KIAMA MUNICIPAL COUNCIL
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Kiama Development Control Plan 2020
DRAFT Chapter 12.11
South Kiama Urban Release Area

for public exhibition

RESPECT INNOVATION INTEGRITY TEAMWORK EXCELLENCE

Chapter 12. Location Specific Controls

Topic 12.11 – South Kiama Urban Release Area

Site overview

The South Kiama Urban Release Area (the Site) lies in the Wollongong Coastal Plain region, between the Pacific Ocean and the Illawarra Escarpment (Figure 1 and Figure 2). The Site is approximately 41 hectares in size and is located approximately 1.6 kilometres to the southwest of Kiama Town Centre. It has frontages to Saddleback Mountain Road to the north, Weir Street to the south and the Princes Highway to the east. A vehicular culvert, located to the north of Munna Munnora Creek, provides access from the Site to South Kiama Drive.

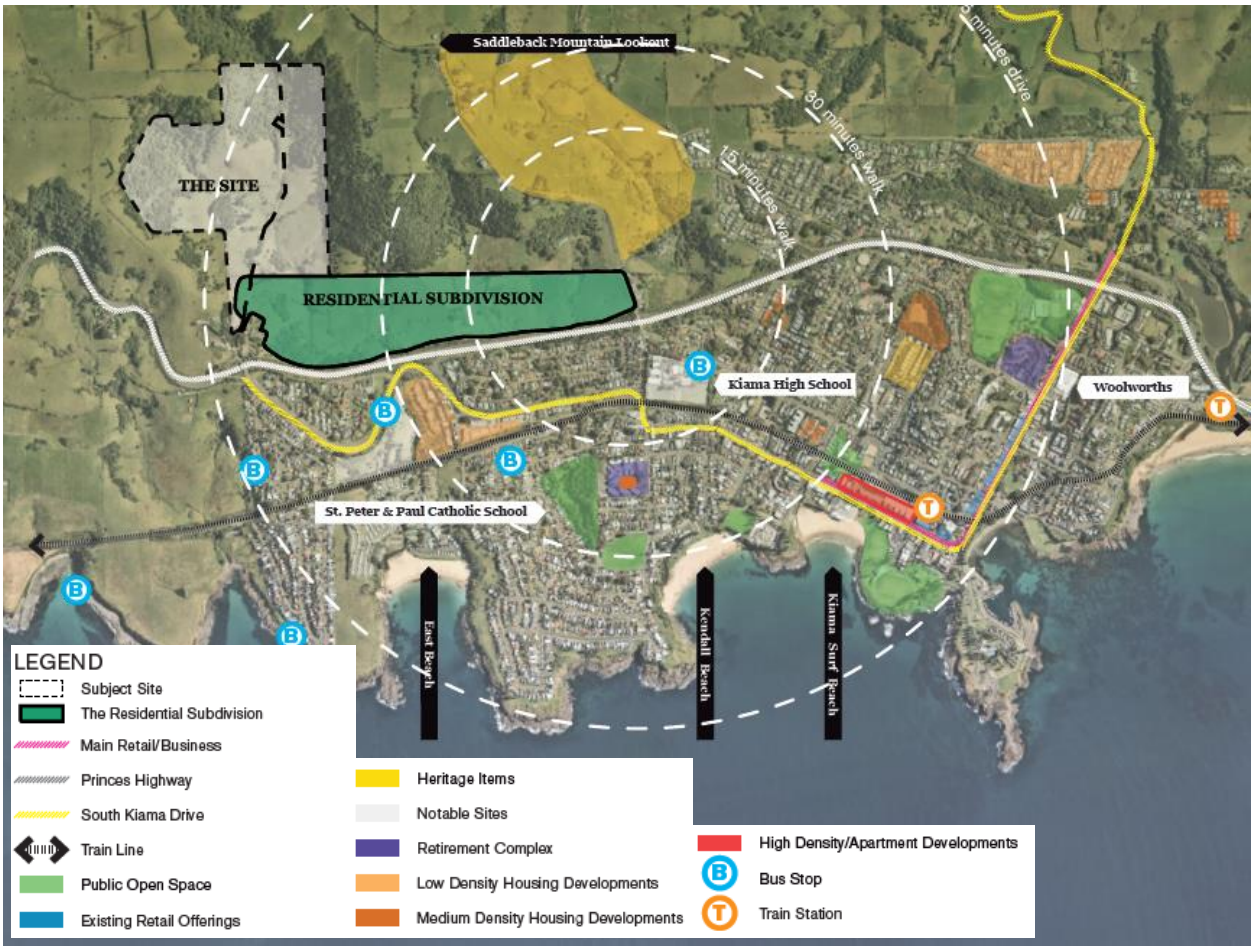

Figure 1: Context map (DKO, 2023)

Figure 2: Aerial image of the Site – South West view (DKO, 2023)

Future character

The character of the South Kiama Urban Release Area is transitioning from a rural landscape to an urban landscape of predominantly residential, recreational, and environmental protection uses. The desired future character will be achieved through adherence to the vision statement, place principles, concept plan and site-specific objectives and controls in Chapter 12.11 of this Development Control Plan. In determining the appropriate future character of the Site, the following objectives and controls apply:

Objectives

O:12.11.1	Maintain and enhance the environmental, scenic, and historic features of the Site while creating a sustainable and liveable residential neighbourhood for future residents.
O:12.11.2	Deliver greenfield housing and associated infrastructure in Kiama near existing services and facilities.
O:12.11.3	Create residential neighbourhoods that respond to the natural landscapes, natural topography and corridors that define the Site.
O:12.11.4	Promote liveability and high-quality urban design outcomes.
O:12.11.5	Enable the logical development of the Site, introducing a local 'village' character typical of the neighbourhoods found through the Kiama township.
O:12.11.6	Integrate transport and pedestrian access and infrastructure within the Site layout to support the future neighbourhoods whilst providing enhanced connectivity to the wider locality.
O:12.11.7	Create a community of unique living experiences, interconnected by nature to restore a healthy landscape and promote a healthy lifestyle.
O:12.11.8	Realise the landscape vision that promotes conservation and restoration, environmental custodianship, community identity, cultural character and celebrates the setting.

Site Specific Control

12.11.1 Development applications are to demonstrate consistency with the vision statement, place principles and the Concept Plan described below and relevant Site-specific objectives and controls.

Place vision

The vision for Kiama South Urban Release Area is to create a liveable and sustainable residential community that provides innovative housing design and high levels of amenity for the future residents.

This vision includes the following objectives that guide the urban design principles:

Place principles

Six (6) place principles will drive the urban design and built form outcomes for the residential subdivision of the Site and will continue to influence the various design and construction stages of the Site and future residential dwellings. These are:

Heritage Fabric Management

Retain significant number of original elements including Kendalls Cemetery and dry stone walls throughout the Site, and incorporate the Site's historic, social and cultural significance into the desired character of the concept DA.

Topography

Use the Site's unique topography to maximise outlook to open green corridors within the Site, minimise earthworks and create five distinct villages. Create houses that will be unique to coastal Kiama, creating a special vernacular.

Riparian Corridor Use

Enhance the Munna Munnora Creek and riparian corridors to manage flood risks, offer a mix of active and passive recreational uses and introduce water quality management.

Valuing Ecological Communities

Enhance and maximise preservation of identified important ecological communities throughout the Site. Street trees to be placed to provide fauna connection points. Preservation of threatened species of flora and embellishment of planting in the riparian corridor.

Open Space Diversity

Achieve high quality open spaces, provide spaces for all ages and create opportunities for more residents to have nature at their doorstep. Create an open space network across the Site that contributes to the character and amenity of each residential villages.

Connecting into the Local Network

Create vehicular, public transport and active movement links to provide easy and safe access to Kiama Town Centre, local parks, open spaces and other residential neighbourhoods. Deliver a street network that is legible, safe and designed to provide amenity and a cool microclimate within the Site with generous street verge and street widths.

The principles above are complemented by five (5) landscape principles:

Conserve and restore

Utilise the opportunity to recognise the unique and beautiful natural aspects of the site. Improve inter-site ecology through restorative landscape applications

Environmental custodianship

Promote the connectivity and accessibility of great natural areas throughout the site. Improve degraded pasture areas to encourage pride in natural systems and custodianship of the environment by South Kiama residents.

Community identity

Bring people together, promoting activation and sense of Community and celebrate the fantastic south coast lifestyle

Cultural character

Acknowledge, protect, and celebrate Indigenous heritage, promoting a sense of place and integrating cultural heritage into design outcomes.

Celebrate setting

Celebrate the unique aspect and topography of the site. Create opportunities with walking trails and rest points which provide access to views for all. Careful consideration of entries with deliberate landscape intervention to enhance gateway arrival experience.

Figure 3: Vision for South Kiama (DKO, 2023)

Concept plan

The concept plan (Figure 4) illustrates the spatial directions that will guide land use and development of the Site pertaining to housing, streets, pedestrian and bicycle networks, environmental protection areas, public open spaces, Aboriginal and European heritage, infrastructure and others.

Development Applications (DA) are to be assessed against the concept plan to ensure that the strategic directions identified are achieved.

KEY FEATURES

1 Village 1 – Ridgetop Gateway	6 Entry Signage Location	11 Bio-retention Basin
2 Village 2 – Ocean Outlook	7 Riparian Corridors	12 Future Bus Stop
3 Village 3 – Central Village	8 Kendall Cemetery	13 Offset planting
4 Village 4 – Munna Munnora	9 Retained Vegetation	14 Munna Munnora Creek
5 Village 5 – Ridgetop	10 Retained Dry Stone Walls	15 Community Picnic Lawns

Figure 4: Concept plan (DKO, 2023)

Development Controls

This section should be read in conjunction with the other chapters of the Kiama Development Control Plan 2020. Where there are inconsistencies, this chapter (12.11) of the Kiama DCP should prevail.

1. Connectivity

Objectives

O:12.11.9	Create safe, pleasant, walkable, and accessible streets and footpaths within the Site.
O:12.11.10	Provide a legible, connected, and permeable grid of streets that are sympathetic to the natural topography and natural assets and is connected to the surrounding urban areas.
O:12.11.11	Create streets that encourage social interaction while balancing the efficient movement of people and goods.
O:12.11.12	Create a street layout that maximises views to significant landscapes and waterways.
O:12.11.13	Provide bus stops in accessible locations for residents and visitors.
O:12.11.14	Integrate the bus route and stops throughout the Site.
O:12.11.15	Incorporate high quality landscaping, street trees and public lighting to streets, cycleways, and footpaths.
O:12.11.16	Provide safe and pleasant cycleways and/or shared paths across the Site to promote active transport and active lifestyles.

Site Specific Controls – Street network and hierarchy

12.11.2 Development applications are to demonstrate consistency with the vision statement, place principles and the Concept Plan described below and relevant Site-specific objectives and controls.

12.11.3 The street network should follow natural ground contours and overland flow as much as possible to minimise requirements for cut and fill.

12.11.4 Cul-de-sacs and dead-end streets are to be avoided.

12.11.5 The north-south collector road is to connect to Weir Street to the south, Saddleback Mountain Road to the north, and the Kendalls Cemetery Access to the east and is to be designed in accordance with Austroads Guide to Road Design.

12.11.6 The collector road is to be designed to balance the efficient movement of people and goods while creating a safe, walkable and pleasant environment for pedestrians and cyclists.

12.11.7 A shared path of a minimum 2.5 metres wide is to be provided on the collector road, between Saddleback Mountain Road and Weir Street.

12.11.8 Access streets and access roads are to be designed as low-speed and low-traffic zones.

12.11.9 Access roads adjacent to environmental corridors and riparian corridors are to be designed to reduce risk of vehicle strike to wildlife.

12.11.10 Any temporary fire access road must be designed to allow safe access and egress for firefighting vehicles in accordance with *Planning for Bushfire Protection 2019* (PBP). This includes:

a) An 8 metre wide carriageway kerb to kerb.
b) Parking and footpaths are to be provided outside of the carriageway.

12.11.11 All perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface. This includes:

a) Minimum 8 metre wide carriageway kerb to kerb.
b) Parking is to be provided outside of the carriageway width.

12.11.12 Non-perimeter access roads, access streets and private access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating in accordance with PBP. This includes:

a) Minimum 5.5 metre wide carriageway kerb to kerb.
b) Parking is provided outside of the carriageway width.

12.11.13 Road layouts / street design should accommodate manoeuvring in accordance with Austroads Design Vehicles and Turning Path Templates Guide. All intersections must accommodate the turning movements of the 9.64 metre Refuse Collection Vehicle (RCV) or as required by the Austroads Guide (whichever is larger).

12.11.14 An access point for pedestrians, cyclists and emergency vehicles only is to be provided in the former Kendalls Cemetery Access, connecting the collector road to Hillview Crescent to the east.

Refer to 10. Bushfire for further objectives and controls.

12.11.15 Intersections and streets should be design in accordance with the relevant Australian Standards and guidelines.

12.11.16 Traffic management and calming devices should generally comply with the requirements of *Austroads Guide to Traffic Management Part 8: Local Area Traffic Management* and be subject to review and approval by the consent authority.

12.11.17 A footpath of a minimum width of 1.5 metres is to be provided on the northern side of Saddleback Mountain Road. This excludes the Saddleback Mountain Road overpass.

12.11.18 All emergency access routes must be designed in consultation and concurrence with TfNSW and RFS.

Site Specific Controls – Street typology

12.11.19 The collector road must allow for:

a) An 8 metre wide carriageway kerb to kerb that is clear of parking bays and that meets RFS requirements.

b) Parking lanes or indented parking bays on both sides of the road that are a minimum of 2.1 metres wide.

c) A verge with a minimum width of 3.5 metres. The verge must include:

- a continuous shared path on one side that is a minimum of 2.5 metres wide,
- a footpath on one side of the road that is a minimum of 1.2 metres wide.
- high-quality landscaping and tree planting on both sides of the road.

12.11.20 Perimeter access roads must allow for:

a) An 8 metre wide carriageway kerb to kerb that is clear of parking bays and that meets RFS requirements.

b) A parking lane or parking bays where the road fronts residential lots that are a minimum of 2.1 metres wide.

c) A verge with a minimum width of 3.5 metres where the road fronts residential lots. The verge must include:

- a footpath where the road fronts residential lots that is a minimum of 1.2 metres wide.
- high-quality landscaping and tree planting on both sides of the road.

d) Dry stone walls must be located a minimum of 3.5 metres from the kerb line.

