DEVELOPMENT ASSESSMENT REPORT	
Application No.	DA/2020/0136
Address	62 Alfred Street ANNANDALE NSW 2038
Proposal	New garage and secondary dwelling over to rear and associated works
Date of Lodgement	28 February 2020
Applicant	Billie Harkness C/- Saturday Studio Pty Ltd
Owner	Billie B Harkness Mr Wilson DR Cuervo
Number of Submissions	Initial: 1
Value of works	$120,000.00
Reason for determination at Planning Panel	Clause 4.6 variation to FSR exceeds 10%
Main Issues	Impacts on Conservation Area Unsatisfactory response to existing pattern of development and desired future character Unsatisfactory on-site and off-site amenity impacts Unacceptable flood risk Adverse impacts on existing vegetation Variation to FSR and Site Coverage Site suitability.
Recommendation	Refusal
Attachment A	Plans of proposed development
Attachment B	Arboricultural Impact Assessment Report
Attachment C	Flood Risk Management Report
Attachment D	Statement of Environmental Effect
Attachment E	Statement of Significance – Conservation Area

LOCALITY MAP

Subject Site		Objectors	N
Notified Area		Supporters	

1. Executive Summary

This report is an assessment of the application submitted to Council for a new garage and secondary dwelling over to rear and associated works at 62 Alfred Street, Annandale.

The application was notified to surrounding properties and one (1) submission was received in response to the initial notification.

The main issues that have arisen from the application include:

- Adverse impacts on Heritage Conservation Area and unsatisfactory response to desired future character controls;
- Adverse amenity impacts – bulk and scale, overshadowing and privacy;
- Unsatisfactory on-site amenity outcomes, including non-compliance with Private Open Space controls;
- Unacceptable flood risk – site and adjoining sites;
- Adverse impacts on existing vegetation – subject and adjoining sites;
- Significant breaches of applicable Floor Space Ratio and Site Coverage development standards; and
- Site suitability.

Given the substantive issues raised by the design and unresolved concern whether the site is suitable to accommodate a secondary dwelling as identified above, Council requested that the application be withdrawn. The application has not been withdrawn as requested, and given the substantial time that has elapsed since issues were first raised with the applicant, the assessment of the proposal has proceeded. Refusal is recommended.

2. Proposal

The application seeks consent for a secondary dwelling over garage at the rear of the property accessed via Whites Creek Lane. The proposed secondary dwelling comprises of a single car garage and bicycle/ garden storage area on the ground floor and an artist studio/ study and bathroom on first floor. The proposed building is two storeys in form with a mansard roof and stepped façade to Whites Creek Lane, the majority of which is splayed to the lane. Access to the artist studio on the first floor is provided via an external stair which is also splayed toward the lane.

3. Site Description

The subject site is located at 62 Alfred Street, Annandale between Booth Street and Styles Street. The area of the site is approximately 227.6sqm and is legally described as Lot 43 Section 25 DP 1225. The site is irregular in shape, with a frontage of 7.62 metres to Alfred Street and a laneway frontage of 8.33 metres to White Creeks Lane.

Zoning of the subject site and the adjoining properties.

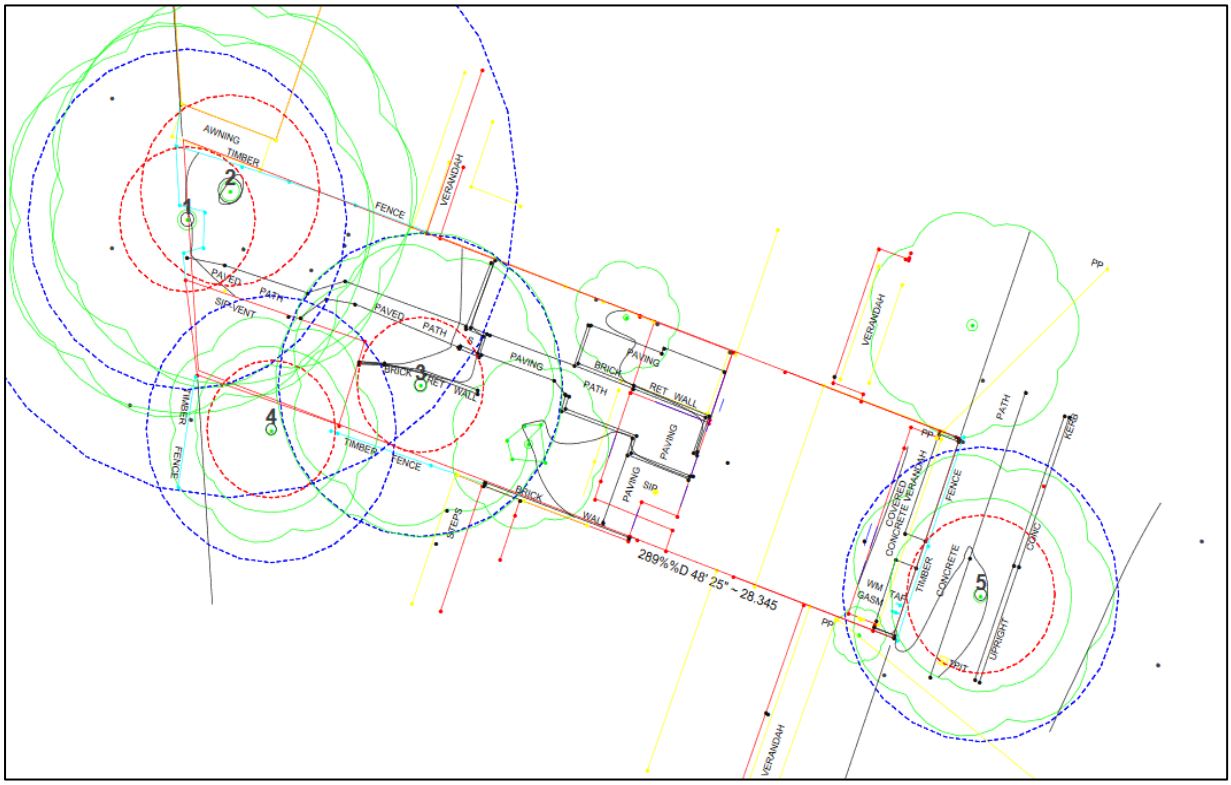

Aerial view of the subject site at 194 Short Street.

The site supports a 2-storey dwelling addressing Alfred Street as single-storey with a 2 storey form to the rear of the dwelling following the topography of the land. Adjoining the site to the north is a 2 storey dwelling at 64 Alfred Street. Adjoining the site to the south is a 2 storey dwelling at 52 Alfred Street.

The subject site is not listed as a heritage item nor located in the vicinity of any environmental heritage. The property is located within a Heritage Conservation Area. The property is identified as a flood prone lot.

The following trees are located on the site and within the vicinity.

- One (1) *Corymbia citriodora – T1 located on the rear boundary (Whites Creek Lane)*
- One (1) *Eucalyptus grandis – T2 located adjacent to the rear and northern boundary on the subject site*
- *One (1) Jacaranda mimosifolia – T3 located on the rear middle of the subject site*
- *One (1) Callistemon viminalis – T4 located on adjacent to the southern boundary on 52 Alfred Street Annandale.*



4. Background

4(a) Site history

The following application outlines the relevant development history of the subject site and any relevant applications on surrounding properties.

Subject Site

Application	Proposal	Decision & Date
T/2009/298	Complying Work only. Prune 2 x gum trees and 1 x jacaranda. Less than 25% of canopy	Approved 09/12/2009
T/2013/126	Removal of 1 Eucalyptus saligna tree	Refused 04/06/2013

T/2013/212	Removal of 1 Eucalyptus saligna tree	Completed 05/07/2016
D/2019/315	Alterations and additions to existing dwelling-house	Approved 24/10/2019

Surrounding properties

Application	Proposal	Decision & Date
52 Alfred Street, Annandale		
D/2006/243	Alterations and additions to existing dwelling	Approved 04/10/2006
M/2006/704	Section 96 (1A) modification of development consent D/2006/243 which approved alterations and additions to existing dwelling. Modification seeks to correct original plans that did not accurately reflect the existing arrangement of parking space and deletion of condition 2(b) which required removal of the panel lift door servicing this car space.	Approved 31/01/2007
M/2008/24	Section 96 modification of development consent D/2006/243 which approved alterations and additions to existing dwelling. Modification seeks to delete proposed dining room and retain existing laundry, new window to kitchen and privacy screen to deck.	Approved 2705/2008
62 Alfred Street, Annandale		
D/2007/475	Alterations and additions to an existing dwelling including ground and first floor additions. Please note: Amended plans.	Approved 04/12/2008
M/2010/216	Section 96 application to modify D/2007/475 which approved alterations and additions to an existing dwelling including ground and first floor additions. Modification seeks to replace existing single garage with new single garage and construction of a new dormer window facing Alfred Street.	Approved 07/04/2011

4(b) Application history

The following table outlines the relevant history of the subject application.

Date	Discussion / Letter / Additional Information
28/02/2020	Application lodged.
22/05/2020	Letter sent to applicant. The applicant was advised that the application could not be supported by Council due to a number of non-compliances and concerns and was requested to withdrawal the application. Applicant given 21 days to advise Council in writing of their intentions otherwise Council would determine the application accordingly.
15/06/2020	Applicant requested an update of how the application was progressing.
15/06/2020	Applicant was informed that an email was sent on 22 May requesting withdrawal of application and that the 21 day period to respond had already expired.
15/06/2020	Applicant requested an additional 7 day extension to respond/withdraw which Council granted.
16/06/2020	Applicant requested a meeting to be held with Council on 19 June 2020 to discuss withdrawal letter which Council granted.

19/06/2020	Council held a meeting with the applicant to discuss withdrawal letter. Fundamental issues were discussed including: • Flooding • Streetscape/Heritage • Amenity Impacts • FSR non-compliance Applicant given until 29 June 2020 to formally withdraw the application Council called the applicant shortly after 29 June 2020 regarding the applicant's response. The applicant verbally informed Council that the wanted the application to be determined.
28/07/2020	Applicant advised further information being submitted for consideration by the Panel and requested details with respect to deadline for submission of this information. Note: This was not requested by Council.
30/07/2020	Council responded that the applicant will be advised of the future Panel date that the matter will be reported.
10/10/2020	Council advised the applicant that the matter will be reported to the September Planning Panel and the deadline for submission of further information was Tuesday 11th August 2020 (to allow the finalising of the assessment within reporting deadlines) of 12 August 2020.
10/10/2020	Applicant responded that additional information was being prepared and this deadline could not be met.
10/10/2020	Council responded that the deadline for reports to be finalised was on 12 August 2020. Given this, that Council did not formally request amended plans and further information (and that withdrawal requested), the age of the application, the substantial planning issues to be resolved, and the considerable time that has elapsed since the meeting of 19 June 2020, and given a report is in the final stages of being completed, Council was unable to give any further extensions of time.
10/10/2020	Applicant responded that he was still preparing a submission for the Panel's consideration. Note: At the time of finalising the report / reporting deadline, additional information had not been provided.

5. Assessment

The following is a summary of the assessment of the application in accordance with Section 4.15 of the *Environmental Planning and Assessment Act 1979*.

5(a) Environmental Planning Instruments

The application has been assessed against the relevant Environmental Planning Instruments listed below:

- *State Environmental Planning Policy No. 55—Remediation of Land*
- *State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004*
- *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*
- *State Environmental Planning Policy (Affordable Rental Housing) 2009*
- *State Environmental Planning Policy (Coastal Management) 2018*
- *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017*
- *Leichhardt Local Environmental Plan 2013*

5(a)(i) State Environmental Planning Policy No 55—Remediation of Land

State Environmental Planning Policy No. 55 - Remediation of Land (SEPP 55) provides planning guidelines for remediation of contaminated land. *SEPP 55* requires the consent authority to be satisfied that "the site is, or can be made, suitable for the proposed use" prior to the granting of consent.

The site has not been used in the past for activities which could have potentially contaminated the land. It is considered that the site will not require remediation in accordance with *SEPP 55*.

5(a)(ii) State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004

A BASIX Certificate was submitted with the application satisfying the requirements of SEPP BASIX 2004.

5(a)(iii) Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

The subject site is not within the Foreshores and Waterways Area.

5(a)(iv) State Environmental Planning Policy Affordable Rental Housing 2009

Division 2 – Secondary Dwellings

Clause 22(3) of the SEPP prescribes the following:

(3) A consent authority must not consent to development to which this Division applies unless:

(a) the total floor area of the principal dwelling and the secondary dwelling is no more than the maximum floor area allowed for a dwelling house on the land under another environmental planning instrument, and

(b) the total floor area of the secondary dwelling is no more than 60 square metres or, if a greater floor area is permitted in respect of a secondary dwelling on the land under another environmental planning instrument, that greater floor area.

Clause 4.4 of LLEP 2011 prescribes a maximum floor space ratio of 0.8:1 for development for the purpose of a dwelling house on the site. The development has an FSR of 0.9:1 on the site which does not comply with Clause 22(3)(a) of the SEPP and is non-complaint in this regard.

The total floor area of a secondary dwelling measures 45sqm which complies with Clause 22(3)(b) of the SEPP and is acceptable notwithstanding the total FSR of the primary and secondary dwellings.

Given the above, the development is non-compliant having regard to the relevant provisions of the ARH SEPP and as such is recommended for refusal.

5(a)(v) State Environmental Planning Policy (Vegetation in Non-Rural Areas (2009)

State Environmental Planning Policy (Vegetation in Non-Rural Areas 2009) which concerns the protection of trees identified under Leichhardt Development Control Plan 2011.

The application seeks consent for works within close proximity to a number of trees that are protected under LDCP 2011. The issue of tree management is discussed later in this report under the provisions of Clause C1.14 – Tree Management.

5(a)(vi) *Leichhardt Local Environment Plan 2013* (LLEP 2013)

The application was assessed against the following relevant clauses of *the Leichhardt Local Environmental Plan 2013*:

- Clause 1.2 - Aims of the Plan
- Clause 2.3 - Zone objectives and Land Use Table
- Clause 2.7 - Demolition
- Clause 4.3A(3)(a) - Landscaped areas for residential accommodation in Zone R1
- Clause 4.3A(3)(b) - Site Coverage for residential accommodation in Zone R1
- Clause 4.4 – Floor Space Ratio
- Clause 4.5 - Calculation of floor space ratio and site area
- Clause 4.6 - Exceptions to development standards
- Clause 5.10 - Heritage Conservation
- Clause 6.2 - Earthworks
- Clause 6.3 - Flood Planning
- Clause 6.4 - Stormwater management

The proposal does not comply with a number of the controls prescribed above as detailed below:

Clause 1.2 – Aims of the Plan

Due to the concerns raised later in this report with respect to development standard breaches, adverse streetscape / heritage impacts and incompatibility with the existing pattern of development, unsatisfactory on-site and off-site amenity outcomes, flood risk management and adverse impacts on existing vegetation, the proposal does not comply or has not demonstrated compliance with the following provisions of Clause 1.2 of the LEP:

(c) to identify, protect, conserve and enhance the environmental and cultural heritage of Leichhardt,
(d) to promote a high standard of urban design in the public and private domains,
(l) to ensure that development is compatible with the character, style, orientation and pattern of surrounding buildings, streetscape, works and landscaping and the desired future character of the area,
(u) to promote energy conservation, water cycle management (incorporating water conservation, water reuse, catchment management, stormwater pollution control and flood risk management) and water sensitive urban design,
(v) to ensure that existing landforms and natural drainage systems are protected,
(w) to ensure that the risk to the community in areas subject to environmental hazards is minimised,

Clause 2.3 - Land Use Table and Zone Objectives

The site is zoned R1 – General Residential and secondary dwellings are permissible in the zoning.

The Objectives of the zone are as follows:

- *To provide for the housing needs of the community.*
- *To provide for a variety of housing types and densities.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*
- *To improve opportunities to work from home.*
- *To provide housing that is compatible with the character, style, orientation and pattern of surrounding buildings, streetscapes, works and landscaped areas.*
- *To provide landscaped areas for the use and enjoyment of existing and future residents.*
- *To ensure that subdivision creates lots of regular shapes that are complementary to, and compatible with, the character, style, orientation and pattern of the surrounding area.*
- *To protect and enhance the amenity of existing and future residents and the neighbourhood.*

The proposal is considered to be incompatible with the streetscape, Heritage Conservation Area and pattern of development in the area. The proposal also results in poor amenity outcomes on the site, an unacceptable flood risk for the future residents of the secondary dwelling, adverse impacts on existing vegetation and adverse bulk and scale and overshadowing and privacy impacts on adjoining properties. In light of the above, the proposal does not achieve compliance with the following objectives of the zone.

- *To provide housing that is compatible with the character, style, orientation and pattern of surrounding buildings, streetscapes, works and landscaped areas.*
- *To provide landscaped areas for the use and enjoyment of existing and future residents.*
- *To protect and enhance the amenity of existing and future residents and the neighbourhood.*

Clause 4.3A, 4.4 and 5.4 – Development Standards

The following table provides an assessment of the application against the development standards:

Standard	Proposal	non compliance	Complies
4.3A(3)(a) Landscape Area Minimum permissible: 15% or 34.14sqm	21.60% or 49.17sqm	-	Yes
4.3A(3)(b) Site Coverage Maximum permissible: 60% or 136.56 sqm	65.51% or 149.09sqm	9.18%	No
4.4 Floor Space Ratio Maximum permissible: 0.8:1 or 182.08sqm	0.90:1 or 205.25 sqm	12.73%	No

5.4(9) Miscellaneous Permissible Uses Secondary Dwellings Maximum permissible: 60sqm	45.39sqm	-	Yes

The following provides further discussion of the relevant issues:

Clause 4.3A(3)(b) – Site Coverage

A maximum site coverage of 60% of the total site area or 136.56sqm applies to the site as prescribed in Clause 4.4A(3)(b) of the LLEP 2013. Based on Council's calculations, the proposal will result in a Site Coverage of 65.51% or 149.09sqm which equates to a 9.18% breach of the Site Coverage standard.

No Clause 4.6 Exception to Development Standard had been provided in relation to Site Coverage. On this basis alone, the application is unsupportable.

Clause 4.4 – Floor Space Ratio

As noted above, an FSR of 0.8:1 applies to the site as prescribed in Clause 4.4 of the LLEP2013.

The applicant's Statement of Environmental Effects (SEE) provides that the proposed FSR will be 0.78:1 being in compliance with the standard. A dimensioned set of plans that included calculations for FSR were not provided by the applicant verifying the above calculation.

Based on Council's calculations, the proposal will result in a FSR of approximately 0.90:1 (205.25m²), which equates to a 12.73% breach of the FSR development standard prescribed in Clause 4.4 of the LEP.

No Clause 4.6 Exception to Development Standard had been provided in relation to FSR. On this basis alone, the application is unsupportable.

Clause 4.6 Exceptions to Development Standards

The proposal results in a breach of the following development standard/s:

- *Clause 4.3A(3)(b)- Site Coverage for residential accommodation in Zone R1*
- *Clause 4.4 – Floor Space Ratio*

As noted above, the applicant has not provided a Clause 4.6 Exception to Development Standards for either applicable development standard. For this and other reasons, the application is recommended for refusal.

Clause 5.10 – Heritage Conservation

The subject property at 62 Alfred Street, Annandale, is a contributory dwelling located within the Annandale Heritage Conservation Area (C1 in Schedule 5 of the Leichhardt LEP 2013).

An assessment of the proposal against the heritage provisions of the Leichhardt LEP2013 has been carried out in Section 5(c) of this report. In summary, the design, building alignments, roof form and materials and finishes are inconsistent with the established pattern and character of development along Whites Creek Lane, and as such, will result in a development that is detrimental to the Heritage Conservation Area and contrary to the provisions and

objectives of Clause 5.10 Objectives 1(a) and (b) in the Leichhardt LEP 2013 which seek to conserve the heritage significance of Heritage Conservation Areas, including settings and views.

Clause 6.3 – Flood Planning

The site is a flood lot and as such Clause 6.3 applies to the proposal. For reasons discussed later in this report under heading "E1.3.1 - Flood Risk Management", the proposal results in unacceptable flood risks for future residents of the secondary dwelling and adjoining properties and is considered non-compliant with the following Flood Planning Objectives:

(1) The objectives of this clause are as follows—
- (a) to minimise the flood risk to life and property associated with the use of land,
- (b) to allow development on land that is compatible with the land's flood hazard, taking into account projected changes as a result of climate change,
- (c) to avoid significant adverse impacts on flood behaviour and the environment.

(3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development—
- (a) is compatible with the flood hazard of the land, and
- (b) will not significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and
- (c) incorporates appropriate measures to manage risk to life from flood, and
- (d) will not significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and
- (e) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

For this and other reasons, the proposal is unsupportable.

5(b) Draft Environmental Planning Instruments

The application has been assessed against the relevant Draft Environmental Planning Instruments listed below:

- Draft Inner West Local Environmental Plan 2020

The Draft IWLEP 2020 was placed on public exhibition commencing on 16 March 2020 and accordingly is a matter for consideration in the assessment of the application under *Section 4.15(1)(a)(ii) of the Environmental Planning and Assessment Act 1979*.

The amended provisions contained in the Draft IWLEP 2020 are not relevant to the assessment of the application.

5(c) Development Control Plans

The application has been assessed and the following provides a summary of the relevant provisions of Leichhardt Development Control Plan 2013

LDCP2013	Compliance
Part A: Introductions	
Section 3 – Notification of Applications	Yes

Part B: Connections	
B1.1 Connections – Objectives	Yes
B2.1 Planning for Active Living	Yes
B3.1 Social Impact Assessment	N/A
B3.2 Events and Activities in the Public Domain (Special Events)	N/A
Part C	
C1.0 General Provisions	No - see discussion
C1.1 Site and Context Analysis	Yes
C1.2 Demolition	N/A
C1.3 Alterations and additions	N/A
C1.4 Heritage Conservation Areas and Heritage Items	No – see discussion
C1.5 Corner Sites	N/A
C1.6 Subdivision	N/A
C1.7 Site Facilities	Yes
C1.8 Contamination	Yes / No – see discussion
C1.9 Safety by Design	N/A
C1.10 Equity of Access and Mobility	N/A
C1.11 Parking	No – See discussion
C1.12 Landscaping	No – see discussion
C1.13 Open Space Design Within the Public Domain	N/A
C1.14 Tree Management	No – see discussion
C1.15 Signs and Outdoor Advertising	N/A
C1.16 Structures in or over the Public Domain: Balconies, Verandahs and Awnings	N/A
C1.17 Minor Architectural Details	N/A
C1.18 Laneways	No – see discussion
C1.19 Rock Faces, Rocky Outcrops, Cliff Faces, Steep Slopes and Rock Walls	N/A
C1.20 Foreshore Land	N/A
C1.21 Green Roofs and Green Living Walls	N/A
Part C: Place – Section 2 Urban Character	
C.2.2.1.1: Young Distinctive Neighbourhood C2.2.2.6(a) Louisa Road Sub Area	No – see discussion
Part C: Place – Section 3 – Residential Provisions	
C3.1 Residential General Provisions	No – see discussion
C3.2 Site Layout and Building Design	No
C3.3 Elevation and Materials	No – see discussion
C3.4 Dormer Windows	N/A
C3.5 Front Gardens and Dwelling Entries	N/A
C3.6 Fences	No
C3.7 Environmental Performance	Yes
C3.8 Private Open Space	Yes
C3.9 Solar Access	No – see discussion
C3.10 Views	N/A
C3.11 Visual Privacy	No – see discussion
C3.12 Acoustic Privacy	Yes
C3.13 Conversion of Existing Non-Residential Buildings	N/A
C3.14 Adaptable Housing	N/A

Part C: Place – Section 4 – Non-Residential Provisions	N/A
Part D: Energy	
Section 1 – Energy Management	Yes
Section 2 – Resource Recovery and Waste Management	
D2.1 General Requirements	Yes
D2.2 Demolition and Construction of All Development	Yes
D2.3 Residential Development	Yes
D2.4 Non-Residential Development	N/A
D2.5 Mixed Use Development	N/A
Part E: Water	
Section 1 – Sustainable Water and Risk Management	
E1.1 Approvals Process and Reports Required With Development Applications	Yes
E1.1.1 Water Management Statement	Yes
E1.1.2 Integrated Water Cycle Plan	Yes
E1.1.3 Stormwater Drainage Concept Plan	No – see discussion
E1.1.4 Flood Risk Management Report	No – see discussion
E1.1.5 Foreshore Risk Management Report	N/A
E1.2 Water Management	Yes
E1.2.1 Water Conservation	Yes
E1.2.2 Managing Stormwater within the Site	No
E1.2.3 On-Site Detention of Stormwater	N/A
E1.2.4 Stormwater Treatment	Yes
E1.2.5 Water Disposal	Yes
E1.2.6 Building in the vicinity of a Public Drainage System	N/A
E1.2.7 Wastewater Management	Yes
E1.3 Hazard Management	No
E1.3.1 Flood Risk Management	No – see discussion
E1.3.2 Foreshore Risk Management	N/A
Part F: Food	N/A
Part G: Site Specific Controls	N/A

The following provides discussion of the relevant issues:

Clause C1.0 – General Provisions

As discussed elsewhere in this report, the proposal is considered to be incompatible with the streetscape and heritage conservation area. The proposal will result in on and off-site amenity impacts with regard to secondary dwelling amenity, flood risk, tree management and overshadowing. Therefore, it is considered to be inconsistent with the following objectives under this part:

- *O3 Adaptable: places and spaces support the intended use by being safe, comfortable, aesthetically appealing, economically viable and environmentally sustainable and have the capacity to accommodate altered needs over time.*
- *O4 Amenable: places and spaces provide and support reasonable amenity, including solar access, privacy in areas of private open space, visual and acoustic privacy, access to views and clean air.*

- *O6 Compatible: places and spaces contain or respond to the essential elements that make up the character of the surrounding area and the desired future character. Building heights, setbacks, landscaping and architectural style respond to the desired future character. Development within Heritage Conservation Areas or to Heritage Items must be responsive to the heritage significance of the item and locality.*

C1.4 Heritage Conservation Areas and Heritage Items, *C.2.2.1.1: Young Distinctive Neighbourhood*

Clause 5.10: Heritage Conservation from the Leichhardt LEP 2013 and *C1.4: Heritage conservation areas and heritage items* and *C.2.2.1.1: Young Distinctive Neighbourhood* from the Leichhardt DCP 2013 applies to the proposal.

The application was referred to Councils Heritage Officer who provided the following comments:

"The drawings dated 10 September 2019, and the Heritage Impact Statement, n.d., both prepared by Saturday Studio, were reviewed as part of this assessment.

The proposal includes demolition of the existing garage and construction of a new garage with a secondary dwelling above, to the rear of the site.

Whites Creek Lane is generally a service lane with timber paling fences and roller doors accessing garages and carports. There are some garages and 2 with lofts to the north of the site. The setback of the garages with the lofts do not follow the angle of the boundary to the laneway, so they are not perpendicular. Instead, they are stepped back, so they are at an angle to the lane.

C7 of Part C2.2.1.1. of the DCP requires that the harmony/character of the neighbourhood is maintained by ensuring development is complementary in form and materials, and reflects the cohesiveness of the streetscape.

The garage and studio must be redesigned so that it is aligned with the established alignment of the subject dwelling and the garages and studios to the north at Nos. 68, 70 and 72 Alfred Street. The western elevation of the garage and studio must be stepped in from the rear boundary. No angles will be permitted as this is out of character with the established character of similar buildings to the laneway. Walls of the structure must be at 90°to each other.

C5 of Part C2.2.1.1 of the DCP requires that upper floors are contained within the roof form, so they are not to be visible from the street frontage. The roof form of the garage and studio must be redesigned so it is a complementary simple gable roof form with the gable end facing the laneway and the studio located within the roof, similar to the garages with studios above, to the north.

Large expanses of glass are not to be used in areas visible from the public domain, e.g. from Whites Creek Lane. Openings must be vertically proportioned, employing traditional design (timber sash or French doors) and materials (timber frame). Dominancy must be given to masonry/solid elements rather than glazed areas.

Materials, finishes, textures and colours must be appropriate to the historic context. Reflective wall cladding is not acceptable. They must be similar to the characteristic materials, finishes, textures and colours of the original contributory buildings within the streetscape. Greys and blacks are not acceptable and must be avoided. Light, warm, earthy, tones are to be used. A pre-coloured traditional corrugated steel shall be used for the roofing, finished in a colour

equivalent to Colorbond colours "Windspray" or "Wallaby". Fencing along the rear boundary must be vertical timber paling. A colours and materials schedule will need to be submitted for consideration."

Given the concerns raised by Council's Heritage Advisor, the following elements of the design are unsatisfactory:

- The building alignment of the garage and studio;
- The angled form of the western elevation of the garage and studio;
- The mansard roof form of the garage and studio
- Elevational treatment including the proposed large window openings and non-traditional design of window opening; and
- Non-contributory materials and finishes of the dwelling and rear fencing.

Given the above, it is considered that the bulk, scale, form, materials, and general design and appearance of the proposed secondary dwelling will result in a development that is detrimental to the Heritage Conservation Area and contrary to the provisions and objectives of the above Clauses of the LDCP2013. Despite Council requesting modifications to address these issues, the design has not been amended to be more sympathetic.

C1.11 Parking

The proposed car space is irregular in shape. The parking space has a width of 2.6m and has lengths of 5.45m (southern) and 6.7m (northern). Clause *C1.11.4 – Minimum Car Parking Dimensions* of the LDCP 2013 states that the minimum dimensions for a single car space must be an unobstructed 6.0m length by 3.0m width. As such, the proposal does not meet the minimum requirements and is not supportable in its current form.

Notwithstanding the above, the proposed rear garage and studio above is unsupportable due to flooding risk management issues discussed later in this report. Given the issues discussed earlier and later in this report relating to heritage, amenity and flood risk impacts of the proposed structure, the proposal is non-compliant with the following objectives of Clause C1.11:

O12 Vehicle access, manoeuvring and parking will:

a. not visually dominate the building façade or streetscape;
b. integrate with overall site and building design;
c. provide for a high level of residential amenity for the site and protect existing residential amenity of adjoining sites; and
d. enable the safe, convenient and efficient movement of vehicles, pedestrians and cyclists.

Given the above, the proposal is recommended for refusal.

C1.14 – Tree Management

There are three (3) significant trees on the site. The proposal does not seek the removal of any trees on the site.

The application was referred to Council's Tree Management Officer who provided the following comments:

> *A review of the submitted* Architectural Plan Set*, prepared by* Saturday Studio *and* Arboricultural Impact Assessment Report, *prepared by* Urban Arbor*, dated 23/01/2020 has been undertaken.*
> *It is noted in section* 10.7 Recommendations *of the submitted AIA, the Arborist has not assessed any underground service plans.*
>
> *The submitted* Ground Floor Drainage Plan*, prepared by* NB Consulting Engineers *depicts service pipes and pits within the TPZ of trees to be retained on site.*
>
> *It is requested that the appointed Arborist have the opportunity to review these plans and provide comment. Further root mapping is required where excavation is proposed to install new services within the TPZ of trees T1, T2 and T3.*
>
> *Root mapping documentation must be prepared in accordance with Council's* Development Fact Sheets *located at:*
>
> *https://www.innerwest.nsw.gov.au/live/information-for-residents/trees/trees-on-your-property-pruning-or-removing*
>
> *The above documentation must include clear coloured photographs that demonstrate the depth of all exploration trenches/test holes as well as the diameter measurements of all roots identified.*
>
> *It is acknowledged in clause 6.4* Stormwater Management *of the submitted* Statement of Environmental Effects*, prepared by* Saturday Studio*, states that new downpipes will connect to the existing stormwater system however, the detail in the submitted plans are unclear.*
>
> - *Full owners consent will be required for the pruning of T4* Callistemon viminalis *(Weeping Bottlebrush) located on adjoining property.*
> - *Verification is required to ascertain if T1* Corymbia citriodora *(Lemon Scented Gum) is located on the subject site or on Council land.*
> - *Further recommendations are required by the Arborist relating to site specific tree protection for trees during the construction of the new block wall along the northern boundary and new boundary fence. Additional root mapping may be required.*
> - *Clarification is required to ascertain the distance between the top of existing ground levels and the bottom of the proposed suspended slab within the TPZ of trees T1, T2 and T3. Further recommendations by the Arborist relating to water infiltration and requirements of gaseous exchange for tree roots are required."*

In summary, Councils Tree Officer does not support the proposal as submitted due to insufficient information and concerns about the on-going health of the existing trees on the subject site and adjoining properties due to the works proposed.

For these and other reasons, the proposal is recommended for refusal.

C1.18 – Laneways

Whites Creek Lane has a width of approximately 13m which classifies it as a Wide Lane. Due to the streetscape / heritage and pattern of development concerns raised above and below in this report, the development as proposed is inconsistent with the following objectives and controls of the part:

- *O1 Development:*
  (a) respects the existing and desired future use, form and character of the laneway consistent with the laneway hierarchy as shown in Table C11 Laneway hierarchy;
  (b) Achieves an appropriate level of amenity, access, security and landscaping;
- *C4 Building adjacent to the laneway have a simple form and minimal façade detailing*
- *C9 The bulk and scale of development does not significantly diminish the dominance of the primary building on the same lot.*
- *C10 Building are generally built to the laneway alignment*
- *C12 External wall are constructed in high quality materials and finishes which are compatible with fabric of the surrounding neighbourhood.*
- *C13 Roof forms are either hipped roofs, gabled roofs pitched from the side or skillion roofs located behind parapets where such development meets the laneway control envelope;*
- *C17 Sufficient on-site parking and manoeuvring space is provided without compromising the prevailing character, building form and setback of the laneway.*

Given the above, the proposal is recommended for refusal.

C3.1 Residential General Provisions

As discussed in earlier and later sections of the report, the proposal is considered to be incompatible with the heritage area in which it forms a part and will result in adverse amenity impacts on adjoining properties, and therefore, is considered to inconsistent with the following objectives under this part:

- *O3 To ensure that alterations, additions to residential buildings and new residential development are compatible with the established setting and character of the suburb and neighbourhood and compatible with the desired future character and heritage significance of the place and its setting.*
- O4 To ensure that all residential development is compatible with the scale, form, siting and materials of existing adjacent buildings.
- *O7 To ensure that the amenity, including solar access and visual privacy, of the development and adjacent properties is not adversely impacted.*

C3.2 Site Layout and Building Design

Side Setbacks
The proposed secondary dwelling will breach the side setback control graph as prescribed in this Clause as outlined in the following table:

Elevation	Proposed Maximum Wall Height (m)	Required setback (m)	Proposed setback (m)	Difference (m)
Southern	5.6m	1.62m	Nil	1.62m
Northern	2.9m	0.05m	Nil	0.05m

Control C8 under this part states that Council may allow walls higher than that required by the side boundary setback controls where:

a. The development is consistent with relevant Building Typology Statements as outlined within Appendix B – Building Typologies of this Development Control Plan;
b. The pattern of development within the streetscape is not compromised;
c. The bulk and scale of development is minimised by reduced floor to ceiling heights;
d. The potential impacts on amenity of adjoining properties, in terms of sunlight and privacy and bulk and scale, are minimised; and
e. Reasonable access is retained for necessary maintenance of adjoining properties.

It is considered that the proposal is not acceptable in relation to the impacts to the Heritage Conservation Area, and consequently, the pattern of development within the streetscape would be compromised. Further, as discussed later in this report, he proposed development will result in adverse amenity impacts in regard to privacy and solar access. In addition, as a result of the two storey scale and location of the development adjacent to adjoining private open space, the proposal will have intrusive bulk and dominance impacts.

Building Location Zone

The Building Location Zone (BLZ) is determined by having regard to only the main building on the adjacent properties. Given the proposal is for a secondary dwelling, the BLZ controls are not technically applicable to the site.

