Engineer's Report Guide

for subdivision landscape assets

February 2023

Christchurch City Council

Contents

Introduction

This guidance document has been prepared by the Christchurch City Council to assist developers or their agents in preparing an engineer's report. The guidance relates only to subdivision landscape design and should be read in conjunction with the current versions of the Infrastructure Design Standard (IDS), Construction Standard Specification (CSS), Waterways, Wetlands and Drainage Guide (WWDG), and any relevant consent conditions.

The requirement for an engineer's report is stated in Section 10.3.4 of the IDS[1]:

> **IDS 10.3.4 Engineer's Report**
>
> The developer must provide, upon completion of physical works, certification that all assets to be vested have been inspected, audited and tested, and comply with the design and quality requirements. Any trees to be vested must have documentation to support this which has been prepared by a qualified arborist.
>
> Where playground equipment has been installed, ensure maintenance manuals and as-built drawings are presented with the Engineer's Report, as detailed in Part 12: As-Built Records.

This is akin to the engineer's report/s that are required for all the other physical works in the subdivision (roading and pipes). Ideally, a single engineer's report would be submitted for the entire subdivision, with landscape assets forming one part of that report. However, due to constraints such as the planting season, the completion of landscape works does not always line up with the completion of the other physical works in a subdivision. As a result it is common for the engineer's report for landscape assets to be submitted to Council some time after the engineer's report/s for civil works.

An engineer's report must be provided prior to Council's practical completion inspection.

Without an engineer's report being provided, Council will not schedule an inspection of landscape assets.

This guide provides a draft structure for an engineer's report, outlining the certifications and documentation that must be included.

[1] In this context, "engineer" refers to "engineer to the contract". This may be a landscape architect, or other suitably experienced and qualified personnel.

Example Engineer's Report Layout

The following is an example of the format and content of an engineer's report.

- You may choose to structure your report differently (for example, tree supply and planting may be combined in one separate document and attached as an Appendix).
- For clarity:
    - references to suitably experienced and qualified personnel (including arborists) means personnel who have been engaged by the developer, not Council staff or contractors.
    - references to Council means the Parks & Landscapes team in the Technical Services & Design Unit, who are responsible for subdivision landscape approvals and the subsequent inspections. They can be reached at landscape.approval@ccc.govt.nz.
    - references to trees includes street trees, and trees located in reserves (park trees).
    - references to plants includes:
        - plant beds in streets (road landscaping);
        - riparian planting along a waterway or drain; and
        - plants in reserves, including plants within and adjacent to land drainage infrastructure.

Part 1: Confirmation of Completion

The engineer's report must provide confirmation that the completed works align with the accepted plans, the CSS and any relevant consent conditions.

- This assessment must be completed by the engineer to the contract or a qualified landscape architect.
- Where aspects of the construction require expertise outside of the field of knowledge of the contract engineer/landscape architect, provide completion certificates from suitably qualified sub-consultant engineers (e.g. structural engineer, ecologist, arborist, etc.)

Any differences between the approved plan/s and the completed works require acceptance by Council via a **Non-Conformance Report**, prior to the changes being implemented.[2]

- If there are changes that have not been accepted via an NCR, a retrospective NCR must be submitted to Council prior to the submission of the engineer's report and the practical completion inspection.
- Please note that Council is under no obligation to accept a retrospective NCR if it does not comply with the IDS, CSS, WWDG or consent conditions. If Council declines to accept the NCR, the subject of the NCR must be remedied prior to the submission of the engineer's report and the practical completion inspection, unless otherwise agreed by Council.

A table could be helpful here (example below):

[2] A template for a Non-Conformance Report is provided in the IDS, Part 3 Appendix IX.

