

**CODE OF PRACTICE FOR CITY INFRASTRUCTURE
& LAND DEVELOPMENT**

ENGINEERING STANDARDS MANUAL

SECTION 1

GENERAL PROVISIONS

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SECTION 1.0 GENERAL PROVISIONS

1.1 SCOPE

The Land Development Module of the Engineering Standards Manual:

- a) Is modelled on NZS 4404 “Code of Practice for Urban Land Subdivision” and maintains the general principles and requirements thereof
- b) Gives the design and construction requirements for all land development and new infrastructural projects within Waitakere City.
- c) Provides a means of compliance therewith.
- d) Defines the requirements relating to particular types of services and utilities to be provided with land subdivision and development projects.

NOTE: Waitakere City Council encourages innovative and sustainable design and therefore welcomes alternative solutions to this code where this will result in better results. Please discuss this option with the relevant asset area within council. See also “Administration” section.

1.2 STATUTORY REQUIREMENTS

The following provisions of this Code shall be read subject to the provisions of the District Plan and any applicable statutes, regulations and bylaws, including (but without limitation):

The Resource Management Act 1991
The Local Government Act 1974
The Building Act 1991

1.3 OTHER AUTHORITIES

In addition to the Council, other bodies or persons may require to be consulted or give approval for various aspects of the land development projects, including:

The Auckland Regional Council
The Tangata Whenua and Local Iwi
The New Zealand Historic Places Trust
Transit New Zealand
Other Utility Network Operators Including:

- WaterCare Services
- Electricity Companies
- Telecommunication Companies
- Gas Companies
- Department of Conservation
- Land Information New Zealand

1.4 DEVELOPER'S REPRESENTATIVE

1.4.1

The developer of any projects involving the provision of new utility networks or undertaking land development works, which are under the control of this Code, shall appoint a representative who shall be responsible for:

- a) The investigation, design and obtaining of approvals for the works.
- b) Contract administration and supervision of the works.
- c) Certification upon completion of the works.

1.4.2

The developers representative shall be a suitably qualified and experienced person appropriate to the project and shall have liability and indemnity cover as appropriate, particularly with respect to geotechnical investigations and reports.

NOTE: The developers representative for most projects will need to be a registered engineer or surveyor. However, for smaller projects this level of qualification and experience may be reduced at the discretion of the approving Council officer.

1.4.3

All communications of a technical nature shall be made through the developers representative.

1.5 METHODOLOGY FOR APPLICATIONS AND APPROVALS FOR LAND DEVELOPMENT PROJECTS

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|--------|---|
| Step 1 | Initial Concept – Preliminary – Subdivision or other development consents lodged with Council on proper forms |
| Step 2 | Resource Consent Application – Subdivision or other development consents lodged with Council on proper forms. |
| Step 3 | Resource Consent Granted – Conditions imposed accordingly. |
| Step 4 | Engineering Design Approval Application – Detailed plans and reports submitted. |
| Step 5 | Engineering Design Approval Given – Stamped, endorsed plans issued. (A set of approved plans are to be kept on site). |

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|--------|---|
| Step 6 | Construction Inspection – Inspections carried out in accordance with the Quality and Release Manual of this Code. |
| Step 7 | Construction Release – Bonds, maintenance arrangements and release procedures carried out in accordance with the Quality and Release Manual of this Code. |

NOTE: In order to expedite the commencement of works, Engineering Design Approval may be applied for (but not granted) prior to (but not withstanding) resource consent application. Works may then commence almost immediately upon granting of the resource consent subject to granting of engineering design approval.

1.6 ENGINEERING DESIGN REQUIREMENTS

The purpose of an engineering design is to provide a common terms of reference for defining the physical works (as may be required by Council's Asset Managers or by Resource Consent condition) and to provide a mechanism that will enable the works to be evaluated against their performance requirements.

1.6.1 DESIGN PERFORMANCE CRITERIA

An engineering design shall:

- define the scope of works and incorporate all of the components required for the intended project
- be legible and understandable and be supported by sufficient drawings, calculations reports and associated documentation to facilitate appraisal
- provide sufficient information for construction purposes
- provide for
 - safety
 - the whole of the catchment
 - sudden or catastrophic failure
 - future development
 - efficiency in operation and maintenance
- be prepared and endorsed by a suitably qualified and experienced person (Refer Clause 1.4.2)
- demonstrate compliance with resource consent conditions, this Code and other regulatory and statutory requirements
- be a platform for approvals and acceptance

1.6.2 ENGINEERING DESIGN SPECIFICATIONS

1.6.2.1

Applications for the approval of an engineering design shall be made in accordance with Section 5.2 of the Administration Manual of this Code.

1.6.2.2

Engineering design drawings shall include the following information as appropriate to the proposed works.

NOTE: See also information requirements for Resource Consents in the District Plan.

- **General**
Locality plan, north point, headings and titles, scales, revisions, construction notes and requirements, standard symbols as per Fig. 1.1.

