Council Assessment Panel
Agenda & Reports

17 January 2024

Our Vision

A City which values its heritage, cultural diversity, sense of place and natural environment.

A progressive City which is prosperous, sustainable and socially cohesive, with a strong community spirit.

City of Norwood Payneham & St Peters
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City of Norwood Payneham & St Peters

12 January 2024

To all Members of the Council Assessment Panel:

- Mr Terry Mosel (Presiding Member)
- Mr Mark Adcock
- Cr Christel Mex
- Ms Jenny Newman
- Mr Ross Bateup

NOTICE OF MEETING

I wish to advise that pursuant to Clause 1.5 of the Meeting Procedures, the next Ordinary Meeting of the Norwood Payneham & St Peters Council Assessment Panel, will be held in the Council Chambers, Norwood Town Hall, 175 The Parade, Norwood, on:

Wednesday 17 January 2024, commencing at 7.00pm.

Please advise Tala Aslat on 8366 4530 or email taslat@npsp.sa.gov.au if you are unable to attend this meeting or will be late.

Yours faithfully

Geoff Parsons
ASSESSMENT MANAGER

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VENUE Council Chambers, Norwood Town Hall

HOUR

PRESENT

Panel Members

Staff

APOLOGIES

ABSENT

1. COMMENCEMENT AND WELCOME

2. APOLOGIES

3. CONFIRMATION OF THE MINUTES OF THE MEETING OF THE COUNCIL ASSESSMENT PANEL HELD ON 18 DECEMBER 2023

4. DECLARATION OF INTERESTS

5. DEVELOPMENT APPLICATIONS – PDI ACT

5.1 EVELOPMENT NUMBER 23005863 - JONATHAN LEANEY - 10 GRAY STREET NORWOOD

DEVELOPMENT NO.:	23005863
APPLICANT:	Jonathan Leaney
ADDRESS:	10 GRAY ST NORWOOD SA 5067
NATURE OF DEVELOPMENT:	Demolition of an existing dwelling and the construction of two (2) two-storey semi-detached dwellings together with associated masonry fences and landscaping
ZONING INFORMATION:	**Zones:** • Established Neighbourhood **Overlays:** • Airport Building Heights (Regulated) • Historic Area • Prescribed Wells Area • Regulated and Significant Tree • Stormwater Management • Traffic Generating Development • Urban Tree Canopy **Technical Numeric Variations (TNVs):** • Minimum Site Area (Minimum site area is 200 sqm) • Maximum Building Height (Levels) (Maximum building height is 2 levels)
LODGEMENT DATE:	3 May 2023
RELEVANT AUTHORITY:	Assessment panel at City of Norwood, Payneham and St. Peters
PLANNING & DESIGN CODE VERSION:	3 May 2023
CATEGORY OF DEVELOPMENT:	Code Assessed - Performance Assessed
NOTIFICATION:	Yes
RECOMMENDING OFFICER:	Kieran Fairbrother - Senior Urban Planner
REFERRALS STATUTORY:	Nil
REFERRALS NON-STATUTORY:	Matthew Cole, City Arborist David Brown, Heritage Advisor

CONTENTS:

DETAILED DESCRIPTION OF PROPOSAL:

This development application seeks to demolish the existing dwelling and ancillary buildings located on the subject land, and in their place construct two semi-detached dwellings with associated fencing and landscaping. Both dwellings are two storeys, with the second levels recessed from both street frontages and constructed within the roof space of the building. One dwelling has been designed to reflect the single-fronted cottages that largely make up this historic area whereas the other dwelling resembles the villas that can also be seen within the historic area. The former dwelling will present to Gray Street while the latter presents to Rokeby Avenue. Both dwellings will obtain vehicle access via Rokeby Avenue.

Four (4) mature, established street trees surround the subject land – 2 on each street frontage. Both street trees on Rokeby Avenue are regulated Iron Barks and consequently the application is supplemented with a report from a qualified arborist who has undertaken exploratory arboricultural investigations to determine the feasibility of the proposal in respect of avoiding adverse effects being caused to one or both of these regulated trees.

SUBJECT LAND & LOCALITY:

Site Description:

Location reference: 10 GRAY ST NORWOOD SA 5067

Title ref.: CT 5199/787	**Plan Parcel:** F100206 AL24	**Council:** THE CITY OF NORWOOD PAYNEHAM AND ST PETERS

Shape:	regular
Frontage width:	15.16m to Gray Street / 23.47m to Rokeby Avenue
Area:	approx. 478m^2
Topography:	relatively flat
Existing Structures:	a single storey dwelling, an attached carport, an outbuilding and boundary fencing
Existing Vegetation:	low-lying grasses and shrubs, some smaller trees and plants

Locality

The locality is taken to be the area bound by The Parade to the south, the northern side of Gray Street and 100 metres east and west. This locality is characterised predominantly by historic residential dwellings, mainly in the form of single- and double-fronted cottages, and some villas, with later period single-storey dwellings interspersed within. Commercial land uses within the locality are restricted to those properties fronting The Parade, with the exception of the early learning centre at 33 Gray Street.

Although located close to both Fullarton Road and The Parade, the dwellings within this locality enjoy a relatively high level of amenity due to the predominantly residential character of the neighbourhood and the mature street trees that line these streets.

CONSENT TYPE REQUIRED:

Planning Consent

CATEGORY OF DEVELOPMENT:

- **PER ELEMENT:**
  Tree-damaging activity: Code Assessed - Performance Assessed
  Detached dwelling: Code Assessed - Performance Assessed
  Fence: Code Assessed - Performance Assessed
  Demolition: Code Assessed - Performance Assessed

- **OVERALL APPLICATION CATEGORY:**
  Code Assessed - Performance Assessed

- **REASON**
  P&D Code

PUBLIC NOTIFICATION

- **REASON**
  Demolition of a building within the Historic Area Overlay
  (Note: this development application was lodged prior to the *Miscellaneous Technical Enhancements Code Amendment*, which now provides a relevant authority with discretion to not publicly notify a proposal to demolish a building that does not conform with the historic characteristics of the historic area. Thus, no such discretion existed with respect to this development application).

- **LIST OF REPRESENTATIONS**

First Name	Surname	Address	Position	Wishes to be heard?
Charter Hall Social Infrastructure Ltd		33 Gray St Norwood SA 5067	Support, with concerns	No
Nastasja	Agerman		Opposed	No
Cordell	Whittle	6 Rokeby Ave Norwood SA 5067	Opposed	Yes
Ning	Gu	10 Rokeby Ave Norwood SA 5067	Opposed	No
Kate	Greenfield	8 Rokeby Ave Norwood SA 5067	Opposed	No
Beth	Scharnberg	104 West Parkway Colonel Light Gardens SA 5041	Support, with concerns	No
Nathaniel	Scharnberg	104 West Parkway Colonel Light Gardens SA 5041	Support, with concerns	No
Nadine	Welke	3B Rokeby Ave Norwood SA 5067	Opposed	No
Annette	Rothgrew	4 Rokeby Ave Norwood SA 5067	Opposed	Yes

- **SUMMARY**

The concerns raised by the representors can be briefly summarised as follows:

- That the construction work avoids causing nuisances by way of dust, noise and vehicle movements;

- That the construction work does not interfere with the childcare centre's (33 Gray Street) operations;
- That the subject land is not large enough for two dwellings;
- That the development will lead to an unacceptable loss of on-street car parking spaces, while also increasing demand for such.

INTERNAL REFERRALS

- Matthew Cole, City Arborist

Following the various revisions to the proposal and the hydrovac investigations undertaken by the Applicant's Arborist, the Council's arborist is supportive of the proposal from an arboricultural perspective.

- David Brown, Heritage Advisor

Council's Heritage Advisor is generally supportive of the proposal but with reservation, citing that the overall building height, roof form, and garaging under the main roof are not consistent with the surrounding historic character.

PLANNING ASSESSMENT

The application has been assessed against the relevant provisions of the Planning & Design Code, which are contained in Appendix One.

Demolition

Performance Outcome 7.3 of the Historic Area Overlay states:

> *"Buildings or elements of buildings that do not conform with the values described in the Historic Area Statement may be demolished."*

The Historic Area Statement for the Overlay in which the subject land is located identifies "late 19th century (pre 1920s)" dwellings, and more specifically "single-fronted and double-fronted cottages", being those types of dwellings that make up the historic character of this historic area.

The subject dwelling is a circa-1935 conventional hipped roof dwelling of a simple form. The subject dwelling does not conform with the values described in the Historic Area Statement and therefore may be demolished in accordance with PO 7.3 above. Council's Heritage Advisor agrees that the subject dwelling is not representative of this historic area and therefore supports its demolition.

Density

Performance Outcome 2.1 of the Established Neighbourhood Zone states:

> *"Allotments/sites for residential purposes are of suitable size and dimension to accommodate the anticipated dwelling form and are compatible with the prevailing development pattern in the locality."*

The corresponding Designated Performance Feature suggests that a minimum site area of 200m^2 will generally accord with this PO.

Performance Outcome 5.1 of the Historic Area Overlay states:

> *"Land division creates allotments that are:*
>
> *(a) Compatible with the surrounding pattern of subdivision in the historic area*
>
> *(b) Of a dimension to accommodate buildings of a bulk and scale that reflect existing buildings and setbacks in the historic area."*

The proposed development will result in two allotments of 246m^2 and 232m^2 respectively, which certainly comply with the criteria in DPF 2.1 of the Zone (above).

An analysis of the surrounding pattern of subdivision within the immediate locality (i.e. within a 70m radius of the subject land) shows allotments for detached and semi-detached dwellings ranging from 172m^2 up to 439m^2 in size, with an average allotment size of 278m^2 and a median of 244m^2. In this context, the proposed allotments to result from this development are considered compatible with the surrounding pattern of subdivision in the historic area and therefore satisfy PO 2.1 of the Zone and PO 5.1 of the Historic Area Overlay. As will be demonstrated in the following sections of this report, the proposed development also results in allotments that are capable of accommodating dwellings of a bulk and scale reflective of the historic character of this area, consistent with the above Performance Outcomes.

Building Height

Performance Outcome 4.1 of the Established Neighbourhood Zone states:

> *"Buildings contribute to the prevailing character of the neighbourhood and complements the height of nearby buildings."*

The corresponding Designate Performance Feature sets a maximum building height TNV of 2 levels.

Performance Outcome 2.2 of the Historic Area Overlay states:

> *"Development is consistent with the prevailing building and wall heights in the historic area."*

Performance Outcome 1.1 of the Historic Area Overlay states:

> *"All development is undertaken having consideration to the historic streetscapes and built form as expressed in the Historic Area Statement."*

In respect of building heights, the Historic Area Statement states "*up to two storeys*".
The proposed dwellings are two storeys in height, consistent with the TNV expressed in DPF 4.1 of the Zone and PO 1.1 of the Historic Area Overlay. Prevailing building heights within the historic area are single storey, however, and PO 2.2 of the Historic Area Overlay requires development to be consistent with this. Accordingly, when the applicant sought preliminary advice for this development from Council administration, they were advised that the dwellings should achieve a single storey appearance from both street frontages.

Although two storeys in height, the proposed dwellings have been designed in such a way as to appear primarily single storey from both street frontages; achieved by incorporating the second storeys into the roof space of the dwellings, which maintain a 30^o pitch and use skylights instead of protruding dormer windows. The overall height of the dwellings is slightly taller than the adjacent industrial building at 8 Gray Street and the dwelling at 12 Gray Street. Notwithstanding, external wall heights of the dwellings measure 3.6m, which is consistent with the prevailing building stock in the historic area and so the dwellings will not appear out of place in either streetscape and accordingly are considered to sufficiently accord with PO 2.2 of the Historic Area Overlay and PO 4.1 of the Zone.

Site Coverage and Setbacks

Performance Outcome 3.1 of the Established Neighbourhood Zone states:

> *"Building footprints are consistent with the character and pattern of the neighbourhood and provide sufficient space around buildings to limit visual impact, provide an attractive outlook and access to light and ventilation."*

The corresponding Designated Performance Feature states that a maximum site coverage of 50% is applicable. However, this does not represent the surrounding development pattern. Contrarily, site coverages within the immediate locality are typically over 50%, particularly along the southern side of Gray Street and along Rokeby Avenue.

House A (facing Gray Street) has a site coverage of 60.8% whereas House B (facing Rokeby Avenue) has a site coverage of 58.9%, both of which are consistent with the surrounding pattern of development.

It should be noted that the plans indicate a hard-surfaced area in the rear yard of each dwelling, presumably for a future covered outdoor entertaining area. However, no verandahs have been applied for with this application – the notation of a downpipe in the corner of these areas is considered to be a drafting error.

In respect of setbacks to neighbouring allotments, Performance Outcomes 8.1 and 9.1 of the Established Neighbourhood Zone state, respectively:

> *"Buildings are separated from side boundaries to provide:*
> *(a) Separation between buildings in a way that complements the established character of the locality*
> *(b) Access to natural light and ventilation for neighbours."*

> *"Buildings are set back from rear boundaries to provide:*
> *(a) Separation between buildings in a way that complements the established character of the locality*
> *(b) Access to natural light and ventilation for neighbours*
> *(c) Private open space*
> *(d) Space for landscaping and vegetation."*

Similarly, Performance Outcome 2.4 of the Historic Area Overlay states:

> *"Development is consistent with the prevailing front and side boundary setback pattern in the historic area."*

Side setbacks within the locality are generally contained to one side of an allotment, with many dwellings being in the form of semi-detached dwellings. Most of the detached dwellings within the locality are similarly built on, or very close to, one side boundary.

The proposed dwellings will be set back from the rear boundary by 3.5m at ground level which poses no visual outlook issues for the adjoining neighbour. Similarly, the second storeys being contained within the 30-degree-pitched roof space limits any visual impact that a second building level may otherwise pose.

With respect to the southern side boundary of House B, the dwelling will be set back 1.4m at ground level which, again, is considered reasonable to limit visual impact and is also consistent with the side setback pattern within the locality. Shadow diagrams provided by the Applicant demonstrate that overshadowing of the southern allotment is of little concern by virtue of the second building level being contained within the roof space. Accordingly, the proposal satisfies POs 8.1 and 9.1 of the Zone and PO 2.4 of the Historic Area Overlay.

With respect to setbacks from the primary and secondary streets, Performance Outcomes 5.1 and 6.1 of the Established Neighbourhood Zone state, respectively:

> *"Buildings are set back from primary street boundaries consistent with the existing streetscape."*
>
> *"Buildings are set back from secondary street boundaries to maintain the established pattern of separation between buildings and public streets and reinforce streetscape character."*

House A is set back 2.4m from Gray Street (primary street). The adjoining industry building at 8 Gray Street is constructed with a zero setback from the primary street (which is the anomaly in the street) and 12 Gray Street has a setback of approximately 2.8m, which more accurately reflects the general front setback pattern in the street. The proposed set back of 2.4m provides a good transition between the two neighbouring buildings and is consistent with the existing streetscape.

House A is set back 2.5m from Rokeby Avenue (secondary street). Designated Performance Feature 6.1(b) of the Zone suggests that the minimum secondary street setback is 900mm. Contextually, however, the opposite building at 12 Gray Street has a zero setback to Rokeby Avenue which arguably provides a precedent for similar. Notwithstanding, the proposed setback of 2.5m provides sufficient room for landscaping along this frontage and helps reinforce the streetscape character of the two dwellings (discussed in more detail later in this report). Accordingly, House A's setbacks to both street frontages is considered acceptable.

House B is similarly set back 2.5m from Rokeby Avenue (primary street). The west side of Rokeby Avenue has no real consistent set back pattern or streetscape character. The dwelling at 1 Rokeby Avenue is an historic villa with an approximate setback of 4.5m. From there, moving closer to the proposed dwelling, there exists a pair of semi-detached dwellings at 3A and 3B Rokeby Avenue, both of which have single-width carports constructed on the primary street boundary adjacent solid fencing, set well in front of the dwellings themselves. Then, at 5 Rokeby Avenue, is a residential flat building containing three dwellings that is constructed and sited at an angle of 25^{o} off parallel to the primary street boundary. Accordingly, what is required for satisfaction of Performance Outcome 5.1 of the Zone is difficult to articulate given the inconsistent pattern on this side of Rokeby Avenue.

Therefore, cues can be taken from the more-consistent development pattern on the opposite side of Rokeby Avenue. As mentioned above, the secondary street setback of 12 Gray Street is 0m. Further south, the dwellings from 4 to 10 Rokeby Avenue have front setbacks ranging between 2.5m and 3.2m. In this context, the proposed front setback of 2.5m for House B is considered acceptable. Further, the consistency between Houses A and B in this respect will positively contribute to the Rokeby Avenue streetscape pattern, and will help provide further guidance for the reinforcement of the streetscape character for the future redevelopment of neighbouring allotments at 3A, 3B and 5 Rokeby Avenue when that transpires one day.

Design and Appearance (Heritage)

Performance Outcome 10.2 of the Established Neighbourhood Zone states:

> *"The appearance of development as viewed from public roads is sympathetic to the wall height, roof forms and roof pitches of the predominant housing stock in the locality."*

Performance Outcome 2.1 of the Historic Area Overlay states:

> *"The form and scale of new buildings and structures that are visible from the public realm are consistent with the prevailing historic characteristics of the historic area."*

Performance Outcome 2.3 of the Historic Area Overlay states:

> *"Design and architectural detailing of street-facing buildings (including but not limited to roof pitch and form, openings, chimneys and verandahs) complement the prevailing characteristics in the historic area."*

Performance Outcome 2.5 of the Historic Area Overlay states:

> *"Materials are either consistent with or complement those within the historic area."*

Performance Outcome 1.1 of the Historic Area Overlay states:

> *"All development is undertaken having consideration to the historic streetscapes and built form as expressed in the Historic Area Statement."*

In respect of design and appearance, and in the context of the other abovementioned Performance Outcomes, the Historic Area Statement identifies "*single-fronted and double-fronted cottages"* and *"bluestone, sandstone, pise or brick*" as constituting the historic fabric and materiality of this historic area. The historic area does also contain several historic villas.

Performance Outcome 20.2 of the Design in Urban Areas module states:

> *"Dwelling elevations facing public streets make a positive contribution to the streetscape…"*

House A has a symmetrical façade and a cantilevered sloping front verandah, taking cues from the double-fronted cottages within the historic area. The use of sandstone on the primary façade is appropriate in this historic context, as is the use of off-white render on the secondary street elevation. From a streetscape perspective, the hipped roof is a simple roof form consistent with the historic roof forms seen along Gray Street. The roof form of the second level is more complex, with more valleys and ridges than typical of this historic area, but this is sufficiently set back from the primary street to not be readily visible.

House B, on the other hand, borrows design cues from the few villas within this historic area by including a similar front verandah adjacent a projecting room under a gable roof form. Like House A, the use of sandstone as the primary material for the projecting room is appropriate and will positively contribute to the Rokeby Avenue streetscape, while the use of an off-white render for the balance of the dwelling is also acceptable.

Where the two dwellings meet, the upper-level roof form has been modified from an earlier version to introduce a low point at the boundary, thus distinguishing one dwelling from the other and minimising the prominence of the second level. Although this is not consistent with the simple roof forms typical of this historic area, this section of roofing is set back sufficiently from the street and the façades of both dwellings such that it won't be readily visible from the street and therefore will not adversely affect the historic character of the area. Both roofs will be constructed of corrugated Colorbond sheet metal in "woodland grey" colour, which is appropriate in this historic context. The use of skylights within the second level is also appropriate and is a better outcome than dormer windows which would both draw attention to the second level and be inconsistent with the architectural styles and features of this historic area.

Performance Outcome 10.1 of the Established Neighbourhood Zone states:

> *"Garages and carports are designed and site to be discrete and not dominate the appearance of the associated dwelling when viewed from the street."*

Performance Outcome 4.1 of the Historic Area Overlay states:

> *"Ancillary development, including carports, outbuildings and garages, complements the historic character of the area and associated buildings."*

Garages are not common streetscape elements in this historic area because most dwellings within the locality have no off-street parking facilities. Accordingly, achieving discrete garaging in this context (PO 10.1) is arguably not as simple as complying with the corresponding Designated Performance Feature that states that a garage should: be set back at least 5.5m from the street, set back at least 0.5m behind the building line of the associated dwelling and have an opening no greater than 30% of the width of the allotment. Instead, satisfying this Performance Outcome is more of a qualitative test.

That being said, both garages achieve the quantitative criteria set out in DPF 10.1 of the Zone, and in fact are set back 3.45m behind the building line of both dwellings. Both garages are set under the main roof of the dwelling, with that roof extending approximately 2.2m beyond the garage doors, thus providing shadowing to reduce the prominence of the garages in the street. However, garaging under the main roof is not a typical feature of dwellings in this historic area – where garages or carports do exist, they are usually constructed as an independent structure. Therefore, introducing this is not an ideal streetscape outcome. However, to require a separate garage structure would require substantial amendments to the proposal, including the likely loss of any second-storey element for both dwellings, and accordingly the proposed garages under the main roof are considered acceptable on balance.

Overall, the two dwellings have been designed in a manner that complements the historic character of the area by borrowing design elements and cues from the double-fronted cottages and the few villas that make up this historic area. The second level has been downplayed as much as may be possible for two allotments of this size, and the somewhat-complex roof form that results is not readily visible from either Gray Street or Rokeby Avenue and is therefore acceptable too. The colour and material choices for both dwellings are appropriate for this historic area. Finally, both garages are sufficiently set back from Rokeby Avenue to be discrete elements in the streetscape and therefore the two dwellings are reasonable outcomes in this regard.

Performance Outcome 4.4 of the Historic Area Overlay states:

> *"Fencing and gates closer to a street boundary than the elevation of the associated building are consistent with the traditional period, style and form of the associated building."*

The application proposes 1.2m tall steel picket fences for both dwellings, along with 1.5m masonry columns to delineate the pedestrian gate from the balance of the fence. This fence design is consistent with the low, open-style fencing seen throughout the historic area and is an appropriate, contemporary response in this context.

Performance Outcome 9.1 of the Design in Urban Areas module states:

> *"Fences, walls and retaining walls of sufficient height maintain privacy and security without unreasonably impacting visual amenity and adjoining land's access to sunlight or the amenity of public places."*

A 3.5m section of fencing on Gray Street, west of proposed House A, will be comprised of 1.8m tall rendered masonry to provide sufficient privacy for the private open space associated with this dwelling. Solid, tall fencing on a primary street boundary is not an envisaged outcome in a historic area. However, given this fencing abuts the neighbouring industrial building (which is built of solid masonry and almost to the front boundary itself) it will not appear completely out of place. There is sufficient justification for the necessity of this fencing and it is therefore acceptable in the circumstances.

Quantitative Provisions

Performance Outcome 21.1 of the Design in Urban Areas module states:

> *"Dwellings are provided with suitable sized areas of usable private open space to meet the needs of occupants."*

The corresponding Designated Performance Feature prescribes a minimum requirement of 24m^2 of private open space for allotments under 300m^2 in area.

Performance Outcome 21.1 of the Design in Urban Areas module states:

> *"Private open space is positioned to provide convenient access from internal living areas."*

House A (facing Gray Street) will be provided with 46.2m^2 of private open space, directly accessible from the living area of the dwelling. Similarly, House B (facing Rokeby Avenue) will have 58.8m^2 of private open space, directly accessible from the living area of the dwelling. Thus, both dwellings satisfy the above Performance Outcomes.

Performance Outcome 22.1 of the Design in Urban Areas module states:

> *"Soft landscaping is incorporated into development to:*
> *(a) Minimise heat absorption and reflection*
> *(b) Contribute shade and shelter*
> *(c) Provide for stormwater infiltration and biodiversity*
> *(d) Enhance the appearance of land and streetscapes*

The corresponding Designated Performance Feature states that for allotments between 200m^2 and 450m^2 in area, 20% of the site should be comprised of soft landscaping.

House A includes 43.5m^2 of soft landscaping, which equates to only 17.7% of the site; whereas House B includes only 30.2m^2 of soft landscaping, which equates to only 13% of the site. Thus, both sites fall short of the 20% expectation posed by DPF 22.1 above. Nonetheless, the site coverage of both dwellings is not inconsistent with that of the prevailing development pattern in the area, and the proposed extent of soft landscaping is similarly consistent. Both dwellings incorporate landscaping across both street frontages, which will aid in enhancing the appearance of the development in the streetscape. Condition No. 5 has been recommended to ensure that these areas are suitably planted to achieve this. In the context of the surrounding development within the locality and noting that the proposed density of two dwellings is acceptable, the proposed extent of soft landscaping is considered acceptable.

Environmental Factors

Designated Performance Feature 1.1 of the Urban Tree Canopy Overlay is applicable to this proposal, by virtue of *State Planning Commission Practice Direction 12 (Conditions) 2020*, and states that each dwelling must plant one small tree per the policy's definition of such (see **Appendix 1**). Each dwelling is provided with sufficient planting room for one small tree in the rear yard in accordance with this DPF, which is shown on the plans, and therefore the mandatory condition (No. 6 in the recommendation below) can be adhered with.

Similarly, Designed Performance Feature 1.1 of the Stormwater Management Overlay is equally applicable, meaning each dwelling will be required to install and maintain a 3000-litre rainwater tank (2000L retention +

1000L detention). This requirement is reinforced by way of the mandatory condition (No. 7 in the recommendation below).

Interface Issues

Performance Outcome 10.1 of the Interface Between Land Uses module states:

> *"Development mitigates direct overlooking from upper level windows to habitable rooms and private open space of adjoining residential uses in neighbourhood-type zones."*

The upper-level windows of the two dwellings are oriented east towards Rokeby Avenue and west towards the industrial building located at 8 Gray Street, and therefore not directly south towards the only adjoining residential land use. As such, no overlooking issues arise from this development (notwithstanding they are skylights located 2.4m above the internal floor level).

Traffic Impact, Access and Parking

Performance Outcome 5.1 of the Transport, Access and Parking module states:

> *"Sufficient on-site vehicle parking and specifically marked accessible car parking places are provided to meet the needs of the development or land use having regard to factors that may support a reduced on-site rate such as [a number of factors]."*

The corresponding Designated Performance Feature states that a dwelling with 2 or more bedrooms is required to provide 2 on-site car parking spaces, one of which must be covered.

Each dwelling is provided with two (2) on-site car parking spaces by way of a single-car garage and a 5.5m long driveway. This satisfies the requirements in DPF 5.1 which is considered to equally satisfy the corresponding Performance Outcome.

Performance Outcome 23.4 of the Design in Urban Areas module states:

> *"Vehicle access is safe, convenient, minimises interruption to the operation of public roads and does not interfere with street infrastructure or street trees."*

Each dwelling will obtain vehicle access from Rokeby Avenue, by way of a double-width crossover half of which supports each respective dwelling. The crossover will be located well outside of the Structural Root Zones (**SRZ**) of both adjacent regulated street trees and its construction will not adversely affect their health. Council's Arborist agrees with this outcome. There are no other street infrastructure or service utilities that will be affected by the proposed crossover location.

Performance Outcome 23.3 of the Design in Urban Areas module states:

> *"Driveways and access points are located and designed to facilitate safe access and egress while maximizing land available for street tree planting, domestic waste collection, landscaped street frontages and on-street parking."*

Rokeby Avenue is a narrow street and consequently permits on-street car parking on only one side of the road – the western side. The advantage of this, in respect of the proposed development, is that vehicle access and egress from the site is safe and convenient because there is a solid yellow line adjacent the kerb opposite the proposed crossovers, thereby preventing cars parking there and access and egress being otherwise impeded.

Unfortunately, however, the proposed development will result in the loss of two (2) off-street car parking spaces, which is a concern raised in several of the representations. In their response to representations (**Attachment 6**), the Applicant indicates that there will be sufficient room for an off-street car parking space on Rokeby Avenue adjacent House A, north of the proposed crossover location. This is not the case, as there is currently a yellow line that extends south from Gray Street, along the western side of Rokeby Avenue, and ends just south of the street tree. Council's Team Leader, Regulatory Services has confirmed that this yellow line cannot be reduced in length given the proximity to the intersection and the narrow width of Rokeby Avenue, and accordingly an off-street car parking space cannot be provided here.

As earlier mentioned, many historic dwellings within this locality have no off-street parking facilities and so on-street parking demand is high. Further, due to the proximity of these streets to The Parade, many of the on-street parking spaces are time-restricted (although residents can apply for a parking permit in some instances). With respect to Rokeby Avenue in particular, house numbers 6, 8 and 10 all have no off-street car parking facilities whereas the remainder of the dwellings on Rokeby Avenue do. Consequently, it is likely that it will be these three dwellings that will feel the effects of the removal of these two (2) spaces more than others. Council's Team Leader, Regulatory Services, has confirmed that these three dwellings do all possess a residential parking permit that allows them to park in Rokeby Avenue without being subject to the parking restrictions. Nonetheless, the occupiers of 8 and 10 have indicated in their respective representations that they often struggle to find a park on Rokeby Avenue anyway, and the removal of two of the limited spaces on this street will only exacerbate this situation.

Performance Outcome 23.6 of the Design in Urban Areas module states:

> *"Driveways and access points are designed and distributed to optimise the provision of on-street visitor parking."*

The corresponding Designated Performance Feature states:

> *"Where on-street parking is available abutting the site's street frontage, on-street parking is retained in accordance with the following requirements:*
>
> *(a) Minimum 0.33 on-street spaces per dwelling on the site (rounded up to the nearest whole number) …"*

According to DPF 23.6 (above), the development needs to retain only one (1) on-street parking space abutting the sites' frontages to be considered appropriate; and the development retains space for three (3) parks – one on Rokeby Avenue and two on Gray Street. However, given the previous discussion regarding on-street parking demand, satisfaction of DPF 23.6 does not automatically justify the removal of the two (2) spaces being removed. Notwithstanding, these losses are arguably justifiable noting that the proposed development accords with the envisaged net residential density for this Zone and historic area and each dwelling is provided with sufficient on-site car parking provisions. Council administration notes that this justification does nothing to appease the concerns of other residents in the area, and most importantly those at 6, 8 and 10 Rokeby Avenue, but recognises that this is an unfortunate circumstance of what is considered to be the reasonable development of the subject land.

Regulated Trees

The subject land is bordered by four (4) mature street trees, of which two (2) are regulated Ironbarks (*Eucalyptus sideroxylon)* located on Rokeby Avenue.

Although this application does not seek land division consent per se, Performance Outcome 3.1 of the Regulated and Significant Tree Overlay is highly relevant, which states:

> *"Land division results in an allotment configuration that enables its subsequent development and the retention of regulated and significant trees as far as is reasonably practicable."*

Additionally, Performance Outcome 2.1 of the Regulated and Significant Tree Overlay states:

> *"Regulated and significant trees, including their root systems, are not unduly compromised by excavation and/or filling of land, or the sealing of surfaces within the vicinity of the tree to support their retention and health."*

The footprint of both dwellings results in major encroachment into the Tree Protection Zones (TPZs) of both regulated trees. Accordingly, the Applicant was requested to engage a certified arborist and undertake hydrovac exploratory work along the nominated building setback line parallel to the Rokeby Avenue boundary to a depth of 600mm, to determine the extent of root presence and whether the proposed development can proceed without adversely affecting the health of these two trees.

The Applicant's arborist undertook this work (see **Attachment 1** pp. 26-28) and concluded that the development could proceed without adversely impacting these trees, on the basis that minimal roots >50mm (i.e. potentially structural roots) were discovered in the trenched areas. It is the opinion of both the Applicant's arborist and the Council's arborist that the roots discovered during exploratory works are unlikely to be structurally supportive, and thus their removal will not result in the
destabilisation of the tree. Council's arborist is therefore supportive of the proposal from an arboricultural point of view, providing appropriate tree protection measures are imposed by way of conditions on any consent.

Accordingly, the proposed development sufficiently accords with Performance Outcomes 2.1 and 3.1 (above) and can proceed without adversely affecting the health of the two regulated trees, subject to appropriate conditions.

CONCLUSION

A complicated proposal that involves a multitude of complex considerations, the proposed development sufficiently accords, on balance, with the Planning & Design Code to warrant consent.

The proposed site areas accord with the minimum requirements envisaged within the Established Neighbourhood Zone and accord generally with the prevailing allotment pattern in the locality. Both dwellings present to their respective primary street frontages in a manner that is generally consistent with the historic building stock in the area, paying reference to the double-fronted cottages and villas through their design and use of sandstone as a primary façade material. The incorporation of the cantilevered front verandahs and the steel picket front fences are appropriate contemporary versions of these more traditional features of the historical housing within the area. Finally, in what is a predominantly single-storey neighbourhood, the second storeys of both dwellings are appropriately contained within the roof spaces and adequately set back from both street frontages to be considered somewhat discrete and a contextually responsive design.

Each dwelling is provided with sufficient off-street parking, although in the form of a garage under the main roof which is not an ideal outcome. Similarly, each dwelling is provided with sufficient private open space. Both sites fall short on soft landscaping expectations, but this is not inconsistent with the surrounding development pattern. Importantly, each dwelling still provides sufficient planting room for a small tree and other plants, shrubs and groundcovers to improve both the amenity of the occupants and enhance the streetscape appearance of both dwellings.

An unfortunate consequence of the development is that two (2) on-street car parking spaces will be lost on Rokeby Avenue, in an area where there is significant demand for on-street parking due to many houses having

no off-street car parking facilities. However, this one negative aspect should not condemn the proposal.

Finally, through the imposition of appropriate conditions, the development can proceed without adversely affecting the health of the two regulated street trees located adjacent to the site on Rokeby Avenue.

RECOMMENDATION

Grant planning consent

It is recommended that the Council Assessment Panel resolve that:

1. Pursuant to Section 107(2)(c) of the Planning, Development and Infrastructure Act 2016, and having undertaken an assessment of the application against the Planning and Design Code, the application is NOT seriously at variance with the provisions of the Planning and Design Code; and

2. Development Application Number 23005863, by Jonathan Leaney is granted Planning Consent subject to the following reserved matter and conditions:

RESERVED MATTERS
Planning Consent

Reserved Matter 1
An updated Civil & Drainage Plan shall be prepared and provided to the reasonable satisfaction of the Assessment Manager that reflects the amended location and siting of the dwellings herein approved.

Note: Further conditions may be imposed on the Planning Consent following satisfaction of the above matter.

CONDITIONS
Planning Consent

Condition 1
The development granted Planning Consent shall be undertaken and completed in accordance with the stamped plans and documentation, except where varied by conditions below (if any).

Condition 2
Adjacent to the development site are two (2) regulated Ironbark street trees (identified as Tree 3 and Tree 4 in the Arborist Report prepared by Alan Cameron). Each of these trees have a Structural Root Zone ("the Zones") of 3.1 metres radius, measured from the centre of the tree.

No works of any kind, except those approved, shall occur within the Zones during the construction of the dwellings herein approved. Further:

1. there shall be no changes to the natural ground level within the Zones;
2. no vehicles or machinery shall enter this Zones without consent of the Council.
3. no storage or dumping of material, fuel, chemicals, equipment or temporary building shall take place within the Zones.
4. nothing shall be attached to the trees.
5. supplementary watering must be provided to both trees through the whole construction process.
6. no trenching form for the installation of underground service is permissible within the Zones.
7. structural roots, that is, roots with a diameter greater than 25 millimetres, located outside the Zones should be retained during the construction. If such roots require removal they shall be severed under

the supervision of the Project Arborist by saw cutting, sharp axe or secateurs and not with a Backhoe or any machinery or blunt instrument. Wounds shall be dressed with a commercially available tree-wound healing compound.

8. excavations necessary for the construction of the fences within the Zones shall be constructed by hand digging and any structural roots, that is, roots with a diameter greater than 25 millimetres, encountered should be retained.

Condition 3
The existing vehicle crossover invert that is located adjacent the northern boundary of the site (Gray Street) shall be reinstated to upright kerb and gutter in accordance with Council's specifications, prior to the occupation of the dwellings, and to the reasonable satisfaction of the Council or its delegate. All costs shall be borne by the applicant/developer/owner.

Condition 4
All stormwater from buildings and paved areas shall be disposed of in accordance with recognised engineering practices in a manner and with materials that does not result in the entry of water onto any adjoining property or any building, and does not affect the stability of any building and in all instances the stormwater drainage system shall be directly connected into either the adjacent street kerb & water table or a Council underground pipe drainage system.

Condition 5
All areas nominated as landscaping or garden areas on the approved plans shall be planted with a suitable mix and density of trees, shrubs and groundcovers within the next available planting season after the occupation of the premises to the reasonable satisfaction of the Assessment Manager and such plants, as well as any existing plants which are shown to be retained, shall be nurtured and maintained in good health and condition at all times, with any diseased or dying plants being replaced, to the reasonable satisfaction of the Assessment Manager or its delegate.

Condition 6
Tree(s) must be planted and/or retained in accordance with DTS/DPF 1.1 of the Urban Tree Canopy Overlay in the Planning and Design Code (as at the date of lodgement of the application). New trees must be planted within 12 months of occupation of the dwelling(s) and maintained.

Condition 7
The approved development must include rainwater tank storage which is:

1. connected to at least 60% of the roof area;
2. connected to one toilet and either the laundry cold water outlets or hot water service;
3. with a minimum retention capacity of 2000 litres;
4. because the site perviousness is less than 30%, with a minimum detention capacity of 1000 litres; and
5. where detention is required, includes a 20-25 mm diameter slow release orifice at the bottom of the detention component of the tank within 12 months of occupation of the dwelling(s).

ADVISORY NOTES
Planning Consent

Advisory Note 1
Appeal Rights - General rights of review and appeal exist in relation to any assessment, request, direction or act of a relevant authority in relation to the determination of this application, including conditions.

Advisory Note 2
Consents issued for this Development Application will remain valid for the following periods of time:

1. Planning Consent is valid for 24 months following the date of issue, within which time Development Approval must be obtained;
2. Development Approval is valid for 24 months following the date of issue, within which time works must have substantially commenced on site;
3. Works must be substantially completed within 3 years of the date on which Development Approval is issued.

If an extension is required to any of the above-mentioned timeframes a request can be made for an extension of time by emailing the Planning Department at townhall@npsp.sa.gov.au. Whether or not an extension of time will be granted will be at the discretion of the relevant authority.

Advisory Note 3
No work can commence on this development unless a Development Approval has been obtained. If one or more Consents have been granted on this Decision Notification Form, you must not start any site works or building work or change of use of the land until you have received notification that Development Approval has been granted.

Advisory Note 4
A separate land division application will be required to formalise the division of land between the two proposed dwellings.

Advisory Note 5
The Applicant is reminded of its responsibilities under the *Environment Protection Act 1993*, to not harm the environment. Specifically, paint, plaster, concrete, brick wastes and wash waters should not be discharged into the stormwater system, litter should be appropriately stored on site pending removal, excavation and site disturbance should be limited, entry/exit points to the site should be managed to prevent soil being carried off site by vehicles, sediment barriers should be used (particularly on sloping sites), and material stockpiles should all be placed on site and not on the footpath or public roads or reserves. Further information is available by contacting the EPA.

Advisory Note 6
The granting of this consent does not remove the need for the beneficiary to obtain all other consents which may be required by any other legislation.

The Applicant's attention is particularly drawn to the requirements of the *Fences Act 1975* regarding notification of any neighbours affected by new boundary development or boundary fencing. Further information is available in the 'Fences and the Law' booklet available through the Legal Services Commission.

Advisory Note 7
The Applicant is advised that construction noise is not allowed:

1. on any Sunday or public holiday; or
2. after 7pm or before 7am on any other day

Advisory Note 8
The Applicant is advised that any works undertaken on Council owned land (including but not limited to works relating to crossovers, driveways, footpaths, street trees and stormwater connections) will require the approval of the Council pursuant to the *Local Government Act 1999* prior to any works being undertaken. Further information may be obtained by contacting Council's Public Realm Compliance Officer on 8366 4513.

Advisory Note 9
The Applicant is advised that the condition of the footpath, kerbing, vehicular crossing point, street tree(s) and any other Council infrastructure located adjacent to the subject land will be inspected by the Council prior to

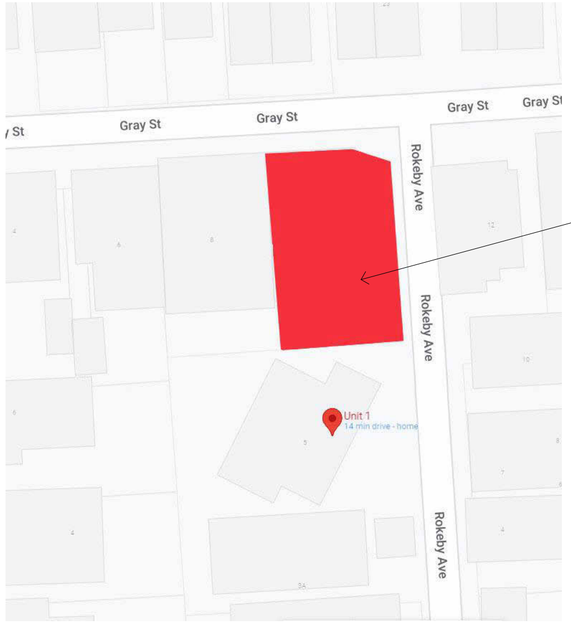
the commencement of building work and at the completion of building work. Any damage to Council infrastructure that occurs during construction must be rectified as soon as practicable and in any event, no later than four (4) weeks after substantial completion of the building work. The Council reserves its right to recover all costs associated with remedying any damage that has not been repaired in a timely manner from the appropriate person.

Advisory Note 10
The Council has not surveyed the subject land and has, for the purpose of its assessment, assumed that all dimensions and other details provided by the Applicant are correct and accurate.

Advisory Note 11
To assist in the interpretation of the Urban Tree Canopy condition noted above, where payment into a relevant off-set scheme is not possible or chosen, tree(s) must be planted in accordance with the requirements set out below. Further guidance and information can be obtained by visiting the Landscaping and Development webpage on the Council's website (https://www.npsp.sa.gov.au/planning_and_development/landscaping-and-development) or contacting the Council's Planning Department on (08) 8366 4555.

Lot Size Per Dwelling (m2) // Tree Size and Number Required
<450 // 1 small tree
450-800 // 1 medium tree or 2 small trees
>800 // 1 large tree or 2 medium trees or 4 small trees

Tree Size // Mature Height (minimum) // Mature Spread (minimum) // Soil Area Around Tree Within Development Site (minimum)
Small // 4m // 2m // 10m^2 and min. dimension of 1.5m
Medium // 6m // 4m // 30m^2 and min. dimension of 2m
Large // 12m // 8m // 60m^2 and min. dimension of 4m



10 GRAY ST
NORWOOD

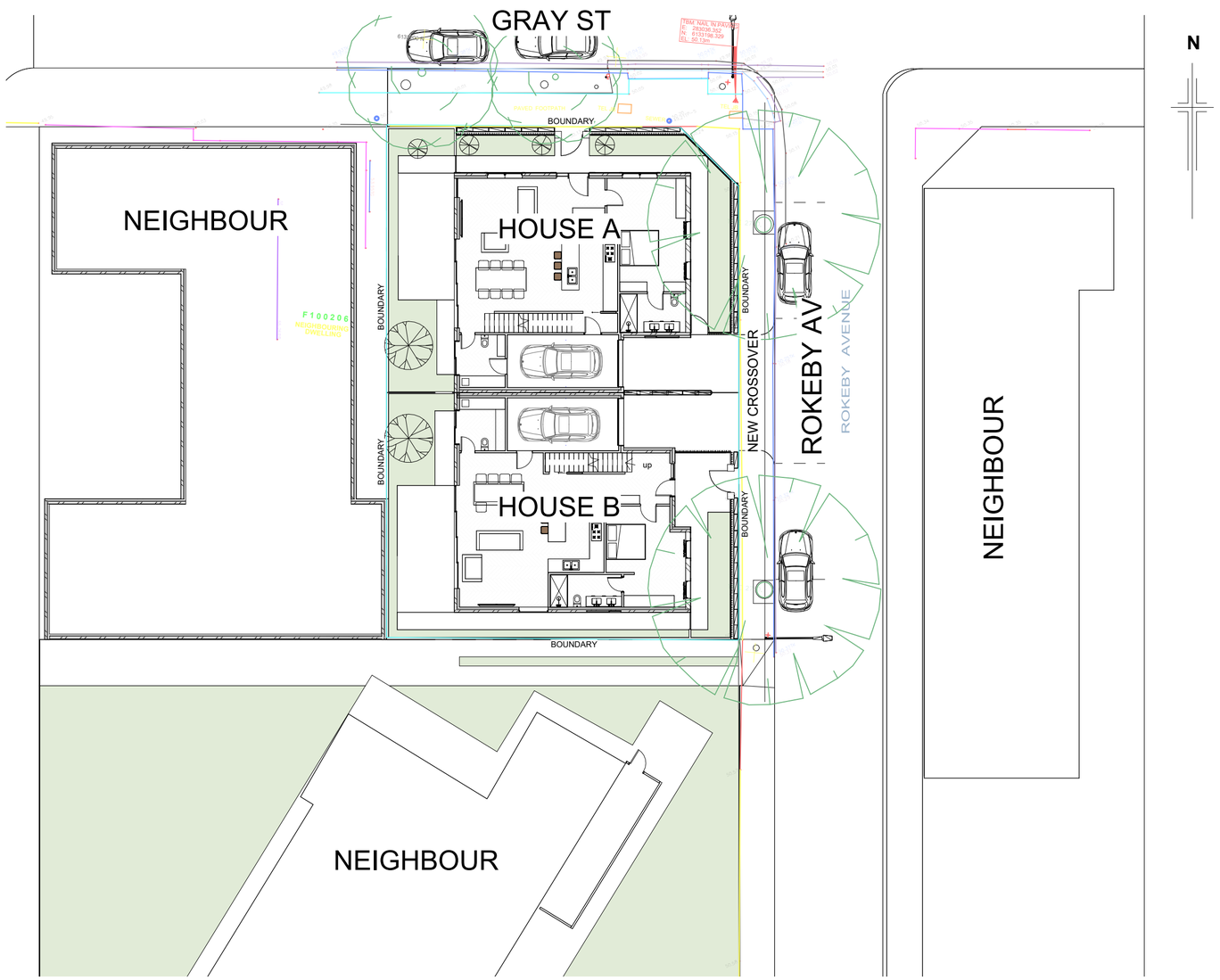
LOCATION PLAN

HOUSE A

AREAS	Sq.m		
TOTAL LAND	246	SITE COVERAGE 128/246	= 52.4%
GF LIVING	128.0		
FIRST FL LIVING	56.0	PRIVATE OPEN SPACE	
OUTDOOR LIVING	19.0		= 46.2 Sq.m
		LANDSCAPE SPACE	
TOTAL =	203.0		= 51.6 Sq.m

HOUSE B

AREAS	Sq.m		
TOTAL LAND	232	SITE COVERAGE 126/232	= 54.3%
GF LIVING	126.0		
FIRST FL LIVING	56.0	PRIVATE OPEN SPACE	
OUTDOOR LIVING	19.0		= 85.0 Sq.m
		LANDSCAPE SPACE	
TOTAL =	201.0		= 35.7 Sq.m



1 **LOCATION PLAN**
1 : 200

FINISHES:

WALLS:	**GROUND FLOOR:** BRICK VENEER - WHITE TEXTURED COAT RENDER WHITE WASH 2 & WHITE WASH 4 BY HAYMES COLOUR TO FRONT FACADE AND BASKET RANGE SANDSTONE HONED FACE
WINDOWS:	MATT BLACK ALUMINIUM FRAMES
EXTERIOR DOOR :	MATT BLACK ALUMINIUM FRAMES WITH SOLID TIMBER DOOR / GARAGE DOOR - WOODLAND GREY
MAIN ROOF:	"WOODLAND GREY" COLORBOND ROOF DECK / "WOODLAND GREY" EDGE GUTTERS & FASCIA H3 TREATED PINE PRIMED PAINTED WOODLAND GREY
PAVING AND DRIVEWAY:	EXPOSED AGGREGATE CONCRETE, PAVERS
FENCE:	NEW BOUNDARY FENCE (HEBEL POWERFENCE PAINTED WHITE WASH 1 BY HAMES) , STEEL PICKET FENCE (FRONT FENCE), BLACK MATTE STEEL GATE

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

plot date : 20/12/2023
scale : As indicated
job no : 221025
drawn by : JC
checked by : JL

status: PRELIMINARY
client name: Katelyn, Jessica & Matthew
project title:
PROPOSED RESIDENCE
project address:
10 GRAY ST, NORWOOD

page no.: P100
drawing title: GENERAL LOCATION

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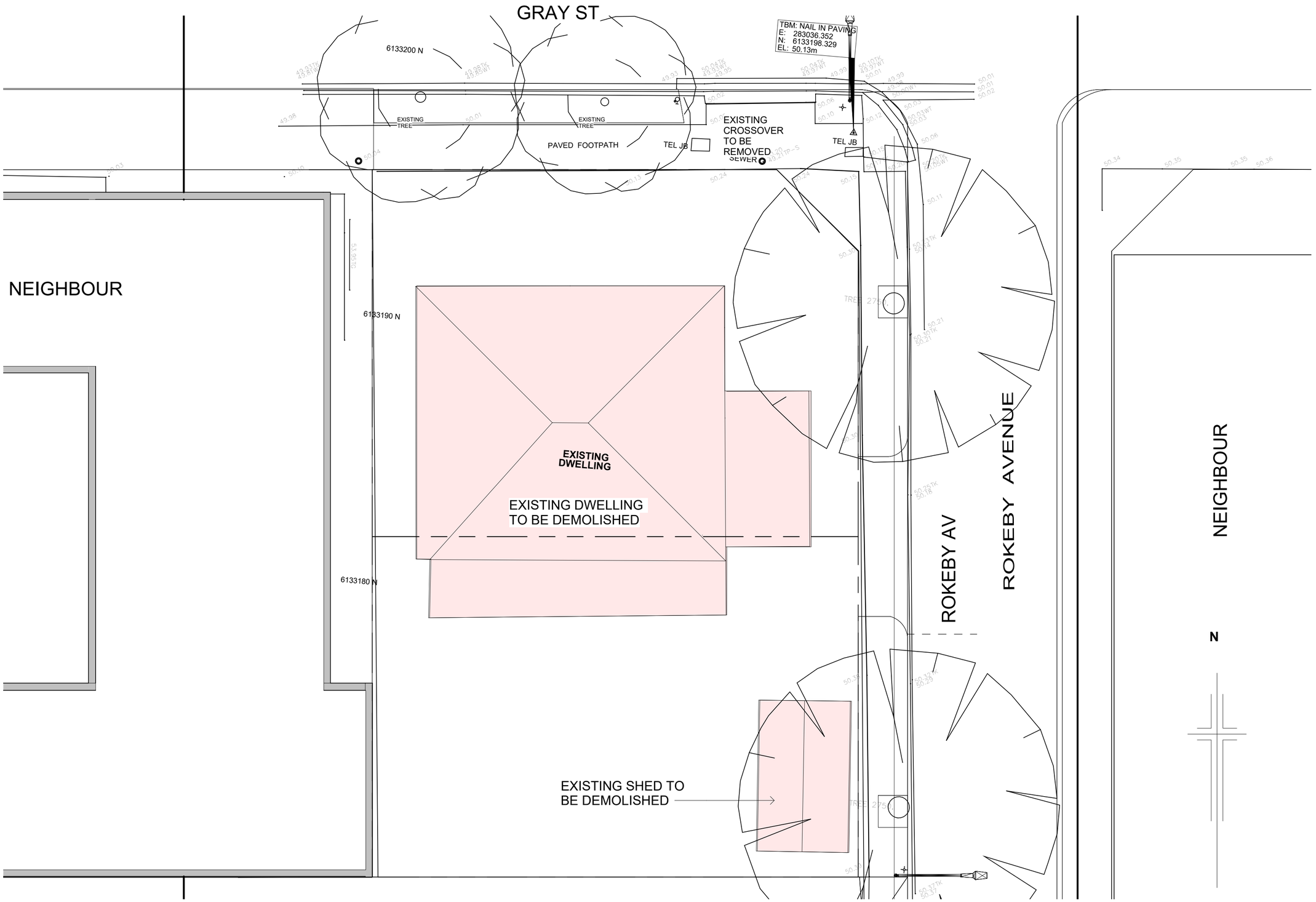
Attachment 1



1 DEMOLITION PLAN

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Revision Number	Revision Date	Revision Description

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Sheet Size

Revision No.

plot date : 20/12/2023
scale : 1 : 100
job no : 221025
drawn by : Author
checked by : Checker

status: PRELIMINARY
client name: Katelyn, Jessica & Matthew
project title: PROPOSED RESIDENCE
project address: 10 GRAY ST, NORWOOD
page no.: P100A
drawing title: DEMOLITION

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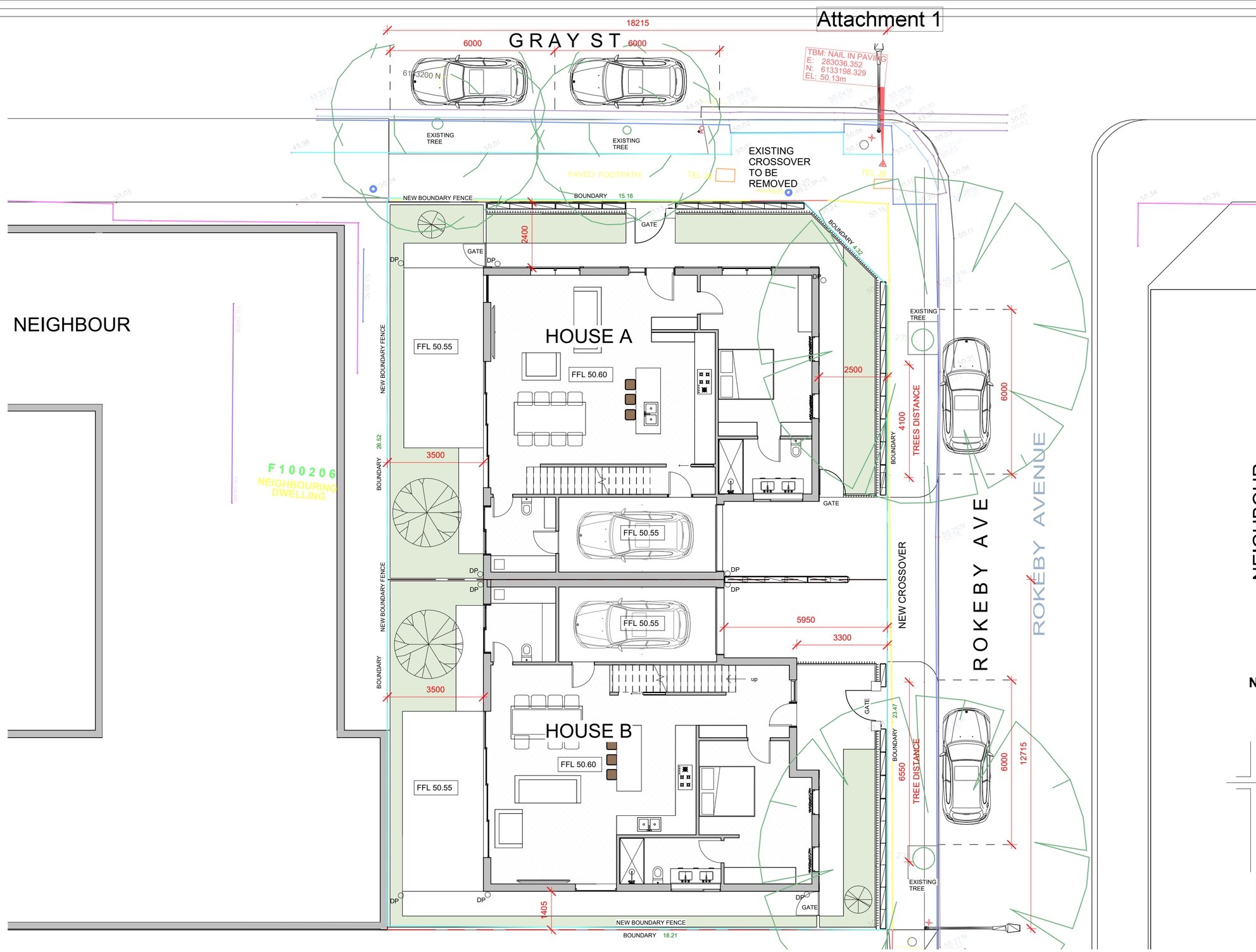

1 SITE PLAN
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Revision Number	Revision Date	Revision Description

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Sheet Size

Revision No.