12.11.21 Internal access roads must allow for:

a) A 5.5 metre wide carriageway kerb to kerb that is clear of parking bays and meets RFS requirements.

b) On-street parking bays or a parking lane that is a minimum of 2.1 metres wide where it fronts residential lots.

c) A verge with a minimum width of 3.5 metres.

d) Footpaths on both sides of the road that each have a minimum width of 1.2 metres.

e) Where the road fronts an open space, a shared path with a minimum width of 2.5 metres within the open space.

f) Tree planting and landscaping within the verge on both sides of the road.

g) Dry stone walls must be located a minimum of 3.5 metres from the road reserve.

12.11.22 Private access roads must allow for:

a) A 5.5 metre wide carriageway kerb to kerb that is clear of parking bays and meets RFS requirements.

b) A road reserve that is at least 8 metres wide.

c) A footpath that is a minimum of 1.2 metres wide on one side of the road where the road fronts residential lots.

d) Local residents and emergency vehicle access only.

12.11.23 Temporary access roads must allow for an 8 metre carriageway width kerb to kerb that is clear of parking bays, verges and footpaths and meets PBP requirements.

Site Specific Controls – Pedestrian and bicycle network

12.11.24 A pedestrian and bicycle network plan is required to accompany a Development Application for a residential subdivision of the Site.

12.11.25 Pedestrian and bicycle facilities within the road reserve are to be designed and implemented in accordance with the controls – Street Typologies.

12.11.26 The central underpass of the motorway (Former Kendalls Cemetery Access) must accommodate a shared path, connecting the Site to the residential neighbourhoods to the east, to the satisfaction of Council and TfNSW.

12.11.27 An interconnected network of dedicated shared paths for pedestrians and cyclists is to be provided within the Site along the collector road, between Saddleback Mountain Road and Weir Street, and on green open spaces.

12.11.28 The shared path network is to be connected to the cycle routes identified in the Kiama Cycleway Plan.

12.11.29 The shared paths are to:

a) Be developed in consultation with Council and TfNSW.
b) Be designed and constructed in accordance with the relevant Australian Standards and Development Design Specification D9 Cycleway and Pathway Design.
c) Be safe and comfortable for people of all abilities through measures such as level pavements, ramps and tactile markers at crossings.
d) Ensure legibility and ease of wayfinding with clear sightlines.
e) Be well lit for safety, while avoiding glare into private residences and minimising light pollution.

12.11.30 Provide tree planting and landscape buffers for shade and visual interest.

12.11.31 Traffic management should not impede upon pedestrian movements.

12.11.32 Layout and road marking for bicycle and pedestrian network facilities at intersections are to be designed for the safe and continuous movement of pedestrians and cyclists.

Site Specific Controls – Public transport

12.11.33 Bus routes and bus stop facilities are to be developed in consultation with Council, the local bus operator and TfNSW.

12.11.34 Bus routes and bus stops are to be located along the collector road and be within walking distance to all dwellings.

12.11.35 Bus stop shelters are to be designed to reduce users' sun exposure in summer and to enhance protection from bad weather such as rain, wind and hail.

2. Lot density, type and layout

Objectives

O:12.11.17	Achieve a diversity of lot sizes and building types to offer greater housing choices to meet the changing needs of the community.
O:12.11.18	Orient lots to follow the natural contours, maximise views and support the desired future character of the Site.
O:12.11.19	Provide larger lot sizes in steeper and more visually prominent areas of the Site to minimise disturbance to the Sites' unique topography and maintain its landscape escarpment character.
O:12.11.20	Provide smaller lot sizes in flat and less visually prominent areas and close to green open spaces.
O:12.11.21	Maximise lots with principal street frontages and restrict the number of battle-axe lots to promote a safe, active and vibrant community.
O:12.11.22	Be consistent with the principles of ecologically sustainable development and solar energy efficiency.
O:12.11.23	Achieve total lot yield and dwelling densities that are commensurate with the anticipated provision of utility and transport infrastructure for the Site.

Site Specific Controls

12.11.36 Provide a maximum of 419 residential allotments across the Site that is made up of:

a) small lots (300m² – 450m²) along the flatter and less visually prominent central sections of the Site. These small lots should account for a maximum of 34% of the total residential allotments across the Site.
b) average-sized lots (>450m² – <1,000m²) located over the majority of the remaining area suitable for residential development. Average sized lots should account for a maximum of 62% of the total residential allotments across the Site.
c) large lots (>1,000m²) and lower building heights on visually prominent sections of the Site. Large lots should account for a minimum of 4% of the total residential allotments across the Site.

12.11.37 Include a range of lot sizes, orientations, and access arrangements to deliver a mix of housing typologies as shown in the indicative density strategy (Figure 5).

12.11.38 The lot layout must accommodate the appropriate building type and respond to the location by:

a) Orienting east-west to maximise views while minimising cut and fill.
b) Orienting north/south to follow natural topography.
c) Minimising overlooking and overshadowing.
d) Retaining existing heritage dry stone walls as identified in 6. Heritage.
e) Supporting active street frontages and creating opportunities for passive surveillance.

f) Providing battle-axe lots on lots fronting riparian corridors if required

12.11.39 All lots must meet the prescribed solar access, open space, and setback requirements.

Refer to 13. Built form.

Figure 5: Density strategy (DKO, 2023)

3. Public open space and tree canopy

Objectives

O:12.11.24	Create a network of high-quality and diverse public open space throughout the Site.
O:12.11.25	Ensure public open spaces are designed to be inclusive and equitable and are accessible by pedestrian and cycle paths.
O:12.11.26	Provide for landscaping and enhance tree canopy in public open spaces.
O:12.11.27	Protect and enhance the biodiversity values of the Site
O:12.11.28	Ensure that additional landscaping is considered within the expansion of public land beyond the Cemetery's walled boundaries.
O:12.11.29	Achieve a minimum of 30% tree canopy coverage across open space areas through preservation of existing trees and new tree planting.
O:12.11.30	Be consistent with the five (5) landscape principles in this DCP Chapter.

Site Specific Controls – Public open space network

12.11.40 A detailed landscape plan must be provided for any development application for the subdivision of land where public/green open space is proposed.

12.11.41 The Open Space Structure Strategy and landscaping for the Site shall:

a) Regenerate and rehabilitate the riparian/ecological corridors and existing creek lines with planting of species belonging to the Illawarra Subtropical rainforest and Coastal Freshwater Wetlands only.

b) Re-vegetate riparian/ecological corridors and visually prominent areas towards reduction of visual impacts upon surrounding areas.

c) Retain native trees and other significant mature trees within public land where possible.

d) Provide appropriate open space across the Site, including a range of open space types, functions, and hierarchy.

e) Achieve a 30% tree canopy coverage across the residential areas (villages).

f) Utilise trees and shrubs endemic to the local area.

g) Remove weeds in line with the Riparian Vegetation Management Plan (RVMP).

h) Include landscaping for Kendalls Cemetery and any surrounding open space, the Munna Munnora Trail, any Community Picnic Lawns and Managed Grassland.

i) Provide efficient, safe and pleasant pedestrian and bicycle connections to open spaces for recreation and transportation purposes and allow connection to the waterways.

12.11.42 The Munna Munnora Trail is to be designed as a parkland that includes:

a) Entry and educational signage.

b) Meandering pathways through the parkland adjacent to riparian zones.

c) An open space zone to support active open space activities.

d) A bio-retention basin and riparian regeneration planting.

e) Nature pause nodes.

f) A vegetation management trail, local paths, shared paths.

g) Conservation for existing heritage stone walls.

12.11.43 The community picnic lawns is to be designed as an accessible conservation area that:

a) Provides entry and educational signage.

b) Provides spaces for social gatherings.

c) Provides sealed and unsealed footpaths.

d) Conserves the existing heritage stone walls.

Figure 6: Munna Munnora Trail (Arcadia, 2023)

MUNNA MUNNORA SECTIONS
SECTION A

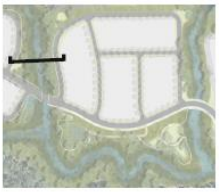

Figure 7: Munna Munnora Trail, Section A (Arcadia, 2023)

Figure 8: Munna Munnora Trail, Section B (Arcadia, 2023)

Figure 9: Community picnic lawns (Arcadia, 2023)

12.11.44 The Riparian Zones illustrated in Figure 10, Figure 11 and Figure 12 are to:

a) Ensure the regeneration of riparian planting and rehabilitation of the existing conditions of the creek line

b) Provide groundcover, shrubs and canopy layers with species belonging to Illawarra Subtropical rainforest and Coastal Freshwater Wetlands.

c) Provide shared paths to allow connection to the waterways and nature and promote an active lifestyle.

d) Provide well-located entry signage

e) Provide retailing walls and civil scour protections in accordance with the objectives and controls in 15. Retaining walls, batters and culverts.

f) Provide bio-retention basins and water sensitive urban design measures in accordance with the objectives and controls in 7. Water management.

12.11.45 A detailed Concept Plan for Kendalls Cemetery Park is to be prepared and submitted with the Development Application for residential subdivision of the Site. The Concept Plan shall:

a) Provide a high-quality passive open space, and

b) Be consistent with the objectives and controls in 5 - Heritage of this DCP Chapter.

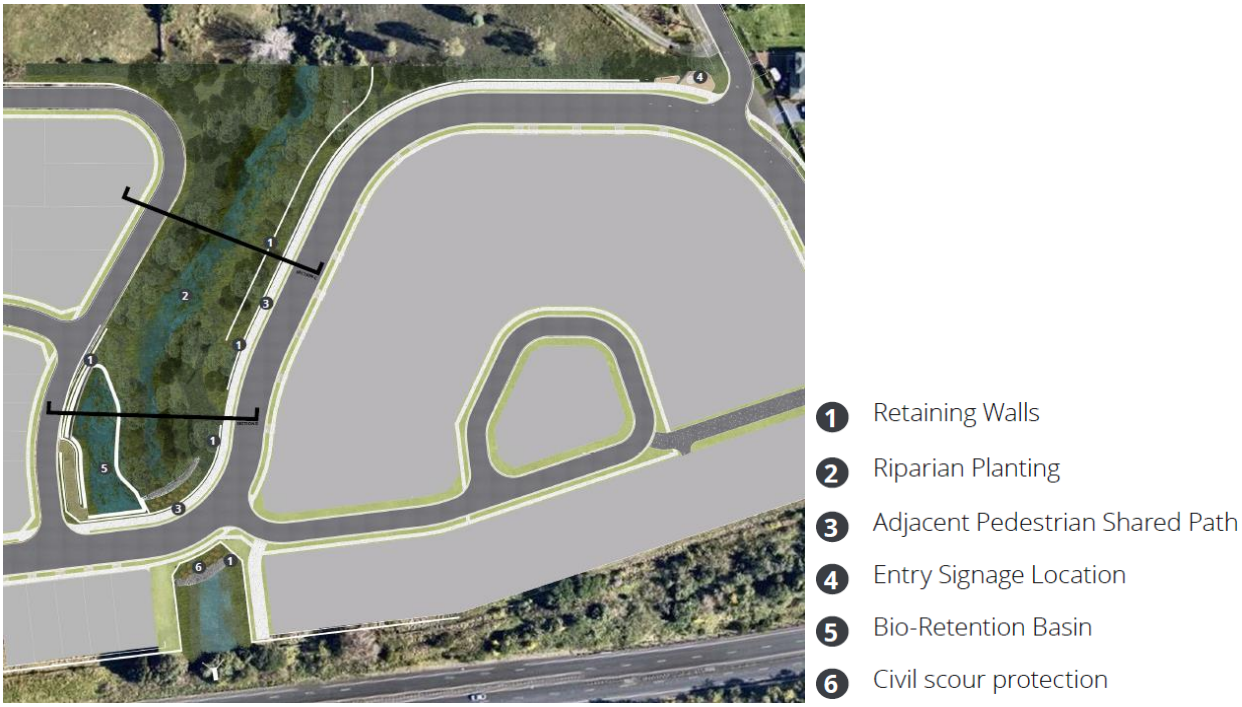

Figure 10: Riparian zone – Typical approach (Arcadia, 2023)

RIPARIAN ZONE SECTIONS

SECTION C

Figure 11: Riparian zone, Section C (Arcadia, 2023)

RIPARIAN ZONE SECTIONS

SECTION D

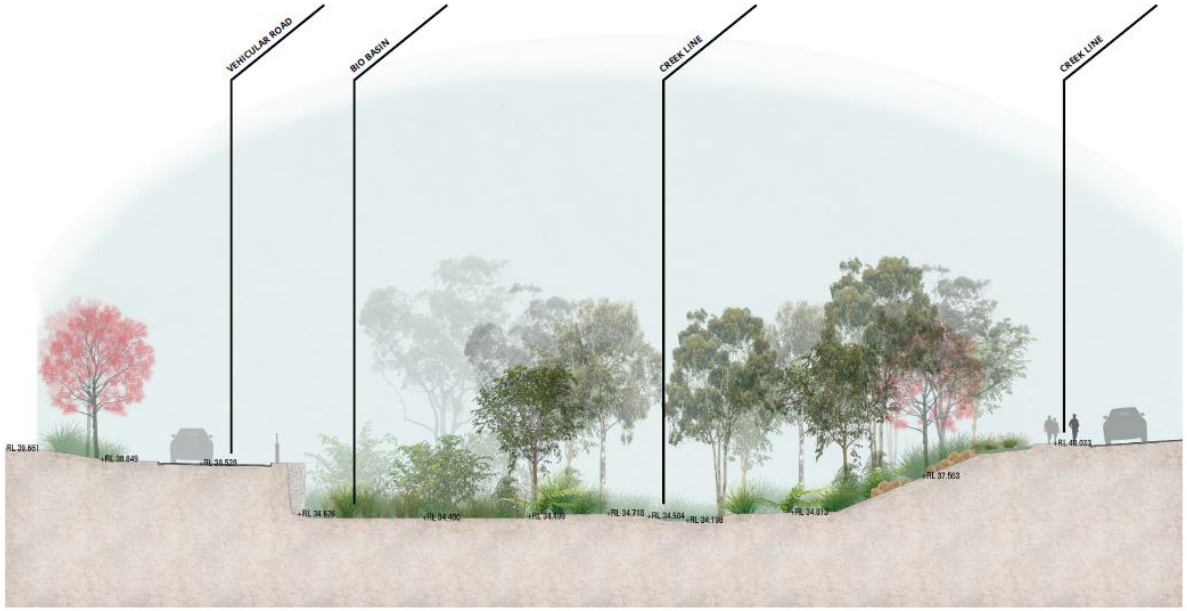

Figure 12: Riparian zone, Section D (Arcadia, 2023)