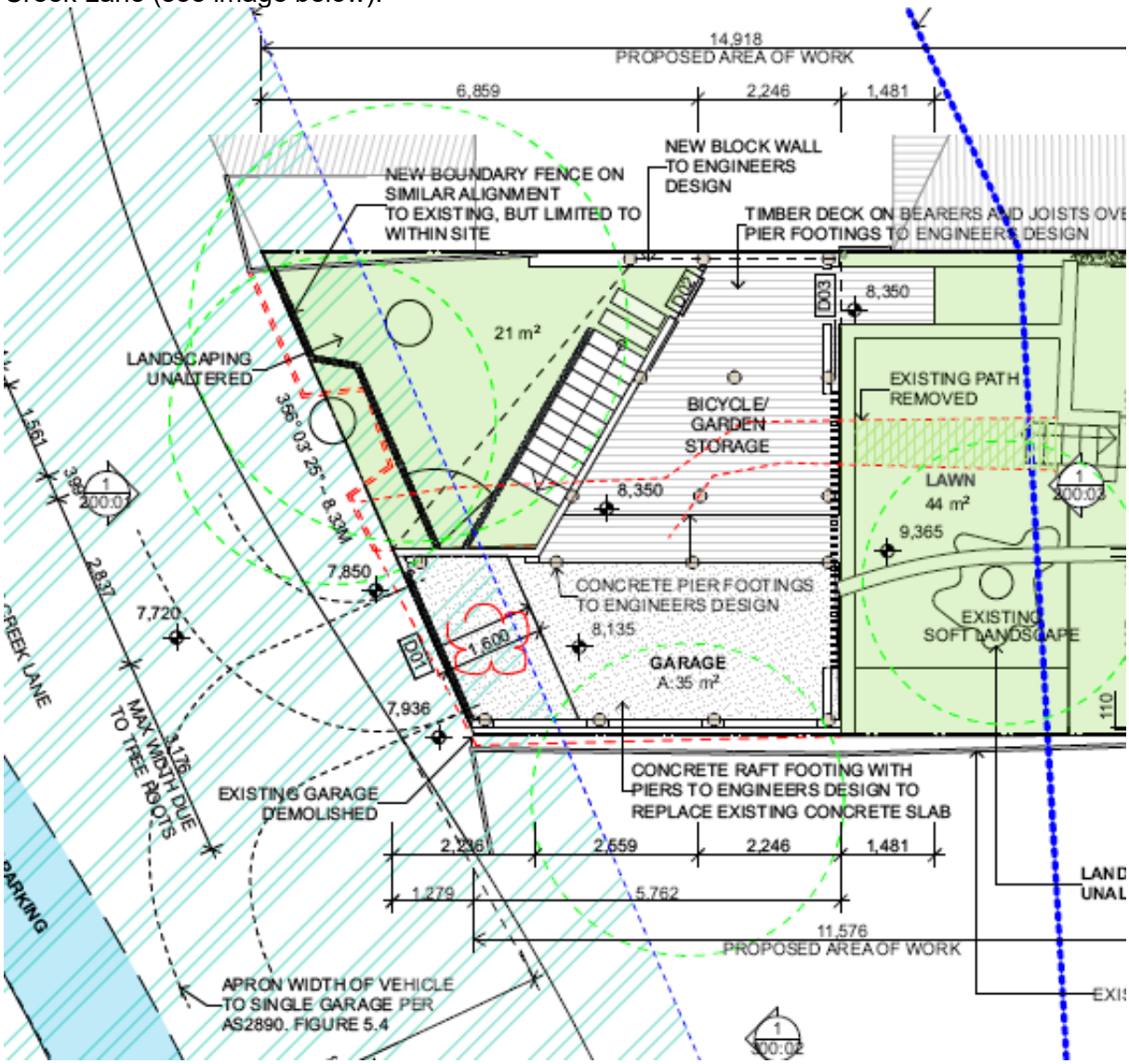
Notwithstanding, the above, the Part outlines objectives and controls for building siting, scale and form. Due to the uncharacteristic building alignment of the proposal, amenity impacts on the subject and adjoining properties by way of overshadowing, visual privacy, private open space and additional issues discussed previously and later in this report, the proposal is considered to be non-complaint with the following Objectives and Controls within part:

- *O1 To ensure adequate separation between buildings for visual and acoustic privacy, solar access and air circulation.*
- *O2 To ensure the character of the existing dwelling and/or desired future character and established pattern of development is maintained.*
- *O4 To ensure that development:*
  - *reinforces the desired future character and distinct sense of place of the streetscape, neighbourhood and Leichhardt;*
  - *emphasises the street and public domain as a vibrant, safe and attractive place for activity and community interaction;*
  - *complements the siting, scale and form of adjoining development; and*
  - *creates a high level of residential amenity for the site and protects existing or enhances residential amenity of adjoining sites in terms of visual and acoustic privacy, air circulation, solar access, daylight, outlook and views.*

Given the above, the proposal is recommended for refusal.

C3.8 Private Open Space

Control C2 of C3.8 Private Open Space states that for secondary dwellings, private open space must comprise of a minimum area of 3m x 3m located at ground level directly accessed from the living area and separated from the other dwellings within the development. The proposal provides a private open space area for the secondary dwelling that fronts Whites Creek Lane (see image below).



The private open space area is not directly accessed from the living area as such is contrary to the following objectives of this part:

- O1 Private open space: (c) integrates with and is capable of serving as an outdoor extension of the dwelling's main living area

C3.9 Solar Access

The subject site and the surrounding lots have a north-south orientation. The following solar access controls under Clause C3.9 apply to the proposal in relation to impacts to glazing on the surrounding sites.

- *C12 Where the surrounding allotments are orientated east/west, main living room glazing must maintain a minimum of two hours solar access between 9am and 3pm during the winter solstice.*
- *C15 Where surrounding dwellings currently receive less than the required amount of solar access to the main living room between 9am and 3pm during the winter solstice, no further reduction of solar access is permitted.*

In addition, C3.9 also requires protection of solar access to private open spaces of adjoining properties. The subject site has north-south orientation, and therefore, the following solar access controls apply to the proposal in relation to solar access to private open spaces of affected properties:

- *C18 Where surrounding dwellings have east/west facing private open space, ensure solar access is retained for two and a half hours between 9am and 3pm to 50% of the total area (adjacent to living room) during the winter solstice.*
- *C19 Where surrounding dwellings currently receive less than the required amount of solar access to their private open space between 9am and 3pm during the winter solstice, no further reduction of solar access is permitted.*

The shadow diagrams provided are generally accurate in the depiction of the proposed impacts at the winter solstice. As the proposed and impacted sites are east-west orientated, only north-facing glazing associated with living areas can be protected, and there are no impacts to the north-facing windows of No. 52 Albert Street. The provided shadow diagrams illustrate that solar access is retained for less than one hour between 9am to 3pm during the winter solstice to 50% of the POS of No. 52 Alfred Street and does not comply with Controls C18 and C19 as prescribed above. Given the non-compliances with Controls C18 and C19 above, and due to the compounding issues discussed previously and later in this report, the proposal is recommended for refusal.

C3.11 – Privacy

Due to the design, elevation and orientation of the stair access and entry landing of the secondary dwelling, future occupants and visitors will have a direct line of sight into the rear of No. 64 Alfred Street which is unacceptable and contrary to the objectives of Clause C3.11 of the LDCP2013 which requires development to be designed with a high level of consideration to protecting visual privacy within the dwelling, in particular the main living room, and private open space of both the subject site and nearby residential uses.

Given the above, the proposal is recommended for refusal.

E1.3.1 - Flood Risk Management

The site is a flood control lot. The applicant submitted a Flood Risk Management Report with the application which did not adequately address Section E1.3.1 (Controls C1, C2, C8 and C9) and Appendix E Section 2 of the LDCP 2013. The application was referred to Councils Engineering team who do not support the proposal for a number of reasons, specifically:

- The proposal will obstruct and redirect flood flows;
- The garage does not meet flood planning level requirements; and
- There is no safe flood free evacuation route from the secondary dwelling to Alfred Street (given the dwelling at the front of the site is constructed boundary-to-boundary).

Given non-compliance with the above controls within the Part, the proposal is recommended for refusal.

5(d) The Likely Impacts

The key issues and concerns relating to the proposal are as follows:

- Adverse impacts on Heritage Conservation Area and unsatisfactory response to desired future character controls;
- Adverse amenity impacts – bulk and scale, overshadowing and privacy;
- Unsatisfactory on-site amenity outcomes, including non-compliance with Private Open Space controls;
- Unacceptable flood risk – site and adjoining sites;
- Adverse impacts on existing vegetation – subject and adjoining sites; and
- Significant breaches of applicable Floor Space Ratio and Site Coverage development standards.

In light of the above, and due to site suitability concerns, the application is recommended for refusal.

5(e) The suitability of the site for the development

For reasons outlined above and in this report, the site is considered unsuitable to accommodate secondary dwelling in the form proposed.

5(f) Any submissions

The application was notified in accordance with Leichhardt Development Control Plan 2013 for a period of 14 days to surrounding properties.

1 submissions were received in response to the initial notification.

The following issues raised in submissions have been discussed in this report:

- Suitability of site – see Section 5 (a)(iii) - Clause 4.4 and Section 5(c)
- Tree Health – see Section 5(c) – C1.14
- Impact on Heritage Conservation Area – see Section 5(c) C1.3 and C1.4
- Safety During Flood Event – see Section 5(c) – E1.3.1
- Non-Compliance with Laneway controls – see Section 5(c) – C1.18
- Building Location Zone – see Section 5(c) - C3.2
- Loss of Privacy – see Section 5(c) - C3.11

In addition to the above issues, the submissions raised the following concerns which are discussed under the respective headings below:

Issue - Side Boundary Wall
"The height of the block wall along our boundary is not accurately documented on the north elevation plan. This wall appears to be greater than 3m high, with a nil setback."

Comment
Noted. The application is not supported and is recommended for refusal.

Issue - Removal of Boundary Fence
"The plans show the demolition of the boundary fence which we have not consented to."

Comment
Noted. This is a civil matter between the relevant parties. Notwithstanding, the application is recommended for refusal.

5(h) The Public Interest

The public interest is best served by the consistent application of the requirements of the relevant Environmental Planning Instruments, and by Council ensuring that any adverse effects on the surrounding area and the environment are appropriately managed.
The proposal is contrary to the public interest as it will result in adverse amenity impacts to surrounding properties and is incompatible with the heritage conservation area.

6 Referrals

6(a) Internal

The application was referred to the following internal sections/officers and issues raised in those referrals have been discussed in section 5 above.

- Heritage – Issues raised have not been adequately resolved.
- Engineer – Issues raised have not been adequately resolved.
- Landscape – Issue raised have not been adequately resolved.

6(b) External

The application was not required to be referred to any external bodies.

7. Section 7.11 Contributions/7.12 Levy

Had the proposal been recommended for approval, Section 7.11 contributions would be payable for the proposal.

8. Conclusion

The proposal does not comply with the aims, objectives and design parameters contained in Leichhardt Local Environmental Plan 2013 and Leichhardt Development Control Plan 2013. The approval of the application would not be in the public interest and in view of the circumstances, refusal of the application is recommended.

9. Recommendation

That the Inner West Planning Panel, as the consent authority pursuant to s4.16 of the Environmental Planning and Assessment Act 1979, refuse the Development Application No. DA/2020/0136 for a new garage and secondary dwelling over to the rear and associated works at 62 Alfred Street, Annandale for the following reasons.

1. The proposed development is inconsistent and / or has not demonstrated compliance with the Leichhardt Local Environmental Plan 2013, pursuant to Section 4.15 (1)(a)(i) of the Environmental Planning and Assessment Act 1979:

a) Clause 1.2 – Aims of the Plan
b) Clause 2.3 – Zone objectives and Land Use Table
c) Clause 4.3A(3)(b) - Site Coverage for residential accommodation in Zone R1
d) Clause 4.4 – Floor Space Ratio
e) Clause 4.6 – Exceptions to Development Standards
f) Clause 5.10 – Heritage Conservation
g) Clause 6.3 – Flood Planning

2. The proposed development does not comply with Clause 22(3) of State Environmental Planning Policy (Affordable Rental Housing) 2009.

3. The proposed development is inconsistent and / or has not demonstrated compliance with the following provisions of Leichhardt Development Control Plan 2013, pursuant to Section 4.15 (1)(a)(iii) of the Environmental Planning and Assessment Act 1979:

a) Clause C1.0 - General Provisions

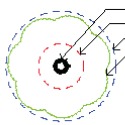
a) Clause C1.3 – Alterations and Additions
b) Clause C1.4 – Heritage Conservation Areas and Heritage Items
c) Clause C1.11 Parking
d) Clause C1.14 – Tree Management
e) Clause C1.18 – Laneways
f) Clause C.2.2.1.1: Young Distinctive Neighbourhood
g) Clause C3.1 - Residential General Provisions
h) Clause C3.2 - Site Layout and Building Design
i) Clause C3.3 - Elevation and Materials
j) Clause C3.8 Private Open Space
k) Clause C3.9 Solar Access
l) Clause C3.11 Visual Privacy
m) Part E1.3.1 - Flood Risk Management

4. The adverse environmental impacts of the proposal mean that the site is not considered to be suitable for the development as proposed, pursuant to Section 4.15 (1)(c) of the Environmental Planning and Assessment Act 1979.

5. The approval of this application is considered contrary to the public interest, pursuant to Section 4.15 (1)(d) and (e) of the Environmental Planning and Assessment Act 1979.

Attachment A – Plans of proposed development

LEGEND



EXISTING STRUCTURE TO BE RETAINED

EXISTING STRUCTURE TO BE DEMOLISHED

STEEL BASED MATERIAL

BRICK

TIMBER BASED MATERIAL

GLASS

SCHEDULE OF EXTERIOR FINISHES

COLORBOND WALLABY®
1 -ROOFING
-GUTTERS
-EAVES
-METAL CLADDING

5 GLASS

2 SPOTTED GUM TIMBER SCREEN

4 GB HONED BLOCK

SHOU SUGU BAN
3 CHARRED WOOD CLADDING &
TIMBER SCREEN

NATURAL GREY
6 MICACEOUS IRON OXIDE
ON STEEL REAR FENCE

DRAWING REGISTER

Layout No:	Layout Name	Issue Name
	COVER SHEET	DA
100:01	SITE PLAN	DA
100:02	SEDIMENTATION CONTROL PLAN & ...	DA
110:01	EXISTING LOWER GROUND FLOOR	DA
110:02	EXISTING UPPER GROUND FLOOR	DA
110:03	LOWER GROUND FLOOR	DA
110:04	UPPER GROUND FLOOR	DA
110:05	ROOF PLAN	DA
200:01	LANE WEST ELEVATION	DA
200:02	E-02 STREET EAST ELEVATION	DA
200:03	E-05 EAST ELEVATION	DA
200:04	E-03 SOUTH ELEVATION	DA
200:05	E-04 NORTH ELEVATION	DA
300:01	SECTION LONG	DA
300:02	SECTION CROSS	DA
710:01	WINTER SHADOWS	DA
720:01	NOTIFICATION SITE PLAN	DA
720:02	NOTIFICATION PLANS	DA
720:03	NOTIFICATION PLAN	DA
720:04	NOTIFICATION SHADOWS	DA
800:01	WINDOW SCHEDULE	DA

62 ALFRED STREET ANNANDALE
43 SEC 25 DP 1225

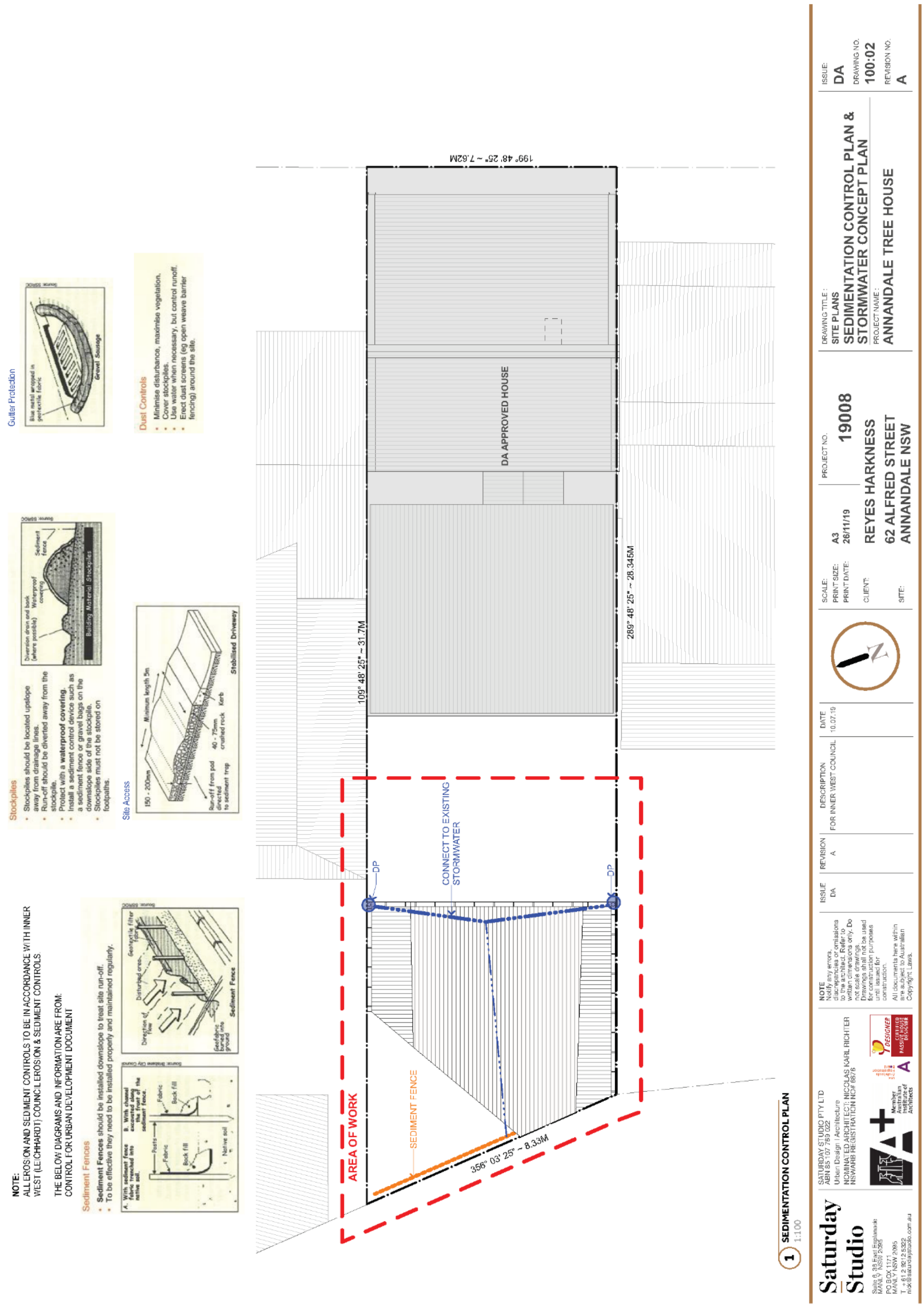
SITE AREA:	227.6m²
EXISTING FLOOR AREA:	146m²
PROPOSED FLOOR AREA:	175m²
ALLOWABLE FSR:	0.8:1
PROPOSED FSR:	0.77:1
MINIMUM REQ'D LANDSCAPE	34m²
PROPOSED LANDSCAPE	70m²

NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE

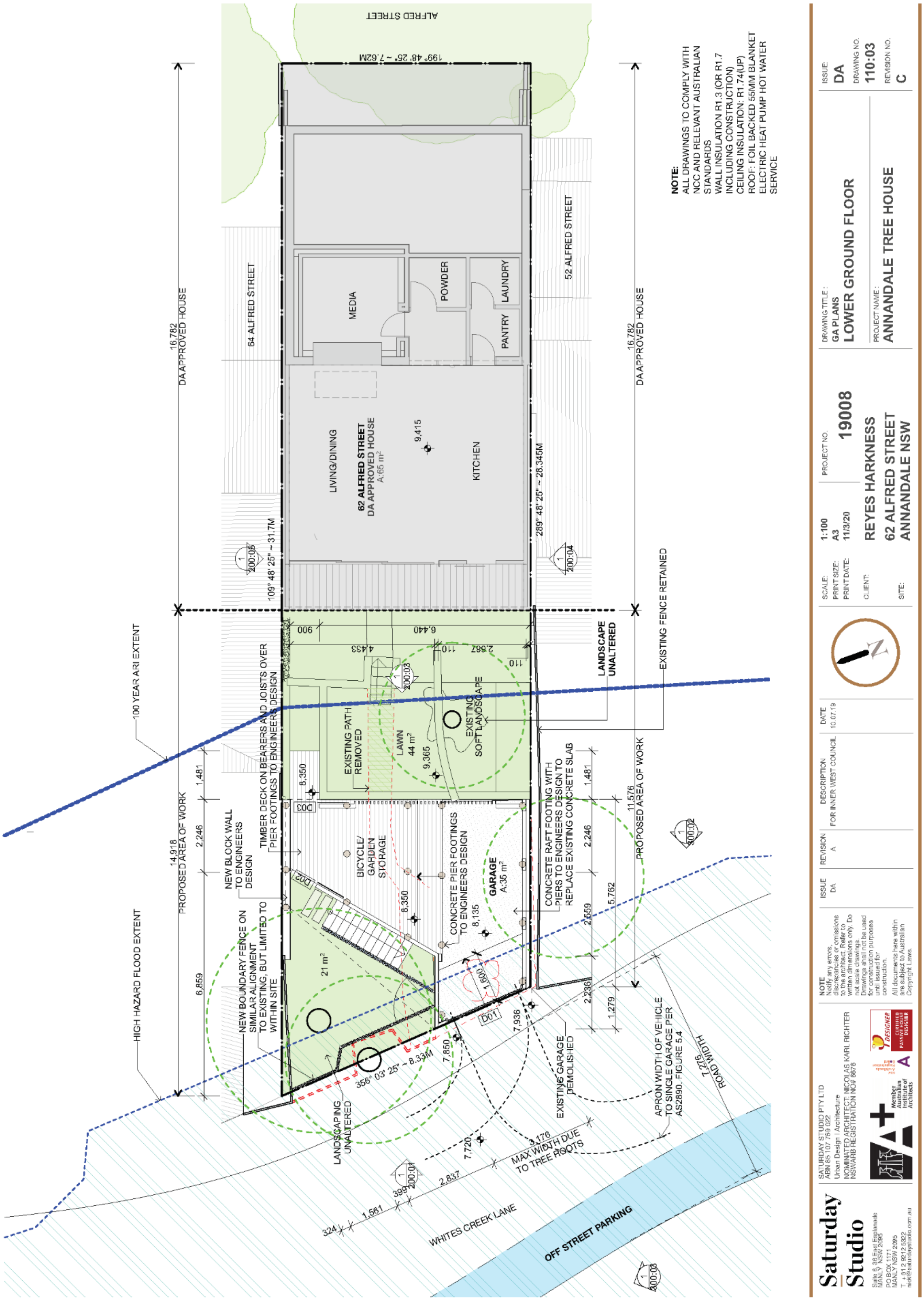
Saturday Studio

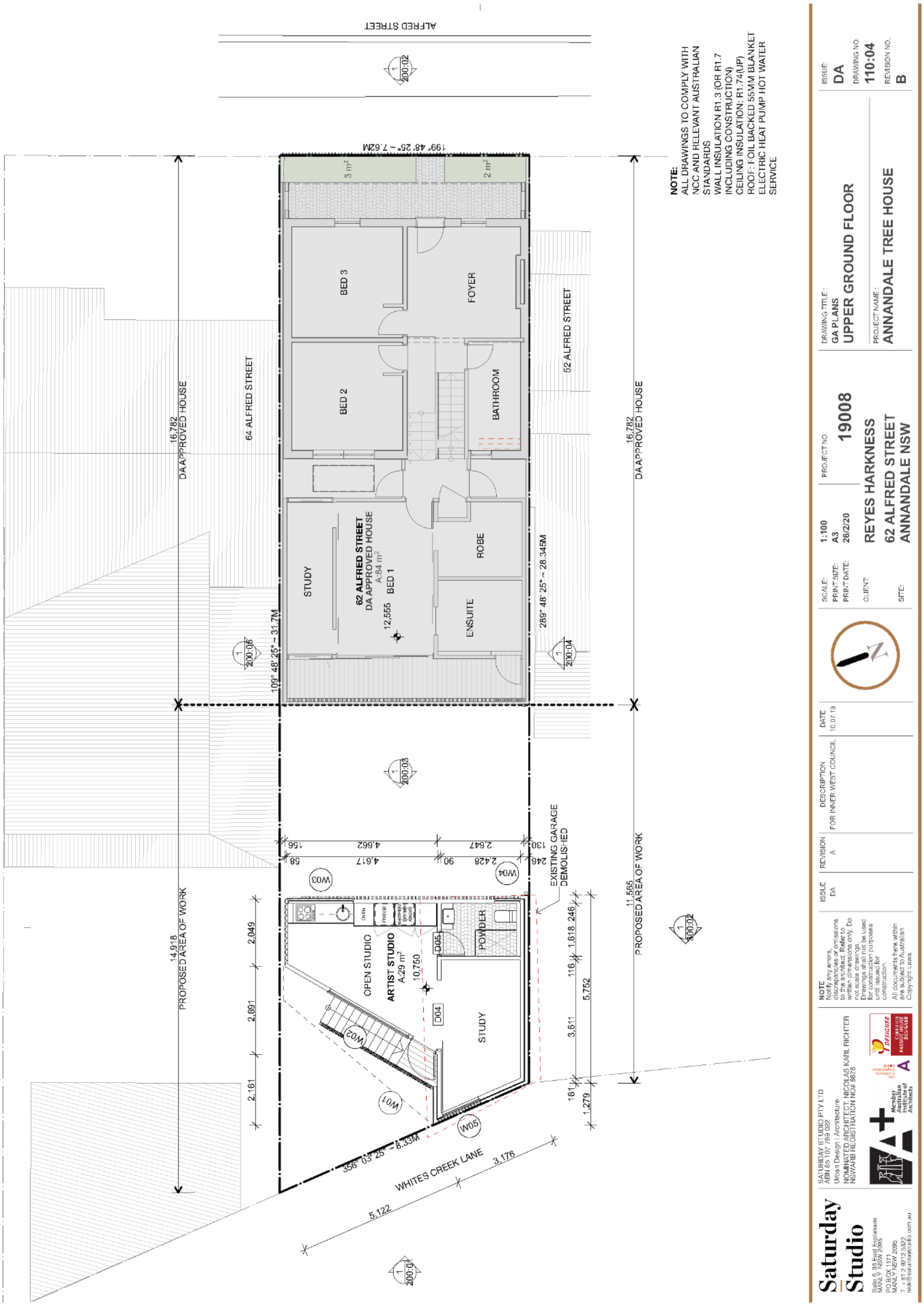
REYES HARKNESS
62 ALFRED STREET ANNANDALE NSW
DEVELOPMENT APPLICATION

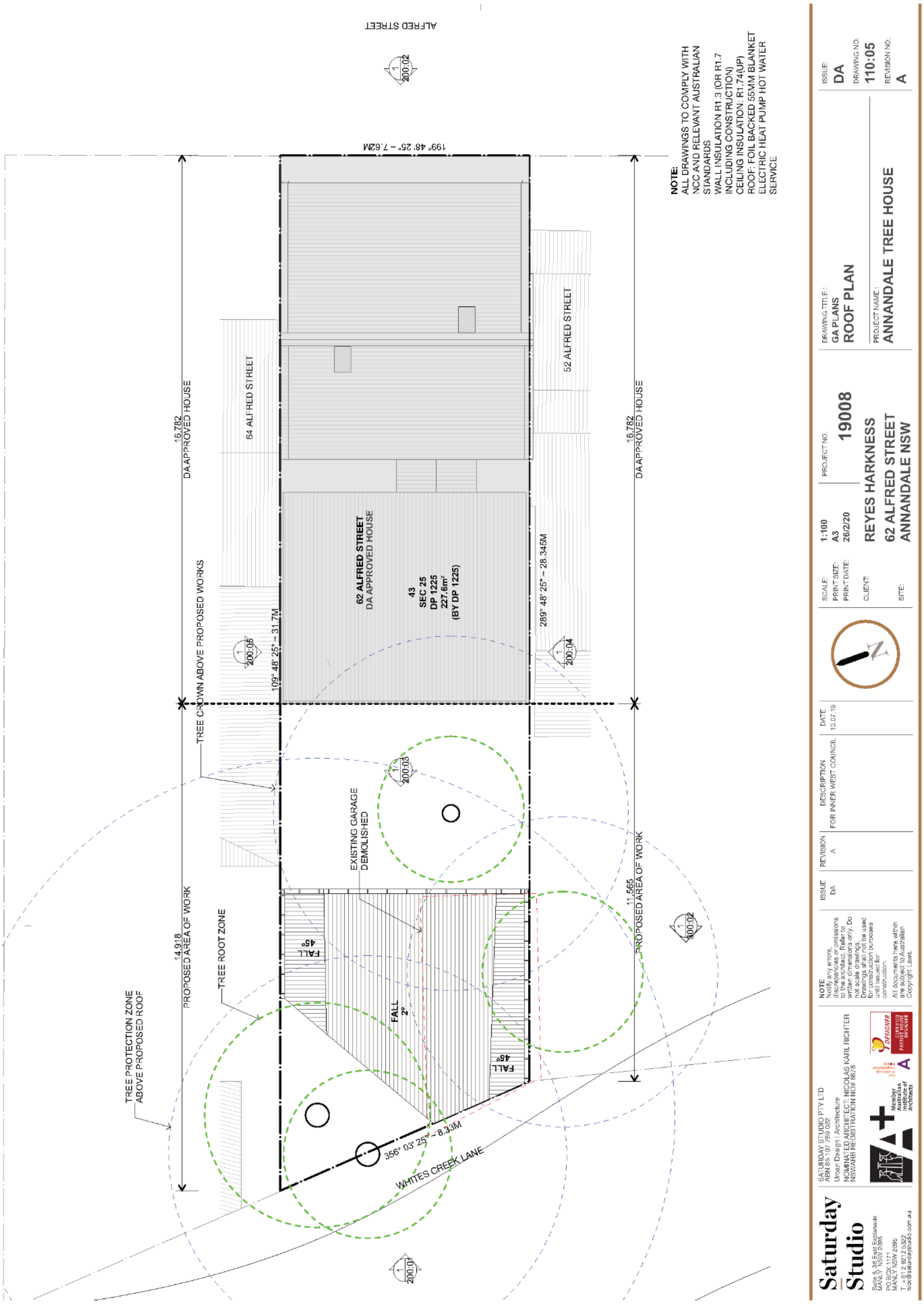

62 ALFRED STREET ANNANDALE
43 SEC 25 DP 1225
SITE AREA: 227.6m²
EXISTING FLOOR AREA: 146m²
PROPOSED FLOOR AREA: 175m²
ALLOWABLE FSR: 0.8:1
PROPOSED FSR: 0.77:1
MINIMUM REQ'D LANDSCAPE 34m²
PROPOSED LANDSCAPE 70m²
63 Alfred Street
Alfred St
Alfred St
Whites Creek Ln
Whites Cree
199° 48' 25" ~ 7.62M
109° 48' 25" ~ 31.7M
289° 48' 25" ~ 28.346M
356° 03' 25" ~ 8.33M
SUBJECT SITE
WORKS TONED RED
64
66
68
70
52
50
48
ISSUE: DA
DRAWING NO. 100:01
REVISION NO. A
DRAWING TITLE : SITE PLANS
SITE PLAN
PROJECT NAME : ANNANDALE TREE HOUSE
PROJECT NO. 19008
SCALE:
PRINT SIZE: A3
PRINT DATE: 26/11/19
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET ANNANDALE NSW
ISSUE DA
REVISION A
DESCRIPTION FOR INNER WEST COUNCIL
DATE 10.07.19
NOTE
Notify any errors, discrepancies or omissions to the architect. Refer to written dimensions only. Do not scale drawings. Drawings shall not be used for construction purposes until issued for construction.
All documents here within are subject to Australian Copyright Laws.
SATURDAY STUDIO PTY LTD
ABN 85 107 769 022
Urban Design | Architecture
NOMINATED ARCHITECT: NICOLAS KARL RICHTER
NSWARB REGISTRATION NO# 6676
Member Australian Institute of Architects
Saturday Studio
Suite 6, 36 East Esplanade MANLY NSW 2095
PO BOX 1171 MANLY NSW 2095
T. +61 2 9212 5322
nick@saturdaystudio.com.au

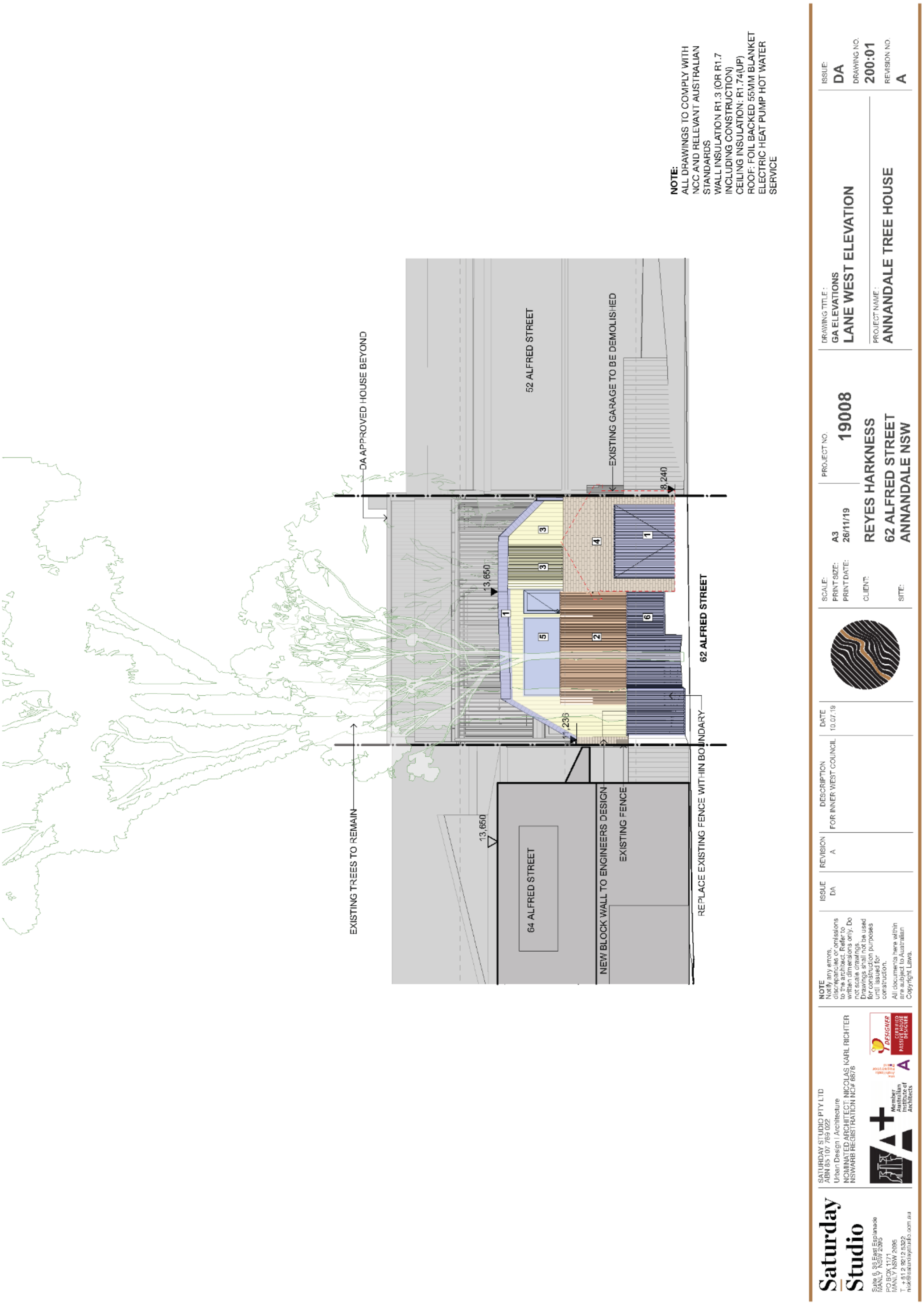


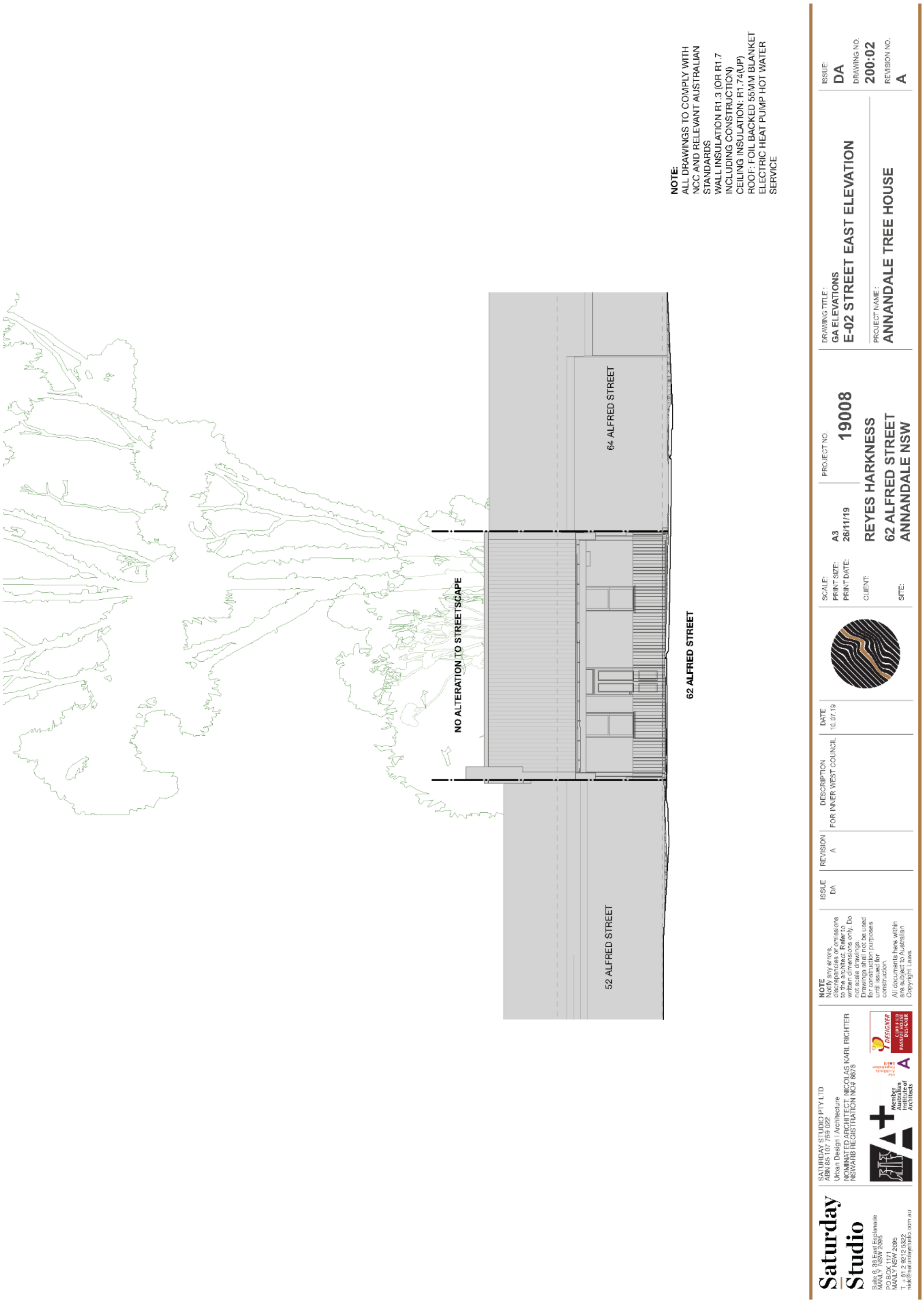
NOTE:
ALL EROSION AND SEDIMENT CONTROLS TO BE IN ACCORDANCE WITH INNER WEST (LEICHHARDT) COUNCIL EROSION & SEDIMENT CONTROLS
THE BELOW DIAGRAMS AND INFORMATION ARE FROM: CONTROL FOR URBAN DEVELOPMENT DOCUMENT
Sediment Fences
Sediment Fences should be installed downslope to treat site run-off.
To be effective they need to be installed properly and maintained regularly.
Stockpiles
Stockpiles should be located upslope away from drainage lines.
Run-off should be diverted away from the stockpile.
Protect with a waterproof covering.
Install a sediment control device such as a sediment fence or gravel bags on the downslope side of the stockpile.
Stockpiles must not be stored on footpaths.
Site Access
Stabilised Driveway
Gutter Protection
Dust Controls
Minimise disturbance, maximise vegetation.
Cover stockpiles.
Use water when necessary, but control runoff.
Erect dust screens (eg open weave barrier fencing) around the site.
DA APPROVED HOUSE
199° 48' 25" ~ 7.62M
109° 48' 25" ~ 31.7M
289° 48' 25" ~ 28.345M
356° 03' 25" ~ 8.33M
CONNECT TO EXISTING STORMWATER
DP
SEDIMENT FENCE
AREA OF WORK
1 SEDIMENTATION CONTROL PLAN 1:100
Saturday Studio
SATURDAY STUDIO PTY LTD
NOMINATED ARCHITECT: NICOLAS KARL RICHTER
NSWARB REGISTRATION NO# 8676
ISSUE DA
REVISION A
DESCRIPTION FOR INNER WEST COUNCIL
DATE 10.07.19
SCALE:
PRINT SIZE: A3
PRINT DATE: 26/11/19
PROJECT NO. 19008
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET ANNANDALE NSW
DRAWING TITLE: SITE PLANS
SEDIMENTATION CONTROL PLAN & STORMWATER CONCEPT PLAN
PROJECT NAME: ANNANDALE TREE HOUSE
ISSUE: DA
DRAWING NO. 100:02
REVISION NO. A

