People, Places and Spaces: A design guide for urban New Zealand, Ministry for the Environment, 2002

Consolidation and dispersal

Development patterns Intensity

To promote higher-intensity development around existing or new nodes and lower density on the periphery. This allows local communities, businesses and public transport to be strengthened and resource efficiencies achieved, while reducing environmental impacts on peripheral areas.

Development pattern and intensity

The ODP provides much needed residential development in Rolleston, a town already identified as a key activity centre where growth of this nature is anticipated. Rolleston Township provides appropriate commercial, educational and community facilities in the town centre and newer educational and community facilities around Foster Park.

Locating residential developments around the immediate perimeter of Rolleston consolidates development and avoids dispersal into areas further afield, keeping urban growth within suitable areas with adequate infrastructure and support services available. ODP area 81 is a logical continuation of the growth pattern of Rolleston and in principle falls in line with the overall intent of the Rolleston Structure Plan.

A minimum density of 12 hh/ha is proposed for PC81, which is consistent with development in the adjacent plan change areas and the wider Rolleston development pattern. Higher densities can be achieved in the selected medium density areas within ODP 81.

Integration and connectivity

Movement networks Building interfaces

To promote development that is integrated and connected with its surrounding environment and community. This facilitates ease of access, economy of movement and improved social interaction.

Integrated movement networks

PC81 – updated ODP provide logical connections to PC73 to the north and PC70 to the east but can also be independently and directly accessed via Dunns Crossing Road and Selwyn Road.

(Refer to the ODP Connectivity plan for PC73, PC70 and PC81 overlay)

As the key access points are via already existing roads PC81 does not rely on PC70 and PC73 to function – however with PC73 and PC70 added in the urban environment, PC81 achieves enhanced connectivity and gains access to the local amenities provided within those proposed plan change areas.

With regard to staging and timing of implementation – to my knowledge, there may be traffic and /or infrastructure related reasons to delay parts of the development. However, from an urban design perspective there are no specific restraints requiring implementation of PC81 to be deferred. There are benefits in PC73 and PC70 to be developed in conjunction with PC81 to ensure a consistent and integrated approach to road networks, green and blue networks, pedestrian/cycle networks and general cohesion between all three Plan Change areas.

Building interfaces

Building interfaces are primarily guided by the relevant rules in the Operative District Plan, the SDC Subdivision Guide and SDC Fencing Guide. Developer covenants and design approval processes will provide additional controls to ensure buildings are integrated and connected with their surrounding environment and community.

Diversity and adaptability

Mixes of uses Flexibility of buildings

To promote choice through the provision of a diverse mix of compatible activities and uses, so built environments can adapt over time. This facilitates the ability to respond efficiently to social, technical and economic changes.

Mixes of uses

The ODP allows for the integration of medium density environments which will be located in close proximity to open space reserves, main movement corridors and low traffic street environment (playstreets and shared

street environments) to facilitate high amenity public spaces and compensate for a possible reduction in private outdoor space. The exact location of these medium density environments will be determined at detailed subdivision stage. Living Z allows for a wide range of lot sizes including small-lot medium density and comprehensive medium density, generating a diverse variety of properties and dwelling designs.
No specific mixed-use areas are proposed however the Living Z Zone does not preclude communal and educational facilities from being established (i.e. preschool, church, retirement communities, medical facilities etc.), subject to their own approval process (where applicable).

Flexibility of buildings
This applies to specific urban environments and is a matter of detailed design it does not apply to a residential Plan Change of this nature.

Legibility and identity
Town form Visual character
To promote environments that are easily understood by their users, and that display a strong local identity and appropriate visual character. This facilitates an enhanced usage, enjoyment and pride in local places.

Town form
The Rolleston Structure Plan set the overall structure and extent of urban growth for Rolleston. It identified future development areas to the east, south and west of the original township and set time sequences and targets for development of these areas. Due to the Canterbury earthquakes and other global events growth has accelerated drastically and all FDAs are nearing completion ahead of the projected time.
The PC81 Site is located at the periphery of the Rolleston 'urban limit' that was initially established by the Rolleston Structure Plan and therefore presents a natural extension of the current development pattern and urban form of the township.