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job no : 221025
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checked by : JL

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page no.: P100B
drawing title: SITE

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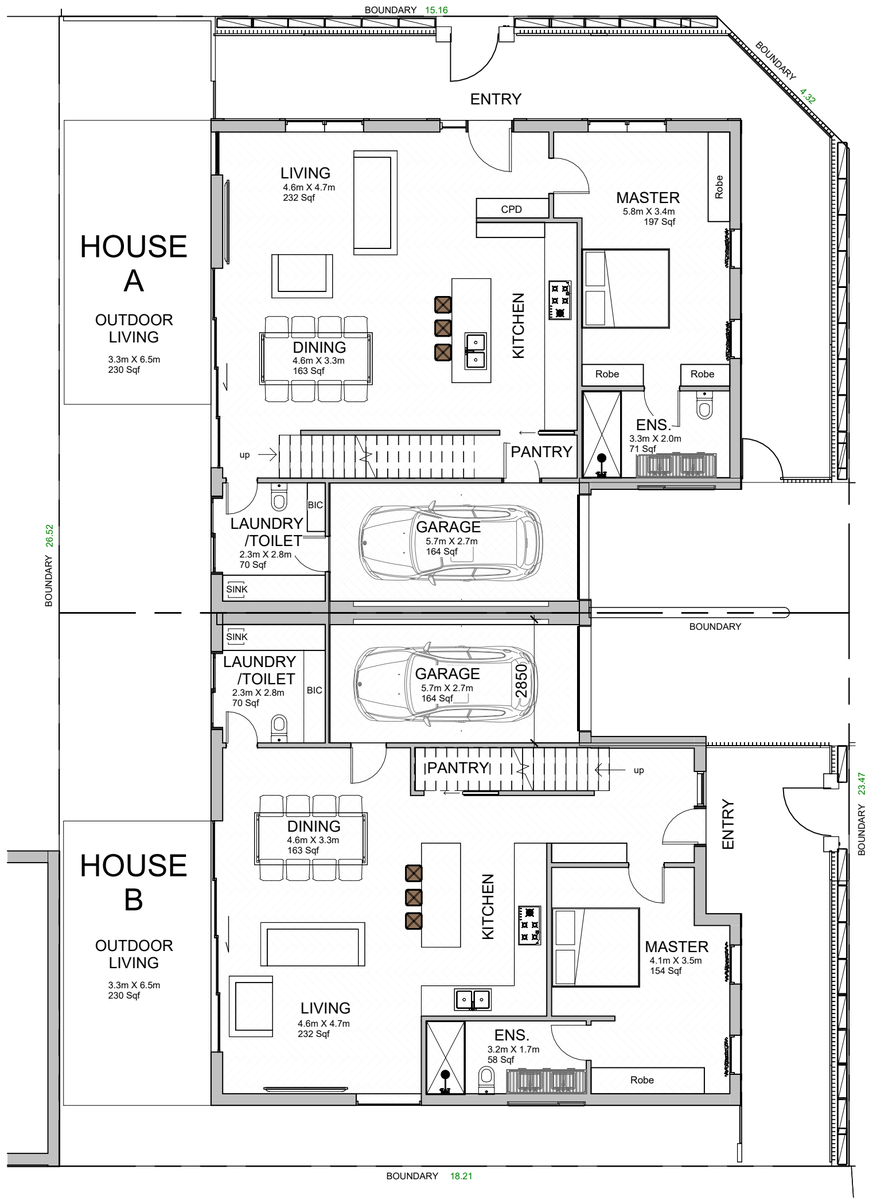

1 GROUND FLOOR
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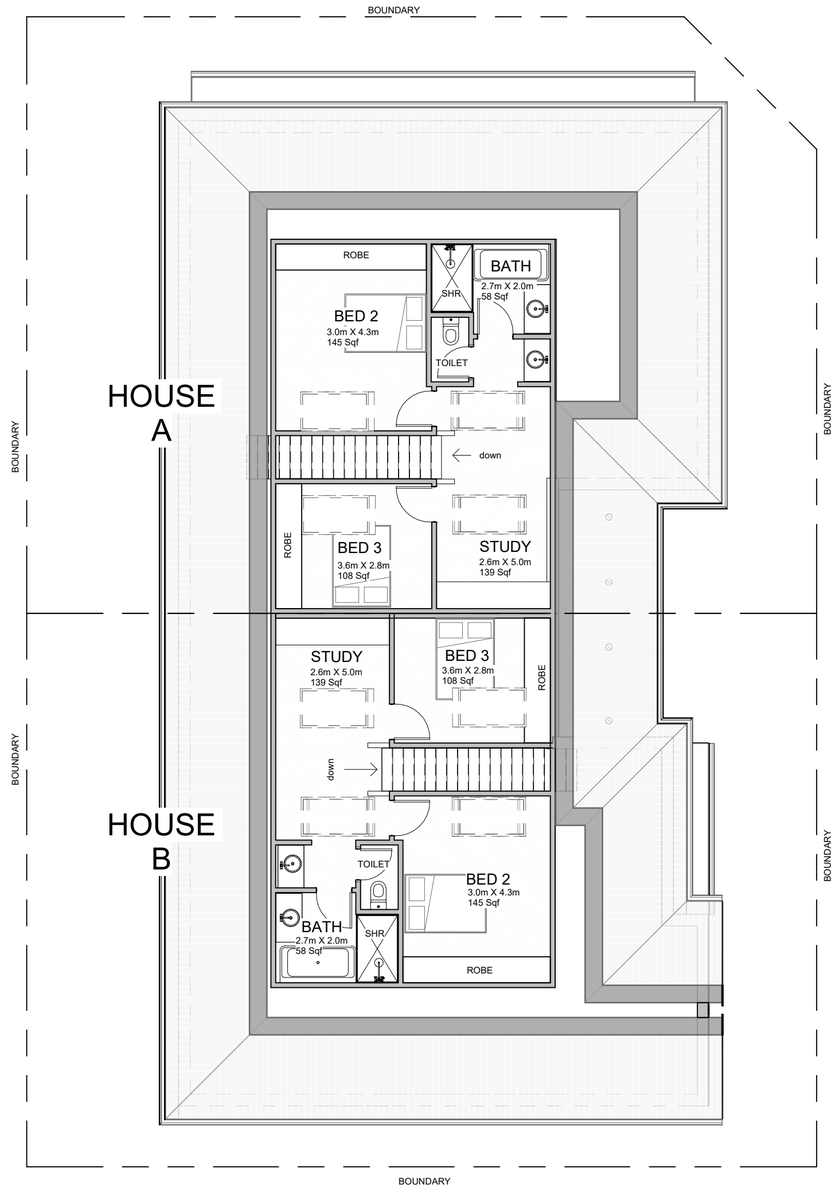

2 FIRST FLOOR
1 : 100

Revision Number	Revision Date	Revision Description

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Sheet Size

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job no : 221025
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project title: PROPOSED RESIDENCE
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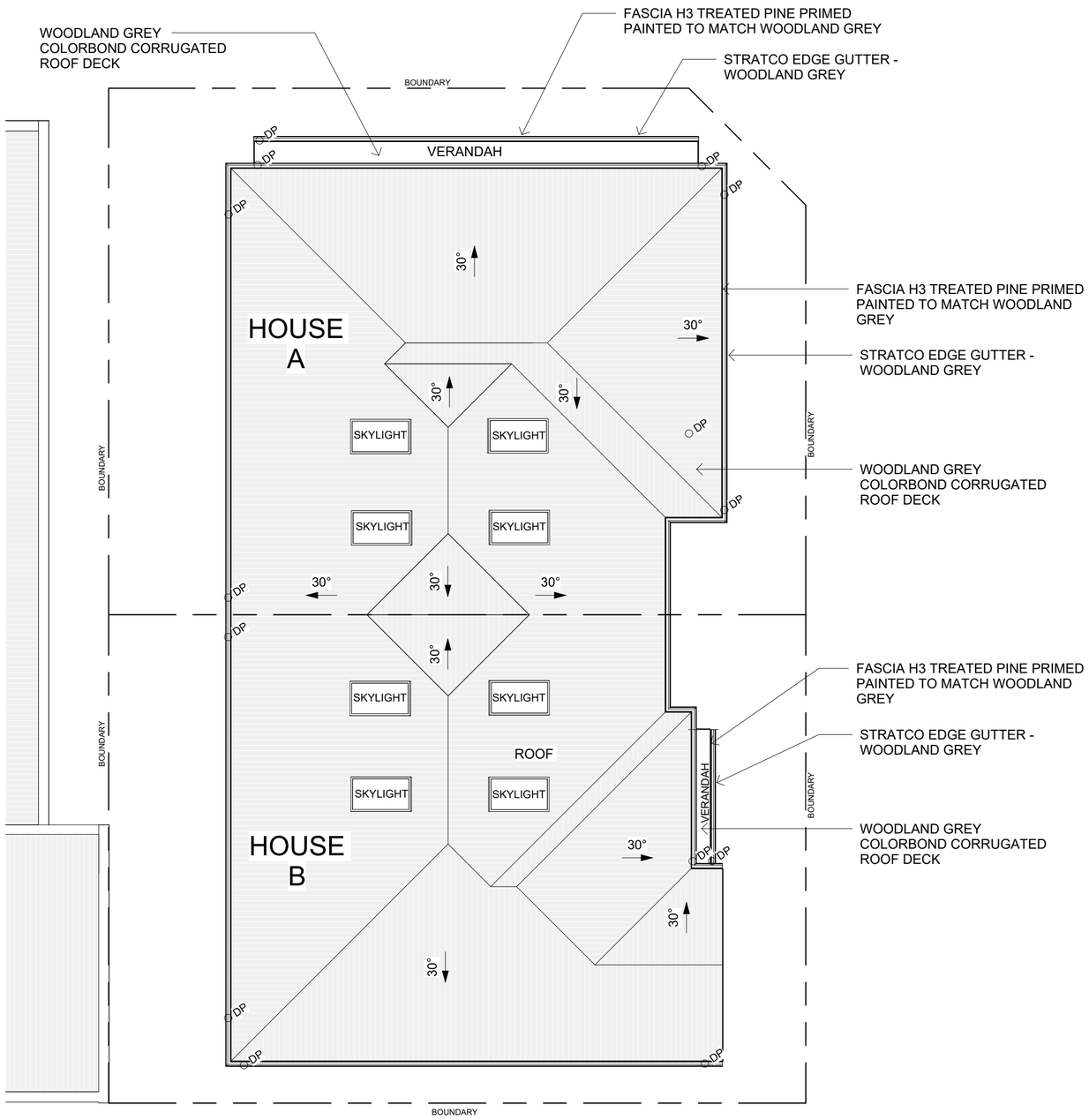

LEGEND

DP — DOWN PIPE

CONNECT DOWNPIPE TO STORMWATER SYSTEM

ROOF NOTES
- REFER TO ENGINEERS DRAWINGS FOR ROOF STRUCTURE DESIGN
- STEEL FRAMING INCLUDING LINTELS SHALL BE GALVANIZED IN ACCORDANCE WITH BCA 3.4.4.4.
- ROOF CLADDING SHALL BE IN ACCORDANCE WITH BCA 93.5.1 AND RAINWATER GOODS BCA P3.5.2
- ROOF PITCHES MULTIPLE

FINISHES:

WALLS:	**GROUND FLOOR:** BRICK VENEER - WHITE TEXTURED COAT RENDER WHITE WASH 2 & WHITE WASH 4 BY HAYMES COLOUR TO FRONT FACADE AND BASKET RANGE SANDSTONE HONED FACE
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PAVING AND DRIVEWAY:	EXPOSED AGGREGATE CONCRETE, PAVERS
FENCE:	NEW BOUNDARY FENCE (HEBEL POWERFENCE PAINTED WHITE WASH 1 BY HAMES) , STEEL PICKET FENCE (FRONT FENCE), BLACK MATTE STEEL GATE

1 ROOF FLOOR
1 : 100

Revision Number	Revision Date	Revision Description

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project title: PROPOSED RESIDENCE
project address: 10 GRAY ST, NORWOOD
page no.: P102
drawing title: PLANS

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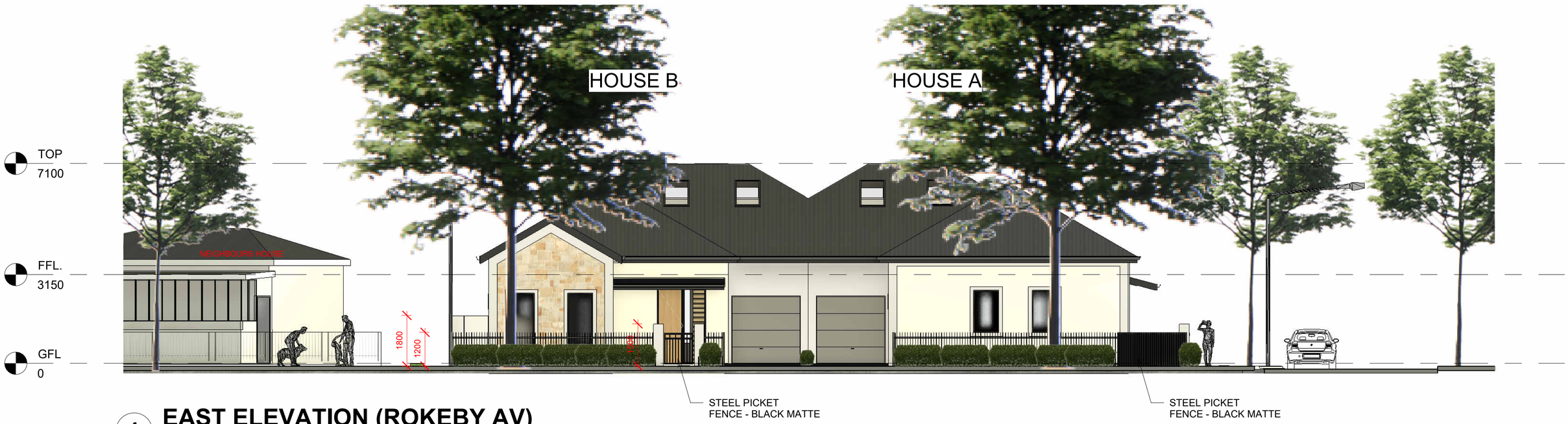

1 EAST ELEVATION (ROKEBY AV)

1 : 100

2 NORTH ELEVATION (GRAY ST)

1 : 100

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

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scale : 1 : 100
job no : 221025
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page no.: P103
drawing title: STREET ELEVATION

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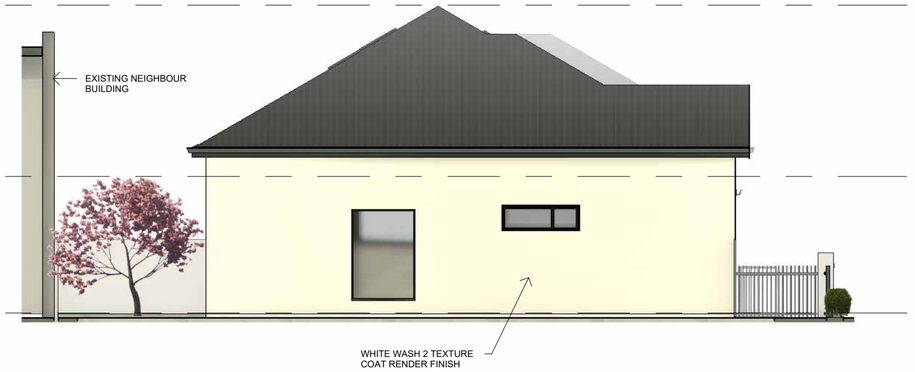
1 FRONT ELEVATION
1 : 100

3 HOUSE A SIDE ELEVATION
1 : 100

2 REAR ELEVATION
1 : 100



4 HOUSE B SIDE ELEVATION
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Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

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scale : 1 : 100
job no : 221025
drawn by : Author
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project title:
PROPOSED RESIDENCE
project address:
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page no.: P104
drawing title: ELEVATION

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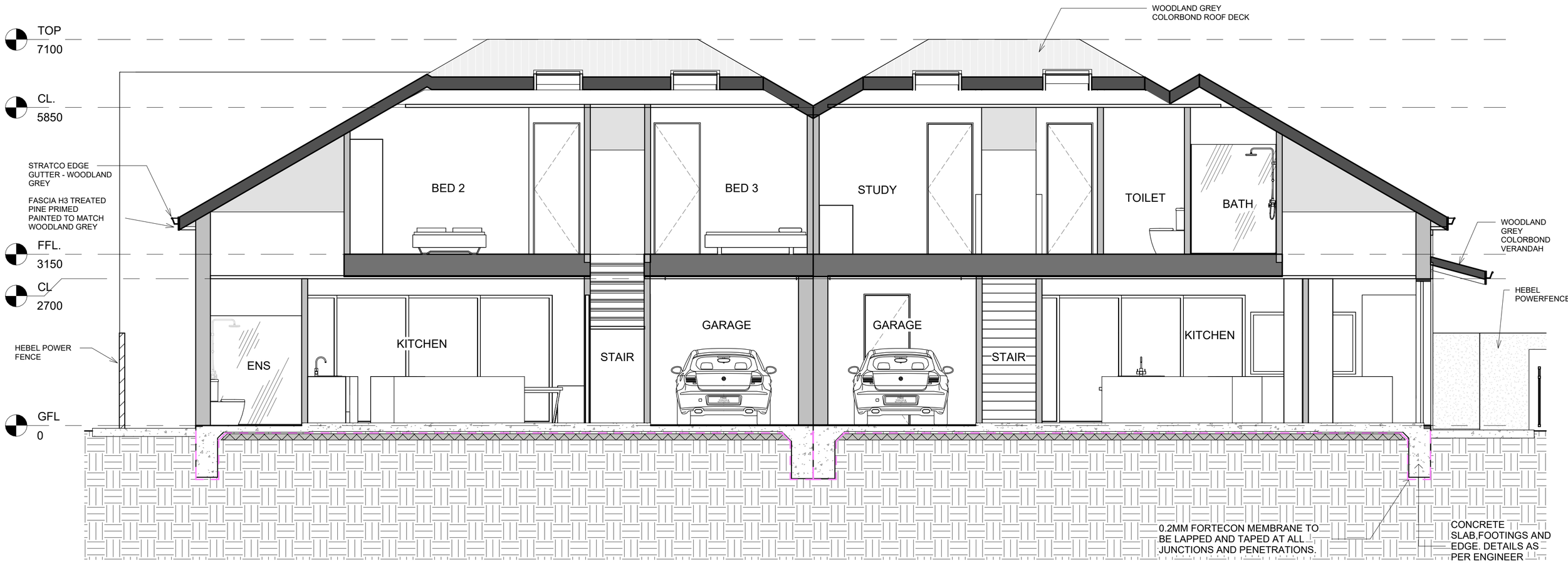

1 SECTION A
1 : 50

FINISHES:

WALLS:	**GROUND FLOOR:** BRICK VENEER - WHITE TEXTURED COAT RENDER WHITE WASH 2 & WHITE WASH 4 BY HAYMES COLOUR TO FRONT FACADE AND BASKET RANGE SANDSTONE HONED FACE
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Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

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job no : 221025
drawn by : Author
checked by : Checker

status: PRELIMINARY
client name: Katelyn, Jessica & Matthew
project title:
PROPOSED RESIDENCE
project address:
10 GRAY ST, NORWOOD

page no.: P105
drawing title: SECTION

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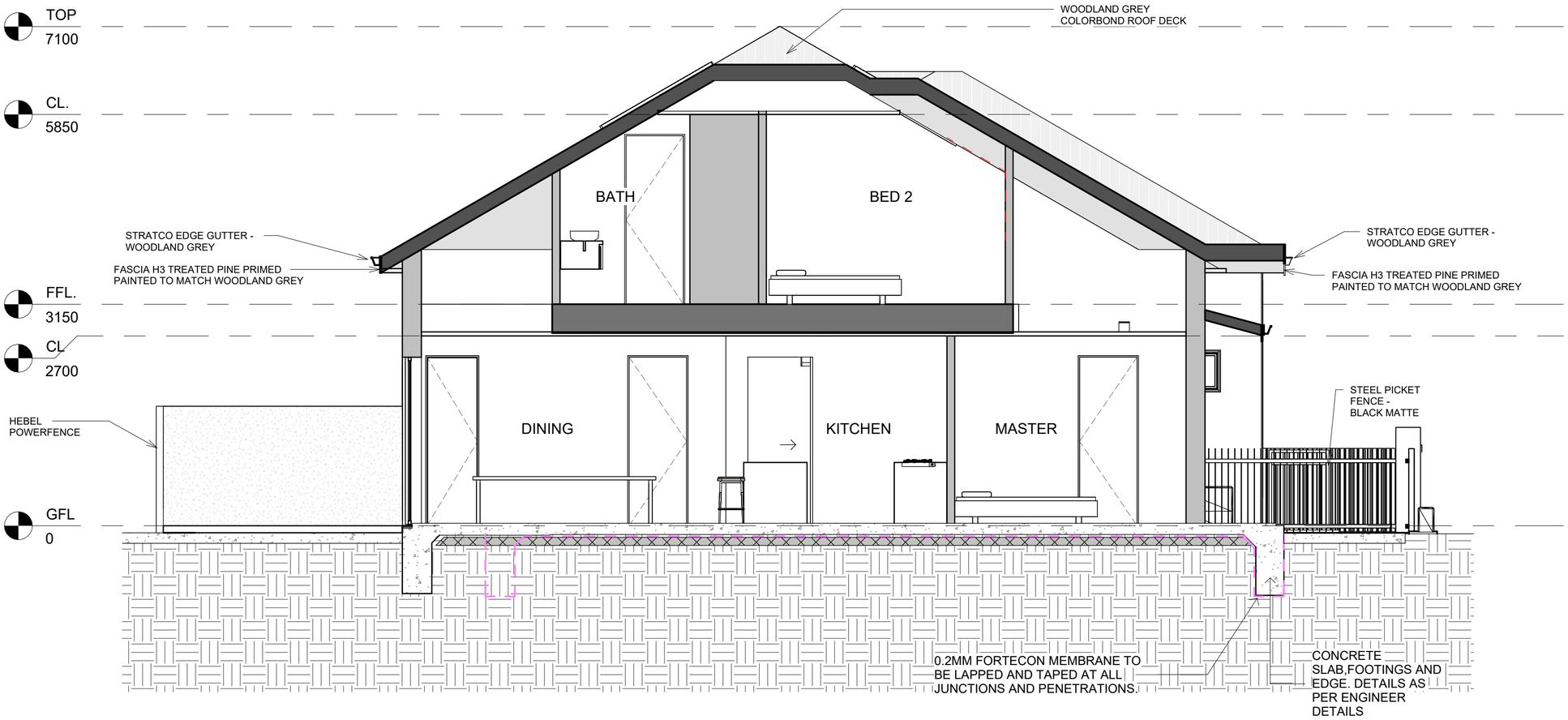

1 SECTION B
1 : 50

FINISHES:

WALLS:	**GROUND FLOOR:** BRICK VENEER - WHITE TEXTURED COAT RENDER WHITE WASH 2 & WHITE WASH 4 BY HAYMES COLOUR TO FRONT FACADE AND BASKET RANGE SANDSTONE HONED FACE
WINDOWS:	MATT BLACK ALUMINIUM FRAMES
EXTERIOR DOOR :	MATT BLACK ALUMINIUM FRAMES WITH SOLID TIMBER DOOR / GARAGE DOOR - WOODLAND GREY
MAIN ROOF:	"WOODLAND GREY" COLORBOND ROOF DECK / "WOODLAND GREY" EDGE GUTTERS & FASCIA H3 TREATED PINE PRIMED PAINTED WOODLAND GREY
PAVING AND DRIVEWAY:	EXPOSED AGGREGATE CONCRETE, PAVERS
FENCE:	NEW BOUNDARY FENCE (HEBEL POWERFENCE PAINTED WHITE WASH 1 BY HAMES) , STEEL PICKET FENCE (FRONT FENCE), BLACK MATTE STEEL GATE

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

plot date : 20/12/2023
scale : 1 : 50
job no : 221025
drawn by : Author
checked by : Checker

status: PRELIMINARY
client name: Katelyn, Jessica & Matthew
project title:
PROPOSED RESIDENCE
project address:
10 GRAY ST, NORWOOD

page no.: P106
drawing title: SECTION

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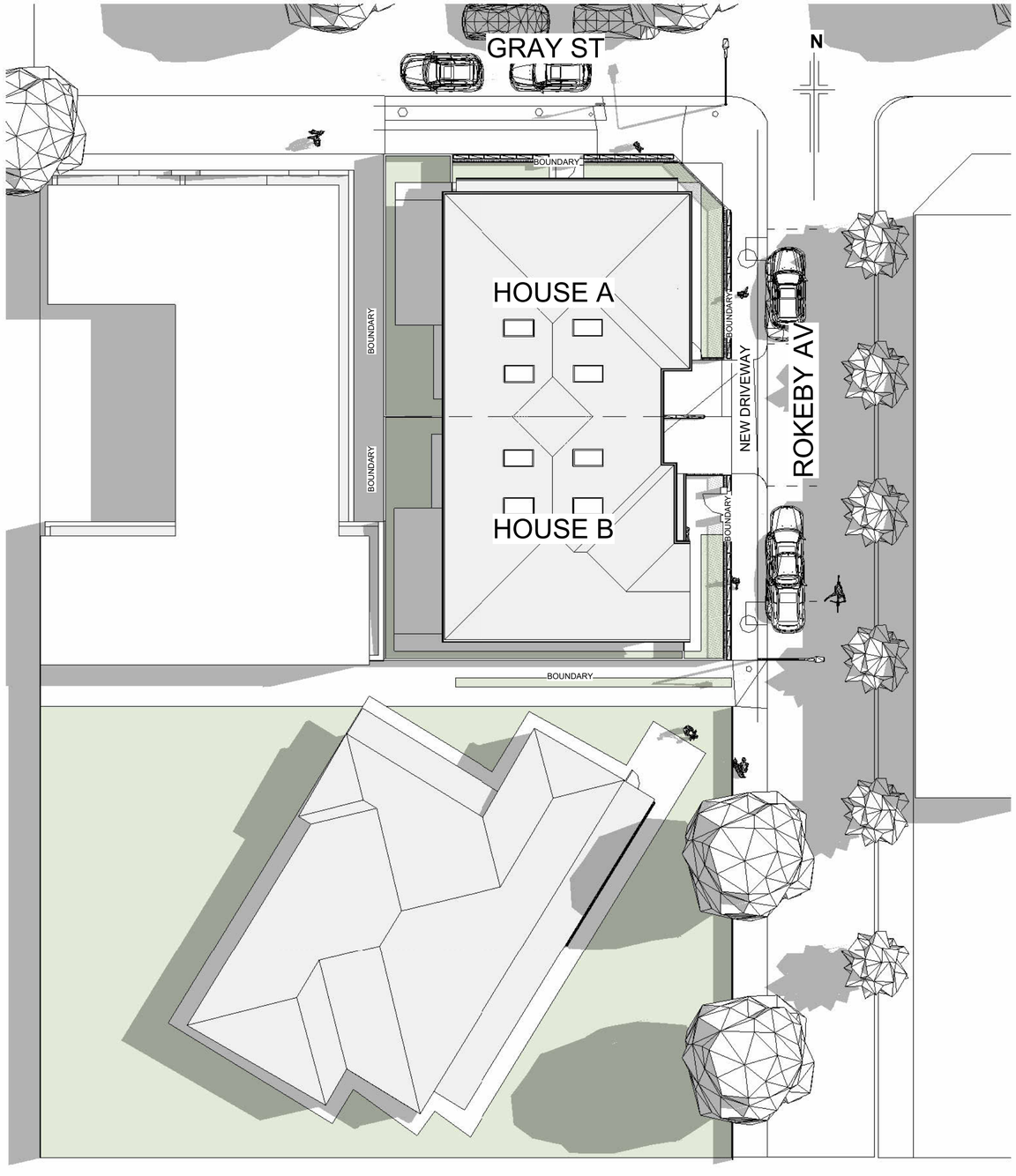
SYDNEY MELBOURNE PERTH BRISBANE ADELAIDE



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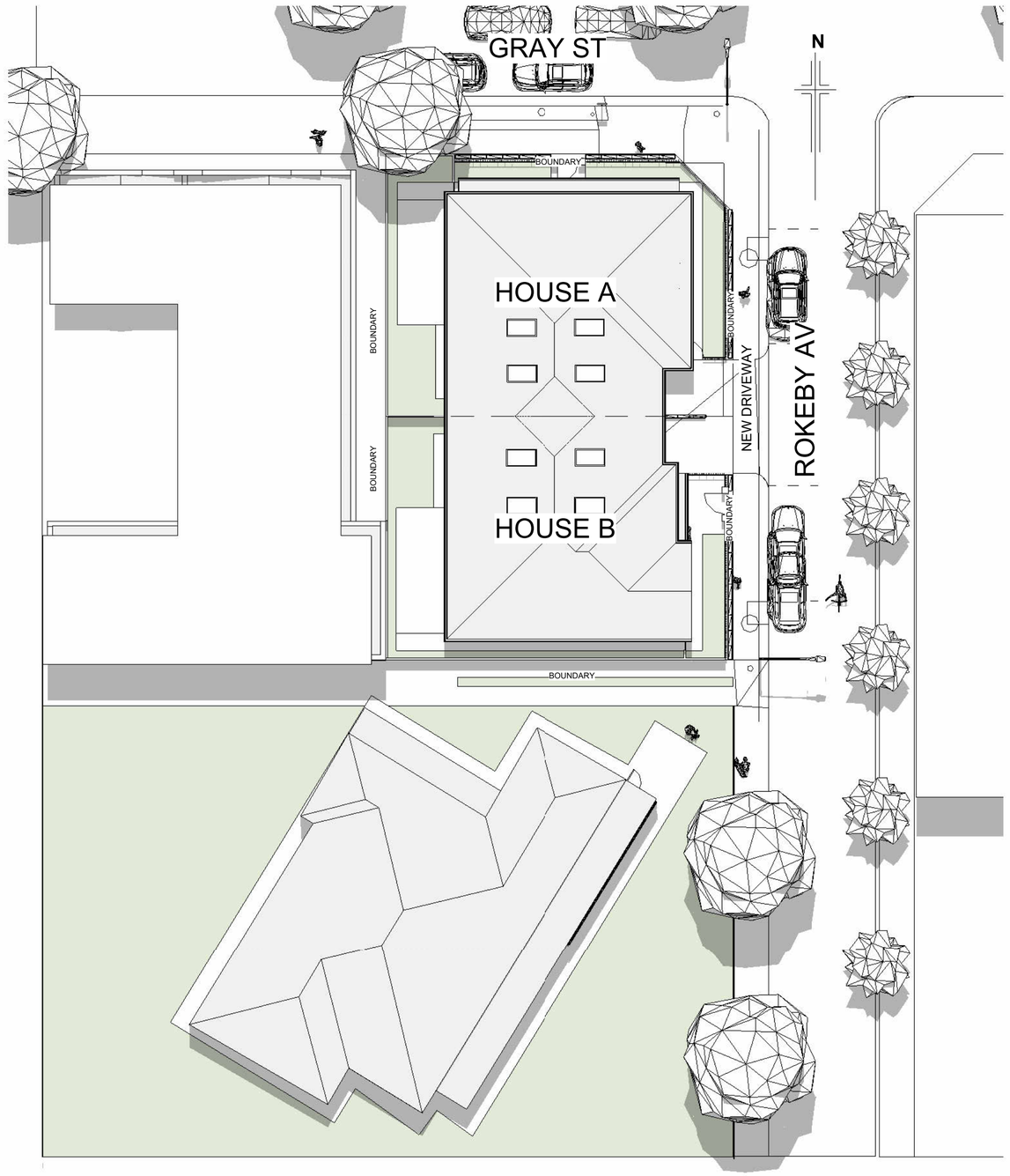

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Revision Number	Revision Date	Revision Description

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Revision No.

plot date : 20/12/2023
scale : 1 : 200
job no : 221025
drawn by : JC
checked by : JL

status: PRELIMINARY
client name: Katelyn, Jessica & Matthew
project title:
PROPOSED RESIDENCE
project address:
10 GRAY ST, NORWOOD
page no.: P203
drawing title: SHADOW

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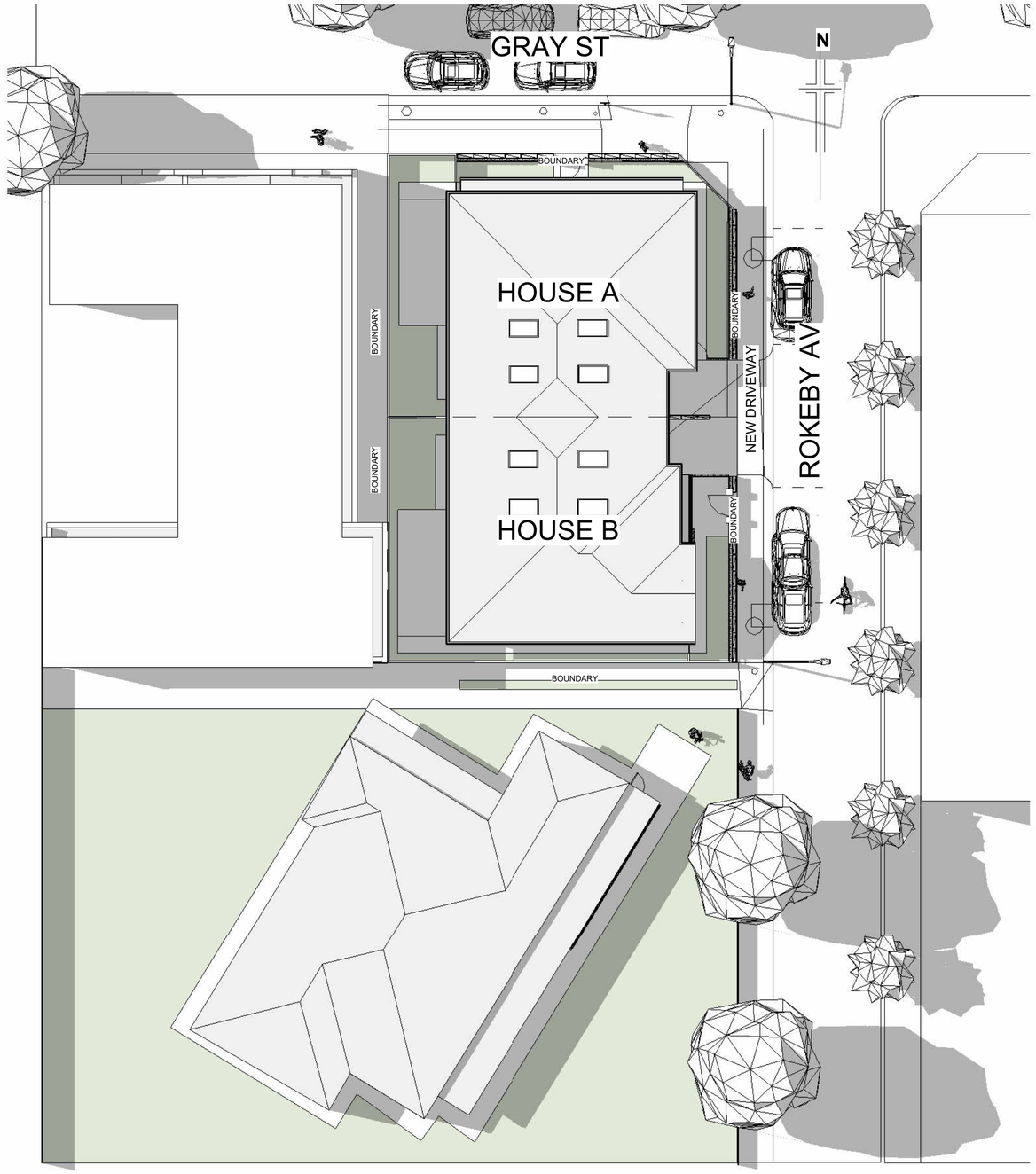

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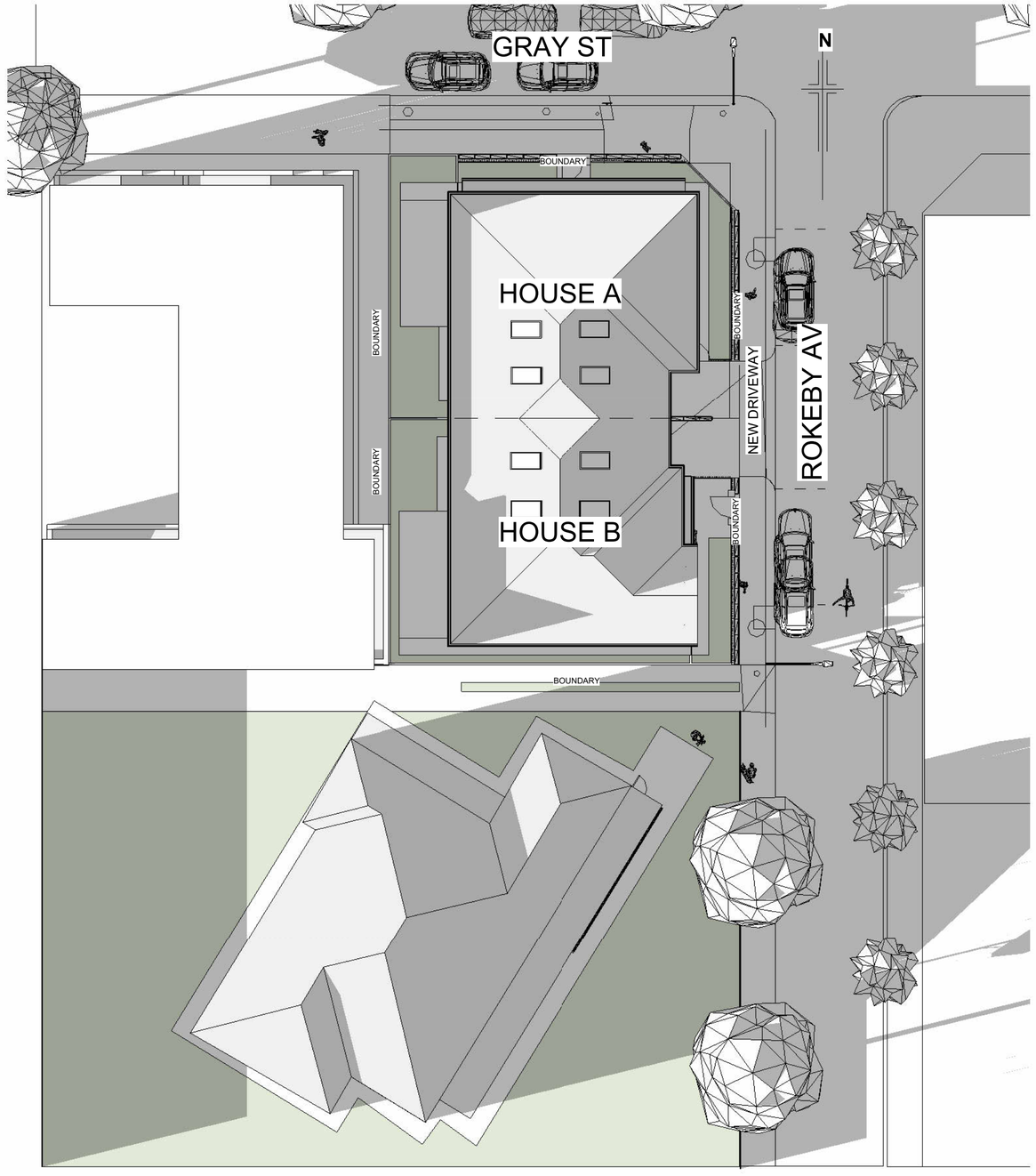

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Revision Number	Revision Date	Revision Description

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job no : 221025
drawn by : JC
checked by : JL

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client name: Katelyn, Jessica & Matthew
project title:
PROPOSED RESIDENCE
project address:
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page no.: P204
drawing title: SHADOW

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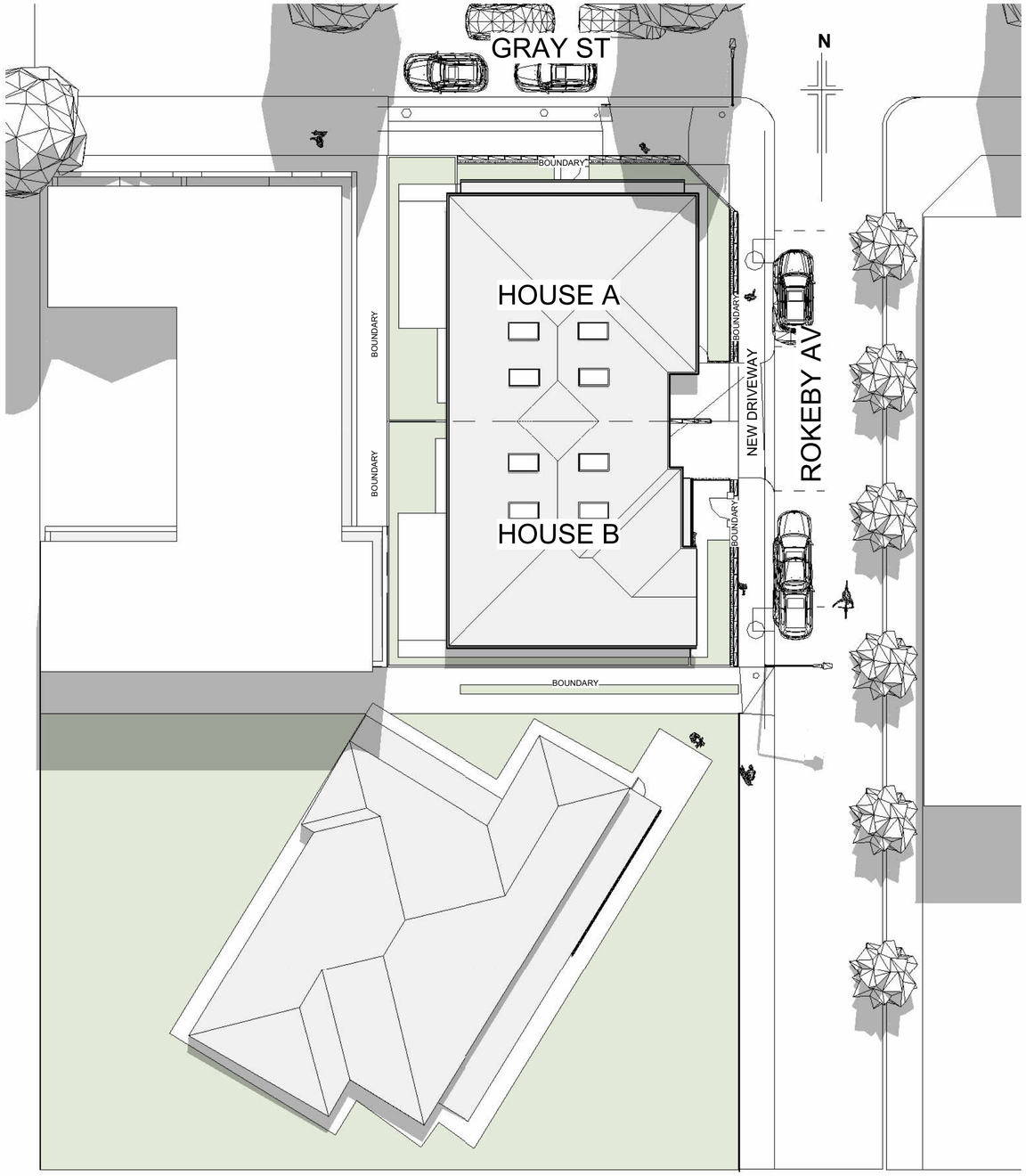