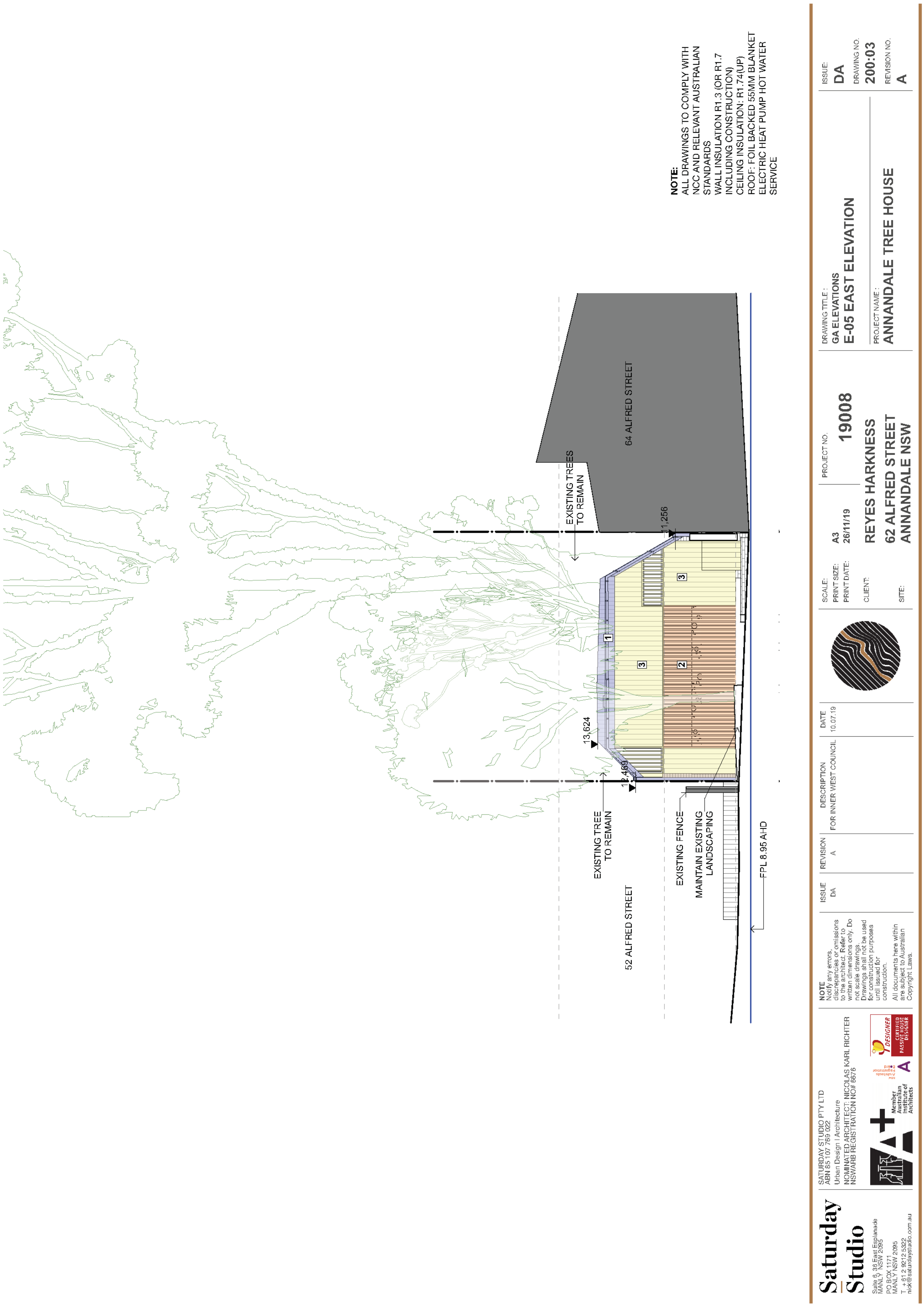

ALFRED STREET
199° 48' 25" ~ 7.62M
16,782
DA APPROVED HOUSE
64 ALFRED STREET
52 ALFRED STREET
MEDIA
POWDER
LAUNDRY
PANTRY
LIVING/DINING
62 ALFRED STREET
DA APPROVED HOUSE
A:65 m²
KITCHEN
9,415
289° 48' 25" ~ 28.345M
109° 48' 25" ~ 31.7M
100 YEAR ARI EXTENT
HIGH HAZARD FLOOD EXTENT
TIMBER DECK ON BEARERS AND JOISTS OVER PIER FOOTINGS TO ENGINEERS DESIGN
EXISTING PATH REMOVED
LAWN
44 m²
EXISTING SOFT LANDSCAPE
LANDSCAPE UNALTERED
EXISTING FENCE RETAINED
14,918
PROPOSED AREA OF WORK
11,576
PROPOSED AREA OF WORK
NEW BLOCK WALL TO ENGINEERS DESIGN
BICYCLE/ GARDEN STORAGE
GARAGE
A:35 m²
CONCRETE PIER FOOTINGS TO ENGINEERS DESIGN
CONCRETE RAFT FOOTING WITH PIERS TO ENGINEERS DESIGN TO REPLACE EXISTING CONCRETE SLAB
NEW BOUNDARY FENCE ON SIMILAR ALIGNMENT TO EXISTING, BUT LIMITED TO WITHIN SITE
21 m²
356° 03' 25" ~ 8.33M
LANDSCAPING UNALTERED
EXISTING GARAGE DEMOLISHED
APRON WIDTH OF VEHICLE TO SINGLE GARAGE PER AS2890. FIGURE 5.4
MAX WIDTH DUE TO TREE ROOTS
ROAD WIDTH
WHITES CREEK LANE
OFF STREET PARKING
NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE
Saturday Studio
SATURDAY STUDIO PTY LTD
SCALE: 1:100
PRINT SIZE: A3
PRINT DATE: 11/3/20
PROJECT NO. 19008
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET ANNANDALE NSW
DRAWING TITLE: GA PLANS LOWER GROUND FLOOR
PROJECT NAME: ANNANDALE TREE HOUSE
ISSUE: DA
DRAWING NO. 110:03
REVISION NO. C
ISSUE DA REVISION A DESCRIPTION FOR INNER WEST COUNCIL DATE 10.07.19

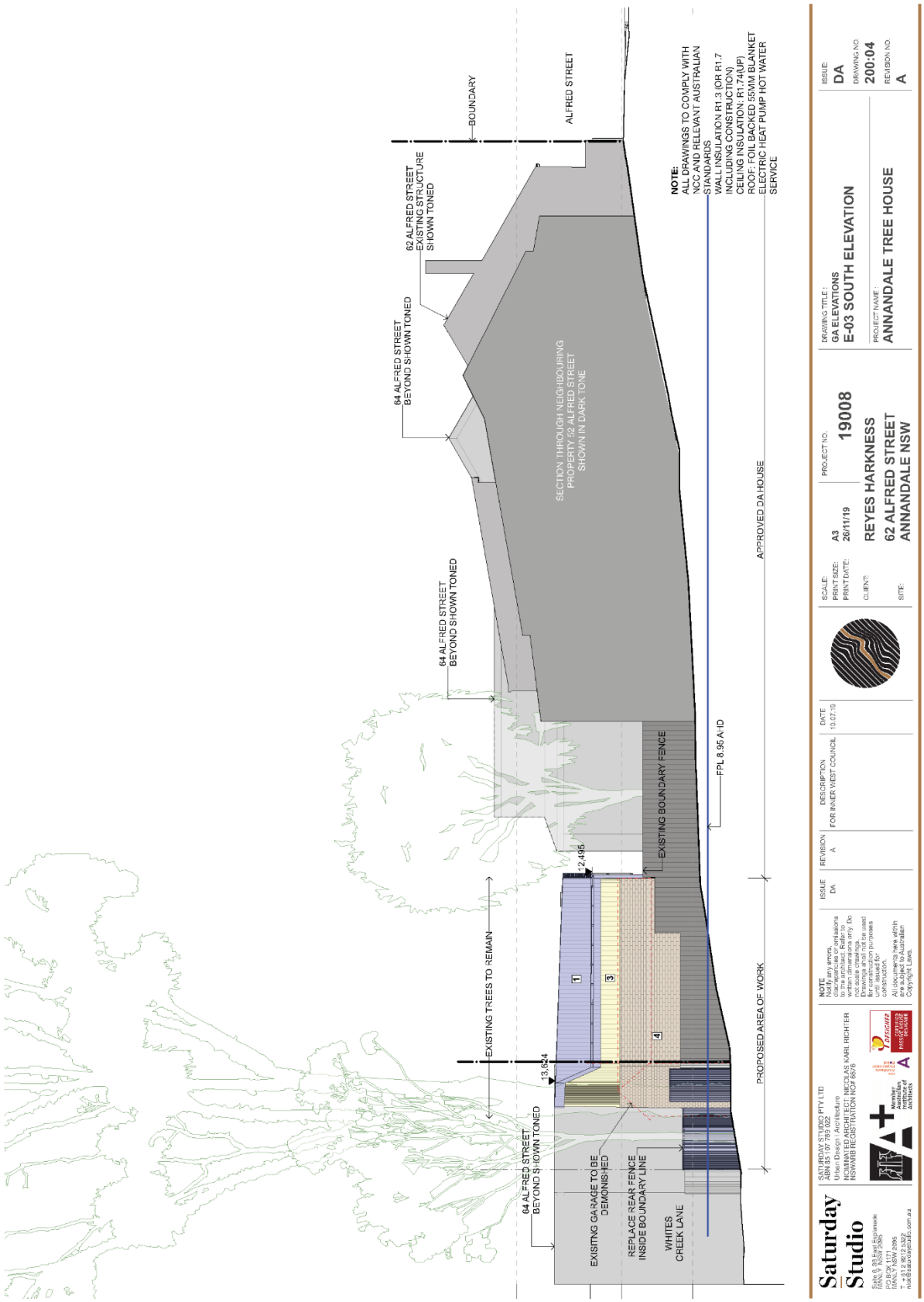

ALFRED STREET
NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE
BED 3
FOYER
BED 2
BATHROOM
STUDY
62 ALFRED STREET
DA APPROVED HOUSE
BED 1
ROBE
ENSUITE
64 ALFRED STREET
52 ALFRED STREET
DA APPROVED HOUSE
PROPOSED AREA OF WORK
EXISTING GARAGE DEMOLISHED
OPEN STUDIO
ARTIST STUDIO
POWDER
STUDY
WHITES CREEK LANE
GA PLANS
UPPER GROUND FLOOR
ANNANDALE TREE HOUSE
19008
REYES HARKNESS
62 ALFRED STREET
ANNANDALE NSW
DA
110:04
B
Saturday Studio


ALFRED STREET
WHITES CREEK LANE
62 ALFRED STREET
DA APPROVED HOUSE
43
SEC 25
DP 1225
227.6m²
(BY DP 1225)
64 ALFRED STREET
52 ALFRED STREET
EXISTING GARAGE
DEMOLISHED
TREE CROWN ABOVE PROPOSED WORKS
TREE ROOT ZONE
TREE PROTECTION ZONE
ABOVE PROPOSED ROOF
16,782
DA APPROVED HOUSE
14,918
PROPOSED AREA OF WORK
11,565
PROPOSED AREA OF WORK
199° 48' 25" ~ 7.62M
109° 48' 25" ~ 31.7M
289° 48' 25" ~ 28.345M
356° 03' 25" ~ 8.33M
FALL 45°
FALL 2°
NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE
Saturday Studio
SATURDAY STUDIO PTY LTD
NOMINATED ARCHITECT: NICOLAS KARL RICHTER
ISSUE: DA
DRAWING NO. 110:05
REVISION NO. A
DRAWING TITLE: GA PLANS
ROOF PLAN
PROJECT NAME: ANNANDALE TREE HOUSE
PROJECT NO. 19008
SCALE: 1:100
PRINT SIZE: A3
PRINT DATE: 26/2/20
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET
ANNANDALE NSW
ISSUE DA
REVISION A
DESCRIPTION FOR INNER WEST COUNCIL
DATE 10.07.19


NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE
DA APPROVED HOUSE BEYOND
52 ALFRED STREET
EXISTING GARAGE TO BE DEMOLISHED
8,240
13,650
62 ALFRED STREET
EXISTING TREES TO REMAIN
64 ALFRED STREET
NEW BLOCK WALL TO ENGINEERS DESIGN
EXISTING FENCE
REPLACE EXISTING FENCE WITHIN BOUNDARY
Saturday Studio
SATURDAY STUDIO PTY LTD
Urban Design | Architecture
NOMINATED ARCHITECT: NICOLAS KARL RICHTER
NOTE
ISSUE DA
REVISION A
DESCRIPTION FOR INNER WEST COUNCIL
DATE 10.07.19
SCALE:
PRINT SIZE: A3
PRINT DATE: 26/11/19
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET ANNANDALE NSW
PROJECT NO. 19008
DRAWING TITLE: GA ELEVATIONS
LANE WEST ELEVATION
PROJECT NAME: ANNANDALE TREE HOUSE
ISSUE: DA
DRAWING NO. 200:01
REVISION NO. A


NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE
64 ALFRED STREET
NO ALTERATION TO STREETSCAPE
62 ALFRED STREET
52 ALFRED STREET
ISSUE: DA
DRAWING NO. 200:02
REVISION NO. A
DRAWING TITLE: GA ELEVATIONS
E-02 STREET EAST ELEVATION
PROJECT NAME: ANNANDALE TREE HOUSE
PROJECT NO. 19008
PRINT SIZE: A3
PRINT DATE: 26/11/19
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET ANNANDALE NSW
DATE 10.07.19
DESCRIPTION FOR INNER WEST COUNCIL
Saturday Studio


NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE
64 ALFRED STREET
EXISTING TREES TO REMAIN
11,256
13,624
12,469
EXISTING TREE TO REMAIN
52 ALFRED STREET
EXISTING FENCE
MAINTAIN EXISTING LANDSCAPING
FPL 8.95 AHD
Saturday Studio
SATURDAY STUDIO PTY LTD
Urban Design | Architecture
NOMINATED ARCHITECT: NICOLAS KARL RICHTER
NSWARB REGISTRATION NO# 6676
ISSUE DA
REVISION A
DESCRIPTION FOR INNER WEST COUNCIL
DATE 10.07.19
SCALE:
PRINT SIZE: A3
PRINT DATE: 26/11/19
PROJECT NO. 19008
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET ANNANDALE NSW
DRAWING TITLE: GA ELEVATIONS E-05 EAST ELEVATION
PROJECT NAME: ANNANDALE TREE HOUSE
ISSUE: DA
DRAWING NO. 200:03
REVISION NO. A


BOUNDARY
ALFRED STREET
62 ALFRED STREET EXISTING STRUCTURE SHOWN TONED
64 ALFRED STREET BEYOND SHOWN TONED
SECTION THROUGH NEIGHBOURING PROPERTY 52 ALFRED STREET SHOWN IN DARK TONE
NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE
64 ALFRED STREET BEYOND SHOWN TONED
APPROVED DA HOUSE
EXISTING BOUNDARY FENCE
FPL 8.95 A.H.D
2,495
EXISTING TREES TO REMAIN
13,624
PROPOSED AREA OF WORK
64 ALFRED STREET BEYOND SHOWN TONED
EXISTING GARAGE TO BE DEMONISHED
REPLACE REAR FENCE INSIDE BOUNDARY LINE
WHITES CREEK LANE
1
3
4
ISSUE DA
REVISION A
DESCRIPTION FOR INNER WEST COUNCIL
DATE 10.07.19
SCALE:
PRINT SIZE: A3
PRINT DATE: 26/11/19
CLIENT:
SITE:
PROJECT NO. 19008
REYES HARKNESS
62 ALFRED STREET
ANNANDALE NSW
DRAWING TITLE: GA ELEVATIONS
E-03 SOUTH ELEVATION
PROJECT NAME: ANNANDALE TREE HOUSE
ISSUE: DA
DRAWING NO. 200:04
REVISION NO. A
Saturday Studio
SATURDAY STUDIO PTY LTD
ABN 15 107 793 022
NOMINATED ARCHITECT: NICOLAS KARL RICHTER
NSWARB REGISTRATION NO# 6676
NOTE
Notify any errors, discrepancies or omissions to the architect. Refer to written dimensions only. Do not scale drawings. Drawings shall not be used for construction purposes unless issued for construction.
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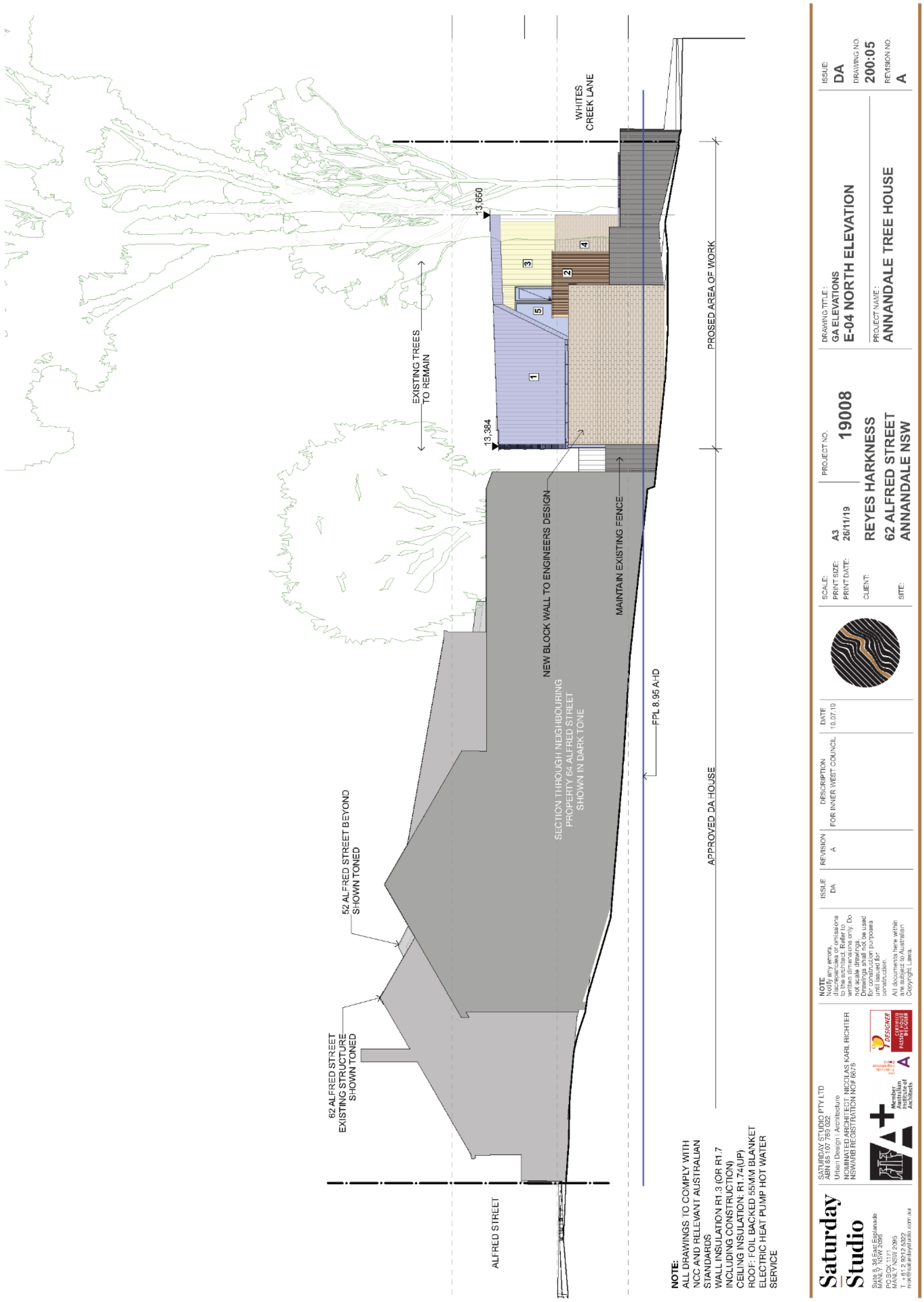
62 ALFRED STREET EXISTING STRUCTURE SHOWN TONED
52 ALFRED STREET BEYOND SHOWN TONED
EXISTING TREES TO REMAIN
13,384
13,650
ALFRED STREET
NEW BLOCK WALL TO ENGINEERS DESIGN
SECTION THROUGH NEIGHBOURING PROPERTY 64 ALFRED STREET SHOWN IN DARK TONE
WHITES CREEK LANE
MAINTAIN EXISTING FENCE
FPL 8.95 AHD
APPROVED DA HOUSE
PROSED AREA OF WORK
NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE
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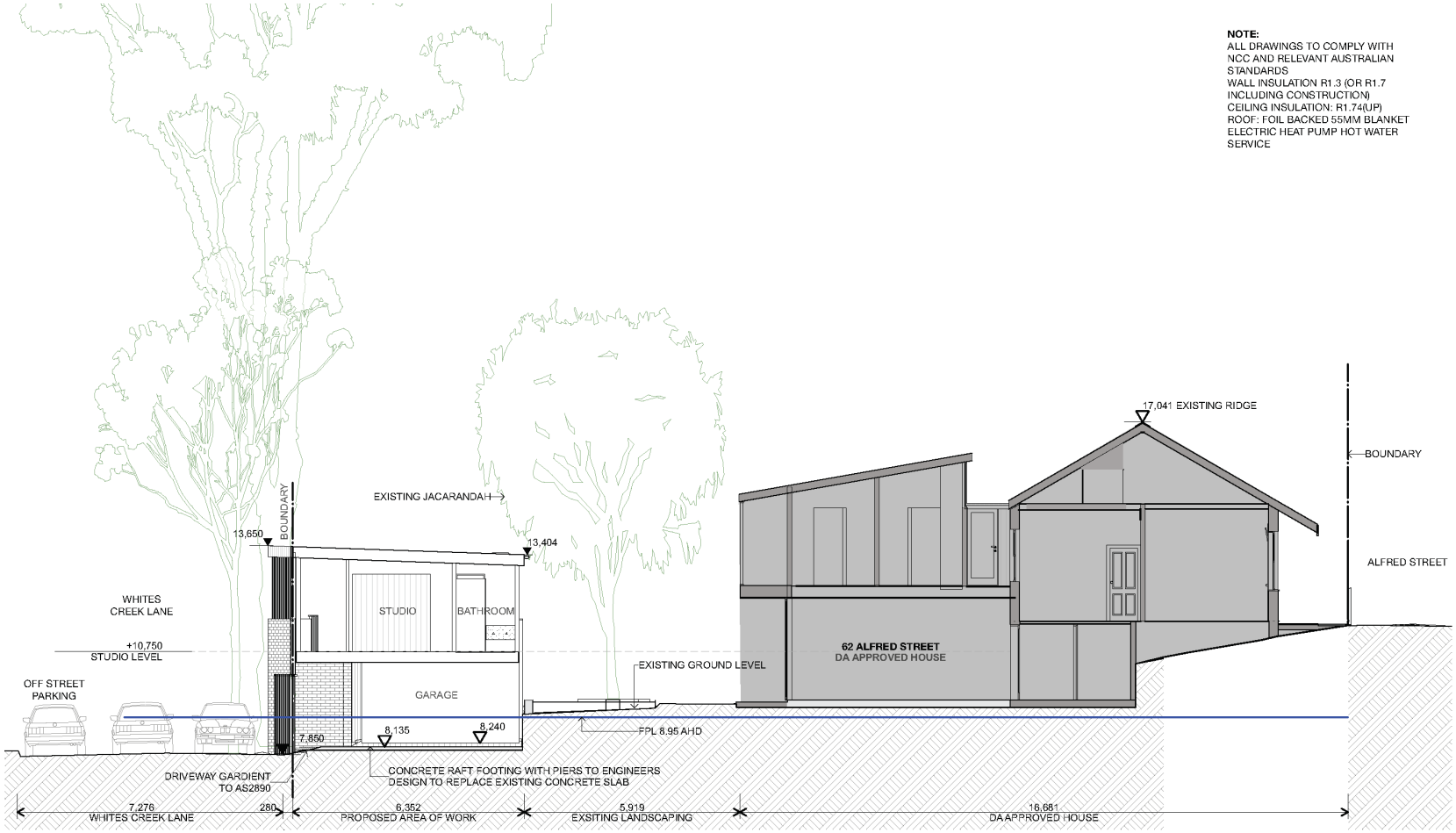
DATE 10.07.19
SCALE:
PRINT SIZE: A3
PRINT DATE: 26/11/19
PROJECT NO. 19008
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET ANNANDALE NSW
DRAWING TITLE : GA ELEVATIONS
E-04 NORTH ELEVATION
PROJECT NAME : ANNANDALE TREE HOUSE
ISSUE: DA
DRAWING NO. 200:05
REVISION NO. A



NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE

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MANLY NSW 2095
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T +61 2 9212 5302
nick@saturdaystudio.com.au

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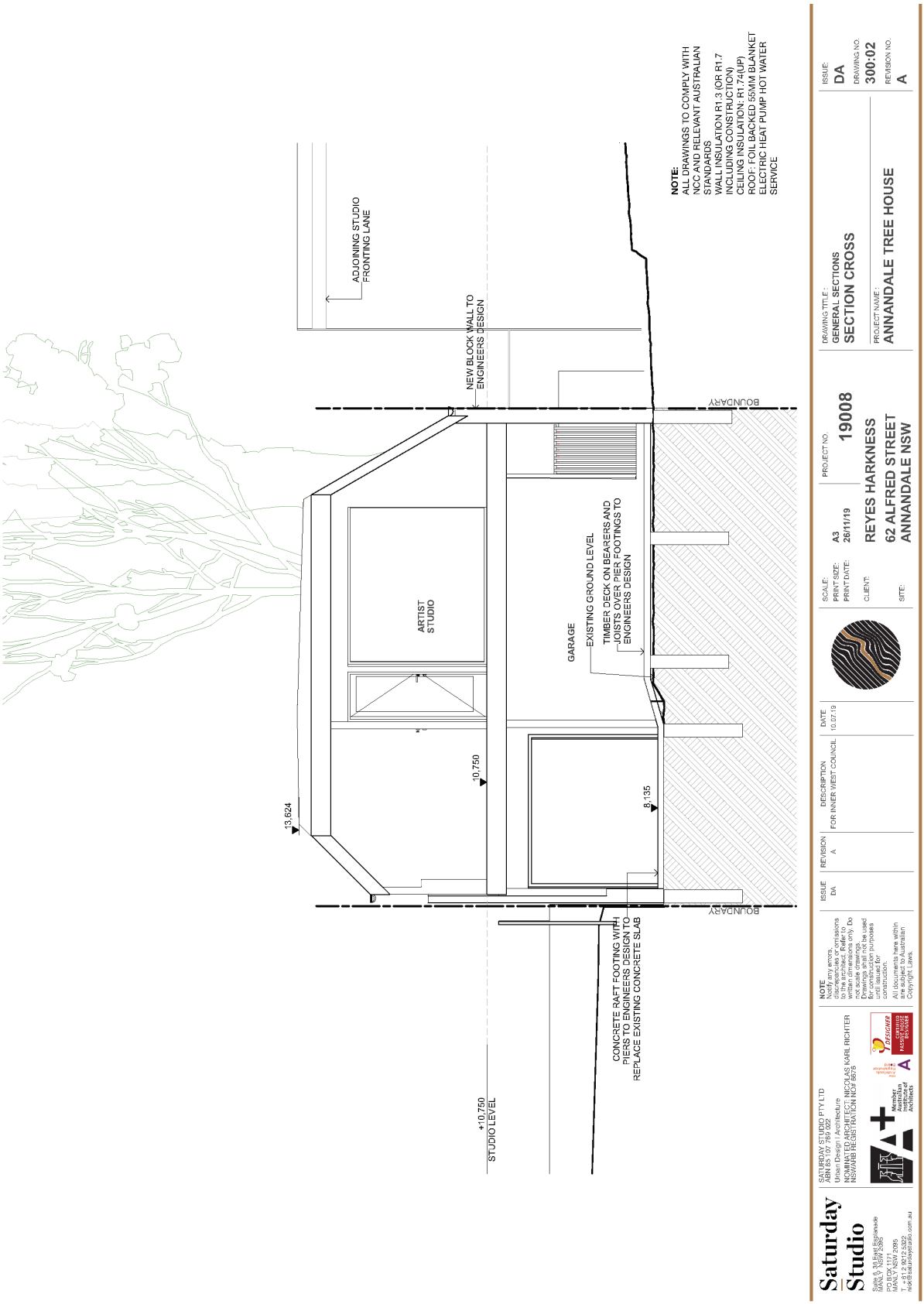
ABN 65 107 769 022
Urban Design | Architecture
NOMINATED ARCHITECT: NICOLAS KARL RICHTER
NSWARB REGISTRATION NO# 6676
Member Australian Institute of Architects
CERTIFIED PASSIVE HOUSE DESIGNER

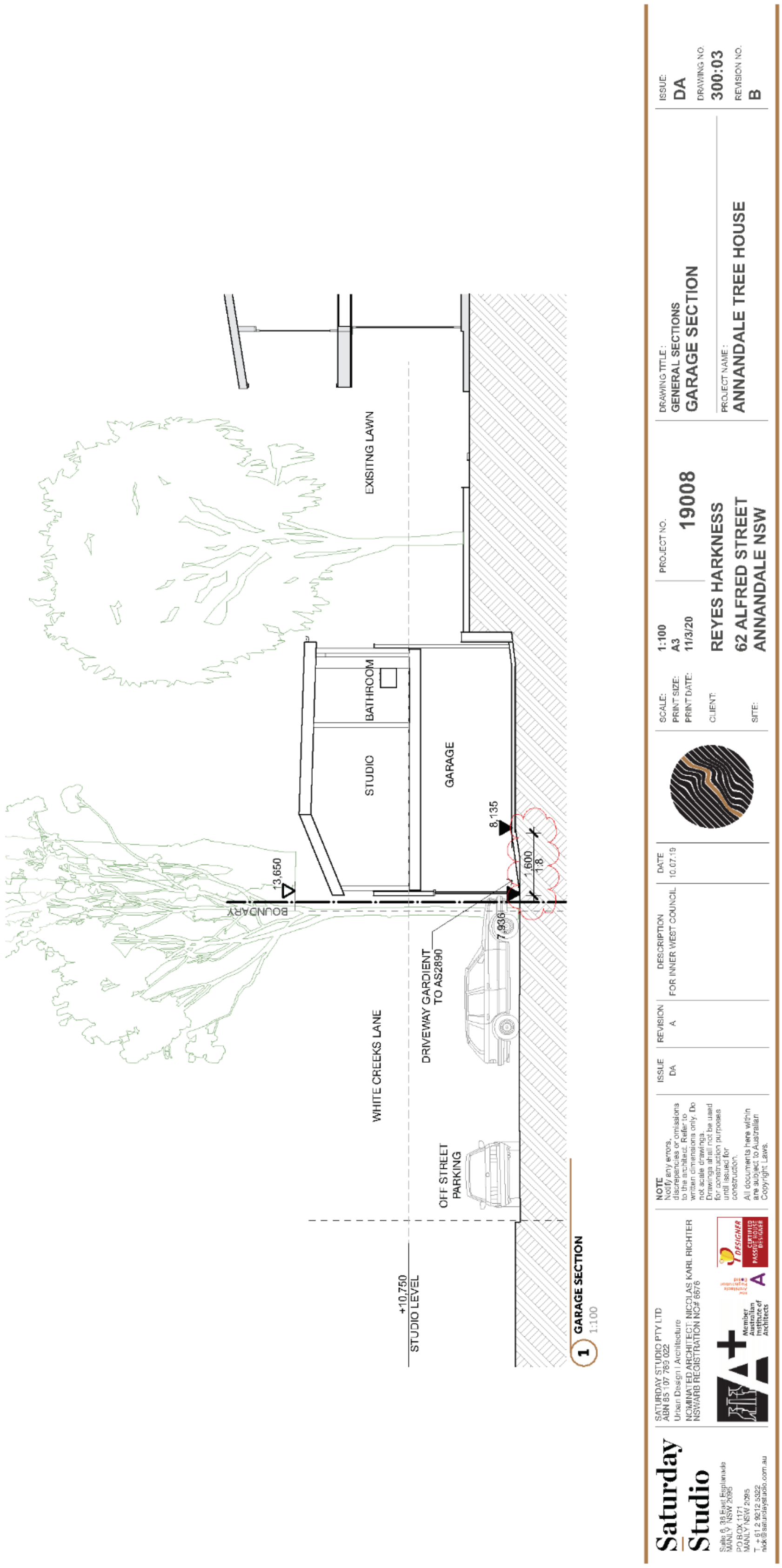
ISSUE	REVISION	DESCRIPTION	DATE
DA	A	FOR INNER WEST COUNCIL	10.07.19

SCALE: 1:100
PRINT SIZE: A3
PRINT DATE: 26/2/20
PROJECT NO. 19008
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET ANNANDALE NSW