Site Specific Controls – Street trees

12.11.46 Street tree planting shall:

a) Contribute towards a minimum of 30% tree canopy with a minimum of 500 street trees planted across the Site. Trees are to be planted in a way that ensures their ability to thrive.

b) Create a unique character for each neighbourhood using a different selection of tree species. An example of the potential tree species for each neighbourhood is shown in Figure 13 and includes:

- Escarpment Village – *Eucalyptus saligna* and *Eucalyptus robusta*
- Munna Munnora – *Backhousia myrtifolia* and *Tristaniopsis*
- Central Village – *Cordyline australis, Glochidion ferdinandi* and *Brachychiton populneus*
- Ocean Outlook – *Commersonia fraseri* and *Alphitonia excelsa*
- Ridgetop Gateway – *Illawarra Flame Tree* and *Brachychiton populneus*

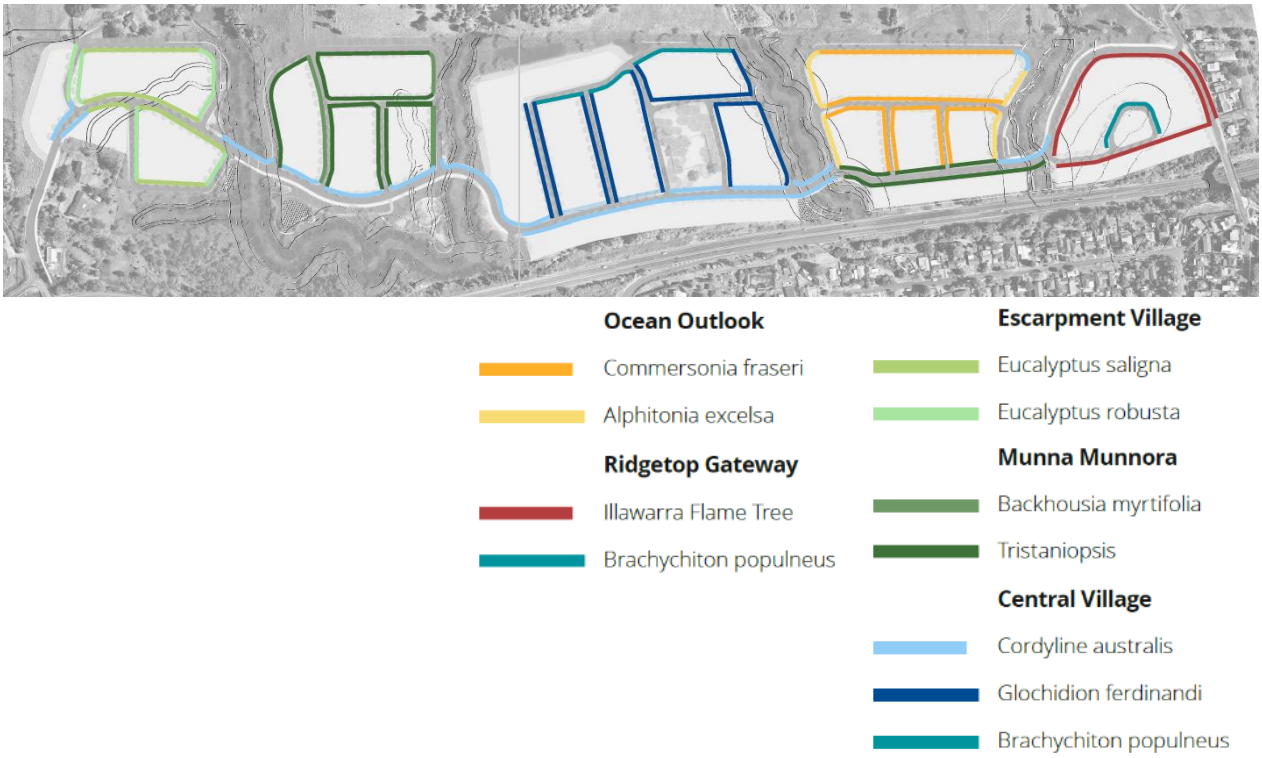

Figure 13: Street tree strategy (Arcadia, 2023)

Site Specific Controls – Signage and public art

12.11.47 A Public Art Strategy is to be prepared and submitted with the Development Application for the residential subdivision of the Site in collaboration and discussions with Council.

12.11.48 A signage strategy is to be prepared and submitted with the Development Application for the residential subdivision of the Site in collaboration and discussions with Council.

12.11.49 The Signage Strategy is to be consistent with Figure 14 and shall:

a) Provide a strong sense of place and provide wayfinding opportunities throughout the Site.
b) Provide educational information throughout the Site to encourage connection to the surrounding landscape.
c) Design entrances to public open spaces and parklands that are clearly signposted and visible to optimise wayfinding and with car-free frontages.
d) Be constructed of high quality, durable and sustainable materials that are compatible with the future architectural design of dwellings.
e) Acknowledge and celebrate the Aboriginal and non-Aboriginal historic, cultural and heritage values of the Site through educational signage to be in accordance with the objectives and controls in 6. Heritage.

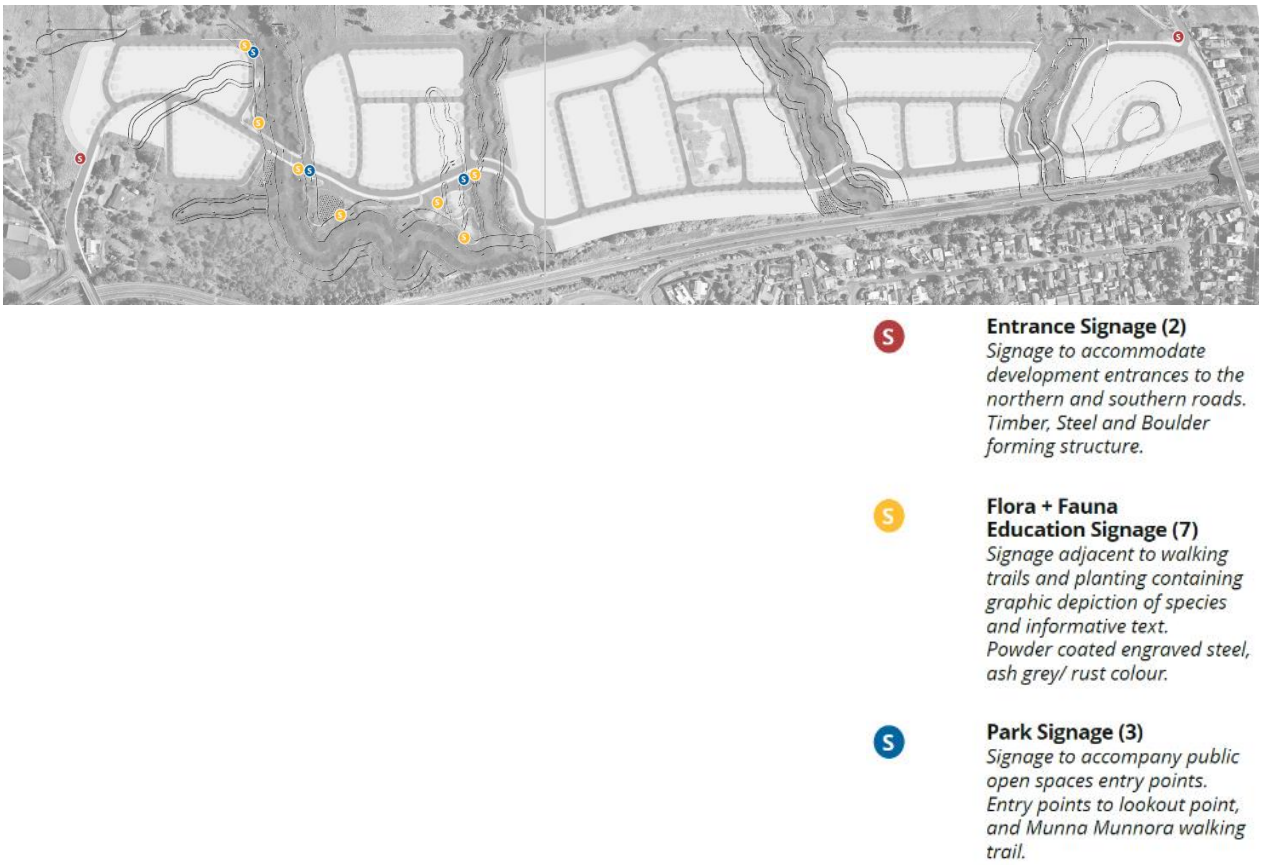

Figure 14: Signage strategy (Arcadia, 2023)

Site Specific Controls – Lighting

12.11.50 A Public Lighting Plan for streets and open spaces is to be prepared and submitted with a Development Application for the residential subdivision of the Site.

12.11.51 Lighting design is to:

a) address the principles of Crime Prevention Through Environmental Design (CPTED) having regard to street topographies and location of dwellings and open space areas.

b) implement sustainable solutions eliminating unnecessary energy / power consumption.

12.11.52 Street lighting along the street network is to be provided in accordance with the provisions of Australian Standard: AS1158 – Lighting for Roads and Public Spaces.

Site Specific Controls – Materials palette

12.11.53 Use materials to communicate a high quality standard that contributes to the comfort and resort style experience.

12.11.54 Use natural material and tones while ensuring accessibility and safety (refer to Figure 15).

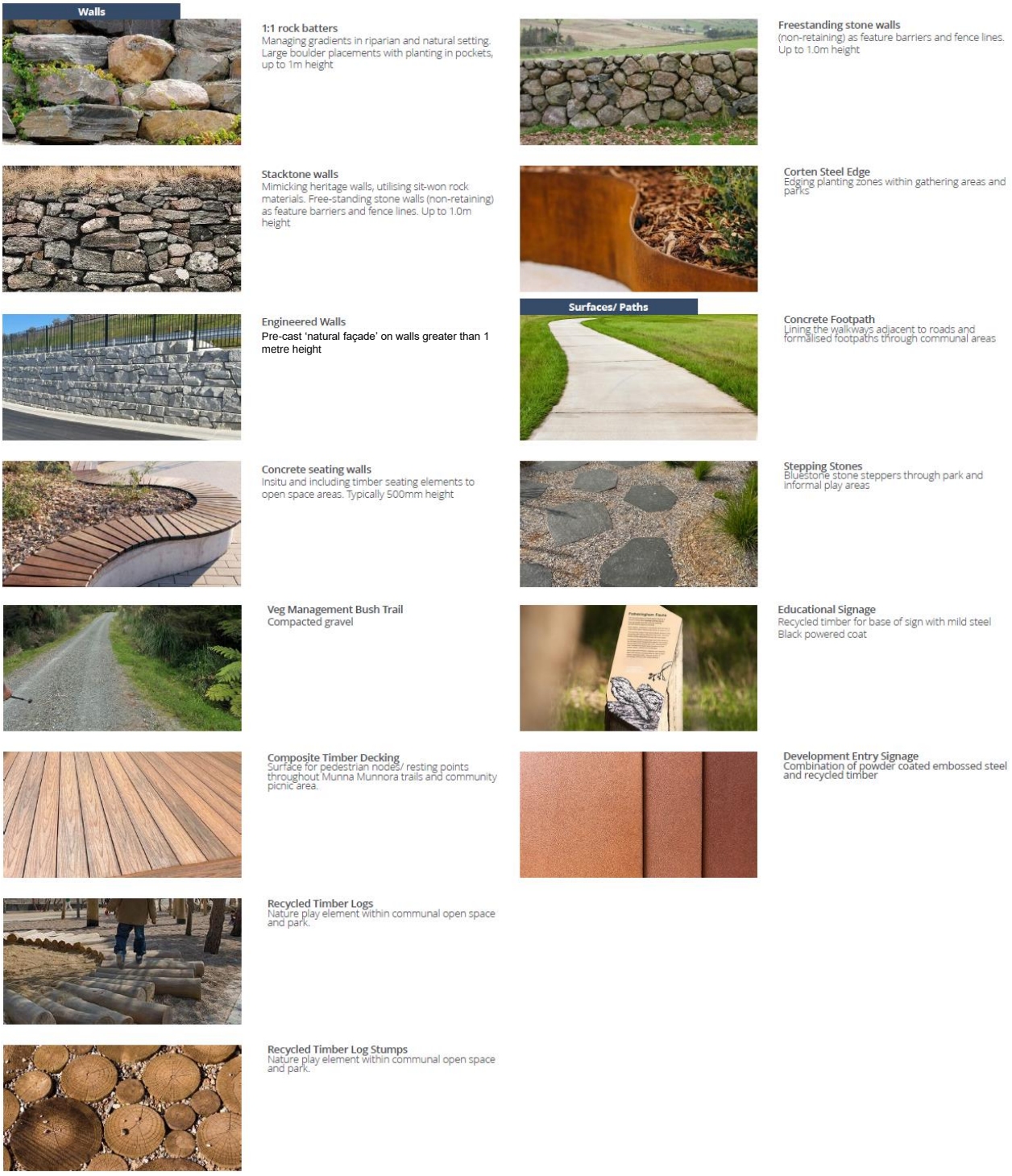

Figure 15: Example materials palette (Arcadia, 2023)

4. Biodiversity and ecology

Objectives

O:12.11.31	Identify, protect and enhance areas that have a high biodiversity value, including areas of contiguous remnant vegetation.
O:12.11.32	Ensure no adverse direct or indirect impacts occur on native vegetation and fauna habitat on land identified for environmental conservation.
O:12.11.33	Locate and design the subdivision to avoid and minimise impacts on biodiversity values.
O:12.11.34	Revegetate and rejuvenate watercourses and wetlands.
O:12.11.35	Ensure long term management of land identified for environmental conservation occurs.
O:12.11.36	Provide habitat for fauna along vegetated riparian corridors.
O:12.11.37	Provide vegetated linkages between the coast and the hinterlands.
O:12.11.38	Reduce pollution and erosion along the creek lines.
O:12.11.39	Manage construction works to protect significant environmental features and habitats.
O:12.11.40	To protect, retain and preserve trees in good health across the Site that do not require removal.

Site Specific Controls

12.11.55 The subdivision of the land must avoid and minimise impacts to native vegetation and habitats by:

a) Locating the development within mostly exotic vegetation and areas of the poorest quality native vegetation.

b) Rejecting the design options that would enable an increased dwelling yield in order to preserve and rehabilitate existing good quality native vegetation and riparian corridors.

c) Revegetating and rehabilitating the riparian corridors under a Riparian Vegetation Management Plan (VMP).

d) Preserving most of the existing dry stacked stone walls to minimise potential impacts on fauna that may be using the walls as sheltering habitat. Common herpetofauna that would use this habitat include Blue-tongue Lizard and Eastern Water Skink among other species.

e) Implementing water quality treatment measures to manage potential pollutants entering the riparian corridor.