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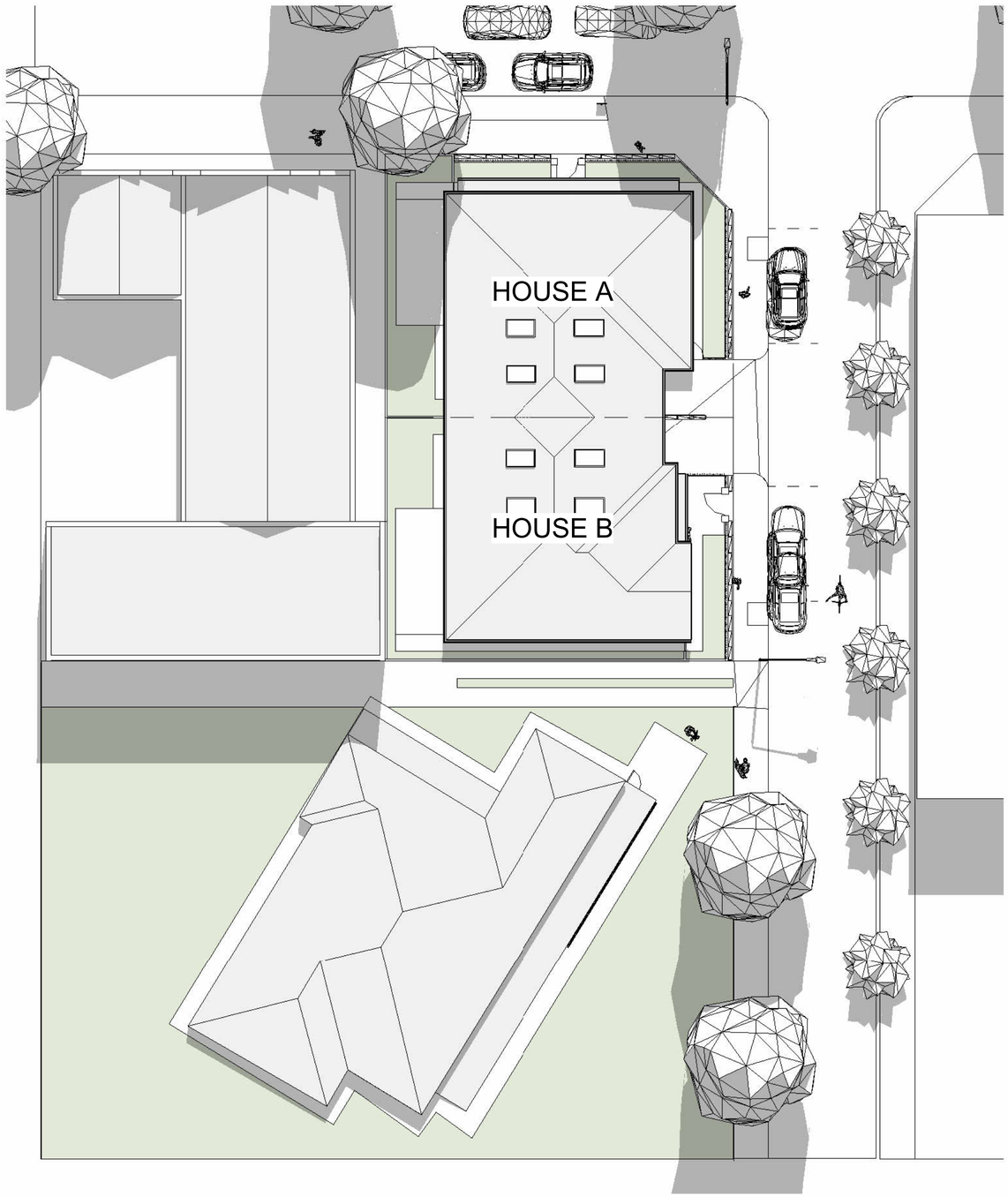

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Revision Number	Revision Date	Revision Description

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Revision No.

plot date : 20/12/2023
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job no : 221025
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status: PRELIMINARY
client name: Katelyn, Jessica & Matthew
project title:
PROPOSED RESIDENCE
project address:
10 GRAY ST, NORWOOD

page no.: P205
drawing title: SHADOW WINTER

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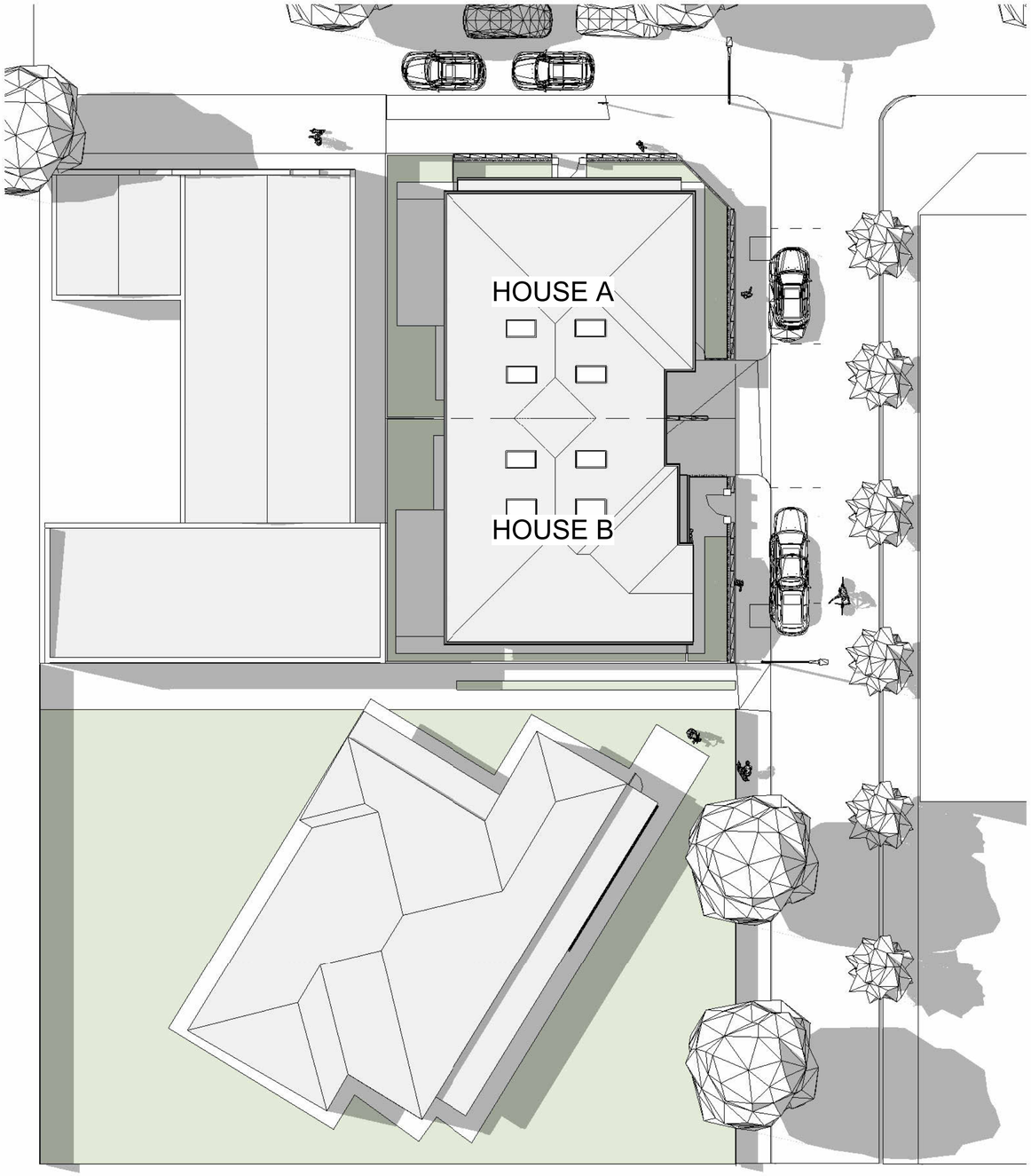

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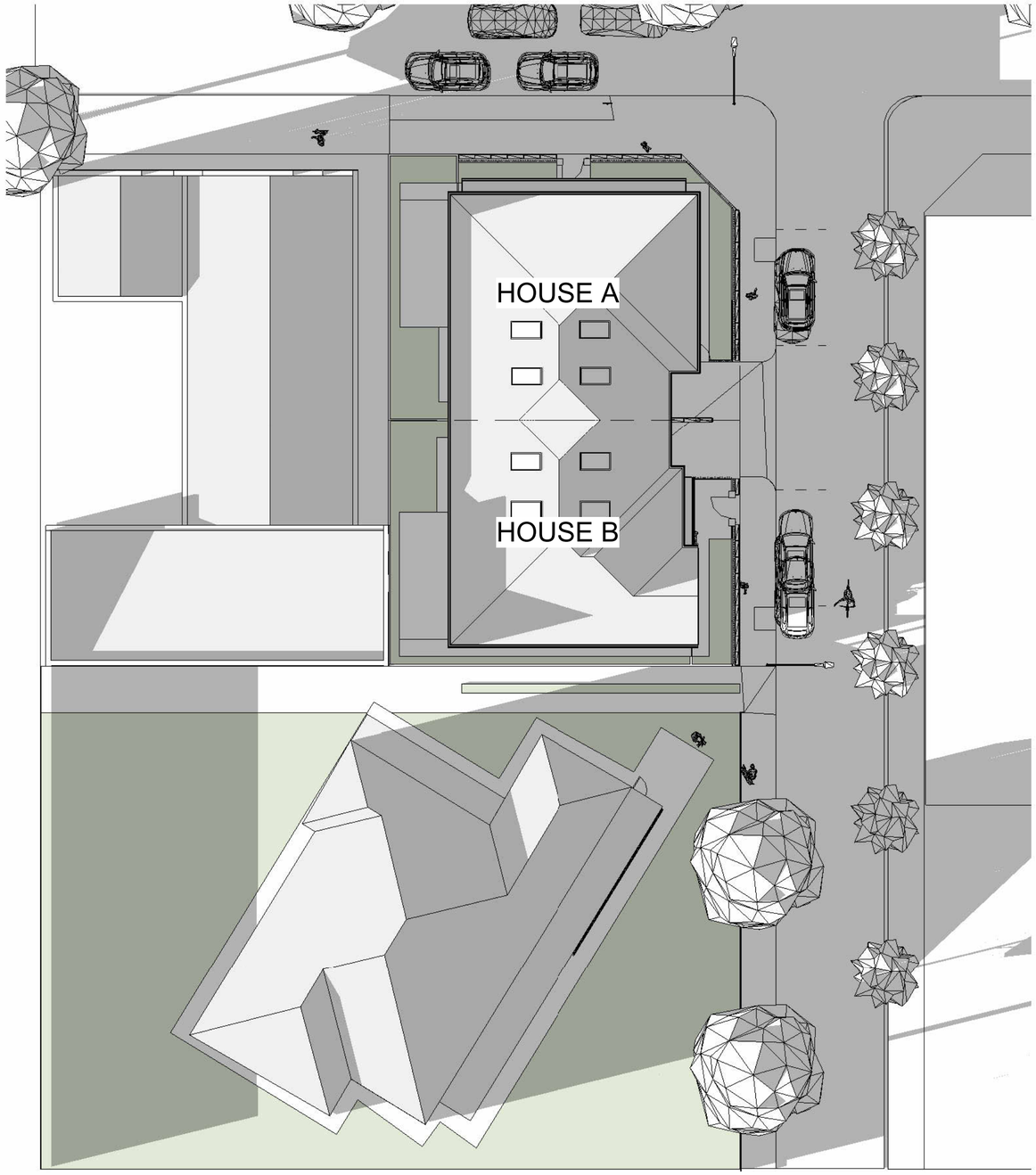

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Revision Number	Revision Date	Revision Description

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job no : 221025
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status: PRELIMINARY
client name: Katelyn, Jessica & Matthew
project title: PROPOSED RESIDENCE
project address: 10 GRAY ST, NORWOOD
page no.: P206
drawing title: SHADOW WINTER

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tree assessment services

ARBORICULTURAL REPORT

DEVELOPMENT IMPACT ASSESSMENT

14 August + RFI 8 November 2023

Anthony Cirocco Design

10 Gray Street Norwood

tas - 3088

Alan Cameron

Consulting Arborist

ISA Certified Arborist #AU004 AQF Level 5

Dip Arboriculture GDip Planning BAppSc Environment

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CONTENTS

1 preliminaries

Introduction

The Applicant seeks to redevelop the existing approx 483 sqm residential property zoned Established Neighbourhood at Norwood by demolition of the existing dwelling, creating an additional Torrens Title by division and construction of 2 two-storey dwellings, in proximity to a 4 Council Street Trees.

The range of assessment tasks undertaken to prepare this report include

- Physical site, soil, drainage, moisture sources, weather, site usage, existing development, tree health, growth response to gauge local environmental influences to growth performance, constraints to tree growth and specimen retention suitability.
- Identification and measurement of encroachment posed by proposed development to specimens determined suitable for retention, determination of impact extent and intensity, species and specimen capacity to sustain potential disruption by builtform, services, earthworks, pavement and other development
- Canopy risk via QTRA, TRAQ and VALID risk assessment methodology to determine level of risk posed current and projected canopy interaction with site traffic, including acceptable exposure abatement.
- Consideration of applicable Planning and Design Code guidelines, AS 4970-09 - Protection of Trees on Development Sites, relevant Council policy, Common Law ownership and property rights other Legislation including tree related management under may be included.
- Provision of tree-sensitive design advice that reduce excessive impacts and departures to improve assessment outcomes and overall schematic acceptability

Method

A range of arboricultural assessment procedures and reporting tasks possibly undertaken include

- Multiple assessment Specimen assessment of condition, structure, stability, form, defects, behaviour, age, habits, lifespan
- Site assessment, location, exposure, soils, site history, growing conditions, visibility, urban character, threat
- Specimen identification, location, legal status, environmental importance assessment
- Retention suitability or removal assessment
- Encroachment history, type, extent and impact severity assessment
- Canopy interactions, risk as per VALID and nuisance assessment
- Root discovery transept specification
- Root and canopy pruning specification
- Tree-sensitive design specification
- Tree protection during construction specification
- Planning and Design Code – Regulated Tree Overlay and AS 4970 summary recommendations

Documents

The following documents assisted preparation of this report

- Google Earth - Historic and recent aerial photo imagery
- South Australian Property and Planning Atlas – site details and infrastructure
- SA Planning, Development and Infrastructure Act 2016 - V-3-2021
- SA Planning, Development and Infrastructure General Regulations 2017 - V-3-2021
- SA Planning and Design Code 2018 - Regulated and Significant Tree Overlay
- AS 4970 - 2009 Protection of trees on development sites
- Proposed Residence – Design set – Anthony Cirocco Design 221025 – 2 August 2023
- Street tree TPZ advisory – Norwood Payneham St Peters Council –undated

2 site assessment

LOCAL AREA

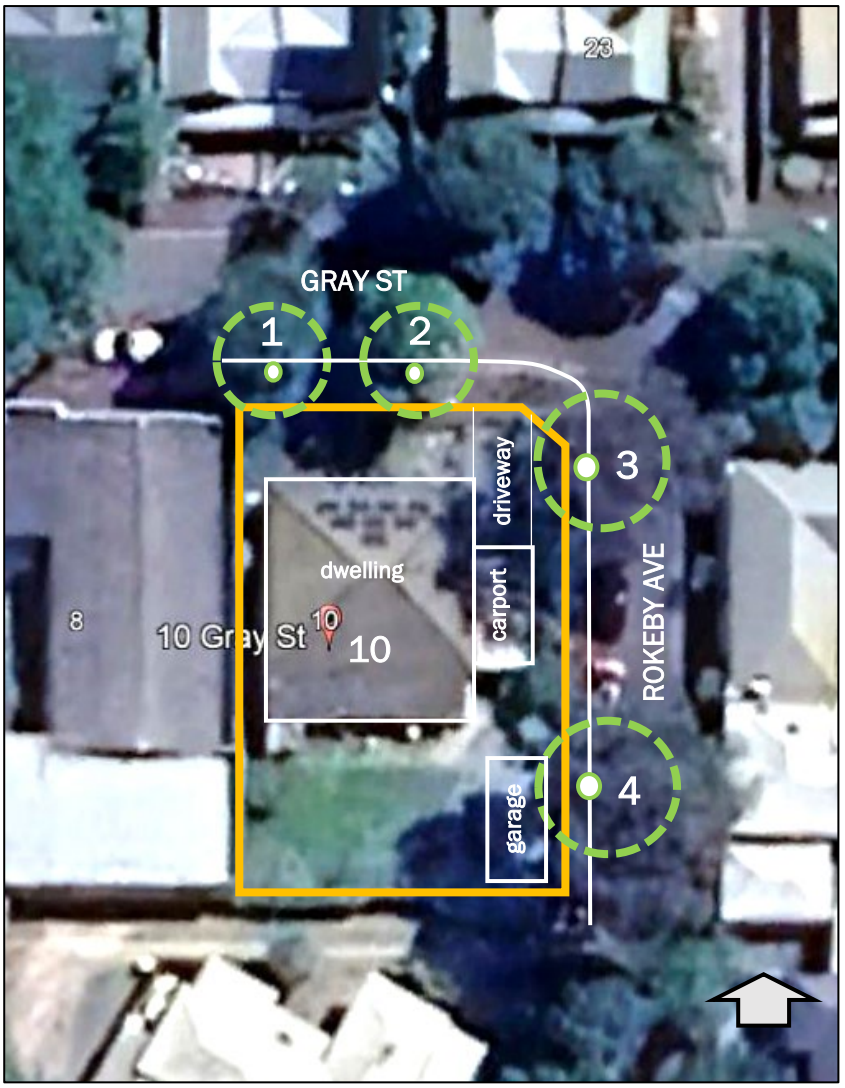
- Zoned Established Neighbourhood
  - Subject property extends off corner Gray and Rokeby
  - Street trees extend roots and canopy into property
- Gray Street
  - 12 mtr wide road reserve with 7 mtr wide carriageway and narrow 2-2.5 mtr wide footpaths and verges
  - Narrow small cottage allotments with 2-2.5 mtr wide primary setbacks to north side
  - Medium sized mature Chinese Elm and Brush Box trees to north side verge
  - Medium sized mature Brush Box and deciduous Jacaranda trees south side and adj subject property
  - Wider larger villa allotments with 0 to 3 mtr primary setbacks to south side
  - Undergrounded power lines, sewer and water mains
  - Trees provide substantial contributions to Gray Street's visual and urban environmental amenity
- Rokeby Ave
  - 7.5 mtr wide road reserve with 4.5 mtr wide carriageway and 1-2.0 mtr wide footpaths and verges
  - Large Ironbox trees x 2 on western verge adjacent subject property not elsewhere in street
  - Brush Box and Ornamental Pears further south
  - Fastigate Capital Pears on narrow road width east side and larger Ornamental Pears elsewhere
  - Sewer and water mains beneath
  - Trees substantially contribute to Rokeby Ave's visual and urban environmental amenity

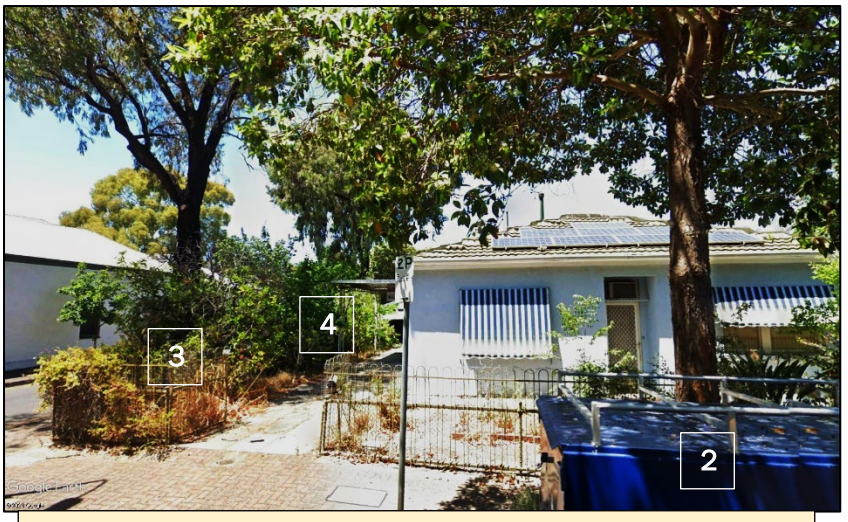
SUBJECT PROPERTY

- 483 sqm villa/corner allotment
  - 300 mm crossfalls north-east to south-west
  - No trees on subject property
  - No neighbouring trees apart from Council's
- Constraints
  - Dwelling and garage built before trees planted
  - Restricts rainfall and root growth beneath
- Growth support
  - Deeper secondary setback of existing dwelling and undeveloped rear yard space offers unconstrained root growing area.
  - No fill or excavation constraint posed to growth

GROWING CONDITIONS

- Medium density developed area
  - extensive pavement and builtform
  - tree shade offers heat bank relief
  - Tree roots extending under paved roadways
  - Root damage likely by infrastructure repair work
- Alluvial clay soils over deeper firm clay.
  - low porosity with moderate moisture
  - possible subterranean seepage
- Prevailing winds/weather fronts
  - south-west to west cold, north-west warm, north for pre-cool change, south-east nocturnal warm season
  - Trees not overtly shaped by wind conditions
  - Low level wind break offered by dwelling height
  - Canopy above subject to buffeting
  - Most trees medium size fit under dwelling windbreak except for Rokeby Ave
- Tree size for location suggests paving preventing soil-moisture evaporation.



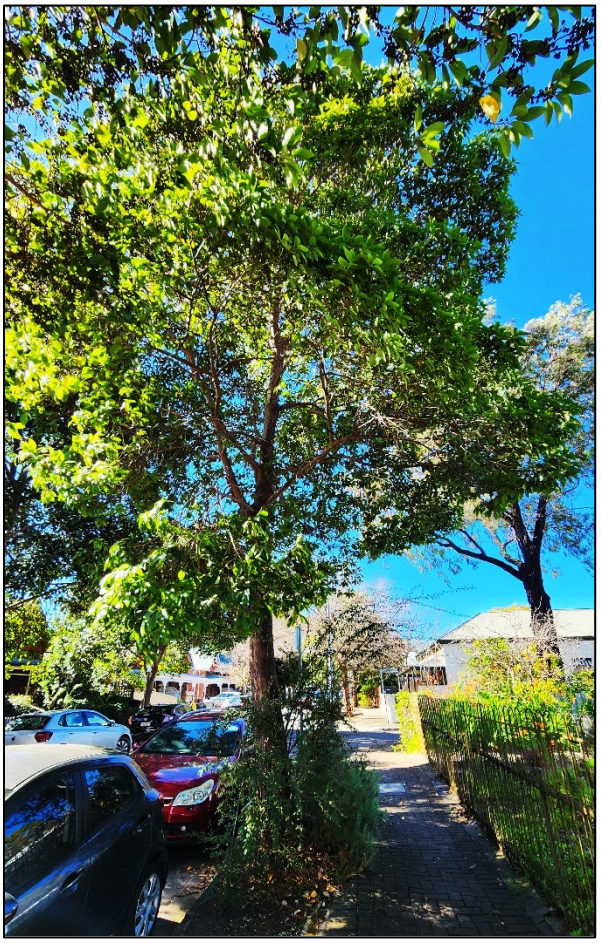


View to east. Dwelling orientates north with car port off side to east and driveway/site access near street corner. Tree 2 in Gray Street foreground and Trees 3 and 4 in Rokeby Ave.

3 tree assessment

TREE 1	*Lophostemon confertus* Brushbox
LOCATION	Approx aligns with southern boundary projection into Gray St verge. Edge of trunk meets kerb.
TRUNK MEASURE	1280 @1.4, 1450 @1.0, 1720 @0.3 mtrs H
SIZE	Height 5 mtrs, Canopy 4 4 4 4 mtrs NSEW
PROTECTION	SRZ 2.5 TPZ 4.9 mtrs rad
LEGAL STATUS	Unregulated as per SA PDI Regs 2017 -3F 2(b)
AGE	230-25 yrs Early Mature
CONDITION	Health-Very Good, Structure-Good-Fair, Stability-Good Single upright trunk biased north 10° divides x 2 @ 2.5 mtrs high angled ribbed inclusion codominant half hemisphere canopies Stem 1 250 mm Ø 30° north, Stem 2 400 mm Ø 30° south. Hardy pollution and disruption tolerant species no longer favoured in urban areas due to nut drop nuisance. Approx 30-40 yrs remaining life expectancy.
QUALITY	Moderately High – Minor stem defect, no disease, no limb failures, well balanced, well maintained, high shade amenity

TREE 2	*Lophostemon confertus* Brushbox
LOCATION	Trunk on kerb edge 8.5 mtrs off southern boundary projection.
TRUNK MEASURE	1150 @1.4, 1250 @1.0, 1650 @0.3 mtrs H
SIZE	Height 5 mtrs, Canopy 4 4 4 4 mtrs NSEW
PROTECTION	SRZ 2.5 TPZ 4.7 mtrs rad
LEGAL STATUS	Unregulated as per SA PDI Regs 2017 -3F 2(b)
AGE	20-25 yrs Early Mature
CONDITION	Health- Good, Structure-Good-Fair, Stability-Good Upright single trunk, distinct taper, lateral 1 north @ 3 mtrs H apical codominant., Hardy pollution and disruption tolerant species no longer favoured in urban areas due to nut drop nuisance. Approx 30-40 yrs remaining life expectancy.
QUALITY	High - No defects, no disease, no limb failures, well balanced, well maintained, high shade amenity.



TREE 3	*Eucalyptus sideroxylon* Ironbark
LOCATION	4.5 mtr south of northern front boundary projection in Rokeby Ave footpath Edge of trunk meets kerb.
TRUNK MEASURE	2520 @1.4, 2640 @1.0, 2670 @0.3 mtrs H
SIZE	Height 15 mtrs, Canopy 10 8 6 6 mtrs NSEW
PROTECTION	SRZ 3.1 TPZ 10.1 mtrs rad
LEGAL STATUS	Regulated as per SA PDI Regs 2017 -3F 2(b)
AGE	40-45 yrs Over-Mature
CONDITION	Health-Fair, Structure-Good-Fair, Stability-Fair Single upright tapered trunk with lower limb removals to 3 mtrs H then high angled lateral limbs L1 400 mm Ø 60° north and north-west, L2 south 6 mtrs H 400 mm Ø 40° with main stem/limb cluster x 3 @ 8 mtrsH. Foliar density moderate, canopy coverage good. Disruption and compaction tolerant species with low limb flexibility resulting in limb fatigue in turbulent weather. Up to 10 yrs remaining useful lifespan.
FORM	Tall tapered stem forming upper peripheral apical canopy surrounding upper central canopy
QUALITY	Moderate–high proportion of small limbs and low foliar density indicates mildly stressed growing conditions possibly from heat bank. No obvious disease, well balanced, well maintained. Very large for confined street

TREE 4	*Eucalyptus sideroxylon* Ironbark
LOCATION	2.2 mtrs north of southern rear boundary projection in Rokeby Ave footpath. Edge of trunk meets kerb.
TRUNK MEASURE	2580 @1.4, 2640 @1.0, 3040 @0.3 mtrs H
SIZE	Height 15 mtrs, Canopy 6 8 6 4 mtrs NSEW
PROTECTION	SRZ 3.1 TPZ 9.5 mtrs rad
LEGAL STATUS	Regulated as per SA PDI Regs 2017 -3F 2(b)
AGE	40-45 yrs Fully Mature
CONDITION	Health-Very Good, Structure-Good, Stability-Good Single upright tapered trunk with lower limb removals to 3 mtrs H diverts south corrects to vertical from L1 north 600 mm Ø 45°6 mtrsH subdominant apical, limb cluster x 4 @ 9 mtrs with regrowth. Foliar density very good and canopy coverage very even. Disruption and compaction tolerant species with low limb flexibility resulting in limb fatigue in turbulent weather. Approx 20-25 yrs remaining life expectancy.
QUALITY	High – Size for age and condition indicates good response to larger growing area, no disease, no limb failures, well balanced, well maintained, high shade amenity

4 encroachment assessment

tree assessment services

Encroachment measurement compares the extent of existing builtform on site to the footprint of proposed development.

- Elements considered include pavement, services, building, excavation and fill.
- Encroachment severity identified from depth of impact and porosity of surface treatment.
- Encroachment occurs where new development extends over portions of the TPZ that are not occupied by existing builtform. Builtform restricts oxygen and rainfall from accessing ground containing respiring tree roots, hence limits root sustainability.
- New non-porous development over previous non-porous builtform does not generate root loss or deep encroachment
- Pavement or shallow excavation over areas not previously occupied by builtform, scalps surface roots and permits surficial root recolonisation from deeper lateral roots as growing conditions requiring oxygen and soil moisture can be replenished.
- Preservation of growing conditions requires protection from ground compaction during construction.
- Construction proposed in SRZ's allowable if isolated and preliminary discovery indicates no large root intersection or impact.

Canopy risk
No limbs of sufficient length height and mass able to impact with or substantially damage proposed buildings– no pruning required off any tree at this time.

Tree 1
10 m² Shallow encroachment posed by porous garden and peripheral pavement over previous porous front garden.

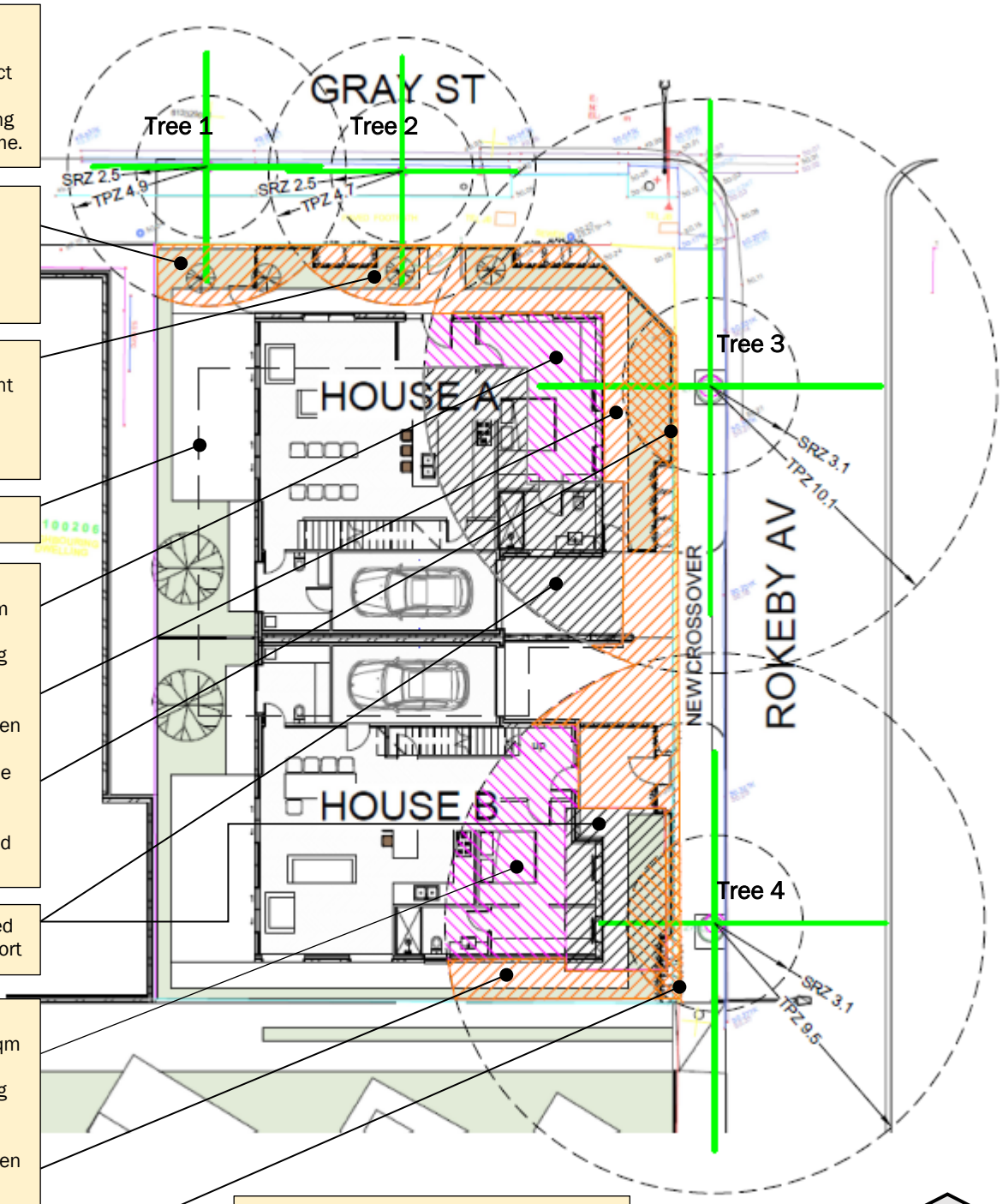
Tree 2
11.5 m² Shallow encroachment posed by porous garden and peripheral pavement over previous porous front garden.

Previous dwelling footprint

Tree 3
- 23 sqm or 7.1% of 320 sqm TPZ deep encroachment posed by proposed Dwelling A.
- 34 sqm shallow encroachment by new garden and peripheral pavement over previous front and side garden.
- Boundary fence piers acceptable in SRZ with hand dug root discovery

39 sqm constraint to TPZ posed by previous dwelling and car port

Tree 4
- 29 sqm or 10.2% of 283 sqm TPZ deep encroachment posed by proposed Dwelling B.
- 28 sqm shallow encroachment by new garden and peripheral pavement over previous rear garden beyond previous garage.
- Boundary fence piers acceptable in SRZ with hand dug root discovery



Services
- Existing Sewer IP in Gray St verge may be retained for Dwelling A.
- Sewer, Water, Electricity, Gas (or not) multiple services routed to both dwellings via prop driveways off Rokeby between Trees 3 and 4 drilled from main to reduce trench impacts.

PROPOSED DEVELOPMENT AND RETAINED TREE INTERACTIONS
10 Gray Street Norwood
Base source Anthony Cirocco Designs

5 assessment summary

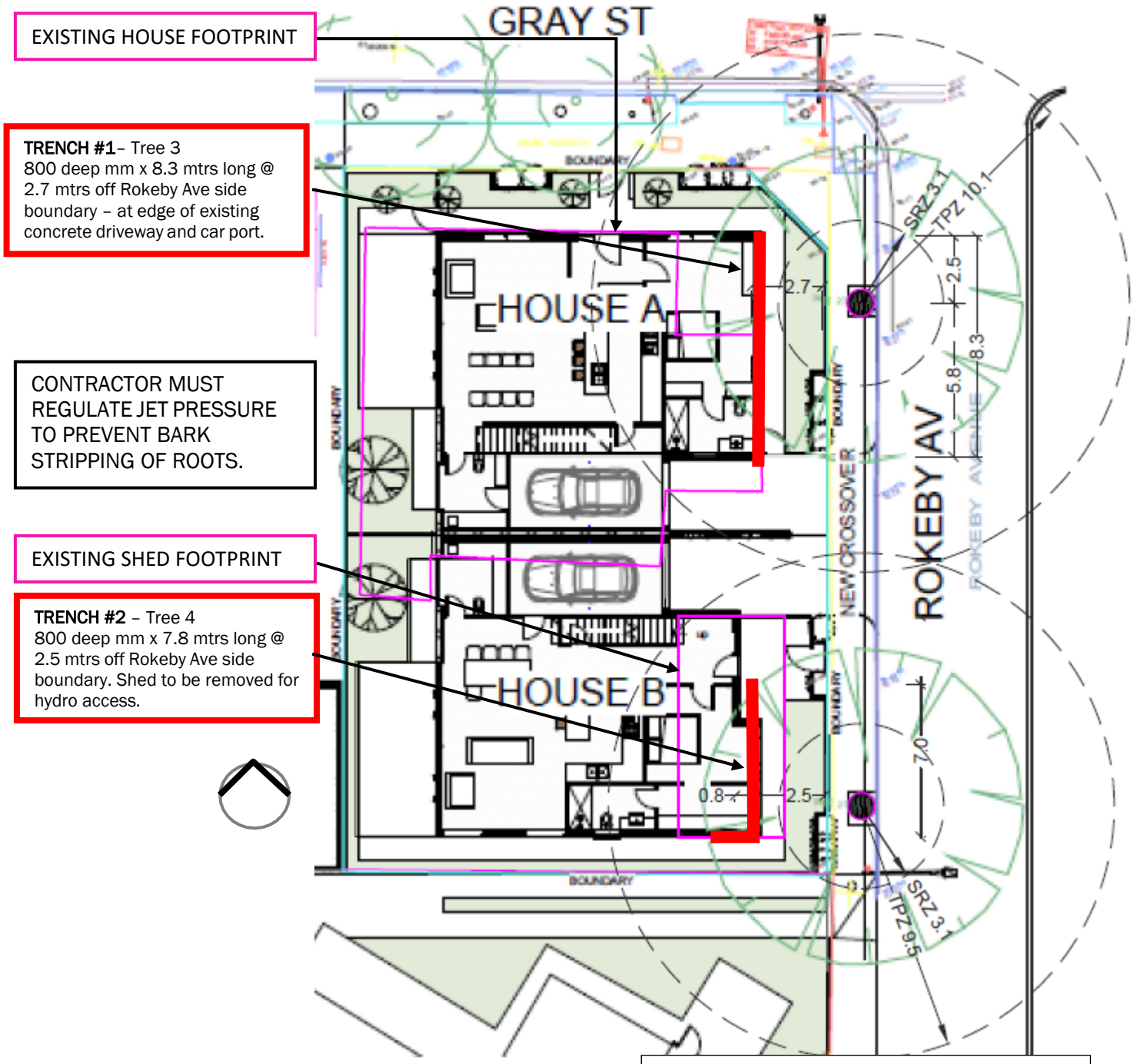
DEVELOPMENT	▪ Deep Encroachments of 7.1% of Tree 3 and 10.2% of Tree 4's TPZ's considered within species and each specimen's capacity to sustain. ▪ Shallow Encroachment posed by peripheral paving and gardens elsewhere to Trees 1-4 considered low impact sustainable. ▪ Services to be routed into each proposed allotment between Trees 3 and 4 where root disturbance would be lowest or drilled in to achieve negligible impacts. ▪ Pruning intervention to address risk or construction access not required. ▪ No trees exhibit history or apparent likelihood of limb failure. ▪ Maintenance pruning able to undertaken if required post development ▪ Overall encroachment by builtform contended as Minor as per Section 3.3.2 of AS 4970 *Protection of Trees on Development Sites*.
PROTECTION	▪ Temporary fencing to property boundary able to isolate street trees from construction activity conducted exclusively within subject property. ▪ Front and side garden areas may be fenced off internally from machinery access post demolition and wet based mixing and waste disposal activities. ▪ Pier holes for boundary fencing to be hand dug and relocated if roots >50mm discovered. ▪ Fencing or boundary walling based on pier and suspended beams, no trenching or strip footings required or permitted. ▪ All site access via existing driveway and proposed driveway, nowhere else required. ▪ Tree Assessment Services nominated as Project Arborist.
LEGISLATIVE RECOMMENDATION	▪ Proposed development demonstrates capacity to o sustain subject Street Trees and maintain the importance of their existing contributions to local area urban character and environmental amenity ▪ Proposed development demonstrates capacity to o Sustain the subject trees and maintain public environmental amenity o satisfy Performance Outcomes ▪ PO 1.1 – regulated trees 3 and 4 offering importance retained ▪ PO 1.4.1 - reasonable development demonstrated as scheme meets Established Neighbourhood Zone and Tree Preservation performance requirements ▪ PO 2.1 – tree roots protection under shallow encroachment able to recolonise ▪ PO 3.1.2 - Division and development demonstrates capacity to accommodate conditions sustaining Trees 1-4 and attributes of importance they offer to the local urban environment.
	All relevant matters addressed to meet best practice expectations Alan Cameron Consulting Arborist Dip Arboriculture AQF Level 5 ISA Certified Arborist #AU0004 VALID

6 RESPONSE TO RFI 13/9/23

From Council's request for root discovery along the proposed extent of footings aligning 2.5 mtrs off the eastern boundary of the subject property and closest offset from subject Council street Trees 3 and 4 as per the following plan.

Results of discovery undertaken by hydrovacuum contractor to specified lengths and 600 mm depth.

Note that engineering footing design has not been undertaken and that depth of strip footing nominated on architectural elevations and sections was indicative only and not based on any soil test based engineered profile.



HYDROVAC TRENCHING
PROPOSED DEVELOPMENT
TWO DWELLINGS
10 GRAY STREET NORWOOD
BASE ACDESIGN

FINDINGS TRENCH #1

No.	CHAINAGE mtrs	SIZE mm Ø	DEPTH mm	ALIGNMENT
	0.0 North			
1	0.3	20	500	Perp
2	0.55	20	300	Perp
3	1.0	20	600	Perp
4	1.1	15	250	Perp
5	1.4	20	500	Perp
6	2.1	100	500	Perp
7	2.2	20	500	Perp
8	2.3	20	500	Perp
9	2.7	30	450	Perp
10	2.9	30	550	Perp
11	3.1	50	200	Perp
12	3.3	40	500	Perp
13	3.4 - 3.8	40	50	Long
14	4.1 - 4.7	40	50	Long
15	4.8 - 5.1	50	200	Long
	7.8 South			

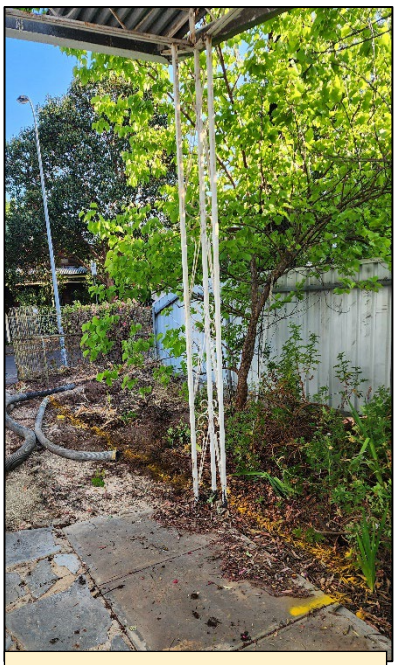
Hydrovac discovery undertaken as per proposed extent to 600 mm depth 2.5 mtrs off eastern boundary or approx 3.5 mtrs perpendicular west of Tree 3.

Concrete driveway removed for ground access. Ground was dense and excavation was slow. Iron and rock detritus regularly unearthed. No bark stripping occurred.

About 20 roots smaller <15 mmØ not recorded, indicative of minor dispersed lateral roots at variable depths, possibly not from subject tree and not structurally supportive or important.

Discovery summary

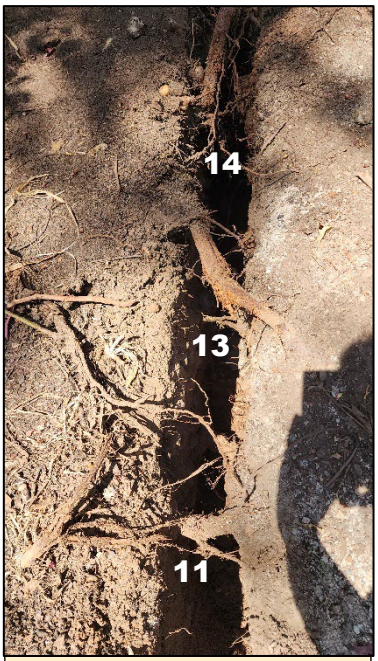
- 3 roots > 50 mm Ø.
  - Root 6, 11 and 12 largest discovered, low density, limited extent, near opposite, limited numbers, at anerobic depths considered unlikely structurally supportive.
  - Roots 13,14 and 15 possibly from the same root orientate from other nearby small tree, along previous edge of concrete driveway at shallow aerobic depth.
- Few roots extend westwards.
- Structural roots possibly deeper or focused elsewhere.



Discovery mark out 2.5 mtrs off eastern boundary. Small tree likely responsible for roots 13-15.

8.3 mtr long by 600 mm deep trench to driveway and car port edge.

Small roots discovered extending into shade, not severed.



Larger diameter root (s) 13-15 shallow following edge of concrete pavement.

FINDINGS TRENCH #2

No.	CHAINAGE mtrs	SIZE mm Ø	DEPTH mm	ALIGNMENT
	0.0 North			
1	0.4	70	500	Perp
2	0.6	15	500	Perp
3	1.2	25	500	Perp
4	3.4	25	150	Water pipe
5	4.8	20	600	Perp
6	5.5	15	400	Perp
7	5.8	15	150	Perp
8	6.8 South			
9	7.6 West			

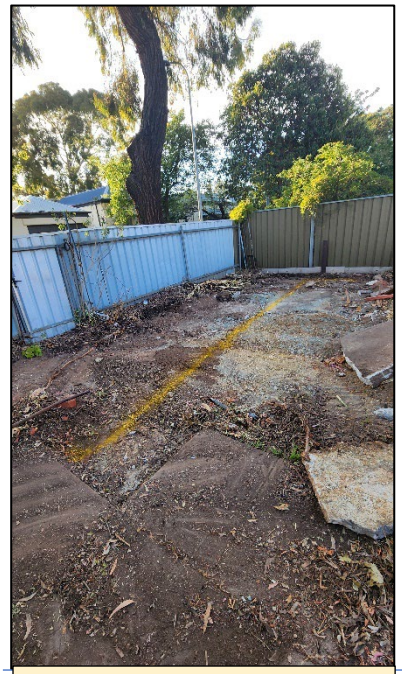
Hydrovac discovery undertaken as per proposed extent approx 3.5 mtrs perpendicular west of Tree 4.

Metal shed and slab removed for ground access. Ground was dense and excavation was slow. Iron and rock detritus regularly unearthed. No bark stripping occurred.

About 10 roots smaller <15 mmØ not recorded, indicative of minor dispersed lateral roots at variable depths, possibly not from subject tree and not structurally supportive or important.

Discovery summary

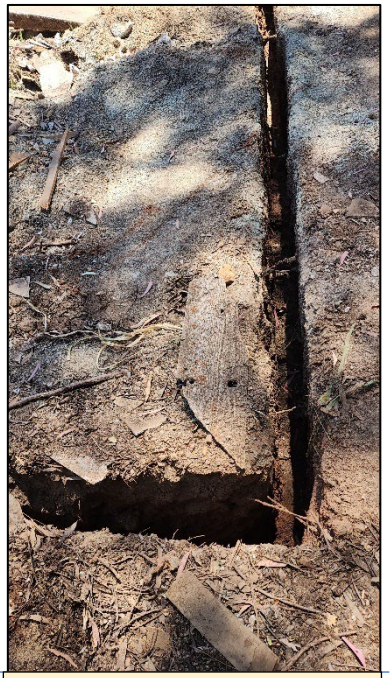
- 1 root > 50 mm Ø discovered
  - Root 1 largest, low density, limited extent, isolated, not opposite Tree 4, unlikely offers structural support
- Overall very few roots extend westwards possibly due to previous shed's moisture constraint effect
- Structural roots possibly deeper or focused elsewhere.



Discovery mark out 2.5 mtrs off eastern boundary after garage and slab demolished.

7.6 mtr long x 800 mm deep hydrovacced trench completed.

Very few roots encountered 1>50mmØ. New species *Water pipei* discovered.



Trench extended to west given proximity to tree

SUMMARY

Findings of 4 Roots >40 mmØ in Trenches #1 and #2 surprising considering proximity of tree to trench, potentially higher quality root growing conditions in subject property's front and rear garden spaces, and alternative supposedly lower quality conditions under adjacent roadways.

Species tolerance of compaction and aerobically challenged ground may explain this.

Essentially, limited findings indicate that neither the health, structural condition or stability of Trees 3 or 4 would be affected by the minor encroachment posed by proposed development.

My understanding regarding footing design, is that standard strip and slab footing remains favoured by the applicant's engineer as the alternative pier and beam is not deemed suitable, and now proven by discovery to be unnecessary for the 2 storey structures.

Legislative Recommendations as per Section 5, page 7 of this report remains as nominated.

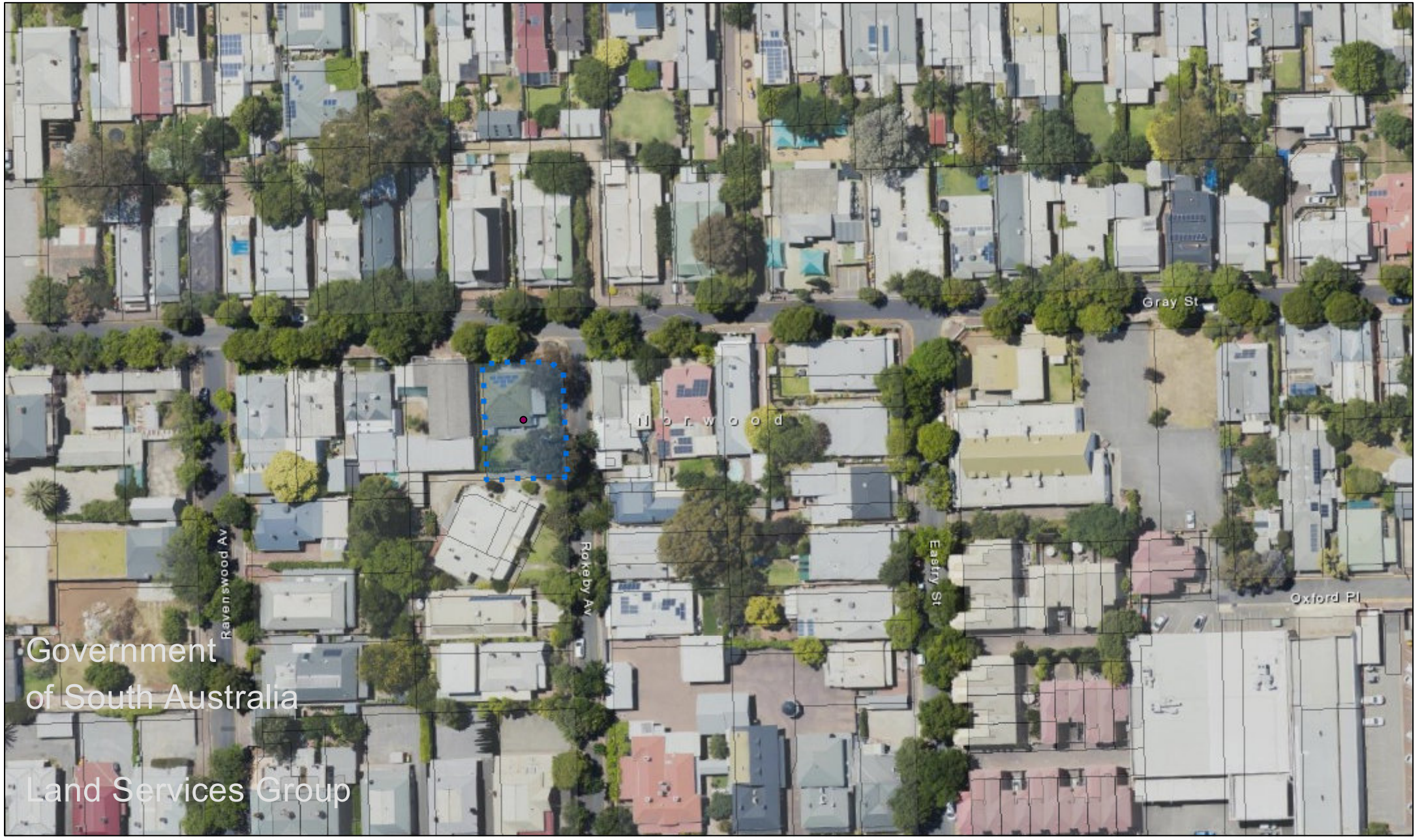
SAPPA Report

The SA Property and Planning Atlas is available on the Plan SA website: https://sappa.plan.sa.gov.au

Attachment 2

Date created:
December 20, 2023

Subject Land Map



Disclaimer: The information provided above, is not represented to be accurate, current or complete at the time of printing this report. The Government of South Australia accepts no liability for the use of this data, or any reliance placed on it.