Visual character
Although currently rural land, the site is in close proximity to the urban edge of Rolleston and can be visually integrated into the wider township. Within the wider visual context, PC81 will extend the township character into the adjoining rural land but will not affect the transition from rural to urban when approaching Rolleston from the rural areas to the south and west. PC81 will be perceived as a natural extension of the urban form of Rolleston.

Environmental responsiveness
Ecosystems Green network Urban water Waste Energy
To promote urban environments that are responsive to natural features, ecosystems, water quality, reduced energy usage and waste production, and balance the spatial needs to achieve this with those required for urbanisation. This facilitates improved ecological outcomes.

Ecosystems, Green network, Urban water
The site contains very few natural features. Vegetation cover is limited to some perimeter boundary planting and consists of typical rural shelterbelts and some additional planting within the block for shelter and shade for stock. A water race enters the site along halfway along the western boundary and terminates within the centre of the site creating a ponding area that varies in size depending on the capacity of water reaching the end of the stock race.

The ODP proposes a centrally located large green space /recreational reserve. From here 4 green links connect to the east, west, north and south to facilitate off street cycling and walking in a high amenity environment. These green links allow for generous street tree planting and can accommodate stormwater swales with associated planting.

Should a stormwater treatment / detention area be required this will most likely be located at the southern boundary or south-eastern corner of the site and could offer opportunities for planting of native wet land species and provide additional open space of a high amenity.

The existing water race is part of a longer stock race running along the western edge of Rolleston from SH1 through PC73 (Holmes Block) and later through PC82 (Brookside Development) it then follows the western

boundary of PC73 (Skellerup Block) before entering the PC81 site. Early investigations have shown some ecological value in the upper reaches of the water race, but water flows in the lower parts of the race are less and can be ephemeral in nature. It would require further detailed investigation to ascertain the feasibility and ecological values of retaining this part of the water race.

From an urban design perspective, the following matters need to be taken into consideration when assessing the suitability of the retention of water races and their integration into a residential area.

Physical and visual amenity
The retention of a water races adds to the local amenity particularly if it can be integrated into open space/ reserves, green links and road reserves. It not only adds to the visual amenity but also assist with the physical amenity as waterbodies can aid in the regulation of temperature provides movement and sound and direct connection to a natural element.

Local character
Water races are an intrinsic feature of the rural landscape in the district. Retention of the water race creates a tangible connection to the character and history of both the site and the wider Rolleston area. It offers opportunities for unique design elements such as bridges and other crossing points, waterway specific landscaping, meandering movement of the waterway itself, ponding areas, etc

Ecological values
Water races provide habitat for local flora and fauna. Their ecological value can be further enhanced by transitioning them into naturalised waterways with native planting along the waterway margins.

Technical and practical matters
Water races within a in a road reserve can pose complications for services, due to potential conflict with perpendicular underground pipes this can create inefficient infrastructure. Above ground multiple culverts for driveway crossings may be required

Water flow
Water races are part of rural infrastructure and there is no guaranty that water will flow long term with SDC being able to turn water flows off permanently as rural areas no longer require this service. At the end of a water race flows can also be inconsistent this creates uncertainty, and the waterway could become a dry ditch or turn into a weed bed. Certainty of consistent good water flow is essential if a water race is to be integrated into a residential development.

Health and safety
Water races can carry swift flowing water and vary in depth. To young children they can present a risk of drowning and may require fencing.

Connectivity
Several bridges or culverts will be needed for pedestrian and cyclist to ensure a good level of connectivity is achieved, otherwise the water race can become a disconnecting element.

Maintenance /cost
Although retention of water races is often encouraged by local authorities ongoing maintenance and related costs can become an issue long term for council asset management.

Considering the uncertainties around several of the above matters, the limited ecological value, and the lack of detailed design for infrastructure within the plan change area, at this point the retention of the stock water race has not been included in the proposed ODP.