NOTE: Plan Scales:

The following scales shall be used:

<i>PLANS</i>	<i>1 TO 500, 1 TO 200 OR 1 TO 250</i>
<i>Longitudinal Sections:</i>	
<i>- horizontal</i>	<i>1 to 500</i>
<i>- vertical</i>	<i>1 to 100</i>
<i>- Cross sections</i>	<i>1 to 100</i>
<i>Details</i>	<i>As required</i>

- **Staging**
Details of stages of development. All stages must be self contained and align with the separate resource consent conditions.
- **Level**
Where practical, all levels shall be shown in terms of DOSLI datum, otherwise a suitable datum shall be used that relates to existing services.
- **Earthworks**
Existing and proposed contours; existing features such as trees, buildings, land forms, water courses, fences and other significant occupations; subsoil drainage; silt controls; an estimate of volume of earthworks to within 10% of actual.
- **Roading**
Horizontal alignment with centre lines, kerbs, footpaths, crossings, private ways and set out information (Level and dimensions):
vertical alignment longitudinal sections with existing ground and proposed finished levels, cuts, fills, grades, vertical curves, transitions, super elevation and services;
cross section and typical cross sections with pavement and surfacing details, cross falls, berms services;
intersection and cul-de-sac head details with levels, contours, dimensions and special features;
road markings and signage;
landscaping and planting plans

- Stormwater and Wastewater Drainage
Layout plan with existing and proposed manholes, pipes, inlets, outfalls and accurate lot boundaries;
flood ways with longitudinal and cross sections;
longitudinal sections with existing and final ground levels, grades, depths, pipe sizes, materials, design and capacity flows, invert levels, lid levels and other services;
special manhole details;
wastewater pump stations
- Water Supply
Layout plan with existing and proposed pipes, pipe sizes, hydrants, valves, fittings, materials;
special details
- Other Utilities
 - electricity, layout, transformer sites, ducts
 - street lighting, layout, poles
 - telecommunication, layout, ducts
 - gas layout
- Reserves and Landscape Treatment
Layout and trees and planting areas; plant species, special design for carparks, signs, lighting and paths and site works
- Structures
Retaining walls, hand rails

NOTE: These structures will require consent pursuant to the Building Act 1991.

- Standard Details
As per the Standard Details in this Code and any others that may be approved.

1.6.2.3

Engineering design drawings shall be supported by the following documentation as appropriate:

- Geotechnical reports with building line restrictions, stability calculations and a statement of professional opinion
- Pavement design calculations
- Stormwater run-off calculations for the 5% and 1% AEP rainfall events, catchment plan
- 1% AEP flood levels and flow paths and protective measures such as minimum floor levels
- Sewerage catchment plan and calculations for trunk sewers and discussions on any restricted servicing limitations
- Structural calculations

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- Construction methodology
 - Health and Safety Plan
 - Other consents
 - Subdivision and development resource consent (WC)
 - Discharge consents (ARC)
 - Earthworks consents (ARC)
 - Building consents (WCC)
 - WaterCare Services – close proximity consent
 - Coastal permits (ARC) (DOC)
 - Permission and right of entry and affected neighbouring landowners
 - Environmental Impact Reports if appropriate or if being lodged with an associated Resource Consent application
 - Plans of existing private drainage and other services.

1.6.2.4

Engineering plans shall be duly signed as approved by the developers representative and shall have revision numbers and dates clearly recorded on them.

1.6.2.5

A copy of the latest revision of the approved engineering design shall be kept on site and shall be made available for viewing by inspecting Council officers.

Fig 1.1

Fig 1.2

1.7 BONDS

1.7.1

The Council may, at its discretion, agree to the acceptance and release of works under the payment of a satisfactory bond and arrangement to complete the works. The existence of a bond may be required to be registered on the titles of the affected allotments.

1.7.2

The implementation of a bond is particularly intended to enable the early release of a subdivision pursuant to the provisions of Section 222 and 224 of the Resource Management Act 1991 when minor works are incomplete or maintenance issues are outstanding.

1.7.3

The extent, amount and period of a bond shall be mutually determined and agreed and shall include provision for exigencies, contingencies and GST, with the minimum maintenance bond amount of \$2,500.

1.7.4

Bonds up to \$10,000 may be held in the form of a cash deposit. Bonds over this amount may be in the form of a formally executed bond supported by a guarantor who shall be a bank or insurance company registered in New Zealand.

1.7.5

All costs, including Council's legal fees, involved in implementing a bond shall be met by the developer.

1.7.6

Agreement to bond is at the discretion of Council and not an automatic right of the developer. However, Council normally agrees to a bond under usual circumstances.

1.7.7

A bond shall not be agreed when:

- a) The incomplete or outstanding items are outside of the developers control.
- b) Signatures or approvals are required from other landowners or agencies.