12.11.56 Riparian corridors are to be provided in accordance with the *Guidelines for Riparian Corridors on Waterfront Land* for each of the watercourses identified for retention and embellishment across the Site (refer to Table 1).

12.11.57 A Vegetation Management Plan (VMP) must be implemented for each detailed Development Application across the Site to rehabilitate the riparian corridors and general ecological condition of the Site to a function PCT 3077 ecosystem. The VMPs will ensure a minimum of 9.12 hectares of revegetation and management area is provided across the Site.

Watercourse Type	VRZ width (each side of watercourse)	Total RC width
1st order	10 metres	20 metres + channel width
2nd order	20 metres	40 metres + channel width
3rd order	30 metres	60 metres + channel width
4th order	40 metres	80 metres + channel width

Table 1: Requirements for Vegetated Riparian Zones (VRZ)

12.11.58 Biodiversity credits are required to offset any residual unavoidable impacts. A Biodiversity Development Assessment Report must accompany a Development Application for the residential subdivision of the Site, identifying any unavoidable impacts and mitigation measures, including the required number and type of biodiversity credits.

12.11.59 Better quality vegetation and habitats are to be retained along with most of the watercourses, as well as the location of the recorded Zieria granulate.

12.11.60 The subdivision pattern must support and/or enable contiguous retention and/or planting of vegetation to enhance existing habitats and ecology.

12.11.61 An Arboricultural Impact Assessment must be undertaken for any Development Application where the removal of non-exempt tree species are proposed.

12.11.62 As a result of VMPs being implemented by the applicants for each detailed Development Application, the following maintenance actions should be undertaken:

a) Weed management,
b) Primary weed control,
c) Secondary weed control,
d) Discovery of threatened species,
e) Weed disposal,
f) Maintenance of revegetated areas,
g) Implementation of minimal disturbance principles,
h) Ensuring appropriate equipment is used for maintenance.

12.11.63 VMPs are to be designed to exceed the Controlled Activities – Guidelines for Vegetation Management Plans on Waterfront Land, which will include the following performance criteria:

a) End of Year 1
   - 90% survival of plantings
   - 100% original woody weeds controlled
   - 100% original annual weeds controlled.
   - Emergent weeds controlled and comprised of <10% cover.

b) End of Year 2
   - 90% survival of plantings.
   - 20% native ground cover achieved by natural regeneration.
   - Emergent weeds controlled and comprised of <10% cover.

c) End of Year 3
   - 90% survival of plantings.
   - 20% native ground cover achieved by natural regeneration.
   - Emergent weeds controlled and comprised of <5% cover.

d) End of Year 4
   - 90% survival of plantings.
   - 30% native ground cover achieved by natural regeneration.
   - Emergent weeds controlled and comprised of <5% cover.

e) End of Year 5
   - 90% survival of plantings.
   - 30% native ground cover achieved by natural regeneration.
   - Emergent weeds controlled and comprised of <5% cover.

5. Views and vistas

This section should be read and applied in addition to 'Chapter 3 – Common Requirements – Topic 3.2 – Amenity' of the Kiama DCP 2020.

Objectives

O:12.11.41	Ensure that coordinated development outcomes are visually congruent with the existing surrounding landscape.
O:12.11.42	Minimise the need for significant earthworks to retain the undulating topography and landscape qualities of the Site and minimise impacts from the Princes Highway.
O:12.11.43	Ensure that the development does not adversely impact on the scenic and visual qualities of the Site and escarpments beyond the Site.
O:12.11.44	Ensure adequate setbacks and separation between buildings on visually prominent areas to maintain views and vistas and allow tree planting to maintain and enhance the scenic and visual qualities of the Site.

O:12.11.45	Ensure that building heights, roof forms and building materials complement and enhance the scenic and visual qualities of the Site and escarpments beyond the Site.

Site Specific Controls

12.11.64 A Visual Impact Assessment (VIA) is required to accompany any Development Application (DA) for the subdivision of land or in visually prominent locations (e.g. on the escarpment). The VIA must be prepared by a suitably qualified consultant and must include (but not be limited to):

a) A detailed description and photographs of the Site and surrounds, including existing vegetation, topography, slope, surrounding development and any features that may affect visual impact.
b) The proposed development, including any proposed increases in ground level associated with bulk earthworks, built form, height, roofline, materials, colour schemes, external surface finishes and landscape treatment.
c) Measures proposed to ameliorate visual impacts (if any).
d) Description and assessment of the visual prominence of the Site and proposed development.

12.11.65 Views and vistas towards and along natural and built assets are to be retained, including the waterways, the escarpment and Kendall's Cemetery.

12.11.66 Screen planting between lots is encouraged to minimise potential visual impacts to adjoining properties.

12.11.67 Dwellings and other ancillary residential development should be designed and sited to avoid (where possible) or minimise any obstruction to public views and vistas containing natural features such as water, ridgeline or bushland, and particularly those containing significant landscape features such as the mountains, waterways, Kendalls Cemetery, Dry Stone Walls, identified Aboriginal sites and areas of high cultural significance.

12.11.68 Building siting, height, bulk, and projecting elements are designed to minimise the impact on existing views from living areas and other highly utilised spaces of surrounding properties.

12.11.69 Where views from neighbouring properties will be reduced as a result of new buildings or structures, the Development Application must address the established NSW Land and Environment Court Planning Principles relating to view sharing between properties.

Note: The NSW Land and Environment Court Planning Principles relating to View Sharing can be found in Tenacity Consulting v Warringah Council (2004) NSWLEC 140.

6. Heritage

Objectives

O:12.11.46	Identify, acknowledge, and protect Aboriginal archaeological and cultural significance and heritage across the Site.
O:12.11.47	Recognise and honour the importance of Aboriginal culture and heritage found within the Site to Aboriginal people.
O:12.11.48	Consult with the local Aboriginal community concerning ongoing management of Aboriginal cultural heritage items.
O:12.11.49	Implement a 'Life Framework of Values' to guide and facilitate well-placed cultural values outcomes across the Site.
O:12.11.50	Recognise the protections afforded to Aboriginal culture and heritage under the *Environmental Planning and Assessment Act 1979*, *National Parks and Wildlife Act 1974* and the Kiama LEP.
O:12.11.51	Conserve and enhance Aboriginal archaeological and cultural heritage for the education of future generations.
O:12.11.52	Identify and protect areas that contain European heritage, cultural landscapes or scenic value.
O:12.11.53	Ensure that development is located and designed to minimise potential impacts on identified heritage items.
O:12.11.54	Encourage heritage items to be used for purposes appropriate to their heritage significance.
O:12.11.55	Ensure development does not detrimentally impact on the significance of heritage items.
O:12.11.56	Ensure the protection, retention and conservation of Kendalls Cemetery.
O:12.11.57	Provide educational signage and public art to acknowledge and celebrate the site's history and heritage.

Site Specific Controls – Aboriginal culture and heritage

12.11.70 All efforts must be made to avoid known and/or potential Aboriginal sites and/or sensitive landforms.

12.11.71 Each Detailed Development Application is to address and consider areas of archaeological potential and acknowledge identified artefacts.

12.11.72 The applicant is to continue to inform the Registered Aboriginal Parties (RAPs) about the management of Aboriginal Cultural Heritage.

12.11.73 If a proposed development application cannot avoid impacts to the artefacts, an application must be made to Heritage NSW for an Aboriginal Heritage Impact Permit (AHIP) to impact these sites, which are currently protected under the *National Parks and Wildlife Act 1974*.

12.11.74 Notwithstanding (4), a Development Application (DA) which proposes to alter, demolish and/or destroy a known Aboriginal site and/or sensitive landform must give regard to the following:

a) Detailed Development Applications must include provisions to establish a long-term management strategy of Aboriginal cultural heritage items that should be developed in consultation with RAPs and in accordance with Requirement 26 of the 'Code'.

b) Should any historical archaeological sites be identified during any phase of development, all works must cease in the vicinity of the find and the project archaeologist and Proponent notified. Should the archaeological nature of the find be confirmed, then Heritage NSW must be notified.

c) In the event an appropriate reburial location cannot be found, a care and control agreement should be determined in consultation with the RAPs to ensure all parties are satisfied as to the long-term care of the Aboriginal artefacts.

12.11.75 Detailed Development Applications (where applicable) should include the provision of an Aboriginal Cultural Heritage Management Plan (ACHMP) to be prepared outlining requirements for management of existing sites and unexpected finds, site inductions and reporting processes during bulk earthworks and construction phases of development to ensure no Aboriginal sites are impacted during later stages of the project.

12.11.76 If any suspected human remains are discovered during any activity works, all activity in the vicinity must cease immediately. The remains must be left in place and protected from harm or damage. The following actions must be taken in instances where human remains or suspected human remains are discovered:

a) Discovery: If suspected human remains are discovered all activity in the vicinity must stop to ensure minimal damage is caused to the remains; and the remains must be left in place and protected from harm or damage.

b) Notification: Once suspected human skeletal remains have been found, the Coroner's Office and the NSW Police must be notified immediately. Following this, and if the human remains are likely to be Aboriginal in origin, the find will be reported to the Aboriginal parties and Heritage NSW. If the find is likely to be non-Aboriginal in origin and more than 100 years in age, the heritage division of NSW will be notified of the find under S146 of the Heritage Act.

Site Specific Controls – European heritage

12.11.77 A Conservation Management Plan (CMP) is required to be developed for the South Kiama Urban Release Area (comprising of Kendalls Cemetery and dry stone walls) prior to any Development Application (DA) for the subdivision of land. The CMP should be formulated in accordance with the following guidelines:

a) Assessing Heritage Significance (Heritage Office 2001).
b) *Conservation Management Documents* (Heritage Office 1996, revised 2002).
c) The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance (Australia ICOMOS 2013).

d) *The Conservation Management Plan* (National Trust of Australia [NSW] 2000).

The CMP must:

a) Address issues such as security of the cemetery and of the wells to reduce the chances of vandalism and theft.
b) Include ground penetrating radar study outside the cemetery walls to attempt to locate additional graves will be included in the information gathering component of the conservation document.
c) Identify historical cultural plantings for retention; if these plantings are now considered weeds their removal must be assessed and reconsidered based on the outcomes of the assessment.
d) Address the management of existing stone walls.
e) Address the reuse of stone from walls that will be demolished (if applicable).
f) Provide practical solutions for stone wall repair using local stone.

12.11.78 A Heritage Impact Statement (HIS) is required to accompany any Development Application (DA) relating to the heritage items and/or all proposed development in the vicinity of heritage items listed under the Kiama Local Environmental Plan 2011. The HIS should be prepared in accordance with the following guidelines:

a) *Statements of Heritage Impact* (Heritage Office 1996, revised 2002)
b) *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance* (Australia ICOMOS 2013)

12.11.79 A Heritage Interpretation Plan (HIP) prepared by a specialist heritage consultant is required to accompany any detailed DA. The HIP should:

a) Highlight the heritage values of Kendalls Cemetery, dry stone walls and cultural landscape across the Site.

b) Be used to inform a design that allows the heritage significance of the place to be retained and demonstrated to the public.

c) Include guidance for signage, landscaping and interpretative elements of the green space design.

12.11.80 All proposed development around Kendalls Cemetery, including any ground disturbance and roadways, must be setback at least 10 metres from the surrounding dry stone wall boundary.

12.11.81 All residential allotments must be set back a minimum of 20 metres from the surrounding dry stone wall of Kendalls Cemetery.

12.11.82 To minimise loss of value and reduce heritage impacts to the curtilage for Kendalls cemetery, the subdivision of land is to:

a) Provide a designated and landscaped green space area/park surrounding the cemetery, between the cemetery walls and the surrounding streets.

b) Plant a native fig tree to the east of Kendalls Cemetery. Advice from a suitably qualified arborist or botanist is required to determine a suitable distance between the tree, the cemetery and the wall surrounding the cemetery to avoid aggressive roof system impacting on the heritage-listed items.

c) Maintain the entry and provide interpretation of the heritage values for public engagement and education.

d) Consider the abovementioned mitigating measures and other design responses in a CMP and CMS to be prepared and submitted to Council for approval prior to commencement of works for Village 3.

12.11.83 All development shall maintain an appropriate visual setting for the dry stone walls through retention of existing vegetation

12.11.84 Bulk earthworks are to be avoided around dry stone wall 5 and 7. If avoidance is not possible, the development should include dismantling them and reinstating them in their original alignment under the supervision of a stone wall expert.

12.11.85 Dry stone walls 4 and 22 are to be protected by making the wall a 'no access' area. Bollards must be installed during construction to separate construction vehicles and provide protection from inadvertent harm.

12.11.86 Dry stone wall 4 must be protected during the construction of any proposed development.

12.11.87 Dry stone wall 22 is to be reassessed when access is possible. The removal of lantana and other weeds binding to the structure must be done with care and under the supervision of a consultant with dry stone wall experience.

12.11.88 Where dry stone walls are located to the front or rear of new properties, all structures, habitable and non-habitable (such as sheds, pergolas, clothes hoists and the like) must be located at least 6 metres from the dry stone wall.

12.11.89 Where dry stone walls are located within the road reserve or to the side of new properties, all structures, habitable and non-habitable (such as sheds, pergolas, clothes hoists, road carriageway and the like) must be located at least 3.5 metres from the dry stone wall.

12.11.90 Where retaining walls of up to 1 metre in height are proposed, these must be setback a minimum of 2 metres from the dry stone walls. The setback from dry stone walls to retaining walls above 1 metre in height will be considered on a case-by-case basis by Council.

12.11.91 Houses adjacent to Kendalls Cemetery are to be designed to incorporate passive surveillance design principles towards the Cemetery.

12.11.92 An unexpected finds procedure must be established for each DA to guide actions where new walls, burials, human remains and relics (as defined by the *Heritage Act 1977*) are discovered before, during or after any works.