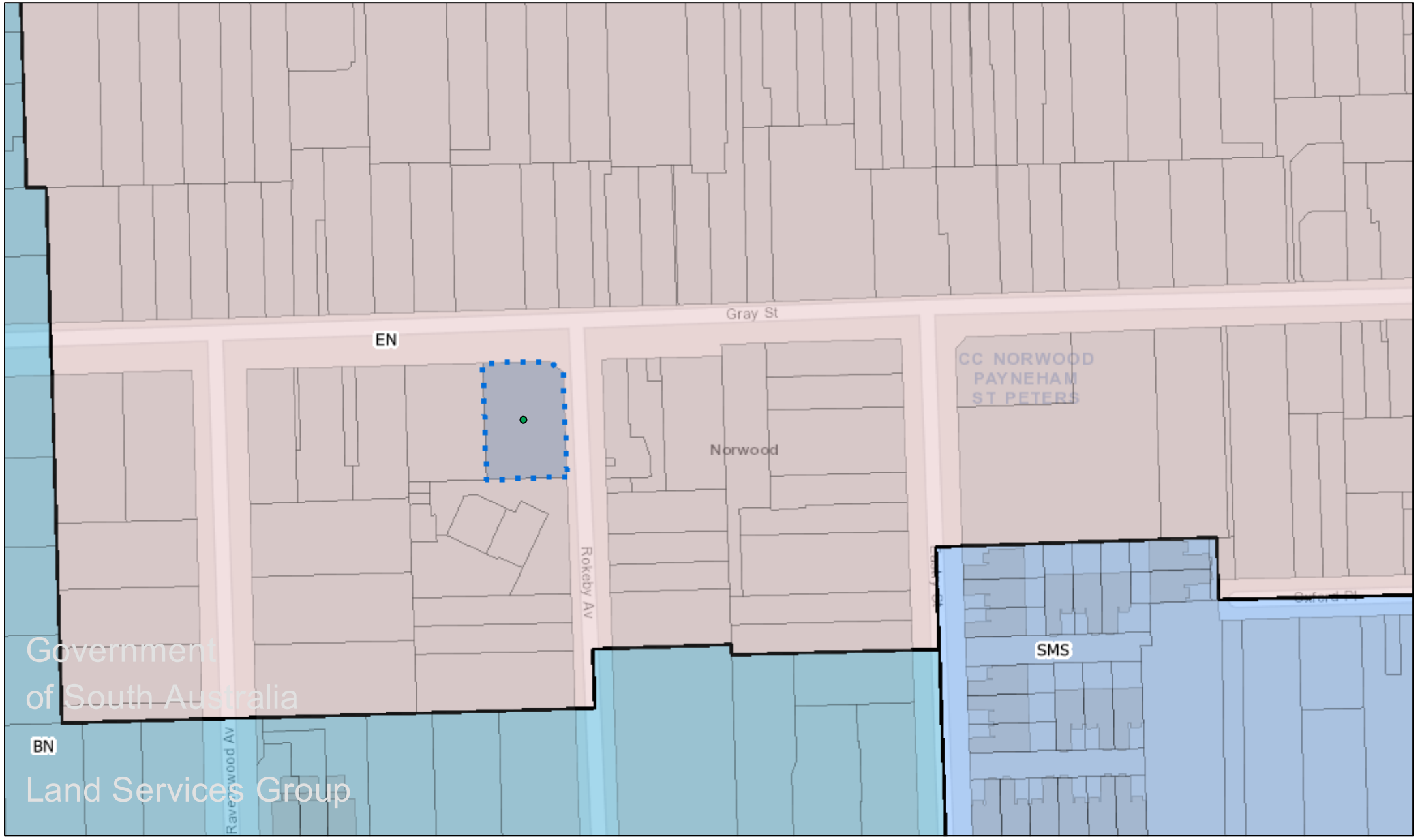
SAPPA Report

The SA Property and Planning Atlas is available on the Plan SA website: https://sappa.plan.sa.gov.au

Attachment 3

Date created: December 20, 2023

Zoning Map



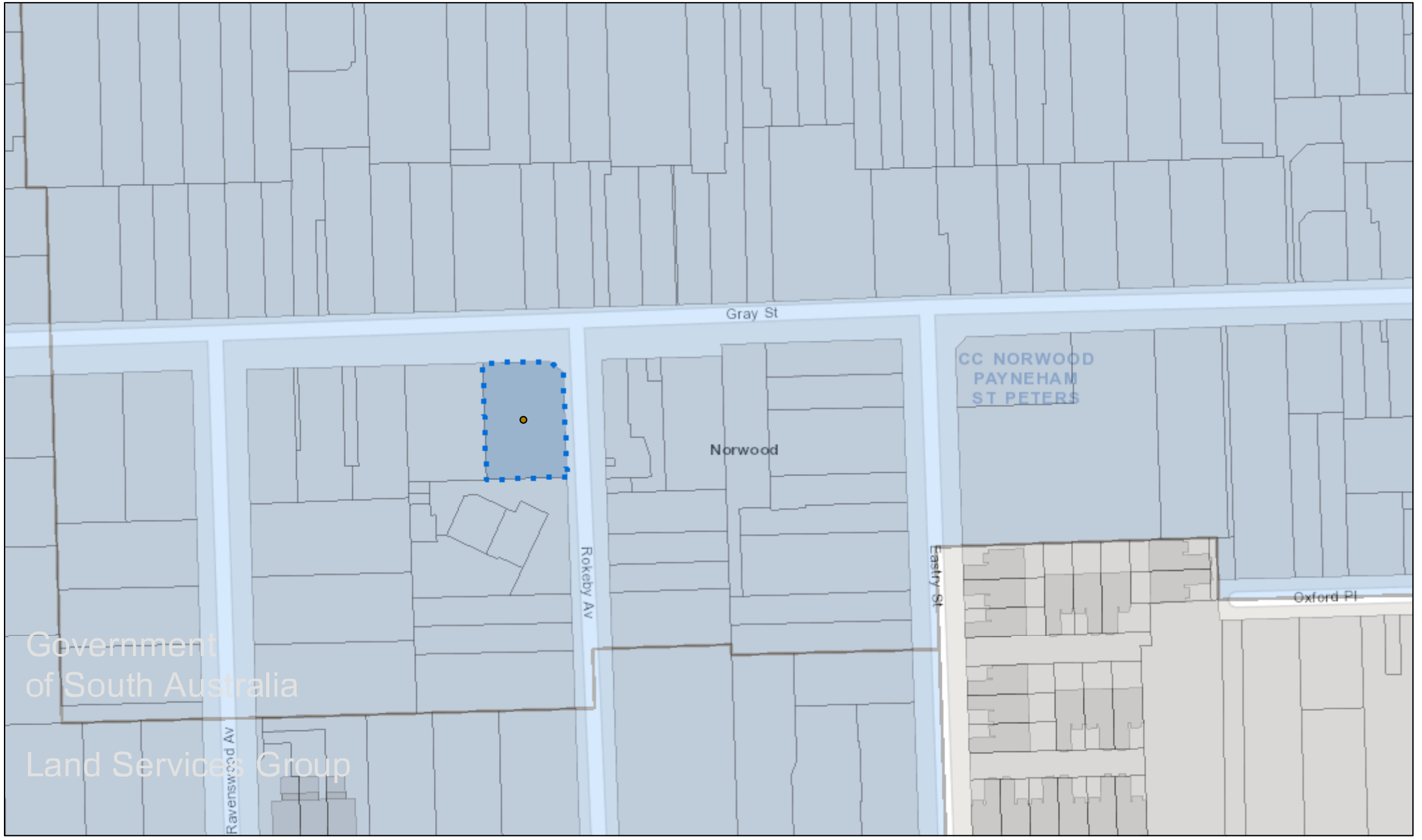
SAPPA Report

The SA Property and Planning Atlas is available on the Plan SA website: https://sappa.plan.sa.gov.au

Attachment 3

Date created: December 20, 2023

Historic Area Overlay Map



SAPPA Report

Attachment 4

The SA Property and Planning Atlas is available on the Plan SA website: https://sappa.plan.sa.gov.au

Representation Map

Out of Map Range:

Representor 2 - 29 Swallowtail St, Mt Barker
Representor 6 - 104 West Pkwy, Colonel Light Gardens
Representor 7 - 104 West Pkwy, Colong Light Gardens

Date created:
December 20, 2023

Attachment 5

Details of Representations

Application Summary

Application ID	23005863
Proposal	Demolition of an existing dwelling and the construction of two (2) two-storey semi-detached dwellings together with associated masonry fences and landscaping
Location	10 GRAY ST NORWOOD SA 5067

Representations

Representor 1 - Charter Hall Social Infrastructure Limited

Name	Charter Hall Social Infrastructure Limited
Address	33 GRAY STREET NORWOOD SA, 5067 Australia
Submission Date	17/05/2023 09:33 AM
Submission Source	Email
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development with some concerns
Reasons Please see attached submission	

Attached Documents

RepresentationForm-CharterHall-5554147.pdf

Tala Aslat

From:
Sent: Tuesday, 16 May 2023 4:27 PM
To: Development Assessment
Subject: Development Application - 10 Gray Street, Norwood
Attachments: DA Norwood 20230516.pdf; cqe046 Norwood DA 20230511.PDF

Good afternoon,

Please find attached document in relation to the attached development planning we received.

Kind Regards

Charter Hall

Follow us

Charter Hall is proud to work with our customers and communities to invest in, develop and manage properties on land across Australia. We pay our respects to the Traditional Owners, their Elders past, present and emerging and recognise their continuing culture and contribution to this country.

Charter Hall

16th May 2023

Charter Hall Social Infrastructure Limited
ACN 111 338 937
AFSL 281544

Responsible entity of
Charter Hall Social Infrastructure REIT
ABN 58 102 955 939
ARSN 102 955 939

Level 23, 130 Lonsdale Street
Melbourne Vic 3000

T +61 3 9903 6100

www.charterhall.com.au

Assessment Panel at City of Norwood, Payneham & St. Peters
PO BOX 204
Kent Town, SA, 5067

Sent via email: developmentassessment@npsp.sa.gov.au

RE: Planning Application No: 23005863
10 Gray Street, Norwood

Thank you for Council's letter advising of the above-mentioned planning permit.

We advise that we act on behalf of Charter Hall Social Infrastructure Limited, the owners of 33 Gray Street, Norwood. Our Land is currently used and developed for a childcare centre (long day care) and may be adversely affected by the proposal during its construction period.

We do not object to the development or use we would like however council and the applicant to implement a construction management plan for the development given its close proximity to our existing long day care service.

The construction management plan should take into consideration the following matters with regard to safety, dust, noise and deliveries:

1.1 Dust Control

We seek to ensure that the development of the review land does not cause nuisance and/or adverse impacts on our Land by way of airborne dust from excavation and building works and requests that in the event that a permit is issued, that conditions be included on any such permit requiring minimisation and control of dust.

1.2 Acoustic Impacts

Noise from construction activity needs to be managed so as not to unduly and unreasonably impact on the continuing use of our Land as a childcare centre.

1.3 Traffic and Truck Movements

Excavation and earth removal associated with the proposed development would see the existing childcare centre operating within a construction zone for an extended period.

Consideration should be given to limiting truck movements and activities particularly at peak drop off and pick up times.

1.4 Operational Consideration

Further construction activities on the review land (if approved) ought to consider operational aspects of our Land being:

- Children are predominately dropped off between 7:30am and 9:00am and the centre is accessed by foot, pram and vehicle;
- Noisy works (jackhammer, impact drills, etc) should be avoided between 7:30am and 9:00am (children settling from parent drop off), 11am - 1pm (baby sleep time), and 4pm - 6pm (quiet time/pickup). These are designated (and industry standard) settling and sleep times. Noisy works in these times will disrupt settling and sleep, and cause distress amongst the very young children in care;
- Children are picked up predominately between 4pm - 6pm and leave by foot, pram or vehicle;
- The safest time for deliveries to the site would be between 9:30am and 2:30pm Monday to Friday; and
- The activities on our Land do not occur on weekends (as such this is a good day for any works that may affect our Land).

The aforementioned matters have been prepared having regard to the wellbeing of the children in care during the construction process and ongoing amenity and safety of the children at the existing childcare centre.

Please do not hesitate to contact the undersigned should you have any queries.

Bronwyn Beardsley
Senior Property Manager

Representations

Representor 2 - Nastasja Agerman

Name	Nastasja Agerman
Address	
Submission Date	19/05/2023 11:07 AM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I oppose the development
Reasons Not enough space on the land for two houses	

Attached Documents

Representations

Attachment 5

Representor 3 - Cordell Whittle

Name	Cordell Whittle
Address	6 Rokeby Ave NORWOOD SA, 5067 Australia
Submission Date	21/05/2023 03:40 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	Yes
My position is	I oppose the development

Reasons
Rokeby Ave is routinely at full capacity night and day, as it is used by residents and by people who work on or visit adjoining Gray St and The Parade. 6, 8, and 10 Rokeby Ave each have no off-street parking, and 4 Rokeby Ave uses the capacity of its driveway plus on-street parking. While the addition of two 3-bedroom households will likely require that parking capacity be increased, the addition of two driveways (each 3m wide) onto Rokeby Ave from the Gray St property will reduce current on-street parking capacity by 2. Please see the attached annotated image, which also highlights an existing tree that prevents parking due to the buckled road surface.

Attached Documents

10-gray-st-50-1224891.jpg


6m
21 m (17.5 m)
parking

Representations

Representor 4 - Ning Gu

Name	Ning Gu
Address	10 Rokeby Avenue NORWOOD SA, 5067 Australia
Submission Date	29/05/2023 01:11 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I oppose the development

Reasons

As current residents of Rokeby Avenue, the development application for 10 Gray Street, Norwood will greatly impact us by removing available parking spaces we rely on daily, especially as we do not have a garage/parking space on our property. Despite holding a residential parking permit, we are often forced to park more than 300 metres away from our house (day and night) as there are no designated 'resident permit holders only' areas on Rokeby Avenue. Parking on the street is also accessed for public parking and by people working nearby who occupy the parking areas all day. The problem will only worsen if the development application goes ahead, further impacting parking availability, particularly for resident and visitor parking permit holders, which is already compromised and difficult at the best of times. The development application is unsatisfactory in being able to deliver a practical outcome to any of these foreseeable complications, such as providing additional parking spaces for which two 3 bedroom households will most likely require. Thank you for your consideration, Ning Gu and Callum Docherty. Residents: 10 Rokeby Avenue, Norwood SA.

Attached Documents

Representations

Attachment 5

Representor 5 - Kate Greenfield

Name	Kate Greenfield
Address	8 Rokeby Avenue, Norwood SA, Australia NORWOOD SA, 5067 Australia
Submission Date	30/05/2023 08:08 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I oppose the development
Reasons Please see attached statement.	

Attached Documents

Response-to-PlanSA-for-10-Gray-St-Norwood-1228715.pdf

Response to PlanSA for 10 Gray St Norwood

As the owner and resident of 8 Rokeby Avenue, I have reviewed the proposed plans for 10 Gray Street and have a number of concerns that I wish to make known.

Rokeby Avenue is a very small and very narrow street. It is a street that often struggles to accommodate delivery trucks, the weekly rubbish and recycling trucks (due in part to the narrow nature and the seemingly 'one-way' aspect of the street) and the street parking is always in high demand across both day and night hours. It is not a street that can afford to accommodate more frequent traffic or support increased demand for parked cars.

The proposed plans impact Rokeby Avenue greatly, most notably decreasing the number of available car parks and increasing parking needs that will come with new residents via a new development. Personally, I do not have a driveway or any off-street parking available to me. I already need to do battle for a car park on my street any time I need to drive and return to Rokeby Avenue.

Rokeby Avenue parking is frequently utilized by surrounding businesses – both from The Parade and in Gray Street, with employees and customers/clients using Rokeby Avenue for large portions of the day, including parking in the 2 hour Monday to Friday section (directly out the front of 6 and 8 Rokeby), which is very rarely policed for fining and deterrents to those who stay longer than the 2 hour limit, putting a large strain on the available parking in Rokeby Avenue.

While I do hold a resident parking permit, there are no 'permit only' parking spaces for Rokeby Avenue residents and I am often forced to park away from my home and my street on returning back to Norwood. The plans for 10 Gray Street do not take into consideration the already tight carparking situation and indeed will decrease the number of carparks available to current residents of Rokeby Avenue via the inclusion of the double driveway and any yellow lines associated with the double driveway access.

Further, there are already 2 driveway access points on Rokeby Avenue servicing 2 dwellings that face Gray Street. These 2 driveway access points are in extremely close proximity to the proposed double driveway for 10 Gray Street. Usage of these already existing driveways would be severely compromised by the 10 Gray Street plans, given the large tree jutting out onto the street (it is difficult to park here already) at the edge of 5 Rokeby driveway and the strong potential for cars to park flush up against the tree in order to utilize a space that is less than ideal. Not only will the users of the current driveways have their access severely compromised, Rokeby Avenue will be required to service 4 driveway access points at that one end of the already small and narrow street, increasing the likelihood of jams, bottlenecks and right of way issues at the Rokeby/Gray intersection.

Having owned and lived on Rokeby Avenue for more than a decade, I love where I live and enjoy my life on the street every day. Under the plans proposed for 10 Gray Street, I have concerns for my future enjoyment and livability on Rokeby Avenue. I foresee with the decrease in carparking spaces and the increase in car parking demand the proposed plans bring, an increase in stress and anxiety when using my car and not being able to return to a space within a reasonable walkable catchment area will impact my life satisfaction on Rokeby Avenue. This is likely to affect other residents too.

Given the reasons already detailed:

- Increased traffic pressure on a small and narrow street

- Doubling the required number of driveway access points that Rokeby will be required to provide for Gray Street properties
- Reduction in carparking for a street that is already at and over carparking capacity
- Increased requirement in carparking demand with extra cars/visitors that will inevitably come with the proposed two, two story, three-bedroom dwellings
- Reduced quality and enjoyment of Rokeby Avenue for current residents due to increased traffic and decrease in available parking

I do not believe planning consent should be granted on the proposed plans for 10 Gray Street Norwood as publicly notified on May 11, 2023, given the number of impacts for residents of Rokeby Avenue. I do not see that any consideration has been made for how these plans would impact Rokeby Avenue residents, especially as the block of land is listed as Gray Street and there is already existing driveway access from Gray Street.

Kate Greenfield

Owner and resident – 8 Rokeby Avenue Norwood

May 30 2023.

Representations

Representor 6 - Beth Scharnberg

Name	Beth Scharnberg
Address	104 west parkway COLONEL LIGHT GARDENS SA, 5041 Australia
Submission Date	31/05/2023 08:50 AM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development with some concerns

Reasons
Concern is with the new driveway coming out onto rokeby avenue. Parking is already very limited on the street being narrow and with existing dwellings and driveways.

Attached Documents

Representations

Attachment 5

Representor 7 - Nathanial Scharnberg

Name	Nathanial Scharnberg
Address	104 West Pkwy COLONEL LIGHT GARDENS SA, 5041 Australia
Submission Date	31/05/2023 04:41 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development with some concerns

Reasons

Having owned a house on Rokeby Avenue for over 10 years i have concerns about the street parking on Rokeby specifically and on other streets given this development. Street parking is already extremely limited on Rokeby Ave given that many houses rely on street parking as their only means. Whilst i support this new development, the introduction of the new double crossover/easement for the driveways on this street will further exacerbate the problem by removing 2 existing street parks from an already crowded street. For me to support this development the parking issue will need to be addressed beforehand.

Attached Documents

Representations

Attachment 5

Representor 8 - Nadine Welke

Name	Nadine Welke
Address	3b Rokeby Ave NORWOOD SA, 5067 Australia
Submission Date	31/05/2023 09:34 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I oppose the development

Reasons

There are 3 car parks at the end of Rokeby Ave for its residents and the walkable catchment of the many residents on Gray Street who have no off-road parking. This development proposal identifies on the SITE PLAN (pg 3) that there is 6550 space to the south of the proposed crossover on Rokeby Ave and 4100 to the north. The renderings on pages 13-15 depict a car parked in each of those spaces however 4100 would not accommodate my small hatch which measures 4300. This represents one car park lost. The proposed crossover is a second park lost. The southern section is long enough to park a car but the base of the gum tree juts out into the road approx 450mm. A car parked in that spot would be sitting out 450mm (at least) into the road, creating risk of damage to that and passing vehicles. It could impede the rubbish truck coming down our narrow street. It will most definitely make life very difficult for the residents of 1/12 and 2/12 Gray Street whose garages are opposite and slightly south to that southern parking space of 6500mm to be able to negotiate their cars into their driveways. So as a street, Rokeby will lose 2 car parks at the end of the street, if not the third where the tree juts into the road. Our street is often full with cars as we are the only street in the vicinity with untimed parks. The three residents across from me have no off-street parks and neither do a significant number of Gray street residents all residing within Rokeby's walkable catchment. They are all vying for a small number of car parks, together with businesses on the Parade and the child-care centre on Gray Street. 3B and 3A often have delivery drivers parked across our garage entrance when there are no parks in the street and at worst, I have tradespeople doing the same; in these instances, I have to find which house they are working in to ask them to move their car so I can get my car out of my garage. I'm very concerned that with the loss of parking at the end of Rokeby, and the addition of more residents needing parks that this situation will only get worse. I understand that Council wish to increase housing density but parking requirements must be considered for existing residents, especially those that have no off-road parking. The only way I can support a development in 10 Gray Street is one that proposes using the existing crossover.

Attached Documents

4100mm-next-to-parked-car-1229391.jpg
tree-roots-lifting-road-edge-1229392.jpg


60 70 80 90 300 10 20 30 40 50 60 70 80 90 400 10 20 30 40 50 60 70 80 90 500 10 20 30 40

Representations

Representor 9 - Annette Rothgrew

Name	Annette Rothgrew
Address	4 Rokeby Avenue NORWOOD SA, 5067 Australia
Submission Date	31/05/2023 10:36 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	Yes
My position is	I oppose the development
Reasons Please see attached	

Attached Documents

Comments-PDF-1229402.pdf

Background

The proposed development of a corner site, at what is currently known as 10 Gray St, is to demolish the existing dwelling and construct two dwellings, however, facing Rokeby Ave (**Rokeby**) instead of Gray St (the **Proposed Development**).

Rokeby is a narrow road of width approximately 5350mm, with currently 10 residences (numbers 1, 3A, 3B, 4, 1/5, 2/5, 3/5, 6, 8 and 10) of two/three bedrooms (although some of the three units comprising number 5 may be one bedroom).

Rokeby has a yellow line parking restriction along its entire Eastern boundary: parking for residents of and visitors to Rokeby is therefore only available on the Western boundary of Rokeby.

Rokeby manages to park 12 cars on the road (separated in groups of 3, 2, 4 and 3 moving North up Rokeby's Western boundary): 8 being without parking restrictions and 4 being restricted with 2P (9-5 Mon-Fri). 5 of the current 10 residences have the benefit of some off-road parking: most of the residences were built prior to current residential off-road parking requirements. On the Western boundary there are 3 single driveways (one being for the adjacent business located on The Parade) and 1 double driveway, and on the Eastern boundary there are 2 double driveways (one being shared by number 4 and the adjacent business located on The Parade, and one being used by the adjacent Gray St property): yellow line parking restrictions abut these driveways to ensure appropriate access from the narrow street.

Rokeby is lined with established trees. As is common for such trees the roots of some have buckled pathways, kerbstones, and the adjacent road, and some of the trees also curve towards the road from their base.

To note

1. On page 3/21 of the Public Notification Documents (the **Documents**), the driveway lengths at the Proposed Development are indicated to be **5460mm**.
2. Under Part 4 – General Development Policies / Design in Urban Areas / Residential Development - Low Rise / Car parking, access and manoeuvrability, which PlanSA indicated was a current policy applying to the Proposed Development, Performance Outcome 23.6 states that "*Driveways and access points are designed and distributed to optimise the provision of on-street visitor parking*" with the Deemed-to-Satisfy Criteria / Designated Performance Feature stating:

   "*Where on-street parking is available abutting the site's street frontage, on-street parking is retained in accordance with the following requirements:*
   a) *minimum 0.33 on-street spaces per dwelling on the site (rounded up to the nearest whole number)*
   b) *minimum car park length of 5.4m where a vehicle can enter or exit a space directly*
   c) ***minimum carpark length of 6m for an intermediate space located between two other parking spaces** or to an end obstruction where the parking is indented*."
3. The marked parking spaces outside of St Peter's Library on St Peter's St are length **5920mm**.
4. On page 3/21 of the Documents, House A's boundary is indicated to be 13275mm.
5. On page 3/21 of the Documents, House A's driveway is indicated to end 3000mm North of its South boundary.
6. On page 3/21 of the Documents, the current parking restriction yellow lines are not indicated. In particular, that on Rokeby's Western boundary approaching the intersection with Gray St which extends South of the existing tree adjacent to House A to 6100mm South of House A's Northern boundary.
7. On page 3/21 of the Documents, House B's boundary is indicated to be 13210mm.
8. On page 3/21 of the Documents, House B's driveway is indicated to end 3000mm South of its North boundary.
9. On page 3/21 of the Documents, the current parking restriction yellow lines are not included. In particular, that on Rokeby's Western boundary which ensures appropriate access to number 5's driveway which extends North of House B's Southern boundary by 1000mm.
10. The tree outside House B (see below photos):
    a. encroaches into Rokeby's width from the kerb edge by 780mm at floor level, and more at higher levels due to its lean; and
    b. encroaches along the length of Rokeby with the distance between the North end of this encroachment and the North of the parking restriction yellow line for number 5's driveway being 3200mm.


11. Current yellow line parking restrictions either side of Rokeby driveways include:
    a. Number 3A – 1000mm South of double driveway
    b. Number 3B – 1800mm North of double driveway
    c. Number 5 - 2100mm South and 1000mm North of driveway

    and it therefore appears reasonable to expect parking restriction yellow lines to be required either side of the Proposed Development's double driveway of at least 1000mm, and perhaps more, to ensure appropriate access.
12. On page 13/21 of the Documents, two cars are indicated as parked on Rokeby's Western boundary, adjacent to the Proposed Development.
13. On page 13/21 of the Documents, the existing double driveway on Rokeby's Eastern boundary situated directly opposite House B's driveway and the adjacent tree is not indicated.

Comments

1. Using the above noted information, it will not be possible for a car to park outside of House A: 13275mm total boundary less the Gray St intersection parking restriction yellow line of 6100mm, less the driveway of 3000mm, less the 1000mm driveway parking restriction yellow line leaves only **3175mm** to park a car, which is insufficient.
2. It is not safe to park a car alongside the tree outside of House B because of its encroachment into the road by at least 780mm and its lean into the road. Parking alongside means your car sits out at least 780mm from the line of other parked cars causing a hazard to other vehicles and passengers, and a possible insurance claim for you. It is actually not possible to park 780mm from the kerb because of the tree's lean meaning you actually have to park out further than that and have to take care not to get too close and bump the higher edge of your car causing damage.
3. Using the above noted information, and taking into account point 2 above, it will not be possible for a car to park outside of House B: 13210mm total boundary less the driveway of 3000mm, less the 1000mm driveway parking restriction yellow line, less the 1000mm driveway parking restriction yellow line for number 5's driveway, and less the 3200mm unavailable space due to the encroaching tree leaves only **5010mm** to park a car, which is insufficient.

Reasons

The specific reason we believe that planning consent should be refused is that the Proposed Development will leave Rokeby with only 9 car parking spaces available (4 with 2P, and 5 unrestricted), losing 3 to the Proposed Development, which would be insufficient for the current 10 residences on Rokeby let alone the suggested 12 residences. A reduction of 25% parking spaces and an increase of 20% residences.

The demand pressure, particularly for the unrestricted parking spaces, from the residents, visitors, trades people and the overspill from Gray St, which is also very busy and, we think, all 2P, and that of employees of nearby businesses, such as the child-care centre on Gray St, and yoga and Toop&Toop on The Parade, is already significantly high. This can currently be problematic for those of us needing to find parking spaces for ourselves, our visitors and our trades people, and reduces the amenity of our residences through inconvenience and uncertainty.

Perhaps worth noting is that the residential and visitor parking permits issued to us by the council exempt us only from the parking restrictions "adjacent your property".

Mr Kieran Fairbrother
Senior Planner
City of Norwood, Payneham and St Peters
PO Box 204, Kent Town
South Australia, 5071

Dear Kieran,

RE: Response to Representations for application ID 23005863: 10 Gray St Norwood SA

I refer to the above stated project and I am pleased to provide the following response to the representations in relation to the application for the demolition of an existing dwelling and the construction of two (2) two-storey semi-detached dwellings together with associated masonry fences and landscaping.

There were nine (9) individual representations received during the public notification, three (3) were in support of the proposal and six (6) were opposed to the proposal or had some concerns, of which two (2) wish to be heard by the Council Assessment Panel (CAP).

The key issues arising from the representations include;

- Dust control
- Acoustic/ Noise Impacts
- Traffic, parking and access, inc lack of existing on-street parking
- Allotment size and suitability

In relation to the matters raised the following responses are provided.

Dust control

The issue of dust control and the management of airborne dust and particles will be managed by the on-site builder during the demolition and construction process. Furthermore, while some level of dust can be anticipated at time during construction and can be influenced by weather events (high winds), the Local Nuisance and Litter Control Act 2016 (the Act) does exists to support and enhance local amenity by strengthening local nuisance and litter management services.

Under the Act, members of the community can make complaints and enquiries regarding local nuisances in the Council area, with the Act allowing councils to consider the granting of an exemption from local nuisance-causing activities upon application.

Acoustic/ Noise Impacts

The subject site is in an Established Neighbourhood Zone where residential dwellings of various forms are the primary land use sought. While it should be anticipated that there will be some level of noise during demolition and during aspects of the construction process, there is a requirement for the builder to adhere to the relevant EPA guidelines for noise during construction and these will be adhered to by the applicant's builder.

m: 0406 124 977
e: greenlightplanning@outlook.com
w: greenlightplanning.com.au
a: PO Box 158, Kensington Park, SA, 5068

Allotment size and land use suitability

Concern has been raised regarding the suitability of the land use and the site suitability for two dwellings. Under the Code the minimum site area is 200m2. The size of the land area for House A is 246m2 and for House B is 232m2. The subject site is located in an Established Neighbourhood Zone where residential dwellings of various forms are the primary land use sought by the Zone. In PO 2.1, the Code envisages development involving the conversion of an existing dwelling into two or more dwellings where the existing dwelling retains its original external appearance to the public road, such is the case in this proposal with House A and its Gray Street frontage.

The proposal have been designed to meet this policy.

Traffic, Parking and Access

Issues have been raised by several representors in relation to the existing lack on on-street parking in Rokeby Ave, the street where the development is proposing its garaging access. In the main these representations are overwhelmingly from the owners and tenants that do have off-site carparking at their homes. The lack of existing on-street parking is regrettable, but not something that this proposal is able to resolve.

A representor has stated that due to the street trees on Rokeby Avenue there is currently and will not be capacity for on-street parking adjacent dwellings on 10 Gray Street, but a site visit, review of Google maps and the architect's plans show otherwise. There is currently on-street parking at the northwestern end of Rokeby and that will remain under the development proposal. It is noted that there is currently no garages or off-street parking in front for 6, 8, and 10 Rokeby Avenue and yellow painted no parking lines in front of their dwellings. The owners of 6,8 and 10 Rokeby Avenue have purchased the dwellings knowing that there is no off-street car parking and it is highly likely that this lack of off-street parking is contributing significantly to the on-street demand.

The two new proposed dwellings will each have a lock up garage as well as parking for another vehicle in their driveways fronting Rokeby Avenue.

Table 1 – Off-Stret car parking requirements of the Planning and design code states the following with respect to semi-detached dwellings.

Dwelling with 2 or more bedrooms (including rooms capable of being used as a bedroom) - 2 spaces per dwelling, 1 of which is to be covered.

The proposed dwellings meet their on-site car parking needs with respect to the Code, while still facilitating on-street parking on the western side of Rokeby Avenue, two spaces as shown on the drawing attached. There will still be parking for at least two cars on-street at the northern end of Rokeby on the western side, potentially lessening the current arrangement by only one space.

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a: PO Box 158, Kensington Park, SA, 5068

It can also be argued that for Gray Street itself and for cars turning from Rokeby Ave, left into Gray Street, safety is improved via the removal of the existing crossover driveway on Gray Street, minimising the need to watch for cars exiting the somewhat concealed existing driveway which is currently in close proximity to the Rokeby and Gray Street intersection.

Thank you for the opportunity to respond to these representations.

Yours sincerely

Amanda Price-McGregor
Managing Principal
Green Light Planning Solutions

6 September 2023

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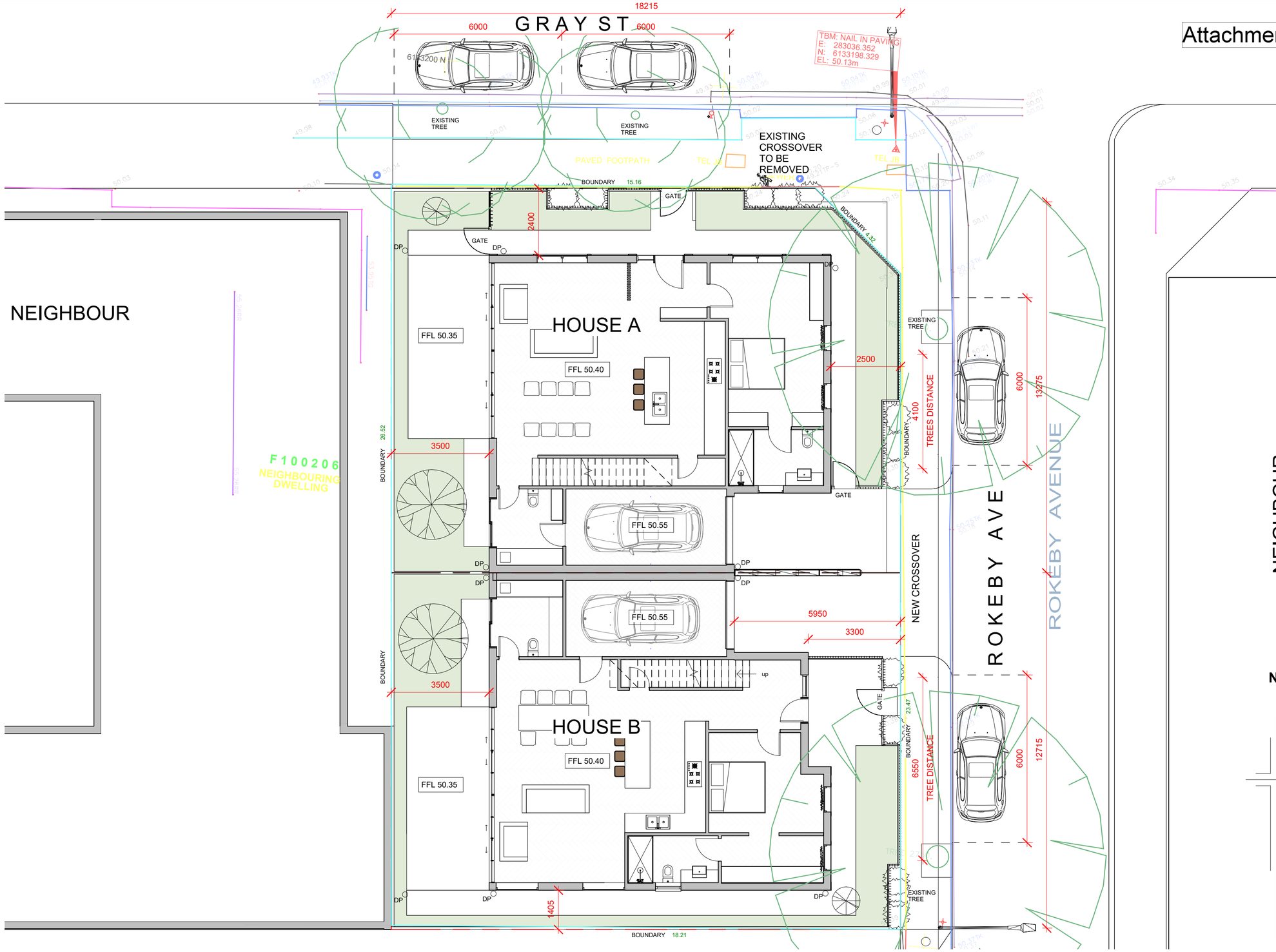
Attachment 6



1 SITE PLAN
1 : 100

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

plot date : 02/08/2023
scale : 1 : 100
job no : 221025
drawn by : Author
checked by : Checker

status: PRELIMINARY
client name: Owner
project title: PROPOSED RESIDENCE
project address: 10 GRAY ST, NORWOOD
page no.: P100B
drawing title: SITE

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HERITAGE IMPACT REPORT

bbarchitects

PROPERTY ADDRESS:	**10 Gray Street Norwood**
APPLICATION NUMBER:	**23005863**
DATE:	17 August 2023
PROPOSAL:	Two semidetached two storey dwellings
HERITAGE STATUS:	NORWOOD 1 HISTORIC AREA OVERLAY
HERITAGE ADVISOR:	David Brown, BB Architects
PLANNER:	Kieran Fairbrother

City of Norwood Payneham & St Peters

ADVICE SOUGHT

No pre Planning Consent advice has been sought from Council's Heritage Advisor by the applicant. I met with the designer at Council after my initial feedback. This is my fourth report on this proposal.

DESCRIPTION

The site currently contains an older house and shed, and is in the Established Neighbourhood Zone within the Norwood 1 Historic Area Overlay.

PROPOSAL

The revised proposal is for two new two storey semi-detached dwellings on the site. The design has been revised again following our meeting, with the two dwellings now more articulated.

COMMENTS

SETBACKS

The setbacks have not been changed since the earlier design following my initial advice. They are generally better now, though do not closely follow the traditional setbacks seen in the area on traditional houses, where there is minimal side setback to one or both sides of traditional houses in the area. The front setback is forward of the house on the opposite corner of Rokeby and Gray Street, and the Local Heritage Places across the road.

FORM

The proposed dwellings in the revised design now more clearly appear as two separate dwellings, with the facades treated slightly different. House A now has a convincing symmetrical façade, and House B borrows the projecting room format from a Villa design.

The roof forms have been modified too with a lower section where the two dwellings share a boundary wall. A small gable has been introduced to House B, and the hipped roofs have been stepped at several points. The front façade to House A has been revised again now with a symmetrical hipped roof form that generally borrows from the cottages in the area.

The overall height of the proposed dwellings is taller than both the adjacent warehouse and the house across Rokeby Street. As this higher portion of the roof containing the upper level is set back on the site, it will be less visible now that the roof design has been modified; but House A is still a broader and taller house than most other traditional dwellings in the street.

MATERIALS

The use of sandstone is a positive change, in the design and the white to the rendered areas has been toned down now. The Woodland Grey roofing is an acceptable colour in this context. Generally the revised materials are a reasonable outcome in this historic area.

GARAGING

The garaging has not changed since the first design that was lodged. The main difference now is the reduction of the roof form over the shared wall between dwellings which reduces the prominence of this part of the house. The garages are still under the main roof of the house, which is not a good outcome as none of the traditional houses in the area have closed garages under the main house roof; but it seems the applicant is not willing to lose more space in the upper floor to better articulate the dwellings and reduce the visual impact of the roof over the garages.

VERANDAHS

The revised verandahs are a better outcome than the earlier design as they are in appropriate locations now and of reasonable proportions. They are both cantilevered sloping roof forms which borrow from a traditional verandah form, just with out the posts.

FENCES

The revised open metal fence design is now more acceptable. The stepping in and out of the front fences is not ideal, as fences in Historic Areas were always set on the front boundary. It is probably not fatal to the design, but does leave open the issue of maintenance of the area outside the fence.

CONCLUSION

The revised down is now a much better outcome for the site than the original submission. However, there are still some design elements, setbacks, and changes to the form that would have been good to incorporate in the proposal to make the design sit better in this historic context.

HERITAGE IMPACT REPORT

bbarchitects

PROPERTY ADDRESS:	**10 Gray Street Norwood**
APPLICATION NUMBER:	**23005863**
DATE:	31 July 2023
PROPOSAL:	Two semidetached two storey dwellings
HERITAGE STATUS:	NORWOOD 1 HISTORIC AREA OVERLAY
HERITAGE ADVISOR:	David Brown, BB Architects
PLANNER:	Kieran Fairbrother

City of Norwood Payneham & St Peters

ADVICE SOUGHT

No pre Planning Consent advice has been sought from Council's Heritage Advisor by the applicant. I met with the designer at Council after my initial feedback. This is my third report on this proposal.

DESCRIPTION

The site contains an older house and shed and is in the Established Neighbourhood Zone within the Norwood 1 Historic Area Overlay.

PROPOSAL

The revised proposal is for two new two storey semi-detached dwellings on the site. The design has been revised again following our meeting, with the two dwellings now more articulated.

COMMENTS

SETBACKS

The setbacks have not been changed since the earlier design. They are generally better now, though do not closely follow the traditional setbacks seen in the area.

FORM

The proposed dwellings in the revised design now appear as two separate dwellings, with the facades treated slightly different. House A now has a convincing symmetrical façade, and House B borrows the projecting room format from a Villa design.

The roof forms have been modified too with a low section where the two dwellings share a boundary wall. A small gable has been introduced to House B, and the hipped roofs have been stepped at several points. The front façade to House A now features a stepped hipped asymmetrical roof. While the façade of this house is symmetrical now, the roof is not, which will only draw attention to the proposed design, as all of the traditional houses in the street have a strong consistent ridge line, symmetrical facades and roof forms when viewed from the front.

MATERIALS

The use of sandstone is a positive change, though a product needs to be specified so its appropriateness can be determined in this context. The stark white of the render is too bright in this area and will make the new dwelling visually quite dominant in the streetscape, where it should defer to the historic and heritage listed properties.

The fascias to the proposed houses are noted as steel fascias. Timber is the traditional and appropriate fascia material for a Historic Area Overlay, as it is simple, flat and painted, rather than ridged and having curved edges like the rolled steel fascias.

The gutter types are not noted, but should be a contemporary gutter profile, not traditional OG gutters. This is to assist in defining the house as new in the area.

GARAGING
The garaging has not changed since the earlier designs. The main difference now is the reduction of the roof form over the shared wall between dwellings which reduces the prominence of this part of the house. They are still under the main roof of the house, which is not a good outcome, but it seems the applicant is not willing to lose more space in the upper floor to better articulate the dwellings.

VERANDAHS
The verandahs are a better outcome in that they are in appropriate locations now and of reasonable proportions.

FENCES
The revised fence design is more acceptable. The stepping in and out of the front fences is not ideal, as fences in Historic Areas were always on the front boundary. It is probably not fatal to the design, but does leave open the issue of maintenance of the area outside the fence.

CONCLUSION
There are still some items that need clarification (materials, and colours), and some elements as proposed will mean that the house is not a good infill design for the streetscape.

These items include:

- Asymmetrical roof to the front of House A
- The bright white colour shown for the render and side walls
- Specification of the stone to be used
- The metal fascias
- Garaging under the main roof

HERITAGE IMPACT REPORT

bbarchitects

PROPERTY ADDRESS:	**10 Gray Street Norwood**
APPLICATION NUMBER:	**23005863**
DATE:	28 July 2023
PROPOSAL:	Two semidetached two storey dwellings
HERITAGE STATUS:	NORWOOD 1 HISTORIC AREA OVERLAY
HERITAGE ADVISOR:	David Brown, BB Architects
PLANNER:	Kieran Fairbrother

City of Norwood Payneham & St Peters

ADVICE SOUGHT

No pre Planning Consent advice has been sought from Council's Heritage Advisor by the applicant. I met with the designer at Council after my initial feedback. This is my third report on this proposal.

DESCRIPTION

The site contains an older house and shed and is in the Established Neighbourhood Zone within the Norwood 1 Historic Area Overlay.

PROPOSAL

The revised proposal is for two new two storey semi-detached dwellings on the site. The design has been revised again following our meeting, with the two dwellings now more articulated.

COMMENTS

SETBACKS

The setbacks have not been changed since the earlier design. They are generally better now, though do not closely follow the traditional setbacks seen in the area.

FORM

The proposed dwellings in the revised design now appear as two separate dwellings, with the facades treated slightly different. House A now has a convincing symmetrical façade, and House B borrows the projecting room format from a Villa design.

The roof forms have been modified too with a low section where the two dwellings share a boundary wall. A small gable has been introduced to House B, and the hipped roofs have been stepped at several points. The front façade to House A now features a stepped hipped asymmetrical roof. While the façade of this house is symmetrical now, the roof is not, which will only draw attention to the proposed design, as all of the traditional houses in the street have a strong consistent ridge line, symmetrical facades and roof forms when viewed from the front.

MATERIALS

The use of sandstone is a positive change, though a product needs to be specified so its appropriateness can be determined in this context. The stark white of the render is too bright in this area and will make the new dwelling visually quite dominant in the streetscape, where it should defer to the historic and heritage listed properties.

The fascias to the proposed houses are noted as steel fascias. Timber is the traditional and appropriate fascia material for a Historic Area Overlay, as it is simple, flat and painted, rather than ridged and having curved edges like the rolled steel fascias.

The gutter types are not noted, but should be a contemporary gutter profile, not traditional OG gutters. This is to assist in defining the house as new in the area.

GARAGING
The garaging has not changed since the earlier designs. The main difference now is the reduction of the roof form over the shared wall between dwellings which reduces the prominence of this part of the house. They are still under the main roof of the house, which is not a good outcome, but it seems the applicant is not willing to lose more space in the upper floor to better articulate the dwellings.

VERANDAHS
The verandahs are a better outcome in that they are in appropriate locations now and of reasonable proportions.

FENCES
The revised fence design is more acceptable. The stepping in and out of the front fences is not ideal, as fences in Historic Areas were always on the front boundary. It is probably not fatal to the design, but does leave open the issue of maintenance of the area outside the fence.

CONCLUSION
There are still some items that need clarification (materials, and colours), and some elements as proposed will mean that the house is not a good infill design for the streetscape.

HERITAGE IMPACT REPORT

bbarchitects

PROPERTY ADDRESS:	**10 Gray Street Norwood**
APPLICATION NUMBER:	**23005863**
DATE:	20 June 2023
PROPOSAL:	Two semidetached two storey dwellings
HERITAGE STATUS:	NORWOOD 1 HISTORIC AREA OVERLAY
HERITAGE ADVISOR:	David Brown, BB Architects
PLANNER:	Kieran Fairbrother

City of Norwood Payneham & St Peters

ADVICE SOUGHT

No pre Planning Consent advice has been sought from Council's Heritage Advisor by the applicant. I have given advice to previous applicants for the same site. This is the second report for this application.

DESCRIPTION

The site contains an older house and shed and is in the Established Neighbourhood Zone within the Norwood 1 Historic Area Overlay.

PROPOSAL

The revised proposal is still for two new two storey semi-detached dwellings on the site. The design has only undergone a few changes, and still presents as a large single level dwelling with the upper level reasonably successfully located in the roof space.

The proposed new houses have a single garage each, simple hipped roof form with some projecting rooms to break up the form.

COMMENTS

SETBACKS

The revised front setback for House A from Gray Street has been increased slightly, but is still smaller than the historic houses in the area. The side setback has not changed significantly, and is still larger than the front setback, which is not a typical arrangement in a Historic Area.

House B has now moved closer to the Rokeby Street boundary, making the situation worse, not better.

FORM

The proposed dwellings have a simple mostly symmetrical rectilinear plan form which has not changed with projecting rooms to the east side. As the sites face different streets with differing contexts the houses should each address these, rather than try to appear to be a semi symmetrical design. Both frontages suffer due to this. The Rokeby Street dwelling does not take on any historical precedent with its inset front door and projecting single room in the centre of the house. The side of the Gray Street house as more visual prominence than the front with the projecting wing, where all houses in this area have simple straight unadorned side walls.

The roof form appears to have an asymmetrical overhang to the western side when compared to the east, presenting a strange outcome to Gray Street where the eaves overhangs on each side do not match. My previous comments still stand, this roof form is not a contextual approach.

The front façade to House A has been modified and is a better outcome apart from the roof form noted above. However, all of my other comments on symmetry, and taking into consideration the context still stand.

MATERIALS
The introduction of sandstone is a positive change, though a product needs to be specified so its appropriateness can be determined in this context. The stark white of the render is too bright in this area and will make the new dwelling visually quite dominant in the streetscape, where it should defer to the historic and heritage listed properties.

GARAGING
Apart from the removal of the verandah there is no real change to the garaging design. The location of this under the main roof of the house give it too much prominence, and give the building too much visual bulk in this location.

VERANDAHS
The verandahs are a better outcome in that they are in appropriate locations now.

FENCES
The revised fence design is more acceptable.

CONCLUSION
There are still too many elements of the proposed design that mean it will not be a suitable infill building in this small-scale context. Minor design changes to the current proposal are unlikely to achieve the desired outcome.

HERITAGE IMPACT REPORT

bbarchitects

PROPERTY ADDRESS:	**10 Gray Street Norwood**
APPLICATION NUMBER:	**23005863**
DATE:	16 May 2023
PROPOSAL:	Two semidetached two storey dwellings
HERITAGE STATUS:	NORWOOD 1 HISTORIC AREA OVERLAY
HERITAGE ADVISOR:	David Brown, BB Architects
PLANNER:	Kieran Fairbrother

City of Norwood Payneham & St Peters

ADVICE SOUGHT

No pre Planning Consent advice has been sought from Council's Heritage Advisor by the applicant. I have given advice to previous applicants for the same site.

DESCRIPTION

The site contains an older house and shed and is in the Established Neighbourhood Zone within the Norwood 1 Historic Area Overlay.

PROPOSAL

The proposal is for two new two storey semi-detached dwellings on the site. The design presents as a large single level dwelling with the upper level reasonably successfully located in the roof space.

