPEN SPACE TYPOLOGIES - PEDESTRIAN LINKS

EAST-WEST PEDESTRIAN LINK - PERSPECTIVE VIEW BETWEEN CANBERRA AND HOLSWORTH AVE LOOKING WEST

PRIVATE PROPERTY BOUNDARY AND ENTRY POINTS

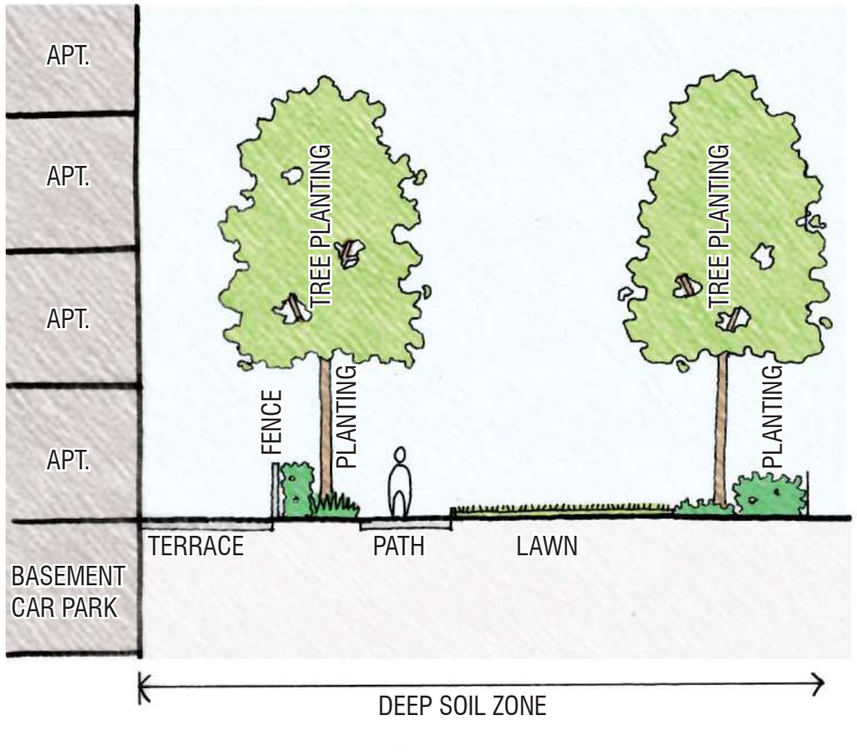
PRIVATE OPEN SPACE TYPOLOGIES - GREEN SPINES

The new green links are intended to have the following attributes and character:

- accessible (max 1:20 grade) where possible
- level with adjacent green link to east or west
- major changes in level generally located on north/south site boundaries
- communal open space areas with outdoor gathering, seating and play areas
- existing trees retained (tree retention to be agreed with Council pre-DA)

- mature canopy tree cover (existing + proposed) is to be minimm 50% of area of Green Spine
- new canopy trees to include min 50% large sized trees (12m high +) or medium sized trees (8-12m high) and max 50% small trees (up to 8m high)
- basement car parks are confined to the building footprint. Intrusion into Green Spine is only permitted if 2 levels of basement parking under the building is provided. If located under Green Spines, basement car parking is to be located so as to retain existing trees and to provide min 1m soil depth over entire area of basement
- max 40% of area to be hard paved (including softfall); min 60% of area to be soft with max 40% of this lawn & 60% planted
- adequate pedestrian lighting

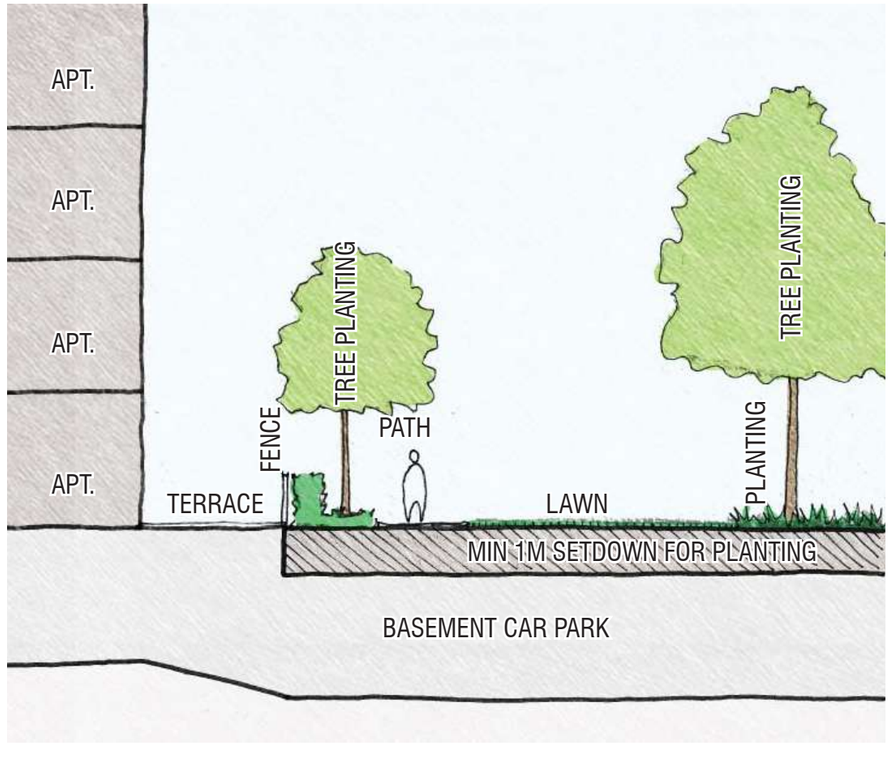
PRIVATE OPEN SPACE TYPOLOGIES - GREEN SPINES



GREEN SPINE INTERFACE WITHOUT BASEMENT CAR PARKING

Green Spine Facilities (within any contiguous area of Green Spine across adjoining development sites) are to include:

- max 40% of area to be hard paved (including softfall)
- min 60% of area to be soft with max 40% of this lawn & 60% planted
- separate play areas for toddlers (ages 6 months - 3 years) and young children (ages 3-8 years+)
- play areas to provide range of play equipment, min 70% shade cover and seating
- play areas to be located and designed to enable good surveillance
- provision for adult & young person recreation eg. outdoor table tennis table, boules court, informal kick-about area
- min 1no. flexible lawn area (min 150m2) centrally located with direct access from apartment lobbies, main north-south pathways, play and picnic/bbq areas
- a picnic/bbq area including min 1no. dual hotplate built-in BBQ with sink, min 2no. picnic table settings, bench seating, shade in the form of canopy trees or shde structure, external GPO
- min 2no. quiet outdoor seating areas with shaded bench seating located away from play and picnic/bbq area
- provision for small scale public art, interpretation and/or water features



GREEN SPINE INTERFACE WITH BASEMENT CAR PARKING

Basement car parks are confined to the building footprint. Intrusion into Green Spine is only permitted if 2 levels of basement parking under the building is provided. If located under Green Spines, basement car parking is to be located so as to retain existing trees and to provide min 1m soil depth over entire area of basement subject to approval of Council's Landscape Architect.

PRIVATE OPEN SPACE TYPOLOGIES - GREEN SPINES

INDICATIVE GREEN SPINE LAYOUT FOR CONTIGUOUS AREA (SITES 1-6)

Each contiguous area of Green Spine must contain the landscape elements shown in the landscape plan for each. Final sign-off of the design is required by Council's landscape architect. Ensure that materials and colours in the private landscape areas are suitable for a formal landscape theme. There should be a common material, standard and colour for paths etc that pass through the Green Spine. Have regard to solar penetration, environmental factors and the likely apartment layouts / access.

PRIVATE OPEN SPACE TYPOLOGIES - GREEN SPINES

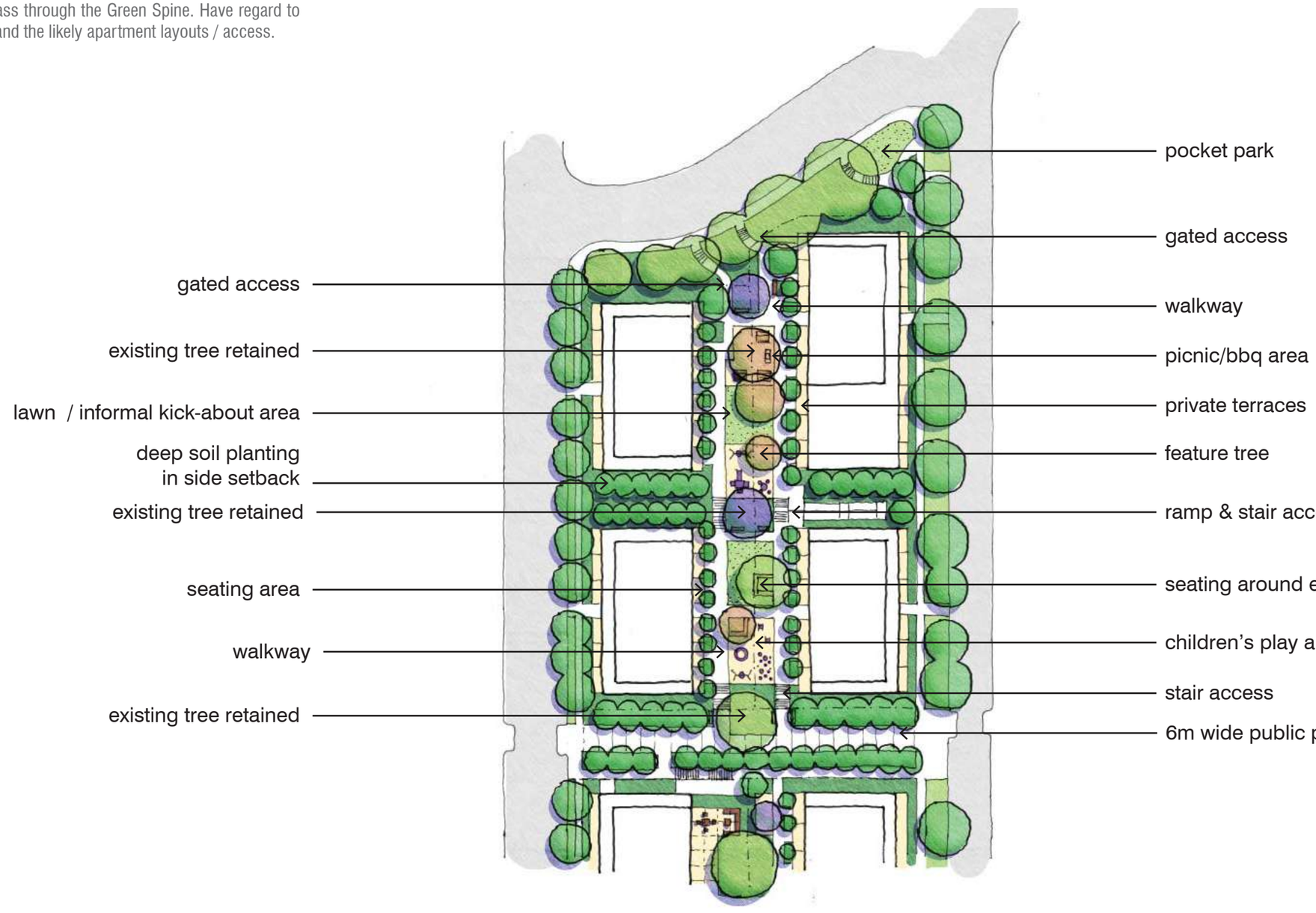
INDICATIVE GREEN SPINE LAYOUT FOR CONTIGUOUS AREA (SITES 7-11)