Figure 16: Dry stone walls (EMM, 2023)

7. Water management

Objectives

O:12.11.58	Adopt Water Sensitive Urban Design (WSUD) principles and systems.
O:12.11.59	Reduce wastewater generation, pollution and erosion and protect downstream environments.
O:12.11.60	Slow down the flow of stormwater and provide for stormwater treatment measures on Site.
O:12.11.61	Support the retention of natural topography and stormwater flow paths.
O:12.11.62	Ensure regular monitoring and maintenance of water sensitive urban design systems to retain their performance throughout its life cycle.
O:12.11.63	Ensure the highest water quality targets are met for human health, the environment and the recreational value of waterways and wetlands.
O:12.11.64	Ensure ecologically vulnerable land and associated watercourses are protected.
O:12.11.65	Prevent stormwater damage to the downstream built environment.
O:12.11.66	Development does not result in adverse flooding impacts at a local and regional level.
O:12.11.67	Minimise development on flood affected land.
O:12.11.68	Protect the floodplain and avoid geomorphic instability along riparian corridors.

Site Specific Controls – Water Sensitive Urban Design (WSUD)

12.11.93 Any proposed WSUD devices/assets are to be whole-of-life cost effective with detailed maintenance plans and funding arrangements (if required) for maintenance.

12.11.94 The treatment train should not be reliant on devices (such as pit baskets or lot-scale rain gardens) that require ongoing maintenance by residential property owners.

Site Specific Controls – Water quality and quantity

12.11.95 A detailed Water Cycle Management Plan is to be prepared by a suitably qualified consultant and submitted with any Development Application (DA) for the subdivision of the land.

12.11.96 Water re-use is to be maximised, particularly in areas such as public open spaces.

12.11.97 Pit and pipe network is to be provided to convey minor flows, with the excess flow for events above the minor event to be conveyed by the road network.

12.11.98 OSD shall not be provided in the Southern catchment to prevent the increase in peak flow downstream of the three culverts beneath the Princes Highway.

12.11.99 On-site Stormwater Detention (OSD) is to be provided on the two northern catchments to ensure there is no increase in peak flow downstream of the Princes Highway culverts in all events up to and including the 1% AEP event. These OSDs shall be designed as follows:

a) In the Northern catchment, draining to the 900mm and 1650mm culverts, OSD shall be in the form of a detention basin with a low flow pipe and an overflow weir for flows in excess of the basin capacity, controlling flows up to and including the 100 year ARI event.
b) In the middle catchment, OSD shall be provided by the road crossing of the watercourse. A low flow pipe and overflow structure shall convey stormwater up to and including the PMF event so that the proposed road crossing the creek remains accessible in the case of an emergency.

Site Specific Controls – Stormwater treatment

12.11.100 All stormwater management outcomes are to be designed by a suitably qualified engineer.

12.11.101 All allotments are to connect to the proposed stormwater network upstream of the bio-retention basins where possible.

12.11.102 Two (2) bio-retention swales are to be provided across the Site as an end of line treatment, removing nutrients from the stormwater. The basins are to be planted out with plants that are effective at nutrient removal.

12.11.103 The following parameters and design are to apply to the bio-retention basins (refer to Table 2 and Figure 17):

Structure	Bio-retention Filter Media Area (sqm)	Bio-retention Surface Area (sqm)
Basin 1	180	180
Basin 2	150	150
Total	**330**	**330**

Table 2: Bio-retention basin area

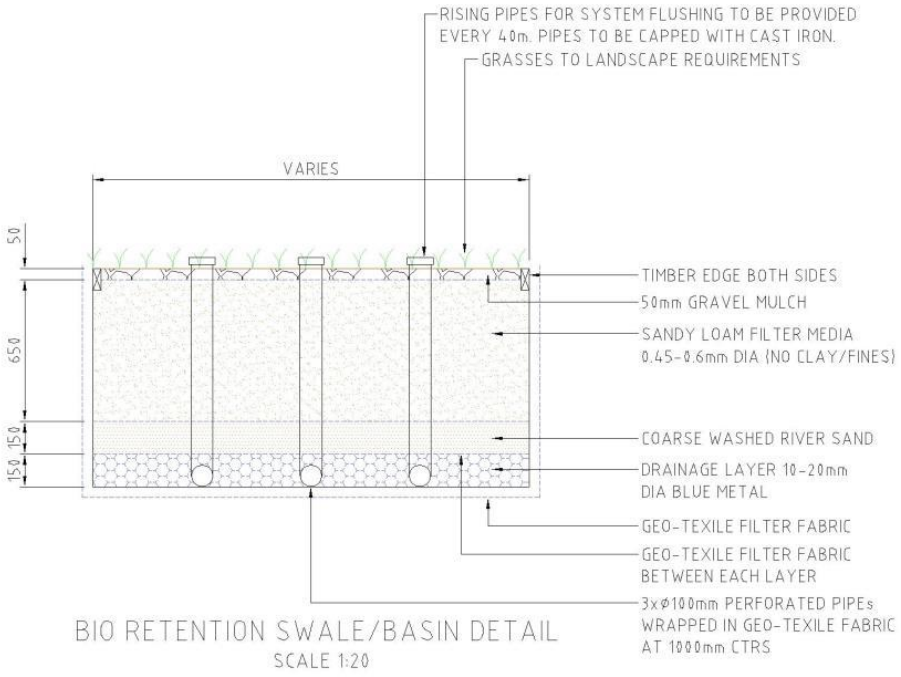

Figure 17: Bio-retention swale detail

12.11.104 Seven (7) Gross Pollutant Traps (GPT) are to be implemented across the Site to treat all stormwater prior to discharge to a watercourse or water quality basin.

12.11.105 The parameters for post-development pollution reduction treatment targets are:

a) 70% removal of Gross pollutants,

b) 80% removal of suspended solids,

c) 45% removal of Phosphorus, and

d) 45% removal of Nitrogen.

12.11.106 A detailed monitoring and maintenance schedule of water sensitive urban design systems is to be prepared by a suitably qualified consultant and submitted with any Development Application for subdivision of land. As a minimum, the schedule should include:

a) Gross Pollutant Trap must be cleaned every 3 months or after major storm events that exceed 35mm in total as per manufactures standards and specifications.

b) During the vegetation establishment period, bio-retention systems must be inspected every three (3) months or after a major rainfall event.

c) After bio-retention basin has been established, monitoring and maintenance of the system must be carried out every six (6) months.

12.11.107 Rainwater tanks are to be provided for all future residential development to treat runoff from roof areas and to provide stormwater retention for non-potable water use.

12.11.108 Detention storage is to be located at a level that considers flooding.

12.11.109 Detention systems are to be designed using a catchment wide approach that considers treatment, overland flow and drainage requirements having regard to input from Council.

12.11.110 Restrictions as to user and positive covenants relating to the provision and ongoing maintenance of retention and detention storage shall be registered on title of all residential allotments to ensure that their ongoing retention and maintenance can be achieved.

12.11.111 Development flows should not impact upon riparian corridor bank stabilisation as a result of the post-development scenarios.

Site Specific Controls – Flooding

12.11.112 Flood hazard is to be kept at an acceptable level up to an including the 100-year ARI event.

12.11.113 The road network to be delivered should be raised and include provision for a high-flow box culvert system to ensure safe egress for vehicles during the PMF event.

12.11.114 No future allotments and dwellings should be located within the 1% AEP flood event (including 500mm freeboard).

12.11.115 All future subdivision building components below the FPL are to be flood compatible being constructed of masonry or concrete.

12.11.116 All future allotments are to be located above the 1% AEP flood level and therefore are suitable for refuge.

12.11.117 A Flood Impact and Risk Assessment must be prepared by a suitably qualified consultant and submitted with any development application for the subdivision of land. The assessment should confirm the development will not increase flood hazards or susceptibility to flooding, or damage dwellings as a result of subdivision, earthworks, and future built form.

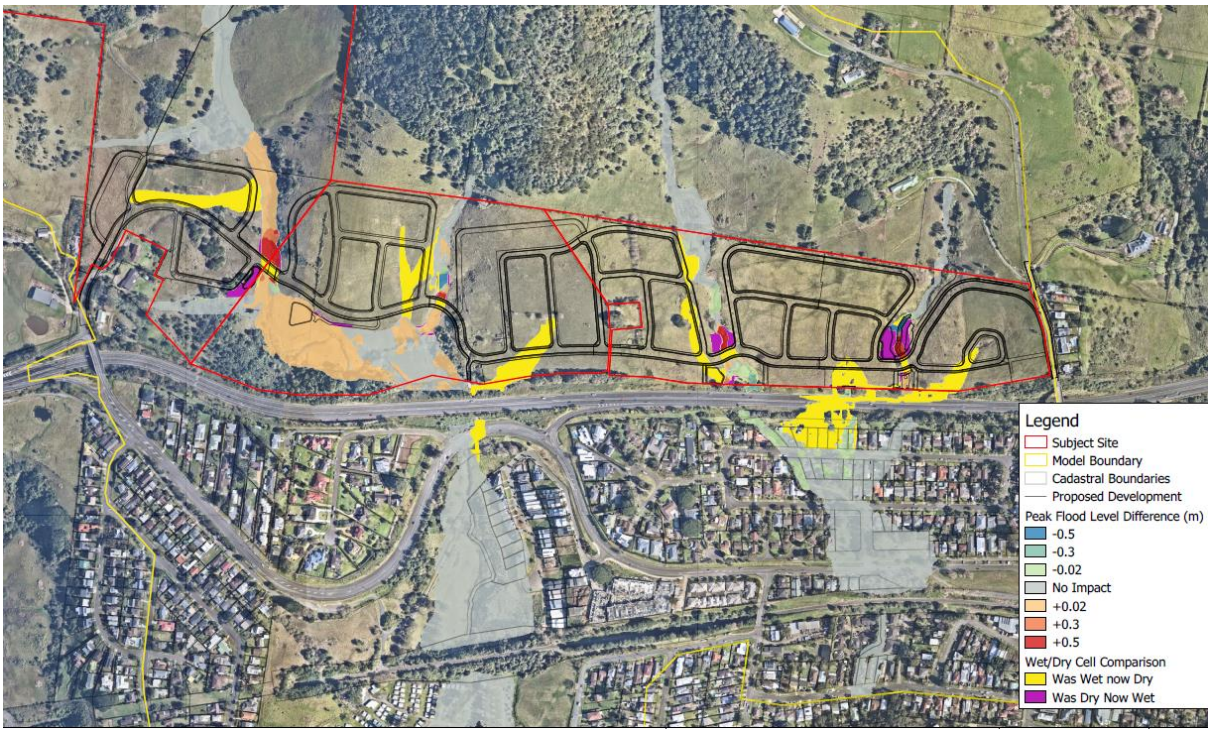

Figure 18: Post-development peak flood impacts, 1% AEP flood level (Siteplus, 2023)

8. Noise and vibration

Objectives

O:12.11.69	Avoid adverse environmental impacts to adjoining receivers during construction generated from noise and vibration.
O:12.11.70	Avoid adverse environmental impacts to future dwellings emitted from the Princes Highway generated by traffic and road noise.

Site Specific Controls

12.11.118 Implementation of 2.1 metre high lapped and capped fencing for residential allotments along the eastern boundary. These are to be installed along the nominated retaining wall areas as per the Civil Engineering drawings during construction of the relevant residential dwelling.

12.11.119 Façade treatment requirements as detailed in Attachment 1.

12.11.120 Each stage detailed development application will provide allotment specific façade treatment requirements, informing future residential development within the residential subdivision.

12.11.121 Any room on a façade with a noise level >60 decibels require ventilation that allows windows and doors to remain closed and the room whilst still maintaining ventilation.

12.11.122 Future detailed Development Applications should include provision for a Construction Noise and Vibration Management Plan that considers the relevant scope of works and includes review against the Interim Construction Noise Guideline.

9. Utility infrastructure

Objectives

O:12.11.71	Ensure that water and sewerage infrastructure is delivered within the existing or proposed infrastructure capacity and requirements.
O:12.11.72	Ensure that electricity infrastructure is delivered within the existing or proposed infrastructure capacity and requirements.
O:12.11.73	Provide upgrades of essential services ahead of delivery of residential allotments
O:12.11.74	Reduce the generation of greenhouse gas emissions.

Site Specific Controls – Water and sewerage infrastructure

12.11.123 Detailed Development Applications must provide servicing details to satisfy the proposed demand.

12.11.124 For potable water, connection along Saddleback Mountain Road to service allotments above RL60 metres and underboring of the Princes Highway to connect the trunk main will be required for the remaining allotments.

12.11.125 For sewerage, two under bored sections under the Princes Highway are required for connection to an existing manhole. Upsizing of the main may be required to meet increased capacity requirements.

12.11.126 Sewerage infrastructure is to be connected to the Bombo catchment area (under the Kiama Sewerage Catchment Area Management Plan). Upsizing of the mains must be considered for as part each detailed Development Application.

12.11.127 Concurrence from Sydney Water is to be obtained as part of any Development Application for the subdivision of land.

12.11.128 A minimum of one (1) rainwater tank with a capacity of 5kL is to be provided for each new dwelling.

Site Specific Controls – Electricity infrastructure

12.11.129 A new High Voltage 11kV feed is to be established via the new road on Saddleback Mountain Road.

12.11.130 Seven (7) padmount substations are required to be delivered across the four stages.

12.11.131 All electrical infrastructure is to be provided underground within the Site.

12.11.132 Street lighting is to be provided throughout the Site.

12.11.133 The use of renewable energy sources is to be prioritised.

12.11.134 Installation of photovoltaic panel and solar thermal hot water systems is to be maximised.

12.11.135 Concurrence from relevant energy provider is to be obtained as part of a Development Application for the subdivision of land.

12.11.136 A certificate from the service provider is to be obtained outlining their notification of arrangements for servicing the Site, including the provision of street lighting for each respective stage of development.

Site Specific Controls – National Broadband Network (NBN) services

12.11.137 Telecommunications services are to be provided in accordance with the requirements of the relevant services provider (e.g. NBNCo. And Telstra).

12.11.138 Telecommunications services shall be provided by the Applicant, including consultation and design certification required to provide pit and pipe conduit in accordance with the relevant provider requirements.

12.11.139 Underground fibre installation to each lot is to be provided (fibre to the premises).

12.11.140 NBN is to be provided to stages 1 and 2 of the development via the existing infrastructure within Saddleback Mountain Road or as directed by NBN.

12.11.141 NBN is to be provided to stages 3 and 4 of the development via existing infrastructure within Weir Street or as directed by NBN.

10. Bushfire

This section should be read and applied in addition to 'Chapter 2 – Site considerations – Topic 2.5 – Risk minimisation and management' of the Kiama DCP 2020.

Objectives

O:12.11.75	Mitigate risks to development associated with bushfires.
O:12.11.76	Provide opportunities within the Site for bushfire hazard management (eg. asset protection zones, fire trails).
O:12.11.77	Provide access for emergency personnel, vehicles and equipment.