The proposed new houses have a single garage each, simple hipped roof form with some projecting rooms to break up the form.

COMMENTS

SETBACKS

The front setback for House A from Gray Street appears to be closer than all of the surrounding traditional dwellings. Understanding that the warehouse next door is the anomaly in the streetscape, the house should be set back in line with the traditional dwellings on that side of the street. The side setback to this dwelling from Rokeby could be much less as with other Gray Street facing houses.

A similar issue exists for House B and its set back from Rokeby Avenue. A setback similar to the single fronted cottages on the east side of Rokeby Avenue would make more sense. The southern boundary side setback could be much smaller in this case as well.

FORM

The proposed dwellings have a simple mostly symmetrical rectilinear plan form with projecting rooms to the east side. The roof form is an overly large simple hip over both dwellings, which is not something seen in the area, nor are the projecting hips on the east side. Traditional houses in the area are either single or double fronted cottages with much smaller scale roof forms. Projecting elements are usually gables, not hips and are the same height as the main ridge of the house.

The front façade to House A has no windows facing the street, except one behind the high side fence. This is not a good outcome for Gray Street, where every other house has a front door and at least one window to break up the façade. The feature windows in the projecting wings are very small in this context where traditional windows are usually a bit wider and higher.

Houses in this area are either symmetrical fronted cottages, villas, symmetrical maisonettes, or single fronted cottages. The unusual asymmetry of the proposed houses will stand out in this location as it does not take any design cues from the surrounding important heritage buildings.

MATERIALS
There doesn't appear to be any information on the materials apart from the roofing. The renders show pale grey bricks for the whole house. Single material buildings are not a feature in this area. They are all a combination of stone, render and brick, with brick on the front façade almost never seen except on a few modest single fronted cottages.

Metal folded fascias are not something seen in this historic area. While the house is a contemporary dwelling, it should borrow more strongly from the traditional design elements seen in the area. Timber fascias, with contemporary gutters are a better outcome.

GARAGING
Garaging under the main roof of houses is not a design element seen anywhere in this context. The large roof overhang and verandah across the front give the garage a similar level of importance to the house, whereas the garage should not dominate or be a feature. The setback is a good outcome for the garage doors, but the covered area over the driveway needs to be rethought.

VERANDAHS
The shallow cantilevered verandahs are a reasonable outcome in this context, but they cover too much of the dwellings including the garage doors. Traditional verandahs in this area where the sites are small are only over the front façade. Return verandahs are not a feature of houses in Gray Street or Rokeby Avenue.

FENCES
Solid front fences are not a common traditional fencing style seen in the area. Traditional fences are low and open. While some solid portions might be acceptable, the proposed outcome is not in character with this streetscape.

CONCLUSION
At this stage there are too many elements with this proposed design that mean it will not sit well in the context of this Historic Area Overlay. I think the symmetrical approach will not work on this block, as the houses face different streets. Overall the house is out of scale with surrounding historic buildings, and will be too visually dominant. A more context driven approach is required that takes into account the Local Heritage Places and other older houses in the area.

The following areas need to be addressed before this building would be considered a good infill design for this site:

- Setbacks to both streets
- Front façade composition to House A
- Roof form
- Garaging outcome
- Fencing
- Verandahs
- Materials

Kieran Fairbrother

From: Matthew Cole
Sent: Thursday, 30 November 2023 4:30 PM
To: Kieran Fairbrother
Subject: RE: 10 Gray St Norwood

Hi Kieran

Thank you for arranging and sending through the Alan Cameron report titled tas – 3088.

Having now read the report, and specifically the detail outlining the size and location of tree roots located during the hydrovac investigation, I can advise the following.

Trench 1/Tree 3

I am happy to agree with the Alan Cameron report that the 3 roots with a diameter of between 40mm and 100mm exposed in the trench at 2.5m from the tree (and within the SRZ) are unlikely to be structurally supportive and will not result in the destabilisation of the tree. These roots and all other smaller roots could be pruned to allow for the proposed development of this allotment to occur, and that it is likely that structural roots are located elsewhere, and perhaps deeper than the 600mm investigative trench.

However, these roots (and other smaller non documented roots exposed) would be important for moisture uptake and therefore should you approve the DA I would strongly recommend that some form of supplementary irrigation is a condition of the development.

Trench 2/Tree 4

Tree 4 would require less pruning of roots than Tree 3 and is overall a healthier tree. Therefore I have less concern but would make the same recommendation regarding irrigating the site throughout development and until completion of any front yard landscaping.

Additionally for both trees I would recommend a physical tree protection barrier is installed and maintained to prevent damage to the during construction of the dwellings, obviously it will need to be removed for fence construction etc., ideally it would be in place until absolutely necessary it is removed. Similar to the conditions we put on the large development at Briar Road, Felixstow (Kathryn Clausen circa 2019)

Finally, as the trees (3 and 4) occupy almost the entire footpath, I do have some concern for incoming complaints around footpath use and would like to discuss further when construction is nearing completion the closing of the footpath and the establishment of a small garden bed or build out around the base of the trees.

I trust this information is of assistance however please let me know if I can elaborate or provide additional information.

Kind regards

Matthew Cole
City Arborist

City of Norwood Payneham & St Peters
175 The Parade, Norwood SA 5067
Telephone
Email
Website www.npsp.sa.gov.au

From: Kieran Fairbrother
Sent: Friday, November 17, 2023 4:21 PM
To: Matthew Cole
Subject: FW: 10 Gray St Norwood

Hi Matt,

If you recall this DA, we asked the applicant to undertake hydrovac exploratory works to determine the extent of root presence along the nominated building setback line parallel to the Rokeby Avenue boundary, to ensure the development could proceed without adversely affecting the health or structure of the adjacent regulated street trees (see attached RFI).

The applicant has now provided such a repot (attached). Can you please review this and provide your thoughts?

Let me know if you have any questions or want to discuss.

Regards,

Kieran Fairbrother
SENIOR URBAN PLANNER

City of Norwood Payneham & St Peters
175 The Parade, Norwood SA 5067
Telephone
Email
Website www.npsp.sa.gov.au

From: Matthew Cole
Sent: Thursday, 31 August 2023 3:57 PM
To: Kieran Fairbrother
Subject: RE: Development Application Referral - 10 Gray Street, Norwood

Hi Kieran

Thank you for providing the Tree Assessment Services (TAS) report and the revised design for 10 Gray Street, Norwood.

I remain of the opinion the proposed development will have an adverse effect on the health and potentially the stability of Tree 3 and Tree 4 that could result in decline and the eventual need to remove the trees due to a substantial reduction in available root growing environment..

I am pleased the author agrees that Tree 4 in particular is tree of very good health with good structure and good stability.

My concerns as follows-

As outlined in the report, the trees have a broad spreading canopy that overhangs the private property by 5m at the westernmost crown parts into the private property airspace and at substantial height- (I think the report underestimates the height of both the trees crown commencing at 3m). The development proposes the removal of all tree roots within the top 300-400mm of soil for the majority of the length of the property at 2.5m from the boundary at about 3.5m from the tree meaning there could be substantial above ground tree parts reaching further west than below ground tree parts.

In addition, The TAS report from my perspective does not accurately measure the encroachment into the TPZ- encroachment should include any built infrastructure that will be non-permeable on completion, I believe the encroachment would be considered major and well above 10%.

I think it would be best to gather some more information from their arborist Alan Cameron, specifically-

1. What would structure and stability of tree 3 and tree 4 be rated at on completion of the dwelling? i.e. is he confident the trees will not be subject to windthrow following completion of the development
2. Please confirm the pruning removal of all tree roots that will be required to construct the dwellings will not affect the stability of Tree 3 and Tree 4 (this would require detailed pier and beam footing design to be able to determine for sure)
3. Confirm that any roots of less than 50mm diameter can be severed within the trees SRZ for fence construction
4. Would an investigative trench at the required depth (to be determined by the project arborist) at 2.5m in from the western boundary for the entire length of the property be recommended, what size roots can be cut at what depth within this trench

To summarise, I have some concerns with respect to tree stability and in the longer term, tree health.

Let me know if I can elaborate on any of the above.

Kind regards

From: Kieran Fairbrother
Sent: Friday, 18 August 2023 11:46 AM
To: Matthew Cole
Subject: Development Application Referral - 10 Gray Street, Norwood

Hi Matt,

I am not sure if you recall but earlier this year I referred a DA to you for the abovementioned site, for the construction of two dwellings. Around the site – on both Gray St and Rokeby Ave – are four established (two regulated) street trees. In your earlier referral response you said:

Response:
Hi Kieran
I have assessed the trees and completed the attached VTA's for each of the four trees.
As you will see, the proposed development shows a major encroachment into the Tree Protection Zone of each of the four trees. The
without substantial assessment and documentation from the developers project arborist that would show how this can be done.
Following my review of the plans and the site, with respect to the two trees on Rokeby Street, I am of the opinion the dividing of the e
have occurred. Any dwelling on the sub allotment will result in a tree damaging activity that will compromise the trees health and res
expectancy in the current growing environment.
Kind regards
Matt

In my email to the applicant expressing these concerns, amongst others, I said:

Impact on street trees

Council's Arborist has undertaken a Visual Tree Assessment of the four street trees that surround this site, and in so doing has calculated the Structural Root Zones and Tree Protections Zones of each tree. All four trees have been determined to be of good health and worthy of retention. Additionally, the two red iron barks on Rokeby Avenue are both regulated trees, meaning they are afforded a level of statutory protection and any work undertaken that has the potential to damage the trees requires approval for a 'tree-damaging activity'.

To this end, the two dwellings both encroach significantly within the TPZs of both of these street trees which constitutes a tree-damaging activity, unless it can be shown otherwise that the construction of the dwellings will not interfere with these trees. Similarly, the proposed masonry fence encroaches into the SRZs of both of the regulated red iron barks on Rokeby Avenue. Excluding the masonry fences, the extent of TPZ encroachment equates to approximately 16% of Tree 2 and 14% of Tree 1. Per Australian Standard AS 4970-2009, anything more than 10% is considered 'major encroachment'; hence why it is considered a tree-damaging activity. For ease of reference I have attached herein an annotated site plan that shows the level of encroachment of the dwellings and masonry fence into each of the respective trees.

As such, I currently cannot support this level of encroachment. I recommend engaging a consulting arborist who may assist you in determining: the extent of encroachment; the extent of potential for damage to the trees; particular non-invasive construction methods for both the dwellings and the masonry front fence; and/or some other means by which the dwellings and fence may be able to be constructed without affecting both of these trees.

The applicant has now provided an arborist report, see attached, which opines that the development can take place while retaining and not severely impacting the street trees. You should also note that the setbacks to Rokeby Avenue have also slightly been increased and so the level of encroachment now compared to the original proposal you assessed has slightly reduced.

Can you please review and provide feedback on this report? If you're of an equal opinion, can you also please suggest any conditions you consider necessary to this extent?

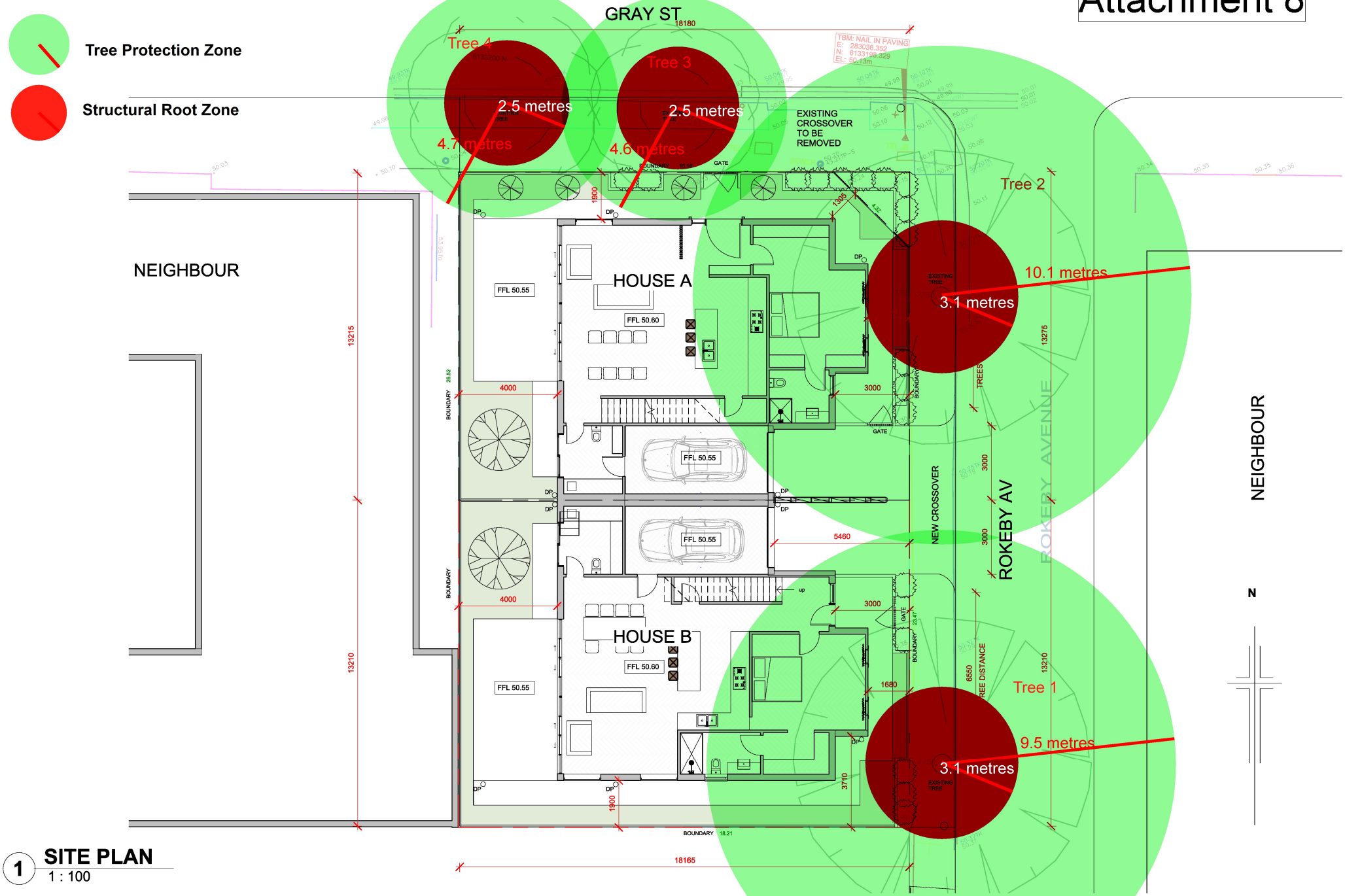
If you're able to provide a response within a fortnight that would be awesome.

Let me know if you need anything else from me.

Regards,

Kieran Fairbrother
SENIOR URBAN PLANNER

City of Norwood Payneham & St Peters
175 The Parade, Norwood SA 5067
Telephone
Email
Website www.npsp.sa.gov.au



1 **SITE PLAN**
1 : 100

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

plot date : 20/04/2022
scale : 1 : 100
job no : 221025
drawn by : Author
checked by : Checker

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status: PRELIMINARY
client name: Owner
project title: PROPOSED RESIDENCE
project address: 10 GRAY ST, NORWOOD
page no.: P100B
drawing title: SITE

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Planning Consent - 23005863: 10 Gray St Norwood SA 5067

Help for this section

‹ Development application 23005863

Schedule 9 of the PD&I Regulations

ADD A NEW EXTERNAL REFERRAL

Internal Referrals

Requested By	Referral Type	Requested Date	Respondee	Response Date	Status	Actions
Kieran Fairbrother	Arboriculture – Street Tree	02/05/2023	Matthew Cole	19/05/2023	Responded	View

Response Details

Request:
Hi Matt,
Would you please mind measuring the SRZ's of the four street trees that surround this site, and providing a VTA on each of them?
The application is proposing two new dwellings and a masonry fence around both Gray Street and Rokeby Avenue. I imagine that the two trees on Rokeby Avenue will have SRZ's that protrude into the property, but not sure about those on Gray St. As such, if this is the case for any and/or all of the trees, some commentary from you about the masonry fence impacts and whether a pier and beam footing construction is feasible would be great.
If you're able to action this by Friday 19 May that would be great.
Thanks
Kieran

Response:
Hi Kieran
I have assessed the trees and completed the attached VTA's for each of the four trees.
As you will see, the proposed development shows a major encroachment into the Tree Protection Zone of each of the four trees. Therefore the development cannot be supported from an arboricultural perspective without substantial assessment and documentation from the developers project arborist that would show how this can be done.
Following my review of the plans and the site, with respect to the two trees on Rokeby Street, I am of the opinion the dividing of the existing allotment has not taken the regulated trees into consideration and should not have occurred. Any dwelling on the sub allotment will result in a tree damaging activity that will compromise the trees health and result in the need to remove trees that at this point in time have a long useful life expectancy in the current growing environment.
Kind regards
Matt

× Close

Attachment 8

Date of Inspection & Staff:	Thursday 18 May 2023, City Arborist
Customer / CRM / Concerns:	DA 23005863 seeks to demolish exisiting dwelling and construct two new dwellings
Address / Location:	10 Gray Street Norwood

Tree No.	Genus	Species	Common Name	Height	Spread	Trunk Circumference
1	*Eucalyptus*	*sideroxylon*	red mugga iron bark	12m	10m	2.57m

Age Class	Mature
Health	Good
Structure	Good
Shape & Form	Good
Quantified Tree Risk Assessment	Broadly Acceptable
Legislative Controls	Regulated Tree
Recommendation	Retain
No. & Replacement Species	*N/A*

Comments

The subject tree is a single stemmed specimen to 6m from where division occurs at a well formed union. The two main uprights at this point further divide to form the trees relatively

compact crown consisting of well attached branching structure with good foliage density. Stem wounds indicate substantial pruning to remove the trees lower branches in the past.

The tree is situated/planted into a narrow footpath with the tree now within 1m of the adjacent property boundary and causing displacement of pavement and road surface.

Overall this Regulated tree has good health and good structure and there is no action required from an arboricultural perspective. **SRZ = 3.09m TPZ = 9.48m**

Attachment 8

Date of Inspection & Staff:	Thursday 18 May 2023, City Arborist
Customer / CRM / Concerns:	DA 23005863 seeks to demolish exisiting dwelling and construct two new dwellings
Address / Location:	10 Gray Street Norwood

Tree No.	Genus	Species	Common Name	Height	Spread	Trunk Circumference
2	*Eucalyptus*	*sideroxylon*	red mugga iron bark	12m	8m	2.72m

Age Class	Mature
Health	Fair
Structure	Sound
Shape & Form	Good
Quantified Tree Risk Assessment	Broadly Acceptable
Legislative Controls	Regulated Tree
Recommendation	Retain
No. & Replacement Species	*N/A*

Image above shows 'tree 2' and **Image below** shows tree buttress and displacement of infrastructure. **Image 3** shows current growing enviornment of the four trees that surround this potential development site, consisting of undisturbed garden bed, dwelling and minor infrastructure. The trees are likely to be a similar age to the dwelling.

Comments

The subject tree is a single stemmed specimen to 5m having had all its lower branches previously removed. Branch division occurs at 5m and again at 6m, these unions are

well formed and support the trees branching framework which displays good attachments throughout the trees relatively sparse crown. Several small dead branches are evident

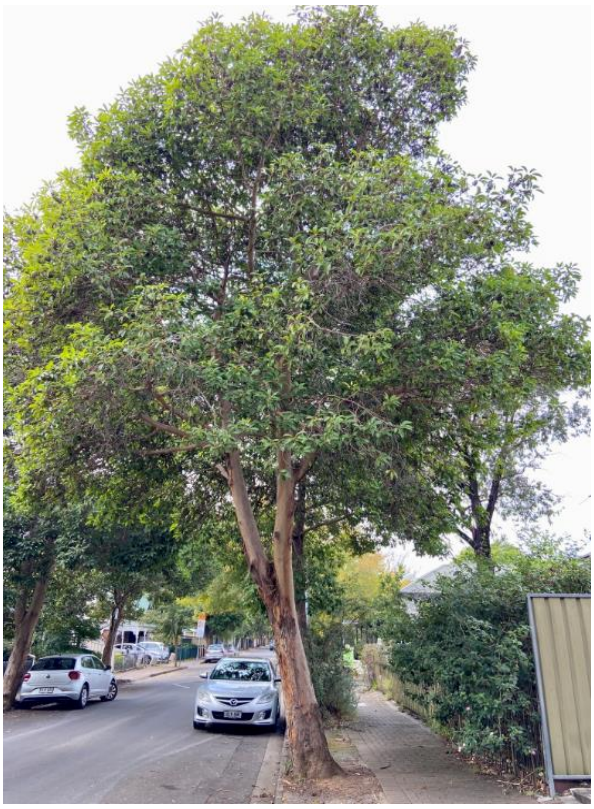
throughout the trees crown indicating the tree having been through a period of gradual decline, at this stage overall health is fair and will be subject to changes to root growing

environment. The tree is free of any structural defect that could be observed from ground level. The tree is currently <1m from the property boundary. **SRZ = 3.09m TPZ = 10.08m**

Attachment 8

Date of Inspection & Staff:		Thursday 18 May 2023, City Arborist				
Customer / CRM / Concerns:		DA 23005863 seeks to demolish exisiting dwelling and construct two new dwellings				
Address / Location:		10 Gray Street Norwood				
Tree No.	**Genus**	**Species**	**Common Name**	**Height**	**Spread**	**Trunk Circumference**
4	*Lophostemon*	*confertus*	Queensland box	10m	8m	1.3m

Age Class	Mature
Health	Good
Structure	Good
Shape & Form	Good
Quantified Tree Risk Assessment	Broadly Acceptable
Legislative Controls	None
Recommendation	Retain
No. & Replacement Species	*N/A*



Comments

Tree 4 is siuated on Gray Street in close proximity to the western property boundary of 24 Gray Street. The tree is a jealthy and well formed specimen with good structure and is free

of any fault or defect that would warrant action from an arboricultural perspective. The tree has a long useful life expectancy in the current growing environment.

The tree is situated at 2.55m from the property boundary to the south and is well suited to its location.

SRZ = 2.53m TPZ = 4.68m

Attachment 8

Date of Inspection & Staff:	Thursday 18 May 2023, City Arborist
Customer / CRM / Concerns:	DA 23005863 seeks to demolish exisiting dwelling and construct two new dwellings
Address / Location:	10 Gray Street Norwood

Tree No.	Genus	Species	Common Name	Height	Spread	Trunk Circumference
3	*Lophostemon*	*confertus*	Queensland box	10m	8m	1.3m

Age Class	Mature
Health	Good
Structure	Good
Shape & Form	Good
Quantified Tree Risk Assessment	Broadly Acceptable
Legislative Controls	None
Recommendation	Retain
No. & Replacement Species	*N/A*

Comments

The Queensland box tree closest to the intersection with Rokeby Street, 'Tree 3' is a healthy and well formed specimen. The tree has good to very good structure and is free of any

fault or defect that would warrant any action from an arboricultural perspective. The tree has a long useful life expectancy in the current growing environment.

The tree is situated at 2.55m from the property boundary to the south and is well suited to its location. Tree 3 is circled in yellow below.

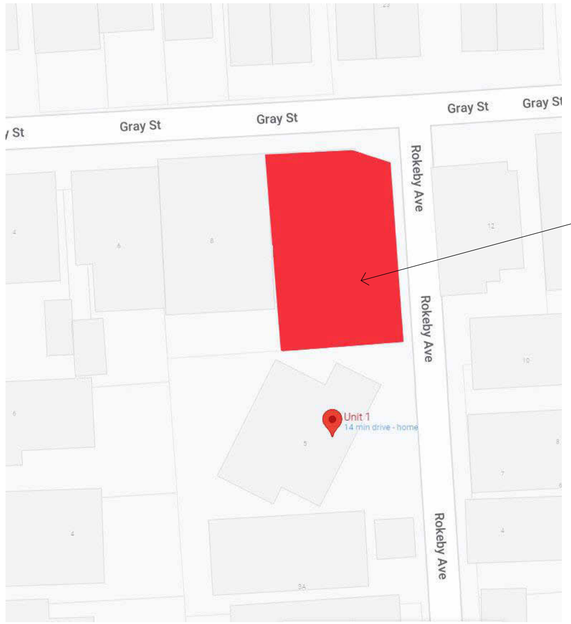
SRZ = 2.47m TPZ = 4.56m

Kieran Fairbrother

From: Matthew Cole
Sent: Thursday, 31 August 2023 5:07 PM
To: Kieran Fairbrother
Subject: RE: Development Application Referral - 10 Gray Street, Norwood

Hi Kieran

Further to my email below and for my own understanding, I took the below image during the assessment, the green line in the image shows the approximate location of the eastern front walls of both dwellings and the line at which an investigative trench would be dug to the south.



10 GRAY ST
NORWOOD

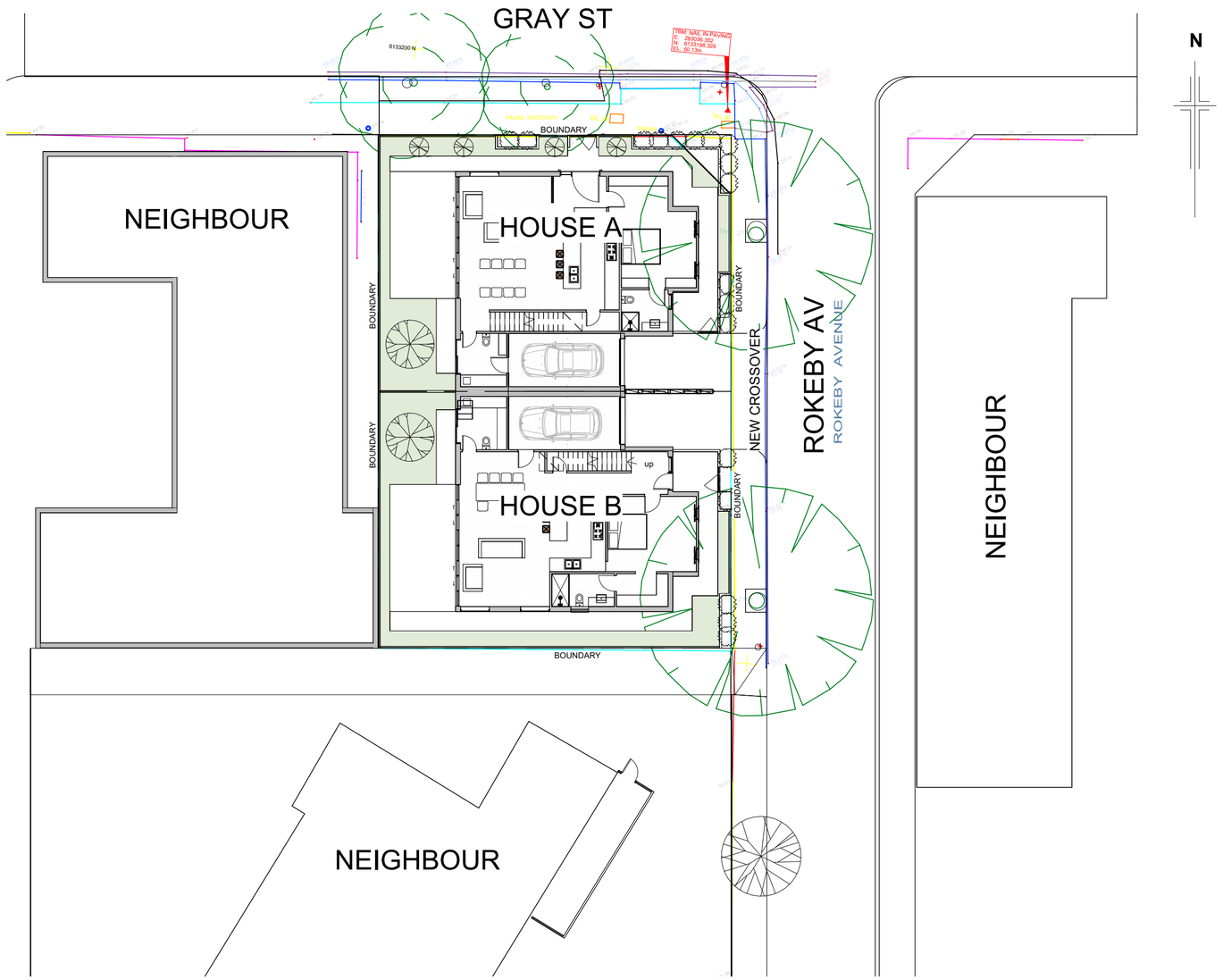
LOCATION PLAN

HOUSE A

AREAS	Sq.m	
TOTAL LAND	241	SITE COVERAGE 112/241 = 46.8%
GF LIVING	112.9	
FIRST FL LIVING	50.0	PRIVATE OPEN SPACE
OUTDOOR LIVING	21.4	= 85.0 Sq.m
		LANDSCAPE SPACE
TOTAL =	183.9	= 40.0 Sq.m

HOUSE B

AREAS	Sq.m	
TOTAL LAND	236	SITE COVERAGE 112/236 = 47.8%
GF LIVING	112.9	
FIRST FL LIVING	50.0	PRIVATE OPEN SPACE
OUTDOOR LIVING	21.4	= 85.0 Sq.m
		LANDSCAPE SPACE
TOTAL =	183.9	= 40.0 Sq.m



1 **LOCATIN PLAN**
1 : 200

FINISHES:

WALLS:	**GROUND FLOOR:** BRICK VENEER - WHITE TEXTURED COAT RENDER TO FRONT FACADE AND AUSTRAL BRICKS WHITEHAVEN HAMPTONS BRICKS
WINDOWS:	MATT BLACK ALUMINIUM FRAMES
MAIN ROOF:	"WOODLAND GREY" COLORBOND ROOF DECK / "WOODLAND GREY" GUTTERS & FASCIA
PAVING AND DRIVEWAY:	EXPOSED AGGREGATE CONCRETE, PAVERS
FENCE:	GOOD NEIGHBOUR FENCE, BRICKS (FRONT FENCE), BLACK MATTE STEEL GATE

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

plot date : 20/04/2022
scale : As indicated
job no : 221025
drawn by : JC
checked by : Checker

status: PRELIMINARY
client name: Owner
project title:
PROPOSED RESIDENCE
project address:
10 GRAY ST, NORWOOD

page no.: P100
drawing title: Site

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GRAY ST

TBM: NAIL IN PAVING
E: 283036.352
N: 6133198.329
EL: 50.13m

6133200 N

EXISTING TREE

EXISTING TREE

PAVED FOOTPATH

TEL JB

EXISTING CROSSOVER TO BE REMOVED

TEL JB

SEWER

NEIGHBOUR

6133190 N

EXISTING DWELLING

EXISTING DWELLING TO BE DEMOLISHED

6133180 N

ROKEBY AV

ROKEBY AVENUE

NEIGHBOUR

EXISTING SHED TO BE DEMOLISHED

N

1 DEMOLITION PLAN

1 : 100

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

plot date : 20/04/2022
scale : 1 : 100
job no : 221025
drawn by : Author
checked by : Checker

status: PRELIMINARY
client name: Owner
project title: PROPOSED RESIDENCE
project address: 10 GRAY ST, NORWOOD
page no.: P100A
drawing title: DEMOLITION

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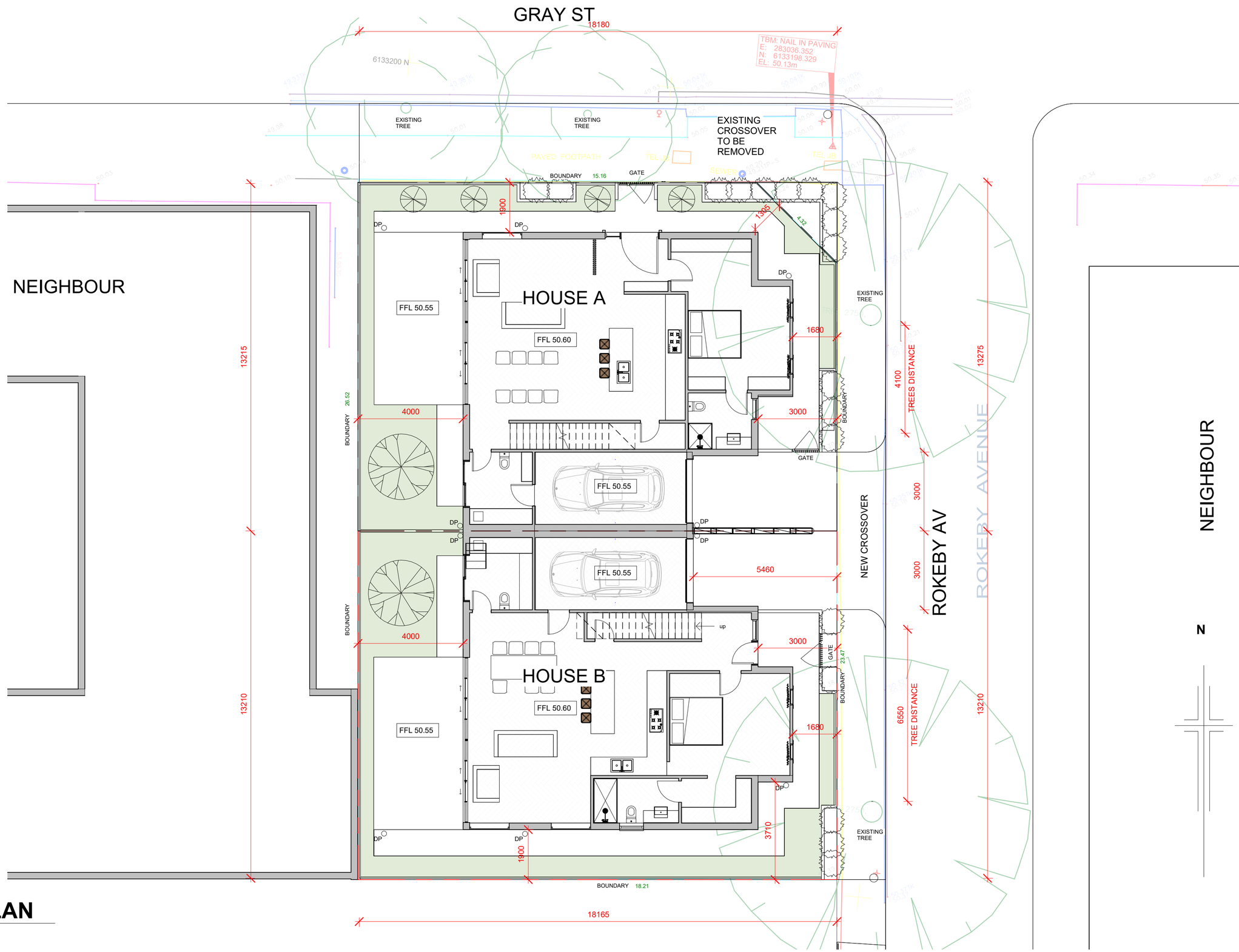

1 SITE PLAN
1 : 100

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

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scale : 1 : 100
job no : 221025
drawn by : Author
checked by : Checker

status: PRELIMINARY
client name: Owner
project title: PROPOSED RESIDENCE
project address: 10 GRAY ST, NORWOOD
page no.: P100B
drawing title: SITE

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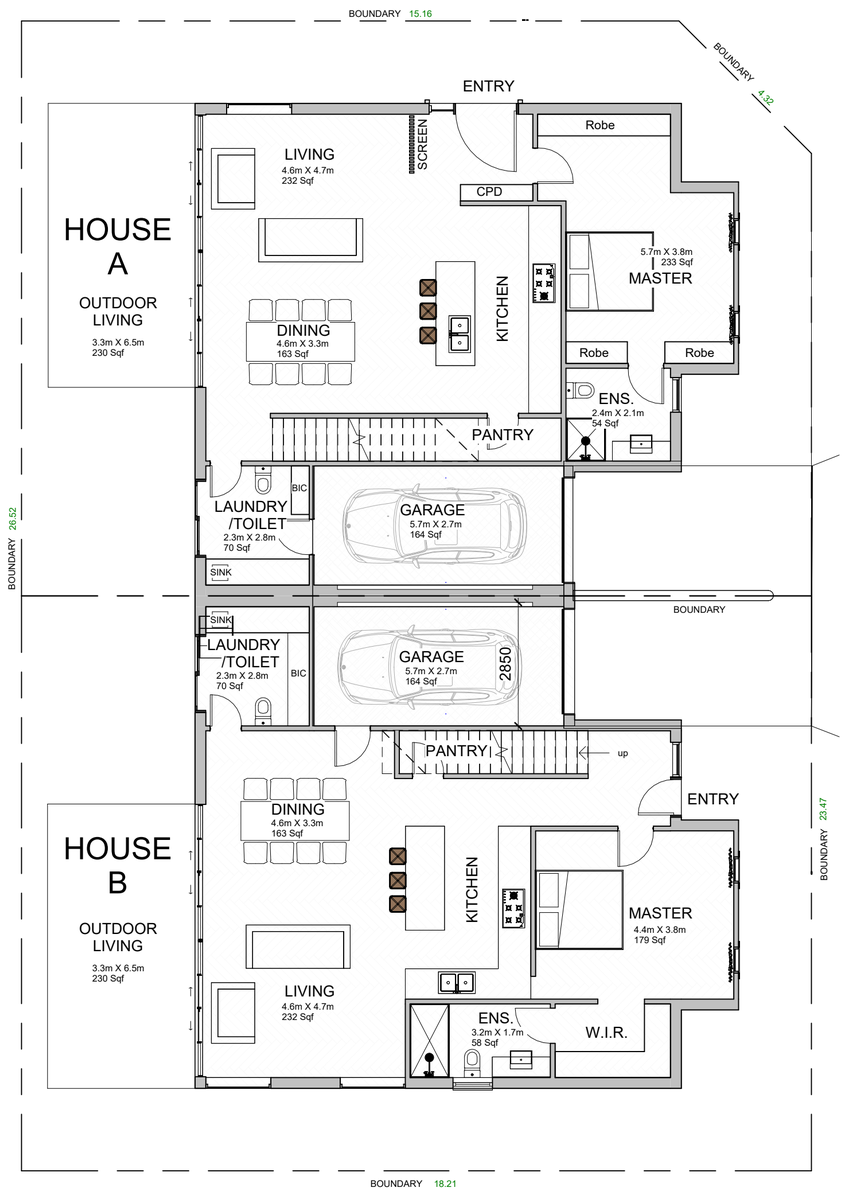
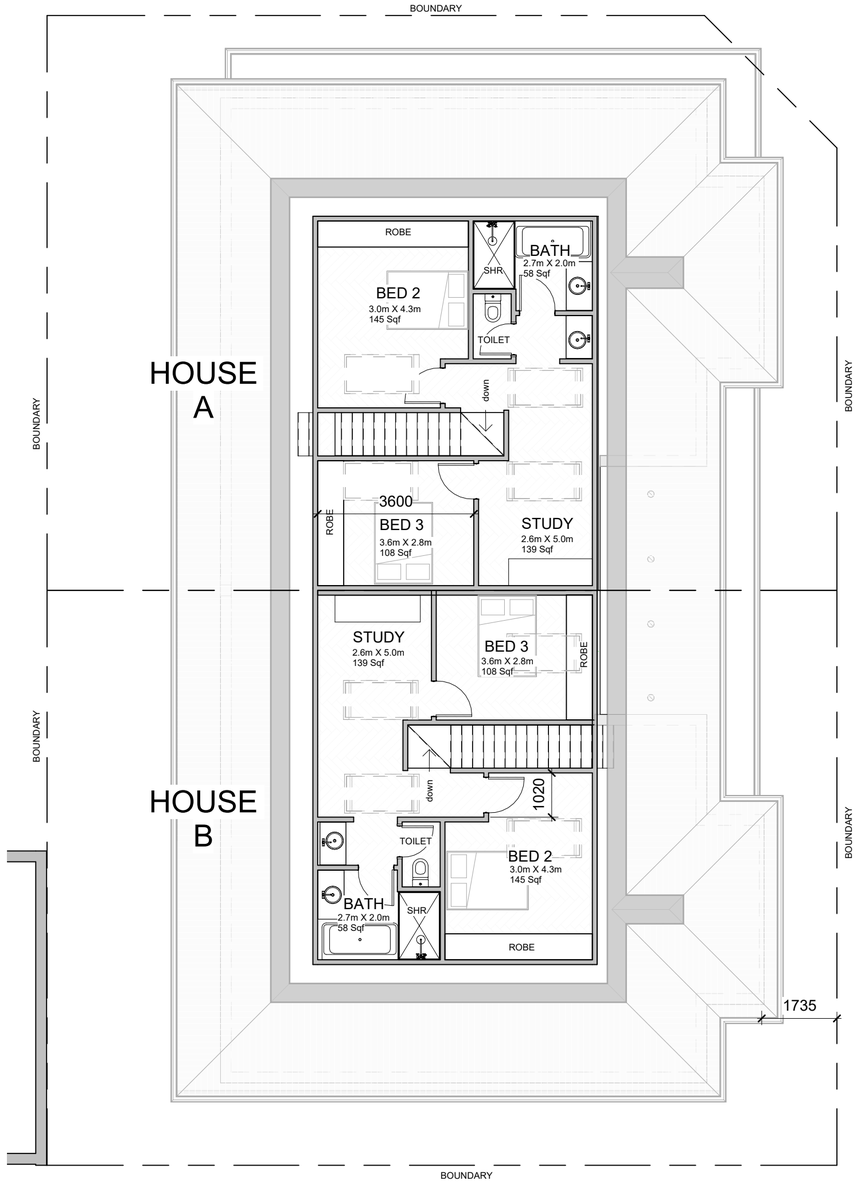


1 GROUND FLOOR
1 : 100



2 FIRST FLOOR
1 : 100

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

plot date : 20/04/2022
scale : 1 : 100
job no : 221025
drawn by : JC
checked by : JL

status: PRELIMINARY
client name: Owner
project title: PROPOSED RESIDENCE
project address: 10 GRAY ST, NORWOOD
page no.: P101
drawing title: PLANS

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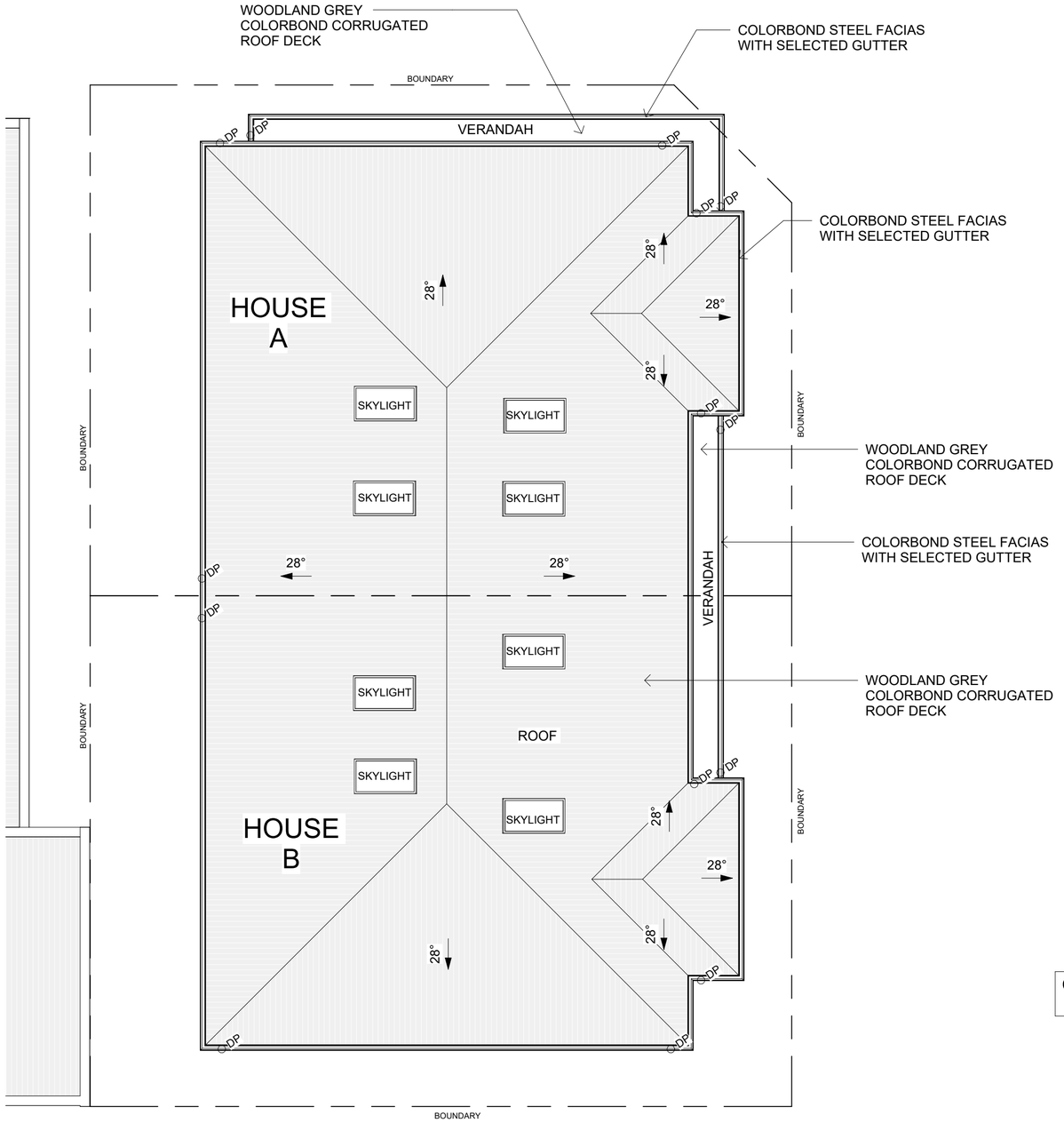

LEGEND

DP — DOWN PIPE

ROOF NOTES
- REFER TO ENGINEERS DRAWINGS FOR ROOF STRUCTURE DESIGN
- STEEL FRAMING INCLUDING LINTELS SHALL BE GALVANIZED IN ACCORDANCE WITH BCA 3.4.4.4.
- ROOF CLADDING SHALL BE IN ACCORDANCE WITH BCA 93.5.1 AND RAINWATER GOODS BCA P3.5.2
- ROOF PITCHES MULTIPLE

CONNECT TO DOWNPIPE
STORMWATER SYSTEM

1 ROOF FLOOR
1 : 100

Revision Number	Revision Date	Revision Description

A2 — Sheet Size

Revision No.

plot date : 20/04/2022
scale : As indicated
job no : 221025
drawn by : J.C
checked by : J.L

status: PRELIMINARY
client name: Owner
project title: PROPOSED RESIDENCE
project address: 10 GRAY ST, NORWOOD
page no.: P102
drawing title: PLANS

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1 EAST ELEVATION (ROKEBY AV)

1 : 100

2 NORTH ELEVATION (GRAY ST)

1 : 100

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

plot date : 20/04/2022
scale : 1 : 100
job no : 221025
drawn by : JC
checked by : JL

status: PRELIMINARY
client name: Owner
project title: PROPOSED RESIDENCE
project address: 10 GRAY ST, NORWOOD
page no.: P103
drawing title: STREET ELEVATION

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1 FRONT ELEVATION
1 : 100

2 REAR ELEVATION
1 : 100

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

plot date : 20/04/2022
scale : 1 : 100
job no : 221025
drawn by : Author
checked by : Checker

status: PRELIMINARY
client name: Owner
project title:
PROPOSED RESIDENCE
project address:
10 GRAY ST, NORWOOD

page no.: P104
drawing title: ELEVATION

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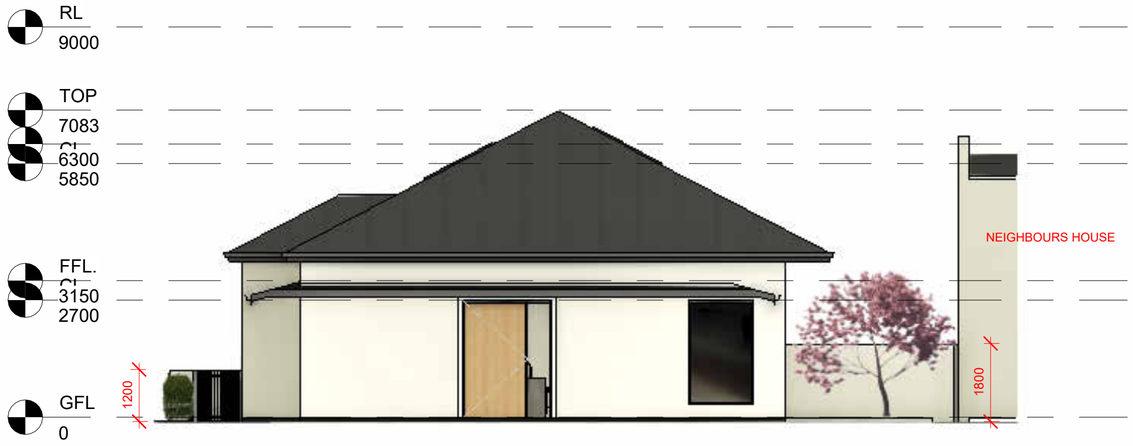