Each contiguous area of Green Spine must contain the landscape elements shown in the landscape plan for each. Final sign-off of the design is required by Council's landscape architect. Ensure that materials and colours in the private landscape areas are suitable for a formal landscape theme. There should be a common material, standard and colour for paths etc that pass through the Green Spine. Have regard to solar penetration, environmental factors and the likely apartment layouts / access.

PRIVATE OPEN SPACE TYPOLOGIES - GREEN SPINES

INDICATIVE GREEN SPINE LAYOUT FOR CONTIGUOUS AREA (SITES 12-15)

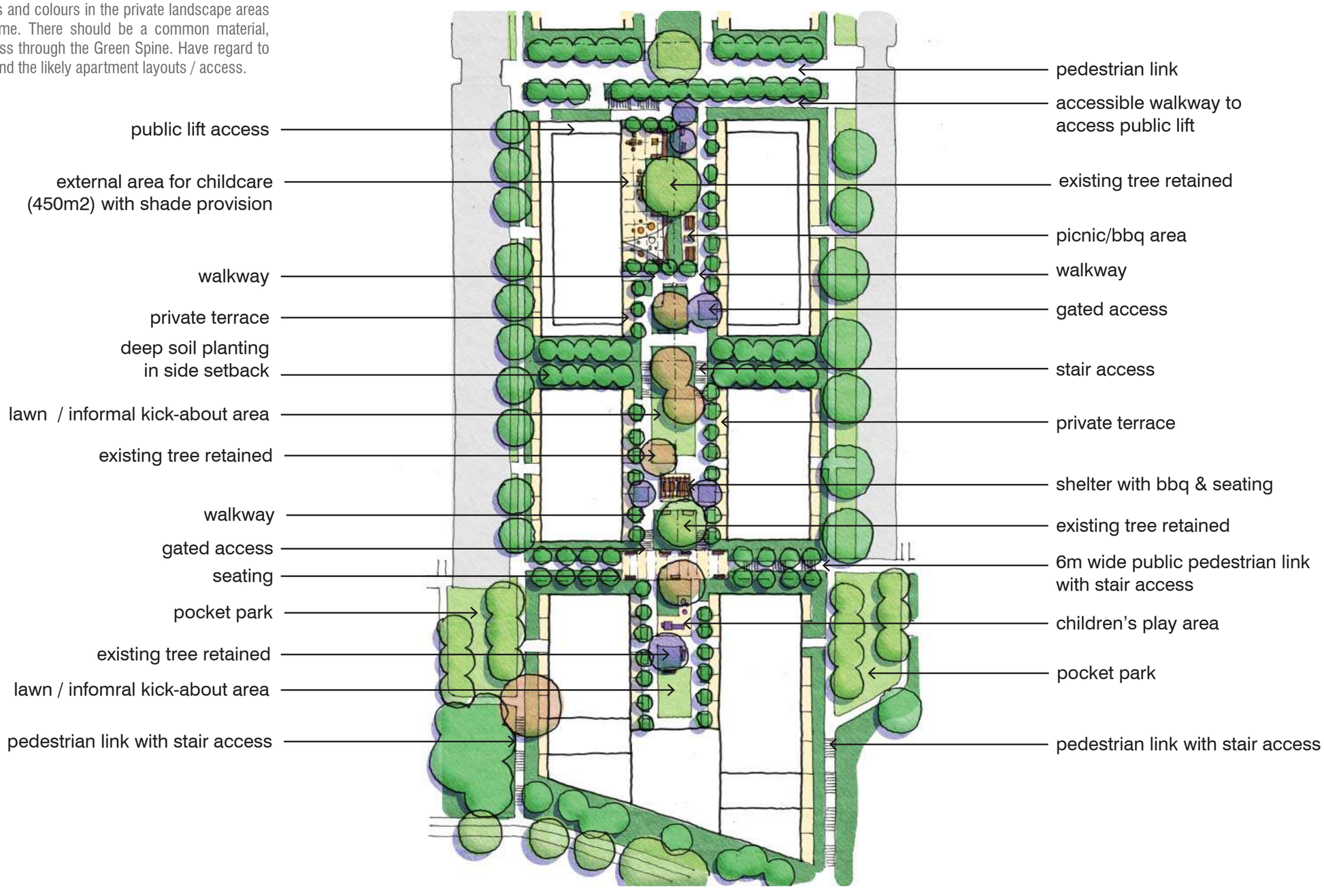
Each contiguous area of Green Spine must contain the landscape elements shown in the landscape plan for each. Final sign-off of the design is required by Council's landscape architect. Ensure that materials and colours in the private landscape areas are suitable for a formal landscape theme. There should be a common material, standard and colour for paths etc that pass through the Green Spine. Have regard to solar penetration, environmental factors and the likely apartment layouts / access.



PRIVATE OPEN SPACE TYPOLOGIES - GREEN SPINES

INDICATIVE GREEN SPINE LAYOUT FOR CONTIGUOUS AREA (SITES 16-20)

Each contiguous area of Green Spine must contain the landscape elements shown in the landscape plan for each. Final sign-off of the design is required by Council's landscape architect. Ensure that materials and colours in the private landscape areas are suitable for a formal landscape theme. There should be a common material, standard and colour for paths etc that pass through the Green Spine. Have regard to solar penetration, environmental factors and the likely apartment layouts / access.



PRIVATE OPEN SPACE TYPOLOGIES - GREEN SPINES

INDICATIVE GREEN SPINE LAYOUT FOR CONTIGUOUS AREA (SITE 21)

Each contiguous area of Green Spine must contain the landscape elements shown in the landscape plan for each. Final sign-off of the design is required by Council's landscape architect. Ensure that materials and colours in the private landscape areas are suitable for a formal landscape theme. There should be a common material, standard and colour for paths etc that pass through the Green Spine. Have regard to solar penetration, environmental factors and the likely apartment layouts / access.

PRIVATE OPEN SPACE TYPOLOGIES - GREEN SPINES

INDICATIVE GREEN SPINE LAYOUT FOR CONTIGUOUS AREA (SITES 22-23)

Each contiguous area of Green Spine must contain the landscape elements shown in the landscape plan for each. Final sign-off of the design is required by Council's landscape architect. Ensure that materials and colours in the private landscape areas are suitable for a formal landscape theme. There should be a common material, standard and colour for paths etc that pass through the Green Spine. Have regard to solar penetration, environmental factors and the likely apartment layouts / access.

MASTERPLAN

PRIVATE OPEN SPACE TYPOLOGIES - SETBACKS

Landscape setbacks are intended to have the following attributes and character:

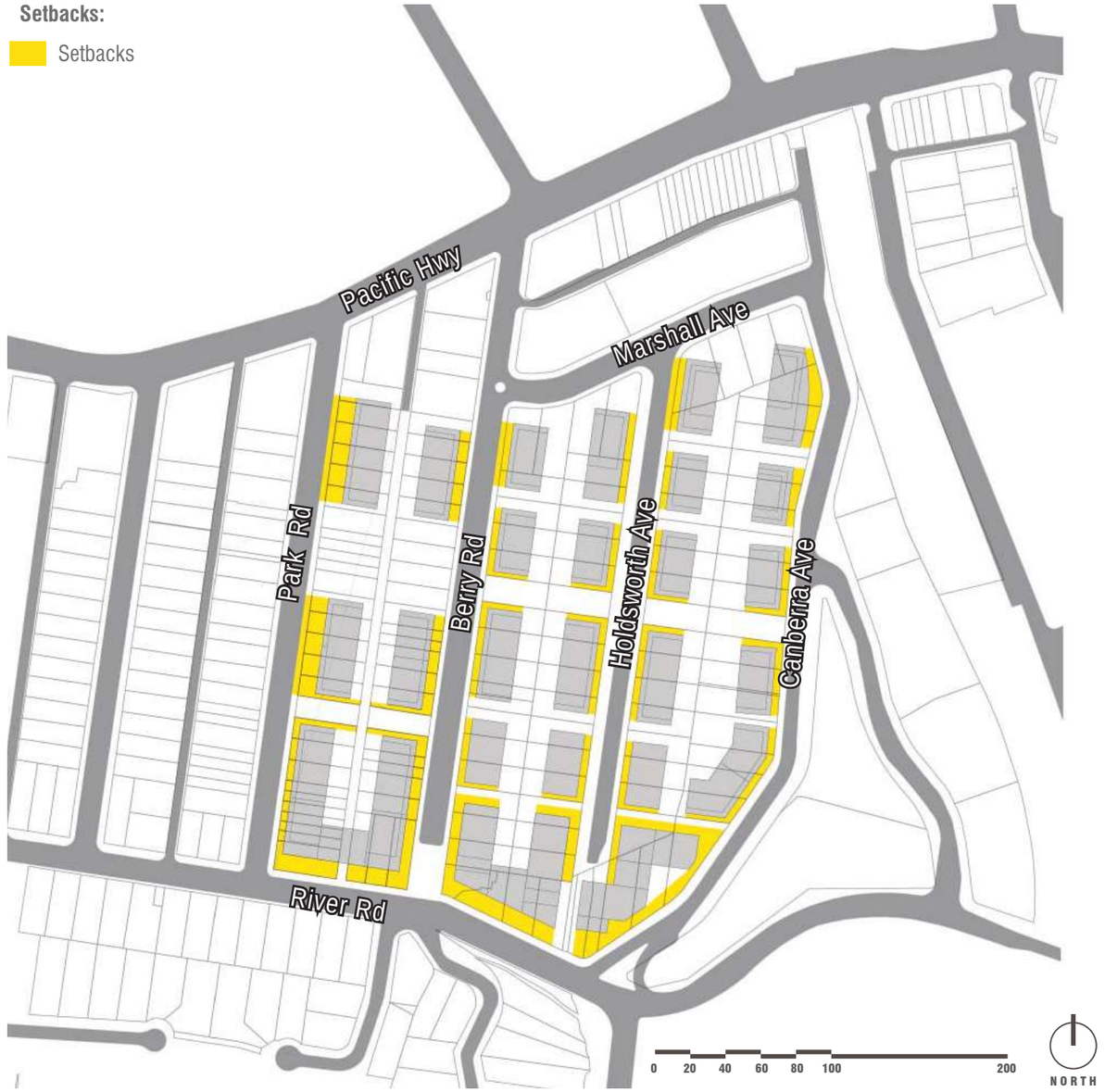
- provide adequate privacy to private apartments and terraces/courtyards
- accommodate level changes where required
- mitigate the impact of basement car park structures where these emerge above ground level
- include trees and planting, including deep soil planting
- existing trees retained if possible within landscape setbacks
- adequately lit

Tree planting in front setback areas:

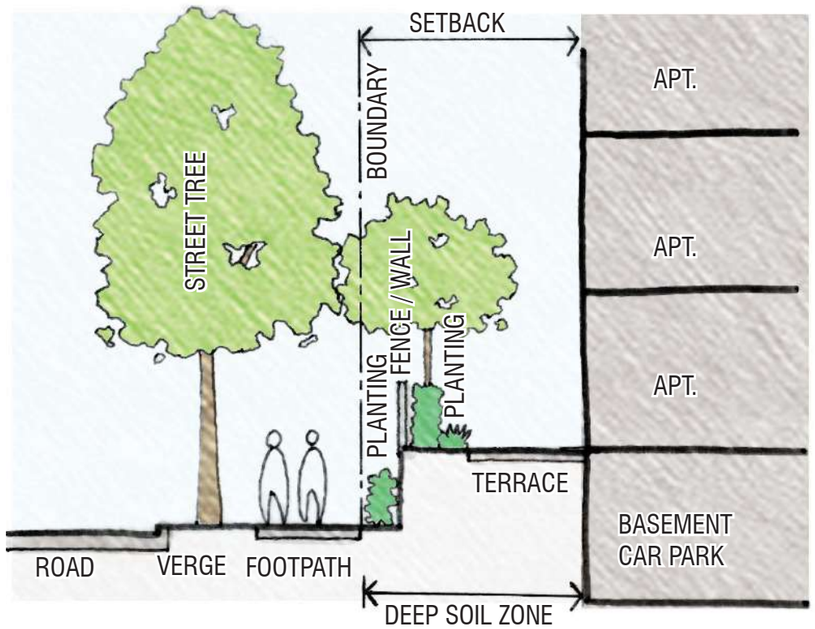
Proper tree selection and placement in the front setback areas is crucial in order to ensure good amenity and privacy for residents while reducing the size and bul of the built form.

Trees in the front setback area shall:

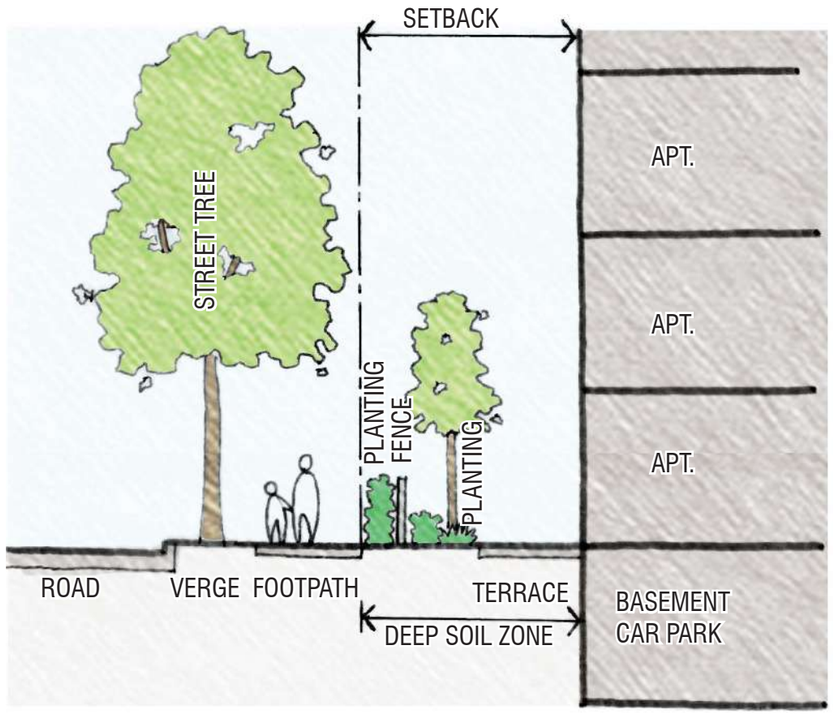
- be selected from Council's DCP Part J Landscaping Appendix 1 - Plant Lists; and
- be of a suitable size to assist in ensuring that the development in not visually intrusive by providing visual softening of buildings, driveways and car parking areas



