The Selwyn District Council Engineering Code of Practice for Infrastructure Design

Version 1.0

July 2022

Table of Contents

1. Document Control

Document Name	Selwyn District Council Code of Practice Section 1:

Purpose	The purpose of this major revision of the Selwyn District Council Engineering Code of Practice was to incorporate new structural changes in the way that the Council accepted assets and to update the technical engineering aspects of the Industry Design Standard to current practice, including alignment with the Council's various planning and engineering related publications, such as the Construction Standard Specifications. The opportunity was also taken to incorporate the application of quality assurance to ensure that Council assets are well designed and constructed. This Engineering Code of Practice is based on the Christchurch City Council Infrastructure Design Standard, by agreement, and with the consent of Christchurch City Council. Selwyn District Council has made amendments to the Industry Design Standards to cover Selwyn-specific requirements for infrastructure. Some of the changes reflect the smaller scale of urban settlement and the rural infrastructure in the district.

Version history

Version	Date
Version 1.0	July 2022

Approval

Reviewed	
Approved	

This document, the **Selwyn District Council Engineering Code of Practice (ECOP),** will be reviewed and updated as and when necessary, with a formal review and updated of the whole document undertaken every five years. The next complete review of the ECOP will be undertaken in 2027.

The website www.selwyn.govt.nz/COP will be the sole controlled version. The onus is therefore on users to be familiar with and refer to this as the latest version of the COP.

2. Feedback

Council appreciates any comments and feedback from the users of the Code of Practice.

Please email to COP@selwyn.govt.nz, development.engineer@selwyn.govt.nz or send via mail to:

Selwyn District Council
PO Box 90
Rolleston, 7643

Comment is preferred in electronic format using Microsoft Word 97 or above, following the layout below.

Infrastructure Department Selwyn District Council PO Box 90 Rolleston 7643 Fax: (03) 347 2799 Email: COP@selwyn.govt.nz	From: Date of comment:
Title: **Selwyn District Council Engineering Code of Practice**	

General Comment

Specific Comment

Reference	Page No./ Clause No.	Recommended changes and reason (Exact wording of proposed changes should be provided)

3. Amendments Schedule

None.

4. Referenced Documents

Planning & Policy

- Selwyn District Plan (District Plan) http://eplan.selwyn.govt.nz/#!Start
- Selwyn District Structure Plans https://www.selwyn.govt.nz/property-And-building/planning/strategies-and-plans
- Resource Management Act (1991)
- Local Government Act (2002)
- New Zealand Building Code (1992)
- Selwyn District Council - Long Term Plan –
- Selwyn Community Plan 2009-2019 www.selwyn.govt.nz/council-info/selwyn-community-plan
- Greater Christchurch Urban Development Strategy www.greaterchristchurch.org.nz/
- Canterbury Land and Water Regional Plan https://www.ecan.govt.nz/your-region/plans-strategies-and-bylaws/canterbury-land-and-water-regional-plan/
- Selwyn District Council's *Development Contributions Policy* https://www.selwyn.govt.nz/__data/assets/pdf_file/0011/267815/Development-Contributions-Policy-June-2018.pdf
- Selwyn District Council's Charter Accessible Selwyn Te Arataki Taero Kore https://www.selwyn.govt.nz/community/policies-And-plans/accessible-selwyn-te-arataki-taero-kore

Design

- Christchurch City Council Waterways, Wetlands and Drainage Guide, Ko TeAnga Whakaora mö Ngä Arawai Rëpo(WWDG) (2003)

- Christchurch City Council Design Guide Crime Prevention Through Environmental Design www.resources.ccc.govt.nz/files/CPTED-docs.pdf
- Christchurch City Council Water Supply Wells, Pumping Station and Reservoir Design Specification
- Transit New Zealand Guidelines for Planting for Road Safety
- TNZ M/19 Specification for tubular steel lighting column
- NZS 3910: 2003 Conditions of contract for building and civil engineering construction
- NZS 4404: 2004 Land development and subdivision engineering
- AS/NZS 1158 Set Lighting for roads and public spaces
- Selwyn District Design Guide for residential subdivision in the Urban Living zones www.selwyn.govt.nz/services/planning/policy-strategy/design-guides/subdivision-design-guide
- NZS ISO 9000: 2006
- Quality management systems - Fundamentals and vocabulary
- Transit New Zealand Quality Standard TQS2: Second Edition, June 2005
- Auckland Regional Council Technical Publication 10, Stormwater treatment devices; design guideline manual 2003

