



Arborist Assessment Report

Client:	11 Fleet Street Ltd (Shackleton Developments)
Site Address:	11 – 13 Fleet Street, Eden Terrace, Auckland, 1021
Proposal:	Demolition of the existing dwelling and the construction of a multilevel development with associated infrastructure.
Compiled By:	Stuart Barton
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Arbor Connect Ltd.

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1.0 Introduction

- 1.1 Our company received instruction from Geoff Cawson from Shackleton Developments, the owners of 11 – 13 Fleet Street, Eden Terrace (the site), to prepare an arboricultural assessment report to assess the impacts of the proposal on the subject trees.
- 1.2 This report has been commissioned to assess how the proposal will impact the subject trees and provide suitable recommendations to mitigate any adverse effects.
- 1.3 On 23 March 2022, I visited the site to collect data on the trees. On 11 April 2022, I met on-site with Geoff Cawson and Bernardo Santos, the Auckland Council Urban Forest Specialist, to discuss the street tree implicated by the development. This report is based upon the findings of those visits and the conditions found.
- 1.4 The details of the trees are specified in Appendix A of this report. The approximate location of the trees has been indicated on a location plan attached as Appendix B. The documentation supplied, and upon which I have based this assessment, are attached as Appendix C.
- 1.5 All assessments were made from ground level. While the tree dimensions were measured, they should be viewed as approximate only.

2.0 Site Description

- 2.1 The site is legally described as Lot 1 DP 389386 (11 Fleet Street) and Lot 2 DP 389386 (13 Fleet Street). The site is zoned Business - Mixed Use in the Auckland Unitary Plan (AUP), under which this proposal is to be assessed.
- 2.2 The site is vacant other than a dwelling in the northeastern corner and has little vegetation. It is bounded by residential properties on three sides and Fleet street on the front boundary. There are no protected trees within the site.
- 2.3 In front of the site, Fleet Street is not a formed road due to the steepness of the topography. This part of Fleet Street is a steep grassed area with a large pin oak street tree almost central. Stairs run down both sides of the area.
- 2.4 There is a London plane tree located in the southern corner of 6 Piwakawaka Street that overhangs the site

3.0 Tree Protection Rules

- 3.1 The proposal has been assessed under the AUP.
- 3.2 The tree rules that apply to this proposal are under E17 Trees in Roads.
- 3.3 This proposal implicates no other protected trees.

4.0 The Proposal

- 4.1 It is proposed that the existing house be demolished, and a nine-level apartment complex will be constructed. The building will have 57 residential units with a small

amount of ground-floor commercial offices. The basement will be primarily bike storage and parking for 11 vehicles.

- 4.2 The area of Fleet Street in front of the site will be upgraded to allow for a vehicle entrance to the building and replace the existing stairs to allow for a pedestrian entrance off Fleet Street. This upgrade will include bleacher seating and landscape planting.