PRIVATE OPEN SPACE TYPOLOGIES - SETBACKS

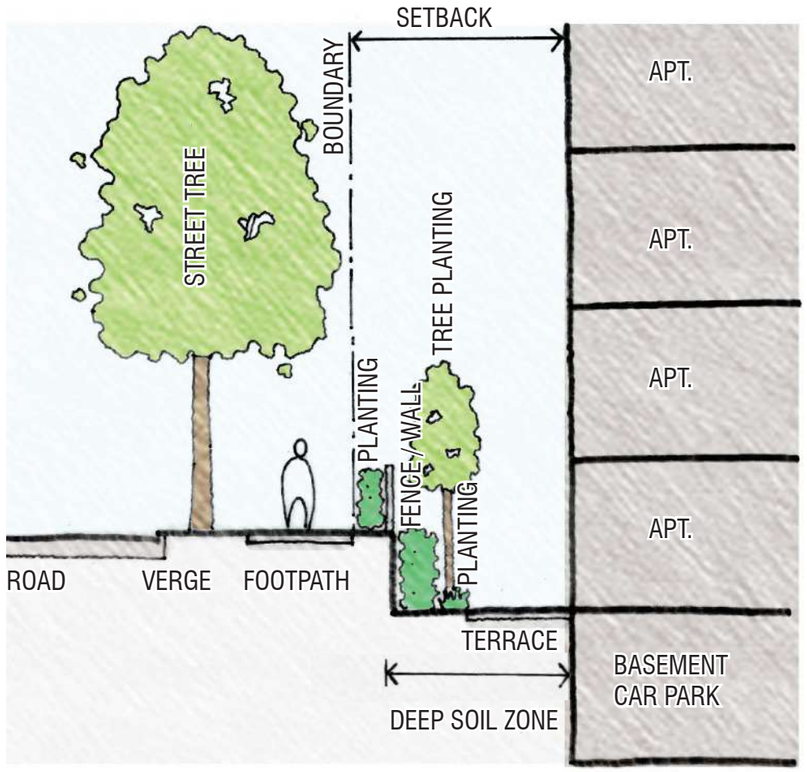


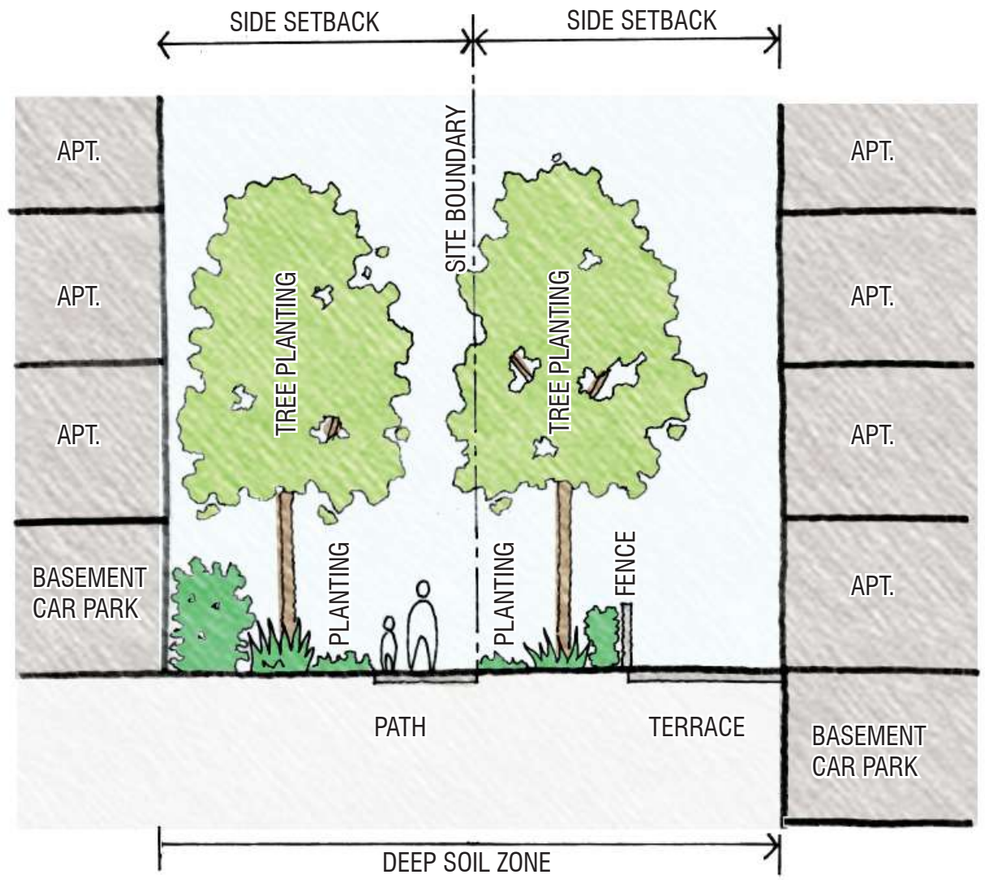
STREET FRONTAGE A. ELEVATED



STREET FRONTAGE B. AT GRADE

PRIVATE OPEN SPACE TYPOLOGIES - SETBACKS





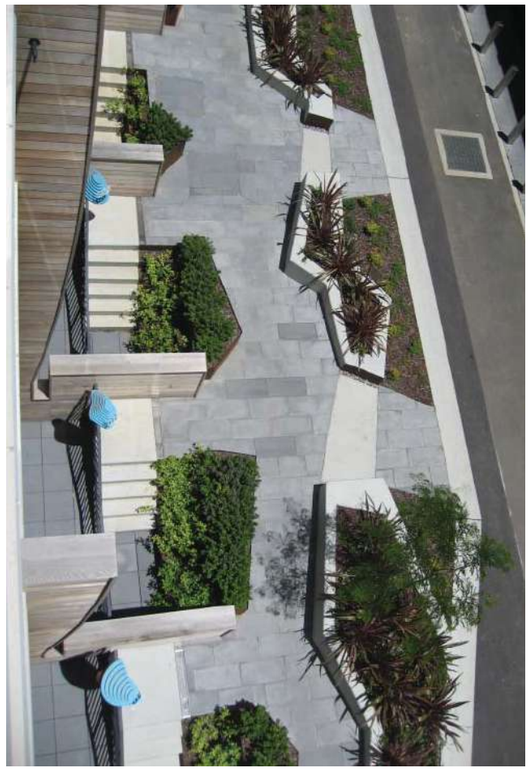
STREET FRONTAGE C. SUNKEN

SIDE SETBACK

PRIVATE OPEN SPACE TYPOLOGIES - PRIVATE COURTYARDS & TERRACES

Private courtyards and terraces are intended to have the following attributes and character:

- Clearly defined as private open space
- Designed to ensure appropriate privacy whilst also allowing adequate passive surveillance
- Open out onto communal open space or walkways wherever possible
- Be of the required minimum size and have adequate solar access
- Include a mix of paved areas for usability and planted areas for amenity



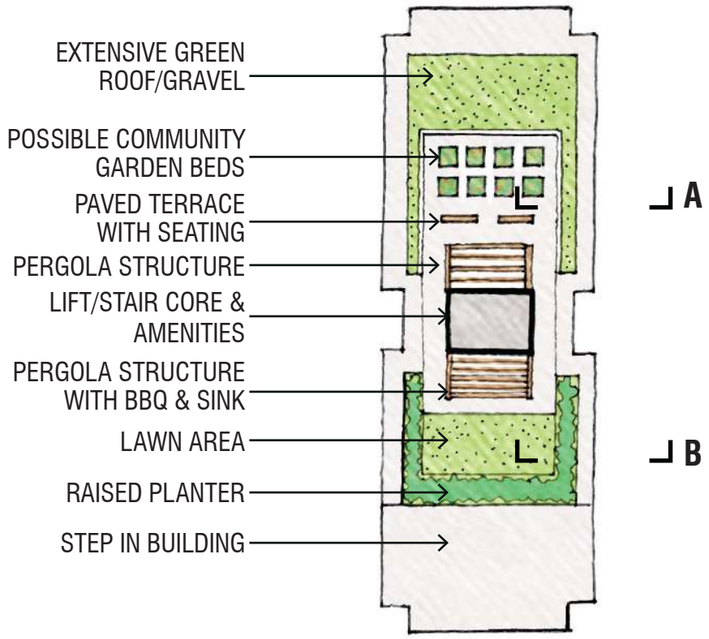
MASTERPLAN

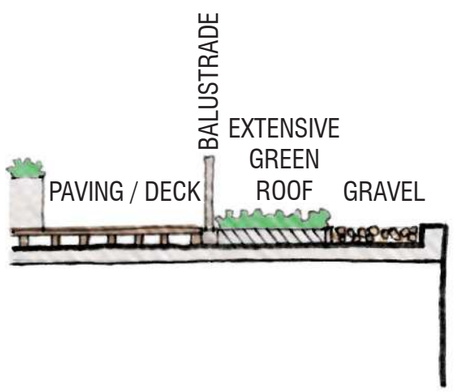
PRIVATE OPEN SPACE TYPOLOGIES - ROOF GARDENS

Roof Gardens are intended to have the following attributes and character:

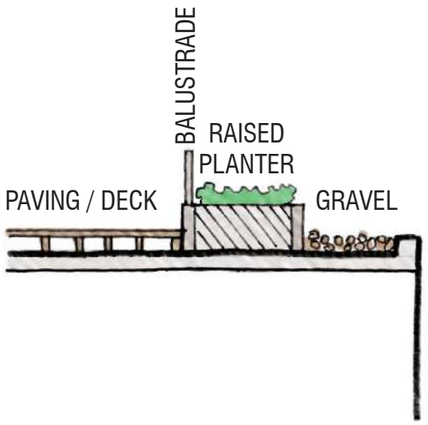
- Be accessible to all residents via lifts and stairs
- Be of the required minimum size
- Have adequate solar access and shade
- Include a mix of paved/decked/turfed areas for usability and planted areas for amenity
- Provide a range of facilities/amenities such as lawn areas, bbqs, potable water supply & sink, picnic tables, seats, lighting, community garden beds

PRIVATE OPEN SPACE TYPOLOGIES - ROOF GARDENS





SECTION A



SECTION B

MASTERPLAN

TREE REMOVAL & RETENTION

Park Road

- existing Melaleuca spp. to be retained on west side and replaced on east side where affected by pruning to clear powerlines with same species.

Berry Road

- existing street trees to be progressively replaced with new species (Flindersia australis) to create strong avenue effect.

Holdsworth Ave

- existing Lophostemon to be retained.

Canberra Ave

- existing Eucalypt spp. on west side of street to be removed and replaced with new species (Tristaniopsis).

Marshall Ave

- existing Lophostemon to be retained on north side.
- existing Lophostemon to be progressively removed on south side where affected by pruning to clear powerlines and replaced with Tristaniopsis.
- existing Tristaniopsis on south side to be retained and supplemented to create continuous row on this side of street.

River Road

- existing Eucalypt spp. to be retained and supplemented where possible with same species.

Public Open Space and Links

- retain existing trees unless prior approval obtained from Council

Private Open Space and Setbacks

- Retain existing trees unless prior approval obtained from Council
- Council requires an arboricultural impact assessment including SULE assessment to be carried out by a qualified arborist
- Agreement with Council on existing trees to be retained is required pre-DA

Tree Removal:

- Retain existing trees and supplement with same species (subject to Preliminary Tree Assessment Report)
- Progressively remove existing trees and replace with new species as per stm
- Retain existing trees (agreement on trees to be retained is required pre-DA)

STREET TREE MASTERPLAN

The street tree masterplan aims to build upon the existing character of the precinct by retaining existing street trees where well established and of suitable species, and supplementing these to help maintain and enhance the existing leafy character. Priority will be given to those sides of the streets where trees have been adversely affected by pruning to clear overhead powerlines (eg. east side of Park Rd), in conjunction with a program to underground power lines, and to streets where trees are less well established (eg. Berry Road) or are absent / in poor condition (west side of Canberra Ave). It is proposed to continue to plant street trees predominantly within the verges to maintain/create a symmetrical avenue affect.

Lophostemon confertus (Bushbox)

Flindersia australis (Crow's Ash)

Melaleuca quinquenervia (Broad Leafed Paperbank)

Eucalyptus scoparia (Wallangarra White Gum)

Street Tree:

- Lophostemon confertus (Bushbox)
- Tristaniopsis laurina (Water Gum)
- Flindersia australis (Crow's Ash)
- Melaleuca quinquenervia (Broad Leafed Paperbank)
- Eucalyptus scoparia (Wallangarra White Gum)

MASTERPLAN
PLANTING

This LMP is to be read in conjunction with Lane Cove Council's DCP, Part J - Landscaping.