Assets	Constructed in accordance with the accepted plans and CSS? (Y/N)	Changes made during construction	NCRs *Note- NCRs should be referenced but do not need to be provided*
Street Trees *[Stage 1, or on X Road]*	N	1x [*species]* moved 3m east due to driveway conflict	NCR#1, approved by Council on *[date]*
		1x *[species]* removed due to conflict with services	NCR#2, approved by Council on *[date]*
		Change of grade from [*X]*L to *[X]*L	NCR#4, approved by Council on *[date]*
Street Trees, *[Stage 2, or on X Road]*	Y		
Street garden beds, *[Stage 1, or at central roundabout]*	N	*[Species]* changed to *[species]* due to availability of supply	NCR#3, approved by Council on *[date]*
Lot *[X]* Utility Reserve, *[planting in wetted area]*	N	Planted outside the planting season, on *[dates]*	NCR#7, approved by Council on *[date]*
Lot *[X]* Recreation Reserve, *[seats]*	N	Changed from *[brand/model]* to *[brand/model]*	NCR#6, approved by Council on *[date]*
Lot *[X]* Recreation Reserve, *[garden beds on northern side]*	N	*[Species]* changed to *[species]* due to availability of supply	NCR#5, approved by Council on *[date]*

Part 2: Before Planting (Supply)

It is important that trees and plants are inspected at procurement and prior to planting, by suitably experienced and qualified personnel. Trees and plants that are not acceptable (for example, due to poor condition or incorrect species or provenance), may be rejected by Council following planting. This could result in delays and re-work.

Trees

Any trees to be vested must have documentation to support the engineer's report, which has been prepared by a qualified arborist[3].

- Council recommends that trees be quality inspected by a **Technician Arborist** to ensure that trees comply with the required quality standards, at procurement and prior to planting[4].
- In some situations, the construction of tree pits will also require arborist input and/or inspection. Your Design Report will have identified this requirement.
- Where specified, evidence of provenance for indigenous trees must be included in the engineer's report.

There is a Tree Supply Inspection Form template in Appendix 3 of the CSS Part 7, that can be used to record the quality of the trees when procured. The form lists all the quality criteria in **CSS Part 7 Section 4.3** that are to be checked and confirmed.

Confirmation of tree quality or the completed Tree Supply Inspection Form (and evidence of provenance where required) must be supplied as part of this engineer's report.

[3] Any trees means each and every tree.
[4] A list of Council-approved arborists is provided on the website: Protected trees and guidelines : Christchurch City Council (ccc.govt.nz)

Plants

Similar quality control checks, of the criteria listed in **CSS Part 7 Section 4.4**, are to be completed for plants at procurement and prior to planting.

- These checks should also be completed by suitably experienced and qualified personnel.
- The Tree Supply Inspection Form from the CSS can be used for the plants also.
- Where specified, evidence of provenance for indigenous plants must be included in the engineer's report.

Confirmation of plant quality (and evidence of provenance where required) must be supplied as part of this engineer's report.

Part 3: After Planting (Acceptance Criteria)

Trees

The engineer's report must include documentation that is prepared by a suitably experienced and qualified arborist, to confirm that the quality and planting of **any** trees to be vested comply the acceptance criteria specified in the **CSS Part 7 Section 6.9.**

A table or spreadsheet, accompanied by the accepted plan/s marked up with the tree IDs/numbers, is an appropriate format (example shown below). Photographs can be a useful addition.

RMA/*XXXX/XXXX, [Subdivision Name] [Stage]* Date of Inspection: *XX/XX/XXXX*						
Tree Type *Street/Park*	**Tree ID / ref #**	**Species**	**Condition**	**Planting**	**Pit / Site**	**Comments / Remediations**

An assessment matrix with a simple three point classification could be used, such as those shown below.

No issues; complies with accepted plans and CSS	**√**	
Minor issues; defects are able to be remediated and are likely to correct during establishment	**≤**	
Major issues; rework required/ tree unlikely to establish or comply with CSS Pt 7 s.6.9	**X**	

Plants

A similar quality control check, by suitably experienced and qualified personnel, of the criteria listed in **CSS Part 7 Section 7.10**, must be completed for plants.

A separate table with the same classification system as the trees could be used (example shown below):

RMA/*XXXX/XXXX, [Subdivision Name] [Stage]* Date of Inspection: *XX/XX/XXXX*						
Assets / Planted Area	**Species**	**Condition**	**Planting**	**Mulch**	**Site**	**Comments / Remediations**
Street garden beds, [location]						
Lot [XX] Recreation Reserve, garden beds eastern side						
[X] Drain riparian planting, north-west portion ~30m length						
First Flush Basin, western side						

An assessment matrix with a simple three point classification could be used, such as those shown below.