DRAWING TITLE : GENERAL SECTIONS
SECTION LONG
PROJECT NAME : ANNANDALE TREE HOUSE

ISSUE: DA
DRAWING NO. 300:01
REVISION NO. B


ADJOINING STUDIO FRONTING LANE
NEW BLOCK WALL TO ENGINEERS DESIGN
BOUNDARY
ARTIST STUDIO
GARAGE
EXISTING GROUND LEVEL
TIMBER DECK ON BEARERS AND JOISTS OVER PIER FOOTINGS TO ENGINEERS DESIGN
10,750
8,135
3,624
BOUNDARY
CONCRETE RAFT FOOTING WITH PIERS TO ENGINEERS DESIGN TO REPLACE EXISTING CONCRETE SLAB
+10,750
STUDIO LEVEL
NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE
Saturday Studio
SATURDAY STUDIO PTY LTD
ABN 65 107 789 022
Urban Design | Architecture
NOMINATED ARCHITECT: NICOLAS KARL RICHTER NSWARB REGISTRATION NO# 8676
Suite 9, 38 East Esplanade MANLY NSW 2095
PO BOX 117 MANLY NSW 2095
T: +61 2 9812 8322
hello@saturdaystudio.com.au
ISSUE DA
REVISION A
DESCRIPTION FOR INNER WEST COUNCIL
DATE 10.07.19
SCALE: PRINT SIZE: A3
PRINT DATE: 26/11/19
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET ANNANDALE NSW
PROJECT NO. 19008
DRAWING TITLE: GENERAL SECTIONS
SECTION CROSS
PROJECT NAME: ANNANDALE TREE HOUSE
ISSUE: DA
DRAWING NO. 300:02
REVISION NO. A


EXISITNG LAWN
BATHROOM
STUDIO
GARAGE
8,135
13,650
BOUNDARY
1,600
1:8
7,936
WHITE CREEKS LANE
DRIVEWAY GARDIENT TO AS2890
OFF STREET PARKING
+10,750 STUDIO LEVEL
1 GARAGE SECTION 1:100
Saturday Studio
SATURDAY STUDIO PTY LTD
Urban Design | Architecture
NOTE
ISSUE DA
REVISION A
DESCRIPTION FOR INNER WEST COUNCIL
DATE 10.07.19
SCALE: 1:100
PRINT SIZE: A3
PRINT DATE: 11/3/20
PROJECT NO. 19008
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET ANNANDALE NSW
DRAWING TITLE: GENERAL SECTIONS GARAGE SECTION
PROJECT NAME: ANNANDALE TREE HOUSE
ISSUE: DA
DRAWING NO. 300:03
REVISION NO. B

ID	W01	W02	W03	W04	W05
Height	2,100	2,128	600	1,712	1,812
Width	820	2,805	2,003	798	1,243
Front View					
GLAZING	VIRIDIAN COMFORT HUSH NUETRAL TONED GLASS SHGC 0.51 SHADING CO. 0.6	VIRIDIAN COMFORT HUSH NUETRAL TONED GLASS SHGC 0.51 SHADING CO. 0.6	VIRIDIAN COMFORT HUSH NUETRAL TONED GLASS SHGC 0.51 SHADING CO. 0.6	VIRIDIAN COMFORT HUSH NUETRAL TONED GLASS SHGC 0.51 SHADING CO. 0.6	VIRIDIAN COMFORT HUSH NUETRAL TONED GLASS SHGC 0.51 SHADING CO. 0.6

ALL WINDOW FRAMES IMPROVED ALUMINIUM

01 Window List
1:1

NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE

Saturday Studio
Suite 5, 36 East Esplenade
MANLY NSW 2095
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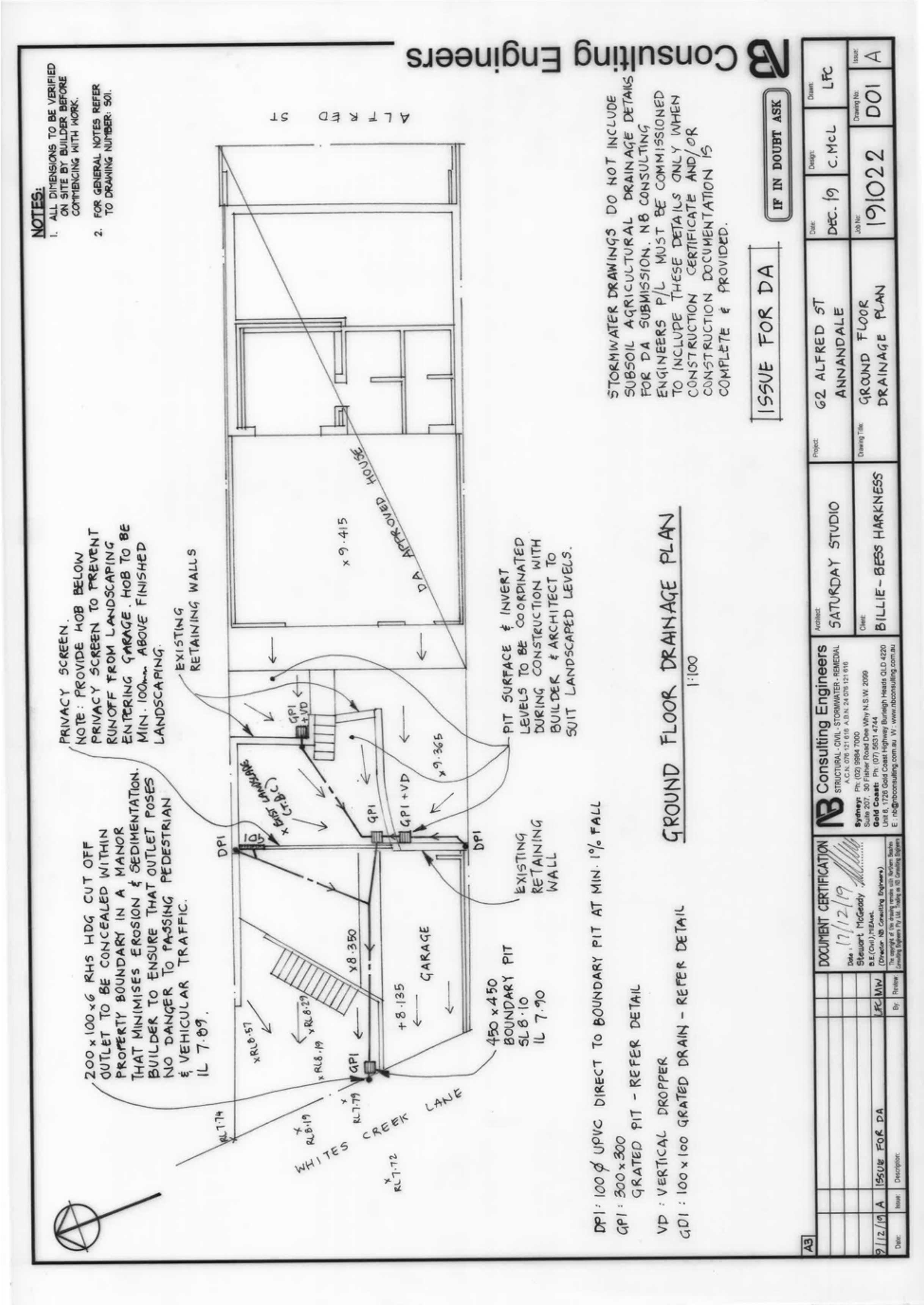
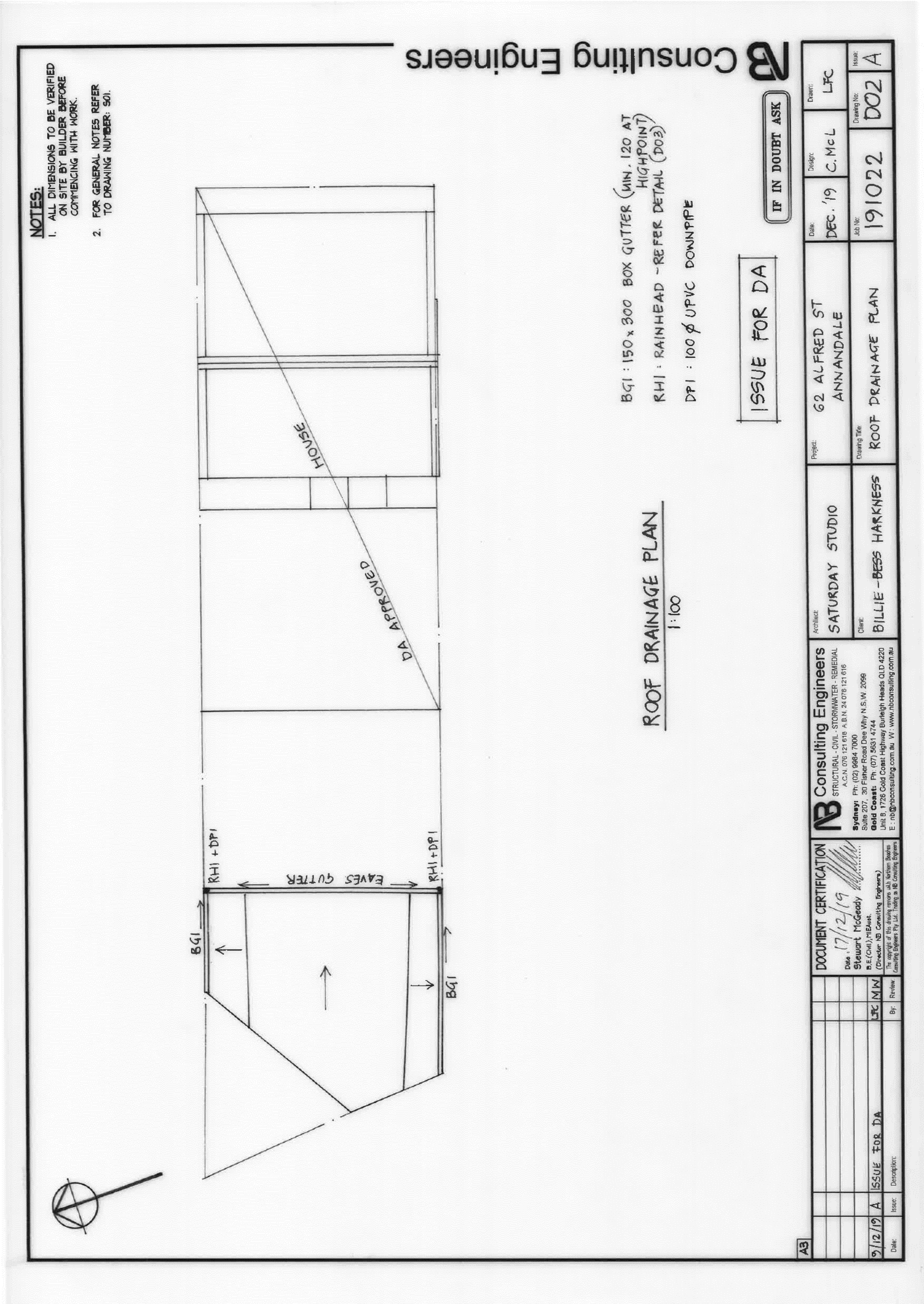
SATURDAY STUDIO PTY LTD
ABN 85 107 769 022
Urban Design I Architecture
NOMINATED ARCHITECT: NICOLAS KARL RICHTER
NSWARB REGISTRATION NO# 6676
Member Australian Institute of Architects
DESIGNER CERTIFIED PASSIVE HOUSE DESIGNER

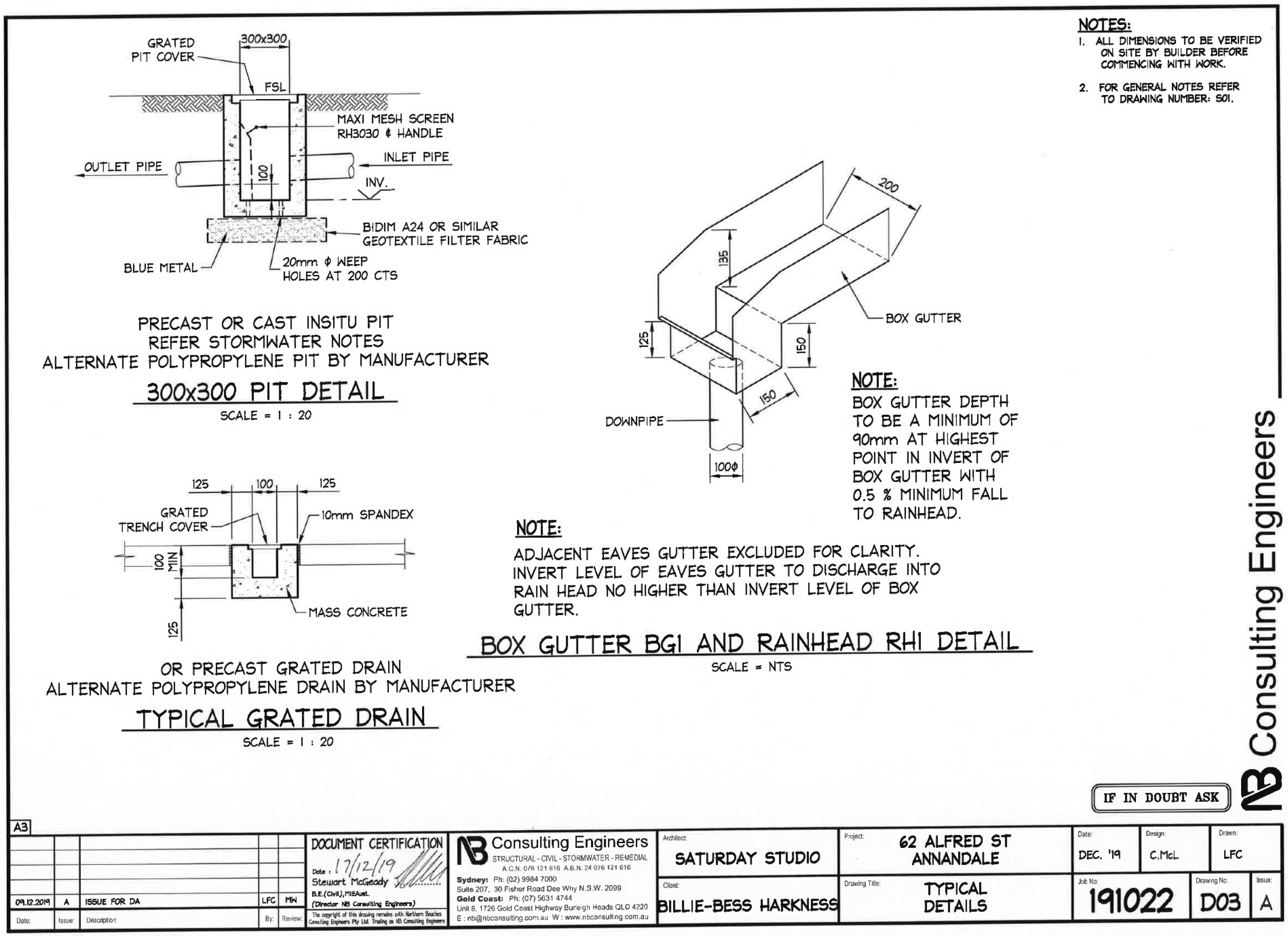
ISSUE	REVISION	DESCRIPTION	DATE
DA	A	FOR INNER WEST COUNCIL	10.07.19

SCALE:
PRINT SIZE: A3
PRINT DATE: 31/1/20
PROJECT NO. 19008
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET ANNANDALE NSW

DRAWING TITLE : SCHEDULES
WINDOW SCHEDULE
PROJECT NAME : ANNANDALE TREE HOUSE
ISSUE: DA
DRAWING NO. 800:01
REVISION NO. A


NB Consulting Engineers
NOTES:
1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES REFER TO DRAWING NUMBER: 501.
ALFRED ST
STORMWATER DRAWINGS DO NOT INCLUDE SUBSOIL AGRICULTURAL DRAINAGE DETAILS FOR DA SUBMISSION. NB CONSULTING ENGINEERS P/L MUST BE COMMISSIONED TO INCLUDE THESE DETAILS ONLY WHEN CONSTRUCTION CERTIFICATE AND/OR CONSTRUCTION DOCUMENTATION IS COMPLETE & PROVIDED.
IF IN DOUBT ASK
ISSUE FOR DA
DA APPROVED HOUSE
x 9.415
PRIVACY SCREEN.
NOTE: PROVIDE HOB BELOW PRIVACY SCREEN TO PREVENT RUNOFF FROM LANDSCAPING ENTERING GARAGE. HOB TO BE MIN. 100mm ABOVE FINISHED LANDSCAPING.
EXISTING RETAINING WALLS
PIT SURFACE & INVERT LEVELS TO BE COORDINATED DURING CONSTRUCTION WITH BUILDER & ARCHITECT TO SUIT LANDSCAPED LEVELS.
GPI +VD
GPI
GPI +VD
x 9.365
DPI
DPI
EXISTING RETAINING WALL
200 x 100 x 6 RHS HDG CUT OFF OUTLET TO BE CONCEALED WITHIN PROPERTY BOUNDARY IN A MANOR THAT MINIMISES EROSION & SEDIMENTATION. BUILDER TO ENSURE THAT OUTLET POSES NO DANGER TO PASSING PEDESTRIAN & VEHICULAR TRAFFIC.
IL 7.89.
x8.350
GARAGE
+8.135
450 x 450 BOUNDARY PIT
SL 8.10
IL 7.90
GPI
xRL8.57
xRL8.29
xRL8.19
RL7.74
RL8.19
RL7.79
RL7.72
WHITES CREEK LANE
GROUND FLOOR DRAINAGE PLAN
1:100
DPI : 100 Ø UPVC DIRECT TO BOUNDARY PIT AT MIN. 1% FALL
GPI : 300 x 300 GRATED PIT - REFER DETAIL
VD : VERTICAL DROPPER
GDI : 100 x 100 GRATED DRAIN - REFER DETAIL
DOCUMENT CERTIFICATION
Date: 17/12/19
Stewart McGeady
NB Consulting Engineers
STRUCTURAL · CIVIL · STORMWATER · REMEDIAL
Architect: SATURDAY STUDIO
Client: BILLIE-BESS HARKNESS
Project: 62 ALFRED ST ANNANDALE
Drawing Title: GROUND FLOOR DRAINAGE PLAN
Date: DEC. 19
Design: C.McL
Drawn: LFC
Job No: 191022
Drawing No: D01
Issue: A
9/12/19 A ISSUE FOR DA LFC MW
A3


NB Consulting Engineers
NOTES:
1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES REFER TO DRAWING NUMBER: S01.
BG1 : 150 x 300 BOX GUTTER (MIN. 120 AT HIGHPOINT)
RH1 : RAINHEAD - REFER DETAIL (D03)
DP1 : 100 ø UPVC DOWNPIPE
ISSUE FOR DA
IF IN DOUBT ASK
HOUSE
DA APPROVED
ROOF DRAINAGE PLAN
1:100
RH1 + DP1
EAVES GUTTER
RH1 + DP1
BG1
BG1
DOCUMENT CERTIFICATION
Date: 17/12/19
Stewart McGeady
B.E.(Civil),MIEAust.
(Director NB Consulting Engineers)
NB Consulting Engineers
STRUCTURAL · CIVIL · STORMWATER · REMEDIAL
Architect: SATURDAY STUDIO
Client: BILLIE-BESS HARKNESS
Project: 62 ALFRED ST ANNANDALE
Drawing Title: ROOF DRAINAGE PLAN
Date: DEC. '19
Design: C. McL
Drawn: LFC
Job No: 191022
Drawing No: D02
Issue: A
9/12/19 A ISSUE FOR DA LFC MW
Date: Issue: Description: By: Review
A3


NOTES:
1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES REFER TO DRAWING NUMBER: S01.
GRATED PIT COVER
300x300
FSL
MAXI MESH SCREEN RH3030 & HANDLE
OUTLET PIPE
INLET PIPE
100
INV.
BIDIM A24 OR SIMILAR GEOTEXTILE FILTER FABRIC
BLUE METAL
20mm ϕ WEEP HOLES AT 200 CTS
PRECAST OR CAST INSITU PIT
REFER STORMWATER NOTES
ALTERNATE POLYPROPYLENE PIT BY MANUFACTURER
300x300 PIT DETAIL
SCALE = 1 : 20
125
100
125
GRATED TRENCH COVER
10mm SPANDEX
100 MIN
MASS CONCRETE
125
OR PRECAST GRATED DRAIN
ALTERNATE POLYPROPYLENE DRAIN BY MANUFACTURER
TYPICAL GRATED DRAIN
SCALE = 1 : 20
200
135
BOX GUTTER
125
150
150
DOWNPIPE
100ϕ
NOTE:
BOX GUTTER DEPTH TO BE A MINIMUM OF 90mm AT HIGHEST POINT IN INVERT OF BOX GUTTER WITH 0.5 % MINIMUM FALL TO RAINHEAD.
NOTE:
ADJACENT EAVES GUTTER EXCLUDED FOR CLARITY.
INVERT LEVEL OF EAVES GUTTER TO DISCHARGE INTO RAIN HEAD NO HIGHER THAN INVERT LEVEL OF BOX GUTTER.
BOX GUTTER BG1 AND RAINHEAD RH1 DETAIL
SCALE = NTS
IF IN DOUBT ASK
NB Consulting Engineers
A3
09.12.2019 A ISSUE FOR DA LFC MW
Date: Issue: Description: By: Review:
DOCUMENT CERTIFICATION
Date: 17/12/19
Stewart McGeady
B.E.(Civil),MIEAust.
(Director NB Consulting Engineers)
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NB Consulting Engineers
STRUCTURAL - CIVIL - STORMWATER - REMEDIAL
A.C.N. 076 121 616 A.B.N. 24 076 121 616
Sydney: Ph: (02) 9984 7000
Suite 207, 30 Fisher Road Dee Why N.S.W. 2099
Gold Coast: Ph: (07) 5631 4744
Unit 6, 1726 Gold Coast Highway Burleigh Heads QLD 4220
E : nb@nbconsulting.com.au W : www.nbconsulting.com.au
Architect: SATURDAY STUDIO
Client: BILLIE-BESS HARKNESS
Project: 62 ALFRED ST ANNANDALE
Drawing Title: TYPICAL DETAILS
Date: DEC. '19
Design: C.McL
Drawn: LFC
Job No: 191022
Drawing No: D03
Issue: A

STORMWATER NOTES:

1. ALL PIPES TO BE 100mm ϕ UNLESS NOTED OTHERWISE.
2. ALL PIPES TO BE uPVC TO AS 1254-2002 UNLESS NOTED OTHERWISE.
3. ALL PIPES TO BE LAYED AT 1 % MINIMUM GRADE UNLESS NOTED OTHERWISE.
4. ALL PIPES SHALL BE LAID ON A 75mm SAND BED, COMPACTED TO 100% S.M.D.D. BELOW PAVEMENTS.
   (NO COMPACTION REQUIRED BELOW LANDSCAPING)
   COVER TO SURFACE FROM TOP OF PIPE TO BE 300mm MINIMUM.
   BACKFILL TO BE ADEQUATELY CONSOLIDATED AROUND PIPES BY METHOD OF RAMMING AND WATERING IN. TRENCHES TO BE FILLED WITH GRANULAR MATERIAL AS SPECIFIED.
5. ALL DOWN PIPES TO BE 100mm ϕ UNLESS NOTED OTHERWISE.
6. DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
7. PROVIDE CLEANING EYES AT ALL DOWNPIPES.
8. ALL PITS TO BE CAST INSITU OR, IF PRECAST, APPROVED BY ENGINEER. CAST INSITU PITS TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH 1 N12 TOP TIE UNLESS NOTED OTHERWISE. CAST INSITU PITS GREATER THAN 900 DEEP TO BE MINIMUM 900x600 AND TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH N12 AT 300 EACH WAY UNLESS NOTED OTHERWISE.
9. ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
10. THE BOUNDARY OR SILT ARRESTOR PIT SHOULD ALWAYS INCORPORATE A SUMP AND MAXI-MESH SCREEN AS PER LOCAL COUNCIL REQUIREMENTS. HOWEVER, UNLESS SPECIFICALLY REQUIRED BY COUNCILS POLICY OR IF THE SITE CONSISTS OF A CLAY OR ROCK SUBGRADE, ALL OTHER DRAINAGE PITS WILL NOT REQUIRE A SUMP.
11. ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.
12. PRIOR TO COMMENCING ANY SITE WORKS THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL MEASURES TO APPROVED SEDIMENT AND EROSION CONTROL PLAN, EPA GUIDELINES AND COUNCIL SPECIFICATIONS. ALL MEASURES TO REMAIN IN PLACE UNTIL COMPLETION AND STABILIZATION OF THE SITE TO COUNCIL SATISFACTION.
13. ALL LEVELS SHOWN ARE TO AHD
14. ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
15. ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO uPVC.
16. ALL WORKS TO BE IN ACCORDANCE WITH AS 3500-2003 NATIONAL PLUMBING DRAINAGE CODE PART 3 - STORMWATER DRAINAGE.
17. UNLESS NOTED OTHERWISE, SUB-SOIL DRAINS ARE TO BE INSTALLED IN ACCORDANCE WITH AS3500.3 ALONGSIDE WALLS THAT IMPEDE THE NATURAL FLOW OF GROUNDWATER. THIS MAY ALSO INVOLVE TRENCHING INTO THE CLAY OR ROCK SUBGRADE TO DIRECT GROUNDWATER AWAY FROM STRUCTURES.
18. IF NOT INDICATED ON PLANS, PROVIDE LEAF CATCHERS TO ALL DOWNPIPES OR GUTTER GUARD TO ALL EAVES GUTTERS.

ONSITE DETENTION CALCULATIONS
INNER WEST COUNCIL (LEICHHARDT COUNCIL AREA)

TOTAL SITE AREA	=	227.6 m^2
PRE DEVELOPED IMPERVIOUS AREA	=	152.6 m^2 (67 %)
PROPOSED IMPERVIOUS AREA	=	172.7 m^2 (76 %)
INCREASE IMPERVIOUS AREA	=	20.1 m^2 (9 %)
RAINWATER STORAGE REQUIRMENT (BASIX)	=	NIL

OSD REQUIREMENT:
AS THE DEVELOPMENT SITE IS LOCATED WITHIN A FLOOD AFFECTED AREA, ON-SITE DETENTION IS NOT RECOMMENDED FOR THIS DEVELOPMENT.

ADDITIONAL CONCENTRATED DISCHARGE TO WHITES CREEK LANE AS A RESULT OF THE DEVELOPMENT	=	3.8 L/s

NOTES:

1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES REFER TO DRAWING NUMBER: S01.

NB Consulting Engineers

IF IN DOUBT ASK

A3

Date:	Issue:	Description:	By:	Review:
09.12.2019	A	ISSUE FOR DA	LFC	MW

DOCUMENT CERTIFICATION
Date: 17/12/19
Stewart McGeady
B.E.(Civil),MIEAust.
(Director NB Consulting Engineers)
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NB Consulting Engineers
STRUCTURAL - CIVIL - STORMWATER - REMEDIAL
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Suite 207, 30 Fisher Road Dee Why N.S.W. 2099
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Architect: SATURDAY STUDIO
Client: BILLIE-BESS HARKNESS
Project: 62 ALFRED ST ANNANDALE
Drawing Title: STORMWATER NOTES & CALCULATIONS
Date: DEC. '19 | Design: C.McL | Drawn: LFC
Job No: 191022 | Drawing No: D04 | Issue: A

NOTES:
1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES REFER TO DRAWING NUMBER: S01.
Consulting Engineers
www.dialbeforeyoudig.com.au
DIAL 1100 BEFORE YOU DIG
IF IN DOUBT ASK
FOOTING PLAN
SCALE = 1:100
P1 - 300ϕ MASS CONCRETE PIERS.
P2 - 300ϕ MASS CONCRETE PIERS WITH 90 x 90 x 6 SHS (SC3) GALVANISED POSTS WITH STAIR OUT-RIGGERS.
P3 - 300ϕ MASS CONCRETE PIERS WITH 125 x 125 F7 H3 TIMBER POSTS.
P4 - 450ϕ CONCRETE PIERS, 2000 LONG. 8-N16 VERTICAL, R10-300 TIES. (TO BE CONFIRMED BY GEOTECHNICAL ENGINEER) OR EMBEDDED INTO ROCK. (BEARING CAPACITY TO BE CONFIRMED BY GEOTECHNICAL ENGINEER)
BW1 - 190 REINFORCED BLOCK WALL. REFER TO S12 FOR DETAIL.
1500 Max.
EXISTING RETAINING WALLS
LINE OF GARAGE LEVEL WALLS.
BW1
P1
P2
P3
P4
OE
1 S12
2 S12
3 S12
4 S15
DOCUMENT CERTIFICATION
Date: 7/12/19
Stewart McGeady
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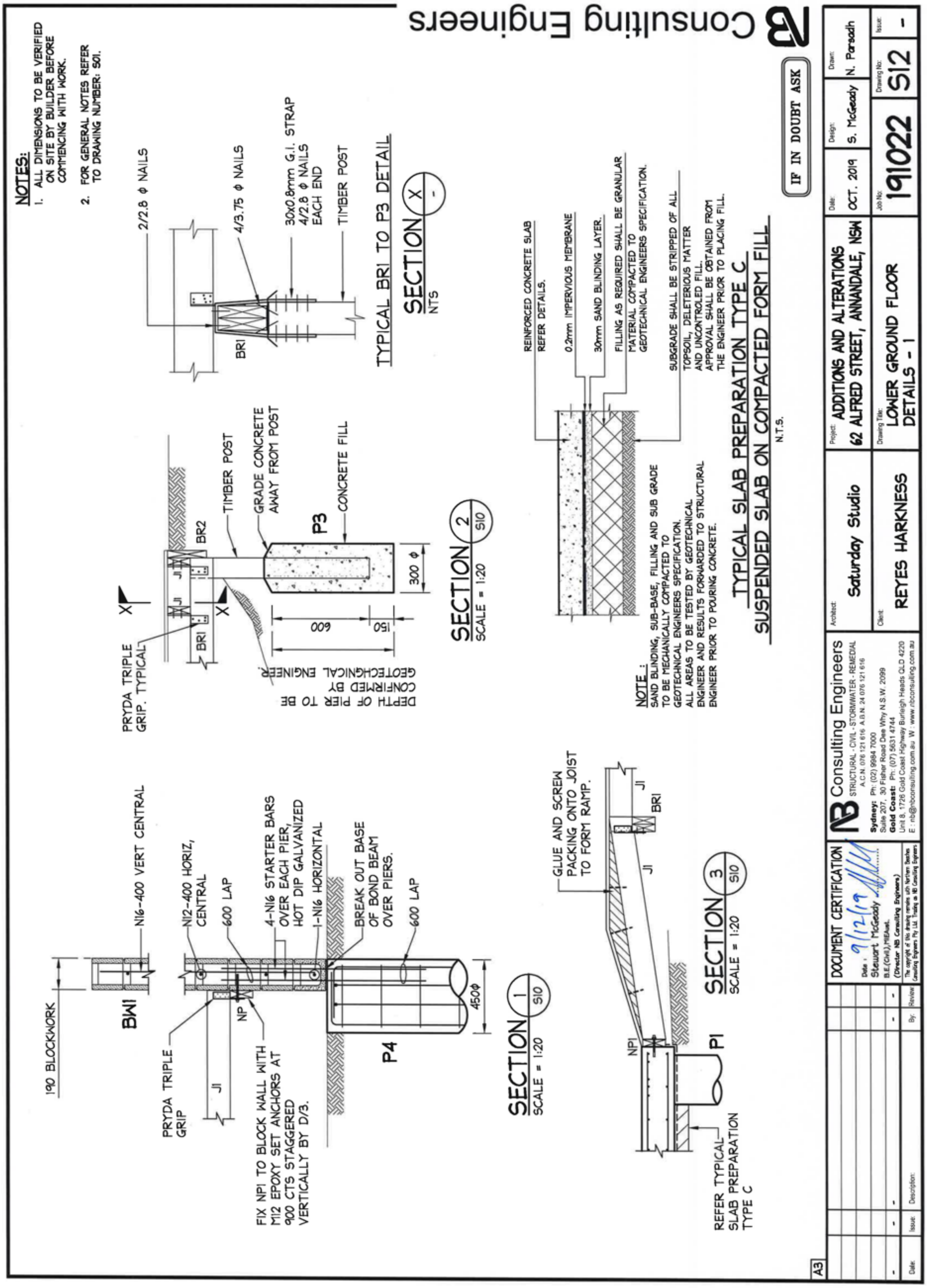
E: nb@nbconsulting.com.au W: www.nbconsulting.com.au
Architect: Saturday Studio
Client: REYES HARKNESS
Project: ADDITIONS AND ALTERATIONS
62 ALFRED STREET, ANNANDALE, NSW
Drawing Title: FOOTING PLAN
Date: OCT. 2019
Design: S. McGeady
Drawn: N. Paroadh
Job No: 191022
Drawing No: S02
Issue: -
Date | Issue | Description | By | Approved
A3


NOTES:
1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES REFER TO DRAWING NUMBER: S01.
2/2.8 ϕ NAILS
4/3.75 ϕ NAILS
30x0.8mm G.I. STRAP 4/2.8 ϕ NAILS EACH END
TIMBER POST
BR1
TYPICAL BR1 TO P3 DETAIL
SECTION X
NTS
PRYDA TRIPLE GRIP. TYPICAL
BR2
TIMBER POST
GRADE CONCRETE AWAY FROM POST
CONCRETE FILL
P3
DEPTH OF PIER TO BE CONFIRMED BY GEOTECHGNICAL ENGINEER.
600
150
300 ϕ
SECTION 2 S10
SCALE = 1:20
REINFORCED CONCRETE SLAB REFER DETAILS.
0.2mm IMPERVIOUS MEMBRANE
30mm SAND BLINDING LAYER.
FILLING AS REQUIRED SHALL BE GRANULAR MATERIAL COMPACTED TO GEOTECHNICAL ENGINEERS SPECIFICATION.
SUBGRADE SHALL BE STRIPPED OF ALL TOPSOIL, DELETERIOUS MATTER AND UNCONTROLED FILL. APPROVAL SHALL BE OBTAINED FROM THE ENGINEER PRIOR TO PLACING FILL.
NOTE :
SAND BLINDING, SUB-BASE, FILLING AND SUB GRADE TO BE MECHANICALLY COMPACTED TO GEOTECHNICAL ENGINEERS SPECIFICATION. ALL AREAS TO BE TESTED BY GEOTECHNICAL ENGINEER AND RESULTS FORWARDED TO STRUCTURAL ENGINEER PRIOR TO POURING CONCRETE.
TYPICAL SLAB PREPARATION TYPE C
SUSPENDED SLAB ON COMPACTED FORM FILL
N.T.S.
IF IN DOUBT ASK
Consulting Engineers
190 BLOCKWORK
BW1
N16-400 VERT CENTRAL
N12-400 HORIZ, CENTRAL
600 LAP
4-N16 STARTER BARS OVER EACH PIER, HOT DIP GALVANIZED
1-N16 HORIZONTAL
BREAK OUT BASE OF BOND BEAM OVER PIERS.
600 LAP
PRYDA TRIPLE GRIP
J1
NP
FIX NP1 TO BLOCK WALL WITH M12 EPOXY SET ANCHORS AT 900 CTS STAGGERED VERTICALLY BY D/3.
P4
450ϕ
SECTION 1 S10
SCALE = 1:20
GLUE AND SCREW PACKING ONTO JOIST TO FORM RAMP.
J1
BR1
SECTION 3 S10
SCALE = 1:20
NP1
P1
REFER TYPICAL SLAB PREPARATION TYPE C
DOCUMENT CERTIFICATION
Date: 9/12/19
Stewart McGeady
B.E.(Civil), MIEAust.
(Director NB Consulting Engineers)
NB Consulting Engineers
STRUCTURAL - CIVIL - STORMWATER - REMEDIAL
Architect: Saturday Studio
Client: REYES HARKNESS
Project: ADDITIONS AND ALTERATIONS 62 ALFRED STREET, ANNANDALE, NSW
Drawing Title: LOWER GROUND FLOOR DETAILS - 1
Date: OCT. 2019
Design: S. McGeady
Drawn: N. Parsadh
Job No: 191022
Drawing No: S12
Issue: -
A3

Attachment B – Arboricultural Impact Assessment

URBAN ARBOR
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Arboricultural Impact Assessment Report

Site Location:
62 Alfred Street Annandale NSW

Prepared for:
Saturday Studio

Prepared by: Jack Williams
Urban Arbor Pty Ltd
Ref: 20/01/23/62ASA
Date prepared: 23 January 2020

URBAN ARBOR
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Table of Contents

Site Address: 62 Alfred St, Annandale, NSW.
Prepared for: Saturday Studio.
Prepared by: Jack Williams, Urban Arbor Pty Ltd, sales@urbanarbor.com.au, (02) 8004 2802.
Date prepared: 23 January 2020.

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1. INTRODUCTION

1.1 Urban Arbor have been instructed by Saturday Studio to provide an Arboricultural Impact Assessment Report for trees located at the site and adjoining neighbouring sites in relation to a proposed development.

1.2 Below is a list of all documents and information provided for assessment in this report;

A) Detail and Level Survey, Survey Plus, Revision A - 10 May 2019.