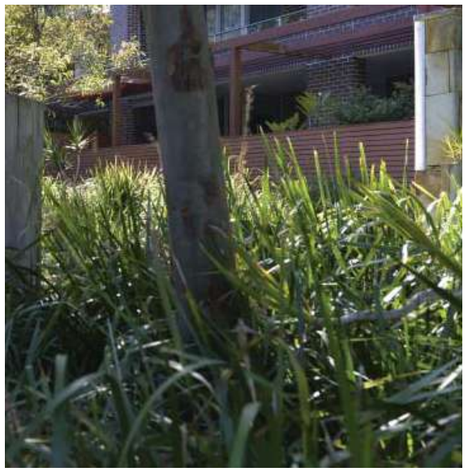
Planting within public open space (excluding streets) and private open space should adopt the following principles:

- Assisting with maintaining and enhancing the existing green character of the precinct, particularly through tree planting, in public and private open space;
- Providing significant areas of deep soil planting within private development sites;
- Selecting suitable tree species for the size of space and volume of soil available;
- Planting to building setbacks particularly in front setbacks to the street to help reduce the scale of buildings;
- Planting for amenity and shade to communal open space located on ground, podiums or rooftops;
- Mature canopy tree cover (existing + proposed) is to be minimm 50% of area of Green Spine;
- New canopy trees within Green Spine to include min 50% large sized trees (12m high +) or medium sized trees (8-12m high) and max 50% small trees (up to 8m high);
- Basement car parks if located under Green Spines to be located in order to retain significant existing trees and to provide min 1m soil depth over entire area of basement;
- All planting on structures to provide minimum soil depth and volume requirements in accordance with the Apartment Design Guide section 4P and Part J - Landscaping;
- Selecting hardy, low water use and low maintenance species.







Street Tree Planting

Where a new street and / or undergrounding of power lines is proposed and new street tree planting is required, a structural root cell system (such as Strata Vault by City Green or approved equal) shall be used and the appropriate amount of both structural soil and an adequate supply of loose, well-aerated, moist and uncompacted soil structure shall be supplied in order for the trees to thrive. This enables their roots to obtain nutrients, oxygen and water - all essential for healthy tree growth.

Construction drawings and details are to be submitted to Council's Landscape Architect for assessment and approval as part of the Development Application stage clearly outlining the soil structure, soil volumes and depths as well as construction methods of the structural root cell system.

The following table shall apply:

	PLANT SIZE	MINIMUM STANDARDS
A	Large trees (canopy diameter of up to 16m at maturity)	minimum soil volume 150m3 minimum soil depth 1.3m minimum soil area 10m x 10m or equivalent
B	Medium trees (8m canopy diameter at maturity)	minimum soil volume 35m3 minimum soil depth 1m minimum soil area 6m x 6m or equivalent
C	Small trees (4m canopy diameter at maturity)	minimum soil volume 9m3 minimum soil depth 800mm minimum soil area 3.5m x 3.5m or equivalent
D	Shrubs	minimum soil depth 500-600mm
E	Ground cover	minimum soil depth 300-450mm
F	Turf	minimum soil depth 100-300mm

PUBLIC DOMAIN - TREE PLANTING

Acer buergerianum

Angophora costata

Brachychiton acerifolius

Callistemon viminalis

Cupaniopsis anacardiodes

Elaeocarpus reticulatus

Eucalyptus paniculata

Eucalyptus pilularis

Eucalyptus scoparia

Hymenosporum flavum

Jacaranda mimosifolia

Liquidambar styraciflua

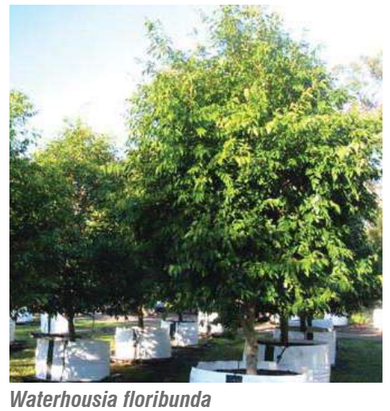
Melaleuca quinquenervia

Podocarpus elatus

Syzygium luehmannii

Tristaniopsis laurina

Ulmus parvifolia



Waterhousia floribunda

PUBLIC DOMAIN PLANTING - SHRUBS, GROUNDCOVERS & VINES

Acacia terminalis

Asplenium australasicum

Callistemon viminalis

Cissus antarctica

Clivia miniata

Dianella caerulea

Doryanthes excelsa

Grevillea sericea

Leptospermum trinervium

Agonis flexuosa

Lomandra 'Tanika'

Myoporum parvifolium

Hibbertia scandens

Philodendron 'Xanadu'

Phormium cookianum

Poa labillardieri

Melaleuca thymifolia

Westringia fruticosa

PRIVATE DOMAIN - TREE PLANTING

GREEN SPINES & SETBACKS

Angophora costata

Brachychiton acerifolius

Eucalyptus paniculata

Eucalyptus pilularis

Eucalyptus scoparia

Hymenosporum flavum

GREEN SPINES & SETBACKS

Jacaranda mimosifolia

Liquidambar styraciflua

Syzygium luehmannii

Tristaniopsis laurina

Ulmus parvifolia

Waterhousia floribunda

ROOF GARDENS

Backhousia citriodora

Banksia serrata

Cupaniopsis anacardiodes

Hibiscus tileaceous ‘Rubra’

Lagerstroemia indica

Magnolia grandiflora ‘Little Gem’

GREEN SPINE PLANTING - SHRUBS, GROUNDCOVERS & VINES

Acanthus mollis

Anemone x hybrida

Arthropodium cirratum

Aspidistra elatior

Asplenium australasicum

Calathea zebrinus

Ctenanthe 'Silver-Maroon'

Clivia miniata

Cissus antarctica

Dichondra argentea Silver Falls

Hydrangea quercifolia

Phormium cookianum

Liriope muscari 'Silver Lawn'

Philodendron 'Xanadu'

Plectranthus argentatus

Camelia sasanqua

Rhapis excelsa

Viola hederacea

FRONT & SIDE SETBACK PLANTING - SHRUBS, GROUNDCOVERS & VINES

Acanthus mollis

Arthropodium cirratum

Aspidistra elatior

Asplenium australasicum

Blechnum nudum

Callistemon viminalis 'Little John'

Clivia miniata

Cyathea spp

Dianella caerulea

Doryanthes excelsa

Viola hederacea

Lomandra 'Tanika'

Philodendron 'Xanadu'

Phormium cookianum

Camelia sasanqua

Rhapis excelsa

Syzygium australe 'Elite'

Westringia fruticosa

ROOF GARDEN PLANTING - SHRUBS, GROUNDCOVERS & VINES

Acacia cognata 'limelight'

Banksia Birthday Candles

Carpobrotus glaucescens

Callistemon viminalis 'Little John'

Dianella revoluta 'Little Rev'

Eriostemon myoporoides

Grevillea 'Superb'

Cyathea spp

Hardenbergia violacea

Hibbertia scandens

Lomandra 'Tanika'

Leptospermum 'Lemon Bun'

Myoporum parvifolium

Poa labillardieri

Baeckia virgata 'Nana'

Russelia equisetiformis

Scaevola 'Mauve Clusters

Westringia fruticosa

MASTERPLAN
MATERIALS

Materials selections for public and private open space should adopt the following principles:

- Using materials with low VOC content, low embodied energy, high recycled content, the ability to be recycled, and are locally sourced wherever possible;
- Ensuring all timber is either sourced from sustainable sources (with relevant certification) or is recycled;
- Using materials that are robust, fit for purpose and easily maintained and replaced;
- Using a hierarchy of materials, with higher quality materials and more bespoke elements used for the most important areas, and standard quality materials / elements used for less important areas;
- Consistent use of paving materials and colour for private domain footpaths for continuity between development sites;
- Private domain materials and colours should be suitable for a formal landscape theme and complement building materials and colours;
- Retain or reuse existing sandstone walls. Where not possible to retain, they should be photographically recorded;
- Private domain materials and colours should reflect the local context by appropriate material and colour selections eg. sandstone, sandstone coloured concrete or plain insitu concrete, hardwood timber, natural or neutral paint colours.

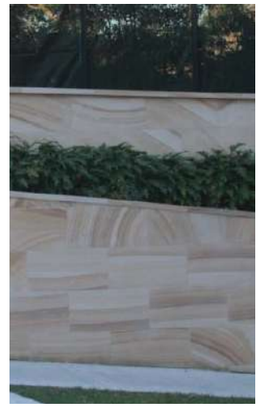
Refer below for indicative materials selections.

1. Public domain footpaths: broom finished insitu concrete
2. Private domain paving: exposed aggregate insitu concrete
3. Private domain feature paving: precast concrete or granite unit paving
4. Stairs: insitu concrete, precast concrete or granite unit paving
5. Drainage grates: heelguard type stainless steel
6. Landscape walls: Class 2 off-form insitu concrete or sandstone clad blockwork
7. Fences & balustrades: painted mild steel
8. Handrails: painted mild steel or stainless steel
9. Bench seats: painted mild steel frames with composite timber (TREX or approved equal) battens
10. Wall seats: insitu concrete or sandstone bases with composite timber (TREX or approved equal) battens on galvanised steel frame
11. Litter bins, bollards, bike racks: stainless steel
12. Play areas: recycled rubber softfall or play bark
13. Play equipment: hardwood timber and painted steel
14. Shade structures: hardwood timber battens or stainless steel cables/mesh (to support climbing plants) and insitu concrete or painted steel frames










MASTERPLAN
LIGHTING

The approach to lighting should be based on the following principles:

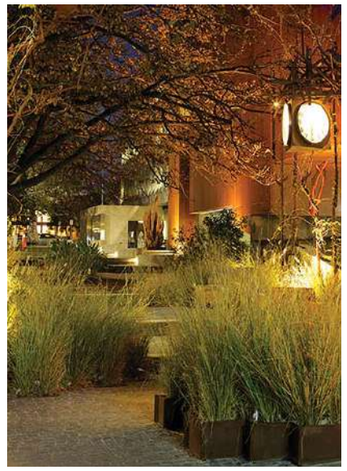
- External spaces should be lit to the appropriate lighting category in accordance with Australian Standards;
- The lighting strategy should adopt a hierarchy, with a higher category of lighting and more feature lighting used for the most important spaces or major circulation routes, and a lower category of lighting used for less important spaces or routes;
- External spaces should be adequately lit without being over-lit or resulting in light spill issues;
- External lighting should encourage the use of spaces during hours of darkness in order to promote activation and surveillance;
- Lighting should not just be utilitarian but should include feature or architectural lighting of key spaces or elements to enhance the design;
- Energy efficient lighting such as LED and solar powered should be used.