5.0 Arboricultural Assessment

Pin Oak - Tree 1

- 5.1 This pin oak is a significant street tree located near the centre of the steep area between the two different levels of Fleet Street. The area the tree is located in is currently mostly bare under the tree, with grass and other low herbaceous plants present towards the bottom of the slope. The stairs on the western side of the area diverge away from the front boundary of the site, so when they are opposite the trunk of the tree, they are approximately equidistant from the boundary and trunk.
- 5.2 The centre of the trunk is 5.4 m from the site boundary, where the edge of the excavation for the building will be. At this point, all roots encountered will need to be removed.
- 5.3 The replacement stairs will be approximately 3.1 m to the west, and the footpath that goes from the west to the east side will be 1.8 m to the south of the trunk at the closest points. From the footpath to the bottom of the area, the stairs will continue to Fleet Street. Bleacher seating will come off the stairs in this lower section. The stairs, footpath and bleachers will be constructed above the ground level using post foundations or similar. The design will ensure that excavation is not required to allow for the bearers to be installed. Minimal excavation will be needed for the construction, and the final design will allow for the retention of major roots. The stairs to the east of the tree are to remain unchanged.
- 5.4 The vehicle entrance to the basement will be located within the southern corner of the site. Two options are being explored for this entrance. The best option for the tree is obtaining an easement over the corner of the neighbouring property to allow for the crossing to be further from the tree. The other option is to have the crossing entirely within the site boundary, which pushes the excavation required closer to the tree. As obtaining the easement is a work in progress and not certain to occur, for this report, I have assumed that the second option will be constructed. A retaining wall will need to be built within the road reserve to construct the vehicle crossing and entrance. The excavation for this wall will be approximately 6.0 m from the tree trunk, and all roots encountered will require removal.
- 5.5 It is proposed that the area around the tree is planted with vegetation that can tolerate dry, shaded areas. To minimise root disturbance, it is recommended that good quality topsoil with 5 % compost is spread to a depth of no more than 100 mm over the area to be planted. This topsoil depth will allow small grade plants to be planted without excavating into the existing ground. The soil and compost will allow for an improved rooting environment.
- 5.6 Approximately 55% of the protected root zone will be disturbed. If this percentage is broken down, 23 % of the root zone will be excavated for the building and vehicle crossing, the stairs, footpath and bleachers will cover 13 % of the root zone with the

foundations allowing for the larger roots to be retained, and 18 % of the root zone will be covered by topsoil to allow for planting and to improve the rooting environment for the tree. The majority of the disturbance does not involve completely removing the protected root zone, so most of the roots in these areas will remain intact. It is anticipated that no roots over 80 mm in diameter will be removed for the project.

- 5.7 The exact location of the underground services is yet to be determined. The topography of the site and the location of the existing public lines allow the stormwater and wastewater to be placed outside of the protected root zone. Water mains, power and telecommunications will need to be installed using a methodology, such as thrusting, that avoids the need to remove roots within the protected root zone.
- 5.8 The canopy of the tree overhangs the site by approximately 8.0 m. Pruning will be required to allow for the construction of the building and to give suitable clearance to the building once occupied. To provide a clearance of 1.5 m, approximately 30 % of the canopy will require to be removed. Three large (between 150 and 350 mm diameter) branches and several minor branches less than 100 mm diameter will need to be removed. Although the pruning will create large wounds, the tree is healthy and shows good vigour, so it is likely to adapt. Due to the size and habit of the tree, it would be challenging to develop the site to its full potential without having to prune large branches.
- 5.9 The proposed work will be within the tolerances of the tree.
- 5.10 Under the AUP rule E17.4.1 (A8), resource consent will be required for the works within the protected root zone as the works will disturb more than 20 % of the protected root zone. The proposed pruning will require resource consent under rule E17.4.1 (A6) because the pruning will remove more than 20 % of the live canopy and needs the removal of branches over 100 mm in diameter.

London Plane Tree – Tree 2

- 5.11 This London plane tree is located at 6 Piwakawaka Street. The trunk is estimated to be 2.0 m from the site's southwestern corner. The canopy overhangs the site by 8.0 m. The site is above the ground level of the tree.
- 5.12 There will be excavation to the boundary, but because the retained ground will have inhibited most root development, it is anticipated that no significant roots will be present, and the excavation is unlikely to have a detrimental effect on the tree.
- 5.13 The tree will need to be pruned to allow for the construction. One branch approximately 150 mm in diameter will require removal and several between 80 and 110 mm in diameter. The pruning will not have a detrimental effect on the tree.
- 5.14 The tree is not protected, and the proposed works will be within the tolerances of the tree.

6.0 Proposed Mitigation

- 6.1 The effect of this proposal on Tree 1 is considered minor in the short term if the proposed Tree Protection Methodology outlined in Section 8.0 is implemented to mitigate any potential adverse effects.