Construction

- Christchurch City Council Civil Engineering Construction Standard Specifications Parts 1-7 https://ccc.govt.nz/consents-and-licences/construction-requirements/construction-standard-specifications
- Canterbury Regional Council Erosion & Sediment control guidelines 2007
- Auckland Regional Council Erosion & Sediment control guide for land-disturbing activities in the Auckland region http://content.aucklanddesignmanual.co.nz/regulations/technical-guidance/Documents/GD05%20Erosion%20and%20Sediment%20Control.pdf

Where a conflict exists between any Standard and the specific requirements outlined in the Engineering Code of Practice (ECOP), the ECOP takes preference (at the discretion of the Council)

The ECOP is based on the CCC Infrastructure Design Standard (IDS) by agreement, and with the consent of the Christchurch City Council. The ECOP is also based on Part 2 of NZS 4404:2010 by agreement with the Christchurch City Council and with the consent of Standards New Zealand.

5. Preface

Selwyn District Council's Engineering Code of Practice (ECOP) has been based on the Christchurch City Council's Infrastructure Design Standard (CCC IDS) by agreement with Christchurch City Council.

It is noted that there are many current territorial local authority standards, along with NZS4404, NZS Standards, AUSTROADS, design guidelines etc that provide much background information and are used by infrastructure designers. The decision to use the CCC IDS as a foundation document was due (in part) to a desire to utilise an infrastructure standard that is currently being used and accepted by the engineering, survey and planning consultants within the local Christchurch and wider Canterbury area.

The CCC IDS, which forms the basis of the Selwyn District Council Engineering Code of Practice, is a revision of the Christchurch Metropolitan Code of Urban Subdivision, which was written in 1987. Since then, the 1991 Resource Management Act was introduced, which removed the control of subdivision from the Local Government Act. When work began on the CCC IDS, consultation by Christchurch City Council with the surveying profession in 2001 showed that the Metropolitan Code was still the principal document used

in the design of sub-divisional works. Which is the main contributing factor for Selwyn District Councils decision to continue to use the CCC IDS as a foundation document for the ECOP.

For the proposed Selwyn District Council Code of Practice (COP) in 2010 a team of asset managers and service delivery managers, team leaders and design engineers reviewed each part of the CCC IDS. New parts were added covering Water Races and Telemetry and a major rewrite of the Reserves, Streetscape and Open Spaces, Stormwater, Land Drainage and Lighting was completed. The remaining parts were amended with minor changes overall. Consultation with practitioners was undertaken on the proposed ECOP with a review undertaken in June 2011.

Selwyn District Council began a review of the COP in 2019. The review was led by a consultant working in conjunction with the Development Engineering Team. A systemic review of all the sections of the COP was undertaken to bring the existing version of the COP up to date with current industry standards and more in line with Council expectations around asset delivery. Consultation with industry representatives was undertaken and feedback from those discussions has been incorporated into the foundation of the new Engineering Code of Practice (ECOP). In 2022, a final review and re-write of multiple sections of the ECOP was undertaken and the ECOP version 2022 was formally adopted by Selwyn District Council in July 2022.

5.1 Definitions

The following definitions apply in the Engineering Code of Practice unless inconsistent with the context. These definitions are additional to those definitions in the District Plan.

Annulus	Gap between the original pipe and an inserted pipe
Arboriculture	The management of individual trees or groups of trees primarily for their amenity value.
Basic boundary fence	Treated timber post and three rail fence with vertical 1.8m timber palings
Canopy	The branches and foliage of a tree out to the drip line
Check valve	One way, no return valve.
Corridor Access Request (CAR)	An application by a utility operator or contractor to carry out works in the transport Corridor.
Designer	The principal designer and design firm.
Developer	As defined in NZS 4404: 2004
Diameter	All pipe diameters are nominal internal, unless specifically stated otherwise.
Drainage	As defined in NZS 4404: 2004
Drip line	From one outer extremity of the canopy of a tree(s) to the other outer extremity of the canopy in a 360º aspect.
Earthworks	As defined in NZS 4404: 2004.
Engineer	Equivalent to “Developer’s professional advisor’ as defined in NZS 4404: 2004
Engineering Approval / Engineering Acceptance	The written confirmation of the Council’s acceptance of the Design Report and design, including drawings, calculations, and specifications.
Environment Canterbury (ECAN)	Canterbury regional council