Refer below for indicative lighting type selections:

- Public streets: street pole lighting
- Public parks: pedestrian pole lighting
- Private open space: pedestrian pole lighting to major pathways/spaces, low level bollard lighting or wall lighting to minor pathways/spaces, handrail lighting to stairs, feature lighting to structures, water features and feature trees





MASTERPLAN
PUBLIC ART

The approach to public art should be based on the following principles:

- all developments should include a public art component;
- the delivery of public art should be based on relevant Council policies and protocols;
- public art should be closely integrated with the design of buildings and spaces rather than included as an afterthought or add-on;
- the scale of public art should be appropriate for the scale of the space in which it is located;
- the design of public art should be site specific and relevant to the character, history or design of that particular place;
- public art should be designed to be safe, robust and easily maintained;
- all public art shall be submitted to Lane Cove Council's Public Art Committee for apporval at the DA stage.






MASTERPLAN
SUSTAINABILITY

The approach to sustainability should be based on the following principles:

- The location and design of walking / cycling paths and outdoor spaces should promote active transport and physical activity;
- Water sensitive urban design measures should be incorporated within public and private open space. Examples include the provision of rain gardens within the parking lanes or in open space at the low end of public streets, and rainwater tanks to collect rainwater for reuse within buildings and/or for irrigation;
- Opportunities to provide communal gardens as part of the communal open space should be explored;
- Opportunities to provide extensive or intensive green roofs on new buildings should be explored;
- Materials used in the public and private domains should have low VOC content, low embodied energy, high recycled content, the ability to be recycled, and be locally sourced wherever possible;
- Retain or reuse existing sandstone walls. Where not possible to retain, they should be photographically recorded;
- All timber used in the public and private domains should be either sourced from sustainable sources (with relevant certification) or recycled;
- Energy efficient lighting such as LED and solar powered should be used;
- The use of a structural rootcell system along with drainage cell and other water storage / reuse elements in areas where appropriate is strongly encouraged;
- Permeable paving to reduce run-off and increase water reuse;
- Vertical gardens / green walls to reduce building temperatures where appropriate.

MASTERPLAN
STAGING & OWNERSHIP

As the precinct will be divided into separate development sites which will be developed at different times, it is critical that the design of the buildings and private domain considers the interfaces with the adjoining sites, both east-west and north-south.

In terms of East-West transitions, it is essential that the green link of adjoining east-west development sites is treated as a single open space and is at the same level. Refer to the indicative levels plan on page 28 for suggested private domain levels.

For north-south transitions, the preferred approach is shown on page 29, with ramps located on the north side of each development site which accommodate the level change between sites.

Temporary and civil works may be required to deal with interim conditions between adjacent development sites.

In terms of ownership, the following delineation between public and private ownership of open space is proposed:

1. Public ownership: local park, shared streets, major east-west pedestrian link, pocket parks within road reserves at ends of Berry Rd and Holdsworth Ave.
2. Private Ownership: green spine, minor pedestrian links, pocket parks along Marshall Ave.

The pocket parks and pedestrian links within private ownership are required to provide 24 hour public access and will be subject to a Section 88E covenant entered into between the private land owner and Council.

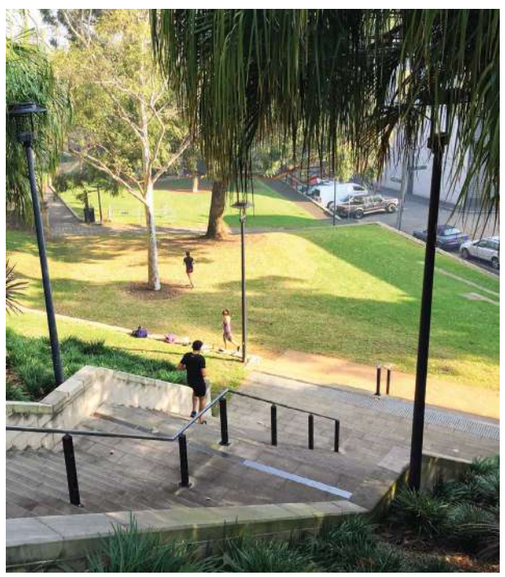
05

APPENDICES

LOCAL PARK

Frog Hollow Reserve, Surry Hills

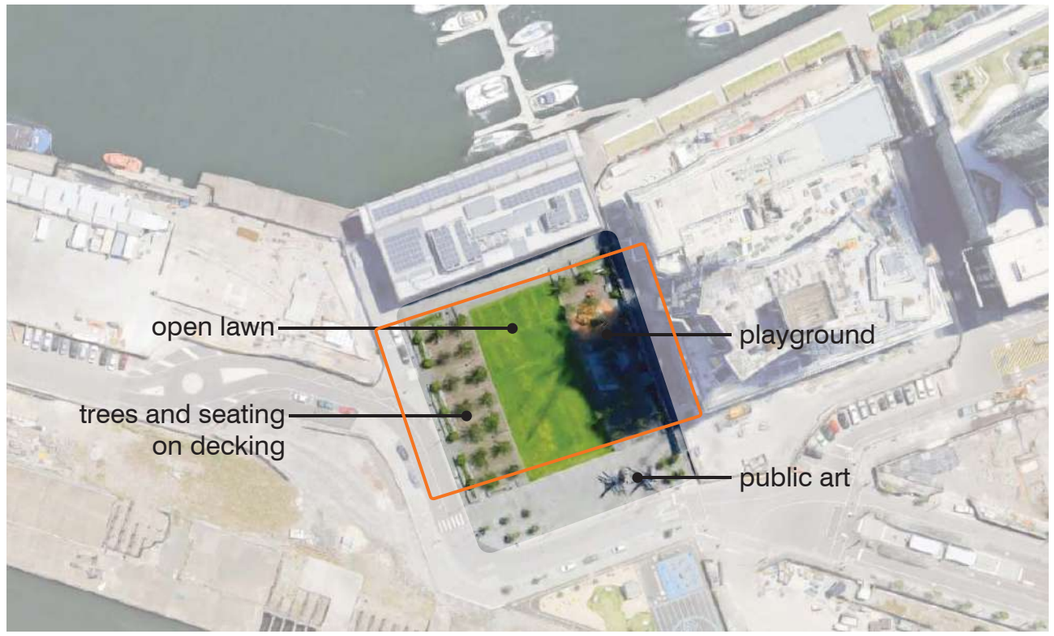
- 3100m^2
- level change with stairs and terraced spaces
- open lawn areas
- mature trees
- perimeter planting



Nuffield Park, Zetland

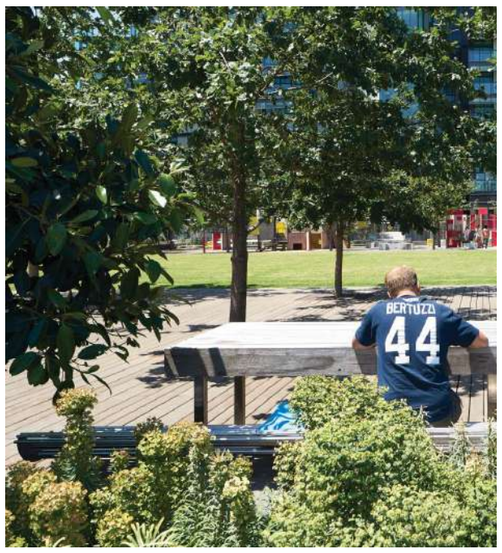
- 5000m^2
- tennis and basketball court
- open lawn area (drainage basin)
- perimeter planting
- tree groves with seating

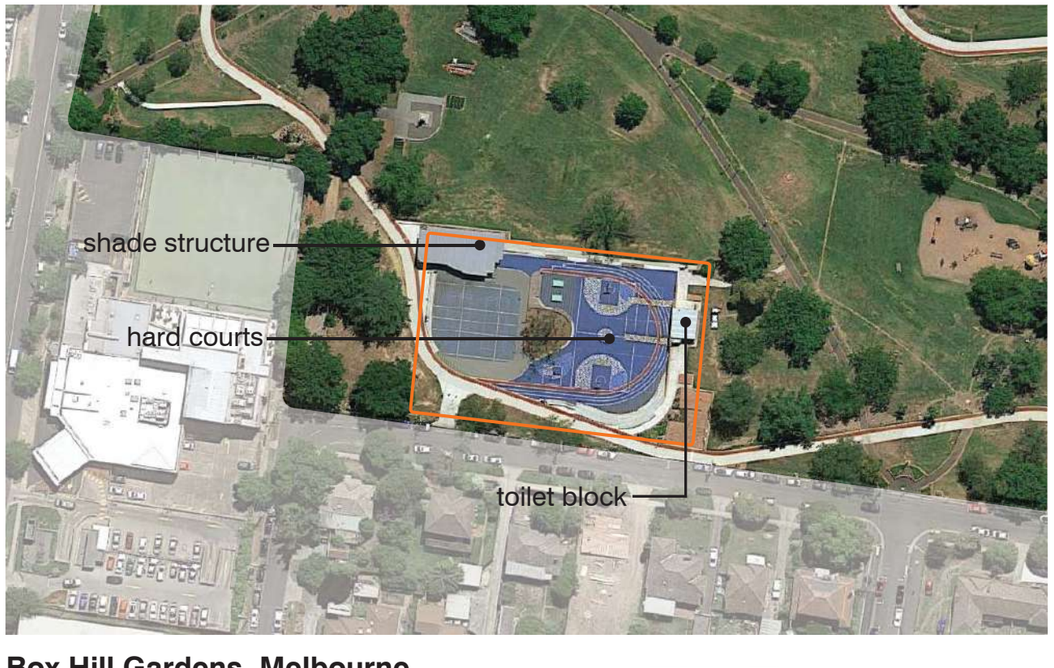
LOCAL PARK



Buluk Park, Melbourne

- 3100m^2
- formal layout
- sculptural playground
- tree groves and seating
- paved areas
- public art