1.8 FEES AND CHARGES

Fees and charges shall be paid to the Council in accordance with the current Scale of Fees and Charges as adopted by Council

1.9 SOURCES OF INFORMATION

- a) The Code of Practice for City Infrastructure and Land Development
- b) The Asset Management Plan

- c) The District Plan
- d) The Council's Hazard Register
- e) Council's catchment studies and management plans
- f) Council held geotechnical reports
- g) The Auckland Regional Council

1.10 CONSTRUCTION REQUIREMENTS

1.10.1 CONTRACT DOCUMENTS

All works involving the provision of utility networks and/or involving the changing of the natural form of the land shall be carried out under a formal contract between the developer (Principal) and the builder (Contractor) in accordance with NZS 3910:1987, Conditions of Contract for Building and Civil Engineering Construction, or such similar contract as specifically approved by the Code of Practice Review Committee. Similarly the relationship between the developer (Principal) and the consultant (Engineer) shall be a formal contract for the provision of professional consultancy services.

NOTE: Evidence of contractual arrangements will need to be supplied to the inspecting Council officer before works begin.

1.10.2 COMMENCEMENT OF WORKS

No engineering works that are subject to engineering design approval shall commence until such approval is obtained. The developer shall give at least 2 working days notice using the standard notification form, prior to the commencement of works. Such notice shall be in writing and shall be acknowledged and approved by the Senior Subdivisions Engineer or the appropriate Asset Engineer.

1.10.3 SUPERVISION OF WORKS

The developer shall be responsible, both personally and through the representative, to ensure that the works are carried out to the approved engineering design using sound engineering practices. All works shall be supervised by the developers representative in accordance with the appropriate level as prescribed in the ACENZ manual.

1.10.4 INSPECTION AND TESTING

Inspections shall be carried out in accordance with the Quality Assurance Module of this Code. Testing shall be carried out in accordance with the requirements of this Code. All works requiring testing shall be pre-tested and proved by the developers representative prior to Council inspection.

1.10.5 SAFETY

Temporary fencing and warning signs shall be erected in accordance with the Health & Safety Plan to protect site personnel and the general public, particularly children, from all hazards associated with the project. All fences and warning signs shall comply with Occupational Safety and Health requirements.

Note: It is an Occupational Safety and Health (OSH) requirement to control all hazards on construction sites. There is a specific hazard associated with Temporary stormwater ponds and these should therefore be fenced in an effective manner to ensure children are unable to gain access.

1.10.6 NUISANCE

The developer shall ensure that construction works cause no undue nuisance to neighbours, particularly noise and dust nuisance. Hours of work (per City Bylaws), dust prevention requirements and District Plan environmental rules are to be adhered to at all times.

NOTE: NZS 6803:1984 can be used as a means of complying with noise level requirements

1.10.7 EMERGENCIES

If during construction works a situation arises whereby the security of any persons or property or public utility is endangered then the developer may be instructed to carry out such remedial works as considered necessary to remove the danger. Any works so ordered must be carried out immediately and the costs decided when security has been restored.

1.10.8 CONNECTION TO EXISTING UTILITIES

Connections to existing utilities must be carried out in accordance with the requirements of the relevant utility network operator.

1.10.9 COMPLETION DOCUMENTATION

Approaching completion of the works the following items shall be attended to by the developers representative: as built plans, certification, fees, tax invoices, geotechnical completion report (6 weeks before final completion), maintenance details. Refer to the Acceptance and Release Manual of the Code of details.

1.11 MAINTENANCE AND REPAIRS

1.11.1 SCOPE

The maintenance and repair of City Infrastructure falls mainly into the following areas:

- Land forms
- Roads
- Stormwater drainage
- Wastewater drainage
- Water supply
- Parks and reserves

The detailed requirements are covered in the respective sections of this manual.

1.11.2 MAINTENANCE AND REPAIR IDENTIFICATION

1.11.2.1

The need for maintenance and repairs will normally be identified by the operator of the particular utility.

1.11.2.2

The need for repairs to be undertaken will normally be reported by the general public or by Council officers. Such reports shall be made to a Customer Care Engineer.

1.11.3 NOTIFICATION SCHEDULE

Activity	Notified Person	
	Routine Maintenance	Repairs
Land Forms	Subdivision Engineer	Regulatory Officer
Roading	Roading Asset Engineer	Customer Care Engineer
Stormwater	Drainage Asset Engineer	Customer Care Engineer
Wastewater	Drainage Asset Engineer	Customer Care Engineer
Water Supply	Water Asset Engineer	Customer Care Engineer

Table 1.1

1.11.4 GENERAL DESIGN REQUIREMENTS

1.11.4.1

Most minor repairs and routine maintenance works will not require specific design or subsequent approval thereof. A written specification and use of the standard details as provided in this Module will usually constitute as a suitable design provided that health and safety issues are addressed.

1.11.4.2

Where the works are significant or require specific design or calculations then engineering design approval shall be required in accordance with the Administration Module.

1.11.5 GENERAL CONSTRUCTION REQUIREMENTS

1.11.5.1

All maintenance and repairs to City Infrastructure shall be performed under a formal contract between the Council (Principal) and the builder (Contractor) in accordance with NZS 3910: 2003

1.11.5.2

All maintenance and repair works shall be covered by an approved health and safety plan, particularly in regard to excavations and traffic.