7.0 Tree Owner Approval (TOA)

- 7.1 TOA will be required for the proposed works within the Tree Protection Zone (TPZ) and pruning of the pin oak. The proposal has been discussed with Bernardo Santos, the current Urban Forest Specialist from Auckland Council for the area. As part of these discussions, he has supported the proposal subject to confirmation of the extent of works and mitigation offered. TOA will be sought separately from the resource consent and will be made available upon receipt.
- 7.2 The TPZ is similar to the protected root zone outlined in the arborist assessment above, so the amount of disturbance of the TPZ is the same.
- 7.3 The excavation within the site and for the vehicle crossing is outside of the Structural Root Zone (SRZ). The excavation for the piles for a small section of stairs to the west and the footpath to the south will be within the SRZ. The stairs and footpath will be designed so there will be no removal of structural roots. All excavations within the SRZ will be undertaken by air excavation.
- 7.4 The pruning is significant, with three large branches requiring pruning and up to 30 % of the canopy being removed. It is impossible to develop the site to the extent permissible under the AUP without undertaking this amount of pruning. The tree is healthy and will be able to tolerate the extent of pruning.

8.0 Tree Protection Methodology

The following recommendations are considered appropriate to mitigate the potential adverse effects of the proposal on the trees and are deemed suitable conditions of consent for works.

- 8.1 A suitably experienced, council approved arborist ('nominated arborist') shall be employed by the consent holder, at the consent holder's expense, to monitor, supervise and direct all works within the drip line or in the vicinity of those protected trees to be retained, for the duration of the works.
- 8.2 Before any site works, including demolition works, commencing, a pre-commencement site meeting shall be held so that the nominated arborist can explain the conditions of consent that pertain to the retained vegetation to all contractors or sub-contractors who will be working on-site within the root zone of, or adjacent to, any protected trees that are covered by the consent. The consent holder shall give the council arborists at least five working days' notice of the meeting's time and date. The minutes of this meeting, including the attendees' names, shall be forwarded to the Council Compliance Officer as soon as practicable.
- 8.3 A copy of the Conditions of Consent shall be held on-site at all times.
- 8.4 A fundamental requirement for protecting the retained tree will be the continued and documented monitoring of conditions during the construction process. The nominated arborist shall maintain a log of visits to the site and works undertaken on those visits. These visits shall include a monthly visit to ensure the tree protection methodology is adhered to. A copy of this log shall be made available to the Council Compliance Officer if requested.

- 8.5 Any pruning of the street tree shall be carried out by council health and safety approved qualified arborists and will comply with accepted arboricultural standards and code of practice.
- 8.6 Any demolition, including the removal of the existing stairs or excavation, within the root zone of any tree to be retained shall be done under the supervision of the consent holder's nominated arborist.
- 8.7 The installation of any silt control shall utilise a no-dig system such as filter socks or an agreed alternative rather than dug-in materials in the protected trees' root zone.
- 8.8 Any excavation work within the root zone of any tree to be retained shall be undertaken by hand until the nominated arborist is satisfied no more roots will be encountered. This excavation shall be under the supervision of the nominated arborist.
- 8.9 Any excavation within the Structural Root Zone of the pin oak shall be undertaken by air excavation only.
- 8.10 The unloading zone for materials shall be outside the canopy of the pin oak tree to prevent damage to the foliage by cranes lifting in materials.
- 8.11 The stairs and footpath design shall allow for the piles to be shifted to avoid roots over 60 mm in diameter.
- 8.12 All roots encountered during excavations that require severance shall be cleanly cut back to the excavation face using a handsaw or secateurs by the consent holder's nominated arborist.
- 8.13 All exposed roots and root ends shall be covered to prevent them from drying out by a covering of Hessian (or acceptable alternative) that is to be kept damp until the excavated area can be backfilled. Any exposed roots that are likely to contact wet concrete shall be covered with a permanent barrier, e.g. polythene, to protect them from this occurring.
- 8.14 Temporary protective fencing to protect the trees to be retained should be installed before any site works, including demolition, commence on site. The temporary protective fencing aims to provide an area around the retained trees to facilitate their successful retention during the construction process.
- 8.15 The extent and location of the temporary protective fencing shall be the area of the road reserve covered by the root zone and the undisturbed area above the existing retaining wall to the north of the tree and shall be in place before works begin.
- 8.16 Although temporary, the fence shall be constructed to be a minimum of 1.8 m high and not easily moved. Signage (minimum size 600 mm x 450 mm) shall be attached to the fence, stating that it is a tree protection area and there should be no unauthorised entry.

