

UTILITIES

Integration of utility infrastructure

Utilities include structures and infrastructure for telecommunications, energy transmission, water supply, wastewater services and flood control are elements which are often found in most parks. These utilities can be in conflict with the vision to provide parks which are open, green in character and free of clutter, therefore careful consideration is needed in the integration of these infrastructure services. Care at the planning and design phases is required and close collaboration with utility suppliers to consider the future opportunities and constraints of working in and alongside these utilities.

Designing for utility infrastructure

Coordinate with utility providers by:

- identifying all utility providers who may be affected by any planning or design works. Using the council's GIS database, contacting utility companies and using services such as Before U Dig will help you to identify what utilities are present on site. Utility providers may also be planning new infrastructure that could affect the park
- using the council's GIS database, information from utility companies and as-built drawings from previous projects to establish the type, location, size, age and depth of all utilities. Check the accuracy of the information
- conducting additional survey works to locate critical infrastructure. This may include physically locating surface features such as lids or plinths; using access chambers to establish sizes and invert levels on pipes; using video and exploratory digs to physically locate infrastructure or using non-invasive detectors to find underground power and telecommunications cables
- working closely with all affected utility companies from project inception, to establish the project scope and timeframe in order to clearly identify any issues that need to be resolved
- identifying all conflicts between proposed works, in particular earth works, and existing and planned infrastructure
- identifying any proposed works which will require additional utilities infrastructure or connections. These could include additional connections to the stormwater network, power supply for buildings or exterior lighting water supply for showers or sanitary connections for toilets
- identifying all network connection charges and identifying who will be responsible for the design, installation and compliance of all connections or works to utilities
- gaining 'works over' approval from utility providers and building in key inspections during construction

Get the details right by:

- ensuring accurate as-built information for all utilities work undertaken by the contractor. Refer to council guides on as-built requirements
- work with utility companies and arboriculture experts to minimize the encroachment of tree canopies into overhead utilities and tree roots into underground utilities. Tree species, soil type, root barriers and physical proximity to utilities should all be considered
- considering opportunities for greater education and biophysical outcomes by developing solutions that daylight aspects of the stormwater catchment
- carefully considering the design of stormwater outfall structures. The use of natural materials and planting will soften the threshold between infrastructure and streams and ponds

- clustering service covers where possible, particularly in urban environments, to reduce the visual clutter
- considering the use of infill service covers particularly in urban environments. Liaise with utility companies to establish where this approach is appropriate
- using common services trenches where possible as this will reduce the volume of excavation and project costs
- identifying power point locations in the design. Work with events teams and the community to gain an understanding of likely power requirements for users. Work with service engineers to prepare a reticulation plan which includes single and three phase along with the proposed wattage demand
- ensuring restrictions are in place around works close to existing infrastructure. Inspections by utility providers and code of compliance requirements should be integrated into contract documentation and fully understood by the contractors
- consulting with community and sports groups to ensure essential services, such as lighting to sports fields, are not disrupted during the construction period

Design infrastructure for the future by:

- working closely with all utility companies to identify the age and condition of all existing infrastructure, and establishing what and when any renewal works might take place. Identify what renewal works might be carried out in parallel with proposed works in order to reduce the possibility of future damage to proposed works by utility companies
- identifying any locations for future infrastructure and incorporating this into the design
- considering the installation of additional ducting to cater for future or proposed works, such as car park lighting or a proposed toilet facility

Technical standards

- GD01 (TP10) Design guideline manual for stormwater treatment devices
- GD02 (TP108) Guideline for stormwater runoff modeling in the Auckland region
- GD03 (n/a) Proprietary device evaluation protocol for stormwater devices
- GD04 (TP124) Low impact design manual for the Auckland region
- GD05 (TP90) Erosion and sediment control guideline for land disturbing activities in the Auckland region

Good practice examples



Olympic Park, New Lynn

A utility plant and light pole have been clustered to reduce visual clutter.



Olympic Park, New Lynn



River Lane, Waiuku

Seat elements have been utilised to conceal and protect power points.



Utility Box Art, Waitakere



Recessed utility covers

Infill service covers have been used effectively to conceal large underground chambers in an urban plaza.