Box Hill Gardens, Melbourne

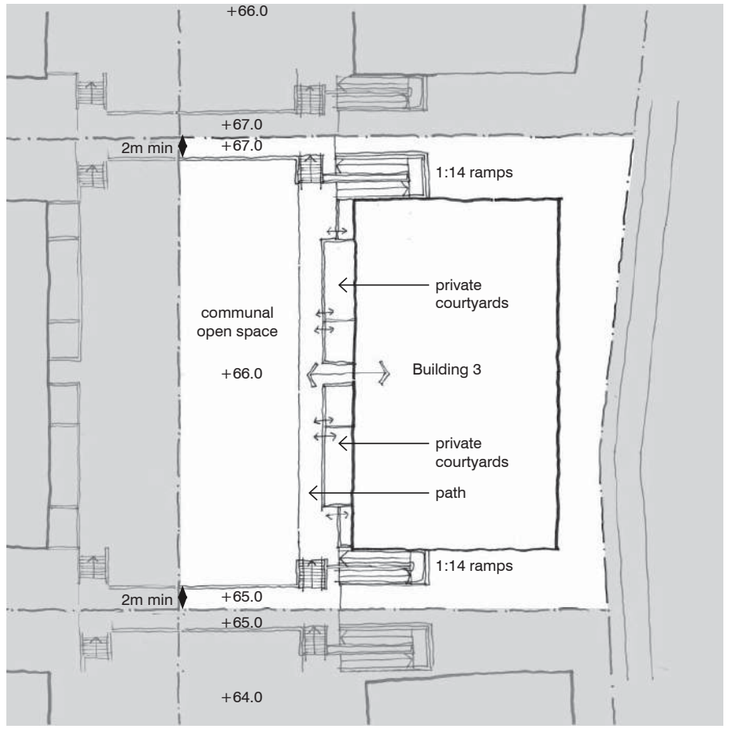
- multi-use courts
- predominantly paved surfaces
- flexible space
- existing trees
- seating and tables

LEVELS STUDY

N-S TRANSITION STUDY

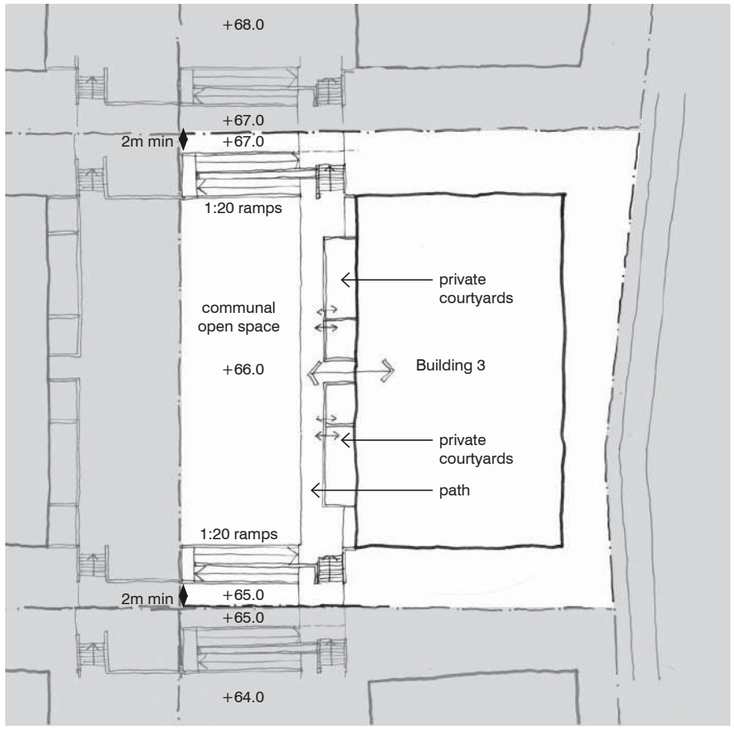
Transitions study - Option 1

- Grade changes taken up at edges of the site with ramps, stairs and 1m (max) retaining walls
- Min 2m setback to boundaries at designated RL required
- Accessible ramps at 1:14 (with handrails) located outside of main north-south open space
- Direct access enabled between private courtyards and open space pathway
- Maximises the flat area available for communal open space



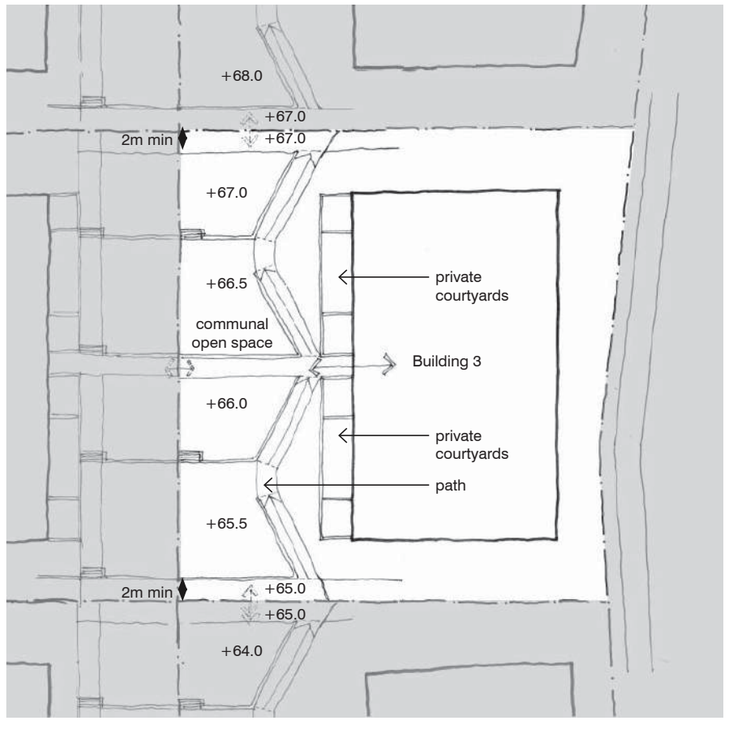
Transitions study - Option 2

- Grade changes taken up at edges of the site with ramps, stairs and 1m (max) retaining walls
- Min 2m setback to boundaries at designated RL required
- Accessible ramps at 1:20 (no handrails required) located within main north-south open space
- Direct access enabled between private courtyards and open space pathway
- Consolidated communal open space



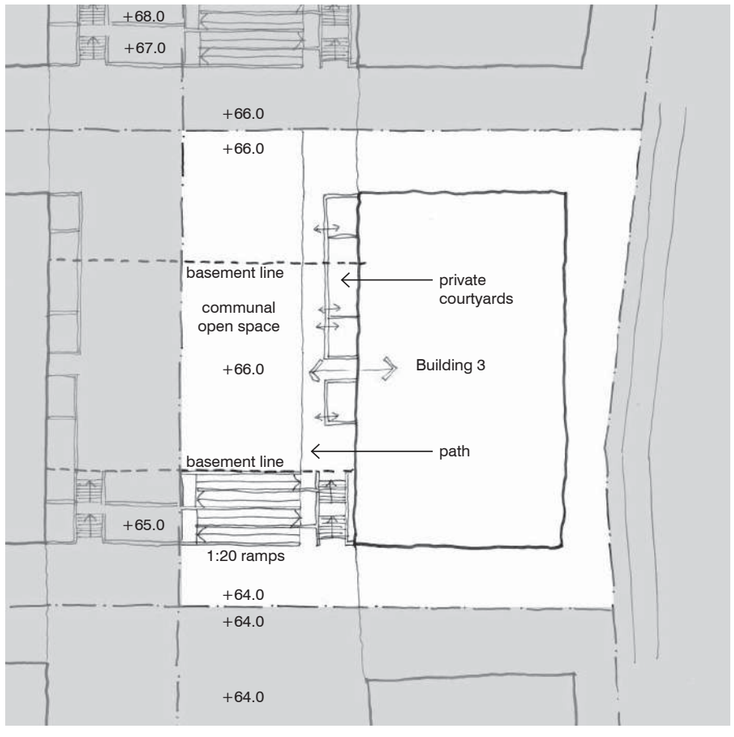
Transitions study - Option 3

- Gradual grade changes across site taken up with 0.5m walls, stairs and ramps
- Min 2m setback to boundaries at designated RL required
- Accessible ramps at 1:20 (no handrails required) located across main north-south open space
- Restricted access between private courtyards and open space pathway - could be achieved with stairs
- Terraced communal open space - reduces the impression of segmentation between lots



Transitions study - Option 4

- Grade changes taken up in one location with ramps, stairs and 1m (max) retaining walls
- Accessible ramps at 1:20 (no handrails required) located within main north-south open space and south of the basement boundary. Option for 1:14 ramps at ~3/4 length shown, with handrails.
- Direct access enabled between some private courtyards and open space pathway
- Consolidated communal open space, however spread over adjacent developments