3 HOUSE A SIDE ELEVATION

1 : 100

4 HOUSE B SIDE ELEVATION

1 : 100

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

plot date : 20/04/2022
scale : 1 : 100
job no : 221025
drawn by : Author
checked by : Checker

status: PRELIMINARY
client name: Owner
project title:
PROPOSED RESIDENCE
project address:
10 GRAY ST, NORWOOD

page no.: P105
drawing title: ELEVATION

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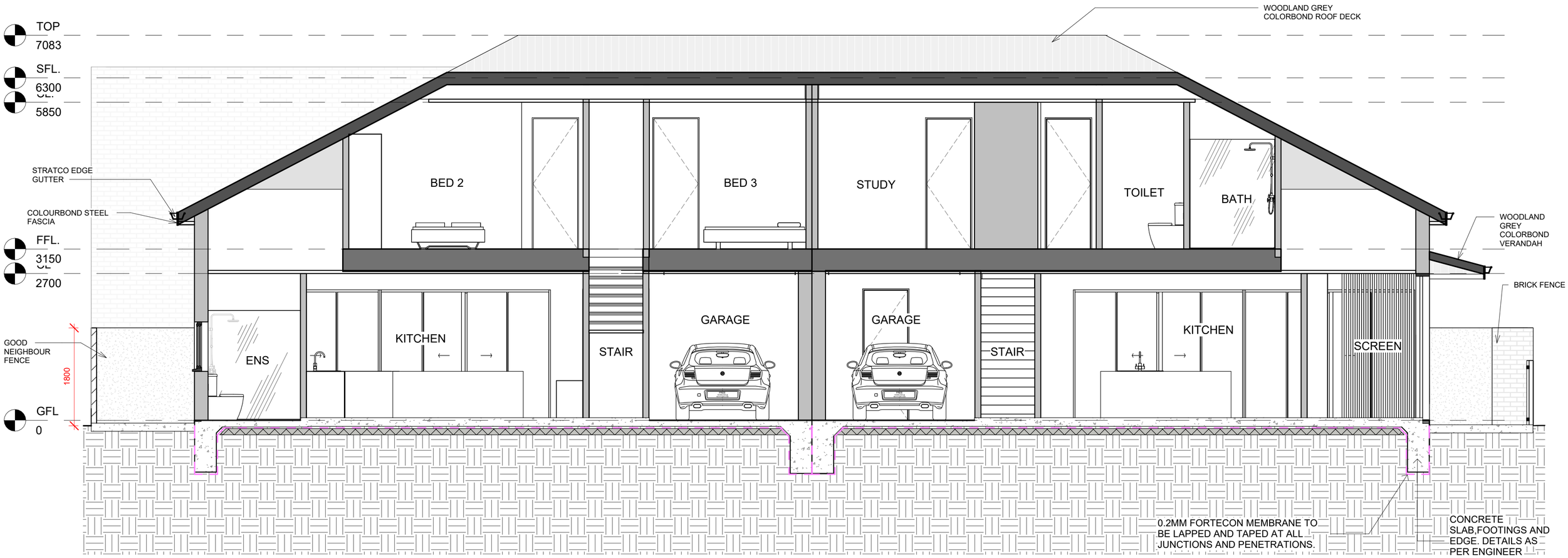

1 SECTION A
1 : 50

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

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job no : 221025
drawn by : Author
checked by : Checker

status: PRELIMINARY
client name: Owner
project title:
PROPOSED RESIDENCE
project address:
10 GRAY ST, NORWOOD
page no.: P106
drawing title: SECTION

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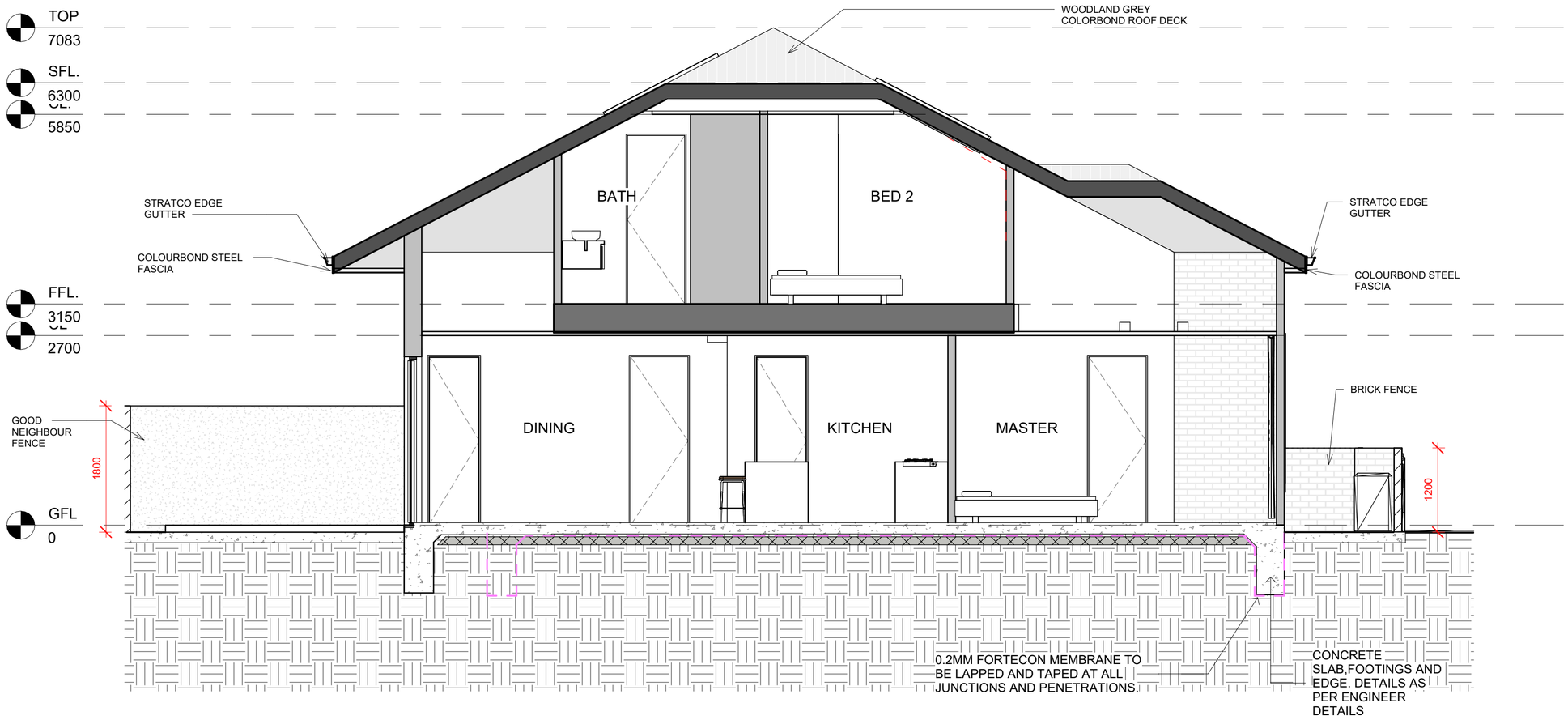

1 SECTION B

1 : 50

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

plot date : 20/04/2022
scale : 1 : 50
job no : 221025
drawn by : Author
checked by : Checker

status: PRELIMINARY
client name: Owner
project title:
PROPOSED RESIDENCE
project address:
10 GRAY ST, NORWOOD
page no.: P107
drawing title: SECTION

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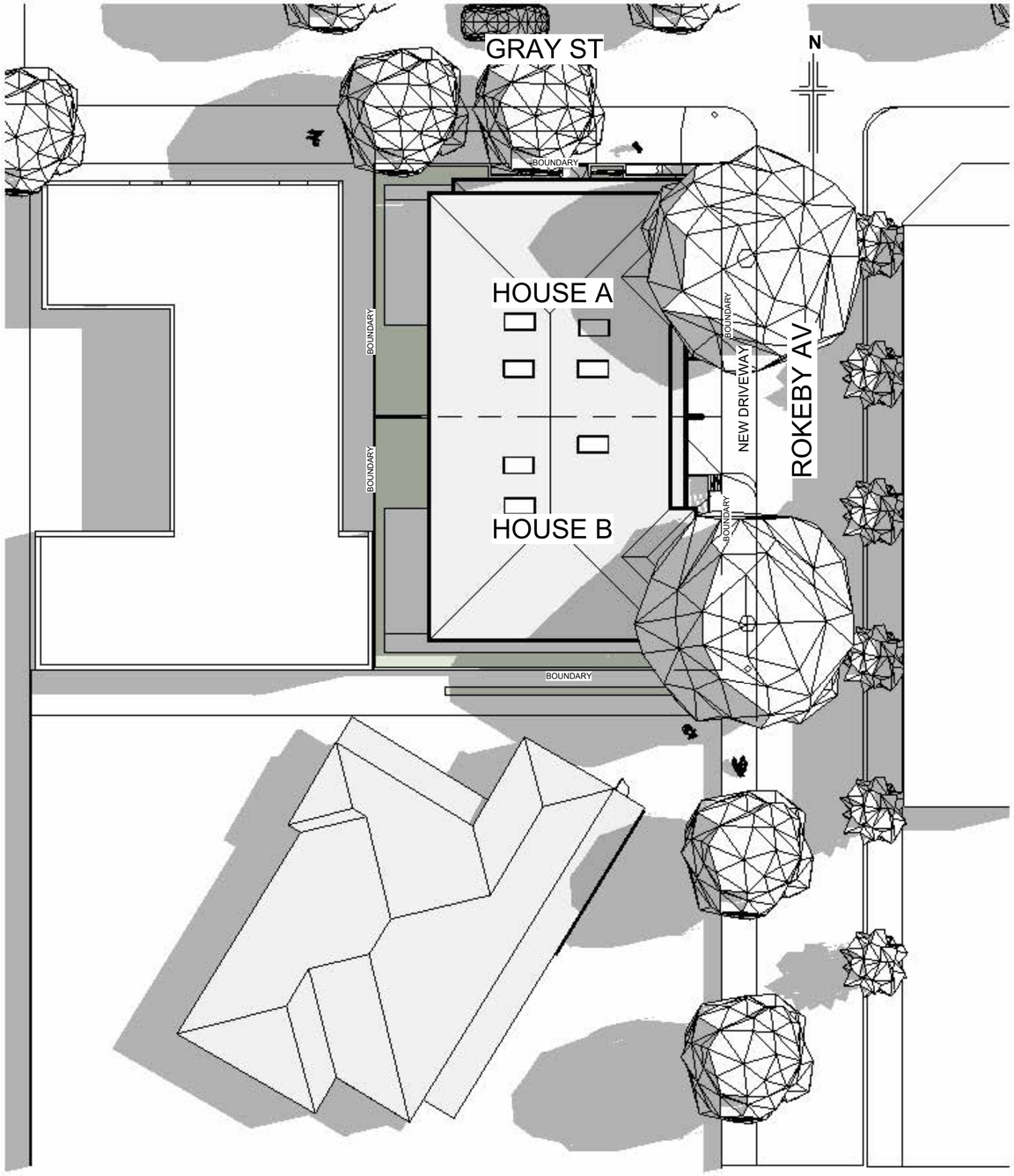
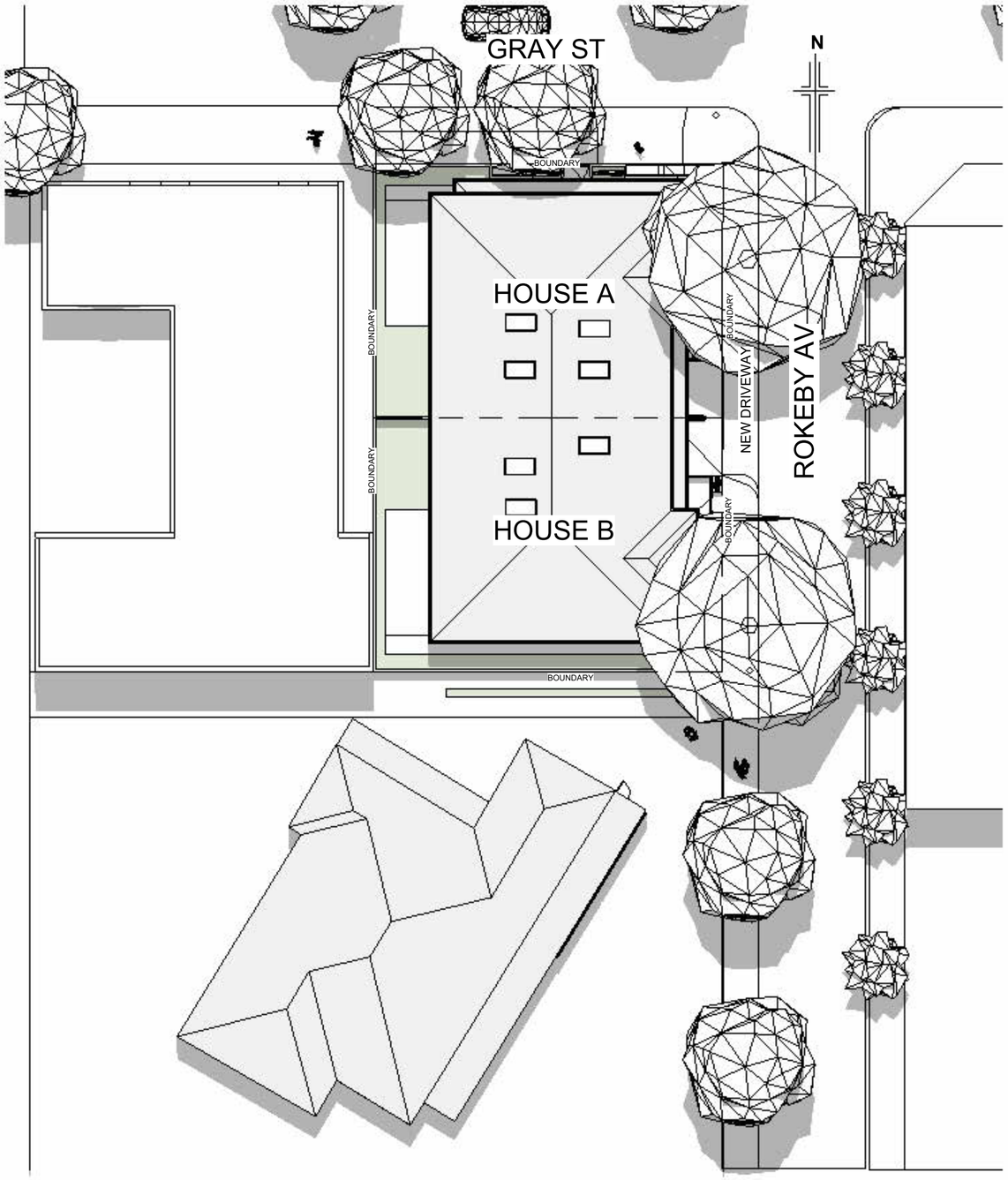


1 SITE PLAN SUN 9AM

1 : 200



2 SITE PLAN SUN 12PM

1 : 200

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

plot date : 20/04/2022
scale : 1 : 200
job no : 221025
drawn by : JC
checked by : JL

status: PRELIMINARY
client name: Owner
project title: PROPOSED RESIDENCE
project address: 10 GRAY ST, NORWOOD
page no.: P203
drawing title: SHADOW

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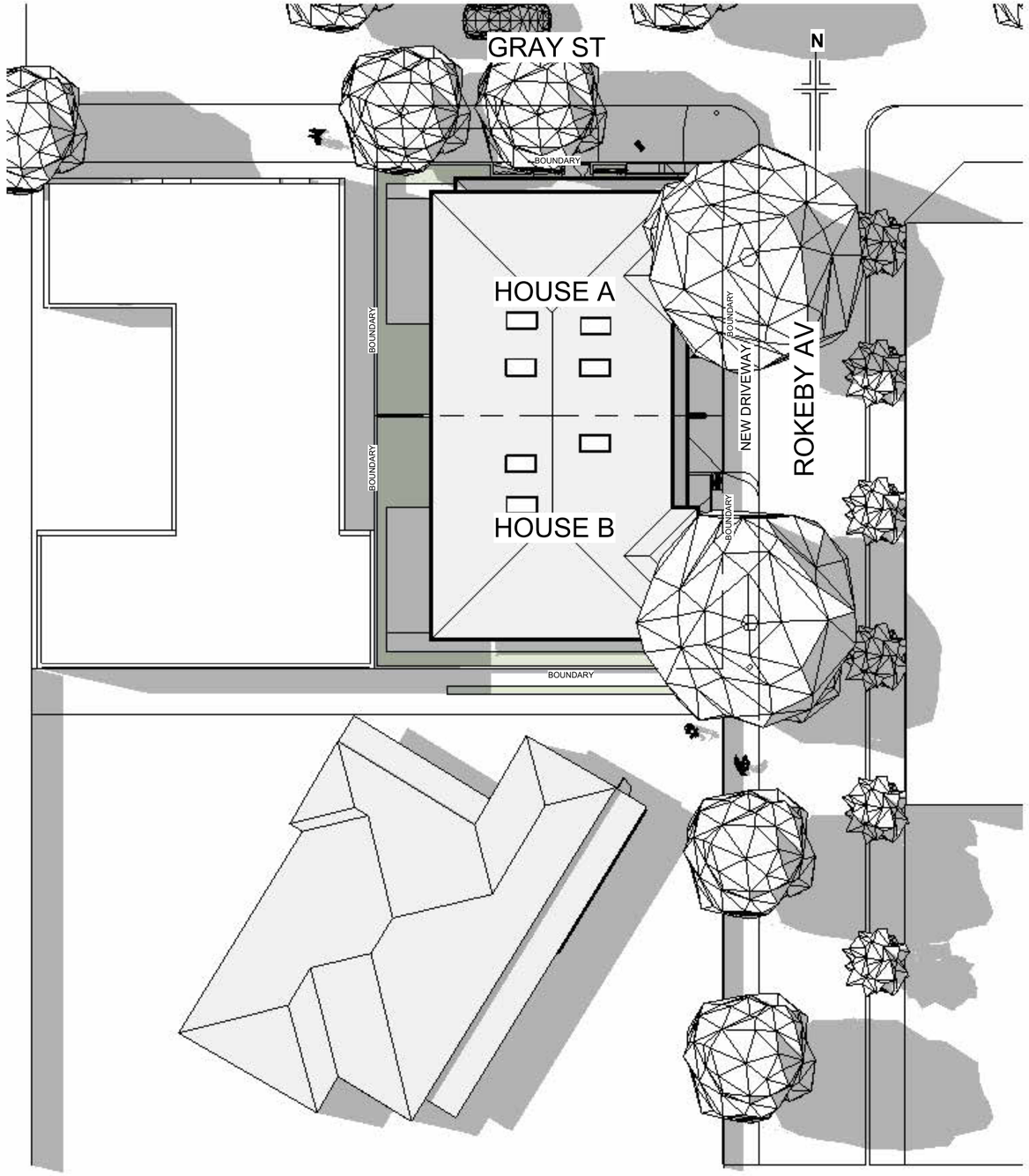
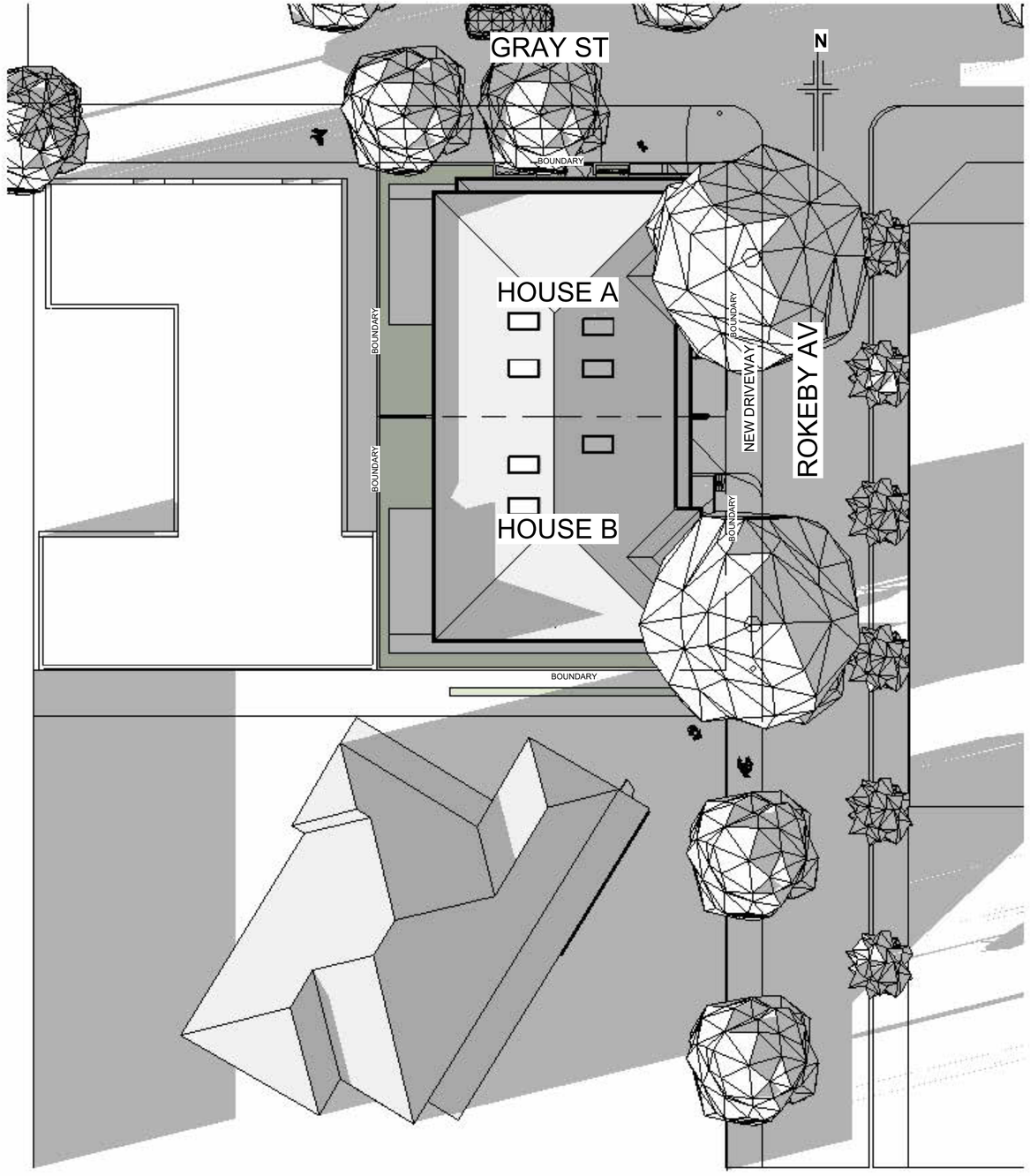


1 SITE PLAN SUN 3PM

1 : 200



2 SITE PLAN SUN 6PM

1 : 200

Revision Number	Revision Date	Revision Description

A2
Sheet Size

Revision No.

plot date : 20/04/2022
scale : 1 : 200
job no : 221025
drawn by : JC
checked by : JL

status: PRELIMINARY
client name: Owner
project title: PROPOSED RESIDENCE
project address: 10 GRAY ST, NORWOOD
page no.: P204
drawing title: SHADOW

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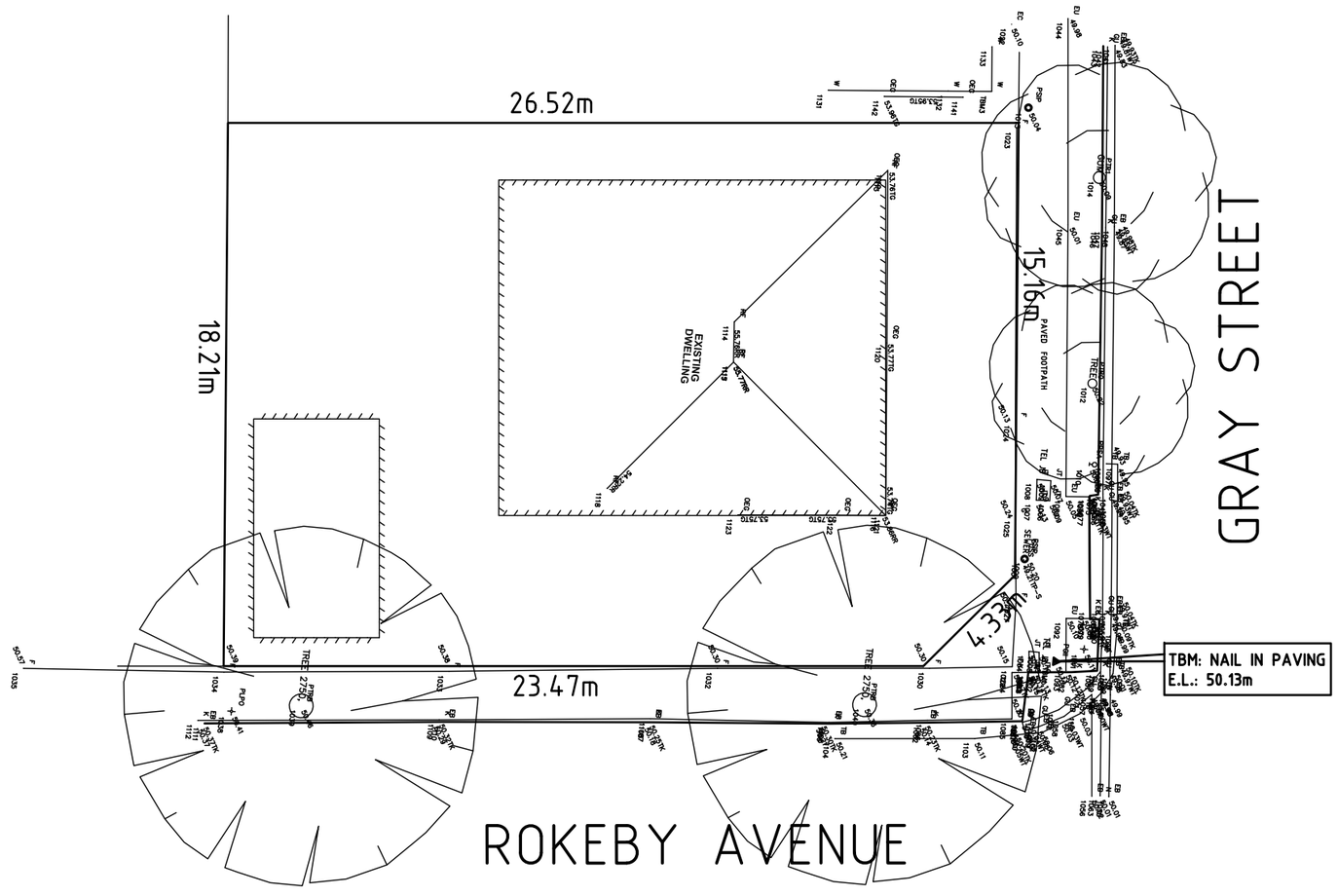
APPROXIMATE

RE-SURVEY NOTE: A COMPLETE SURVEY WITH ALL INTERNAL LEVELS AND BOUNDARY STRUCTURES IS TO BE PROVIDED PRIOR TO CONSTRUCTION COMMENCES. THIS PLAN WILL THEN NEED TO BE RE-ISSUED BASED ON THE NEW SURVEY

ALL TREES WITHIN THE DEVELOPMENT AREA ARE TO BE REMOVED AND THE VOIDS BACKFILLED WITH COMPACTED SATURATED SOIL. REFER TO C01.

WHERE EXISTING STRUCTURES ARE TO BE REMOVED, PRE-WETTING IS MANDATORY.



1m 2m 5m 10m

SCALE 1:200 @ A3

NOTES:

1. THIS IS AN ENGINEERING SURVEY ONLY AND SHALL NOT BE TAKEN AS A BOUNDARY IDENTIFICATION SURVEY. THE BOUNDARY DATA SHOWN IS TO BE TAKEN AS A GUIDE ONLY.
2. CONTACT 'DIAL BEFORE YOU DIG' PRIOR TO COMMENCEMENT OF WORKS TO VERIFY THE LOCATION AND DEPTH OF EXISTING SERVICES.
3. WHERE TREES ARE TO BE REMOVED, BACKFILL THE VOIDS WITH COMPACTED SATURATED SOIL.

LEGEND:

99.00 EXISTING SPOT LEVEL

EXISTING CONTOUR

ISSUE	DATE	AMENDMENT	APPROVED
A	04.04.23	FOR APPROVAL	KP

PROJECT PROPOSED DEVELOPMENT
AT: 10 GRAY STREET
NORWOOD
FOR: AC DESIGN

DRAWING TITLE: **LEVEL PLAN**

SCALE	DRAWN	ENGINEER	DATE
1:200	KP	KP	04.04.2023

SURVEYED	PROJECT No.	DRAWING No.	ISSUE	SHEET SIZE
BY OTHERS	23-072	C1	A	A3

KP AUSTRUCT
Consulting Engineers
6 CRITTENDEN ROAD,
FINDON, SA, 5023.
PH: (08) 8448 2900

APPROXIMATE

RE-SURVEY NOTE: A COMPLETE SURVEY WITH ALL INTERNAL LEVELS AND BOUNDARY STRUCTURES IS TO BE PROVIDED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THIS PLAN WILL THEN NEED TO BE RE-ISSUED BASED ON THE NEW SURVEY

ALL TREES WITHIN THE DEVELOPMENT AREA ARE TO BE REMOVED AND THE VOIDS BACKFILLED WITH COMPACTED SATURATED SOIL. REFER TO C01.

FINISHED FLOOR LEVELS ARE DESIGNED FOR STORM WATER ONLY. ALL FINAL SITE LEVELS TO BE DETERMINED UPON CONFIRMATION OF THE SEWER RUN BY OTHERS. PLEASE CONTACT THIS OFFICE TO CONFIRM.

FINISHED FLOOR LEVEL HAS BEEN BASED ON THE FOLLOWING:
- MIN. 1:200 S/W FALL TO STREET W/T.
- 100mm SLAB THICKNESS
- 100mm BASECOURSE THICKNESS
  (REFER TO ENGINEER'S FOOTING REPORT)

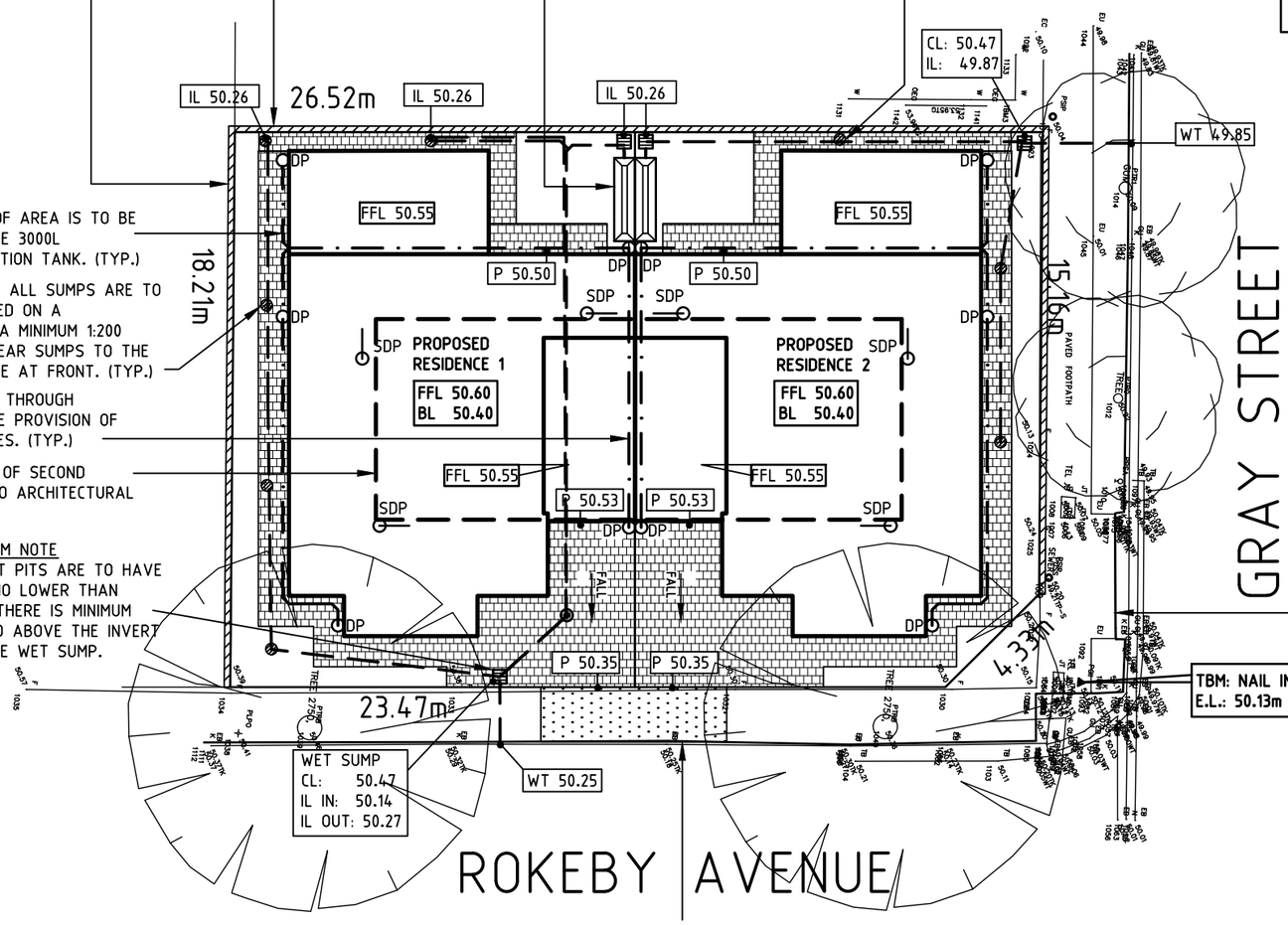
ALL PAVING LEVELS ADJACENT TO RESIDENCES TO BE 100mm (MIN.) BELOW FINISHED FLOOR LEVELS (U.N.O)

DENOTES NEW SLEEPER RETAINING WALL, TO BE A MAXIMUM OF 300MM HIGH.
GIVEN INCOMPLETE SURVEY OF THE ALLOTMENT, TO DETERMINE THE FULL EXTENTS AND HEIGHTS OF RETAINING WALLS, A RE-SURVEY IS REQUIRED PRIOR TO CONSTRUCTION

RETAINING WALL SHOWN OUTSIDE THE PROPERTY BOUNDARY FOR CLARITY ONLY. WALL IS TO BE FULLY CONCEALED WITHIN THE SITE BOUNDARIES.

COUNCIL STORMWATER REQUIREMENTS: PROVIDE MIN. 3000 LITRE RETENTION/DETENTION TANK, WITH THE 2000L RETENTION VOLUME TO BE PLUMBED TO ONE TOILET AND EITHER THE LAUNDRY COLD WATER OUTLETS OF HOT WATER SERVICE IN ACCORDANCE WITH THE DESIGNATED PERFORMANCE FEATURE WITHIN THE STORM WATER MANAGEMENT OVERLAY OF THE PDI ACT. 1000L DETENTION IS TO PROVIDED ABOVE RETENTION PORTION. OUTLET AND OVERFLOW FROM THE TANK IS TO BE DIRECTED, WITH A 25mm FITTED TO OUTLET PIPE, TO NEAREST GRATED SUMP AND THEN TO STREET WATER TABLE VIA GRAVITY. (TYP.)

COVER LEVEL OF GRATED SUMP TO BE PLACED 10mm BELOW LEVEL OF LOWEST PAVING. SURROUNDING SURFACE TO BE DIRECTED TO THE CENTRE OF THE GRATED SUMP (TYP.)



MIN. 60% OF ROOF AREA IS TO BE DIRECTED INTO THE 3000L RETENTION/DETENTION TANK. (TYP.)

INVERT LEVELS OF ALL SUMPS ARE TO BE SELECTED BASED ON A CONTINUATION OF A MINIMUM 1:200 FALL FROM THE REAR SUMPS TO THE S/W WATER TABLE AT FRONT. (TYP.)

PROVIDE SLEEVES THROUGH FOOTINGS FOR THE PROVISION OF STORMWATER PIPES. (TYP.)

DENOTES EXTENT OF SECOND STOREY (REFER TO ARCHITECTURAL PLANS) (TYP.)

WET SUMP SYSTEM NOTE
ALL GRATED INLET PITS ARE TO HAVE A COVER LEVEL NO LOWER THAN 50.47, ENSURING THERE IS MINIMUM 200mm FREEBOARD ABOVE THE INVERT OUT LEVEL OF THE WET SUMP.

REINSTATE CONCRETE KERB, WATER TABLE AND FOOTPATH IN ACCORDANCE WITH COUNCIL'S SPECIFICATION.

TBM: NAIL IN PAVING
E.L.: 50.13m

DENOTES NEW CROSSOVER IN ACCORDANCE WITH THE COUNCIL'S SPECIFICATIONS. (TYP.)

1m 2m 5m 10m

SCALE 1:200 @ A3

STORMWATER & DRAINAGE NOTES:

1. THIS IS AN ENGINEERING SURVEY ONLY AND SHALL NOT BE TAKEN AS A BOUNDARY IDENTIFICATION SURVEY. THE BOUNDARY DATA SHOWN IS TO BE TAKEN AS A GUIDE ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR CORRECT DIMENSIONS AND SET-OUT POINTS.
2. CONTACT 'DIAL BEFORE YOU DIG' PRIOR TO COMMENCEMENT OF WORKS TO VERIFY THE LOCATION AND DEPTH OF EXISTING SERVICES.
3. WHERE TREES ARE TO BE REMOVED, BACKFILL THE VOIDS WITH COMPACTED SATURATED SOIL.
4. COUNCIL OFFICERS ARE TO PROVIDE THIS OFFICE WITH ANY FLOODING INFORMATION FOR THE SITE (IF APPLICABLE) AND ARE TO ENSURE THAT THE FFL APPROVED MEETS THOSE REQUIREMENTS.
5. PATH LEVEL AT FLOOD GULLY TO BE A MINIMUM OF 165mm BELOW FINISHED FLOOR LEVEL. FLEXIBLE CONNECTIONS FOR SEWER AND STORMWATER PIPES ARE REQUIRED FOR SOIL CLASS 'H-D' & 'E-D' SITES (REFER TO THE GEOTECHNICAL/CONSTRUCTION REPORT TO VERIFY)
6. MINIMUM PIPE COVERS (FINISHED SURFACE TO TOP OF PIPE) TO ALL UNDERGROUND PIPES ARE TO BE ACCORDANCE WITH AUSTRALIAN STANDARDS, SPECIFICIALLY AS/NSZ 3500.3: 2018.

LEGEND:

- 99.00 — EXISTING SPOT LEVEL
- EXISTING CONTOUR
- SURFACE STORMWATER PIPE DN100 SN6 PVC-U (MIN. FALL 1:200) (U.N.O)
- ROOF STORMWATER SEALED SYSTEM PIPE DN100 SN6 PVC-U SCJ PN4.5 (MIN. FALL 1:100) (U.N.O.)
- BLUE LINE PUMPING MAIN (TO BE SIZED BY MANUFACTURER)
- DP — DOWNPIPE
- SDP — SPREADER DOWNPIPE
- Ø150 GRATED INLET PIT - COVER LEVEL XXX.XX (TYP.) (UNO)
- INSPECTION OPENING
- 300SQ GRATED SUMP (U.N.O)
- DENOTES 100MM WIDE GENERAL PURPOSE GRATED TRENCH DRAIN WITH REMOVAL GRATE.
- PAVING (REFER TO 'EARTHWORKS & PAVING PLAN')
- 90.00 — DESIGN LEVEL
- P — PAVING LEVEL
- CL — COVER LEVEL
- IL — INVERT LEVEL
- GL — GROUND LEVEL
- TK — TOP OF KERB LEVEL
- WT — WATER TABLE LEVEL

ISSUE	DATE	AMENDMENT	APPROVED
A	13.04.23	FOR APPROVAL	KP

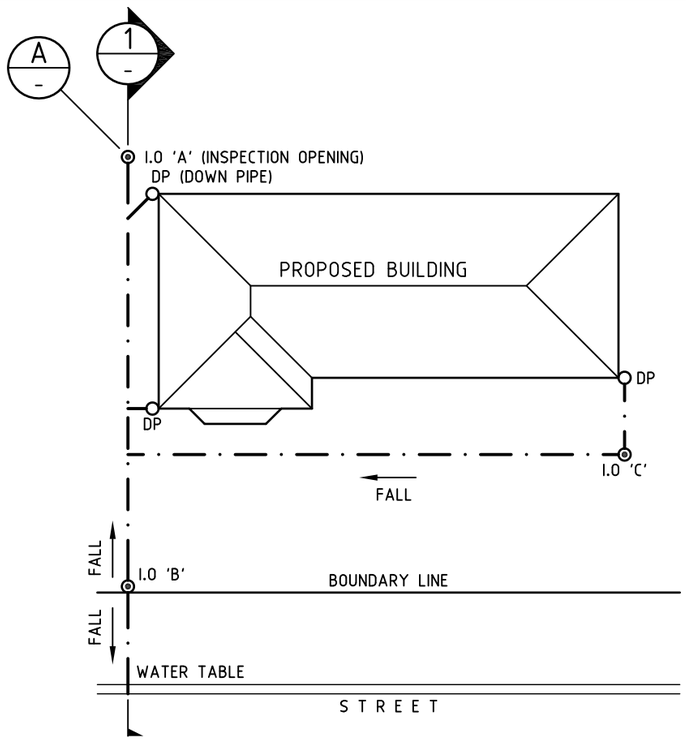
PROJECT PROPOSED DEVELOPMENT
AT: 10 GRAY STREET
NORWOOD
FOR: AC DESIGN

DRAWING TITLE
CIVIL & DRAINAGE PLAN

SCALE	DRAWN	ENGINEER	DATE
1:200	KP	KP	13.04.2023

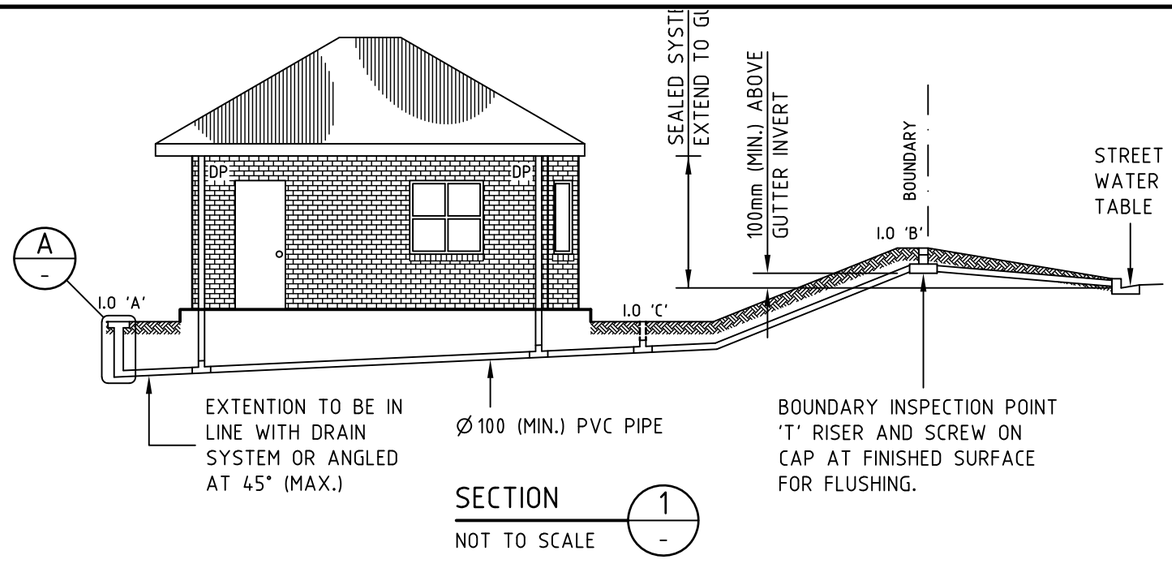
SURVEYED	PROJECT No.	DRAWING No.	ISSUE	SHEET SIZE
BY OTHERS	23-072	C2	A	A3

KP AUSTRUCT Consulting Engineers
6 CRITTENDEN ROAD, FINDON, SA, 5023.
PH: (08) 8448 2900

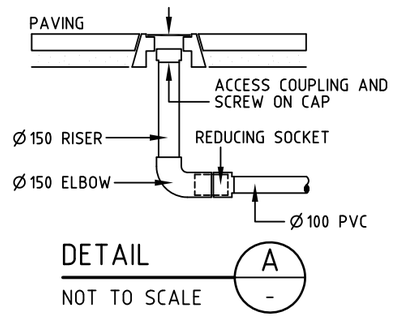


TYPICAL DOMESTIC SEALED (PRESSURISED) DRAINAGE SYSTEM LAYOUT

NOT TO SCALE



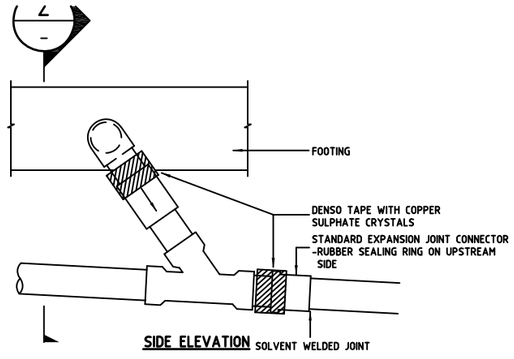
SECTION 1 / NOT TO SCALE

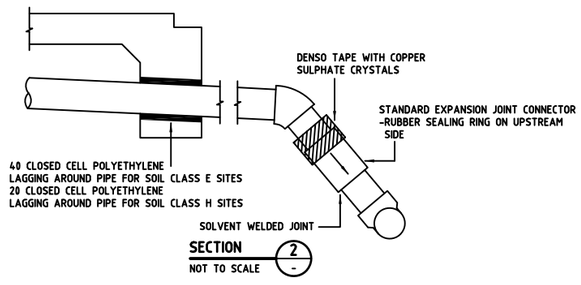


DETAIL A / NOT TO SCALE

GENERAL SEALED SYSTEM NOTES:

1. STORMWATER PIPES TO HAVE A MINIMUM FALL OF 1.0% (1 IN 100) UNLESS NOTED OTHERWISE.
2. DO NOT USE SEAMED SHEET METAL DOWN PIPES OR FITTINGS WITH A PRESSUREISED SYSTEM.
3. NO SURFACE INLETS (SUMPS OR GRATED INLET PITS) PERMITTED INTO SEALED SYSTEM.
4. PROVIDE LEAF GUARDS AT DOWN PIPE INLETS.
5. FLUSHING AND MAINTENANCE IS THE RESPONSIBILITY OF THE OWNER.





STORMWATER & SEWER FLEXIBLE SERVICE CONNECTION DETAILS FOR CLASS 'H' & 'E' SITES

NOT TO SCALE

GENERAL FLEXIBLE CONNECTION NOTES:

DUE TO THE MOISTURE REACTIVE NATURE OF SOILS ON CLASS 'H' & 'E' SITES, IT IS REQUIRED THAT THE SERVICE PIPES INCLUDE STANDARD EXPANSION TYPE JOINT COUPLINGS. PROVIDE A FLEXIBLE CONNECTION TO PIPE IN ACCORDANCE WITH THE FOLLOWING;

1. CONNECTIONS ARE REQUIRED AT EACH LOCATION WHERE PIPES (50mm OR LARGER) PENETRATE OR PASS BENEATH THE EXTERNAL FOOTING BEAMS.
2. TWO EXPANSION JOINT CONNECTORS ARE REQUIRED, AS DETAILED ABOVE, AT EACH CONNECTION..
3. THE DENSO TAPE MUST BE SPRINKLED WITH COPPER SULPHATE CRYSTALS PRIOR TO WRAPPING AND MUST EXTEND 50mm BEYOND THE JOINT ON EITHER SIDE.
4. DETAILS ARE APPLICABLE TO TO SEWER AND STORMWATER PIPES.
5. REFER TO THE CONSTRUCTION/GEOTECHNICAL REPORT FOR SOIL CLASSIFICATION.