Site Specific Controls

12.11.142 Land identified as bushfire prone land under Kiama Municipal Council's Bushfire Prone Land Map is to address the relevant bushfire protection measures pertaining to the *Planning for Bushfire Protection 2019* (PBP) document. This includes, but is not limited to:

a) Provision of Asset Protection Zones (APZs) within the proposed lots in accordance with Table 5.3a in the PBP.
b) Provision of access for Category 1 appliances in accordance with the specifications set out in Table 5.3b in the PBP.
c) Provision of services in accordance with Table 5.3 in the PBP.

12.11.143 Future Development Applications are to include provision for the procurement of a Bushfire Risk Assessment Report, and implement the following recommendations:

a) For each staged development application, a 50 metre temporary APZ will be implemented on the temporary grassland hazards. Temporary PBP compliant turning areas to temporary dead-ends are to be provided.
b) 10-18 metre APZs from Top of Bank areas along the VRZs are to be implemented across the construction stages.
c) Bushfire Attack Levels (BAL) are to be determined during individual development assessment.
d) Permanent emergency access for the residential subdivision will be provided via the existing underpass at the southern end of Village 3 to be provided with the Stage 3 development application. The final route and street cross section is subject to consultation and endorsement by RFS and TfNSW.
e) A temporary emergency access for the residential subdivision is to be provided via Saddleback Mountain Road at the northeastern end of Village 1 pending RFS agreement and endorsement of the emergency access routes (refer to Figure 19). This temporary access will cease operation once the permanent egress is completed under Stage 3.

12.11.144 APZs are not to extend into any land to be dedicated or managed by Council (eg. riparian corridors).

12.11.145 Notwithstanding (3), road reserves with residential property frontages are exempt.

Additional controls relating to access requirements for emergency services including the RFS are found in 1. Connectivity.

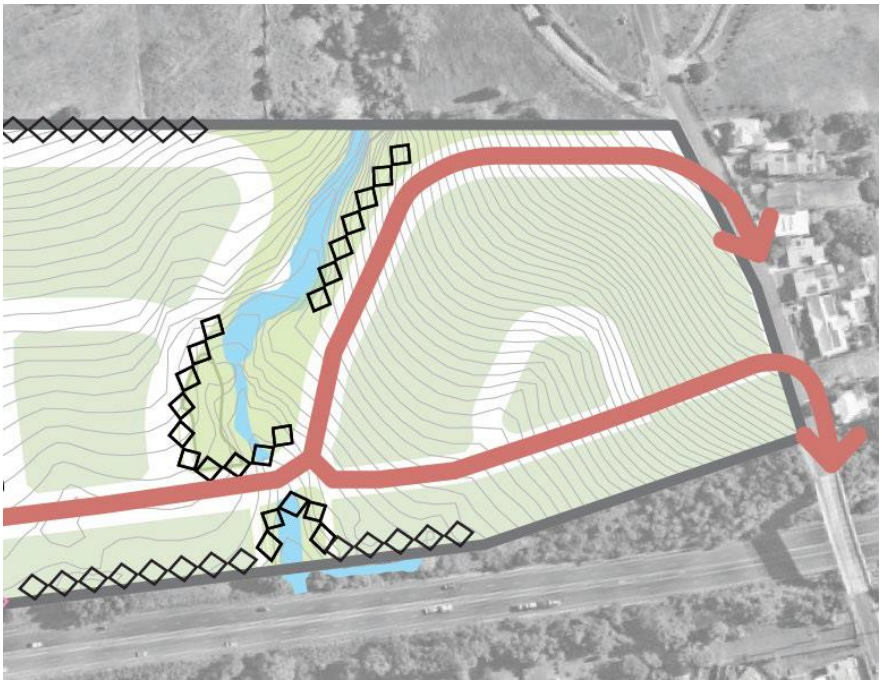

Figure 19: Temporary emergency access (DKO, 2023)

11. Geotechnical

Objectives

O:12.11.78	Excavation should remain cognisant of the existing geotechnical profile and consider site stability when establishing subdivision layouts / allotments.

Site Specific Controls

12.11.146 For the low to moderate and moderate slope stability risk areas, the following must be considered in any detailed design phase:

a) Orientation of access roads, residential structures and services to minimise requirements for excessive excavation, fill and possible retaining structures.
b) Road subgrades should be side cuts; partial side cutting and side filling are undesirable. Where undesirable. Where road construction parallel to contours is unavoidable, the proposed upslope side of the alignments are to be over-excavated to a depth of 1 metre below proposed subgrade and filled under engineering controls to have a uniform fill across the pavement width.
c) Maximisation and / or replacement of tree cover.
d) Implementation of techniques to minimise erosion such as spray.
e) Installation of site-specific surface and subsurface drainage.
f) Founding of residential and retaining structure in stratum of appropriate strength.
g) Selection of residential design to minimise the requirement for excavation.

12.11.147 Geotechnical remediation and hazard reduction measures to achieve a moderate risk classification for slope stability in the northwestern corner of Village 2 should include:

a) Removal of all colluvial soils within the proposed allotments and road alignments and replace with Level 1 engineered fill. The stripped surface is to be inspected by the geotechnical consultant.
b) Installation of a drainage blanket underlying areas of proposed pavement and subsurface drains along the proposed upslope-downslope allotment boundaries to control seepage and porewater pressures within the soil profile.
c) Erosion protection measures must be implemented adjacent the riparian corridor to protect cut and fill batters from erosion and under cutting.
d) Maintain slope integrity and implement erosion control measures, including maintenance and / or the implementation of soil stabilisation, by the planting of local native, deep-rooted shrubs or trees in road and riparian corridor batters. This should be done in concert with a botanical expert and review of VMP.
e) Site-specific investigation and review of plans by an experienced geotechnical consultant for all affected allotments.
f) Transferral of structural loads for dwellings should be a uniform bearing, either 3 metres below the existing natural surface or at least 2 metres

below a cut surface, whichever is deeper. If bedrock is encountered for any footing excavation, then all footings for the dwelling must be founded in bedrock. Bedrock footings should be socketed / embedded 0.5 metre into weathered bedrock or drilled.

g) An inspection and maintenance program must be implemented by property owners to maintain the slope stability over the design life of the development.

h) Excavation of colluvium must not extend any closer to the western boundary than twice the depth of excavation. This must be considered for the detailed design of future residences as allotment and road layouts may require modification.

12.11.148 Site preparation for pavement and dwelling construction, in conjunction with the slope stability recommendations, should be incorporated into future detailed development as follows:

a) Pavement areas, the upper 0.5 metre should be compacted to at least 100% dry density ratio relative to standard compaction.

b) Fill batters should be constructed no steeper than 2.5:1 and vegetated to reduce the effects of erosion.

c) Allowance is to be made for course-bridging layers over geotextiles in the road alignment in the vicinity of Pits 8 and Pits 116 in Village 2 and Village 3 respectively.

d) Conventional sediment and erosion control measures should be implemented during the construction phase of the relevant detailed development with exposed surfaces to be topsoiled and vegetated as soon as practicable following the completion of earthworks.

12.11.149 Further investigations and reviews required during the planning, design and construction phase include:

a) Drilling (including coring) in areas of proposed deep cut where excavation deeper than excavator refusal is proposed.

b) Review of engineering plans to provide comment on geotechnical aspects with respect to the recommendations.

c) Sampling along the alignments of proposed road system, as design levels are reached, to finalise pavement thickness design.

d) At subdivisional stage, test pitting in proposed building envelopes to provide appropriate classification of individual allotments for residential development.

12. Contamination

Objectives

O:12.11.79	To minimise the risk to human health or any other aspects of the environment from the remediation of land and development of the Site to make it suitable for residential and open space land use activities.
O:12.11.80	To provide for a detailed assessment and remediation (where required) of potentially (or) contaminated land.

Site Specific Controls

12.11.150 A Remediation Action Plan should be prepared for the detailed Development Application for Stage 3 of the Concept Plan.

12.11.151 An unexpected finds protocol (UFP) should be prepared and implemented as part of a construction environmental management plan (CEMP).

13. Built form

Objectives

O:12.11.81	Respect and minimise the bulk, scale and visual impacts from surrounding views and vistas towards the Site.
O:12.11.82	Ensure residential dwellings are sited and designed appropriately to respect and address the natural topography, Aboriginal and non-Aboriginal heritage, scenic views and values, and areas of environmental significance.
O:12.11.83	Provide for an appropriate scale of development that is consistent with the LEP and considers the topography and scale of development.
O:12.11.84	Minimise the bulk and scale of dwellings particularly on visually prominent areas through adequate building setbacks, tree planting and landscaping and carefully considered material palette and roof forms.
O:12.11.85	Promote high quality architectural design through the selection of appropriate and sustainable building materials and finishes for dwellings that responds to the natural environment, the escarpment and coastal location.
O:12.11.86	Incorporate retaining walls within the built form and promote split-level home design to minimise the need for significant earthworks and retain the significant landscape character and views and vistas.
O:12.11.87	Maximise views to the ocean and the escarpment.
O:12.11.88	Promote architecturally designed homes on visually prominent areas.
O:12.11.89	Allow for well-designed project homes on flat areas to promote housing affordability.
O:12.11.90	Ensure residential dwellings are sited to retain existing mature trees and significant vegetation.
O:12.11.91	Provide garages on development lots that are visually unintrusive and do not dominate the built form nor the streetscape.

Site Specific Controls – Setbacks

12.11.152 Development must comply with the following minimum setbacks described in Table 3.

Control	Requirement
Front setback (300 – <1000m^2 allotments)	• 4.5 metres to building façade line on primary street frontage. • 5.5 metres to garage line and 1 metre behind the building façade line. • 3.5 metres to building façade line on secondary street frontage (if applicable).
Front setback (>1,000m^2 allotments)	• 6 metres to building façade line on primary street frontage. • 4.5 metres to articulation zone. • Garage is 1 metre behind the building façade line. • 3.5 metres to building façade line on secondary street frontage (if applicable).
Side setback (300 – <1000m^2 allotments)	• 0.9 metre (single storey dwelling) • 1.2 metres (double storey dwelling)
Side setback (>1,000m^2 allotments)	• 3 metres
Rear setback (300–450m^2 allotments)	• 6 metres • Single storey non-habitable structures, such as garages, pools, pergolas and barbecue areas, may be sited at a lesser distance from the rear property boundary, where such a structure satisfies the objectives of this plan and where, in the opinion of Council, no unreasonable impacts on neighbouring properties will result.
Rear setback (450–1,000m^2 allotments)	• 6 metres • Single storey non-habitable structures, such as garages, pools, pergolas and barbecue areas, may be sited at a lesser distance from the rear property boundary, where such a structure satisfies the objectives of this plan and where, in the opinion of Council, no unreasonable impacts on neighbouring properties will result.
Rear setback (>1,000m2 allotments)	• 8 metres

Table 3: Minimum setbacks

12.11.153 Notwithstanding the minimum setbacks described in Table 3, the minimum setbacks may increase to achieve adequate visual privacy, ventilation and solar access, minimise building bulk and retain mature trees.

Site Specific Controls – Site coverage

12.11.154 Lots sized 300-450m^2 must not have a cumulative building footprint greater than 70% of the lot area.

12.11.155 Lots sized >450-1000m^2 must not have a cumulative building footprint greater than 60% of the lot area.

12.11.156 Lots sized greater than 1000m^2 must not have a cumulative building footprint greater than 50% of the lot area.

Site Specific Controls – Building height

12.11.157 Dwellings must comply with the prescribed building heights in the *Kiama Local Environmental Plan 2011*.

12.11.158 Dwellings should be sited and designed to minimise potential visual impacts.

Site Specific Controls – Roof form

12.11.159 New buildings, including roofs, must be designed to not increase the bulk and scale of the development and be consistent with the landscape character of the escarpment.

12.11.160 Lighter roof colours should be adopted for heat deflection and global warming Albedo Effect benefits.

12.11.161 The roof design, location and materials must ensure that reflectivity and glare do not adversely affect neighbours' or wider public amenity. Where amenity cannot be reasonably addressed by redesign, low reflectivity materials may be specified.

12.11.162 Roof design on visually prominent areas must achieve a high-quality architectural outcome.

Site Specific Controls – Building articulation and materials

12.11.163 The location of the built form on the lot must be able to facilitate safe and efficient vehicle access without street frontages being dominated by garages, multiple wide driveways or parked cars.

12.11.164 The selected materials should reference the architectural materials and styles of the Kiama locality with varying degrees of influence from historical heritage character. These include fencing and housing veneers in local stone and other stone types that reflect the rural character and soften the visibility and impact of the development, contributing toward the mitigation of potentially high visual impacts.

12.11.165 The development application for each village is to address materiality in detail in consultation with a heritage consultant with built heritage experience prior to final decisions being made. Consultation with Kiama Municipal Council at design stage is also recommended.

Site Specific Controls – Parking within private property

12.11.166 For allotments between 300-450m^2:

a) Single width garage or car space to be provided.
b) The garage must be less than 50% of the total width of the frontage.

12.11.167 For allotments between 450-1,000m^2:

a) Double garages are permitted.
b) The garage must be less than 50% of the total width of the frontage at the building line.
c) Triple garages are not permitted.
d) The garage line must be setback in accordance with the setback controls.

12.11.168 For allotments >1,000m^2:

a) Double garages are permitted.
b) Triple garages are permitted where at least one garage door is not visible from the street, or where the total width of the garage is less than 50% of the total width of the building façade.
c) The garage line must be setback in accordance with the setback controls.

12.11.169 Parking rates for residential development is to be consistent with the KDCP2020 – Chapter 3, which includes:

a) Dwelling House: One (1) dedicated space behind the building line; and, one space behind the front boundary.

b) Dual Occupancy: For each occupant, one (1) dedicated space behind the building line.

12.11.170 The maximum width of all driveways measured at the boundary to which the front of the dwelling house faces is:

a) 3.2 metres for lot width less than 10 metres.
b) 3.2 metres for single entry driveway for lot width equal to 10 metres or more but less than 15 metres.
c) 4.8 metres for double entry driveway for lot width equal to 15 metres or more.
d) The maximum grade of all driveways is to be 25%.

Site Specific Controls – Fencing and privacy

12.11.171 Fencing along the side and rear boundaries is to follow the allotment boundaries.

12.11.172 Front fencing, if required, is to be a maximum of 1.2 metres in height.

12.11.173 Boundary fencing is to be a maximum of 1.8 metres in height.

12.11.174 Fencing along the eastern boundary of the site for acoustic screening is to be 2.1 metres in height to provide acoustic and visual screening from the Princes Highway. These are to be installed along the nominated retaining wall areas as per the Civil Engineering drawings during construction of the relevant residential dwelling.