No issues; complies with accepted plans and CSS	√	
Minor issues; defects are able to be remediated and are likely to correct during establishment	≤	
Major issues; rework required/ plants unlikely to establish or comply with CSS Pt 7 s.7.10	X	

Part 4: Turf / Grass

The acceptance criteria for lawn is specified in the **CSS Part 7, Section 13.8**. Turf requires confirmation of compliance with the criteria (summarised below):

- Correct grass species used, in accordance with CSS: Part 1 General.
- Ground prepared in accordance CSS: Part 2 Earthworks, and has correct soil quality/depth, surfaces free from hollows/poor consolidation, stones/debris.
- Within two months of sowing, the specified grasses shall be evenly distributed across the lawn with at least 90% of the ground surface covered and with no bare area greater than 30mm in diameter.
- The grass sward shall have less than 10% of its area in non-specified grasses and weeds.
- The lawn height shall be between 25mm and 50mm - except swales, which shall be between 50mm and 150mm.

Part 5: Playgrounds

Prior to any public use of the playground and prior to Council's practical completion inspection (whichever comes first), the developer must provide certification to Council that the playground:

- has been installed as specified in the accepted plans; and
- complies with **NZS 5828:2015, Playground equipment and surfacing** (and is therefore safe for public use).

The inspection and certification of new playgrounds is undertaken by CityCare.

If you have not previously provided the playground certification to Council, it must be provided with the engineer's report.

Warranties and maintenace manuals for playground equipment must be provided with the engineer's report.

Part 6: Structures

Engineered Structures

Engineered structures are those requiring specific engineering design by a Chartered Professional Engineer, and either a Building Consent or Building Consent Exemption.

Engineered structures include (but are not limited to):

- retaining walls: retaining more than 1.5m of ground, or less than 1.5m but supporting load/surcharge or sloping ground;
- free standing walls/fences;
- pedestrian bridges, boardwalks, viewing platforms and/or balustrades, adjacent to or over waterbodies or slopes (anything from which a person could fall);
- pergolas;
- large entrance signs.

Depending on the nature of the engineered structure(s):

- a Producer Statement for Construction (PS3) may be required from the contractor at completion, to certify that the building work has been undertaken in accordance with the consent plans and Building Code; and/or
- a Producer Statement for Construction Review (PS4) may be required from the design engineer to certify that particular elements of the structure have been observed by the design engineer during construction and have been carried out in accordance with the consent plans and the Building Code[5].

Prior to any public use of the structures and prior to Council's practical completion inspection (whichever comes first), the developer must provide certification (including the above PS3/PS4, as applicable) that they have been installed as specified and are safe for public use.

Other Structures

Other structures include (but are not limited to):

- park/street furniture, such as benches or tables for seating;
- bollards;
- light poles;
- rubbish bins;
- interpretation or directional signage.

These structures could be inspected, and compliance with the accepted plans and specifications confirmed, by the landscape architect or contract engineer.

Any warranties or maintenance manuals for structures must be provided with the engineer's report.

Part 7: As-Built Asset Data

Evidence that the as-built data has been provided to Council's data management team must be provided to landscape.approvals@ccc.govt.nz, prior to the practical completion inspection. **Council will not issue a Practical Completion Acceptance letter until the asset data has been provided.**

As-built data must comply with the IDS Part 12 and the Survey as-built guidelines for land improvements.[6] You will receive a confirmation email from Council's data management team when they have receieved the data through the FME Portal. You can forward these emails to landscape.approvals@ccc.govt.nz as evidence that the asset data has been provided, or append them to the engineer's report.

Part 8: Appendices

Appendix 1: Confirmation of Plant Quality / Completed Tree Supply Inspection Form

Appendix 2: Warranties and maintenance manuals for structures

[5] These elements will have been identified on the Producer Statement of Design PS1, that was provided with the Design Report.

[6] As-built survey and data requirements : Christchurch City Council (ccc.govt.nz)