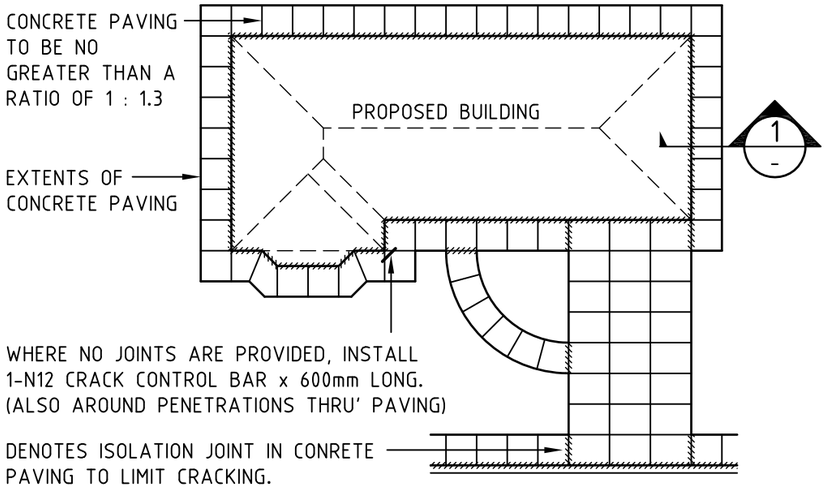
PROJECT PROPOSED DEVELOPMENT
AT: 10 GRAY STREET
NORWOOD
FOR: AC DESIGN

DRAWING TITLE: STORMWATER DETAILS

SCALE	DRAWN	ENGINEER	DATE
AS SHOWN	KP	KP	04.04.2023

SURVEYED	PROJECT No.	DRAWING No.	ISSUE	SHEET SIZE
BY OTHERS	23-072	C3	A	A3

KP AUSTRUCT Consulting Engineers
6 CRITTENDEN ROAD,
FINDON, SA, 5023.
PH: (08) 8448 2900



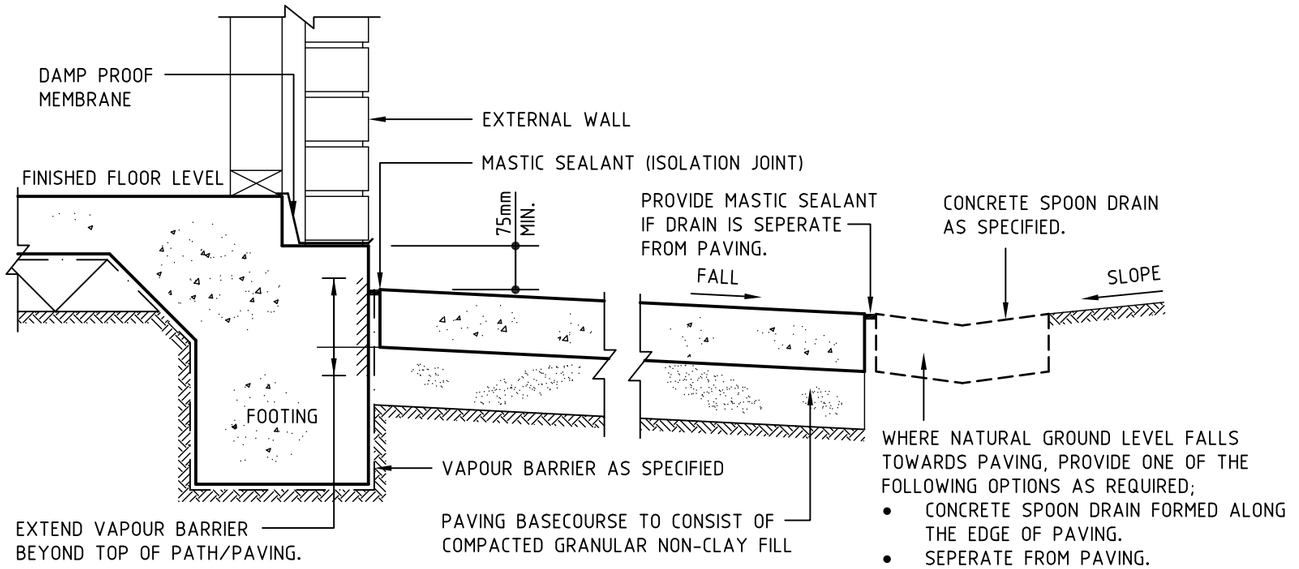
TYPICAL CONCRETE PAVING LAYOUT AROUND BUILDING

NOT TO SCALE

GENERAL PAVING NOTES:

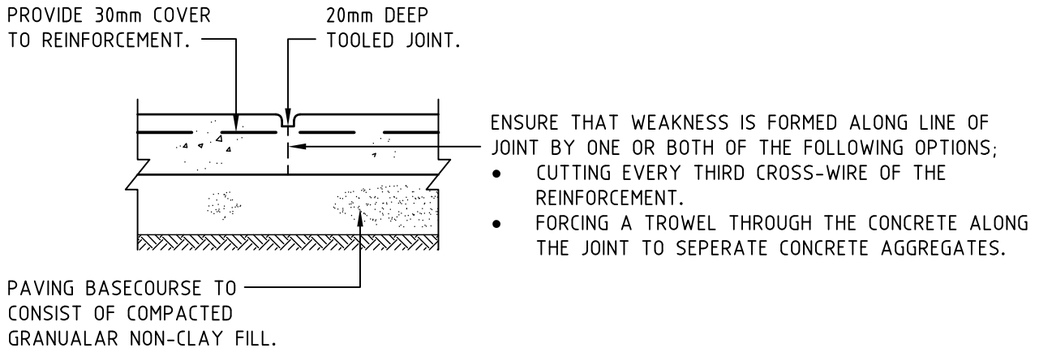
1. UNLESS NOTED OTHERWISE, PAVED AREAS SHALL HAVE A MINIMUM WIDTH OF 900mm. A PREFERABLE WIDTH OF 1200mm SHOULD BE ADOPTED FOR CLASS 'E-D' SITES.
2. WHERE CONCRETE PAVEMENTS ARE ADOPTED, REFER TO THE TABLE BELOW:
   - CLASS 'A' OR 'S' SITES - MIN. CROSSFALL=1:30
     - FOOT TRAFFIC [2m] - 75mm THICK CONCRETE WITH SL52 FABRIC CENTRAL
     - LIGHT VEHICULAR TRAFFIC [3m] - 100mm THICK CONCRETE WITH SL62 FABRIC CENTRAL
   - CLASS 'M' SITES - MIN. CROSSFALL=1:20
     - FOOT TRAFFIC [2m] - 75mm THICK CONCRETE WITH SL52 FABRIC CENTRAL
     - LIGHT VEHICULAR TRAFFIC [3m] - 100mm THICK CONCRETE WITH SL62 FABRIC CENTRAL
   - CLASS 'H' SITES - MIN. CROSSFALL=1:20
     - FOOT TRAFFIC [2m] - 75mm THICK CONCRETE WITH SL62 FABRIC CENTRAL
     - LIGHT VEHICULAR TRAFFIC [4m] - 100mm THICK CONCRETE WITH SL72 FABRIC CENTRAL
   - CLASS 'E' SITES - MIN. CROSSFALL=1:20
     - FOOT TRAFFIC [3m] - 100mm THICK CONCRETE WITH SL72 FABRIC CENTRAL
     - LIGHT VEHICULAR TRAFFIC [4m] - 120mm THICK CONCRETE WITH SL82 FABRIC CENTRAL

   CONCRETE PAVING AND GROUND LEVEL ADJACENT TO THE BUILDING PERIMETER SHALL BE GRADED 50mm OVER 1 METRE (1:20) AWAY FROM THE BUILDING.
   MINIMUM CROSSFALLS MAY ALSO BE DESIGNED IN ACCORDANCE WITH THE MAXIMUM ALLOWABLE FALLS DENOTED IN 'AS 1428 DESIGN FOR ACCESS & MOBILITY'.
   [Xm] DENOTES THE MAXIMUM DISTANCE BETWEEN CONTROL JOINTS (NOTING THAT LENGTH OF ADJACENT SIDES SHOULD BE IN THE RATIO OF 1 TO 1.3 MAX).
3. BRICK, BLOCK & BITUMEN PAVEMENTS SHALL ADHERE TO CROSSFALLS AS NOTED BELOW FOR CLASS 'A, S, M, H & E' SITES. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
4. WHERE PAVING CONSTRUCTION IS UNDERTAKEN ON CLASS 'H' OR 'E' SITES, IT IS PREFERABLE TO COMMENCE PAVING WORK AT THE END OF WINTER WHEN SITE SOIL IT STILL WET TO HELP LIMIT A REDUCTION IN CROSSFALLS.
   SHOULD TO BUILDING BE OCCUPIED DURING THE WINTER MONTHS WITH NO PAVING PROVIDED, ENSURE THAT THE SOIL SURFACE TO THE PERIMETER OF THE BUILDING IS MAINTAINED TO A WELL DRAINED STATE UNTIL SUCH TIME THAT PAVING IS INSTALLED.
   SHOULD IT BE NECESSARY TO CONSTRUCT PAVING ON THESE TYPES OF SOILS DURING OTHER TIMES OF THE YEAR, I.E THE END OF SUMMER, THE CROSSFALLS SHALL BE TWICE OF THAT INDICATED IN NOTE "2".
5. SHOULD TO DWELLING BE OCCUPIED DURING THE WINTER MONTHS WITH NO PAVING PROVIDED, ENSURE THAT THE SOIL SURFACE TO THE PERIMETER OF THE BUILDING IS MAINTAINED TO A WELL DRAINED STATE UNTIL SUCH TIME THAT PAVING IS INSTALLED.
6. ALL PAVEMENTS MUST BE SET DOWN 75mm BELOW THE REBATE.
7. PAVING SHALL BE PREPARED ON A FIRM CLEAN BASE WHERE ALL BUILDING DEBRIS IS REMOVED FROM THE PERIMETER OF THE BUILDING. A COMPACTED QUARRY RUBBLE BASE IS TO BE PROVIDED AS REQUIRED TO ELEVATE PAVING AND ACHIEVE NECESSARY CROSSFALLS.
8. PAVEMENTS SHALL NOT BREACH THE DAMP PROOF COURSE OR BUILT-IN DAMP PROOF MEMBRANE UNLESS OTHER ADEQUATE DAMP-PROOFING MEASURES HAVE BEEN TAKEN.
9. REACTIVE SOILS MAY CAUSE PAVING TO SEPERATE HORIZONTALLY FROM THE BUILDING PERIMETER. IT IS IMPORTANT THAT ANY GAPS BETWEEN THE BUILDING AND PAVING BE IMMEDIATLEY SEALED WITH A FLEXIBLE MASTIC SEALANT.
10. PROVIDE EGDE DRAINS WHERE NECESSARY TO DIVERT RUNOOF CLEAR OF THE BUILDING.
11. PROVIDE TERMITE PROTECTION TO AS 3660.1.



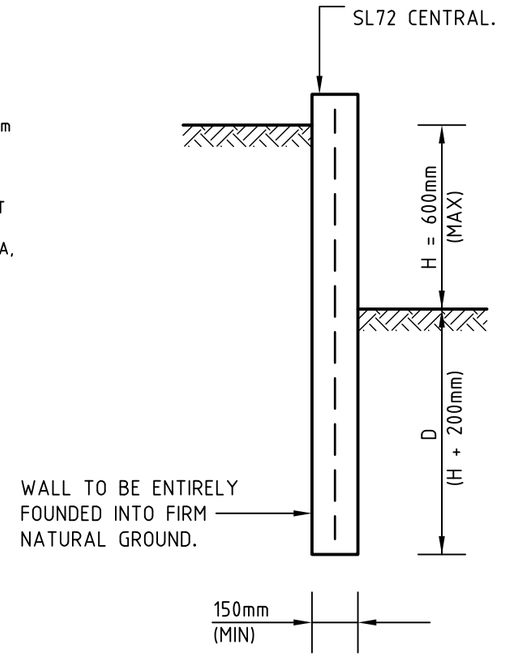
SECTION 1 / -

NOT TO SCALE



CONCRETE PAVING CONTROL JOINT DETAIL

NOT TO SCALE



CONCRETE PLINTH DETAIL

N.T.S

PROJECT PROPOSED DEVELOPMENT
AT: 10 GRAY STREET
NORWOOD
FOR: AC DESIGN

DRAWING TITLE
EARTHWORKS & PAVING DETAILS

SCALE	DRAWN	ENGINEER	DATE
AS SHOWN	KP	KP	04.04.2023

SURVEYED	PROJECT No.	DRAWING No.	ISSUE	SHEET SIZE
BY OTHERS	23-072	C4	A	A3

KP AUSTRUCT
Consulting Engineers
6 CRITTENDEN ROAD,
FINDON, SA, 5023.
PH: (08) 8448 2900

5.2 DEVELOPMENT NUMBER 22029884 - PAREE VERGIS AND MARK ANDERSEN – 26 MAYFAIR STREET MAYLANDS SA 5069

DEVELOPMENT NO.:	22029884
APPLICANT:	Paree Vergis, Mark Andersen
ADDRESS:	26 MAYFAIR ST MAYLANDS SA 5069
NATURE OF DEVELOPMENT:	Demolition of a Dwelling (Representative Building) and all ancillary structures
ZONING INFORMATION:	**Zones:** • Established Neighbourhood **Overlays:** • Airport Building Heights (Regulated) • Historic Area • Hazards (Flooding - General) • Prescribed Wells Area • Regulated and Significant Tree • Stormwater Management • Urban Tree Canopy **Technical Numeric Variations (TNVs):** • Minimum Frontage (Minimum frontage for a detached dwelling is 15m; semi-detached dwelling is 9m) • Minimum Site Area (Minimum site area for a detached dwelling is 300 sqm; semi-detached dwelling is 300 sqm) • Maximum Building Height (Levels) (Maximum building height is 1 level) • Site Coverage (Maximum site coverage is 50 per cent)
LODGEMENT DATE:	14 Sept 2022
RELEVANT AUTHORITY:	Assessment panel/Assessment manager at City of Norwood, Payneham and St. Peters
PLANNING & DESIGN CODE VERSION:	14 Sept 2022
CATEGORY OF DEVELOPMENT:	Code Assessed - Performance Assessed
NOTIFICATION:	Yes
RECOMMENDING OFFICER:	Kieran Fairbrother - Senior Urban Planner
REFERRALS STATUTORY:	Nil
REFERRALS NON-STATUTORY:	David Brown, Council Heritage Advisor (Internal) Imparta Engineers, Structural Engineers (External) Robb Partners, Quantitative Surveyors (External)

CONTENTS:

ATTACHMENT 3:	**Zoning Map**	**ATTACHMENT 8:**	**Internal Referral Advice - Heritage**
ATTACHMENT 4:	**Representation Map**		

BACKGROUND:

This development application was first lodged in September 2022, and was supplemented with a structural engineering report by TMK Consulting Engineers (pages 2-17 of **Attachment 1**). To assist the administration with making an informed determination, the Council engaged Imparta Engineers to undertake their own structural assessment and provide them with a report of their findings. The application was placed on public notification while this occurred.

Following consideration of both structural assessment reports, the administration formed the view that demolition of the dwelling was not justified as the building was not considered to be "beyond reasonable repair". The applicant was informed accordingly on 24 January 2023, and the application was effectively put on hold.

Following this, the applicant engaged with several builders to investigate the cost and extent of reparation and restoration works. Through these investigations, some of the plasterboard lining within the dwelling was removed and further cracking in the exterior walls were uncovered. The applicant then sought to engage another structural engineering firm – this time Magryn & Associates Pty Ltd – to undertake another structural assessment of the dwelling. Magryn formed the opinion that the dwelling was beyond reasonable repair and demolition was warranted (pages 18-30 of **Attachment 2**). The applicant provided this report to Council administration in August 2023 with the intent of re-livening this application.

Consequently, the Council engaged Imparta Engineers again and asked them to provide a new structural assessment given the further-exposed condition of the property (both Imparta reports are in **Attachment 7**). Following consideration of the two new structural assessment reports, Council administration then engaged a quantitative surveyor to determine the estimated costs of structural repairs to the dwelling, if it were to be retained (**Attachment 7**).

Now with four (4) structural engineering reports and a quantitative surveyor costing on the restoration works, this application is now being presented to the Council Assessment Panel for determination.

SUBJECT LAND & LOCALITY:

Site Description:

Location reference: 26 MAYFAIR ST MAYLANDS SA 5069

Title ref.: CT 5328/978	**Plan Parcel:** D1307 AL39	**Council:** THE CITY OF NORWOOD PAYNEHAM AND ST PETERS

Shape:	regular
Frontage width:	15.24 metres
Area:	approx. 603.8m^2
Topography:	relatively flat
Existing Structures:	a single storey detached dwelling, an attached carport, an attached lean-to extension, an outbuilding and boundary fencing

Existing Vegetation:	low-lying grasses and shrubs and one (not regulated) tree in the rear garden

Locality

The locality is characterised predominantly by single storey detached dwellings, with several group dwellings directly opposite the subject land being the only exceptions to this. Mayfair Street and Frederick Street (west) are captured by the Maylands Historic Area Overlay (see **Attachment 3**), and these streets contain a mix of villas and cottages that are representative of the historic building stock identified within this Overlay. Other streets within the locality form part of the Evandale/Maylands/Stepney Character Area. Consequently, the locality is comprised primarily of pre-1940s dwellings and represents a very intact part of the Council area in respect of historic building stock.

CONSENT TYPE REQUIRED:

Planning Consent

CATEGORY OF DEVELOPMENT:

- **PER ELEMENT:**
  Demolition: Code Assessed - Performance Assessed

- **OVERALL APPLICATION CATEGORY:**
  Code Assessed - Performance Assessed

- **REASON**
  P&D Code

PUBLIC NOTIFICATION

- **REASON**
  Table 5 of the Established Neighbourhood Zone
  Involves the demolition of a building (except an ancillary building) in a Historic Area Overlay.

- **LIST OF REPRESENTATIONS**

First Name	Last Name	Address	Position	Wishes to be heard?
Mengshi	Jia	5 Janet Street MAYLANDS SA 5069	Support, with concerns	No
Jianjing	Zhang	5 Janet Street MAYLANDS SA 5069	Support, with concerns	No
Sandy	Wilkinson	112 Osmond Terrace NORWOOD SA 5067	Opposed	Yes
St Peters Residents' Association Inc		12 St Peters St ST PETERS SA 5069	Opposed	Yes

- **SUMMARY**

In respect of representors 1 and 2, their concerns lie in the costs of new boundary fencing (which is not proposed with this application). In respect of the other representors, they oppose the proposal because it involves the demolition of a Representative Building.

INTERNAL REFERRALS

- David Brown, Heritage Advisor

Council's Heritage Advisor is supportive of the proposed demolition given the condition of the property and the extensive costs required to restore it to a structural safe and reasonable condition.

- Imparta Engineers, Structural Engineers (External)
- Robb Partners, Quantitative Surveyors (External)

PLANNING ASSESSMENT

The application has been assessed against the relevant provisions of the Planning & Design Code, which are contained in Appendix One.

Heritage / Demolition

Performance Outcome 7.3 of the Historic Area Overlay states:

> *"Buildings or elements of buildings that do not conform with the values described in the Historic Area Statement may be demolished."*

The Historic Area Statement identifies "double-fronted detached villas and cottages of modest proportions" constructed from the "late 1880s onwards" as being two of the architectural styles important to this historic area. Additionally, "sandstone and bluestone" are identified as materials representative of this era.

The subject dwelling is a double-fronted villa of sandstone construction, constructed circa-1900, and is therefore demonstrative of the historic characteristics as expressed in the Historic Area Statement. Hence, the subject dwelling is a Representative Building

Performance Outcome 7.1 of the Historic Area Overlay states:

> *"Buildings or structure, or features thereof, that demonstrate the historic characteristics as expressed in the Historic Area Statement are not demolished unless:*
>
> *(a) The front elevation of the building has been substantially altered and cannot be reasonably restored in a manner consistent with the building's original style*
> *Or*
>
> *(b) The structural integrity or safe condition of the original building is beyond reasonable repair."*

The front elevation of the building has not been substantially altered and so criterion (a) above is not applicable.

In respect of the structural integrity and/or safe condition of the building, four (4) structural assessments have been undertaken to date. Namely:

Engineering Firm	Date of Inspection	Date of Report	Engaged by
TMK Consulting Engineers	27 July 2022	29 August 2022	Applicant

Imparta Engineers	30 September 2022	30 November 2022	Council
Magryn & Associates Pty Ltd	11 July 2023 & 11 August 2023	August 2023	Applicant
Imparta Engineers	21 August 2023	27 September 2023	Council

Chronology and findings of structural assessments

For ease of reference, the findings and recommendations of the four structural assessments are summarised as follows.

1. TMK Consulting Engineers ("**TMK**") – 29 August 2022

Findings

TMK observed differential movements throughout the building typical of 'localised relative settlement' and likely attributable to soil moisture variations. Internal walls had been lined with fibrous plasterboard which led the engineer to a suspicion that the plasterboard was introduced by an earlier owner to cover up cracking of the external masonry walls. Cracks over 15mm wide were observed in some internal walls, particularly in the north-eastern room (lounge) of the dwelling, as well as in some external walls. The timber floors were observed as having unevenness, particularly in the south-western room (kitchen) where the floor had significantly dropped indicating failure of the supporting members and in the north-eastern bedroom where the floor had delaminated from the sub structure. TMK also observed cracks and leaks in ceilings, rising dampness around the perimeter of the building and corrosion to the roof sheeting and gutters. TMK concluded that the dwelling was of a structural concern and 'uninhabitable without prior extensive structural repair and renovations'.

TMK recommended that underpinning the whole dwelling would be necessary to reduce the likelihood of further differential movement. Such underpins may need to extend to between 4m and 6m in depth to ensure they are founded on s stable soil layer that is not subject to seasonal moisture variations. Further, most, if not all, internal and external walls of the dwelling would require repair works to the cracking. All cracked plaster ceilings, the roof sheeting and gutters would require complete replacement. The front verandah would require repair or replacement, and the timber floors within the dwelling required re-levelling and replacing. In TMK's opinion, the costs of those repairs (pages 9-10 of their report, **Attachment 1**) would outweigh the cost of a new dwelling and were therefore considered to be unreasonable.

2. Imparta Engineers ("**Imparta**") – 30 November 2022

Imparta's engineer had similar observations to those of TMK's above, including concluding the same as to why the internal walls have been lined with plasterboard. In addition, Imparta also noted rotation of the north-eastern corner of the dwelling and cracks in the northern external wall measured between 10mm and 24mm wide in several instances. Evidence of prior repairs to various cracks was evident which indicates that movement is ongoing. Imparta also observed that the front verandah slab is cracked and undulating, as are the perimeter concrete paths of the dwelling. Imparta do acknowledge that cracking in the substrate may be more severe than that observed in the plasterboard lining internally.

Imparta formed the view that the walls of the north-eastern corner of the building require partial reconstruction, and that soil moisture mitigation management could improve and stabilise the balance of the dwelling in its current state. This work would include replacing the stormwater infrastructure (roof sheeting gutters, downpipes) and draining all stormwater to the street, among other things. Other internal works and upgrades would be required (full detail in **Attachment 7**), as well as full reconstruction of the front verandah, but underpinning the whole of the dwelling was not considered necessary by Imparta unless soil moisture management provided ineffective.

3. Magryn & Associates Pty Ltd ("**Magryn**") – August 2023

Magryn undertook two inspections, the first by a senior engineer on 11 July 2023 and a second by the principal engineer on 11 August 2023. Both inspections were undertaken after a significant amount of the internal plasterboard lining had been removed which had exposed further cracking to the substrate masonry walls.

Magryn observed significant (>15mm) cracking to several of the walls that were not previously observed by TMK or Imparta, with some up to 45mm in width. Further, some walls were noted to be of 'random rubble construction, with minimal to no mortar'. Otherwise, Magryn's observations were similar to those of TMK and Imparta previously.

Notably, Magryn undertook a floor level survey of random points throughout the dwelling, which showed that floor levels were generally lower towards the east of the building than at the rear. This survey recorded a maximum difference of floor level of almost 50mm throughout the dwelling. These levels help indicate the extent of differential movement that has occurred.

Magryn concluded that the dwelling should be demolished, noting that if restoration were attempted it would involve: the underpinning of all external and internal bluestone footings; the likely wholesale reconstruction of the eastern, southern and northern external walls; the re-levelling of the floor structure; the installation of damp proof barriers around the perimeter and new paving; and other moisture mitigation measures such as roof and stormwater replacements. In Magryn's opinion, the extent of works required is not reasonable and would cost more than constructing a new dwelling and therefore demolition is recommended.

4. Imparta – 27 September 2023

During their second inspection of the dwelling, Imparta observed the bowing/leaning of the northern and eastern walls of the southern bedroom. Additionally, and most notably, their engineer also observed that the removal of the plasterboard exposed significant cracking to the two front (eastern) rooms of the dwelling and the middle southern room (labelled as Living Room by Imparta and Bed 2 by others), that could be classified as within or beyond Damage Category 4 (*AS 2870-2011*), i.e. >15mm width. Imparta opined that this damage 'warrants, at least, local reconstruction of the affected walls down to sound brickwork'. The extent of reconstruction required, however, would be subject to further investigation by a masonry contractor.

Notwithstanding, Imparta state that the dwelling could be stabilised in its current condition providing the previous recommendations were carried out and the local reconstruction of the affected walls was undertaken. Rather contradictorily, however, Imparta acknowledge that 'the current damage to this dwelling is more severe than what [they] expect would be considered acceptable by a reasonable building owner'. In their concluding comments, Imparta further acknowledge that moisture management measures may not prove effective, and the entire underpinning of the dwelling may eventually be required.

Finally, Imparta were also requested to peer review the Magryn report and provided comments thereon. Imparta agreed with the scope of works proposed by Magryn, with the exception of the underpinning of the dwelling, citing that the balance of the works are 'not unreasonable'.

Analysis of structural assessments

To summarise the above, both engineers engaged by the Applicant – TMK and Magryn – opine that reparation of the dwelling is not recommended, both because of the uncertainty of the effectiveness of those works and the costs involved, and therefore demolition is warranted. On the other hand, Imparta – engaged by the Council – believe that the dwelling could be reasonably restored through the installation of moisture management measures, the local reconstruction of several external and internal walls, and other reasonable works; all while noting that future underpinning might be required if the recommended repair works prove ineffective.

Following consideration of these assessments, it is the view of the administration that the dwelling is beyond reasonable repair, consistent with Performance Outcome 7.1 of the Historic Area Overlay. Although it may be easy to infer bias in reports prepared for different parties, there does appear to be a good degree of certainty in Magryn's decision not to recommend repair work to the dwelling. On the other hand, Imparta's views

following their second inspection do not ultimately change to those first held, but they do now appear less certain that underpinning the dwelling would not be necessary.
Accordingly, it is likely that the reparation and restoration of the dwelling would involve, among other things, but most notably, the following scope of works (N.B. references to specific rooms are consistent with those made by Imparta in their reports):

- Substantial demolition and reconstruction of several internal and external walls of the dwelling;
- The underpinning of the northern, eastern and western external walls;
- Replacement of the entire roof structure, including sheeting, tie-downs and framing;
- Re-levelling internal floors, which could include further works to the sub-structure;
- Reparations to the cracking of those walls that do not require reconstruction, and the replastering, repainting and repointing of such walls;
- Replacement of all ceilings; and
- Various other internal works.

Quantitative surveyor's report

Notwithstanding administration's opinion above, the Council engaged the services of a quantitative surveyor to determine the potential cost of this scope of works, to further assist in determining whether the extent of repair work could be considered reasonable.

In this respect, the Council engaged Robb Partners to undertake a costing estimate (QS Report) based on the scope of works suggested by Imparta plus the underpinning of the entire dwelling. The QS Report provided by Robb Partners can be found at **Attachment 7**.

The Panel should note that the QS report provided by Robb Partners does not accurately cover the scope of works sought to be costed by the Council. In particular, Robb Partners included costs for the demolition and reconstruction of the western lean-to addition, which does not form part of the original dwelling construction and is not considered to be demonstrable of the historic characteristics and is therefore able to be demolished without consideration as to repair costs. Consequently, Robb Partners provided a separate costing for the lean-to addition works (the final 2 pages of **Attachment 7**), which can be removed from the total in the QS Report to present a more accurate picture.

Notwithstanding these discrepancies, the estimated costs of reparation work to the dwelling (which includes entire underpinning) amounts to approximately $700k, with ongoing maintenance work still to be required by future owners. It is the administration's view that these costs exceed what could be considered 'reasonable' to expect of a homeowner, and therefore demolition is justified by virtue of criterion (b) of Performance Outcome 7.1 of the Historic Area Overlay.

RECOMMENDATION

It is recommended that the Council Assessment Panel resolve that:

1. Pursuant to Section 107(2)(c) of the Planning, Development and Infrastructure Act 2016, and having undertaken an assessment of the application against the Planning and Design Code, the application is NOT seriously at variance with the provisions of the Planning and Design Code; and

2. Development Application Number 22029884, by Paree Vergis and Mark Andersen is granted Planning Consent subject to the following conditions:

CONDITIONS
Planning Consent

Condition 1
The development granted Planning Consent shall be undertaken and completed in accordance with the stamped plans and documentation, except where varied by conditions below (if any).

ADVISORY NOTES
Planning Consent

Advisory Note 1
Appeal Rights - General rights of review and appeal exist in relation to any assessment, request, direction or act of a relevant authority in relation to the determination of this application, including conditions.

Advisory Note 2
Consents issued for this Development Application will remain valid for the following periods of time:

1. Planning Consent is valid for 24 months following the date of issue, within which time Development Approval must be obtained;
2. Development Approval is valid for 24 months following the date of issue, within which time works must have substantially commenced on site;
3. Works must be substantially completed within 3 years of the date on which Development Approval is issued.

If an extension is required to any of the above-mentioned timeframes a request can be made for an extension of time by emailing the Planning Department at townhall@npsp.sa.gov.au. Whether or not an extension of time will be granted will be at the discretion of the relevant authority.

Advisory Note 3
No work can commence on this development unless a Development Approval has been obtained. If one or more Consents have been granted on this Decision Notification Form, you must not start any site works or building work or change of use of the land until you have received notification that Development Approval has been granted.

Advisory Note 4
The Applicant is advised that the property is located within an Historic Overlay area and that Approval must be obtained for most works involving the construction, demolition, removal, conversion, alteration or addition to any building and/or structure (including all fencing).

Advisory Note 5
The Applicant is reminded of its responsibilities under the *Environment Protection Act 1993*, to not harm the environment. Specifically, paint, plaster, concrete, brick wastes and wash waters should not be discharged into the stormwater system, litter should be appropriately stored on site pending removal, excavation and site disturbance should be limited, entry/exit points to the site should be managed to prevent soil being carried off site by vehicles, sediment barriers should be used (particularly on sloping sites), and material stockpiles should all be placed on site and not on the footpath or public roads or reserves. Further information is available by contacting the EPA.

Advisory Note 6
The Applicant is advised that construction noise is not allowed:

1. on any Sunday or public holiday; or
2. after 7pm or before 7am on any other day

Advisory Note 7
The Applicant is advised that the condition of the footpath, kerbing, vehicular crossing point, street tree(s) and any other Council infrastructure located adjacent to the subject land will be inspected by the Council prior to the commencement of building work and at the completion of building work. Any damage to Council infrastructure that occurs during construction must be rectified as soon as practicable and in any event, no later than four (4) weeks after substantial completion of the building work. The Council reserves its right to recover all costs associated with remedying any damage that has not been repaired in a timely manner from the appropriate person.

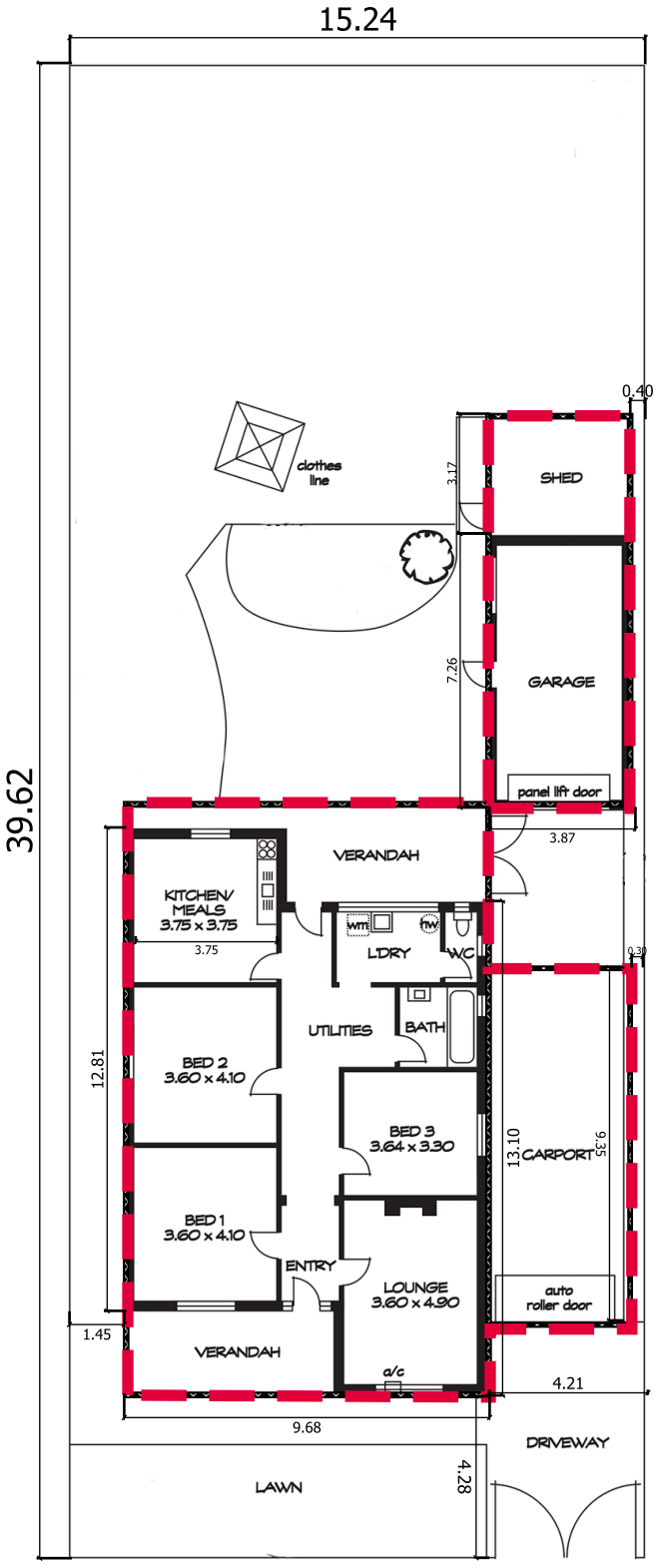
Advisory Note 8
The granting of this consent does not remove the need for the beneficiary to obtain all other consents which may be required by any other legislation.

The Applicant's attention is particularly drawn to the requirements of the *Fences Act 1975* regarding notification of any neighbours affected by new boundary development or boundary fencing. Further information is available in the 'Fences and the Law' booklet available through the Legal Services Commission.

Advisory Note 9
The Council has not surveyed the subject land and has, for the purpose of its assessment, assumed that all dimensions and other details provided by the Applicant are correct and accurate.

Attachment 1

26 Mayfair St Maylands



Attachment 1

TMK Consulting Engineers

ADELAIDE | MELBOURNE | RIVERLAND

TMK Ref. 2206213_R1/A | 29 August 2022

STRUCTURAL CONDITION ASSESSMENT OF EXISTING RESIDENCE

26 MAYFAIR STREET, MAYLANDS SA

for

PAREE VERGIS & MARK ANDERSEN

tmkeng.com.au

Civil – Geotechnical – Environmental – Structural – Mechanical – Electrical – Fire – Hydraulics – Forensic – Construction Assist - Vertical Transport

TMK Ref: 2206213 29 August 2022

Paree Vergis & Mark Andersen
79A Frederick Street
MAYLANDS SA 5069

ATTENTION: PAREE & MARK **Email:** pareevergis@gmail.com
Mark.andersen@petrosys.com.au

Dear Paree & Mark,

RE: STRUCTURAL CONDITION ASSESSMENT OF EXISTING RESIDENCE
AT: 26 MAYFAIR STREET, MAYLANDS SA

TMK Consulting Engineers is pleased to present a PDF copy of our report on the investigation undertaken at the above location.

If you require further information or clarification regarding any aspect of this report, please do not hesitate to contact the undersigned.

For and on behalf of
TMK Consulting Engineers

JARRED ROBINSON
Associate / Engineer

Report Issue	Author	Reviewed	Issue date
2206213_R1	**Jarred Robinson**	**Raik Bosse**	24 August 2022
2206213_R1/A	**Jarred Robinson** *BEng (Hons.) (Civil & Struct.)* Associate	**Raik Bosse** *BEng (Civil & Struct.), CPEng, MIEAust, NER* Associate Director	29 August 2022

The work carried out in the preparation of this report has been performed in accordance with the requirements of TMK Consulting Engineer's Quality Management System which is certified by SAI Global to comply with the requirements of ISO 9001.

EXECUTIVE SUMMARY

- TMK attended the site at 26 Mayfair Street, Maylands SA to investigate the structural condition of the existing residence.
- A desktop site review was conducted involving the review of historical aerial photographs of the site and identification of likely soil profiles in the area.
- The structural condition of the existing residence could be best described as very poor with severe structural damage. The residence was currently vacant and in a derelict state at the time of inspection.
- Observed movement and cracking to the building was considered to be structurally concerning.

CONTENTS

ATTACHMENTS:

CSIRO BTF-18
AS2870-2011 APPENDIX C 'RESIDENTIAL SLABS & FOOTINGS'

1 INTRODUCTION

At your request, TMK Consulting Engineers (TMK) undertook a visual non-destructive inspection at the above property on 27 July 2022. The inspection was undertaken by Engineer, Mr Jarred Robinson.

Our brief was to investigate the structural condition of the residence and report on the likely cause and severity of damage.

Figure 1 - Aerial image of the residence in question, 26 Mayfair Street, Maylands SA (dated March 2022).

1.1 DESKTOP SITE REVIEW

1.1.1 Site History

Historical aerial photographs of the building in question were reviewed back to the approximate time of October 2009. Review of these historical photographs could not conclusively identify any significant factors that would typically contribute to the reported and observed items outlined within this report.

1.1.2 Site Soil Profile

A. The review of data and records held by this office in regards to soil conditions in this region, in combination with soil maps of the Adelaide area, indicated the likely presence of reactive clay soils of an **'RB3' / 'RB5' type**, i.e. 'Heavy red brown clay soils with prismatic or blocky structure over clay with variable lime', on site (soil testing would be required to confirm the exact soil type present on site).

B. During the drier periods of the year, the moisture content of these reactive clays decrease, resulting in shrinkage of the soils surrounding the building. Conversely, during the wetter period of the year, the soil moisture content of the soil increases resulting in expansion of the soil.

C. Reactive soils that incorporate soil layers of a calcareous (or 'limey') nature (such as 'RB3' & 'RB5') can also be subject to a loss of strength upon wetting when under a load. During the wetter months of the year, or as a result of poor drainage/leaking plumbing, the 'rebound' effect of a reactive soil profile containing calcareous layers can be reduced due to this loss of strength within the calcareous layers. As such, the affected portion of the building may not be able to recover (or 'rebound') from the shrinkage experienced during the dry period of the year, whereas those areas not affected by moisture ingress may be able to do so. Consequently, differential movement occurs in the structure with the affected area settling relative to the remainder of the building.

D. Soil shrinkage effects can be exacerbated through the soil drying effects of trees. As the roots of trees seek out moisture within the soil, particularly within dryer periods of the year, the soil can become even drier, subsequently increasing the extent of soil shrinkage.

E. Poor drainage around the building and poor stormwater management can contribute to moisture ingress into the soils during the wetter months, further increasing the differential soil moisture content between seasons.

F. Older non-articulated solid masonry structures, with footings possibly not compliant with current building standards, can be particularly susceptible to the effects of soil movement as the structure has a reduced capacity to 'absorb' movement.

G. You may wish to refer to the attached document published by the CSIRO (BTF-18) which contains useful information regarding soil related building movement.

1.2 GENERAL CONSTRUCTION

The residence was of solid masonry construction; similar to that of an early 20th century style:

Walls:	Solid masonry (internal & external)
Footings:	Expected to be bluestone or similar
Roof:	Timber framed, clad with iron sheets
Ceiling:	Timber lath & Plaster
Rear Addition:	Kitchen & Laundry addition constructed of similar masonry.

Photo 1 – Front of the residence

2 DISCUSSION

2.1 BUILDING MOVEMENT

A. The observed building movement was typical of 'localised relative settlement' of external and internal footings (and walls) throughout. Building settlement manifested as severe wall cracking and could be attributed to a combination of both soil shrinkage and potential settlement within calcareous soil layers.

B. A significant-sized tree was observed to the front of the residence which was considered to be in close enough proximity to be contributing to soil moisture variations alongside the footings to the building. The tree was considered to be a contributing factor to the building settlement. Similarly, multiple trees at the rear of the property would also be contributing to soil moisture variations.

C. Internal walls to the residence were noted to have been covered up with fibrous plasterboard, spaced out from the original brick walls with timber battens. This was likely done in an attempt to conceal wall cracks in the past. It is highly likely that there is concealed wall damage throughout the residence that was not visible at the time of inspection.

D. Cracking damage, where visible to some of the internal walls of the residence at the time of inspection, could be classed up to 'severe' or category 4 damage (> 15.0mm) in accordance with AS2870-2011, Appendix C, Table C1.

E. The most severe internal wall cracking was observed to the north-eastern room, particularly surrounding the north-eastern external corner of the building. Plasterboard internal wall cladding had separated up to 10.0mm. The cracking to the brickwork behind was likely as severe, possibly worse due to masonry's lesser ability to absorb movement.

Photo 2 – Severe structural cracking to internal wall

Photo 3 – Cracking to external wall concealed behind fibrous plaster cladding

Photo 4 – Dropped floor in south-western room

Photo 5 – Typical cracking to internal plasterboard claddings

F. Timber floors to most rooms were noted to have distinct falls and unevenness when walking about. Flooring to the south-western room had dropped in the corner significantly indicating failure of timber supporting members. Timber flooring to the north-eastern bedroom was bouncy and had delaminated from the timber sub structure.

G. Cracking damage, as observed to some of the external walls of the residence at the time of inspection, could be classed up to 'severe' or category 4 damage (> 15.0mm) in accordance with AS2870-2011, Appendix C, Table C1.

H. Located at the southern external wall, a steel lintel was noted to have deflected, resulting in cracking of the brickwork above. The glass window was still intact.

I. Based on observations made at the time of inspection and on the experience of this office, it is the considered opinion of TMK Consulting Engineers that the extent of damage and 'movement' observed on site was of structural concern.

Photo 6 – Structural cracking over lintel on southern external wall

Photo 7 – Structural cracking to northern eastern external walls with evidence of prior crack filling

Photo 8 – Structural cracking (Category 4 – Severe) to northern external wall

Photo 9 – Structural cracking to southern external wall with evidence of prior gap filling (inadequate)

2.2 GENERAL CONDITION

A. Plastered ceilings to some rooms had begun to crack and delaminate from the timber lath structure. Ceilings of the rear addition had collapsed.

B. Ceilings to the front verandah had collapsed.

C. Salt attack and rising dampness was evident around the perimeter of the building. Particularly worse around the north-eastern corner and southern external walls. Symptoms of wall dampness typically included loss of mortar and damage to the masonry & stone units.

D. External roof gutters, particularly along the northern perimeter, were fully corroded through and likely not functional. Downpipes were disconnected and damaged due to building movements.

E. Roof sheeting to the residence had visual signs of corrosion. Historical aerial photographs show that corrosion to the roof sheets had been present since October 2009.

F. Roof leaks were evident in multiple locations throughout the residence. Leaks typically were indicated by moisture staining on the floors and ceilings. In the central hallway, a portion of the plaster ceiling had collapsed. There is also likely moisture damage to the ceilings and possibly framing elsewhere.

Overall, the residence was in a derelict state and uninhabitable without prior extensive structural repair and renovations.

Photo 10 – Collapsed ceiling to rear addition

Photo 11 – Collapsed plaster ceiling due to roof leak

Photo 12 – Moisture damage to timber floorboards due to roof leak above

Photo 13 – Corrosion to gutters and downpipes

3 RECOMMENDATIONS

It is to be noted that attempts of remediation to the extensive damage to the existing residence will not be economical; as compared to relative costs of total replacement with a new structure. The existing residence is, in our opinion, beyond reasonable repair.

The following recommendations have been included as guidance to what would be required to reinstate structural integrity and functional condition of the existing residence (i.e. for costing purposes only, does not include services, doors, windows etc.).

3.1 FOOTINGS (UNDERPINNING)

The existing stone footings to the residence, whilst are likely adequate in bearing, are certainly not adequate to resist the effects of differential soil movements occurring on this site.

To stabilise the footings to the residence and reduce the likelihood of further footing movement, underpinning is required. To avoid differential movement, the entire building perimeter would need to be underpinned. Given the evident movement to internal walls, some of the internal walls would also require stabilising.

The underpinning piers are required to found on a stable soil layer which is not subject to seasonal soil moisture variations. Based on the experience of this office and our collective knowledge of soil conditions in the Maylands area, we might expect this stable layer to exist anywhere from 4.0m to 6.0m below ground level (*please note that there have been no site-specific soil tests at this stage).*

3.2 WALL CRACKING

Repairs to wall cracking would be required to most, if not all of the walls to the existing building. This would typically involve removal of all plasterboard cladding and the original wall plaster beneath before repairs and then reinstatement of new plaster.

3.2.1 Internal Walls – Typical Repair Procedure

Internal walls may be repaired by the following crack repair method:

a) Completely remove wall plaster to expose the brickwork and clear all loose and friable debris from the area of the crack.

b) Wedge the length of the crack by tightly packing shims into the opening at 300 mm centres.

c) Fill the entire length of the crack between ‘wedge’ positions with an approved non-shrink filler applied in accordance with the manufacturer's recommendations and allow suitable curing time (ie, cement render 1:1:6 cement: lime: sand).

d) Coat the exposed wall surface with an approved bonding agent in readiness for a new render coating to the brickwork of the affected area (ie, the minimum 200 mm width strip as per item a) above).

e) Using masonry nails, secure expanded metal lath along the length and height of the wall. Apply the final plaster 'setting' coat and re-paint. It is recommended that this stage of the work be performed by a licensed tradesperson for optimum results.

3.2.2 External Walls – Typical Repair Procedure

<u>Reconstruction</u>
The north-eastern external walls of the original portion of the residence will require re-construction.
Prior to the reconstruction of the wall, footings beneath the existing wall will require correction & underpinning as per above. Alternatively the stone footings may be replaced with an engineered equivalent. Underpinning for the new footing would still be required to avoid the effects of differential movement.

Removal of the external wall will require temporary propping of the existing roof structure. Prior to propping, all timber connections of the roof framing should be reinforced with additional fixings.

<u>Crack Repair</u>
Following the completion of underpinning, cracking to external walls could be repaired by conventional crack repair methods – including replacement of individual broken bricks and repointing of mortar.

Wall Damp
For the treatment of observed wall damp, intrusive remedial methods are required.

Remedial options may include undersetting of all remaining external walls to the residence (i.e. not including walls removed / rebuilt as part of the structural repairs).

Alternatively, injection damp proof courses may be considered. Existing moisture affected mortar and brickwork will still require replacement prior to the installation of an injection system.

3.3 REAR BUILDING ADDITION

The existing building addition at the rear (kitchen & laundry) was in an extremely poor condition and will need to be removed / reconstructed. The new building addition should be suitably engineered and designed to accommodate for differential building movement between new and existing footing systems.

3.4 CEILINGS

Cracked plaster ceilings should be completely removed, including the supporting timber laths, and replaced with new plasterboard ceilings; fixed directly to timber ceiling joists in accordance with the manufacturer's specifications and relevant building codes.

3.5 ROOFING & GUTTERS

The structural integrity of the existing timber roof framing was not assessed at the time of inspection.

3.5.1 Roof Cladding

Replace all roof sheeting with Colourbond equivalent or similar; in accordance with the manufacturer's specifications and relevant building codes.

3.5.2 Gutters

Replace corroded eaves gutters; in accordance with relevant building codes.

3.5.3 Verandahs

Remove / replace collapsed and damaged verandahs at the front and rear of the residence. Replace as desired.

3.6 TIMBER FLOORING

Typical re-levelling procedure:

i. Remove existing timber floorboards and stockpile materials for later reinstatement.
i. Re-level timber floor joists with shims and packers where required.
ii. Ensure adequate clearance beneath timber floor structure to the soils.
iii. Reinstate timber floorboards to levelled timber floor structure.

3.7 TREE REMOVAL

Irrespective of whether the existing building is to be replaced or remediated, the large trees surrounding the residence should be removed; to reduce soil moisture variations within the reactive clay soil profile. Removal of the large trees would reduce the risks of movement to the existing, or replacement structure.

4 CONCLUSION

It is the considered opinion of TMK Consulting Engineers that repair of the existing dwelling at 26 Mayfair Street may, from a solely economic viewpoint, be regarded as unreasonable. On the basis that the costs to repair the residence (to a minimum habitable state) would exceed the cost of total building replacement of similar size.

5 FINAL STATEMENTS

We trust this report is sufficient for your present requirements. If you have any further queries regarding this matter, please do not hesitate to contact this office.

The conclusions reached in this report have been based on opinions derived from site observations and our experience in understanding the causes of building damage. If you consider that the circumstances in this matter justify any additional testing or measurement, please contact this office so that we can discuss whether any appropriate further testing or procedure may be of assistance to gain further insight to the observed site conditions.

For and on behalf of
TMK Consulting Engineers

Foundation Maintenance and Footing Performance: A Homeowner's Guide

CSIRO PUBLISHING

BTF 18-2011 replaces Information Sheet 10/91

Buildings can and often do move. This movement can be up, down, lateral or rotational. The fundamental cause of movement in buildings can usually be related to one or more problems in the foundation soil. It is important for the homeowner to identify the soil type in order to ascertain the measures that should be put in place in order to ensure that problems in the foundation soil can be prevented, thus protecting against building movement.

This Building Technology File is designed to identify causes of soil-related building movement, and to suggest methods of prevention of resultant cracking in buildings.

Soil Types

The types of soils usually present under the topsoil in land zoned for residential buildings can be split into two approximate groups – granular and clay. Quite often, foundation soil is a mixture of both types. The general problems associated with soils having granular content are usually caused by erosion. Clay soils are subject to saturation and swell/shrink problems.

Classifications for a given area can generally be obtained by application to the local authority, but these are sometimes unreliable and if there is doubt, a geotechnical report should be commissioned. As most buildings suffering movement problems are founded on clay soils, there is an emphasis on classification of soils according to the amount of swell and shrinkage they experience with variations of water content. The table below is Table 2.1 from AS 2870-2011, the Residential Slab and Footing Code.

Causes of Movement

Settlement due to construction

There are two types of settlement that occur as a result of construction:

- Immediate settlement occurs when a building is first placed on its foundation soil, as a result of compaction of the soil under the weight of the structure. The cohesive quality of clay soil mitigates against this, but granular (particularly sandy) soil is susceptible.
- Consolidation settlement is a feature of clay soil and may take place because of the expulsion of moisture from the soil or because of the soil's lack of resistance to local compressive or shear stresses. This will usually take place during the first few months after construction, but has been known to take many years in exceptional cases.

These problems are the province of the builder and should be taken into consideration as part of the preparation of the site for construction. Building Technology File 19 (BTF 19) deals with these problems.

Erosion

All soils are prone to erosion, but sandy soil is particularly susceptible to being washed away. Even clay with a sand component of say 10% or more can suffer from erosion.

Saturation

This is particularly a problem in clay soils. Saturation creates a bog-like suspension of the soil that causes it to lose virtually all of its bearing capacity. To a lesser degree, sand is affected by saturation because saturated sand may undergo a reduction in volume, particularly imported sand fill for bedding and blinding layers. However, this usually occurs as immediate settlement and should normally be the province of the builder.

Seasonal swelling and shrinkage of soil

All clays react to the presence of water by slowly absorbing it, making the soil increase in volume (see table below). The degree of increase varies considerably between different clays, as does the degree of decrease during the subsequent drying out caused by fair weather periods. Because of the low absorption and expulsion rate, this phenomenon will not usually be noticeable unless there are prolonged rainy or dry periods, usually of weeks or months, depending on the land and soil characteristics.

The swelling of soil creates an upward force on the footings of the building, and shrinkage creates subsidence that takes away the support needed by the footing to retain equilibrium.

Shear failure

This phenomenon occurs when the foundation soil does not have sufficient strength to support the weight of the footing. There are two major post-construction causes:

- Significant load increase.
- Reduction of lateral support of the soil under the footing due to erosion or excavation.

In clay soil, shear failure can be caused by saturation of the soil adjacent to or under the footing.

GENERAL DEFINITIONS OF SITE CLASSES

Class	Foundation
A	Most sand and rock sites with little or no ground movement from moisture changes
S	Slightly reactive clay sites, which may experience only slight ground movement from moisture changes
M	Moderately reactive clay or silt sites, which may experience moderate ground movement from moisture changes
H1	Highly reactive clay sites, which may experience high ground movement from moisture changes
H2	Highly reactive clay sites, which may experience very high ground movement from moisture changes
E	Extremely reactive sites, which may experience extreme ground movement from moisture changes

Notes

1. Where controlled fill has been used, the site may be classified A to E according to the type of fill used.
2. Filled sites. Class P is used for sites which include soft fills, such as clay or silt or loose sands; landslip; mine subsidence; collapsing soils; soil subject to erosion; reactive sites subject to abnormal moisture conditions or sites which cannot be classified otherwise.
3. Where deep-seated moisture changes exist on sites at depths of 3 m or greater, further classification is needed for Classes M to E (M-D, H1-D, H2-D and E-D).

Tree root growth
Trees and shrubs that are allowed to grow in the vicinity of footings can cause foundation soil movement in two ways:

- Roots that grow under footings may increase in cross-sectional size, exerting upward pressure on footings.
- Roots in the vicinity of footings will absorb much of the moisture in the foundation soil, causing shrinkage or subsidence.