14. Private open space, landscaping and tree canopy

Objectives

O:12.11.92	Enhance the appearance and amenity of residential developments through careful integration of private open spaces, tree canopy and landscaping within residential lots.
O:12.11.93	Provide a consistent approach to village and streetscape aesthetics across the development.
O:12.11.94	Ensure a strong character is derived from the landscape to assist mitigating broader visual impacts.
O:12.11.95	Protect and enhance the biodiversity values of the Site with indigenous planting.
O:12.11.96	Minimise site disturbances and preserve the existing landscape through appropriate site design and the retention of mature trees.
O:12.11.97	Provide an integrated landscaping outcome that includes screening from sensitive views, embellishment of riparian corridors and complementary settings towards recreation areas.
O:12.11.98	Promote high quality landscape design that integrates with the built form, the natural environment, and the landscaping strategy of the public domain.
O:12.11.99	Incorporate character elements derived from existing heritage walls and rural and coastal living styles.

Site Specific Controls

12.11.175 Native trees and mature trees are to be retained where possible.

12.11.176 Landscaping should respond to the built form and to provide screening from adjoining dwellings.

12.11.177 A Landscape Plan should be prepared and submitted with each detailed Development Application.

12.11.178 Landscaped front and rear setbacks should include canopy cover trees, shrubs and groundcover species to provide enhanced shading and cooling.

12.11.179 Tree planting on lots that are less than 800m² must include a minimum of one (1) large tree (200 L pot size) per residential allotment.

12.11.180 Tree planting on lots that are greater than 800m² must include a minimum of two (2) large trees (200 L pot size) per residential allotment.

12.11.181 New tree planting should be located giving regard to views and vistas, privacy requirements, and need for shade in summer and sun in winter.

12.11.182 Retaining walls that are within private property but not integrated within the dwelling house must be provided in accordance with 15. Retaining walls, batters and culverts.

12.11.183 Landscaping must be provided for all new dwellings (including secondary dwellings) that:

a) Enhances the appearance of the streetscape and the residential allotment through the provision of substantial landscaping to street frontage.
b) Integrates the dwelling with the landscape and wider Site.
c) Utilises vegetation types that are locally endemic and other appropriate native species to improve biodiversity.

Is an appropriate scale relative to the street reserve and proposed development.

12.11.184 Planting should include species within the Illawarra Subtropical Rainforest and Coastal Freshwater Wetlands or additional plants that are successful in subtropical climates.

12.11.185 Indicative plantings on residential allotments could include:

a) *Amenca smithii*
b) *Atriplex cinerea*
c) *Casuarina glauca*
d) *Carpobrotus*
e) *Dianella caerulea*
f) *Eupomatia laurina*
g) *Heliconia psittacorum*
h) *Liriope muscari*
i) *Lomandra tanika*
j) *Myoporum parvifolium*
k) *Trachelospermum jasminoides*
l) *Viola hederacea.*

12.11.186 Landscape palette is to be derived from the natural landscape and the Site's heritage, cultural and environmental significance and should be generally in accordance with the indicative planting list above (12.11.185), the palette in Figure 20, and typical residential lot landscape design in Figure 21.

12.11.187 Where tree removal within residential allotments is necessary, replacement tree planting must be provided at a ratio of 2:1.

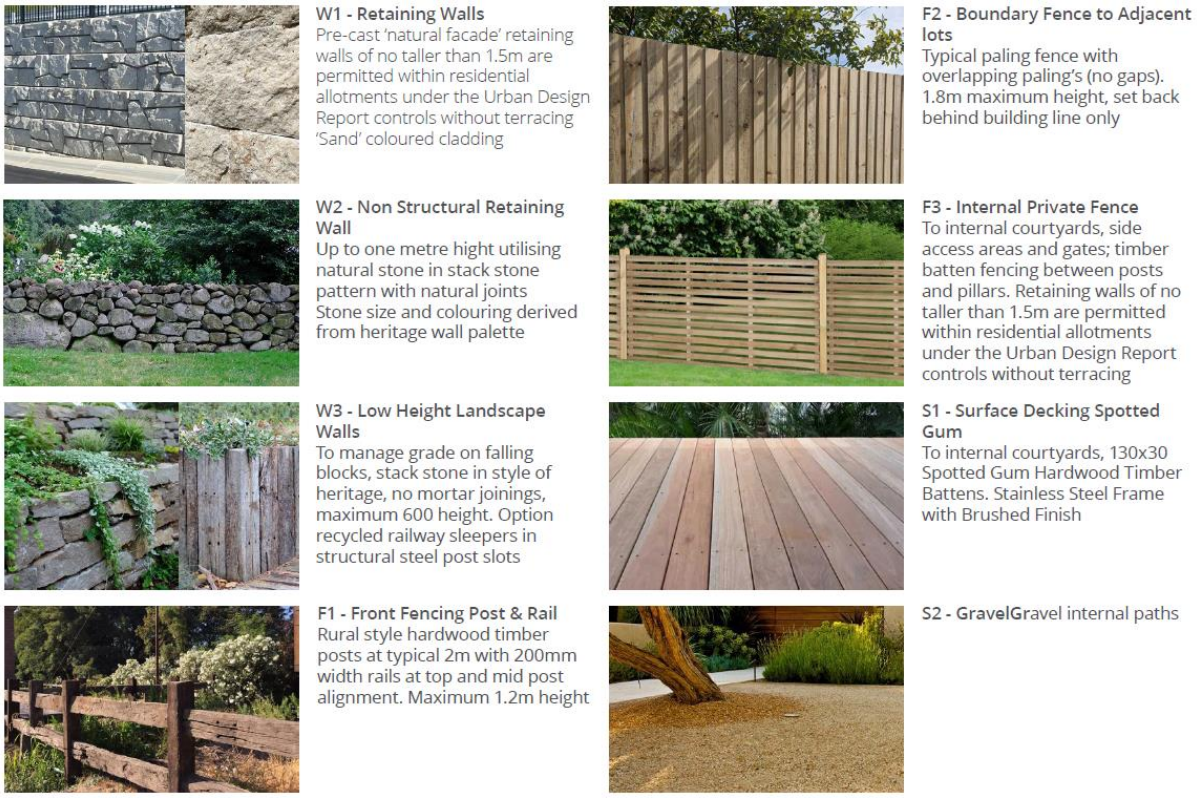

Figure 20: Residential landscape design guidelines (Arcadia, 2023)

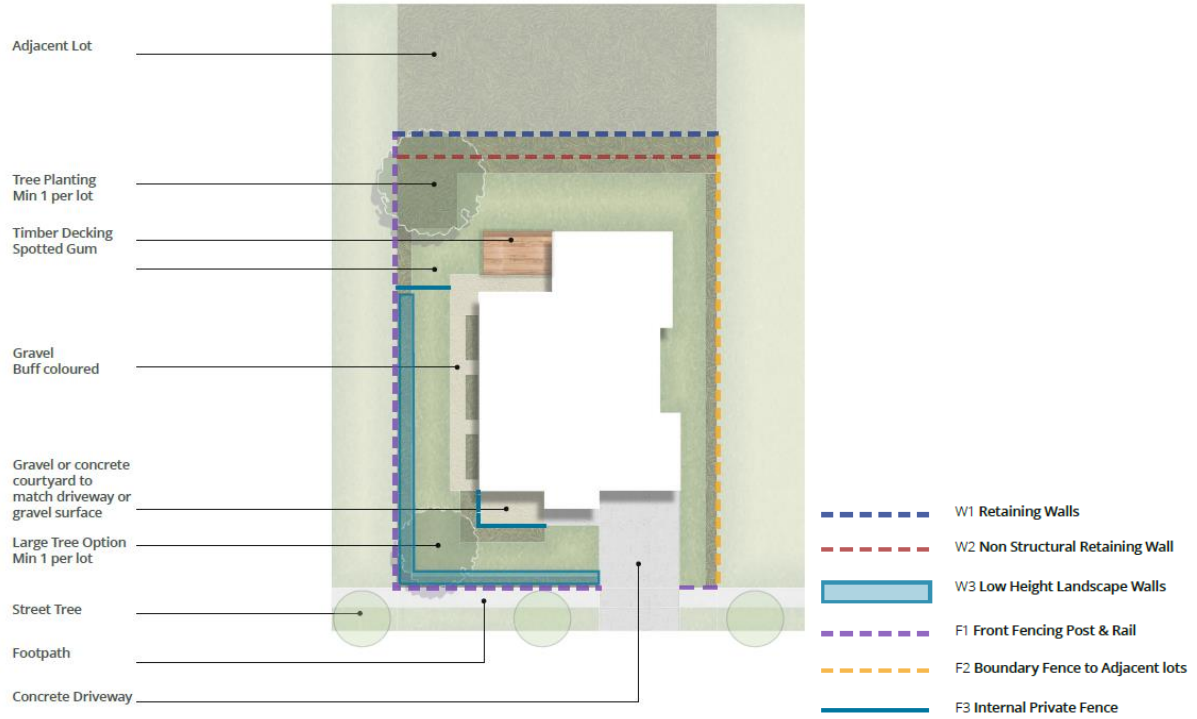

Figure 21: Typical residential lot landscape design (Arcadia, 2023)

15. Retaining walls, batters and culverts

This section should be read and applied in addition to 'Chapter 3 – Common Requirements – Topic 3.3 – 'Earthworks and retaining walls' of the Kiama DCP 2020.

Objectives

O:12.11.100	Design and implement the subdivision layout to follow natural ground contours and overland flow as much as possible to minimise requirements for earthworks and retaining walls.
O:12.11.101	Minimise the need for significant earthworks to retain the undulating topography, protect ecological corridors and waterways and protect the scenic and landscape qualities of the Site.
O:12.11.102	Allow for gradual level changes and avoid sudden level changes.
O:12.11.103	Maximise the use of non-structural batters to address level changes.
O:12.11.104	If unavoidable, incorporate retaining walls into landscape features and within the built form and promote split-level home design to minimise the need for bulk earthworks, retain the significant landscape character and views and vistas.
O:12.11.105	Incorporated level changes within the residential allotments and into an integrated landscaping feature.
O:12.11.106	Minimise the extent and scale of retaining walls within public land to reduce ongoing liability.
O:12.11.107	Enter into an agreement with Council to ensure that costs associated with maintenance and replacement of retaining walls within public land are covered in perpetuity.
O:12.11.108	Ensure the design and construction of retaining walls within public and private land consider whole-of-life costs and safety-in-design.
O:12.11.109	Manage and mitigate any adverse visual impact of retaining walls.
O:12.11.110	Ensure road levels are sympathetic, protect and maintain views to existing dry stone walls.

Site Specific Controls – Retaining walls within public property

12.11.188 Civil re-grade of the Site is to follow natural ground contours, allow gradual level changes and minimise retaining walls as much as possible.

12.11.189 Use of retaining walls is to be minimised as much as possible.

12.11.190 Road levels are to be sympathetic to existing dry stone walls and avoid the isolation of the walls from the road and public views. Refer to objectives and controls in 6. Heritage.

12.11.191 At human-scale interface areas (streets, walkways, etc.) the following apply:

a) Natural earth batters are to be implemented for level changes that are less than 1 metre in height as shown in Figure 22.

b) Reinforced earth batters are to be implemented for level changes that are greater than 1 metre in height but less than 2 metres as shown in Figure 23.

c) The maximum height of a retaining wall is 1.5 metres. In instances where a retaining wall greater than 1.5 metres in height is required, a second retaining wall is permitted providing the retaining wall structure incorporates (1) a step of a minimum 1.5 metres in width, with the second retaining wall being limited to 1.5 metres in height, (2) reinforced earth batters, and (3) sufficient separation to allow for tree planting and shrubs to mask the retaining walls.

12.11.192 At nature and riparian interface areas:

a) Reinforced earth batters are to be implemented for level changes that are a maximum of 3 metres in height as shown in Figure 24.

b) The maximum height of a retaining wall is 1.5 metres. In instances where a retaining wall greater than 1.5 metres in height is required, a second and third retaining wall is permitted providing the retaining wall structure incorporates (1) a step of a minimum 1.5 metres in width, with the second retaining wall being limited to 1.5 metres in height to a maximum height of 4.5 metres, (2) reinforced earth batters, and (3) sufficient separation to allow for tree planting and shrubs to mask the retaining walls.

c) Notwithstanding the above, level changes greater than 3 metres in height are to be avoided as much as possible.

Figure 22: Human scale interface – Natural earth batter (>1m level difference) (DKO, 2023)

Figure 23: Human scale interface – Reinforced earth batter (1-2m level difference) (DKO, 2023)

Figure 24: Nature and riparian interface – Reinforced earth batter (0-3m level difference) (DKO, 2023)

12.11.193 Stream crossings are to be designed and implemented generally in accordance with Figure 25.

12.11.194 The design and construction of retaining walls are to consider whole-of-life costs and safety-in-design.

12.11.195 The applicant of the Development Application for the residential subdivision on the Site is to enter into an agreement with Council to cover the costs associated with maintenance and replacement of retaining walls within public land in perpetuity.