B) Architectural Plans, Saturday Studio, Revision A - 10 July 2019, Including the following drawings;

Layout No:	Layout Name	Issue Name
	COVER SHEET	DA
100.01	SITE PLAN	DA
100.02	SEDIMENTATION CONTROL PLAN & ...	DA
110.01	EXISTING LOWER GROUND FLOOR	DA
110.02	EXISTING UPPER GROUND FLOOR	DA
110.03	LOWER GROUND FLOOR	DA
110.04	UPPER GROUND FLOOR	DA
110.05	ROOF PLAN	DA
200.01	LANE WEST ELEVATION	DA
200.02	E-02 STREET EAST ELEVATION	DA
200.03	E-05 EAST ELEVATION	DA
200.04	E-03 SOUTH ELEVATION	DA
200.05	E-04 NORTH ELEVATION	DA
300.01	SECTION LONG	DA
300.02	SECTION CROSS	DA
710.01	WINTER SHADOWS	DA
720.01	NOTIFICATION SITE PLAN	DA
720.02	NOTIFICATION PLANS	DA
720.03	NOTIFICATION PLAN	DA
720.04	NOTIFICATION SHADOWS	DA
800.01	WINDOW SCHEDULE	DA

C) Engineering Drawings, NB Consulting Engineers, October 2019, Drawing Numbers S02 and S12.

1.3 The site and tree inspections were carried out on 14 November 2019. Access was available to the subject site and adjoining public areas only.

2. SCOPE OF THE REPORT

2.1 This report has been undertaken to meet the following objectives.

2.1.1 Conduct a ground level visual assessment of all significant trees located within 5 metres of development works from ground level. For the purpose of this report, a significant tree is a tree with a height greater than 5 metres.

2.1.2 Determine the trees estimated contribution years and remaining, useful life expectancy and award the trees a retention value.

2.1.3 Provide an assessment of the potential impact the proposed development is likely to cause to the condition of the subject trees in accordance with AS4970 Protection of trees on development sites (2009).

2.1.4 Specify tree protection measures for trees to be retained in accordance with AS4970 Protection of trees on development sites (2009).

3. LIMITATIONS

3.1 The observations and recommendations are based on the site inspections identified in section 1 only. The findings of this report are based on the observations and site conditions at the time of inspection.

3.2 All of the observations were carried out from ground level. The accuracy of the assessment of the subject trees structural condition and health is limited to the visibility of the tree at the time of inspection.

3.3 The tree inspection was visual from ground level only. No soil or tissue testing was carried out as part of the tree inspection. None of the surrounding surfaces adjacent to trees were lifted or removed during the tree inspections.

3.4 Root decay can sometimes be present with no visual indication above ground. It is also impossible to know the extent of any root damage caused by mechanical damage such as underground root cutting during the installation of services without undertaking detailed root investigation. Any form of tree failure due to these activities is beyond the scope of this assessment.

3.5 The report reflects the subject tree(s) as found on the day of inspection. Any changes to the growing environment of the subject tree, or tree management works beyond those recommended in this report may alter the findings of the report. There is no warranty, expressed or implied, that problems or deficiencies relating to the subject tree, or subject site may not arise in the future.

3.6 Tree identification is based on accessible visual characteristics at the time of inspection. As key identifying features are not always available the accuracy of identification is not guaranteed. Where tree species is unknown, it is indicated with an *spp*.

3.7 All diagrams, plans and photographs included in this report are visual aids only, and are not to scale unless otherwise indicated.

3.8 Alteration of this report invalidates the entire report.

4. METHODOLOGY

4.1 The following information was collected during the assessment of the subject tree(s).

4.1.1 Tree common name

4.1.2 Tree botanical name

4.1.3 Tree age class

4.1.4 DBH (Trunk/Stem diameter at breast height/1.4m) - millimetres.

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4.1.5 Estimated height - metres
4.1.6 Estimated crown spread (diameter of crown) - metres
4.1.7 Health
4.1.8 Structural condition
4.1.1 Amenity value
4.1.2 Estimated remaining contribution years (SULE)[1]
4.1.3 Retention value (Tree AZ)[2]
4.1.4 Notes/comments

4.2 An assessment of the trees condition was made using the visual tree assessment (VTA) model (Mattheck & Breloer, 1994).[3]

4.3 Tree diameter was measured using a DBH tape or in some cases estimated. Tree height and tree canopy spread was measured with a clinometer or in some cases estimated. All other measurements were estimations unless otherwise stated. The other tools used during the assessment were a nylon mallet, compass, camera and a steel probe.

4.4 All information was imported into our computerised geographical information system (GIS) PT-mapper pro. This software was used to measure/calculate all encroachment estimates included in this report.

4.5 All DBH measurements, tree protection zones, and structural root zones were calculated in accordance with methods set out in AS4970 Protection of trees on development sites (2009).[4]

4.6 Details of how the observations in this report have been assessed are listed in the appendices.

[1] Barrell, J. (2001), *'SULE: its use and status in the new millennium' in Management of Mature Trees proceedings of the 4th NAAA Workshop*, Sydney, 2001. Barrell.

[2] Barrell Tree Consultancy, *Tree AZ version 10.10-ANZ*, http://www.treeaz.com/.

[3] Mattheck, C. & Breloer, H., *The body language of trees - A handbook for failure analysis*, The Stationary Office, London, England (1994).

[4] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009).

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5. SITE LOCATION AND BRIEF DESCRIPTION

5.1 The site is located in the suburb of Annandale, New South Wales, which is located in the Inner West Local Government Area (LGA). All trees at the site are subject to protection under the Leichhardt Local Environmental Plan (LEP) 2013[5] and Development Control Plan (DCP) 2013.[6] The site is located inside a Heritage Conservation Area in the LEP heritage maps.[7]

6. GENERAL INFORMATION IN RELATION TO PROTECTING TREES ON DEVELOPMENT SITES

6.1 **Tree protection zone (TPZ):** The TPZ is the principle means of protecting trees on development sites and is an area required to maintain the viability of trees during development. It is commonly observed that tree roots will extend significantly further than the indicative TPZ, however the TPZ is an area identified in AS4970-2009 to be the area where root loss or disturbance will generally impact the viability of the tree. The TPZ is identified as a restricted area to prevent damage to trees either above or below ground during a development. Where trees are intended to be retained proposed developments must provide an adequate TPZ around trees. The TPZ is set aside for the tree's root zone, trunk and crown and it is essential for the stability and longevity of the tree. The TPZ also incorporates the SRZ (see below for more information about the SRZ). The TPZ is calculated by multiplying the DBH by twelve, with the exception of palms, other monocots, cycads and tree ferns, the TPZ of which have been calculated at one metre outside the crown projection. Additional information about the TPZ is included in appendix 3.

6.2 **Structural Root Zone (SRZ):** This is the area around the base of a tree required for the trees stability in the ground. An area larger than the SRZ always needs to be maintained to preserve a viable tree. The SRZ is calculated using the following formula; (DAB x 50) $^{0.42}$ x 0.64. There are several factors that can vary the SRZ which include height, crown area, soil type and soil moisture. It can also be influenced by other factors such as natural or built structures. Generally, work within the SRZ should be avoided. Soil level changes should also generally be avoided inside the SRZ of trees to be retained. Palms, other monocots, cycads and tree ferns do not have an SRZ. See the appendices for more information about the SRZ.

---

[5] *Leichhardt Local Environmental Plan 2013*, https://www.legislation.nsw.gov.au/#/view/EPI/2013/758/full, accessed 19 November 2019.

[6] *Leichhardt Development Control Plan 2013*, https://www.innerwest.nsw.gov.au/development-works/planning-controls/dcps/leichhardt-dcp-2013, accessed 19 November 2019.

[7] *Leichhardt LEP Heritage map - Sheet HER_005*, https://www.legislation.nsw.gov.au/maps/d9124f23-afa8-44b6-aedc-30ea9346cc32/4800_COM_HER_005_005_20190116.pdf, accessed 19 November 2019.

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6.3 **Minor encroachment into TPZ:** Sometimes encroachment into the TPZ is unavoidable. Encroachment includes but is not limited to activities such as excavation, compacted fill and machine trenching. Minor encroachment of up to 10% of the overall TPZ area is normally considered acceptable, providing there is space adjacent to the TPZ for the tree to compensate and the tree is displaying adequate vigour/health to tolerate changes to its growing environment.

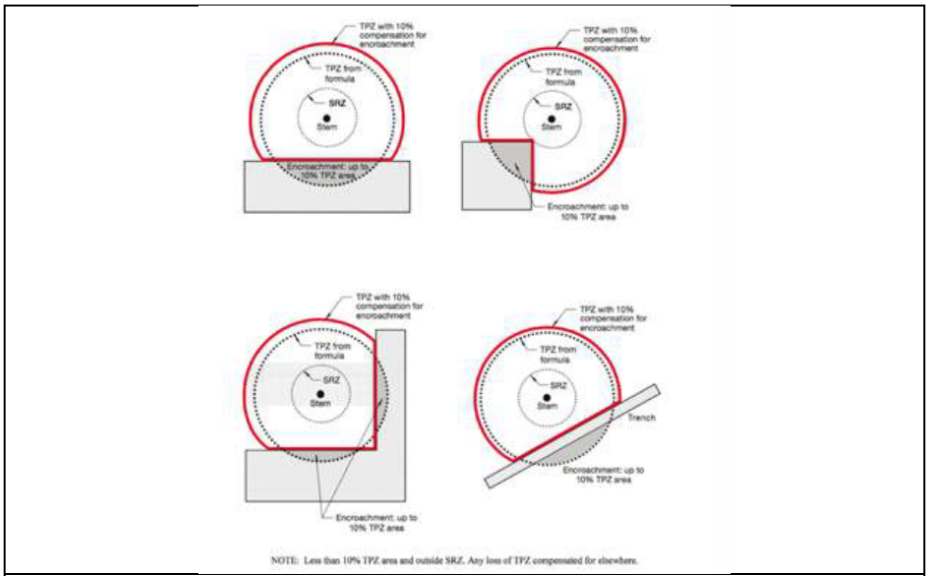

Image 1: Example minor TPZ encroachment from AS4970-2009.

6.4 **Major encroachment into TPZ:** Where encroachment of more than 10% of the overall TPZ area is proposed the project Arborist must investigate and demonstrate that the tree will remain in a viable condition. In some cases, tree sensitive construction methods such as pier and beam footings, suspended slabs, or cantilevered sections, can be utilised to allow additional encroachment into the TPZ by bridging over roots and minimising root disturbance. Major encroachment is only possible if it can be undertaken without severing significant size roots, or if it can be demonstrated that significant roots will not be impacted. Root investigations may be required to identify roots that will be impacted during major TPZ encroachment (see appendix 3 for more information in relation to root investigations).

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7. OBSERVATIONS

7.1 **Tree information:** Details of each individual tree assessed, including the observations taken during the site inspection, can be found in the tree inspection schedule in appendix 2, where the indicative tree protection zone (TPZ) and Structural Root Zone (SRZ) has been calculated for each of the subject trees. The TPZ and SRZ should be measured in radius from the centre of the trunk. Each of the subject trees have been awarded a retention value based on the observations using the Tree AZ method. Tree AZ is used to identify higher value trees worthy of being a constraint to development and lower value trees that should generally not be a constraint to the development. The Tree AZ categories sheet (Barrell Tree Consultancy) has been included in appendix 3 to assist with understanding the retention values. The retention value that has been allocated to the subject trees in this report is not definitive and should only be used as a guideline.

7.2 **Site plan:** In appendix 1 two site plans have been prepared, where the tree information including canopy spread, TPZ and SRZ have been overlaid onto the site plans. The following plans are included in appendix 1;

- Appendix 1A: Existing Site Plan
- Appendix 1B: Proposed Site Plan

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8. ASSESSMENT OF CONSTRUCTION IMPACTS

8.1 Table 1: In the table below, the impact of the proposed development has been assessed for all trees included in the report. The assessed TPZ encroachments include proposed structures and hard landscaping only. All soft landscaping should be completed in accordance with section 12.10.

Tree ID	Botanical Name	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
1	*Corymbia citriodora*	A2	6.1	117.7	2.6	Major	The existing garage is located inside the TPZ and SRZ of the tree and encroaches into the TPZ by 9% (10.8m^2). The existing garage is proposed to be demolished and replaced with a new garage with an increased footprint, which will encroach into the to the TPZ by a further 12% (13.1m^2), which is major TPZ encroachment. The new section garage/building will cover the majority of this area. To minimise the impact to the tree, the footings of the proposed garage are proposed to be tree sensitive to avoid impacting significant tree roots, see section 9.2 for detailed information.	Retain and protect.
2	*Eucalyptus grandis*	A1	11.0	382.9	3.4	Major	The existing garage is located inside the TPZ of the tree and encroaches into the TPZ by 12% (45.6m^2). The existing garage is proposed to be demolished and replaced with a new garage with an increased footprint, which will encroach into the to the TPZ by a further 11% (43.4m^2) and into the SRZ, which is major TPZ encroachment. Within this area, new section garage/building will cover 6% (23.9m^2) of the TPZ area. To minimise the impact to the tree, the footings of the proposed garage are proposed to be tree sensitive to avoid impacting significant tree roots, see section 9.2 for detailed information. Canopy pruning is required to accommodate the proposed building, see section 9.3 for assessment and specifications of pruning.	Retain and protect.
3	*Jacaranda mimosifolia*	A1	5.5	93.5	2.4	Major	The existing garage is located inside the TPZ of the tree and encroaches into the TPZ by 9% (8.6m^2). The existing garage is proposed to be demolished and replaced with a new garage with an increased footprint, which will encroach	Retain and protect.

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Tree ID	Botanical Name	Retention value	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	TPZ encroachment	Discussion/ Conclusion	Recommendation
							into the to the TPZ by a further 9% (8.5m^2), which is major TPZ encroachment. The new section garage/building will cover the whole of this area. To minimise the impact to the tree, the footings of the proposed garage are proposed to be tree sensitive to avoid impacting significant tree roots, see section 9.2 for detailed information. Canopy pruning is required to accommodate the proposed building, see section 9.4 for assessment and specifications of pruning.	
4	*Callistemon viminalis*	A1	4.8	72.4	2.5	Major	The existing garage is located inside the TPZ and SRZ of the tree and encroaches into the TPZ by 28% (20.2m^2). The existing garage is proposed to be demolished and replaced with a new garage within this area. The new section garage/building will cover the whole of this area. To minimise the impact to the tree, the footings of the proposed garage are proposed to be tree sensitive to avoid impacting significant tree roots, see section 9.2 for detailed information. Canopy pruning is required to accommodate the proposed building, see section 9.5 for assessment and specifications of pruning.	Retain and protect.
5	*Callistemon viminalis*	A1	5.3	88.2	2.8	None	No encroachment into the TPZ.	Retain and protect

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9. CONCLUSIONS

9.1 **Table 2:** Summary of the impact to trees by the development;

Impact	Reason	Category A	Category Z
		A	Z
Trees recommended to be removed	Building construction, new surfacing and/or proximity, trees in poor condition or re landscaping	None	None
Trees recommended to be retained	Removal of existing surfacing/structures and/or installation of new surfacing/structures will not impact the trees	1, 2, 3, 4, 5	None

9.2 New Garage in TPZ of tree 1, 2, 3 and 4: The existing garage is located in the TPZ of these trees. The existing garage is proposed to be demolished and replaced with a new garage with an increased footprint. The new garage encroaches into the TPZ of each of trees by more than 10%, which is major TPZ encroachment and could therefore impact the trees, either via root loss, or restricting the availability of water, nutrients and air to the trees root system by reducing the permeable areas in the TPZ.

The new section of garage will cover less than 15% of the TPZ area of each of trees. An increase of less than 15% new impermeable surfaces in the TPZ will not significantly restrict the availability of water, nutrients and air to the trees root system and will therefore not impact the trees.

To minimise root loss in the TPZ of the trees, the footings of garage are proposed to be pier and beam/concrete raft footings to bridge over the trees root system and minimise root loss. The proposed engineering drawings a proposed pier layout plan. To assess the impact of the proposed piers, Urban Arbor carried out root investigations in the location of the proposed piers, see appendix 4 for the root investigations report. The root investigation were not carried out for piers within the footprint of the existing garage.

During the root investigations, significant roots from the subject trees were only identified within one of the pier holes (pier 2), which is the pier located closest to tree 2, the pier hole is within the TPZ of tree 1 and 2. To avoid impacting the trees, the three roots within this location should be retained, the roots are located on the edge of the pier hole, the pier location should be re-positioned to avoid the roots. Providing that these three roots are retained, the construction of the piers will not result in significant root impact to loss and will therefore not significantly impact the trees.

New stairs are proposed that will access the garage in the TPZ of tree 1 and 2. The stairs are also located in the SRZ of tree 2. To avoid impacting the root system of the

trees, the stairs are proposed to be cantilevered off the garage (no excavations required).
Providing that the construction of the garage is carried out in accordance with following points and section 11, tree 1, 2, 3 and 4 can be retained in a viable condition;

- All excavations for piers must be carried out manually under the supervision of the project Arborist (see section 11 for detail of manual excavation and project Arborist).
- All roots greater than 40mm in diameter must be retained.
- Cross beams/slabs and the retaining wall adjacent to the North must be located on or above the existing soil grades. Excavation is only permitted for the piers identified on the engineering drawings referenced in section 1of this report.
- The piers should be located a minimum of 100mm from any root that is greater than 40mm in diameter.
- The proposed stairs in the TPZ of tree 1 and 2 must cantilever off the garage structure.

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9.3 Canopy Pruning Tree 2: Canopy pruning will be required to accommodate the new building. The following pruning is required;

- Reduce first order branch to South at 3.5 metres above ground level in length 4 metres to upright branch (image 1). The final pruning cut will measure approximately 120mm in diameter.

The pruning specified above will result in removing less than 5% of the overall live crown. The pruning will not adversely impact the condition of the tree. The pruning is therefore considered minor and acceptable. All pruning can and must be carried out in accordance with section 7.2.4 of AS4373-2007 for selective pruning.[8] The final pruning cut must be to the branch collar/union.

Image 1: Looking East from Whites Creek Lane. The yellow dashed line indicates the section of branch to be removed. The red line indicates that approximate location of the final pruning cut.

9.4 Canopy Pruning Tree 3: Canopy pruning will be required to accommodate the new building. The following pruning is required;

- Remove second order branch to West at 7 metres above ground level (image 2). The final pruning cut will measure approximately 80mm in diameter.

[8] Council Of Standards Australia, *AS 4373 Pruning of amenity trees* (2007) page 14.

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The pruning specified above will result in removing less than 5% of the overall live crown. The pruning will not adversely impact the condition of the tree. The pruning is therefore considered minor and acceptable. All pruning can and must be carried out in accordance with section 7.2.4 of AS4373-2007 for selective pruning.[9] The final pruning cut must be to the branch collar/union.

Image 2: Looking South West from the rear garden of the site. The yellow dashed line indicates the section of branch to be removed. The red line indicates that approximate location of the final pruning cut.

9.5 Canopy Pruning Tree 4: Canopy pruning will be required to accommodate the new building. The following pruning is required;

- Remove stem to North at 1.5 metres above ground level. The final pruning cut will measure approximately 170mm in diameter.

The pruning specified above will result in removing approximately 15% of the overall live crown. This considered major pruning as more than 10% of the overall live crown will be removed, however the required pruning will not significantly impact the trees condition or reduce the trees useful life expectancy and is therefore acceptable. The tree is located in an adjoining property. All pruning can and must be carried out in accordance with section 7.2.4 of AS4373-2007 for selective pruning.[10] The final pruning cut must be to the branch collar/union.

[9] Council Of Standards Australia, *AS 4373 Pruning of amenity trees* (2007) page 14.

[10] Council Of Standards Australia, *AS 4373 Pruning of amenity trees* (2007) page 14.

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Image 3: Looking West, the existing garage is to the right of the photo. The yellow dashed line indicates the section of branch to be removed. The red line indicates that approximate location of the final pruning cut.

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10. RECOMMENDATIONS

10.1 This report assesses the impact of a proposed development at the subject site to all significant trees located inside or adjoining the site. Five trees have been identified and assessed.

10.2 In appendix 1 two site plans have been prepared, where the tree information including canopy spread, TPZ and SRZ have been overlaid onto the site plans. The following plans are included in appendix 1;

- Appendix 1A: Existing Site Plan
- Appendix 1B: Proposed Site Plan

10.3 All trees assessed in this report can be retained in viable condition. To minimise the impact to tree 1, 2, 3 and 4, the construction of the proposed garage must be tree sensitive and in accordance with the following points;

- All excavations for piers must be carried out manually under the supervision of the project Arborist (see section 11 for detail of manual excavation and project Arborist).
- All roots greater than 40mm in diameter must be retained.
- Cross beams/slabs and the retaining wall adjacent to the North must be located on or above the existing soil grades. Excavation is only permitted for the piers identified on the engineering drawings referenced in section 1 of this report.
- The piers should be located a minimum of 100mm from any root that is greater than 40mm in diameter.
- The proposed stairs in the TPZ of tree 1 and 2 must cantilever off the garage structure.

10.4 Canopy pruning is required for tree 2, 3 and 4 to accommodate the development works, see section 9 for pruning specifications. All pruning can and must be carried out in accordance with section 7.2.4 of AS4373-2007 for selective pruning. One of trees (tree 4) is located in an adjoining site.

10.5 All trees to be retained must be protected in accordance with AS4970-2009, details of which are included in section 11.

10.6 No landscape plan has been assessed in this report. See section 12.10 for general guidance in relation to minimising the impact of proposed landscaping to retained trees.

10.7 No services plan has been assessed in this report, all services plans should be subject to review by a consulting Arborist. Where possible underground services should be located outside the TPZ of trees to be retained. All underground services located inside the TPZ of any tree to be retained must be installed via tree sensitive techniques in accordance with AS4970-2009, see section 12.11 for more information.

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10.8 This report does not provide approval for tree removal or pruning works. All recommendations in this report are subject to approval by the relevant authorities and/or tree owners. This report should be submitted as supporting evidence with the development application.

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11. TREE PROTECTION REQUIREMENTS

11.1 **Use of this report:** All contractors must be made aware of the tree protection requirements prior to commencing works at the site. This report and a copy of the site plans (Appendix 1) drawing must also be made available to any contractor prior to works commencing and during any on site operations.

11.2 **Project Arborist:** Prior to any works commencing at the site a project Arborist should be appointed. The project Arborist should be qualified to a minimum AQF level 5 and/or equivalent qualifications and experience, and should assist with any development issues relating to trees that may arise. If at any time it is not feasible to carryout works in accordance with this, an alternative must be agreed in writing with the project Arborist.

11.3 **Tree work:** All tree work should be carried out by a qualified and experienced Arborist with a minimum of AQF level 3 in arboriculture, in accordance with NSW Work Cover Code of Practice for the Amenity Tree Industry (1998) and AS4373 Pruning of amenity trees (2007).

11.4 **Initial site meeting/on-going regular inspections:** The project Arborist is to hold a pre-construction site meeting with principle contractor to discuss methods and importance of tree protection measures and resolve any issues in relation to tree protection that may arise. In accordance with AS4970-2009, the project Arborist should carryout regular site inspections to ensure works are carried out in accordance with this document throughout the development process. Site inspections are recommended on a monthly frequency throughout the development.

11.5 **Site Specific Tree Protection Recommendations:** It is the responsibility of the principle contractor to install tree protection prior to works commencing at the site (prior to demolition works) and to ensure that the tree protection remains in adequate condition for the duration of the development. The tree protection must not be moved without prior agreement of the project Arborist. The project Arborist must inspect that the tree protection has been installed in accordance with this document and AS4970-2009 prior to works commencing. See section 11.6 for requirements of tree protection.

- Tree 1, 2 and 3: Protective fencing will not be practical while allowing space for construction traffic to access the rear of the site. Trunk protection should be installed on each of the trees. Ground protection should be installed in any area of the TPZ in the back garden that will be used for access by construction traffic (except areas covered by existing hard surfaces that will not be demolished).
- Tree 4: No tree protection required, the boundary fence will provide adequate protection.
- Tree 5: No tree protection required. No development works are proposed near to the tree.

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11.6 **Tree Protection Specifications:**

11.6.1 Protective fencing: The protective fencing must be constructed of 1.8 metre 'cyclone chainmesh fence'. The fencing should only be removed for the landscaping phase and this should be approved by the project Arborist. Where it is not feasible to install fencing at the specified location due to factors such restricting access to areas of the site or for constructing new structures, an alternative location and protection specification must be agreed with the project Arborist. Any modifications to the fencing locations must be approved by the project Arborist.

11.6.2 TPZ signage: Tree protection signage is to be attached to the protective fencing, displayed in a prominent position and the sign repeated at 10 metres intervals or closer where the fence changes direction. Each sign shall contain in a clearly legible form, the following information:

- Tree protection zone/No access.
- This fence has been installed to prevent damage to the tree/s and their growing environment both above and below ground. Do not move fencing or enter TPZ without the agreement of the project Arborist.
- The name, address, and telephone number of the developer/builder and project Arborist

11.6.3 Trunk and Branch Protection: The trunk must be protected by wrapped hessian or similar material to limit damage. Timber planks (50mm x 100mm or similar) should then be placed around tree trunk. The timber planks should be spaced at 100mm intervals, and must be fixed against the trunk with tie wire, or strapping and connections finished or covered to protect pedestrians from injury. The hessian and timber planks must not be fixed to the tree in any instance. The trunk and branch protection shall be installed prior to any work commencing on site and shall be maintained in good condition for the entire development period.

11.6.4 Mulch: Any areas of the TPZ located inside the subject site must be mulched to a depth of 75mm with good quality mulch. Mulch must not be built-up around the trunk the trees as it can cause collar rot.

11.6.5 Ground Protection: Ground protection is required to protect the underlying soil structure and root system in areas where it is not practical to restrict access to whole TPZ, while allowing space for construction. Ground protection must consist of good quality composted wood chip/leaf mulch to a depth of between 150-300mm, laid on top of geo textile fabric, with timber/plywood boards overlaid. If vehicles are to be using the area, additional protection will be required such as rumble boards or track mats to spread the weight of the vehicle and avoid load points. Ground protection is to be specified and approved by the project Arborist as required.

11.6.6 Temporary irrigation: Temporary irrigation should distribute water evenly throughout the area of the TPZ. The irrigation should be used for at minimum one hour daily throughout all stages of the development.

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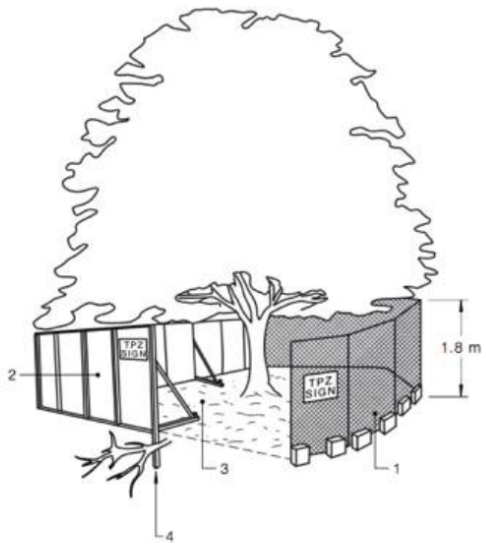
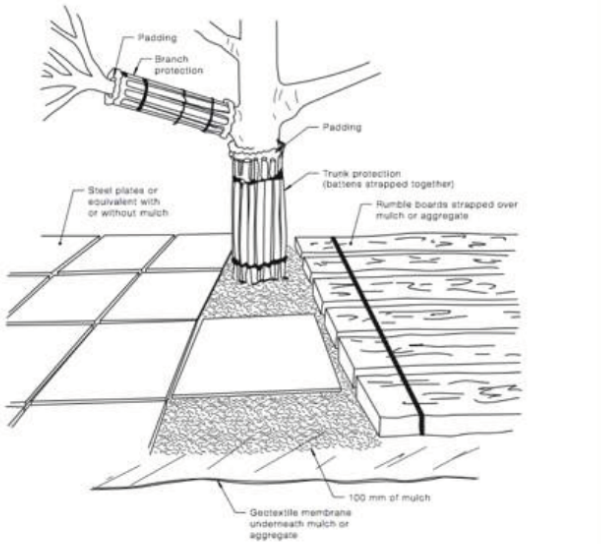


LEGEND:
1 Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
2 Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
3 Mulch installation across surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.
4 Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

An image from AS4970-2009,[11] with example tree protection.

[11] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009), page 16.



NOTES:
1 For trunk and branch protection use boards and padding that will prevent damage to bark. Boards are to be strapped to trees, not nailed or screwed.
2 Rumble boards should be of a suitable thickness to prevent soil compaction and root damage.

An image from AS4970-2009,[12] with example tree protection.

11.7 **Restricted activities inside TPZ:** The following activities must be avoided inside the TPZ of all trees to be retained unless approved by the project Arborist. If at any time these activities cannot be avoided an alternative must be agreed in writing with the project Arborist to minimise the impact to the tree.

A) Machine excavation.
B) Ripping or cultivation of soil.
C) Storage of spoil, soil or any such materials
D) Preparation of chemicals, including preparation of cement products.
E) Refuelling.
F) Dumping of waste.
G) Wash down and cleaning of equipment.
H) Placement of fill.
I) Lighting of fires.
J) Soil level changes.
K) Any physical damage to the crown, trunk, or root system.
L) Parking of vehicles.

[12] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009), page 17.

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11.8 **Demolition:** The demolition of all existing structures inside or directly adjacent to the TPZ of trees to be retained must be undertaken in consultation with the project Arborist. Any machinery is to work from inside the footprint of the existing structures or outside the TPZ, reaching in to minimise soil disturbance and compaction. If it is not feasible to locate demolition machinery outside the TPZ of trees to be retained, ground protection will be required. The demolition should be undertaken inwards into the footprint of the existing structures, sometimes referred to as the 'top down, pull back' method.

11.9 **Excavations:** The project Arborist must supervise and certify that all excavations and root pruning are in accordance with AS4373-2007 and AS4970-2009. For continuous strip footings, first manual excavation is required along the edge of the structures closest to the subject trees. Manual excavation should be a depth of 1 metre (or to unfavourable root growth conditions such as bed rock or heavy clay, if agreed by project Arborist). Next roots must be pruned back in accordance with AS4373-2007. After all root pruning is completed, machine excavation is permitted within the footprint of the structure. For tree sensitive footings, such as pier and beam, all excavations inside the TPZ must be manual. Manual excavation may include the use of pneumatic and hydraulic tools, high-pressure air or a combination of high-pressure water and a vacuum device. No pruning of roots greater 30mm in diameter is to be carried out without approval of the project arborist. All pruning of roots greater than 30mm in diameter must be carried out by a qualified Arborist/Horticulturalist with a minimum AQF level 3. Root pruning is to be a clean cut with a sharp tool in accordance with AS4373 Pruning of amenity trees (2007).[13] The tree root is to be pruned back to a branch root if possible. Make a clean cut and leave as small a wound as possible.

11.10 **Landscaping:** All landscaping works within the TPZ of trees to be retained are to be undertaken in consultation with a consulting Arborist to minimize the impact to trees. General guidance is provided below to minimise the impact of new landscaping to trees to be retained.

- Replacement planting for all trees recommended for removal should be incorporated into the landscape plan. It is recommended that at minimum one tree for each tree proposed to be removed are planted to maintain/increase overall canopy cover at the site when mature. Any replacement tree must be selected in accordance with AS2303-2015 Tree stock for landscape use.
- The location of new plantings inside the TPZ of trees to be retained should be flexible to avoid unnecessary damage to tree roots greater than 30mm in diameter.
- Level changes should be minimised. The existing ground levels within the landscape areas should not be lowered by more than 50mm or increased by more 100mm without assessment by a consulting Arborist.

[13] Council Of Standards Australia, *AS 4373 Pruning of amenity trees* (2007) page 18

- New retaining walls should be avoided. Where new retaining walls are proposed inside the TPZ of trees to be retained, they should be constructed from tree sensitive material, such as timber sleepers, that require minimal footings/excavations. If brick retaining walls are proposed inside the TPZ, considerer pier and beam type footings to bridge significant roots that are critical to the trees condition. Retaining walls must be located outside the SRZ and sleepers/beams located above existing soil grades.
- New footpaths and hard surfaces should be minimised, as they can limit the availability of water, nutrients and air to the trees root system. Where they are proposed, they should be constructed on or above existing soil grades to minimise root disturbance and consider using a permeable surface. Footpath should be located outside the SRZ.
- Where fill/sub base is used inside the TPZ, fill material should be a coarse granular material that does not restrict the flow of water and air to the root system below. This type of material will also reduce the impact of soil compaction during construction.

11.11 **Underground Services:** Where possible underground services should be located outside the TPZ of trees to be retained. All underground services located inside the TPZ of any tree to be retained must be installed via tree sensitive techniques. This should include either directional drilling methods or manual excavations to minimise the impact to trees identified for retention. No roots greater than 30mm in diameter should be severed during the installation of service pipes unless approved in writing by the project Arborist.

11.12 **Sediment and Contamination:** All contamination run off from the development such as but not limited to concrete, sediment and toxic wastes must be prevented from entering the TPZ at all times.

11.13 **Tree Wounding/Injury:** Any wounding or injury that occurs to a tree during the construction process will require the project Arborist to be contacted for an assessment of the injury and provide mitigation/remediation advice. It is generally accepted that trees may take many years to decline and eventually die from root damage. All repair work is to be carried out by the project Arborist, at the contractor's expense.

11.14 **Completion of Development Works:** After all construction works are complete the project Arborist should assess that the subject trees have been retained in the same condition and vigour. If changes to condition are identified the project Arborist should provide recommendations for remediation.

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12. CONSTRUCTION HOLD POINTS FOR TREE PROTECTION

12.1 **Hold Points:** Below is a sequence of hold points requiring project Arborist certification throughout the development process. It provides a list of hold points that must be checked and certified. All certification must be provided in written format upon completion of the development. The final certification must include details of any instructions for remediation undertaken during the development. The principle contractor should be responsible for implemented all tree protection requirements.