- 8.17 The area within the temporary protective fencing is to be considered a total exclusion zone as follows:
- No storage of diesel, cement, building materials, site huts, spoil etc. within the delineated area.
 - No spillages of substances likely to be harmful to tree health within seepage distance of the delineated area.
 - No alteration to the dimensions of the delineated area without the prior approval of the nominated arborist.
 - No access into or works within the delineated area without the prior approval of the nominated arborist.
- 8.18 The consent holder is responsible for maintaining the condition of the temporary protective fencing. The condition, repair and location of the temporary protective fencing shall be regularly inspected as part of the routine tree-monitoring programme.
- 8.19 The nominated arborist shall undertake all necessary remedial pruning works, including pruning tree roots uncovered during excavations, following arboricultural standards.
- 8.20 During the construction process, the nominated arborist may recommend installing irrigation systems, mulch, or remedial pruning works if required to improve the trees' health.

9.0 Conclusion

- 9.1 This proposal will require pruning and works within the protected root zone of one street tree (Tree 1). Resource consent and Tree Owner Approval are necessary. One non-protected private tree (Tree 2) located adjacent to the site will also require pruning and works within its root zone.
- 9.2 A comprehensive set of tree protection measures has been prescribed in the Tree Protection Methodology in Section 8 of this report to minimise the proposed works' effect on the trees.
- 9.3 From an arboricultural perspective, I can support this application if the Tree Protection Methodology is adhered to.

I trust this is of assistance. Please do not hesitate to contact me if you require further information.

For **Arbor Connect Ltd**



Stuart Barton
Consultant Arborist - Principal
Cert. in Arboriculture, Dip. Hort.,
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Attached

Appendix A – Survey Data

Appendix B – Tree Location

Appendix C – Document List

APPENDIX A

SURVEY DATA

Tree Number	Species	Height (m)	Canopy Spread (m)	Trunk Girth @ 1.4m (m)	Trunk Diameter @ 1.4	Trunk Diameter @ Base	TPZ Radius (m)	SRZ Radius (m) r	Condition	Protection Status	Comments
1	Pin Oak	17.5	23.4	3.1	0.98	1.09	11.8	3.4	Good	Street tree	Works within the root zone to construct the vehicle crossing and to upgrade the stairs and landscaping. Pruning of the canopy overhanging the site.
2	London Plane	16.4	18.0	0.4 (estimated)	-	-	-	-	Good	None	It is located at 6 Piwakawaka Street. Works within the root zone to construct the building. Pruning of the canopy overhanging the site.

Table Definitions

Canopy Spread:	Calculated as the greatest radial spread of the canopy from the trunk x 2. This distance is also the protected root zone.
Tree Protection Zone (TPZ):	Protected root zone as calculated in Australian Standard 4970 – 2009 Protection Of trees on Development sites as required by Auckland Council Tree Owner Approval.
Structural Root Zone (SRZ):	Protected root zone required for stability if a major encroachment into the TPZ zone as calculated in Australian Standard 4970 – 2009 Protection Of trees on Development sites as required by Auckland Council Tree Owner Approval.
Condition:	Good: A healthy specimen with good vigour, form, long life expectancy and no significant defects. Fair: Tree of average vigour and form. Minor defects may be present but not significant structural stability. Poor: Tree with low vigour or poor form, significant defects and possible limited life expectancy.



Tree locations 11 - 13 Fleet Street

APPENDIX C**DOCUMENTATION LIST**

Title	Dated	Revision
Architectural Resource Consent Set, 11 – 13 Fleet Street, Eden Terrace by P B and A Architects	06/05/2022	A
11 – 13 Fleet Street – Site Serviceability assessment by A R and Associates	02/03/2022	A
Landscape Design Package, 11 – 13 Fleet Street, Eden Terrace by Boffa Miskell	-	Draft