Engineer's Report Guide

for subdivision landscape assets

June 2024

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

The guidance 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.

Engineer's Report

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 a separate engineer's report for landscape assets to be submitted to Council sometime after the engineer's report/s for civil works.

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

Council will not organise a practical completion inspection until the Engineers Report has been received and reviewed, and the information provided in the report is deemed sufficient.

- Where an Engineer's Report is incomplete; or the report identifies defects that can be easily and immediately remedied, without any indication or evidence that those defects *have* subsequently been remedied - Council will ask for further information / an updated report.

- Where an Engineer's Report identifies defects that cannot be easily and immediately rectified, at such a scale or defect type that practical completion acceptance will not be issued - Council will delay inspection of those assets until those defects have been rectified and an updated report provided.

- Where Council's audit of the provided asset data shows that the submitted data is incomplete or incorrect, Council will delay inspection until accurate data for all of the assets being inspected has been provided and uploaded to Council's systems.

[1] In this context, "engineer" refers to "engineer to the contract". This may be a landscape architect, or other suitably experienced and qualified personnel responsible for certifying the work on behalf of the developer.

Practical Completion

Council's requirements and expectations at practical completion are outlined in Section 10.11.3 of the IDS:

> ### IDS 10.11.3 Presentation of reserves and streetscape
>
> At the time of practical completion, all reserves and streetscapes must be presented in a tidy condition to the satisfaction of Council. The Council will inspect all trees, plants and landscaping including grassed areas… to ensure that the minimum standards and specifications set out in CSS Part 7 are met. Landscaped areas must, as a minimum, meet the following general requirements:
>
> - be completed by the developer in accordance with the accepted plans and required quality standards;
> - be free of weeds, tree stumps (above and below ground) and other specified vegetation;
> - be free of surplus, unwanted construction materials, debris, waste (liquid or solid) and rubbish;
> - pre-existing trees and vegetation must be in a safe, healthy and undamaged condition.

More specific expectations are:

- "Completed" means the ordinary definition: ie, as per the accepted plans, with every tree and plant planted, every grassed area seeded or sprayed (without large bare patches), every piece of furniture installed[2].

- Any departures from accepted plan/s or the IDS/CSS requirements require acceptance by Council via a **Non-Conformance Report**, prior to the changes being implemented.[3]
    - If there are changes that have not been accepted via an NCR, a retrospective NCR must be submitted to Council prior to (or, at the latest, with) the Engineer's Report.
    - 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 practical completion inspection unless otherwise agreed by Council.

- To meet the requirements underlined above, the landscape assets are to be maintained by suitably qualified contractors and as specified in the CSS Part 7 Section 14 *Establishment,* from the time of planting.

- All practical completion inspections will be undertaken:
    - for streetscape assets according to stage/s (from the subdivision scheme plan). Street trees, street garden beds and any landscape structures shall be inspected and achieve practical completion acceptance at the same time.
    - for reserves according to land parcel/s. All landscape assets within a reserve land parcel shall be inspected and achieve practical completion acceptance at the same time.

  Council will not permit the separation of different assets or areas *within* stages or land parcels (for example, street trees separated from street gardens, or grassed areas separated from the remainder of assets in a reserve)[4].

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[2] Where assets shown in the accepted plans have *not* been planted or installed, the Engineers Report should explain why not. Where the number or percentage of missing assets is relatively small, and it results from supply constraints or other factors outside the contractor's control, it will not usually hold up practical completion acceptance.

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

[4] This is due to a) Council's asset management system being based on these units, b) complications with partial bond refunds, and c) a desire to reduce the administrative burden which is on-charged to developers as a result of a) and b). While requests to separate different assets within stages or land parcels will be considered on a case by case basis, Council reserves the right to refuse.

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 Landscape Architecture & Environment 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.

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 suitably experienced and 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.)

A summary table can be very helpful for Council staff (example below):

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 for *[species]* 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]* Utility Reserve *[east side of X Drain]*	N	15x *[species]* at northern end unable to be planted due to nursery delay. Expected to get more stock in [*month*]. Council confirmed practical completion can proceed via email on *[date].*	
Lot *[X]* Recreation Reserve, *[garden beds on northern side of playground]*	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[5].

- 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[6].
- 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.

The Tree Supply Inspection Form template in Appendix 3 of the CSS Part 7 must be used to record confirmation of the quality of the trees when procured. The form lists 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 the engineer's report.

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 the 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.

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

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.
- The grass sward shall have less than 10% of its area in non-specified grasses and weeds.
- 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.

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 usually 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 maintenance 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[7].

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;

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

- 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, audited against the accepted plans and confirmed as complete and correct.**

As-built data must comply with the IDS Part 12 and the Survey as-built guidelines for land improvements.[8] 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

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