Hold Point	Stage	Date Completed and Signature of Project Arborist Responsible
Project Arborist to hold pre construction site meeting with principle contractor to discuss methods and importance of tree protection measures and resolve any issues in relation to feasibility of tree protection requirements that may arise. Project Arborist to mark all trees approved for removal under DA consent.	Prior to development work commencing	
Project Arborist to assess and certify that tree protection has been installed in accordance with AS4970-2009 prior to works commencing at site.	Prior to development work commencing.	
In accordance with AS4970-2009 the project arborist should carryout regular site inspections to ensure works are carried out in accordance with the recommendations. Site inspections are recommended on a monthly frequency.	On-going throughout the development	
The removal of existing structures inside the TPZ of any tree to be retained, such as the existing buildings and hard surfaces must be supervised by the project Arborist.	Demolition	
Project Arborist to supervise all manual excavations and root pruning inside the TPZ of any tree to be retained. Project Arborist to approve all pruning of roots greater than 30mm inside TPZ. All root pruning of roots greater than 30mm in diameter must be carried out by a qualified Arborist/Horticulturalist with a minimum AQF level 3.	Construction	
Project Arborist to certify that all underground services including storm water inside TPZ of any tree to be retained have been installed in accordance with AS4970-2009.	Construction	
Project Arborist to approve relocation of tree protection for landscaping. All landscaping works within the TPZ of trees to be retained are to be undertaken in consultation with the project Arborist to minimise the impact to trees.	Construction/ Landscape	
After all demolition, construction and landscaping works are complete the project Arborist should assess that the subject trees have been retained in the same condition and vigour. If changes to condition are identified the project Arborist should provide recommendations for remediation.	Upon completion of development	

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13. BIBLIOGRAPHY/REFERENCES

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14. LIST OF APPENDICES

The following are included in the appendices:

- Appendix 1A: Existing Site Plan
- Appendix 1B: Proposed Site Plan
- Appendix 2: Tree Inspection Schedule
- Appendix 3: Further Information of Methodology
- Appendix 4: Root Investigations Report

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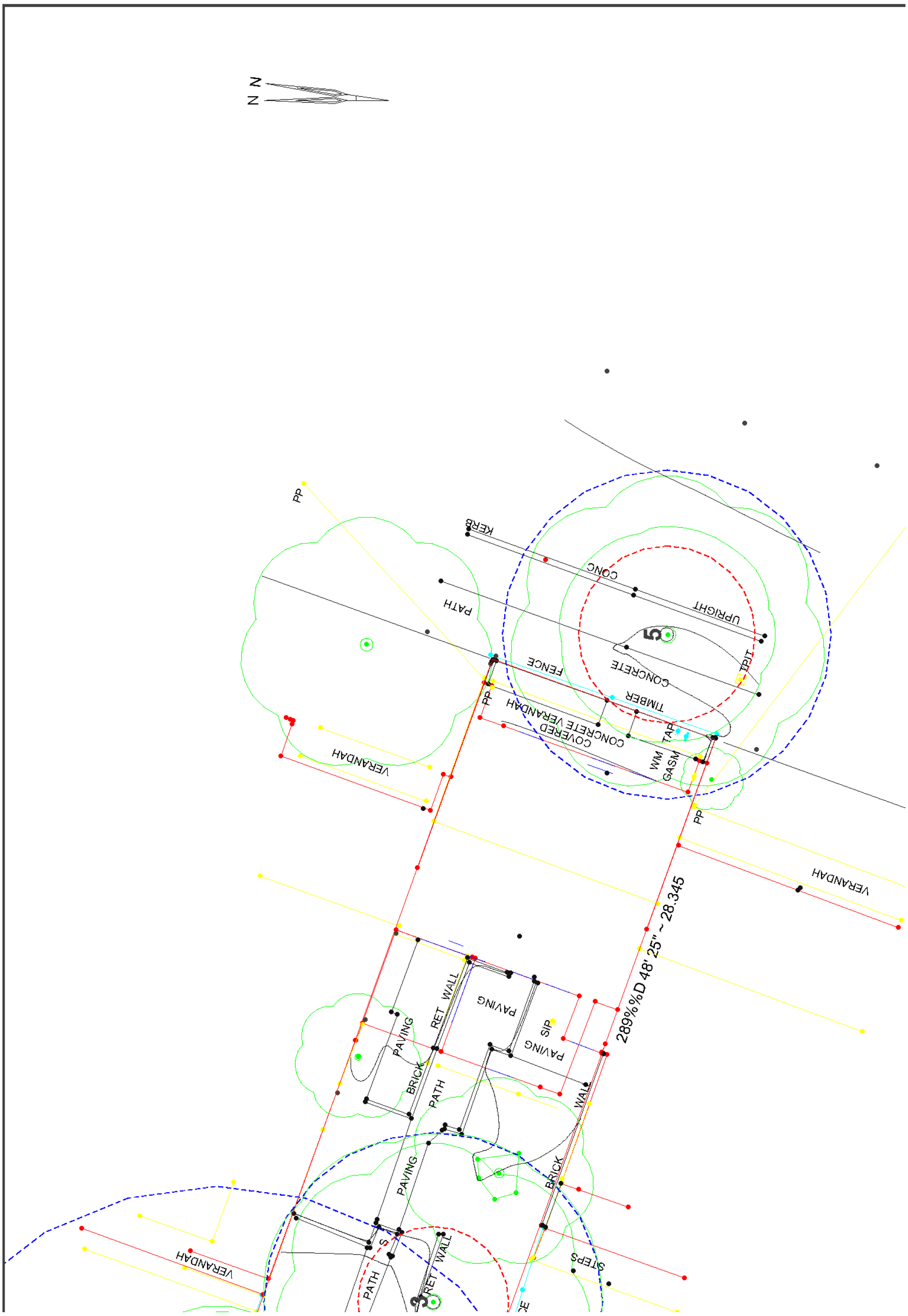
N
KERB
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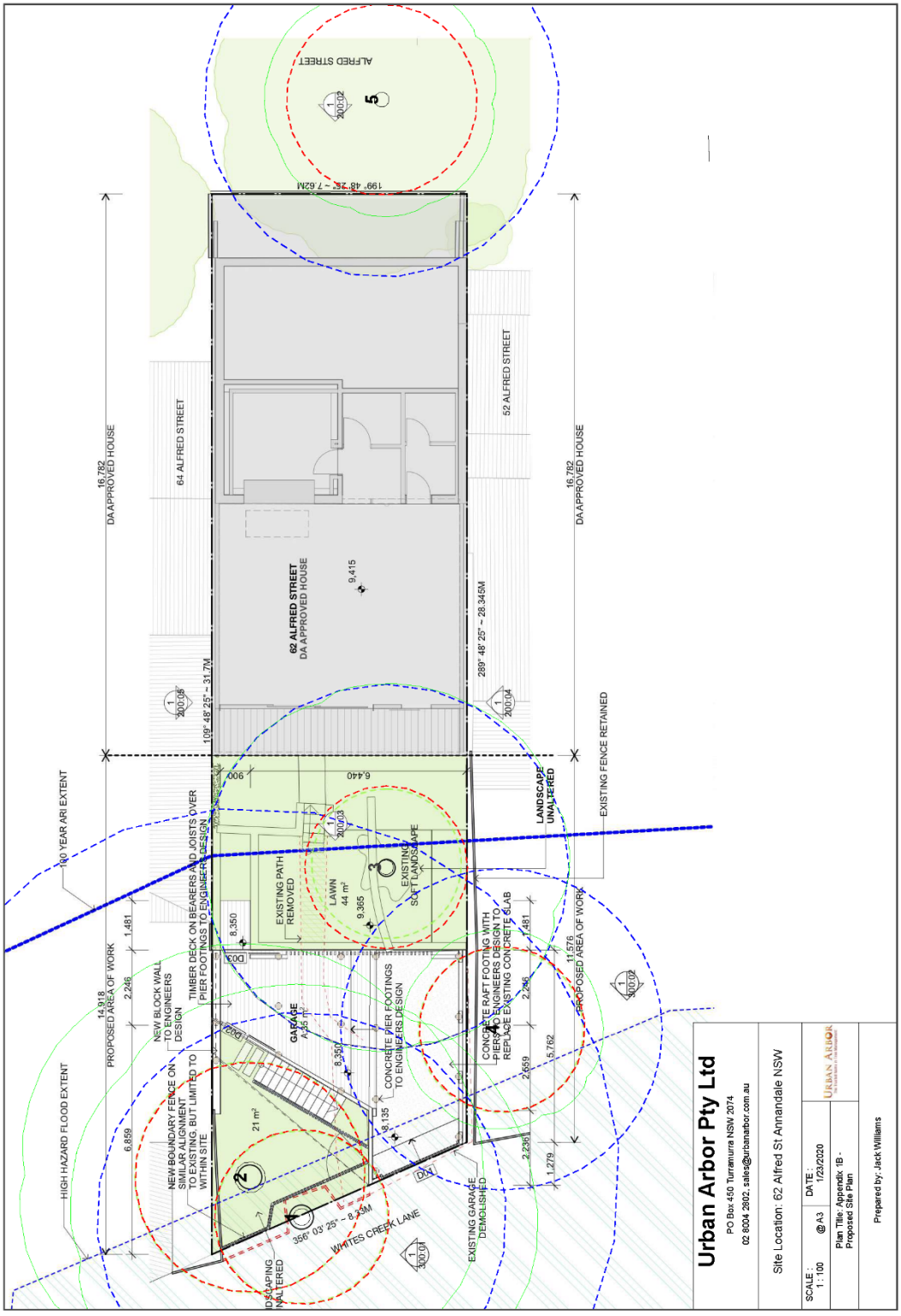
289%%D 48' 25" ~ 28.345
PAVING
RET WALL
SIP
BRICK
PATH
WALL
STEPS


ALFRED STREET
199° 48' 25" ~ 7.62M
64 ALFRED STREET
52 ALFRED STREET
62 ALFRED STREET
DA APPROVED HOUSE
16.782
DA APPROVED HOUSE
16.782
DA APPROVED HOUSE
289° 48' 25" ~ 28.345M
109° 48' 25" ~ 31.7M
9,415
6,440
100 YEAR ARI EXTENT
HIGH HAZARD FLOOD EXTENT
PROPOSED AREA OF WORK
14.918
PROPOSED AREA OF WORK
11.576
LANDSCAPE UNALTERED
EXISTING FENCE RETAINED
EXISTING PATH REMOVED
LAWN 44 m²
9,365
EXISTING SOFT LANDSCAPE
TIMBER DECK ON BEARERS AND JOISTS OVER PIER FOOTINGS TO ENGINEERS DESIGN
NEW BLOCK WALL TO ENGINEERS DESIGN
NEW BOUNDARY FENCE ON SIMILAR ALIGNMENT TO EXISTING, BUT LIMITED TO WITHIN SITE
GARAGE
CONCRETE PIER FOOTINGS TO ENGINEERS DESIGN
CONCRETE RAFT FOOTING WITH PIERS WHERE REQUIRED TO REPLACE EXISTING CONCRETE SLAB
21 m²
356° 03' 25" ~ 8.23M
WHITES CREEK LANE
EXISTING GARAGE DEMOLISHED
LANDSCAPING UNALTERED
Urban Arbor Pty Ltd
PO Box 450 Turramurra NSW 2074
02 8004 2802 sales@urbanarbor.com.au
Site Location: 62 Alfred St Annandale NSW
SCALE: 1 : 100
@ A3
DATE: 1/23/2020
Plan Title: Appendix 1B - Proposed Site Plan
Prepared by: Jack Williams

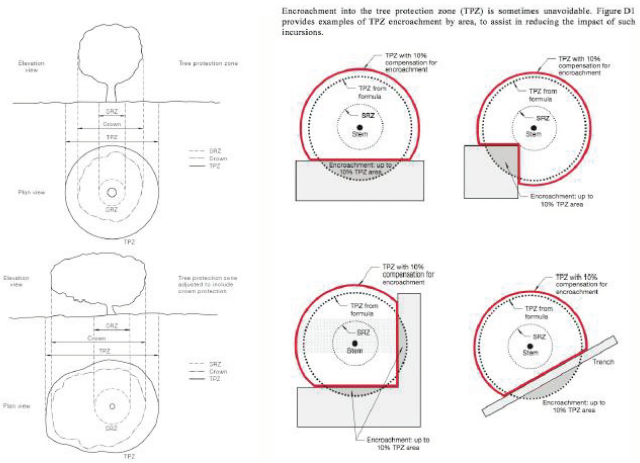
Appendix 2 - Tree Inspection Schedule

Tree ID	Common Name	Botanical Name	Age Class	Height (m)	Canopy Spread Radius (m)	Stem 1	Stem 2	Stem 3	DBH (mm)	DAB (mm)	Health	Structure	Amenity Value	SULE	Retention Value	TPZ Radius (m)	SRZ Radius (m)	Notes
1	Lemon Scented Gum	*Corymbia citriodora*	Mature	14	7	510			510	570	Good	Fair	High	2. Medium	A2	6.1	2.6	Asymmetric crown shape, weighted to West.
2	Flooded Gum	*Eucalyptus grandis*	Mature	31	7	920			920	1100	Good	Good	Very High	1. Long	A1	11.0	3.4	Asymmetric crown shape, weighted to South West. Several primary branches to the North East have been removed during previous pruning.
3	Jacaranda	*Jacaranda mimosifolia*	Mature	13	5.5	350	290		455	480	Good	Good	High	1. Long	A1	5.5	2.4	Asymmetric crown shape, weighted to East.
4	Weeping Bottlebrush	*Callistemon viminalis*	Mature	8	3	400			400	500	Good	Good	Medium	1. Long	A1	4.8	2.5	Located in adjoining property.
5	Weeping Bottlebrush	*Callistemon viminalis*	Mature	8	3.5	240	260	230	442	700	Good	Good	Medium	1. Long	A1	5.3	2.8	Street tree.

Explanatory Notes
Tree Species - Botanical name followed by common name in brackets. Where species is unknown it is indicated with an '*spp*'.
Age Class - Over mature (OM), Mature (M), Early mature (EM), Semi mature (SM), Young (Y).
Diameter at Breast Height (DBH) - Measured with a DBH tape or estimated at approximately 1.4m above ground level.
Diameter Above root Buttresses (DAB): Measured with a DBH tape or estimated above root buttresses (DAB) for calculating the SRZ.
Height - Height from ground level to top of crown. All heights are estimated unless otherwise indicated.
Spread - Radius of crown at widest section. All tree spreads are estimated unless otherwise indicated.
Tree Protection Zone (TPZ) - DBH x 12. Measured in radius from the centre of the trunk. Rounded to nearest 0.1m. For monocots, the TPZ is set at 1 metre outside the crown projection.
Structural Root Zone (SRZ) - (DAB x 50) $^{0.42}$ x 0.64. Measured in radius from the centre of the trunk. Rounded up to nearest 0.1m.
Health - Good/Fair/Poor/Dead
Structure - Good/Fair/Poor
Safe Useful Life Expectancy (SULE) - 1. Long (40 +years), 2. Medium (15 - 40 years), 3. Short (5 - 15 years), 4. Remove (under 5 years), 5. Small/young.
Amenity Value - Very High/High/Medium/Low/Very Low.
Retention Value-Tree A-Z, see appendix 3 for categories.

Appendix 3 - Further Information of Methodology

1. **Tree Protection Zone:** The tree protection zone (TPZ) is the principle means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable. The radius of the TPZ is calculated for each tree by multiplying its DBH x 12. The derived value is measured in radius from the centre of the stem/trunk at ground level. A TPZ should not be less than 2.0 metres nor greater than 15 metres (except where crown protection is required).
It is commonly observed that tree roots will extend significant further than the indicative TPZ, however the TPZ is an area identified AS4970-2009 to be extent where root loss or disturbance will generally not impact the viability of the tree. The TPZ is identified as a restricted area to prevent damage to trees either above or below ground during a development. Where trees are intended to be retained proposed developments must provide an adequate TPZ around trees. The TPZ is set aside for the tree's root zone, trunk and crown and it is essential for the stability and longevity of the tree. The tree protection also incorporates the SRZ (see below for more information about the SRZ). I have calculated the TPZ of palms, other monocots, cycads and tree ferns at one metre outside the crown projection. See appendices for additional information about the TPZ including information about calculating the TPZ and examples of TPZ encroachment.
Minor encroachment into TPZ: Sometimes encroachment into the TPZ is unavoidable. Encroachment includes but is not limited to activities such as excavation, compacted fill and machine trenching. Minor encroachment of up to 10% of the overall TPZ area is normally considered acceptable, providing there is space adjacent to the TPZ for the tree to compensate and the tree is displaying adequate vigour/health to tolerate changes to its growing environment.
Major encroachment into TPZ: Where encroachment of more than 10% of the overall TPZ area is proposed the project Arborist must investigate and demonstrate that the tree will remain in a viable condition. In some cases, tree sensitive construction methods such as pier and beam footings, suspended slabs, or cantilevered sections, can be utilised to allow additional encroachment into the TPZ by bridging over roots and minimising root disturbance. Major encroachment is only possible if it can be undertaken without severing significant size roots, or if it can be demonstrated that significant roots will not be impacted.



2. **Structural Root Zone:** This is the area around the base of a tree required for the trees stability in the ground. An area larger than the SRZ always need to be maintained to preserve a viable tree as it will only have a minor effect on the trees vigour and health. There are several factors that determine the SRZ which include height, crown area, soil type and soil moisture. It can also be influenced by other factors such as natural or built structures. Generally work within the SRZ should be avoided.
An indicative SRZ radius can be determined from the diameter of the trunk measured immediately above the root buttresses. Root investigation could provide more information about the extent of the SRZ. The following formula should be used to calculate the SRZ.
SRZ radius = $(D \times 50)^{0.42} \times 0.64$ (D = Diameter above root buttress).

3. **Tree Age Class:** If can be difficult to determine the age of a tree without carrying out invasive tests that may damage the tree, so we have categorised there likely age class which is defined below;
    - Young/Newly planted: Young or recently plantedtree.
    - Semi Mature: Up to 20% of the usual life expectancy for the species.
    - Early mature/Mature: Between 20%-80% of the usual life expectancy for the species.
    - Over mature: Over 80% of the usual life expectancy for the species.
    - Dead: Tree is dead or almost dead.

4. **Health/Physiological Condition:** Below are examples conditions used when assigning a category for tree health.

Category	Example condition	Summary
Good	• Crown has good foliage density for species. • Tree shows no or minimal signs of pathogens that are unlikely to have an effect on the health of the tree. • Tree is displaying good vigour and reactive growth development.	• The tree is in above average health and condition and no remedial works are required.
Fair	• The tree may be starting to dieback or have over 25% deadwood. • Tree may have slightly reduced crown density or thinning. • There may be some discolouration of foliage. • Average reactive growth development. • There may be early signs of pathogens which may further deteriorate the health of the tree. • There may be epicormic growth indicating increased levels of stress within the tree.	• The tree is in below average health and condition and may require remedial works to improve the trees health.
Poor	• The may be in decline, have extensive dieback or have over 30% deadwood. • The canopy may be sparse or the leaves may be unusually small for species. • Pathogens or pests are having a significant detrimental effect on the tree health.	• The tree is displaying low levels of health and removal or remedial works may be required.
Dead	• The tree is dead or almost dead.	• The tree should generally be removed.

5. **Structural Condition:** Below are examples conditions used when assigning a category for structural condition.

Category	Example condition	Summary
Good	• Branch unions appear to be strong with no sign of defects. • There are no significant cavities. • The tree is unlikely to fail in usual conditions. • The tree has a balanced crown shape and form.	• The tree is considered structurally good with well developed form.
Fair	• The tree may have minor structural defects within the structure of the crown that could potentially develop into more significant defects. • The tree may a cavity that is currently unlikely to fail but may deteriorate in the future. • The tree is an unbalanced shape or leans significantly. • The tree may have minor damage to its roots. • The root plate may have moved in the past but the tree has now compensated for this. • Branches may be rubbing or crossing.	• The identified defects are unlikely cause major failure. • Some branch failure may occur in usual conditions. • Remedial works can be undertaken to alleviate potential defects.
Poor	• The tree has significant structural defects. • Branch unions may be poor or weak. • The tree may have a cavity or cavities with excessive levels of decay that could cause catastrophic failure. • The tree may have root damage or is displaying signs of recent movement. • The tree crown may have poor weight distribution which could cause failure.	• The identified defects are likely to cause either partial or whole failure of the tree.

6. **Amenity Value:** To determine the amenity value of a tree we assess a number of different factors, which include but are not limited to the information below.
   - The visibility of the tree to adjacent sites.
   - The relationship between the tree and the site.
   - Whether the tree is protected by any statuary conditions.
   - The habitat value of the tree.
   - Whether the tree is considered a noxious weed species.

   The amenity value is rated using one of the following values.
   - Very High
   - High
   - Moderate
   - Low
   - Very Low

7. **Safe Useful Life Expectancy (SULE), (Barrel, 2001):** A trees safe useful life expectancy is determined by assessing a number of different factors including the health and vitality, estimated age in relation to expected life expectancy for the species, structural defects, and remedial works that could allow retention in the existing situation.

Category	Description
1. Long - Over 40 years	(a) Structurally sound trees located in positions that can accommodate future growth. (b) Trees that could be made suitable for retention in the long term by remedial tree care. (c) Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long term retention.
2. Medium - 15 to 40 years	(a) Trees that may only live between 15 and 40 more years. (b) Trees that could live for more than 40 years but may be removed for safety or nuisance reasons. (c) Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting. (d) Trees that could be made suitable for retention in the medium term by remedial tree care.
3. Short - 5 to 15 years	(a) Trees that may only live between 5 and 15 more years. (b) Trees that could live for more than 15 years but may be removed for safety or nuisance reasons. (c) Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting. (d) Trees that require substantial remedial tree care and are only suitable for retention in the short term.
4. Remove - Under 5 years	(a) Dead, dying, suppressed or declining trees because of disease or inhospitable conditions. (b) Dangerous trees because of instability or recent loss of adjacent trees. (c) Dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form. (d) Damaged trees that are clearly not safe to retain. (e) Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting. (f) Trees that are damaging or may cause damage to existing structures within 5 years. (g) Trees that will become dangerous after removal of other trees for the reasons given in (a) to (f). (h) Trees in categories (a) to (g) that have a high wildlife habitat value and, with appropriate treatment, could be retained subject to regular review.
5. Small/Young	(a) Small trees less than 5m in height. (b) Young trees less than 15 years old but over 5m in height. (c) Formal hedges and trees intended for regular pruning to artificially control growth.

8. **Root investigations:** The root investigations should identify roots greater than 30mm in diameter that are located along the edge of the structures footprint or in the location of footings. Root investigations must be carried out using non-invasive methods, such as manual excavations or ground penetrating radar (GPR). Any excavations for the root investigations must carried out manually to avoid damaging the roots during excavations. Manual excavation may include the use of a high-pressure air/air knife, or a combination of high-pressure water and a vacuum device. When hand excavating carefully work around roots retaining as many as possible. Take care to not fray, wound, or cause damage to any roots during excavations as this may cause decay or infection from pathogens. It is essential that exposed roots are kept moist and the excavation back filled as soon as possible. The root investigations should be carried out by a qualified Arborist minimum AQF3. Once roots are exposed, a visual assessment can be carried out by a consulting Arborist to evaluate the potential impact of the proposed root loss on the health and stability of the tree. A root map/report should be prepared identifying the findings of investigations, including photographs as supporting evidence in the report.

9. **Retention Value:** The system I have used to award the retention value is Tree AZ. Tree AZ is used to identify higher value trees worthy of being a constraint to development and lower value trees that should generally not be a constraint to the development. The table below provides a brief description of each category.

TreeAZ Categories (Version 10.04-ANZ)

CAUTION: TreeAZ assessments must be carried out by a competent person qualified and experienced in arboriculture. The following category descriptions are designed to be a brief field reference and are not intended to be self-explanatory. They must be read in conjunction with the most current explanations published at www.TreeAZ.com.

Category Z: Unimportant trees not worthy of being a material constraint

Local policy exemptions: Trees that are unsuitable for legal protection for local policy reasons including size, proximity and species	
Z1	Young or insignificant small trees, i.e. below the local size threshold for legal protection, etc
Z2	Too close to a building, i.e. exempt from legal protection because of proximity, etc
Z3	Species that cannot be protected for other reasons, i.e. scheduled noxious weeds, out of character in a setting of acknowledged importance, etc
High risk of death or failure: Trees that are likely to be removed within 10 years because of acute health issues or severe structural failure	
Z4	Dead, dying, diseased or declining
Z5	Severe damage and/or structural defects where a high risk of failure cannot be satisfactorily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, overgrown and vulnerable to adverse weather conditions, etc
Z6	Instability, i.e. poor anchorage, increased exposure, etc
Excessive nuisance: Trees that are likely to be removed within 10 years because of unacceptable impact on people	
Z7	Excessive, severe and intolerable inconvenience to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. dominance, debris, interference, etc
Z8	Excessive, severe and intolerable damage to property to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. severe structural damage to surfacing and buildings, etc
Good management: Trees that are likely to be removed within 10 years through responsible management of the tree population	
Z9	Severe damage and/or structural defects where a high risk of failure can be temporarily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, vulnerable to adverse weather conditions, etc
Z10	Poor condition or location with a low potential for recovery or improvement, i.e. dominated by adjacent trees or buildings, poor architectural framework, etc
Z11	Removal would benefit better adjacent trees, i.e. relieve physical interference, suppression, etc
Z12	Unacceptably expensive to retain, i.e. severe defects requiring excessive levels of maintenance, etc

NOTE: Z trees with a high risk of death/failure (Z4, Z5 & Z6) or causing severe inconvenience (Z7 & Z8) at the time of assessment and need an urgent risk assessment can be designated as ZZ. ZZ trees are likely to be unsuitable for retention and at the bottom of the categorization hierarchy. In contrast, although Z trees are not worthy of influencing new designs, urgent removal is not essential and they could be retained in the short term, if appropriate.

Category A: Important trees suitable for retention for more than 10 years and worthy of being a material constraint

A1	No significant defects and could be retained with minimal remedial care
A2	Minor defects that could be addressed by remedial care and/or work to adjacent trees
A3	Special significance for historical, cultural, commemorative or rarity reasons that would warrant extraordinary efforts to retain for more than 10 years
A4	Trees that may be worthy of legal protection for ecological reasons (Advisory requiring specialist assessment)

NOTE: Category A1 trees that are already large and exceptional, or have the potential to become so with minimal maintenance, can be designated as AA at the discretion of the assessor. Although all A and AA trees are sufficiently important to be material constraints, AA trees are at the top of the categorization hierarchy and should be given the most weight in any selection process.

TreeAZ is designed by Barrell Tree Consultancy (www.barrelltreecare.co.uk) and is reproduced with their permission

Glossary of Terms

Abiotic - Pertaining to non-living agents; e.g. environmental factors

Adventitious shoots - Shoots that develop other than from apical, axillary or dormant buds; see also 'epicormic'

Anchorage - The system whereby a tree is fixed within the soil, involving cohesion between roots and soil and the development of a branched system of roots which withstands wind and gravitational forces transmitted from the aerial parts of the tree

Bark - A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm; occasionally applied only to the periderm or the phellem

Branch:
• **Primary**. A first order branch arising from a stem
• **Lateral**. A second order branch, subordinate to a primary branch or stem and bearing sub-lateral branches
• **Sub-lateral**. A third order branch, subordinate to a lateral or primary branch, or stem and usually bearing only twigs

Branch collar - A visible swelling formed at the base of a branch whose diameter growth has been disproportionately slow compared to that of the parent stem; a term sometimes applied also to the pattern of growth of the cells of the parent stem around the branch base

Brown-rot - A type of wood decay in which cellulose is degraded, while lignin is only modified

Buckling - An irreversible deformation of a structure subjected to a bending load

Buttress zone - The region at the base of a tree where the major lateral roots join the stem, with buttress-like formations on the upper side of the junctions

Cambium - Layer of dividing cells producing xylem (woody) tissue internally and phloem (bark) tissue externally

Canker - A persistent lesion formed by the death of bark and cambium due to colonisation by fungi or bacteria

Compartmentalisation - The confinement of disease, decay or other dysfunction within an anatomically discrete region of plant tissue, due to passive and/or active defences operating at the boundaries of the affected region

Compressive loading - Mechanical loading which exerts a positive pressure; the opposite to tensile loading

Condition - An indication of the physiological condition of the tree. Where the term 'condition' is used in a report, it should not be taken as an indication of the stability of the tree

Crown/Canopy - The main foliage bearing section of the tree

Crown lifting - The removal of limbs and small branches to a specified height above ground level

Crown thinning - The removal of a proportion of secondary branch growth throughout the crown to produce an even density of foliage around a well-balanced branch structure

Crown reduction/shaping - A specified reduction in crown size whilst preserving, as far as possible, the natural tree shape

DAB (Diameter Above Buttress) - Trunk diameter measured above the root buttress

Defect - In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment

Dieback - The death of parts of a woody plant, starting at shoot-tips or root-tips

Disease - A malfunction in or destruction of tissues within a living organism, usually excluding mechanical damage; in trees, usually caused by pathogenic micro-organisms

Dominance - In trees, the tendency for a leading shoot to grow faster or more vigorously than the lateral shoots; also the tendency of a tree to maintain a taller crown than its neighbours

Dormant bud - An axial bud which does not develop into a shoot until after the formation of two or more annual wood increments; many such buds persist through the life of a tree and develop only if stimulated to do so

Dysfunction - In woody tissues, the loss of physiological function, especially water conduction, in sapwood

DBH (Diameter at Breast Height) - Stem diameter measured at a height of 1.4 metres or the nearest measurable point. Where measurement at a height of 1.4 metres is not possible, another height may be specified

Deadwood - Branch or stem wood bearing no live tissues. Retention of deadwood provides valuable habitat for a wide range of species and seldom represents a threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissues and climbing operations to access deadwood can cause significant damage to a tree. Removal of deadwood is generally recommended only where it represents an unacceptable level of hazard

Epicormic shoot - A shoot having developed from a dormant or adventitious bud and not having developed from a first year shoot

Flush-cut - A pruning cut which removes part of the branch bark ridge and or branch-collar

Girdling root - A root which circles and constricts the stem or roots possibly causing death of phloem and/or cambial tissue

Habit - The overall growth characteristics, shape of the tree and branch structure

Hazard beam - An upwardly curved part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London

Heartwood/false-heartwood - The dead central wood that has become dysfunctional as part of the aging processes and being distinct from the sapwood

Heave - A term mainly applicable to a shrinkable clay soil which expands due to re-wetting after the felling of a tree which was previously extracting moisture from the deeper layers; also the lifting of pavements and other structures by root diameter expansion; also the lifting of one side of a wind-rocked root-plate

Included bark (ingrown bark) - Bark of adjacent parts of a tree (usually forks, acutely joined branches or basal flutes) which is in face-to-face contact

Lever arm - A mechanical term denoting the length of the lever represented by a structure that is free to move at one end, such as a tree or an individual branch

Lignin - The hard, cement-like constituent of wood cells; deposition of lignin within the matrix of cellulose microfibrils in the cell wall is termed Lignification

Lions tailing - A term applied to a branch of a tree that has few if any side-branches except at its end, and is thus liable to snap due to end- loading

Loading - A mechanical term describing the force acting on a structure from a particular source; e.g. the weight of the structure itself or wind pressure

Mycelium - The body of a fungus, consisting of branched filaments (hyphae)

Occlusion - The process whereby a wound is progressively closed by the formation of new wood and bark around it

Pathogen - A micro-organism which causes disease in another organism

Photosynthesis - The process whereby plants use light energy to split hydrogen from water molecules, and combine it with carbon dioxide to form the molecular building blocks for synthesizing carbohydrates and other biochemical products

Probability - A statistical measure of the likelihood that a particular event might occur

Pruning - The removal or cutting back of twigs or branches, sometimes applied to twigs or small branches only, but often used to describe most activities involving the cutting of trees or shrubs

Radial - In the plane or direction of the radius of a circular object such as a tree stem

Reactive Growth/Reaction Wood - Production of woody tissue in response to altered mechanical loading; often in response to internal defect or decay and associated strength loss (cf. adaptive growth)

Ring-barking - The removal of a ring of bark and phloem around the circumference of a stem or branch, normally resulting in an inability to transport photosynthetic assimilates below the area of damage. Almost inevitably results in the eventual death of the affected stem or branch above the damage

Root-collar - The transitional area between the stem/s and roots

Sapwood - Living xylem tissues

Soft-rot - A kind of wood decay in which a fungus degrades cellulose within the cell walls, without any general degradation of the wall as a whole

Stem/s - Principle above-ground structural component(s) of a tree that supports its branches

Stress - In plant physiology, a condition under which one or more physiological functions are not operating within their optimum range, for example due to lack of water, inadequate nutrition or extremes of temperature

SRZ (Structural Root Zone) - The area around the bas of the tree required for the trees stability in the ground.

Subsidence - In relation to soil or structures resting in or on soil, a sinking due to shrinkage when certain types of clay soil dry out, sometimes due to extraction of moisture by tree roots

Taper - In stems and branches, the degree of change in girth along a given length

Targets - In tree risk assessment (with slight misuse of normal meaning) persons or property or other things of value which might be harmed by mechanical failure of the tree or by objects falling from it

Topping - In arboriculture, the removal of the crown of a tree, or of a major proportion of it

Transpiration - The evaporation of moisture from the surface of a plant, especially via the stomata of leaves; it exerts a suction which draws water up from the roots and through the intervening xylem cells

TPZ (Tree Protection Zone) - A specified area above and below ground and at a given distance from the trunk set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development.

Understory - This layer consists of younger individuals of the dominant trees, together with smaller trees and shrubs which are adapted to grow under lower light conditions

Veteran tree - Tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. These characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem

Vigour - The expression of carbohydrate expenditure to growth (in trees)

White-rot - A range of kinds of wood decay in which lignin, usually together with cellulose and other wood constituents, is degraded

Wind exposure - The degree to which a tree or other object is exposed to wind, both in terms of duration and velocity

Wind pressure - The force exerted by a wind on a particular object

Windthrow - The blowing over of a tree at its roots

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London

URBAN ARBOR
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Arboricultural Root Investigation Report

Site Location:
62 Alfred Street Annandale NSW

Prepared for:
Saturday Studio

Prepared by: Jack Williams
Urban Arbor Pty Ltd
Ref: 19/11/21/62ASARI
Date prepared: 21 November 2019

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Table of Contents

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1. INTRODUCTION

1.1 Urban Arbor have been instructed by Saturday Studio to carryout root investigations to determine if significant roots are located within an area of proposed construction within the site.

1.2 Below is a list of all documents and information provided to assist in preparing this report;

A) Proposed Plans, Allcastle Homes, Job No. 5656, Sheet 1 to 5, 27 August 2018.
B) Proposed Residence Plan, Allcastle Homes, Job No. 5656, Sheet 1, Issue E, 11 March 2019.
C) Arboricultural Impact Assessment Report, Urban Arbor Pty Ltd, Ref: 18/12/10/24GRH, 10 December 2018.

1.3 The root investigations were carried out on 13 November 2019 and 14 November 2019. Access was available to the subject site and public areas only. All tree data contained in this report has been duplicated from the Arboricultural Impact Assessment by Urban Arbor, dated 21 November 2019.

2. SCOPE OF THE REPORT

2.1 This report has been undertaken to meet the following objectives.

2.1.1 Conduct root investigations to identify if significant woody roots are present in the location of proposed pier footings as per the proposed structural drawings. For the purpose of the investigations, a significant root is a root with a diameter equal to or greater than 40mm.

3. LIMITATIONS

3.1 The observations and recommendations are based on one site inspection. The findings of this report are based on the observations and site conditions at the time of the inspection.

3.2 The report reflects the subject tree as found on the day of inspection. Any changes to the growing environment of the subject tree, or tree management works beyond those recommended in this report may alter the findings of the report. There is no warranty, expressed or implied, that problems or deficiencies relating to the subject tree, or subject site may not arise in the future.

3.3 All diagrams, plans and photographs included in this report are visual aids only, and are not to scale unless otherwise indicated.

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4. METHODOLOGY

4.1 Non-destructive root investigations were undertaken by the means of hand excavation, using digging shovels, small trowels and a digging knife.

4.2 Tree root diameter was measured using a DBH tape or in some cases estimated. The other tools used during the assessment were a nylon mallet, compass, camera, steel tape, wheel tape and a steel probe.

5. OBSERVATIONS

5.1 Root investigations were carried out in the location of ten proposed piers. In appendix 1, a location plan has been prepared that identifies the location of the piers (numbered 1-10 for reference). Images of each pier location are included in section 6.

5.2 The excavations for each pier included excavating 300mm diameter (width) piers holes to a depth of 400-600mm below the existing soil grades.

5.3 Roots were identified in two pier holes only, including pier hole 2 and 10.

5.4 Pier hole 2 is located in the TPZ of tree 1 and 2. Three roots were identified on the edges of pier hole 2 (image 3). Root 1 measures 100mm diameter and is located on the East edge, root 2 measures 60mm diameter and is located in the South edge, and root 3 is 120mm diameter and is located on the South West edge.

5.5 Pier hole 10 is located in the TPZ of tree 2 and 3. One root was identified on the South of pier hole 10 that measures 40mm in diameter (image 11). The root had cambium consistent with and appears to be emanating from an adjacent shrub, not tree 2 or 3.

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6. PHOTOGRAPHS

Image 1: Looking West at the area of the root investigations

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Image 2: Pier hole 1.

Site Address: 62 Alfred St, Annandale, NSW.
Prepared for: Saturday Studio.
Prepared by: Jack Williams, Urban Arbor Pty Ltd, sales@urbanarbor.com.au, (02) 8004 2802.
Date prepared: 21 November 2019.

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Image 3: Pier hole 2.

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Date prepared: 21 November 2019.

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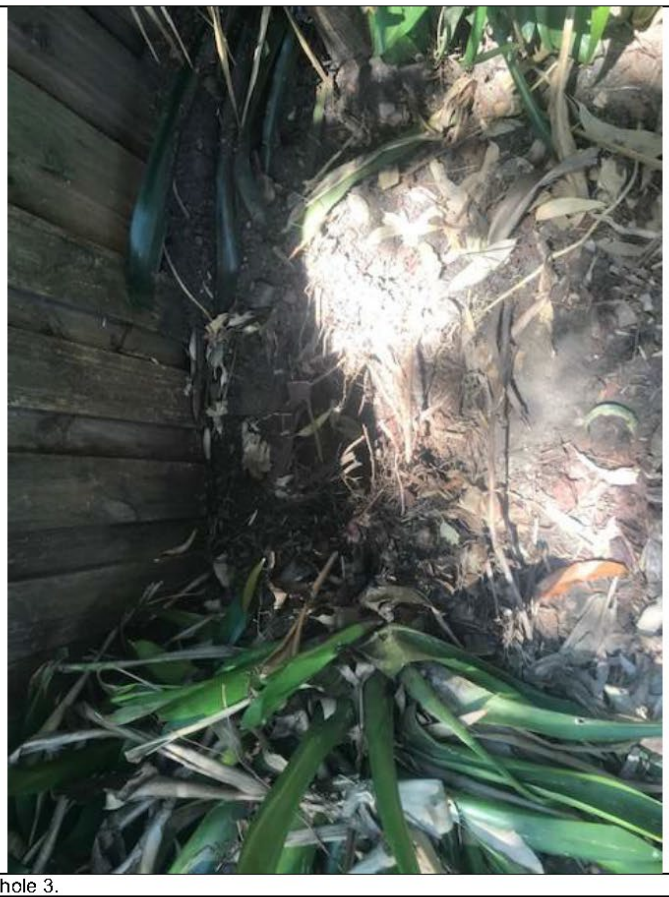

Image 4: Pier hole 3.

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Image 5: Pier hole 4.

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Image 6: Pier hole 5.

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Image 7: Pier hole 6.

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Image 8: Pier hole 7.

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Image 9: Pier hole 8.