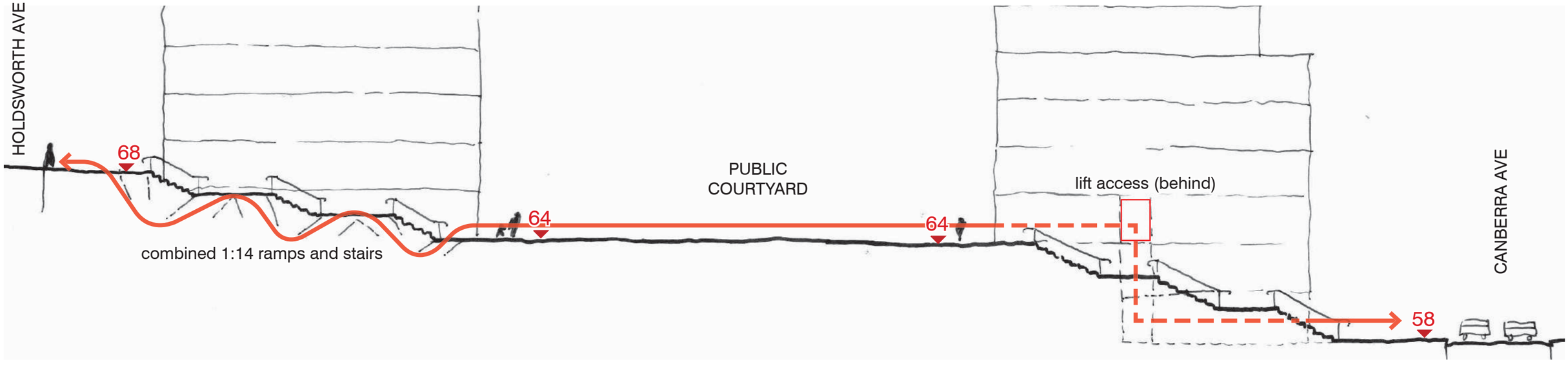


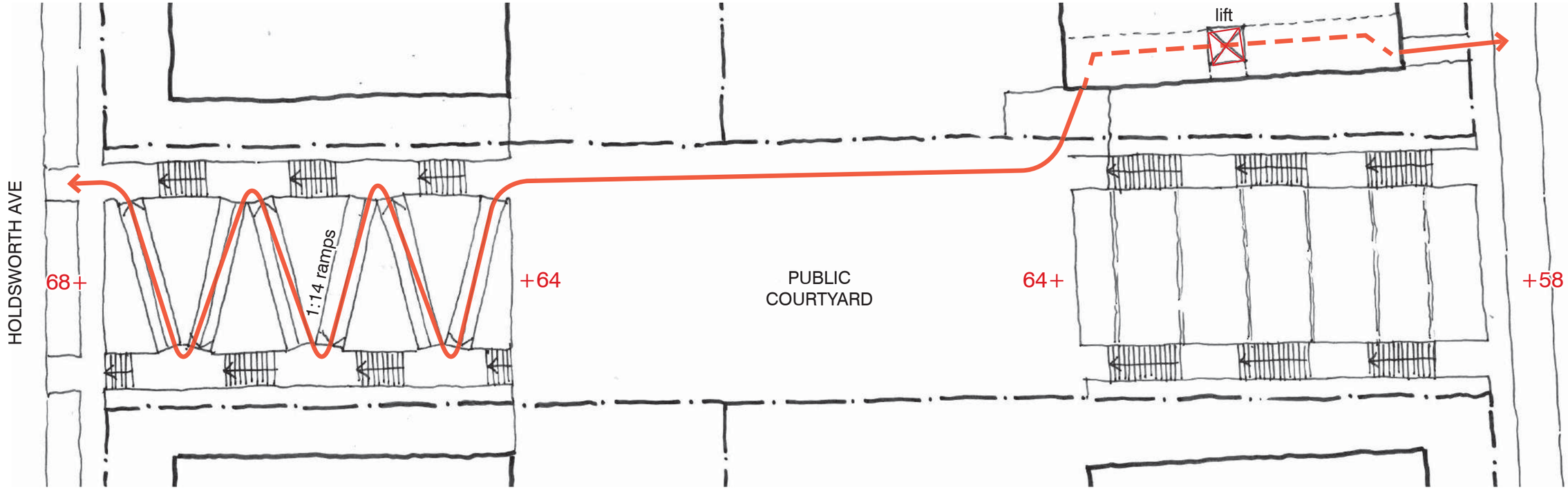
LEVELS STUDY

E-W ACCESSIBLE CONNECTION

Option 1 (Note: This is the preferred option, with a change to 1:20 ramps instead of 1:14 ramps)

- 1:14 ramps are integrated into the stairs and landscape between Holdsworth Ave and the public courtyard.
- Landscape treatment around ramps allows for softening of the transition and helps hide handrails
- Ramps and stairs co-located with equal access and visibility as per best practice disabled access
- Lift access between the public courtyard and Canberra Avenue through public section of building



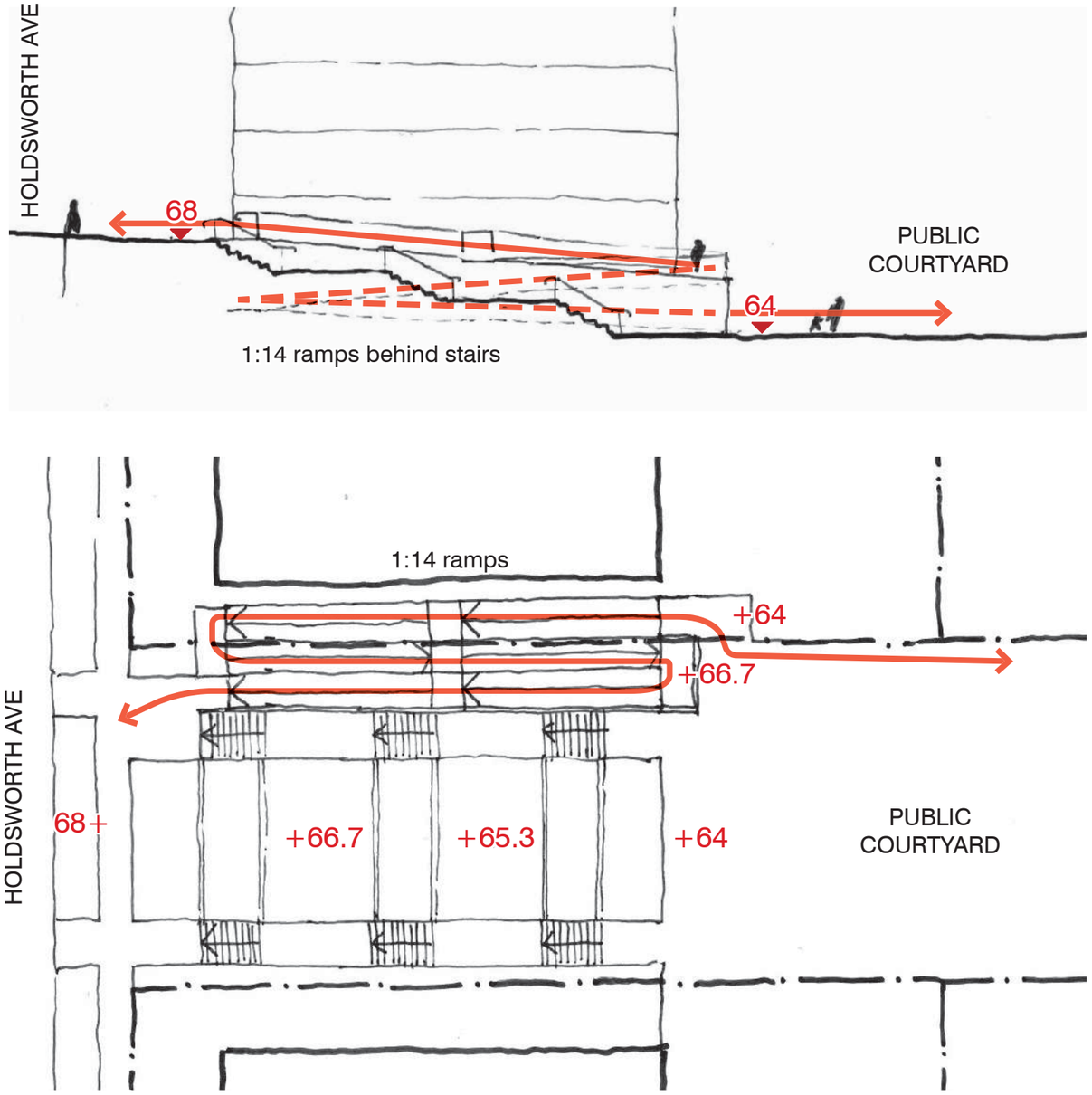


LEVELS STUDY

E-W ACCESSIBLE CONNECTION

Holdsworth Ave to Public Courtyard - Option 2

- 1:14 ramps separated from stair and landscape transition
- Public walkway encroaches into private development lot and creates a poor relationship between building and public space
- Separate ramp access separates wheelchair / pram users from main pedestrian connection - poor accessibility outcome
- Poor visibility to lower portion of ramps creates a safety issue
- Ramps become visually obtrusive within the public space with no screening to walls and handrails.
- Central landscape still requires terracing to take up the 4m level change - recommended max 1m walls to avoid balustrades



Holdsworth Ave to Public Courtyard - Option 3

- Stairs only between upper and lower level
- No access available for wheelchair users (or prams) - very poor accessibility outcome
- Central landscape still requires terracing to take up the 4m level change - recommended max 1m walls to avoid balustrades