Frangible(tree)	As defined in Waka Kotahi NZ Transport Agency Guidelines for Planting for Road Safety, mature trees, not hardwoods, with a trunk diameter less than 100mm at 400mm above the ground
Frangible (street lighting column)	As defined in TNZ M/19
Geotechnical Engineer	As defined in NZS 4404: 2004.
Hectare	Ha
Hydrogen sulphide	H_2S
Living Zone	As defined in District Plan
Maximum operating pressure	This is specified by the Engineer and is the maximum pressure the pipeline must sustain, including surge.
Network Utility Operator	As defined by s.166 of the Resource Management Act 1991
Owner	As defined in NZS 4404: 2004
Private way	As defined by s.315 of the Local Government Act 1974
Qualified arborist	A person who is in possession of a recognised arboriculture degree, diploma or certificate, and on the job experience is familiar with the equipment and hazards involved in arboriculture operations, has demonstrated proficiency in inspecting, analysing and treating hazardous trees and has demonstrated the ability to perform the tasks involved. A certificate shall consist of a minimum of 240 credits of learning (i.e. Level 4).
Qualified horticulturalist	A person who is in possession of a recognised horticulture degree, diploma or certificate, and on the job experience, is familiar with the equipment, hazards and techniques involved in horticulture operations, and has demonstrated the ability to perform the tasks involved. A certificate shall be a minimum of level 3 i.e. The equivalent to one year full time study.
Rated pressure	This is specified by the manufacturer as the limit that the particular component can sustain in use.
Residual pressure	Remaining pressure at a point under a particular demand.
Reticulation	A system of interlacing pipes, wires and other connections, constructed like a net, which feed out from a central supply to customers.
Riparian	Of, inhabiting, or situated on the bank of a river.
Street	Has the same meaning as “road” as defined by s. 315 of the local government act 1974.
Surface water	As defined in NZS 4404: 2004.
Test pressure	This is the pressure the pipeline must sustain during the test.
Utility	As defined in the District Plan but excluding those utilities owned and operated by Selwyn District Council.
Wastewater	As defined in NZS 4404: 2004
Water hammer	Transient pressure surges, can be positive and negative pressure.
Working pressure	This is the typical pressure under which the pipeline will operate.

5.2 Abbreviations

The following abbreviations apply in the Engineering Code of Practice.

These abbreviations are additional to those abbreviations in NZS 4404.

AADT	Average annual daily traffic count
AEP	annual exceedance probability
ASF(l/s)	average wastewater flow is the daily average flow from domestic, industrial and commercial sources, excluding infiltration and surface entry, as determined in clause 6.4–Sanitary Sewer Design Flows (Wastewater Drainage).
CAR	Corridor Access Request
COP	Engineering Code of Practice
CPTED	Crime Prevention Through Environmental Design
CSS	Christchurch City Council Construction Standard Specifications
GPS	global positioning system
IDS	Infrastructure Design Standards
ISO	International Standards Organisation
LTP	Selwyn District Council Long Term Council Community Plan
MF(l/s)	maximum flow is the instantaneous design total peak
NUO	Network Utility Operator
NZTA	NZ Transport Agency (formerly Transit NZ, Land Transport Agency)
OD	outside diameter
P/A	P/A ratio – peak to average ratio PSF/ASF
PE 80B	Polyethylene type 80B
PE 100	Polyethylene type 100
PN	Pressure nominal
PSF(l/s)	peak wastewater flow
PVC-o	Oriented Poly Vinyl Chloride
RAMM	Road Asset and Maintenance Management (database)
RMA	Resource Management Act
RON	road opening notification
SCADA	Supervisory, Control and Data Acquisition
SN	Stiffness number
SPF	Storm peak factor
STMS	Site Traffic Management Supervisor
TNZ	Transit New Zealand (now Waka Kotahi NZ Transport Agency)
WWDG	Waterways, Wetlands and Drainage Guide