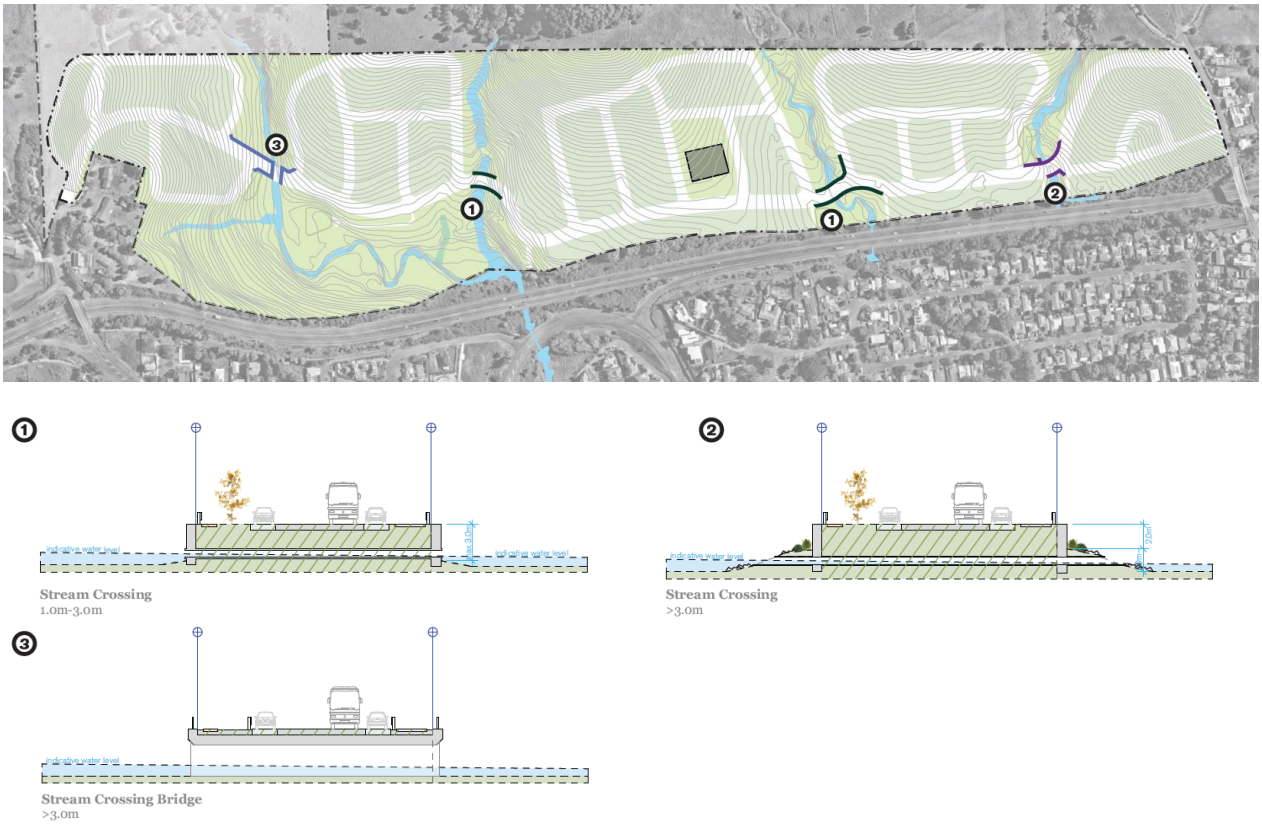

Figure 25: Stream crossings (DKO, 2023)

Site Specific Controls – Retaining walls within private property

12.11.196 Dwelling houses on steeper sites are to be designed as split level homes and incorporate retaining walls within the built form as shown in Figure 26 – Figure 30.

12.11.197 The maximum height of a retaining wall is 3 metres where it is integrated into the built form.

12.11.198 The maximum height of a retaining wall is 1.5 metres where it is not integrated into the dwelling design. Refer to Figure 27.

12.11.199 In instances where a retaining wall greater than 1.5 metres in height is required and not integrated into the dwelling design, a second retaining wall is permitted providing the retaining wall structure incorporates a step of 1.5 metre in width, with the second retaining wall being limited to 1.5 metres in height. Refer to Figure 28.

12.11.200 The design and construction of retaining walls are to consider whole-of-life costs and safety-in-design.

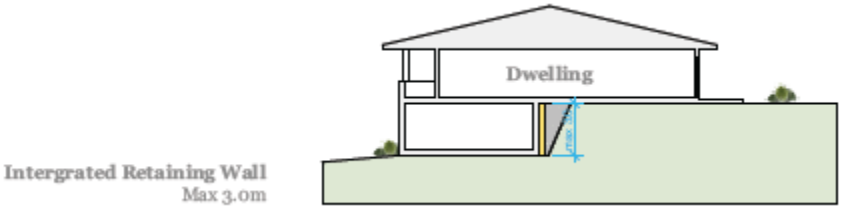

Figure 26: Integrated retaining wall (DKO, 2023)

Figure 27: Non-integrated retaining wall (less than 1.5m) (DKO, 2023)

Figure 28: Non-integrated retaining wall (greater than 1.5m) (DKO, 2023)

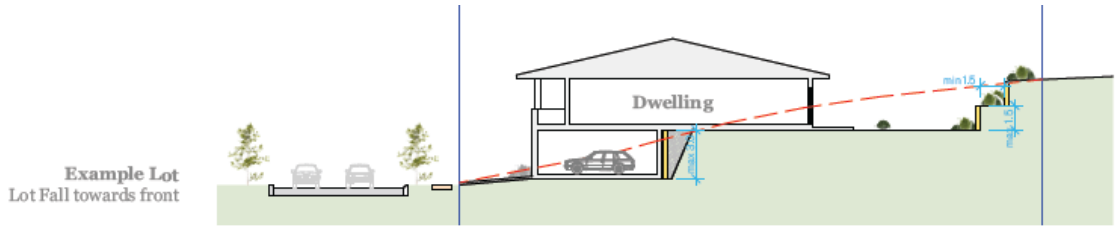

Figure 29: Example lot fall towards front (DKO, 2023)

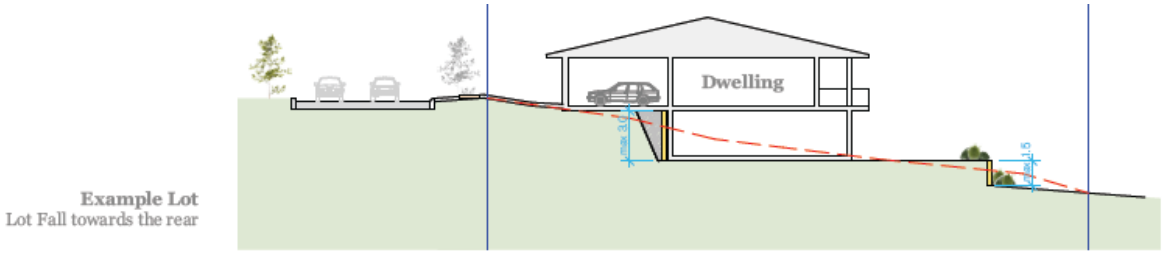

Figure 30: Example lot fall towards rear (DKO, 2023)

16. Environmentally sustainable design

Objectives

O:12.11.111	To encourage innovation and a high standard of architectural design, utilising quality materials and finishes that are sympathetic to the Kiama landscape and palette.
O:12.11.112	To ensure future dwellings achieve a high level of sustainability and environmental performance.

Site Specific Controls

12.11.201 All future applications are to demonstrate commitments to implementing Ecologically Sustainable Development / Design (ESD) measures as part of future built form.

12.11.202 Light coloured materials should be used for dwelling roofs to reduce potential heat impacts.

12.11.203 Solar panels should be installed on roofs to promote sustainable energy solutions for dwellings.

Attachment 1: Acoustic treatment categories (Renzo Tonin, 2023)

Category no.	Building element	Required acoustic rating of building element, Rw	Construction recommendation		
1	Windows / Sliding Doors	24+	Openable with minimum 4mm monolithic glass and standard weather seals.		
	Facade	38+	Cladding Construction: 9mm fibre cement sheeting or weatherboards or plank cladding externally, 90mm timber stud, R2 insulation batts in wall cavity, 10mm standard plasterboard internally.	Brick Veneer Construction: 110mm brick, 90mm timber stud, minimum 40mm clearance between masonry and stud frame, R2 insulation batts in wall cavity, 10mm standard plasterboard internally.	Cavity Brick Construction: 2 leaves of 110mm brickwork separated by 50mm gap.
	Roof	40+	Pitched concrete or terracotta tile or metal sheet roof, 10mm plasterboard ceiling fixed to ceiling joists, bulk insulation in roof cavity.		
	Door	28+	35mm solid core timber door fitted with full perimeter acoustic seals.		
	Floor	29	1 layer of 19mmm structural floorboards, timber joists on piers.	Concrete slab floor on ground or suspended.	
2	Windows / Sliding doors	27+	Openable with minimum 6mm monolithic glass and full perimeter acoustic seals.		
	Facade	45+	Cladding Construction: 9mm fibre cement sheeting or weatherboards or plank cladding externally, 90mm timber stud, R2 insulation	Brick Veneer Construction: 110mm brick, 90mm timber stud, minimum 40mm clearance between masonry and stud frame,	Cavity Brick Construction: 2 leaves of 110mm brickwork separated by 50mm gap.

			batts in wall cavity, 10mm standard plasterboard internally.	R2 insulation batts in wall cavity, 10mm standard plasterboard internally.	
	Roof	43+	Pitched concrete or terracotta tile or metal sheet roof, 10mm plasterboard ceiling fixed to ceiling joists, bulk insulation in roof cavity.		
	Door	30+	40mm solid core timber door fitted with full perimeter acoustic seals.		
	Floor	50	1 layer of 19mmm structural floorboards, timber joists on piers.	Concrete slab floor on ground or suspended slab min 100mm thick.	
3	Windows / Sliding doors	32+	Openable with minimum 6.38mm laminated glass and full perimeter acoustic seals.		
	Facade	52+	Brick Veneer Construction: 110mm brick, 90mm timber stud, minimum 40mm clearance between masonry and stud frame, R2 insulation batts in wall cavity, 10mm standard plasterboard internally.	Cavity Brick Construction: 2 leaves of 110mm brickwork separated by 50mm gap.	
	Roof	48+	Pitched concrete or terracotta tile or sheet metal roof, 1 layer of 13mm sound-rated plasterboard fixed to ceiling joists, bulk insulation in roof cavity.		
	Door	33+	45mm solid core timber door fitted with full perimeter acoustic seals.		
	Floor	50	1 layer of 19mmm structural floorboards, timber joists on piers, with minimum 250mm cavity insulated with 75mm thick 11kg/m3 glass/mineral wool insulation and 9mm fibre cement sheeting externally.	Concrete slab floor on ground or suspended slab min 100mm thick.	
4	Windows / Sliding doors	35+	Openable with minimum 10.38mm laminated glass and full perimeter acoustic seals.		

	Facade	55+	Brick Veneer Construction: 110mm brick, 90mm timber stud, minimum 40mm clearance between masonry and stud frame, R2 insulation batts in wall cavity, 10mm standard plasterboard internally.	Cavity Brick Construction: 2 leaves of 110mm brickwork separated by 50mm gap.
	Roof	52+	Pitched concrete or terracotta tile or sheet metal, 2 layers of 13mm sound-rated plasterboard fixed to ceiling joists, bulk insulation in roof cavity.	
	Door	33+	45mm solid core timber door fitted with full perimeter acoustic seals.	
	Floor	50+	1 layer of 19mmm structural floorboards, timber joists on piers, with minimum 250mm cavity insulated with 75mm thick 11kg/m3 glass/mineral wool insulation and 9mm fibre cement sheeting externally.	Concrete slab floor on ground or suspended slab min 150mm thick
5	Windows / Sliding doors	43+	Openable with minimum 5mm float, 100mm clear gap, 6mm float glass and full perimeter acoustic seals (two sets of glass, each in frames with 100mm between the glass); OR High performance IGU with 8mm glass / 16mm airgap / 8.38mm laminated glass.	
	Facade	55+	Brick Veneer Construction: 110mm brick externally, 90mm timber stud, minimum 50mm clearance between masonry and stud frame, R2 insulation batts in wall cavity, min10mm standard plasterboard internally.	Cavity Brick Construction: 2 leaves of 110mm brickwork separated by 50mm gap with cement render to the external face of the wall and cement render or 13mm plasterboard direct fixed to internal faces of the wall.
	Roof	55	Pitched concrete or terracotta tile or sheet metal roof with sarking, 2 layers of 10mm sound-rated plasterboard fixed to ceiling joist using resilient mounts, R2 insulation batts in roof cavity.	

	Entry Door (on the category 5 façade)	40	Special high performance acoustic door required – Consult an Acoustic Engineer. Alternatively, if the entry door comes into a dedicated hallway, with an additional internal door to all other internal habitable spaces, then door can be Rw 33 - 45mm solid core timber door fitted with full perimeter acoustic seals and drop seal, or min 12.38mm laminated glass with full perimeter acoustic seals and drop seal.	
	Floor	50	1 layer of 19mmm structural floorboards, timber joists on piers, with minimum 250mm cavity insulated with 75mm thick 11kg/m3 glass/mineral wool insulation and minimum 2x9mm fibre cement sheeting externally.	Concrete slab floor on ground or suspended slab min 150mm thick.

Notes

- Where a room has different category recommendations on two or more facades, the roof recommendation for the highest category applies.
- Where a room is adjacent to the road and has different category recommendations on two or more facades, both the roof and the glazing recommendation for the highest category applies.
- Any wall, roof or ceiling penetrations shall be acoustically sealed so as not to reduce the acoustic performance of the element.
- The acoustic performance of glazed doors should be in accordance with the window glazing requirement of the applicable category.
- Development Near Rail Corridors and Busy Roads – Interim Guideline recommends solid core timber doors of 45mm thickness for treatment categories 3 and 4. To align with current industry construction methods, solid core door recommendations have been limited to no more than 40mm thickness.
- The required acoustic rating is for the entire system. For example, for windows this includes the glass, frame and seals including the perimeter seal at the wall junction.
- By way of explanation, the Sound Insulation Rating Rw is a measure of the noise reduction property of the glazing assembly, a higher rating implying a higher sound reduction performance.
- Note that the Rw rating of systems measured as built on Site (R'w Field Test) may be up to 5 points lower than the laboratory result.

- The client is advised not to commence detailing or otherwise commit to systems which have not been tested in an approved laboratory or for which an opinion only is available. Testing of systems and assemblies is a component of the quality control of the design process and should be viewed as a priority because there is no guarantee the forecast results will be achieved. No responsibility is taken for use of or reliance upon untested systems, estimates or opinions. The advice provided here is in respect of acoustics only.
- The advice provided here is in respect of acoustics only. Supplementary professional advice may need to be sought in respect of fire ratings, structural design, buildability, fitness for purpose and the like.

Notes (Glazing constructions)

- All openable glass windows and doors shall incorporate full perimeter acoustic seals equivalent to Q-Lon, which enable the Rw rating performance of the glazing to not be reduced.
- The above glazing thicknesses should be considered the minimum thicknesses to achieve acoustical ratings. Greater glazing thicknesses may be required for structural loading, wind loading etc.

Notes (General)

- The sealing of all gaps in acoustic rated glazing assemblies and facades is critical in a sound rated construction. Use only sealer approved by the acoustic consultant.
- Check design of all junction details with acoustic consultant prior to construction.
- Check the necessity for HOLD POINTS with the acoustic consultant to ensure that all building details have been correctly interpreted and constructed.
- The information provided in this table is subject to modification and review without notice.
- The advice provided here is in respect of acoustics only. Supplementary professional advice may need to be sought in respect of fire ratings, structural design, buildability, fitness for purpose and the like.