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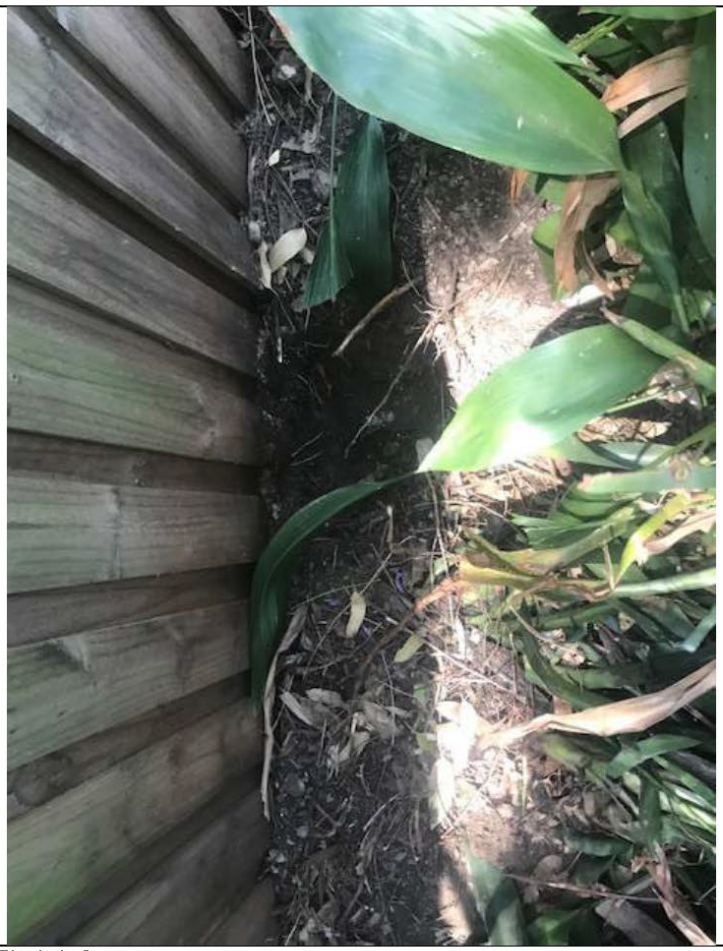

Image 10: Pier hole 9.

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Image 11: Pier hole 10.

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7. BIBLIOGRAPHY/REFERENCES

- Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009).

8. LIST OF APPENDICES

The following are included in the appendices:
Appendix 1: Pier Location Plan

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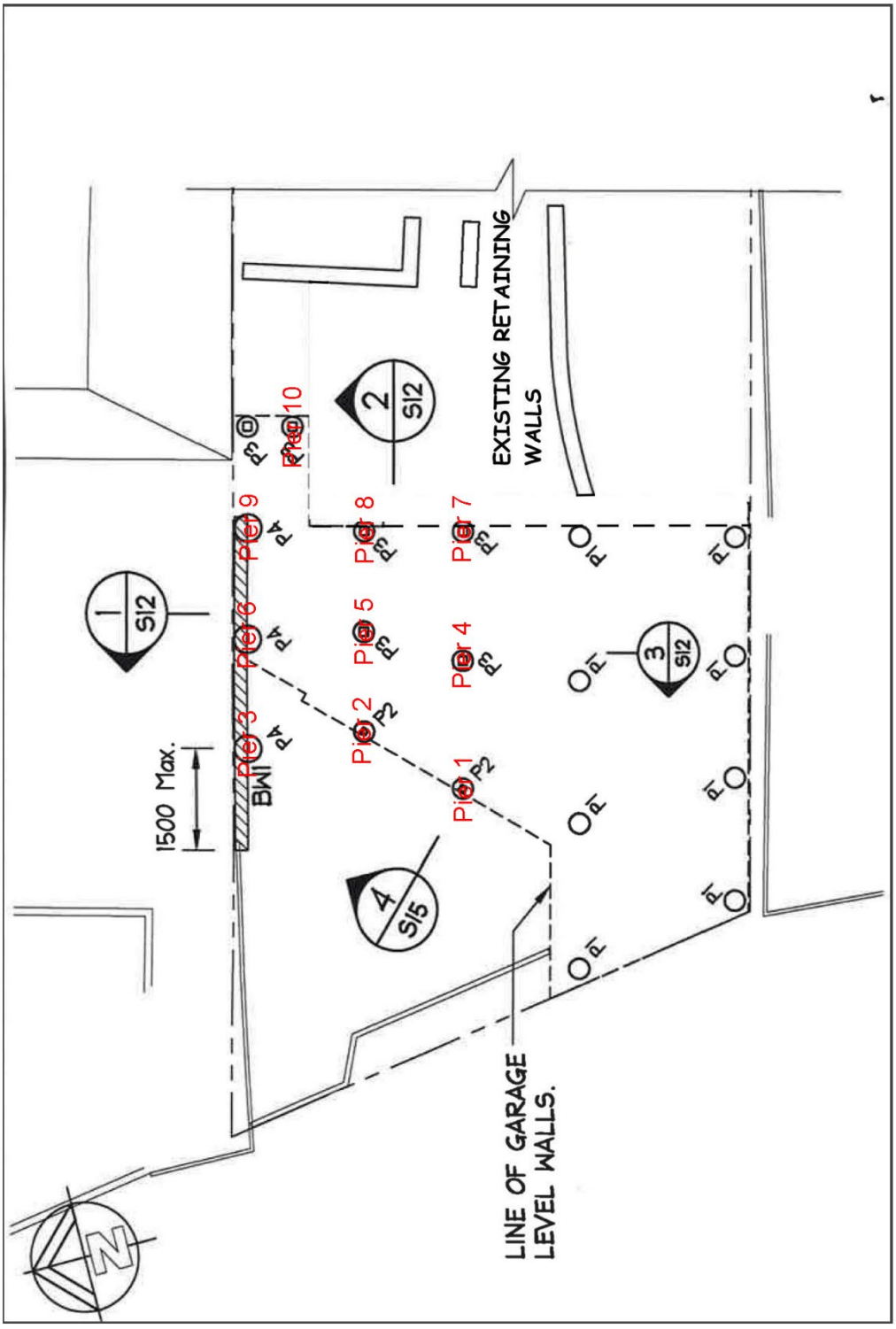
ISA Member No. 228863


EXISTING RETAINING WALLS
LINE OF GARAGE LEVEL WALLS.
1500 Max.
BWIC
Pier 1
Pier 2
Pier 3
Pier 4
Pier 5
Pier 6
Pier 7
Pier 8
Pier 9
Pier 10
1 S12
2 S12
3 S12
4 S15
N

Attachment C – Flood Risk Management Report

DIRECTORS
Stewart McGeady Rick Wray Brad Seghers

FLOOD RISK MANAGEMENT REPORT

Inner West Council (Leichhardt)

Proposed Alterations and Additions

at

62 Alfred Street, ANNANDALE

Job No. 191022

Prepared for: Billie-Bess Harkness

Prepared by: Cameron Haack

Northern Beaches Consulting Engineers Pty Ltd Structural, Civil & Stormwater Engineers ACN 075 121 616 ABN 24 076 121 616
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DIRECTORS
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FLOOD RISK MANAGEMENT REPORT

DATE	31st January 2020
SITE	62 Alfred Street, Annandale
ENGINEER	Cameron Haack
CLIENT	Billie-Bess Harkness
JOB No	191022

INTRODUCTION:

NB Consulting Engineers assessed the plans prepared by *Saturday Studio– dated 27th November 2019* for the proposed additions at the above site address in reference to potential flooding issues. The proposed development generally meets the requirements of Inner West Council (Leichhardt DCP) subject to the recommendations outlined in this flood risk management report.

The premises has been assessed in accordance with the requirements of Leichhardt DCP 2013 (Part E – Water Management), Council's Flood Advice information provided, the Leichhardt Flood Study (2017) and the NSW Government Floodplain Management Manual (2005).

The site is located on Alfred Street in Annandale and backs onto Whites Creek Lane at the rear. This report is in reference to a Development Application for a proposed Garage with a studio over. The development site is located within the vicinity of the overland flow extents (for the 1% AEP flood event) of the flood as predicted in the *Leichhardt Flood Study (2017).*

It should be noted that the *Leichhardt Flood Study (2017)* predicts the 1% AEP flood extends to a maximum onsite level of RL 8.45m AHD and will inundate approximately 40% of the property.

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Below is a summary of flood information in reference to Part E (Water Management) of the Leichhardt DCP and the *NSW Government Floodplain Management Manual* with reference to the 1% AEP storm event.

FLOOD RISK REPORT:

- Flood Hazard — High
- 1% AEP Flood Level — 8.45m AHD (maximum)
- Flood Planning Level (FPL) — 8.95m AHD
- Probable Maximum Flood Level (PMF) — 10.35m AHD
- Existing Garage Floor Level — 8.24m AHD
- Proposed Garage Floor Level — 8.24m AHD (lower)
  8.35m AHD (upper)
- Proposed Studio Floor Level — 10.75m AHD
- Degree of inundation — 40%
- Hydraulic Category — Floodway and Flood Storage
- Flood Behavior
  The development lies in the floodplain of the Whites Creek sub catchment which discharges to Rozelle Bay. The Whites Creek culvert flows full in the 5-year ARI event and Whites Creek lane (directly above) conveys overland flows. Overland flows in Whites Creek lane extend to adjacent properties in less frequent flooding events (including the 1% AEP flood event).
- Flood storage — No anticipated net reduction,
  The proposed building footprint is proposed to increase as a result of the development. To ensure there is not net reduction in flood storage we recommend the floor level of the proposed garage footprint located beyond the existing garage footprint is located above the 1% AEP flood level and

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that the subfloor, including perimeter walls are open to allow floodwaters to flow underneath the structure unimpeded.

The proposed portion of garage that is within the existing footprint will not adversely impact flood storage. All landscaping works are to match the existing natural surface levels.

If the above recommendations are met there will be no net reduction in flood storage as a result of the development.

- Recommendations for structural design

  The proposed structures are recommended to be designed and inspected by a structural engineer to ensure the structure is adequate to withstand the forces of floodwaters up to the FPL with low velocity (including impact loading from debris). Any other new structures located below the 1% AEP Flood level are to be designed to cater for the flood loads.

- Types of materials to be used

  Any new structures are to be constructed of standard building materials of concrete, steel, timber and/or brickwork within the flood levels. Any proposed fencing along the boundaries, are to be certified and/or designed by a civil engineer to withstand hydrostatic forces up to and including the FPL (unless noted otherwise). Openings are to be provided, excluding the property frontage, to ensure the 1% AEP floodwater can flow through the property unimpeded.

- Onsite Stormwater Management

  Refer to stormwater plans prepared by NBCE for onsite stormwater management requirements (Job No. 191022).

- Waterproofing methods

  All electrical equipment is to be fitted with circuit breakers. Switchboard and main circuit unit to be fitted above the FPL flood level of 8.95m AHD. Other valuable materials or possessions are to be stored as above and should be acknowledged by the owner and occupant that a reasonable extent of

damage to fittings below the FPL (RL 8.95m AHD) is to be expected during the 1% AEP storm event.

- Flood warning Signage is not recommended
- Evacuation strategy and onsite response plan Shelter In Place

Should floodwaters begin to inundate the street adjacent the property or the rear of the site, residents are recommended to proceed to the upper ground floor level of the main dwelling (located at RL 12.555m AHD) which is outside the 1% AEP flood extent and above the PMF flood level (RL 10.35m AHD)

A copy of this report is to be kept on the premises at all times. This should be executed, on individual assessment, during high intensity rainfalls within the first 5–10 minutes of a storm and monitored accordingly.

- Hazardous Material Storage

Hazardous chemicals are not to be stored in areas under the Flood Planning Level of 8.95m AHD and should be acknowledged by the owner and occupant.

DIRECTORS
Stewart McGeady Rick Wray Brad Seghers

RECOMMENDATIONS / CONCLUSION:

- The proposed development is not envisaged to have an adverse effect on surrounding properties. The flood levels provided from council flood information have been adopted for this assessment. The proposed development generally meets the requirements of *Inner West Council (Leichhardt) DCP* provided the recommendations within this report are implemented. A development application is recommended.

- Authors qualifications / experience

Rick Wray
Director NB Consulting Engineers
BE(Civil) MIEAust CPEng NER RPEQ
Over 30 years professional experience

We trust that this certificate meets with your requirements. Please contact the author if further clarification is required.

NORTHERN BEACHES CONSULTING ENGINEERS P/L

Author:

Cameron Haack
BE Civil MIEAust

Reviewed By:

Rick Wray
BE CPEng NER RPEQ Director

\\NBADS\Company\Synergy\Projects\191022 62 ALFRED STREET, ANNANDALE\ENG Design\Flood\Flood Risk Report.docx

DIRECTORS
Stewart McGeady Rick Wray Brad Seghers

APPENDIX A – FLOOD INFORMATION

Northern Beaches Consulting Engineers Pty Ltd Structural, Civil & Stormwater Engineers ACN 075 121 616 ABN 24 076 121 616
Suite 207, 30 Fisher Road Dee Why NSW 2099 Tel 9984 7000 Fax 9984 7444 Email nb@nbconsulting.com.au

INNER WEST COUNCIL

Contact: James Ogg
Phone: (02) 9392 5641

14 August 2019

Nick Richter
C/O Saturday Studio
PO Box 1171
Manly NSW 1655

Flood Certificate

As requested, attached is the Flood Level Information Report for the following address:

- **62 Alfred Street, Annandale**

The information contained in the report is derived from the Leichhardt Flood Study (November 2017 prepared by Cardno).

The information is provided in good faith and in accordance with the provisions of s.733 of the Local Government Act.

Should you have any questions please call Council's Stormwater & Emergency Planning Section on 9392 5000.

Yours faithfully

James Ogg
COORDINATOR – STORMWATER & EMERGENCY PLANNING

PO Box 14 Petersham 2049 | P 02 9392 5000 | E council@innerwest.nsw.gov.au
Customer Service Centres | **Petersham** 2-14 Fisher Street | **Leichhardt** 7-15 Wetherill Street | **Ashfield** 260 Liverpool Road

INNER WEST COUNCIL

Property Flood Level Information Report

Applicant Name	Inner West Council	**Our Ref**	677
Property Address	62 Alfred Street, Annandale		
Date of Issue	14 August 2019		

About this Report

This report provides flooding information for the area in the vicinity of the above property. This information can be used to assist in understanding the extent of flooding affecting this property and can be used to assist in preparation of a Flood Risk Management Report in accordance with Section E1.1.4 of Council's Development Control Plan (DCP 2013). It is recommended that the information in this report be interpreted by a suitably qualified professional.

This report includes two pages; this cover page with an explanation of the information provided, and the second page is a figure providing information on the flooding behaviour in the area. The figure includes peak water levels, depths and flow rates for the 100 year ARI and peak water levels for the Probable Maximum Flood event.

The flood levels provided are based on available information including numerical modelling results prepared by Cardno for Leichardt Council. Further details are available in the *Leichhardt Flood Study* (Cardno, 2017). All flood levels and depths are provided to the nearest 0.05 metres.

Definitions

The following provides a brief definition of some of the key terms utilised in this report:

Average Recurrence Interval (**ARI**)	The long-term average number of years between the occurrences of a flood as big as or larger than the selected event. The 100 year ARI flood event can be expressed as having a 1% chance of occurrence in any given year or as the flood that could occur once every 100 years.
Probable Maximum Flood (**PMF**)	The PMF is the largest flood that could conceivably occur at a particular location. This event is used to determine what might occur in events larger than a 100 year ARI.
100 year ARI Flow Path/Extent	The area of land expected to be inundated by either a flow path or mainstream flooding during a 100 year ARI flood event. The extents are limited to the areas where depths of flow are greater than 150mm.
100 year ARI High Hazard	Areas within the 100 year ARI flood extents where the depth and/or velocity of flow is likely to represent a possible danger to personal safety; evacuation by trucks is difficult; able-bodied adults would have difficulty wading to safety; and/or potential for structural damage to buildings.
Flood Planning Level (**FPL**)	The Flood Planning Level is calculated by adding a 500 mm freeboard onto the 100 year ARI flood level.
Freeboard	The freeboard is incorporated into the Flood Planning Level to provide a factor of safety to the flood levels. It accounts for a number of factors, including wave action, localised obstructions to flows, and model uncertainty.
Australian Height Datum (**AHD**)	A common national surface level datum approximately corresponding to mean sea level.

Notes

The ground levels shown on the attached figure are based on aerial survey data undertaken by AAM Hatch on behalf of Council. The ground levels should be verified by a suitably qualified surveyor.

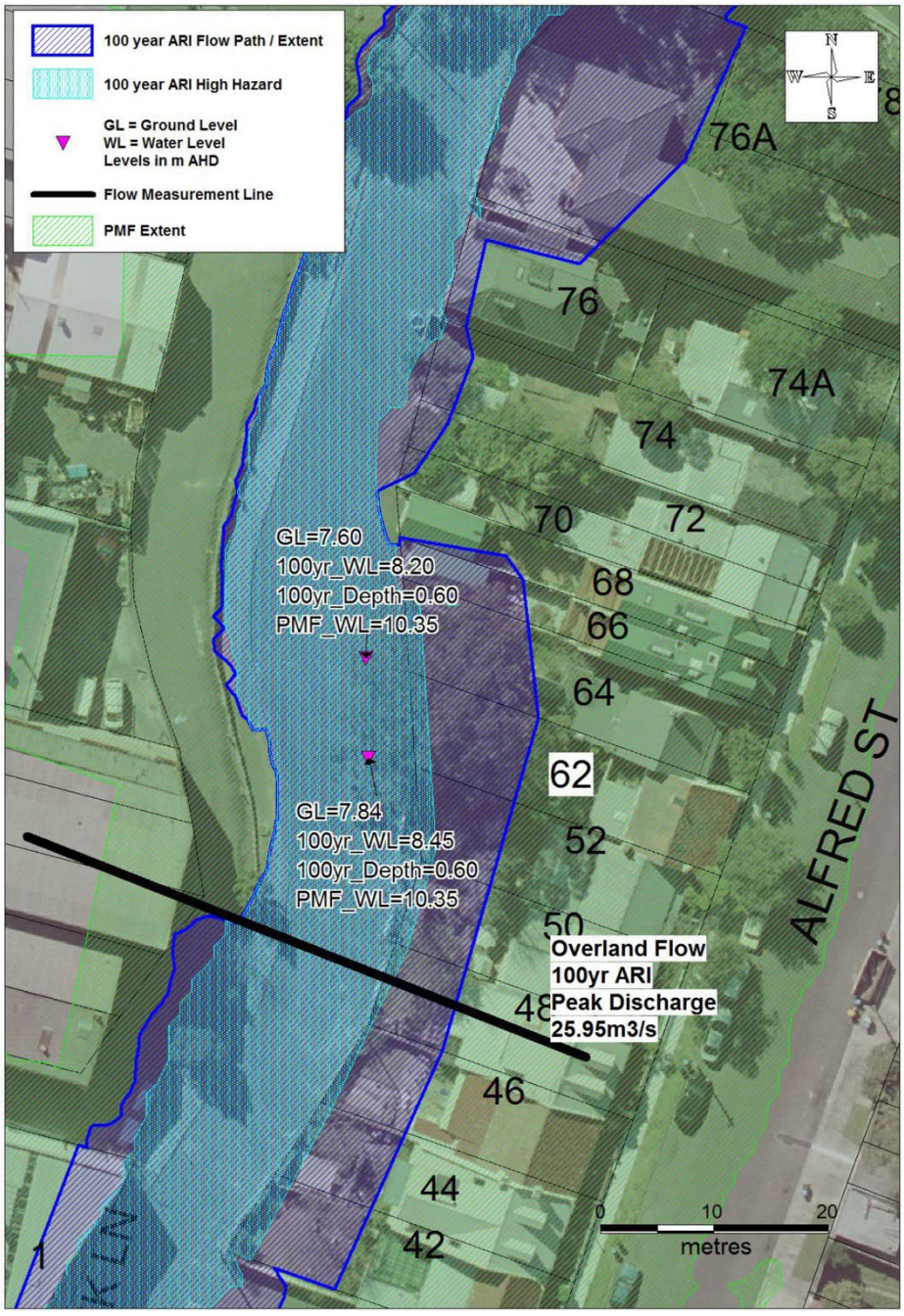
The location of stormwater pits and pipes on the attached figure are indicative only. The location and dimensions of pipelines should be verified by a suitably qualified surveyor.

The water depths shown are provided at the location shown and are indicative only. They do not necessarily represent the maximum depth in the area. For example, where a point is located on the centreline of a road, the depths will be higher within the road gutter.

The information is provided in good faith and in accordance with the provisions of s.733 of the *Local Government Act*.

INNER WEST COUNCIL

Property Flood Level Information Report

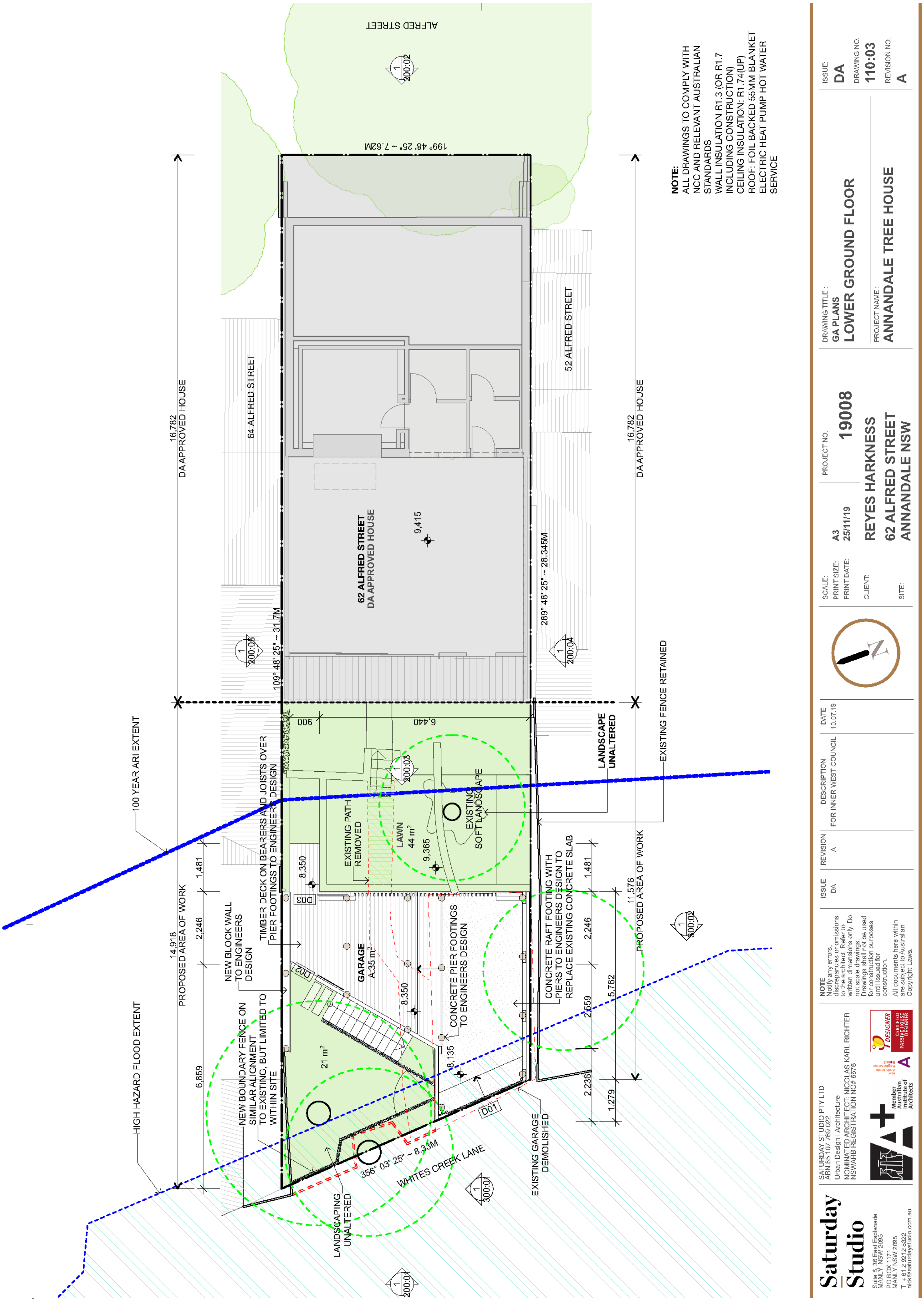


The information provided is in good faith and in accordance with the provisions of s.733 of the *Local Government Act.*
The aerial photo was taken by AAM Hatch and is dated at 2006.

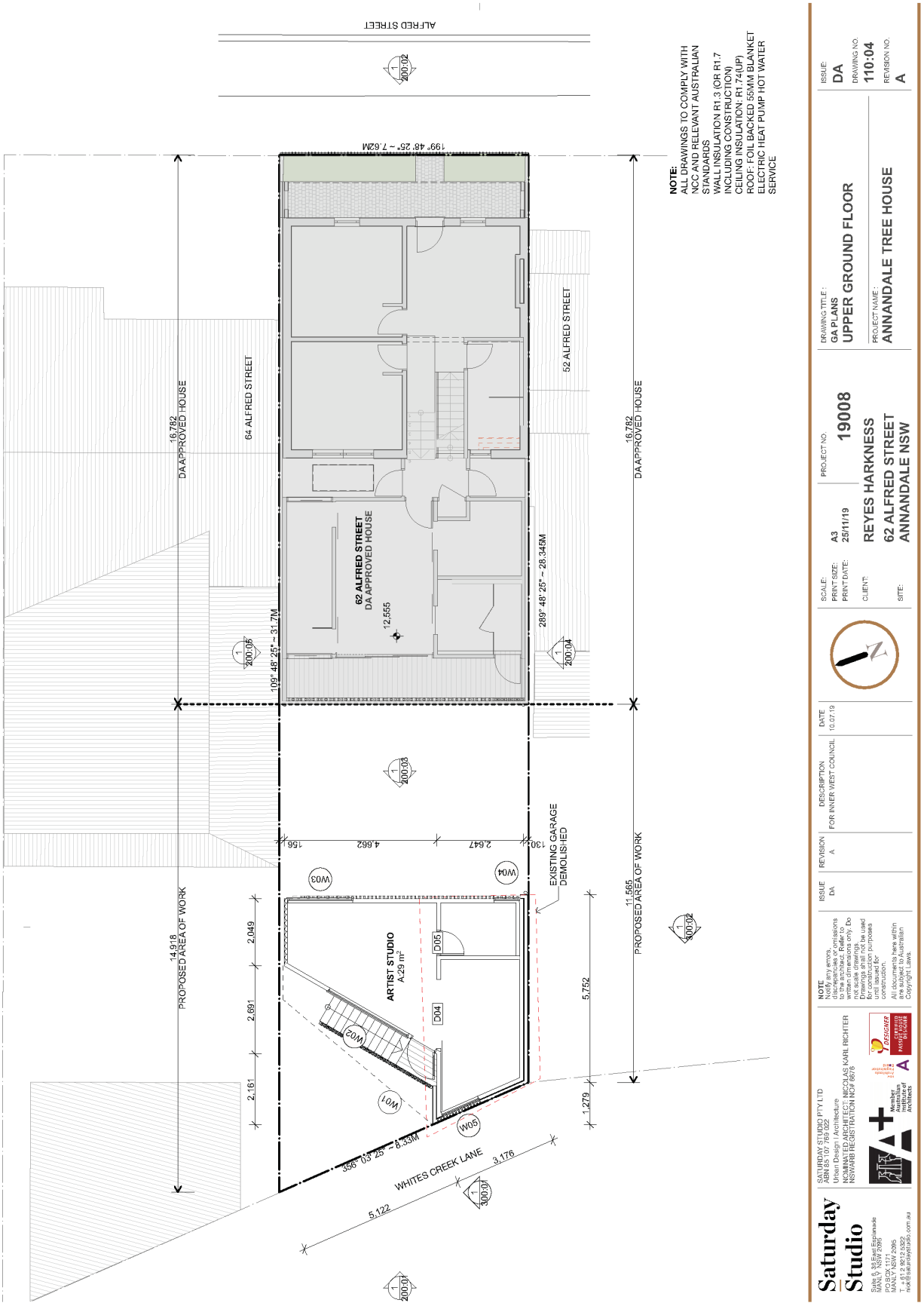
DIRECTORS
Stewart McGeady Rick Wray Brad Seghers

APPENDIX B – PROPOSED DRAWINGS AND SITE SURVEY

Northern Beaches Consulting Engineers Pty Ltd Structural, Civil & Stormwater Engineers ACN 075 121 616 ABN 24 076 121 616
Suite 207, 30 Fisher Road Dee Why NSW 2099 Tel 9984 7000 Fax 9984 7444 Email nb@nbconsulting.com.au



ALFRED STREET
199° 48' 25" ~ 7.62M
64 ALFRED STREET
52 ALFRED STREET
62 ALFRED STREET
DA APPROVED HOUSE
16,782
DA APPROVED HOUSE
109° 48' 25" ~ 31.7M
289° 48' 25" ~ 28.345M
100 YEAR ARI EXTENT
HIGH HAZARD FLOOD EXTENT
14,918
PROPOSED AREA OF WORK
6,859
2,246
1,481
TIMBER DECK ON BEARERS AND JOISTS OVER PIER FOOTINGS TO ENGINEERS DESIGN
NEW BLOCK WALL TO ENGINEERS DESIGN
NEW BOUNDARY FENCE ON SIMILAR ALIGNMENT TO EXISTING, BUT LIMITED TO WITHIN SITE
LANDSCAPING UNALTERED
356° 03' 25" ~ 8.33M
WHITES CREEK LANE
EXISTING GARAGE DEMOLISHED
CONCRETE PIER FOOTINGS TO ENGINEERS DESIGN
CONCRETE RAFT FOOTING WITH PIERS TO ENGINEERS DESIGN TO REPLACE EXISTING CONCRETE SLAB
GARAGE
A:35 m²
21 m²
EXISTING PATH REMOVED
LAWN
44 m²
EXISTING SOFT LANDSCAPE
LANDSCAPE UNALTERED
EXISTING FENCE RETAINED
11,576
PROPOSED AREA OF WORK
5,762
2,659
2,236
1,279
900
6,440
9,415
8,350
9,365
8,135
D01
D02
D03
NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE
ISSUE: DA
DRAWING NO. 110:03
REVISION NO. A
DRAWING TITLE: GA PLANS
LOWER GROUND FLOOR
PROJECT NAME: ANNANDALE TREE HOUSE
PROJECT NO. 19008
SCALE:
PRINT SIZE: A3
PRINT DATE: 25/11/19
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET ANNANDALE NSW
ISSUE DA
REVISION A
DESCRIPTION FOR INNER WEST COUNCIL
DATE 10.07.19
Saturday Studio
SATURDAY STUDIO PTY LTD
Urban Design / Architecture
NOMINATED ARCHITECT: NICOLAS KARL RICHTER


ALFRED STREET
199° 48' 25" ~ 7.62M
16.782
DA APPROVED HOUSE
64 ALFRED STREET
52 ALFRED STREET
62 ALFRED STREET
DA APPROVED HOUSE
12.555
289° 48' 25" ~ 28.345M
109° 48' 25" ~ 31.7M
14.918
PROPOSED AREA OF WORK
11.565
PROPOSED AREA OF WORK
EXISTING GARAGE
DEMOLISHED
ARTIST STUDIO
A:29 m²
D05
D04
W01
W02
W03
W04
S01M
2.049
2.691
2.161
5.752
1.279
156
4.662
2.647
130
356° 03' 25" ~ 8.33M
WHITES CREEK LANE
3.176
5.122
200.01
200.02
200.03
200.04
200.05
200.06
NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE
Saturday Studio
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Urban Design | Architecture
NOMINATED ARCHITECT: NICOLAS KARL RICHTER
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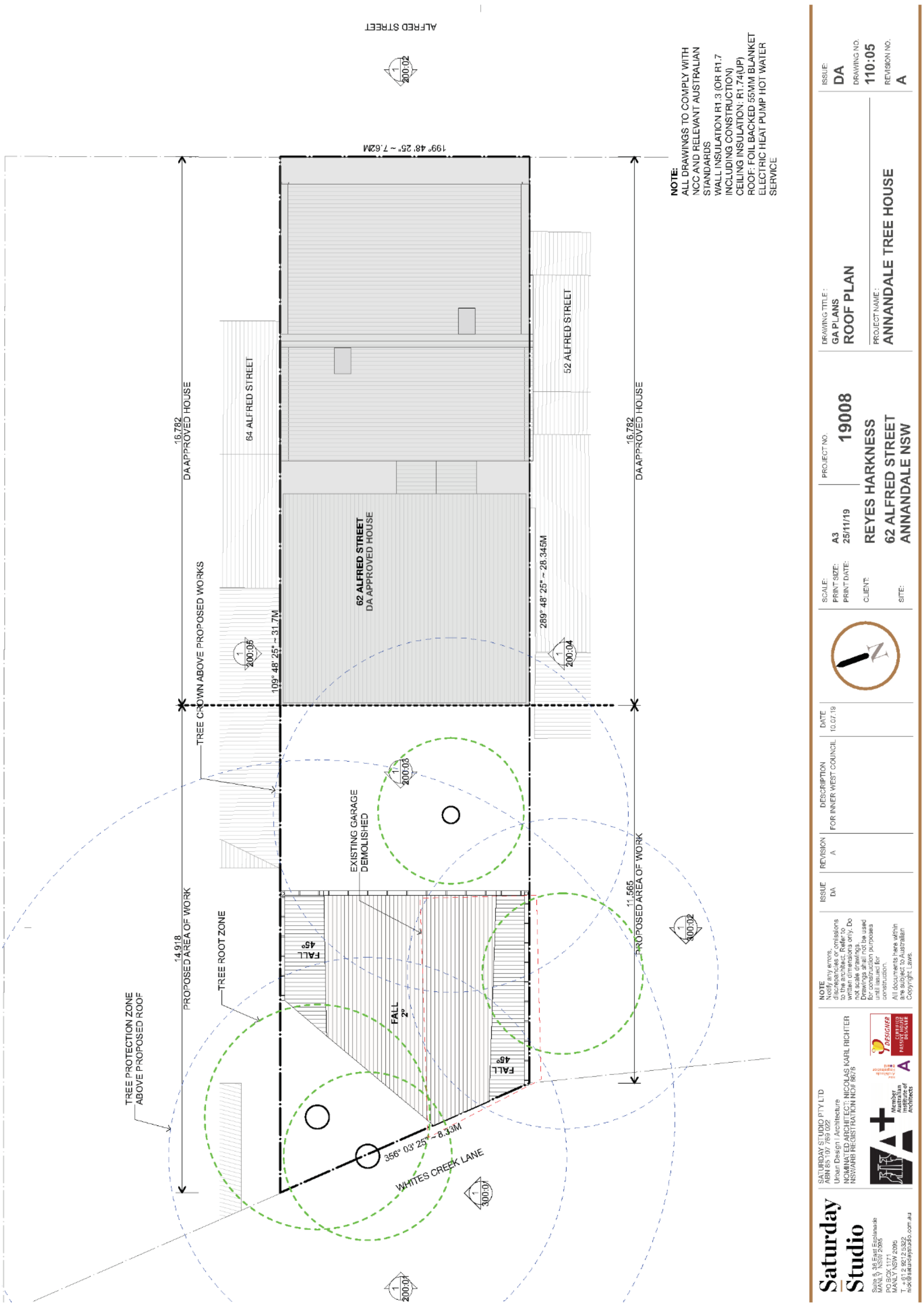
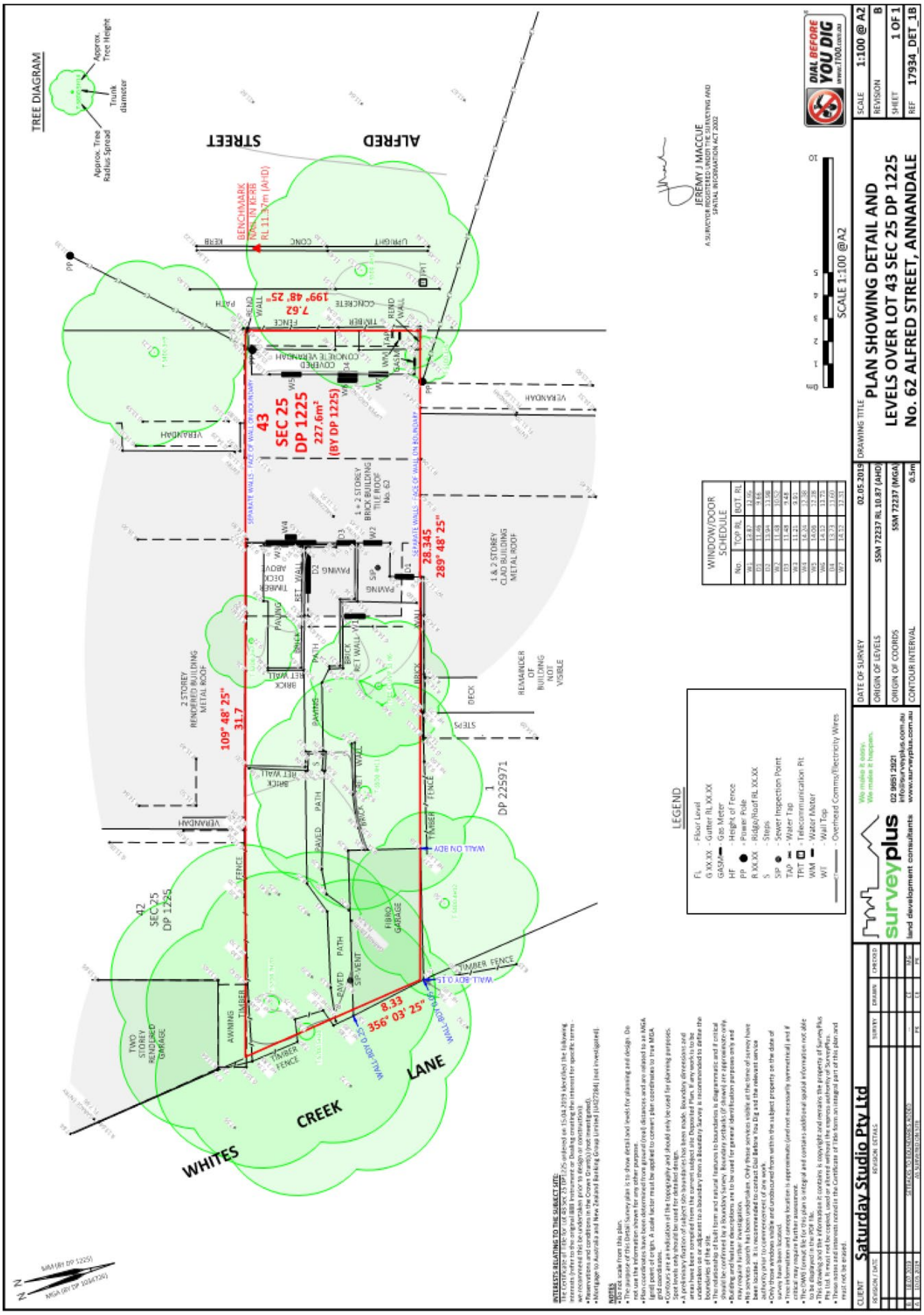
nick@saturdaystudio.com.au
Member Australian Institute of Architects
ISSUE DA
REVISION A
DESCRIPTION FOR INNER WEST COUNCIL
DATE 10.07.19
NOTE
Notify any errors, discrepancies or omissions to the architect. Refer to written dimensions only. Do not scale drawings. Drawings are not to be used for construction purposes until issued for construction.
All documents here within are subject to Australian Copyright Laws.
SCALE:
PRINT SIZE: A3
PRINT DATE: 25/11/19
CLIENT:
SITE:
PROJECT NO. 19008
REYES HARKNESS
62 ALFRED STREET
ANNANDALE NSW
DRAWING TITLE:
GA PLANS
UPPER GROUND FLOOR
PROJECT NAME:
ANNANDALE TREE HOUSE
ISSUE: DA
DRAWING NO. 110:04
REVISION NO. A


ALFRED STREET
NOTE:
ALL DRAWINGS TO COMPLY WITH NCC AND RELEVANT AUSTRALIAN STANDARDS
WALL INSULATION R1.3 (OR R1.7 INCLUDING CONSTRUCTION)
CEILING INSULATION: R1.74(UP)
ROOF: FOIL BACKED 55MM BLANKET
ELECTRIC HEAT PUMP HOT WATER SERVICE
199° 48' 25" ~ 7.62M
16.782
DA APPROVED HOUSE
64 ALFRED STREET
52 ALFRED STREET
62 ALFRED STREET
DA APPROVED HOUSE
109° 48' 25" ~ 31.7M
289° 48' 25" ~ 28.345M
TREE CROWN ABOVE PROPOSED WORKS
EXISTING GARAGE DEMOLISHED
14.918
PROPOSED AREA OF WORK
11.565
PROPOSED AREA OF WORK
TREE ROOT ZONE
TREE PROTECTION ZONE ABOVE PROPOSED ROOF
FALL 45°
FALL 2°
356° 03' 25" ~ 8.33M
WHITES CREEK LANE
Saturday Studio
SATURDAY STUDIO PTY LTD
NOMINATED ARCHITECT: NICOLAS KARL RICHTER
ISSUE DA
REVISION A
DESCRIPTION FOR INNER WEST COUNCIL
DATE 10.07.19
SCALE:
PRINT SIZE: A3
PRINT DATE: 25/11/19
PROJECT NO. 19008
CLIENT: REYES HARKNESS
SITE: 62 ALFRED STREET ANNANDALE NSW
DRAWING TITLE: GA PLANS ROOF PLAN
PROJECT NAME: ANNANDALE TREE HOUSE
ISSUE: DA
DRAWING NO. 110:05
REVISION NO. A


PLAN SHOWING DETAIL AND LEVELS OVER LOT 43 SEC 25 DP 1225
No. 62 ALFRED STREET, ANNANDALE
Saturday Studio Pty Ltd
surveyplus
land development consultants
ALFRED STREET
WHITES CREEK LANE
43
SEC 25
DP 1225
227.6m²
(BY DP 1225)
42
SEC 25
DP 1225
1
DP 225971
1 + 2 STOREY BRICK BUILDING TILE ROOF No. 62
2 STOREY RENDERED BUILDING METAL ROOF
1 & 2 STOREY CLAD BUILDING METAL ROOF
TWO STOREY RENDERED GARAGE
FIBRO GARAGE
REMAINDER OF BUILDING NOT VISIBLE
BENCHMARK
NAIL IN KERB
RL 11.37m (AHD)
7.62
199° 48' 25"
28.345
289° 48' 25"
109° 48' 25"
31.7
8.33
356° 03' 25"
TREE DIAGRAM
Approx. Tree Radius Spread
Trunk diameter
Approx. Tree Height
WINDOW/DOOR SCHEDULE
LEGEND
SCALE 1:100 @A2
JEREMY J MACCUE
DATE OF SURVEY 02.05.2019
ORIGIN OF LEVELS SSM 72237 RL 10.87 (AHD)
ORIGIN OF COORDS SSM 72237 (MGA)
CONTOUR INTERVAL 0.5m
SCALE 1:100 @ A2
REVISION B
SHEET 1 OF 1
REF 17934_DET_1B
DIAL BEFORE YOU DIG

Attachment D – Statement of Environmental Effects

Statement of Environmental Effects

62 Alfred Street Annandale NSW 2038

1 PRELIMINARY

1.1 INTRODUCTION

This Statement of Environmental Effects (SEE) is submitted to Inner West Council on behalf of Billie Harkness and Wilson Reyes and relates to the proposed alterations and additions to the existing residential dwelling at 62 Alfred Street Annandale. The is legally defined as Lot 43 Section 25 in Deposited Plan 1225.

The proposal seeks consent for the alterations and additions to the existing dwelling. The proposal includes the following scope of works:

- Demolition of existing garage,
- Maintain established tree,
- Replace existing rear fence,
- Build a studio with kitchenette and bathroom above new garage.

All work is located at the rear of the site. Works are both internal and external and will result in no visual impact when viewed from the Alfred street streetscape. The poor quality timber fence on the rear boundary will be replaced with a same height high quality steel fence in heritage style in a similar line, however inside the site boundary which the current fence breaches.

The site is zoned R1 (General Residential) under the provisions of the Leichhardt Local Environmental Plan 2013. The proposal is permissible with development consent within the R1 (General Residential) and will be contextually appropriate.

The proposed modifications to the existing garage respond to the lifestyle requirements of the residents and the works do not present any adverse environmental impact. As such favourable consideration is requested.

2. SITE ANALYSIS

2.1 SITE LOCATION & EXISTING CHARACTERISTICS

Land which is the subject of this application is identified as 62 Alfred Street Annandale. The site is a relatively wide terrace of 7.62M, located on a residential street that comprises of two story houses with rear access via Whites Creek Lane. The site is located in a low-density suburban area, with residential development immediate adjacent to all site boundaries.

Figure 1: Site Location (Site shown red)

2.3 SITE CONTEXT

Saturday Studio

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ACN: 107 769 022
ABN: 85 107 769 022

DIRECTOR: NICK RICHTER
AIA PRACTICE MEMBER
NSWARB # 6676

ARCHITECURE & URBAN DESIGN

The site is located within the suburb of Annandale, located approximately 5 kilometres west south west of Sydney's Central Business District (CBD). The site lies within an established urban area characterised by low residential development.

Residential land uses are prevalent within the locality, consisting primarily of terraced dwellings. The Johnston Street/ Booth Street intersection is located approximately 400 metres east of the site.

3. PROPOSED DEVELOPMENT

3.1 AIMS AND OBJECTIVES OF THE PROPOSAL

The subject Development Application seeks to improve the functionality of the existing site. The following objectives have been identified as forming the basis of the proposed development:

- Ensure minimal environmental and amenity impact;
- Provide for a functional and aesthetic residential dwelling; and
- Ensure development is compatible with surrounding development and the local context.

The proposal is therefore considered to meet the objectives set out above as it allows for development on land that has been approved to accommodate a residential use.

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AIA PRACTICE MEMBER
NSWARB # 6676

3.2 DESCRIPTION OF THE PROPOSAL

The proposal seeks development consent for alterations and additions to the existing building at 62 Alfred Street, Annandale. The proposed works include the following outlined below;

- Demolition of existing garage,
- Maintain established tree,
- Replace existing rear fence,
- Build a studio with kitchenette and bathroom above new garage.

4. LEGISLATIVE AND POLICY FRAMEWORK

This Part of the SEE assesses and responds to the legislative and policy requirements for the project in accordance with the Environmental Planning and Assessment Act 1979 (EP&A Act).

The following current and State, Regional and Local planning controls and policies have been considered in the preparation of this application:

Local Planning Context

- Leichhardt Local Environmental Plan 2013
- Leichhardt Development Control Plan 2013

This planning framework is considered in detail in the following sections.

4.1 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) is the overarching governing document for all development in NSW and pursuant to Part 4, the subject proposal is Local Development.

4.2 STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007

The proposal does not trigger traffic generating thresholds under the SEPP.

4.3 STATE ENVIRONMENTAL PLANNING POLICY NO.55 – REMEDIATION OF LAND

Previous use has been for residential purposes, thus it is not considered there is any risk in respect of contamination. The proposal therefore satisfies the provisions of SEPP 55.

4.4 DEEMED STATE ENVIRONMENTAL PLANNING POLICIES (former Regional Environmental Plans)

No deemed State Environmental Planning Policies apply to the proposal.

4.5 DRAFT ENVIRONMENTAL PLANNING INSTRUMENTS

No Draft Environmental Planning Instruments apply to the proposed development.

4.6 LEICHHARDT DEVELOPMENT CONTROL PLAN 2011

The provisions of Leichhardt Local Environmental Plan 2013 apply to the subject site and proposed development as discussed below.

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AIA PRACTICE MEMBER
NSWARB # 6676

Zoning and Permissibility

The subject land is zoned 'R1 General Residential' pursuant to Leichhardt Local Environmental Plan 2013. The objectives of the zone are:

- To provide for the housing needs of the community.
- To provide for a variety of housing types and densities.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To improve opportunities to work from home.
- To provide housing that is compatible with the character, style, orientation and pattern of surrounding buildings, streetscapes, works and landscaped areas.
- To provide landscaped areas for the use and enjoyment of existing and future residents.
- To ensure that subdivision creates lots of regular shapes that are complementary to, and compatible with, the character, style, orientation and pattern of the surrounding area.
- To protect and enhance the amenity of existing and future residents and the neighbourhood

The proposed development for alterations and additions to an existing garage is permitted with development consent in the R1 General Residential zone. The proposal will also improve the opportunity to work from home in a designated private space.

Overall, the proposal will improve the existing dwelling and enhance the liveability for occupants.

Clause 4.3A - Landscaped Area for residential accomodation in Zone R1

At 227.6m2 site area Clause 4.3A(3) (a)(i) requires 15% of site area to be landscaped or 34m2. The proposal only requires some minor clearing of grassed area, with all established trees to remain and existing path removed and turfed. The total landscape area proposed is 70m2 or some 38% of the site.

Clause 4.4 Floor Space Ratio (FSR)

At 227.6m2 site area Clause 4.4 (2B) (a) (ii) establishes a maximum FSR of 0.8:1, resulting in a maximum Gross Floor Area (GFA) of 182 sqm. The GFA of the proposal including existing and additional floor area on all levels is 178sqm resulting in a proposed FSR of 0.78:1.

Clause 4.6 Exceptions to development standards

There are no proposed works that are in exception to development standards.

Clause 5.4 Controls relating to miscellaneous permissible uses

The proposed floor area for the secondary dwelling is 29 sqm which is well below the LEPs 60 sqm and therefore meets this part of the control. The control also requires the area to be less than 30% of the total floor area of the principle dwelling. The existing floor area is 149 sqm which means the secondary dwelling is only 19% of the floor area and therefore also meets this control.

Clause 5.10 - Heritage conservation

The property is not listed as a heritage item, however the site is located within the area of the recently extended Annandale Conservation Area. In accordance with Clause 5.10 (5)(c) a Heritage Impact Statement has been prepared and is included with this application.

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NSWARB # 6676

Clause 6.1 - Acid Sulphate Soils

The site is identified on the Acid Sulphate Soils Map ASS_005 as being within a Class 5 Acid Sulphate soils area. Clause 6.1 (6) states that:

Despite subclause (2), development consent is not required under this clause to carry out any works if:
(a) the works involve the disturbance of less than 1 tonne of soil, and
(b) the works are not likely to lower the water-table.

The works are proposed on grade, they do not involve the disturbance of more than 1 tonne of soil, and are not likely to lower the water-table, making clause 6.1 not applicable to this proposal.

Clause 6.4 - Stormwater Management

(1) The objective of this clause is to minimise the impacts of urban stormwater on land to which this clause applies and on adjoining properties, native bushland and receiving waters.

The proposal includes a minor expansion of the total building footprint on site of only 27sqm. New downpipes will connect to the existing stormwater system. There works are of no consequence to the stormwater system overall, will not impact neighbouring properties, bushland or receiving waters.

5. LEICHHARDT DCP 2013 CONTROLS

The site is located within the Young Street Distinctive Neighbourhood. The objective of the controls is:

To facilitate development that is consistent with the Desired Future Character and Controls for the Distinctive Neighbourhood.

REQUIREMENT	PROPOSED	COMPLIANCE
C2.2.1.1 CONTROLS		
C1 Maintain and enhance the diversity of dwelling style found throughout the neighbourhood, such as Federation and Victorian dwellings, Californian bungalows and weatherboard cottages.	The proposed development maintains the existing dwelling thereby preserving the diversity of dwelling style.	YES
C2 Maintain the character and consistency in architectural detail of continuous rows of attached dwellings.	The existing dwelling while a terrace is not consistent with the adjoining terraces. In any case the proposal does not seek to change the existing dwelling	YES
C3 Allow for contemporary development, which is complementary to the existing streetscape.	The rear/ lane facing development is contemporary in design, contrasting the original dwelling facing the street	YES
C4 Preserve and maintain the historic subdivision pattern of Young Street Distinctive Neighbourhood.	No change is proposed to subdivision pattern	YES
C5 Contain upper floors within the roof form, so as not to be visible from the street frontage.	No change is proposed to the street frontage	YES
C6 Improve the environmental amenity and interest for pedestrians accessing the area.	No change is proposed to the street frontage	YES

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ACN: 107 769 022
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DIRECTOR: NICK RICHTER
AIA PRACTICE MEMBER
NSWARB # 6676

REQUIREMENT	PROPOSED	COMPLIANCE
C7 Maintain the harmony/character of the neighbourhood by ensuring development is complementary in form and materials, and reflects the cohesiveness of the streetscape.	No change is proposed to the Alfred street frontage. The proposal will only be visible from Whites Creek Lane. A Garage/ studio addition is in keeping with the lane streetscape, with neighbours having 2 storey garages and 64 Alfred street having a studio facing Whites Creek lane.	YES
C8 Preserve and integrate natural rocky outcrops into the landscaping of the area, particularly where visible from public places.	There are no rocky outcrops on the site	YES
C9 Maintain the prevalence of street trees in addition to mature and visually significant trees on private land.	There are 3 significant trees on the property that are proposed to be maintained. Please see the attached supportive ACQ Level 5 Arborists Report	YES
C10 Promote the establishment and enhancement of existing front gardens and landscaping on private property.	A section of the exiting path will be removed and turfed. Additional hedging will also be planted on the southern boundary.	YES
C11 The development to a primary street frontage shall have a maximum building wall height of 3.6m unless: a.the relevant wall will adjoin a two storey or higher building in which case the 3.6m wall height may be varied where the new roof forms relate to existing adjacent forms and will not exceed the higher ridge height of the adjoining building; b.the development is on a corner site in which case a 6m building wall height may be used, if all amenity and streetscape issues have been addressed to the satisfaction of Council.	There is no proposed change to wall height facing the street.	YES
C12 New driveway crossings are to be avoided. Existing driveway crossings are to be minimised and a maximum width of a single crossing.	There are no proposed changes to the existing vehicular access from Whites Creek Lane. The proposed structure is in the same position as the existing garage.	YES
C13 Development is to be consistent with any relevant Sub Area objective(s) and condition(s).	See below	YES
C2.2.1.1(b) Young Street Laneways Sub Area		

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REQUIREMENT	PROPOSED	COMPLIANCE
C1 Maintain the predominant service and access character of rear lanes where dwellings are not suitable.	The proposed development will allow rear access to the main house from Whites Creek Lane	YES
C2 Maintain and enhance the prevalence of vegetative corridors created by significant planting in rear yards.	The existing significant trees are proposed to be retained. See attached supportive ACQ Level 5 Arborists Report	YES
C3 Allow for small scale residential dwellings, such as studios or single storey dwellings, fronting onto rear lanes where development is suitable.	The proposal includes building a studio over the replaced garage, which will front the rear lane. This is in keeping with other houses on Whites Creek Lane.	YES
C4 Ensure that future development on lanes does not unreasonably impact upon the amenity (including views) of adjacent properties and the 'lanescape'.	The area of development facing Whites Creek Lane will only require removal on grass and some low lying plants. All significant trees will be maintained and the proposal was designed to not interfere with their root structure and canopy	YES
C5 Ensure that the unique character of Whites Creek Lane is retained by ensuring that future development is compatible with adjoining development and laneway width.	The current rear fence is positioned outside the site boundary. The proposal will position the new fence and new garage/ studio within the site boundary so not to breach the boundary on Whites Creek Lane.	YES
C6 Development is to be consistent with any relevant objectives and controls within the Young Street Distinctive Neighbourhood.	The proposed development facing Whites Creek Lane is in keeping with other properties facing the lane and will improve the streetscape as the current fence and garage are dilapidated.	YES
Appendix B Section 7 Two & Three Storey Terraces		

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REQUIREMENT	PROPOSED	COMPLIANCE
Objective: To facilitate development that is compatible with this Building Typology.	The existing building is closest to the description of a Two and Three Storey Terrace. While being single level fronting the street, there is a lower ground floor that follows the slope of the ground facing Whites Creek Lane consistent with neighbouring properties. The actual building typology differs in that there is no rear-wing as described in the DCP. The alternation to the existing garage will not effect this objective.	YES
C1 Development shall: a. retain the integrity of the original building and the character of consistent terrace groups and rows; b. maintain the relative importance, in scale and detailing of the main (front) part of the building; c. retain streetscape and skyline character; d. retain the architectural character and detailing of corner terraces; e. retain the rhythm of roofs and chimneys on the skyline and maintain the integrity of common ridge lines and parapet lines when viewed from the street; f. maintain the amenity of the terrace and adjoining properties; g. protect sun access to rear ground floor living areas and private open space; and h. reverse unsympathetic changes.	a. There terraced front will be retained, with additions to the rear. b. There is no change to the front of the house and the proposed work is not visible from the front of the building. c. The streetscape and skyline character is unaltered d. the architectural character is unaltered. e. there are no changes to chimneys or ridge lines f. the amenity of the adjoining terraces is unaltered by the proposed rear extension that has a rear building line that is behind the adjoining properties. g. The proposed work has been design so that solar access to the lower ground floor is not effected. h. the dilapidated garage will be demolished, and replaced with a garage and studio above. The rear boundary fence which also breaches the site boundary will be demolished and installed correctly within the site boundary.	YES YES YES YES YES YES YES YES

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REQUIREMENT	PROPOSED	COMPLIANCE
C6 Verandahs and balconies are to be open.	There is a small balcony/ entrance to the studio which is open which has a low privacy screen which doubles as a balustrade.	YES
C7 Rear breezeways (side passages to rear wings) may be infilled at ground level only and only where the privacy, sun access and ventilation to the adjoining property are not adversely affected.	The proposed work will have not have an effect on the breezeway at the rear of the house as there will still be a gap between the proposed work the neighbouring houses.	YES
C8 Original detailing, and materials, including chimneys, balustrades, render and wrought iron palisade fencing are to be retained/reconstructed and restored.	Original detailing where present to the Alfred Street frontage is retained. The poor quality timber picket fence facing Whites Creek Lane is proposed to be replaced with a quality steel fence	YES
C10 Fences are to be less than 1.2m high and of visually permeable materials.	The proposed fence to Whites Creek Lane is 1.2M high and is visually permeable	YES
C11 Fences appropriate to the style and period of the building are to be retained or reconstructed.	The new steel fence is more appropriate to the style than the current timber picket fence.	YES
PART E1.1.4 A Flood Risk Management Report is required for applications that are identified as flood control lots.	The proposed works are inside of the ARI extent, therefore we have prepared a Flood Risk Management Report.	YES

6 LIKELY IMPACTS OF THE DEVELOPMENT

Pursuant to Section 79(c) of the Environmental Planning & Assessment Act 1979, the following matters have been addressed.

6.1 CONTEXT & SETTING

The subject site is located in an established residential area that comprises predominantly of terraced dwellings presenting as single level to Alfred Street. The land slopes down between Alfred Street and Whites Creek Lane, with the dwelling over three levels and the proposed garage/ studio at the rear of the site only visible from Whites Creek Lane. The existing dwelling is well established and the proposal for alterations and additions to the garage at the rear of the property will improve the current level of amenity to meet the needs and requirements of occupants.

6.2 DESIGN AND APPEARANCE

Works are both internal and external and will result in no visual impact when viewed within the Alfred Street streetscape. The new garage/ studio structure will be replacing an existing garage in poor condition. Due to the nature of the sloping site, the studio FFL will only be approximately 1.4m above the lower ground level of the

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existing houses. The poor quality timber fence will be replaced with a same height high quality steel fence in heritage style.
A Colours and Finishes sample board is included in the drawing set included in this application.

6.3 ACCESS AND TRAFFIC IMPACTS
There are no changes to the existing access for the development. Whites Creek Lane currently has rear access via a garage and a gate which will be updated. The proposal includes a private artist studio which is accessible from the existing house and the rear lane, where there is ample parking, it will not cause additional parking demands on Alfred Street.

The proposed garage is currently at 2.8m wide at the entrance, however opens up within 1.5m from the entrance. The entrance is below the Australian Standards, however due to the sensitive root structure the garage wall can not be widened any future along Whites Creek Lane. The existing garage is slightly wider and meets this standard, however this is due to the breach of the boundary onto 52 Alfred street, which this proposal will be fixing.

6.4 AMENITY
The layout of the proposed development has been suitably designed to optimise privacy for neighbouring properties. Positioning and type of windows has been considered and doors and balconies have been located to avoid overlooking, screening has been included in the design where appropriate over the entire first floor balcony. Due to the proposed arrangement of the site and terraced houses neighbouring changes to solar access of neighbouring properties is non-existent.

6.5 SOCIAL, ENVIRONMENTAL AND ECONOMIC IMPACTS
No significant adverse social, environmental or economic impact is to result from the proposed development. The proposed development will profoundly enhance the current amenity of the site for the site occupants. The proposal will provide a modern artist studio seperate from the house that caters for the needs of the resident. The proposal is compatible with existing residential dwellings and will provide for negligible impact in regards to sunlight, overshadowing and ventilation to surrounding development.

The site contains 3 large trees. A detailed level 5 Arborists report has been included within this application supporting the proposal with the appropriate tree protection measures are in place during construction. An engineering footing plan is also included with the application to show the proposed footings will not interfere with the root structure of these large trees.

6.6 UTILITIES
All essential services, utilities and amenities are available to the site and are capable of servicing the development.

6.7 CONSTRUCTION
The development will be undertaken in accordance with all relevant Australian Standards. The proposed design will not compromise the ability of the built form to conform to the building regulations.

6.8 WASTE MANAGEMENT

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The proposal will comply with Council's standard regulations through the provision of a general waste bin, a recycling bin and a green waste bin. The proposal gives sufficient areas to locate the household waste requirements on the site, and makes no proposed changes to the existing conditions.

The Waste Management Plan will be managed by the appointed building/contractor in accordance with Council's waste management requirements.

6.9 BUILDING CODE OF AUSTRALIA

All Building Code of Australia requirements will be addressed as part of the proposed alterations and additions to the existing dwelling. A BASIX Certificate is included with the application.

6.10 SUITABILITY OF SITE FOR DEVELOPMENT

The site is suitable for the development as it already accommodates compatible activities and does not contain any hazards or sensitive features which would otherwise preclude the development.

6.11 ANY SUBMISSIONS MADE IN ACCORDANCE WITH THE ACT

No submissions have been received in relation to the proposed development.

6.12 THE PUBLIC INTEREST

The proposed development is considered to be in the public interest as there will be no unacceptable environmental, social or economic impacts.

7. CONCLUSION

The proposed alterations and additions to the existing residential dwelling at 62 Alfred Street Annandale is permissible within the R1 General Residential zone subject to the consent of Council.

This SEE provides an assessment of the proposal against the relevant environmental planning framework, including the Leichhardt Environmental Plan 2013 and the Leichhardt Development Control Plan 2013. The assessment finds that the proposal is wholly consistent with the objectives and controls of the statutory framework. No adverse environmental, economic or social impacts have been identified from the proposed development. In fact the proposed work will give a significant improvement to the streetscape on Whites Creek Lane and realign the fence within the property boundary.

The additional shadow diagrams provided show that the proposed structure will have a minimal effect on overshadowing to the existing house and will only effect it at 3pm. The plans also show the significant shadows cast by the neighbouring property including their rear granny flat which was approved by council within the last two years. The proposal will allow solar access from 12pm-2pm which is within the councils controls. The proposed work will also have minimal effect on overshadowing to the neighbouring properties.

As demonstrated throughout this Report, the provisions of Section 79C of the Environmental Planning and Assessment Act 1979 have been sufficiently addressed.

Based on the assessment undertaken, it is recommended that Council's favourable consideration to the approval of the Development Application be given.

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Attachment E - Statement of Significance – Conservation Area

Godden Mackay Logan

Area 18 Annandale Conservation Area

Landform

A wide ridge of land between Whites Creek and Johnstons Creek running due north to Rozelle Bay, with views from cross streets, and from the northern end of the suburb to the harbour, Anzac Bridge and the city, and west towards Leichhardt.

Figure 18.1 Annandale Conservation Area Map.

History

George Johnston, a marine officer of the First Fleet, received a grant of 290 acres on the northern side of Parramatta Road in 1799, an area now known as Annandale, named after Johnston's home town in Dumfriesshire, Scotland where he was born in 1764. Annandale House, designed in the Georgian style, was occupied by the Johnston family from 1800, and despite development closing in on all sides, their Annandale estate remained intact until 1876.

The first subdivision of 1876 reveals a grid of streets and allotments covering the land bounded by Parramatta Road, Johnston, Collins and Nelson Streets. Robert Johnston transferred this portion to his son, George Horatio, in June 1876 who sold off 75 lots to John Young, who then purchased the remainder of the estate for 121,000 pounds in October 1877. Young then sold the land to the Sydney Freehold Land and Building Investment Co Ltd, which he formed in 1878 to subdivide and sell the 280 acre estate. Building contractor and entrepreneur John Young, the company's chairman for the rest of its life, and its second largest shareholder, left an indelible impression on Annandale's development. Other directors of the company were politicians Samuel Gray and Robert Wisdom, developers John North and AW Gillies, soap and candle manufacturer WA Hutchinson and Henry Hudson.

Architect and surveyor Ferdinand Reuss junior won a prize of 150 pounds offered by the company for the best design for the subdivisional layout for Annandale

and designed many of the houses. Reuss widened Johnston Street, a major design feature which followed the spine of the ridge from 66ft to 100ft and the topography of the estate encouraged the symmetrical street grid pattern.

Annandale Street, 80 feet wide, almost rivalled Johnston Street, but its opposite number, Trafalgar Street, retained the 66ft width determined by the 1876 plan. On the western side, Young Street matched the 66ft wide Nelson Street, which for topographical reasons terminated at Booth Street. The four cross-streets, Collins, Booth, Piper and Rose Streets were also 66ft wide. The centrepiece of the plan was an open space at the junction of Johnston and Piper Streets, which became Hinsby Reserve. The plan also featured two other large reserves and six smaller ones. The company's original policy of 'no back lanes' was an enlightened planning policy: access for night soil collection was to be by side passage from the front street. Terrace housing was therefore not part of their plans, indicating that they were aiming for a middle class market. Even the lesser streets were 50ft wide, still above the standard widths of other suburban streets.

The majority of the building lots were generous, directed again to a middle class market: 66ft frontages with depths of about 90ft, ideal for freestanding houses. Most of the allotments sold up to 1881 were in Johnston and Annandale Streets. Allotments on the slopes above the creeks were largely ignored. Though extension of the tram track along Parramatta Road reached the junction of Annandale's main artery in 1883, the track was not built along Johnston Street. Land sales were sluggish and in 1882 the company was forced to revise its original policy on lot sizes. Though Johnston and Annandale Streets remained typical of the kind of middle class suburb the company originally envisaged, elsewhere a proliferation of small lots were created by resubdivisions. The company began with land on the creek slopes near Parramatta Road, re-subdividing sections 26 and 30 (creating Mayes Street), 34 (Ferris Street) and 37 on the western side, and eastern sections 28 and 33. The smaller lots did attract working class buyers, largely missing before 1882.

Between 1884 and 1886 more sections were resubdivided, increasing the number of sales up to 1889. Section 25, creating Alfred Street, and 35 were resubdivided, and sections 9-11 and 16-19 were halved to create sections 50 and 56 (along the banks of Whites Creek). The company undertook further resubdivisions in 1887 and 1888 involving sections 13, 21, 22, 24, 29, 39 and 40. As land sales reached their peak Annandale ratepayers began petitioning to secede from Leichhardt Council and incorporate the new Borough of Annandale which occurred in 1894. Between 1894 and 1930 Annandale Council was filled with self-employed local businessmen – timber merchants, builders and contractors, printers, grocers, butchers and a long serving carrier. They provided social leadership in their community. Many of the builders of the suburb's physical fabric possessed local addresses. The number of Annandale's builders and contractors rose from one in 1884 to fourteen in 1886 to seventeen in 1889. Apart from John Young, a partnership comprising John Wise, Herbert Bartrop and John Rawson was especially active in 1881/2, making twenty-five separate purchases. Other prominent local builders of Annandale's houses were Robert Shannon, William Nicholls, William Baker, Albert Packer, Owen Ridge,

George McDonald, George Bates, Hans Christensen, Cornelius Gorton, William Wells and Phillip Newland.

The Sydney Freehold Land and Building Investment Co Ltd, after thirty-eight years of having a controlling interest in Annandale, went into liquidation in 1916. The remaining unsold lots which were, in the main, located at the suburb's northern end, were bought by the Intercolonial Investment Land and Building Co Ltd. Annandale's last major land sales began in 1909 when Young's Kentville Estate was subdivided into ninety allotments.

By 1893, of Annandale's 1,189 residences, 906 were constructed of brick and 250 of weatherboard. The whole process of building up the streets of Annandale stretched over a long time. At the 1901 census there were 1,729 houses increasing to 2,363 by 1911 and reaching 2,825 in 1921. Annandale had 3,265 residences at the 1947 census.

The bubonic plague first appeared in The Rocks in 1901, and led to quarantine areas in Glebe and other inner areas. It affected attitudes to inner city/suburban housing, so that by 1910 those who could afford to were moving out, particularly to the railway suburbs. Inner suburban areas such as Annandale began to be seen as slums. It was at this time, and particularly after World War I, that industry began to appear in peripheral areas, along Johnstons and Whites creeks and in the swampy head of Rozelle Bay (later to be reclaimed).

John Young, with architectural and engineering experience in England including as superintendent for Crystal Palace, purchased the North Annandale land, established the Sydney Freehold Land & Building Investment Co to lay out the subdivision and finance the residential building.

The subdivision in the 1870s was premature, forcing the company to re-subdivide many of the large 'villa' allotments along Annandale Street and Trafalgar Street for smaller scale housing attracting working class residents. Johnston Street for the most part still exhibits the single villa ideals envisaged by the company for the three main streets.

Sources

Information provided by Max Solling.

Significant Characteristics

- Close relationship between landform and layout of the suburb with widest street along ridge top.
- The highest land has the widest streets and the largest buildings with the deeper setbacks
- Streets, buildings and setbacks diminish in size towards creeks.
- Important civic, ecclesiastical and educational buildings sited on top of the ridge facing Johnston Street, giving spire of Hunter Bailey Church high visibility from wide arch of Sydney suburbs.

- A notable group of buildings, 'the witches hats' sited on northern edge of Johnston Street ridge as it falls towards Rozelle Bay.
- Tree-lined streets, particularly of brush box, planted within the carriageway.
- Industrial buildings occur randomly, but generally marginalised to creek edges, the northern end of Annandale and round Booth Street.
- Variety of domestic buildings 1880s-1930s including single and double-fronted freestanding, semidetached and terrace houses and pre-World War II flats from one to three storeys.
- Small collection of weatherboard dwellings.
- Victorian Italianate boom period villas generally along southern end of Johnston Street, nearer to Parramatta Road.
- Uninterrupted commercial buildings with attached dwelling along Parramatta Road, with parapets and balconies or suspended awnings and some original shop fronts.
- Group of shops, pub, post office, church at intersection of Booth Street.
- Occasional corner shops throughout suburb.
- Skyline of chimneys, decorative fire wall dividers on terraces, ridge capping and finials.
- Wealth of decorative elements – iron fences, coloured tiles in paths, steps and verandahs, plaster moulding finishes above door and window openings, coloured glass, chimneys, verandah awnings.
- Walls of rendered brick (1870s and 1880s), and dry pressed face brick (available from c1890s).
- Roof cladding of terracotta tiles, slate, and some iron, particularly on verandahs.
- Irregular occurrence of back lanes.
- Iron palisade fences on low sandstone plinth.
- Continuous kerbs and gutters – many of sandstone.
- Rock outcrops within footpath and road alignments.

Statement of Significance or Why the Area is Important

- One of a number of conservation areas that collectively illustrate the nature of Sydney's early suburbs and Leichhardt's suburban growth particularly between 1871 and 1891, with pockets of infill up to the end of the 1930s (ie prior to World War II). This area is important as a well planned nineteenth-century suburb, and for illustrating development particularly from 1880s-1890s, aimed initially at the middle class market. The surviving development from this period forms the major element of its identity along with an area of 1910s-1930s development at its northern end.

- Demonstrates the vision of John Young, architect, engineer and property entrepreneur.
- Demonstrates, arguably, the best and most extensive example of the planning and architectural skills of Ferdinand Reuss, a designer of a number of Sydney's Victorian suburbs, including South Leichhardt (the Excelsior Estate) and Birchgrove.
- Clearly illustrates all the layers of its suburban development from 1878, through the 1880s boom and resubdivision, the 1900 slump and the appearance of industry, and the last subdivision around Kentville/Pritchard Streets to the 1930s, with the early 1880s best illustrated along Johnston and Annandale Streets.
- Demonstrates a close relationship between landform and the physical and social fabric of the suburb.
- In its now rare weatherboard buildings it can continue to demonstrate the nature of that major construction material in the fabric of early Sydney suburbs, and the proximity of the timber yards around Rozelle Bay and their effect on the building of the suburbs of Leichhardt.
- Displays a fine collection of large detached Victorian Italianate boom-period villas with most decorative details still intact, set in gardens.
- Displays fine collection of densely developed Victorian commercial buildings.
- Through the absence/presence of back lanes, changes in the subdivision pattern, and the range of existing buildings it illustrates the evolution of the grand plan for Annandale, in response to the market, from a suburb of middle class villas to one of terraces and semis for tradesmen and workers.

Management of Heritage Values

Generally

This is a conservation area. Little change can be expected other than modest additions and discrete alterations. Buildings which do not contribute to the heritage significance of the area may be replaced with sympathetically designed infill.

Retain

- All pre-1939 buildings and structures because they are important to understanding the history of the growth of this suburb.
- All weatherboard buildings, their rarity adds to their significance.
- Green garden space to all residential buildings – an important part of the character of Annandale.
- Original plastered walls (generally belonging to pre-1890s buildings).
- Original dry pressed face brick walls (generally belonging to post-1890s buildings).

- All original architectural details.
- Original iron palisade fences.
- Back lanes in their early configuration.
- Brush box tree planting, replace where necessary in original position within the alignment of the carriageway.
- All sandstone kerbs and gutter uninterrupted by vehicular access.

Avoid

- Amalgamation to create any more wider allotments that would further disrupt the Victorian pattern of development.
- Demolition of any pre-1939 building unless it is so compromised that it can no longer contribute to an understanding of the history of the area.
- Plastering or painting of face brick walls.
- Removal of plaster from walls originally sealed with plaster.
- Removal of original architectural details.
- Changes to the form of the original house. Second or third storey additions.
- Posted verandahs over footpaths to commercial premises or former commercial premises where no evidence can be provided to support their reconstruction.
- Additional architectural detail for which there is no evidence.
- High masonry walls or new palisade fences on high brick bases.
- Alteration to back laneways.
- Road chicanes which cut diagonally across the line of the streets.

Further Work

Use Water Board Detailed Survey of 1890 to identify which buildings remain from that time.

Compile photographic record of the conservation area from photos available since the late nineteenth century to the present time, as a means of assisting in appropriate reconstruction/'restoration'.