Unevenness of Movement

The types of ground movement described above usually occur unevenly throughout the building's foundation soil. Settlement due to construction tends to be uneven because of:

- Differing compaction of foundation soil prior to construction.
- Differing moisture content of foundation soil prior to construction.

Movement due to non-construction causes is usually more uneven still. Erosion can undermine a footing that traverses the flow or can create the conditions for shear failure by eroding soil adjacent to a footing that runs in the same direction as the flow.

Saturation of clay foundation soil may occur where subfloor walls create a dam that makes water pond. It can also occur wherever there is a source of water near footings in clay soil. This leads to a severe reduction in the strength of the soil which may create local shear failure.

Seasonal swelling and shrinkage of clay soil affects the perimeter of the building first, then gradually spreads to the interior. The swelling process will usually begin at the uphill extreme of the building, or on the weather side where the land is flat. Swelling gradually reaches the interior soil as absorption continues. Shrinkage usually begins where the sun's heat is greatest.

Effects of Uneven Soil Movement on Structures

Erosion and saturation
Erosion removes the support from under footings, tending to create subsidence of the part of the structure under which it occurs. Brickwork walls will resist the stress created by this removal of support by bridging the gap or cantilevering until the bricks or the mortar bedding fail. Older masonry has little resistance. Evidence of failure varies according to circumstances and symptoms may include:

- Step cracking in the mortar beds in the body of the wall or above/below openings such as doors or windows.
- Vertical cracking in the bricks (usually but not necessarily in line with the vertical beds or perpends).

Isolated piers affected by erosion or saturation of foundations will eventually lose contact with the bearers they support and may tilt or fall over. The floors that have lost this support will become bouncy, sometimes rattling ornaments etc.

Seasonal swelling/shrinkage in clay
Swelling foundation soil due to rainy periods first lifts the most exposed extremities of the footing system, then the remainder of the perimeter footings while gradually permeating inside the building footprint to lift internal footings. This swelling first tends to create a dish effect, because the external footings are pushed higher than the internal ones.

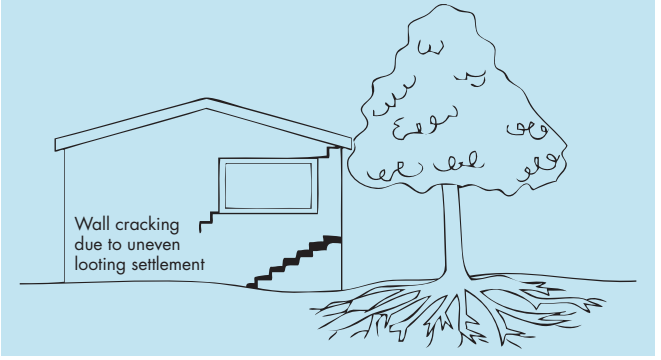
The first noticeable symptom may be that the floor appears slightly dished. This is often accompanied by some doors binding on the floor or the door head, together with some cracking of cornice mitres. In buildings with timber flooring supported by bearers and joists, the floor can be bouncy. Externally there may be visible dishing of the hip or ridge lines.

As the moisture absorption process completes its journey to the innermost areas of the building, the internal footings will rise. If the spread of moisture is roughly even, it may be that the symptoms will temporarily disappear, but it is more likely that swelling will be uneven, creating a difference rather than a disappearance in symptoms. In buildings with timber flooring supported by bearers and joists, the isolated piers will rise more easily than the strip footings or piers under walls, creating noticeable doming of flooring.

As the weather pattern changes and the soil begins to dry out, the external footings will be first affected, beginning with the locations where the sun's effect is strongest. This has the effect of lowering the external footings. The doming is accentuated and cracking reduces or disappears where it occurred because of dishing, but other cracks open up. The roof lines may become convex.

Doming and dishing are also affected by weather in other ways. In areas where warm, wet summers and cooler dry winters prevail, water migration tends to be toward the interior and doming will be accentuated, whereas where summers are dry and winters are cold and wet, migration tends to be toward the exterior and the underlying propensity is toward dishing.

Trees can cause shrinkage and damage



Movement caused by tree roots
In general, growing roots will exert an upward pressure on footings, whereas soil subject to drying because of tree or shrub roots will tend to remove support from under footings by inducing shrinkage.

Complications caused by the structure itself
Most forces that the soil causes to be exerted on structures are vertical – i.e. either up or down. However, because these forces are seldom spread evenly around the footings, and because the building resists uneven movement because of its rigidity, forces are exerted from one part of the building to another. The net result of all these forces is usually rotational. This resultant force often complicates the diagnosis because the visible symptoms do not simply reflect the original cause. A common symptom is binding of doors on the vertical member of the frame.

Effects on full masonry structures
Brickwork will resist cracking where it can. It will attempt to span areas that lose support because of subsided foundations or raised points. It is therefore usual to see cracking at weak points, such as openings for windows or doors.

In the event of construction settlement, cracking will usually remain unchanged after the process of settlement has ceased.

With local shear or erosion, cracking will usually continue to develop until the original cause has been remedied, or until the subsidence has completely neutralised the affected portion of footing and the structure has stabilised on other footings that remain effective.

In the case of swell/shrink effects, the brickwork will in some cases return to its original position after completion of a cycle, however it is more likely that the rotational effect will not be exactly reversed, and it is also usual that brickwork will settle in its new position and will resist the forces trying to return it to its original position. This means that in a case where swelling takes place after construction and cracking occurs, the cracking is likely to at least partly remain after the shrink segment of the cycle is complete. Thus, each time the cycle is repeated, the likelihood is that the cracking will become wider until the sections of brickwork become virtually independent.

With repeated cycles, once the cracking is established, if there is no other complication, it is normal for the incidence of cracking to stabilise, as the building has the articulation it needs to cope with the problem. This is by no means always the case, however, and monitoring of cracks in walls and floors should always be treated seriously.

Upheaval caused by growth of tree roots under footings is not a simple vertical shear stress. There is a tendency for the root to also exert lateral forces that attempt to separate sections of brickwork after initial cracking has occurred.

The normal structural arrangement is that the inner leaf of brickwork in the external walls and at least some of the internal walls (depending on the roof type) comprise the load-bearing structure on which any upper floors, ceilings and the roof are supported. In these cases, it is internally visible cracking that should be the main focus of attention, however there are a few examples of dwellings whose external leaf of masonry plays some supporting role, so this should be checked if there is any doubt. In any case, externally visible cracking is important as a guide to stresses on the structure generally, and it should also be remembered that the external walls must be capable of supporting themselves.

Effects on framed structures
Timber or steel framed buildings are less likely to exhibit cracking due to swell/shrink than masonry buildings because of their flexibility. Also, the doming/dishing effects tend to be lower because of the lighter weight of walls. The main risks to framed buildings are encountered because of the isolated pier footings used under walls. Where erosion or saturation causes a footing to fall away, this can double the span which a wall must bridge. This additional stress can create cracking in wall linings, particularly where there is a weak point in the structure caused by a door or window opening. It is, however, unlikely that framed structures will be so stressed as to suffer serious damage without first exhibiting some or all of the above symptoms for a considerable period. The same warning period should apply in the case of upheaval. It should be noted, however, that where framed buildings are supported by strip footings there is only one leaf of brickwork and therefore the externally visible walls are the supporting structure for the building. In this case, the subfloor masonry walls can be expected to behave as full brickwork walls.

Effects on brick veneer structures
Because the load-bearing structure of a brick veneer building is the frame that makes up the interior leaf of the external walls plus perhaps the internal walls, depending on the type of roof, the building can be expected to behave as a framed structure, except that the external masonry will behave in a similar way to the external leaf of a full masonry structure.

Water Service and Drainage

Where a water service pipe, a sewer or stormwater drainage pipe is in the vicinity of a building, a water leak can cause erosion, swelling or saturation of susceptible soil. Even a minuscule leak can be enough to saturate a clay foundation. A leaking tap near a building can have the same effect. In addition, trenches containing pipes can become watercourses even though backfilled, particularly where broken rubble is used as fill. Water that runs along these trenches can be responsible for serious erosion, interstrata seepage into subfloor areas and saturation.

Pipe leakage and trench water flows also encourage tree and shrub roots to the source of water, complicating and exacerbating the problem. Poor roof plumbing can result in large volumes of rainwater being concentrated in a small area of soil:

- Incorrect falls in roof guttering may result in overflows, as may gutters blocked with leaves etc.
- Corroded guttering or downpipes can spill water to ground.
- Downpipes not positively connected to a proper stormwater collection system will direct a concentration of water to soil that is directly adjacent to footings, sometimes causing large-scale problems such as erosion, saturation and migration of water under the building.

Seriousness of Cracking

In general, most cracking found in masonry walls is a cosmetic nuisance only and can be kept in repair or even ignored. The table below is a reproduction of Table C1 of AS 2870-2011.

AS 2870-2011 also publishes figures relating to cracking in concrete floors, however because wall cracking will usually reach the critical point significantly earlier than cracking in slabs, this table is not reproduced here.

Prevention/Cure

Plumbing
Where building movement is caused by water service, roof plumbing, sewer or stormwater failure, the remedy is to repair the problem. It is prudent, however, to consider also rerouting pipes away from the building where possible, and relocating taps to positions where any leakage will not direct water to the building vicinity. Even where gully traps are present, there is sometimes sufficient spill to create erosion or saturation, particularly in modern installations using smaller diameter PVC fixtures. Indeed, some gully traps are not situated directly under the taps that are installed to charge them, with the result that water from the tap may enter the backfilled trench that houses the sewer piping. If the trench has been poorly backfilled, the water will either pond or flow along the bottom of the trench. As these trenches usually run alongside the footings and can be at a similar depth, it is not hard to see how any water that is thus directed into a trench can easily affect the foundation's ability to support footings or even gain entry to the subfloor area.

Ground drainage
In all soils there is the capacity for water to travel on the surface and below it. Surface water flows can be established by inspection during and after heavy or prolonged rain. If necessary, a grated drain system connected to the stormwater collection system is usually an easy solution.

It is, however, sometimes necessary when attempting to prevent water migration that testing be carried out to establish watertable height and subsoil water flows. This subject is referred to in BTF 19 and may properly be regarded as an area for an expert consultant.

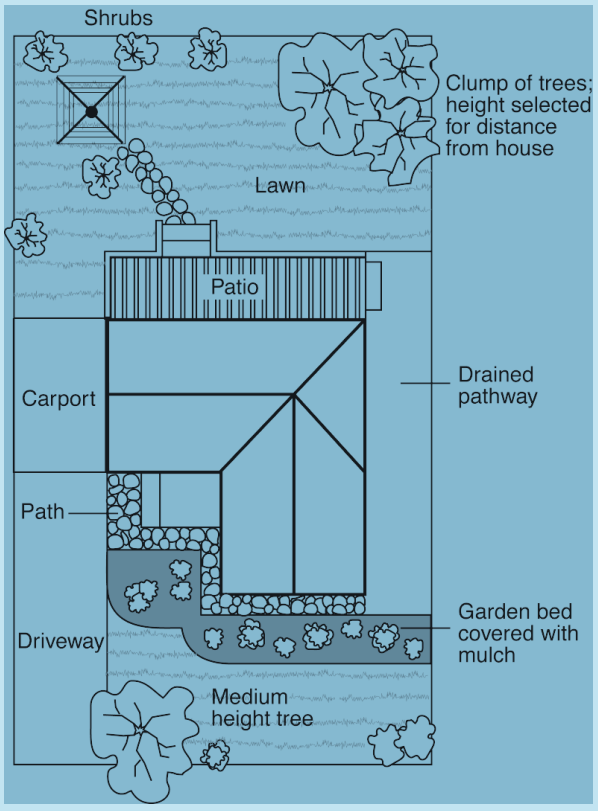
Protection of the building perimeter
It is essential to remember that the soil that affects footings extends well beyond the actual building line. Watering of garden plants, shrubs and trees causes some of the most serious water problems.

For this reason, particularly where problems exist or are likely to occur, it is recommended that an apron of paving be installed around as much of the building perimeter as necessary. This paving should

CLASSIFICATION OF DAMAGE WITH REFERENCE TO WALLS

Description of typical damage and required repair	Approximate crack width limit (see Note 3)	Damage category
Hairline cracks	<0.1 mm	0
Fine cracks which do not need repair	<1 mm	1
Cracks noticeable but easily filled. Doors and windows stick slightly.	<5 mm	2
Cracks can be repaired and possibly a small amount of wall will need to be replaced. Doors and windows stick. Service pipes can fracture. Weathertightness often impaired.	5–15 mm (or a number of cracks 3 mm or more in one group)	3
Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows. Window and door frames distort. Walls lean or bulge noticeably, some loss of bearing in beams. Service pipes disrupted.	15–25 mm but also depends on number of cracks	4

Gardens for a reactive site



extend outwards a minimum of 900 mm (more in highly reactive soil) and should have a minimum fall away from the building of 1:60. The finished paving should be no less than 100 mm below brick vent bases.

It is prudent to relocate drainage pipes away from this paving, if possible, to avoid complications from future leakage. If this is not practical, earthenware pipes should be replaced by PVC and backfilling should be of the same soil type as the surrounding soil and compacted to the same density.

Except in areas where freezing of water is an issue, it is wise to remove taps in the building area and relocate them well away from the building – preferably not uphill from it (see BTF 19).

It may be desirable to install a grated drain at the outside edge of the paving on the uphill side of the building. If subsoil drainage is needed this can be installed under the surface drain.

Condensation

In buildings with a subfloor void such as where bearers and joists support flooring, insufficient ventilation creates ideal conditions for condensation, particularly where there is little clearance between the floor and the ground. Condensation adds to the moisture already present in the subfloor and significantly slows the process of drying out. Installation of an adequate subfloor ventilation system, either natural or mechanical, is desirable.

Warning: Although this Building Technology File deals with cracking in buildings, it should be said that subfloor moisture can result in the development of other problems, notably:

- Water that is transmitted into masonry, metal or timber building elements causes damage and/or decay to those elements.
- High subfloor humidity and moisture content create an ideal environment for various pests, including termites and spiders.
- Where high moisture levels are transmitted to the flooring and walls, an increase in the dust mite count can ensue within the living areas. Dust mites, as well as dampness in general, can be a health hazard to inhabitants, particularly those who are abnormally susceptible to respiratory ailments.

The garden

The ideal vegetation layout is to have lawn or plants that require only light watering immediately adjacent to the drainage or paving edge, then more demanding plants, shrubs and trees spread out in that order.

Overwatering due to misuse of automatic watering systems is a common cause of saturation and water migration under footings. If it is necessary to use these systems, it is important to remove garden beds to a completely safe distance from buildings.

Existing trees

Where a tree is causing a problem of soil drying or there is the existence or threat of upheaval of footings, if the offending roots are subsidiary and their removal will not significantly damage the tree, they should be severed and a concrete or metal barrier placed vertically in the soil to prevent future root growth in the direction of the building. If it is not possible to remove the relevant roots without damage to the tree, an application to remove the tree should be made to the local authority. A prudent plan is to transplant likely offenders before they become a problem.

Information on trees, plants and shrubs

State departments overseeing agriculture can give information regarding root patterns, volume of water needed and safe distance from buildings of most species. Botanic gardens are also sources of information. For information on plant roots and drains, see Building Technology File 17.

Excavation

Excavation around footings must be properly engineered. Soil supporting footings can only be safely excavated at an angle that allows the soil under the footing to remain stable. This angle is called the angle of repose (or friction) and varies significantly between soil types and conditions. Removal of soil within the angle of repose will cause subsidence.

Remediation

Where erosion has occurred that has washed away soil adjacent to footings, soil of the same classification should be introduced and compacted to the same density. Where footings have been undermined, augmentation or other specialist work may be required. Remediation of footings and foundations is generally the realm of a specialist consultant.

Where isolated footings rise and fall because of swell/shrink effect, the homeowner may be tempted to alleviate floor bounce by filling the gap that has appeared between the bearer and the pier with blocking. The danger here is that when the next swell segment of the cycle occurs, the extra blocking will push the floor up into an accentuated dome and may also cause local shear failure in the soil. If it is necessary to use blocking, it should be by a pair of fine wedges and monitoring should be carried out fortnightly.

This BTF was prepared by John Lewer FAIB, MIAMA, Partner, Construction Diagnosis.

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Attachment 1

AS2870-2011 APPENDIX C *'Residential Slabs & Footings'*

CLASSIFICATION OF DAMAGE DUE TO FOUNDATION MOVEMENTS

TABLE C1: CLASSIFICATION OF DAMAGE WITH REFERENCE TO WALLS

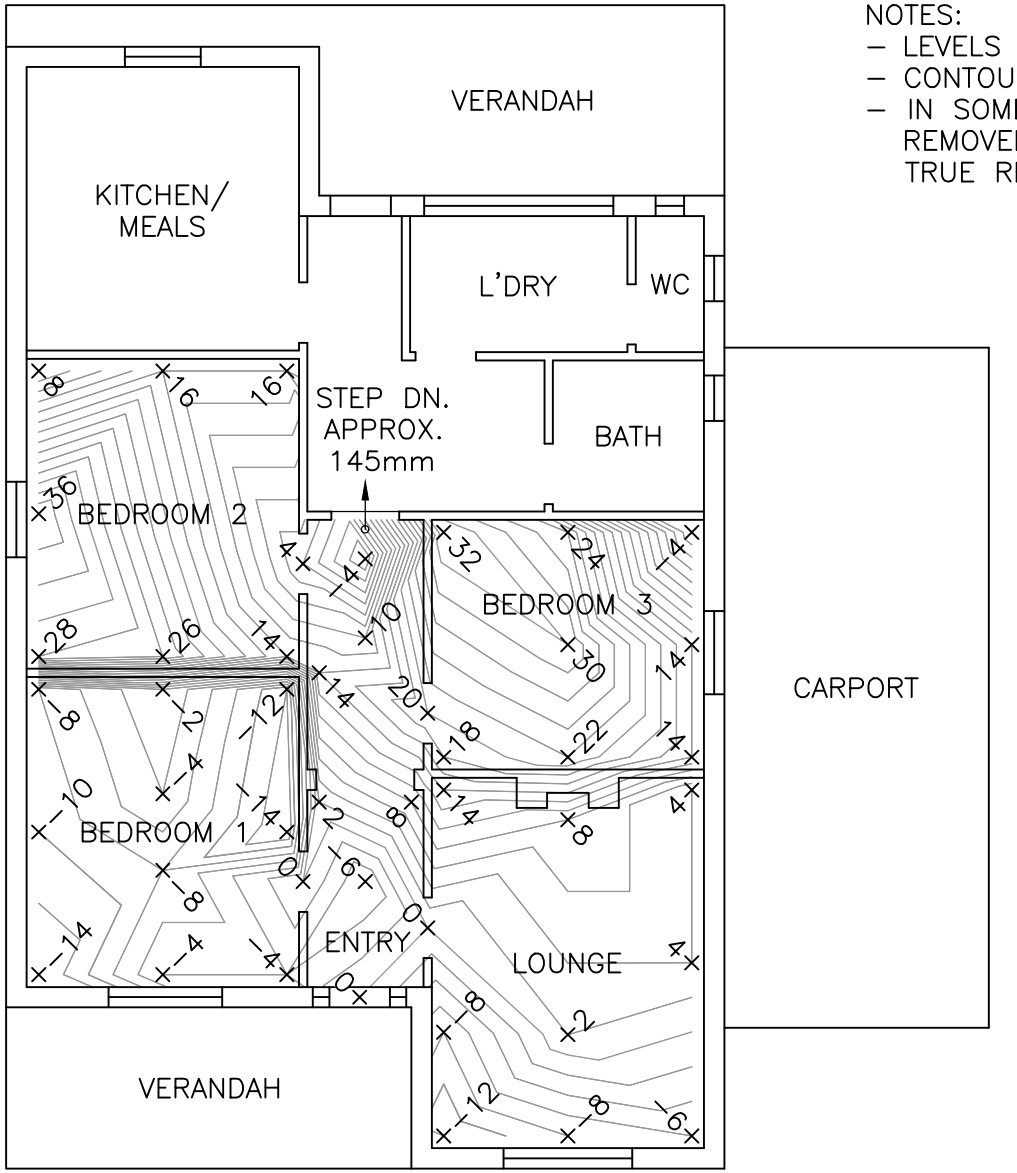
DESCRIPTION OF TYPICAL DAMAGE AND REQUIRED REPAIR	APPROXIMATE CRACK WIDTH LIMIT (see Note 3)	DAMAGE CATEGORY
Hairline cracks.	< 0.1 mm	0 Negligible
Very slight cracks which do not need repair.	< 1 mm	1 Very Slight
Cracks noticeable but easily filled. Doors and windows stick slightly.	< 5 mm	2 Slight
Cracks can be repaired and possibly a small amount of wall will need to be replaced. Doors and windows stick. Service pipes can fracture. Weather tightness often impaired.	5 mm to 15 mm (or a number of cracks 3 mm or more in one group)	3 Moderate
Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows. Window and door frames distort. Walls lean or bulge noticeably with some loss of bearing in beams. Service pipes disrupted.	15 mm to 25 mm but also depends on number of cracks	4 Severe

TABLE C2: CLASSIFICATION OF DAMAGE WITH REFERENCE TO CONCRETE FLOORS

DESCRIPTION OF TYPICAL DAMAGE	APPROXIMATE CRACK WIDTH LIMIT IN FLOOR	CHANGE IN OFFSET FROM A 3 m STRAIGHT EDGE CENTERED OVER DEFECT (see Note 6)	DAMAGE CATEGORY
Hairline cracks, insignificant movement of slab from level.	< 0.3 mm	< 8 mm	0 Negligible
Very slight but noticeable cracks. Slab reasonably level.	< 1.0 mm	< 10 mm	1 Very Slight
Distinct cracks. Slabs noticeably curved or changed in level.	< 2.0 mm	< 15 mm	2 Slight
Wide cracks. Obvious curvature or change in level.	2 mm to 4 mm	15 mm to 25 mm	3 Moderate
Gaps in slab. Disturbing curvature or change in level.	4 mm to 10 mm	> 25 mm	4 Severe

NOTES:

1. Crack width is the main factor by which damage to walls is categorized. The width may be supplemented by other factors, including serviceability, in assessing category of damage.
2. In assessing the degree of damage, account shall be taken of the location in the building or structure where it occurs, and also of the function of the building or structure.
3. Where the cracking occurs in easily repaired plasterboard or similar clad-framed partitions, the crack width limits may be increased by 50% for each damage category.
4. Local deviation of slope, from the horizontal or vertical, or more than 1/100 will normally be clearly visible. Overall deviations in excess of 1/150 are undesirable.
5. Account should be taken of the past history of damage in order to assess whether it is stable or likely to increase.
6. The straight edge is centred over the defect, usually, and supported at its ends by equal height spacers. The change in offset is then measured relative to the straight edge.



NOTES:
- LEVELS ARE SHOWN IN MILLIMETRES.
- CONTOURS ARE SHOWN AT 2mm INTERVALS.
- IN SOME AREAS THE CARPET WAS WORN OR HAD BEEN REMOVED, AND THE RECORDED LEVELS MAY NOT BE A TRUE REPRESENTATION OF THE TIMBER FLOOR BELOW.

LEVEL SURVEY

SCALE 1:100

ISSUE	AMENDMENTS	INT./DATE
A	PRELIMINARY ISSUE	TH 13.07.23

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ENGINEERING CONSULTANTS
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> MINING
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> CIVIL

CLIENT:
PAREE VERGIS &
MARK ANDERSON

PROJECT:
BUILDING REPORT

PROJECT ADDRESS:
26 MAYFAIR STREET,
MAYLANDS

TITLE:
LEVEL SURVEY

CONTRACTORS MUST VERIFY ALL DIMENSIONS PRIOR TO ANY OFF SITE FABRICATION.

DESIGN: NA	SCALE: AS SHOWN	DATE: JUL. 2023
SHEET SIZE: A4	DRAWING NUMBER: 23186–1	REVISION: A

MAGRYN

BUILDING REPORT

Address:	26 Mayfair Street Maylands SA	Report No: Date: Inspector:	BR23186A August, 2023 N Austel & T Magryn
For:	Paree Vergis & Mark Andersen		

EXECUTIVE SUMMARY

The house was inspected independently at different times internally and externally by N. Austel (Senior Engineer) and T. Magryn (Principal Engineer) of our office.

The house shows significant and widespread cracking and movement of all internal and external walls. The extent of cracking is extremely severe, and many walls show bowing.

It is recommended by both of the undersigned that the building be demolished.

SCOPE OF REPORT

The building at 26 Mayfair Street in Maylands is showing movement and severe cracking problems. This report is to:

- Note the damage present
- Note relevant site information
- Discuss probable causes
- Recommend appropriate remedial works.

Figure 1. 26 Mayfair St, Maylands

GENERAL

The building at 26 Mayfair Street in Maylands is a single storey full masonry construction on bluestone footings with timber floors and a metal sheet roof. Internal walls are single leaf clay brickwork, and external walls are a combination of limestone, random rubble and clay bricks. The house appears to have been built in the early 1900's.

The building faces east onto Mayfair Street and the land in the area is generally flat.

There is a lean-to at the rear (western side) of the building, and a carport structure on the northern side.

The current owners have purchased the property in 2022.

Figure 2. Aerial view of property

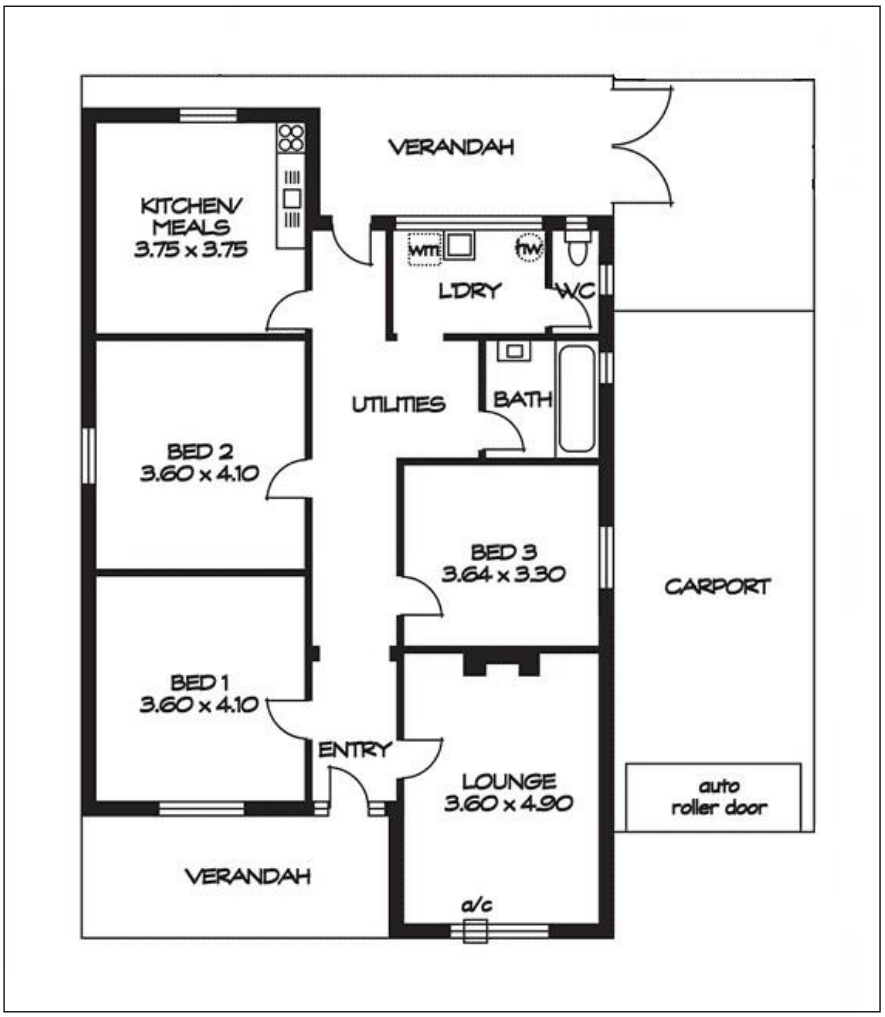


Figure 3. Floor plan of property

SITE INSPECTION

The building was inspected internally and externally by N. Austel of Magryn & Associates on 11 July 2023 and T. Magryn of Magryn & Associates on 11 August 2023. The inspection was visual only, and no fittings or fixtures were removed.

The lean-to structure on the western side (rear) of the house is proposed to be demolished, and is therefore excluded from this report.

Internal

All internal masonry walls were lined with plasterboard at the time of purchase, but the plasterboard has mostly been removed by the owner to reveal the masonry behind.

The following defects were noted internally in the house.

Lounge (north-eastern corner of building)

- All plasterboard had been removed from the walls, and several sections of plaster had broken away from the masonry.

- Several cracks in the plaster throughout all walls.
- Sections of broken out plaster in the eastern and northern walls revealed the wall to be random rubble construction, with minimal to no mortar.
- Sections of broken out plaster in the western wall, on the northern side of the fireplace, revealed severe cracking in the masonry, with heavily deteriorated mortar.
- Sections of broken out plaster in the southern wall revealed a major crack up to 45mm wide in the masonry on the eastern side of the door.
- All other visible sections of masonry in the southern wall showed heavily deteriorated mortar and brickwork.

Bedroom 1 (south-eastern corner of building)

- All plasterboard had been removed from the walls, except for one section at the centre of the western wall.
- Several sections of plaster had broken away from the masonry throughout the room.
- Several cracks in the plaster throughout all walls.
- Sections of broken out plaster in the eastern and southern walls revealed the wall to be random rubble construction, with minimal to no mortar.
- The masonry of the northern wall showed a significant bow, severe cracking and heavily deteriorated mortar.
- A section of broken out plaster at the top of the western wall revealed major cracking in the masonry, with heavily deteriorated mortar.

Bedroom 2 (southern side of building)

- All plasterboard had been removed from the walls, except for one section at the southern end of the western wall.
- Several sections of plaster had broken away from the masonry throughout the room, and the masonry at the centre of the eastern wall was completely exposed where a fireplace had been removed.
- The ceiling had partially collapsed in the south-eastern corner of the room.
- Several cracks in the plaster throughout all walls.
- Sections of broken out plaster in the northern wall revealed a major crack up to 45mm wide in the masonry on the western side of the door.
- All other visible sections of masonry in the northern and eastern walls showed heavily deteriorated mortar and brickwork.

Bedroom 3 (northern side of building)

- All walls were lined with plasterboard, covering the masonry, except for one small section of the northern wall adjacent the window.
- The removed section of plasterboard revealed cracking in the plaster and masonry behind.
- Vertical cracks up to approximately 10mm wide in northern wall at all corners of window.
- Cracking along cornices of northern and western walls.
- Vertical crack to approximately 5mm wide in north-western corner.
- Vertical crack to approximately 10mm wide in the top of the south-western corner.

Entry / Hallway (central)

- All walls were lined with plasterboard, covering the masonry.
- The ceiling was damaged due to a leak in the box gutter above.
- Horizontal crack to approximately 10mm wide in northern wall adjacent door to lounge.
- Cracking along eastern cornice above the front entry door.
- Minor cracking in the plasterboard throughout all walls.
- A section of plasterboard to the northern wall adjacent the door to bedroom 3 was loose, revealing broken plaster and deteriorated masonry behind.

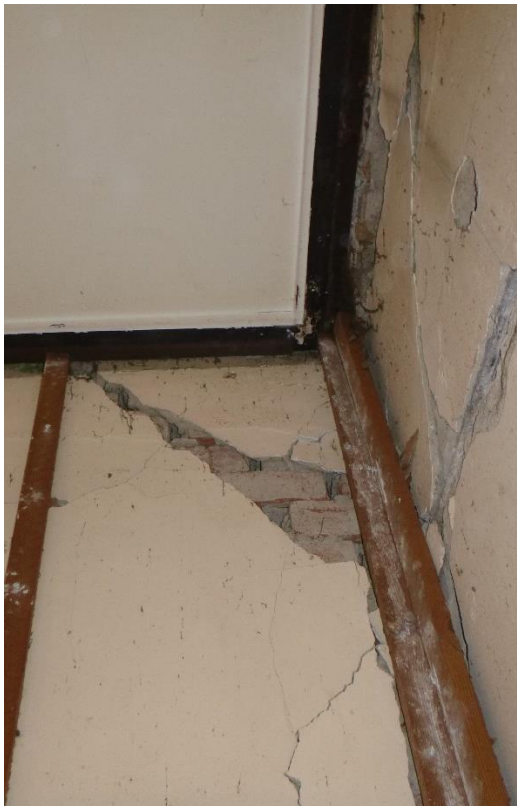
Bathroom (northern side of building)

- Some wall tiles had broken away and revealed the wall to be stone construction.
- Several cracks in the plaster throughout all walls.
- Cracking along eastern cornice. A large gap along this cornice had evidently been filled previously.
- Major vertical crack in southern wall along south-eastern corner, extending through and along door frame.

Utilities (central, rear)

- Several cracks in the plaster throughout all walls.
- Cracking along northern and southern cornices.
- The ceiling had collapsed at the western side of the room.
- Severe cracking along eastern cornice towards north-eastern corner of room. A large gap along this cornice had evidently been filled previously.
- Partially patched cracking in northern wall along north-eastern corner of room. The door frame appeared to be distorted at that location.

Major cracking – Lounge



Major cracking – Lounge

Severe bow in internal wall – Bedroom 1

Exposed random rubble construction – Bedroom 1

Major cracking – Bedroom 2

Major cracking – Bathroom

External

The following damage and points of interest were noted externally around the house.

General Exterior

- The perimeter of the building generally had concrete paving, but the paving was severely deteriorated throughout.
- Gutters and roof sheeting were corroded.
- Only one downpipe to the main building was observed in the south-eastern corner of the house. The downpipe was corroded and was discharging to the ground directly adjacent the building.
- Two reasonably large trees were located in the rear yard and in the street verge in front of the property.

Western Side (rear, lean-to)
- The lean-to structure was deteriorated and showed severe cracking and damage throughout.
- No details were recorded on this side of the house, as the lean-to is proposed to be demolished.

Eastern Side (front)
- Cracking in the render to the footing/brickwork plinth throughout.
- The render had broken away from the footing/brickwork plinth adjacent the north-eastern corner of the house, and exposed deteriorated brickwork and mortar.
- Severe cracks up to 30mm wide in the stone/brickwork/mortar/render towards the north-eastern corner.
- Broken out render around the north-eastern corner of the building revealed, with heavily deteriorated brickwork and mortar.
- Cracking in the face stone and brick quoins throughout.
- Severe deterioration of the masonry/mortar/render around the south-eastern corner of the building. A large section of render had evidently been replaced in this corner, but appeared to be de-bonding again.

Northern Side (carport)
- Major vertical crack in the masonry between the main house and the lean-to structure.
- Cracking in the render to the footing/brickwork plinth throughout.
- Several cracks and broken out render around the bedroom 3 window.
- The masonry above the lintel to the bedroom 3 window was partly exposed and showed heavily deteriorated brickwork and mortar.

Southern Side
- Major vertical crack in the masonry between the main house and the lean-to structure.
- Cracking in the render to the footing/brickwork plinth throughout.
- Paint peeling from the render throughout.
- Severe cracking and broken out render with some previous patching around the bedroom 2 window.
- The masonry above the lintel to the bedroom 2 window was partly exposed and showed heavily deteriorated brickwork and mortar.

Major cracking and deterioration in north-eastern corner

Severe deterioration in south-eastern corner

Severe deterioration of brickwork above bedroom 3 window

Severe cracking around bedroom 2 window

Major cracking between main house and lean-to

Lean-to construction at rear

FLOOR LEVEL SURVEY

A floor level survey was undertaken at the time of the inspection using a Technidea Pro-2000 Zip Level. This survey shows spot levels and contour lines, and is attached to this report. Refer to drawing 23186-1.

The floor levels show that the floor was generally lower along the front (eastern side) of the building than at the rear (bedrooms 2 and 3), with a maximum difference in floor level of 50mm.

However, the spot levels recorded were very random, showing high and low points throughout the house. This suggests that the building has settled or heaved in random locations internally and around the perimeter, without indicating a particular area of subsidence.

SOIL INVESTIGATION

The Soils Association Map of the Adelaide Region, as compiled by the Director General of the Department of Mines and Energy, shows the soils in the area to be RB3, heavy red brown clays. These soils are known to be highly to extremely expansive.

Expansive soils undergo volume change with a change in moisture content. They swell when they wet up and shrink when they dry. This volume change causes the top of the soil to rise or settle which in turn causes the footings of the house to bend and the house over to crack.

DISCUSSION

The damage to the house may be classified as severe, in accordance with the recommendations of Appendix C of Australian Standard AS2870 “Residential Footings”.

Cracking and movement in buildings is generally caused by movement of the soils under the footings. The movement of the soils is caused by the soils wetting up or drying, particularly around the edges of the building.

The major causes of soil drying are:

- Seasonal effects of drying in summer, which may be exacerbated by lack of or poor paving around the edges of the house.
- The drying effects of nearby trees.

The major causes of areas of soil wetting up are:

- Leaking sewer pipes.
- Leaking water supply pipes.
- Poor roof stormwater management, allowing large amounts of water to soak into the soil at some locations, often adjacent the building footings.
- Leaking from garden irrigation systems.

In the case of 26 Mayfair Street in Maylands, it appears that significant movement in the building has been ongoing for a long time. Several major cracks indicate that the movement in the structure is not limited to the external walls, and suggest that all footings, to external and internal walls, have experienced subsidence or heave. This is also in line with the results of the floor level survey.

It should be noted, that:

- The building is full masonry construction, with no control joints in the masonry. This is class 2000 construction (as per AS2870) and is the type of construction most susceptible to cracking.
- The footings are bluestone footings, which are extremely flexible in comparison to modern concrete raft footings used today.
- There are numerous tie bolts through the building on internal and external walls, indicating significant historical movement problems.
- The soils in the area are known to be highly to extremely reactive, with significant movement for a change in moisture content.

These factors noted above suggest that movement and cracking of the building is likely to be an ongoing problem. Therefore, all external and internal bluestone footings will require underpinning at a maximum spacing of 2 metres. Jacking of the building from the underpins is unlikely to be possible, hence the internal floor structure may require re-levelling.

Furthermore, in areas where the masonry was exposed, it was evident that the brickwork and mortar were generally extremely deteriorated. Some wall sections were deformed due to movement and deterioration, and the internal wall between bedroom 1 and the hallway had a significant bow.

The eastern, southern and northern external walls appeared to be partially random rubble construction, with minimal to no mortar between the rubble. This type of wall construction, even when repaired and re-pointed, has no measurable structural strength and is not compliant with current Australian Standards.

Due to the condition of the visible sections of masonry, it is likely that the walls that are still concealed behind render, plaster and/or plasterboard are in similarly deteriorated and poor condition.

Hence, the plaster would need to be removed from all internal walls on both sides, and the walls be assessed for any cracking or damage. Any sections of wall with major cracking (more than 20mm wide), deformation and walls of rubble construction will require re-building. All other sections of wall will require full re-pointing from both sides.

There were signs of dampness and fretting in the masonry in some locations, particularly at the base of the walls. These areas would need to be repaired by undersetting or chemical injection of a damp proof barrier.

The roof sheeting, gutters and downpipe were corroded and in very poor condition, with evident leaks at the box gutter. All roof sheeting and gutters require replacement. The

roof framing was not inspected, but is highly likely not compliant with current Australian Standards. Depending on its condition, the roof framing may also require full replacement.

All paving around the building was heavily deteriorated and would need to be replaced with new paving sloping away from the house and incorporating a surface drainage system where required.

REPAIR WORKS REQUIRED

As a minimum, the following repair works would be required:

- Underpin the bluestone footings under all external and internal walls of the building at 2m centres maximum. Underpins should be Ø300 x 4000mm deep concrete piers, reinforced with 4 N12 vertical bars and W6 ligatures at 300mm centres. Note that jacking of the building is unlikely to be possible.
- Remove all plasterboard from the hallway, bedroom 3 and from the western walls of bedrooms 1 and 2.
- Remove plaster from all internal walls on both sides to expose masonry for assessment.
- Remove render from all external walls to expose masonry for assessment.
- Re-build all walls that
    - have major cracking more than 20mm wide
    - show severe deterioration/fretting, deformation and bowing
    - are of random rubble construction.

  using brickwork and cement mortar in accordance with current Australian Standards.
- Repair all internal and external cracks less than 20mm wide by common crack repair methods. Install Thor helical reinforcement into the major masonry cracking, where more than 10mm wide.
- Re-point all internal and external walls from both sides using cement mortar in accordance with current Australian Standards.
- Re-level the floor structure by installing timber wedges as required. Re-instate floor structure where it was removed for underpin installation.
- Treat all masonry walls that show dampness by undersetting or by injection of a chemical damp proof barrier in accordance with manufacturer's specifications.
- Install new roof sheeting, box gutter, eaves gutters and downpipes in accordance with current Australian Standards.

  Note that it may also be required to upgrade the roof framing to comply with current Australian Standards, depending on the condition of the roof framing.
- Install all new concrete paving around the house. All perimeter paving would need to be a minimum of 900mm wide and to be installed with a gradient of not flatter

than 1 in 60, sloping away from the building, and incorporating a surface water drainage

CONCLUSION

Considering the extent of minimum works required, it is not advisable to repair the property.

It should be noted that the works outlined above are the minimum repair works required, based on what was visible at the time of the inspection. Once the plaster is removed and all masonry is exposed, more damage may become apparent and more walls may need re-building.

It should further be noted that once all repair works have been carried out, the overall construction of the building will still be highly susceptible to movement and cracking, due to the very flexible nature of the shallow bluestone footings (even with underpinning) and the full masonry wall construction above. Dampness issues may also be an ongoing problem, as retrospective waterproofing is generally not as effective compared to when a damp proof course is installed at the time of construction.

Hence, there is no guarantee that the repair works will reduce or eliminate ongoing movement or cracking of the building structure, or prevent ongoing dampness.

Furthermore, the costs for repairing the building would significantly exceed the costs of demolishing and constructing a new building.

Considering all factors above, it is Magryn & Associates' opinion that it is not feasible to repair the building. It is recommended to demolish the building and construct a new building in accordance with current Australian Standards.

This conclusion has been reached independently by both N. Austel and T. Magryn, who both inspected the building independently.

For Magryn & Associates Pty Ltd

Nicola Austel
P. Eng.

Terry Magryn
CPEng.

ENGINEERS AUSTRALIA

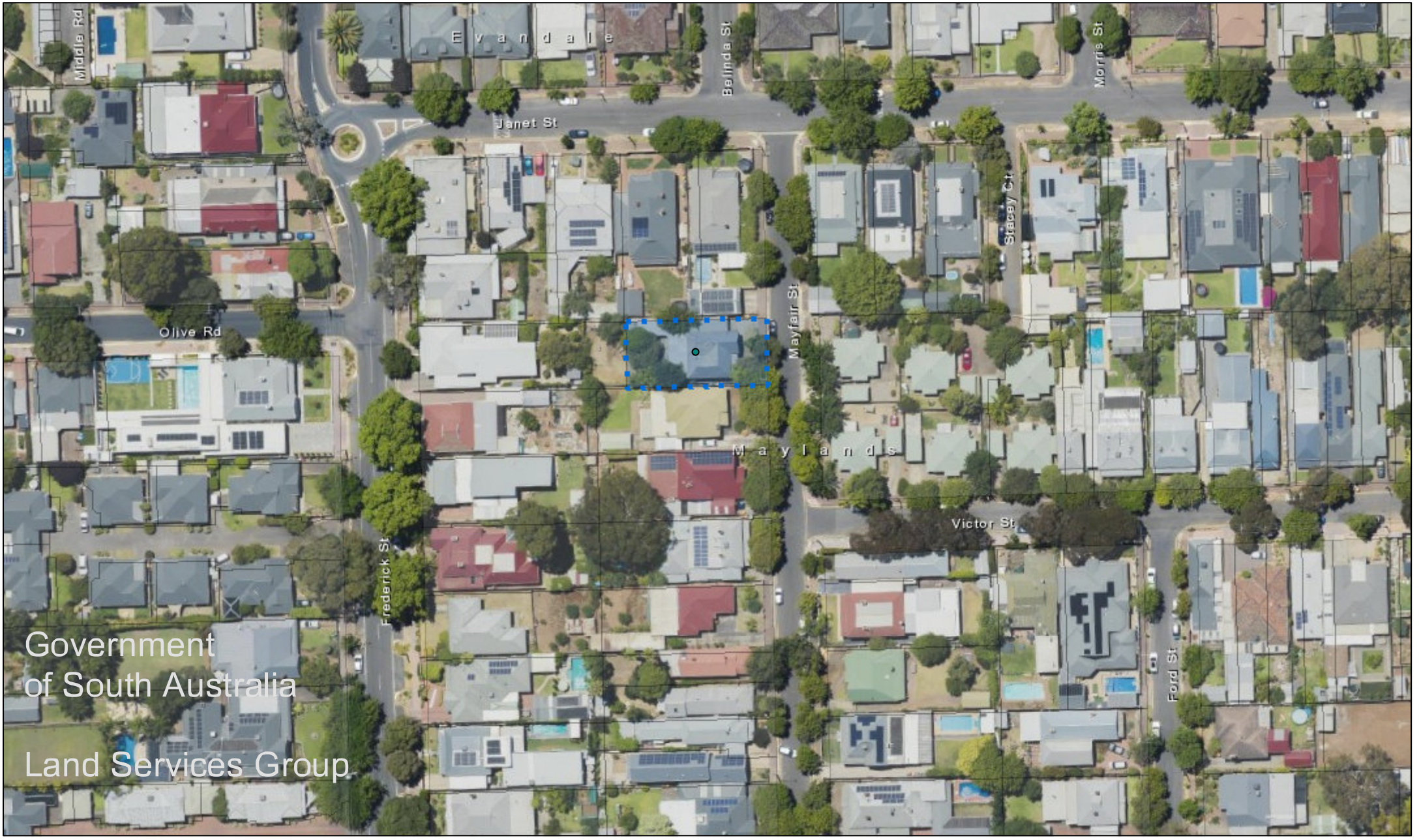
Terence Magryn
B.E.(Hons), M.Eng.Sc.
F.I.E.Aust, EngExec.
C.P.Eng (108230) RPEQ (09294)
Vic. BLA PE0003996
NT Building Prac. 275990ES

Attachments:
- Floor Level Survey – Drawing No. 23186-1

SAPPA Report

The SA Property and Planning Atlas is available on the Plan SA website: https://sappa.plan.sa.gov.au

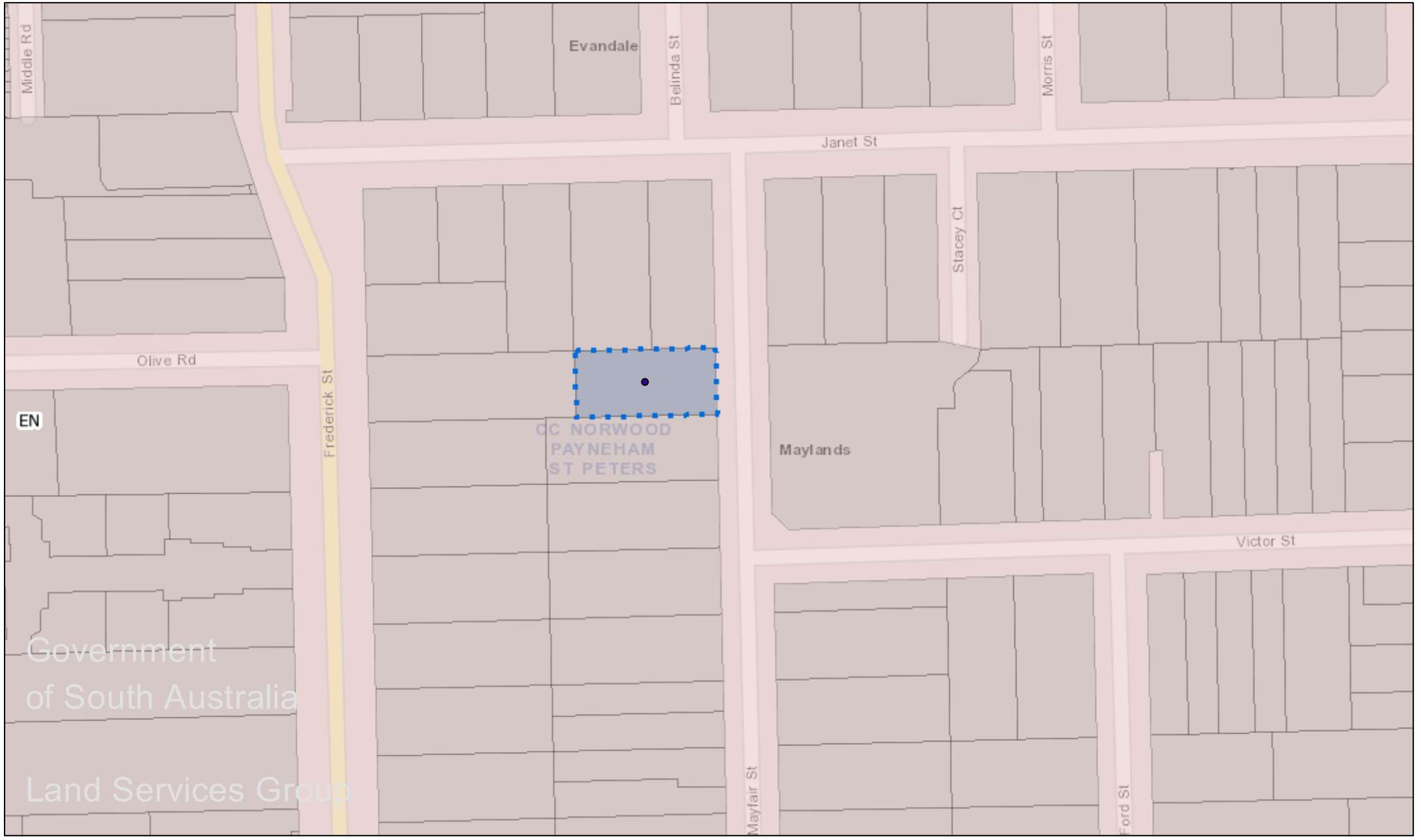
Subject Land Map



SAPPA Report

The SA Property and Planning Atlas is available on the Plan SA website: https://sappa.plan.sa.gov.au

Zoning Map



Disclaimer: The information provided above, is not represented to be accurate, current or complete at the time of printing this report. The Government of South Australia accepts no liability for the use of this data, or any reliance placed on it.

SAPPA Report

The SA Property and Planning Atlas is available on the Plan SA website: https://sappa.plan.sa.gov.au

Overlay Map

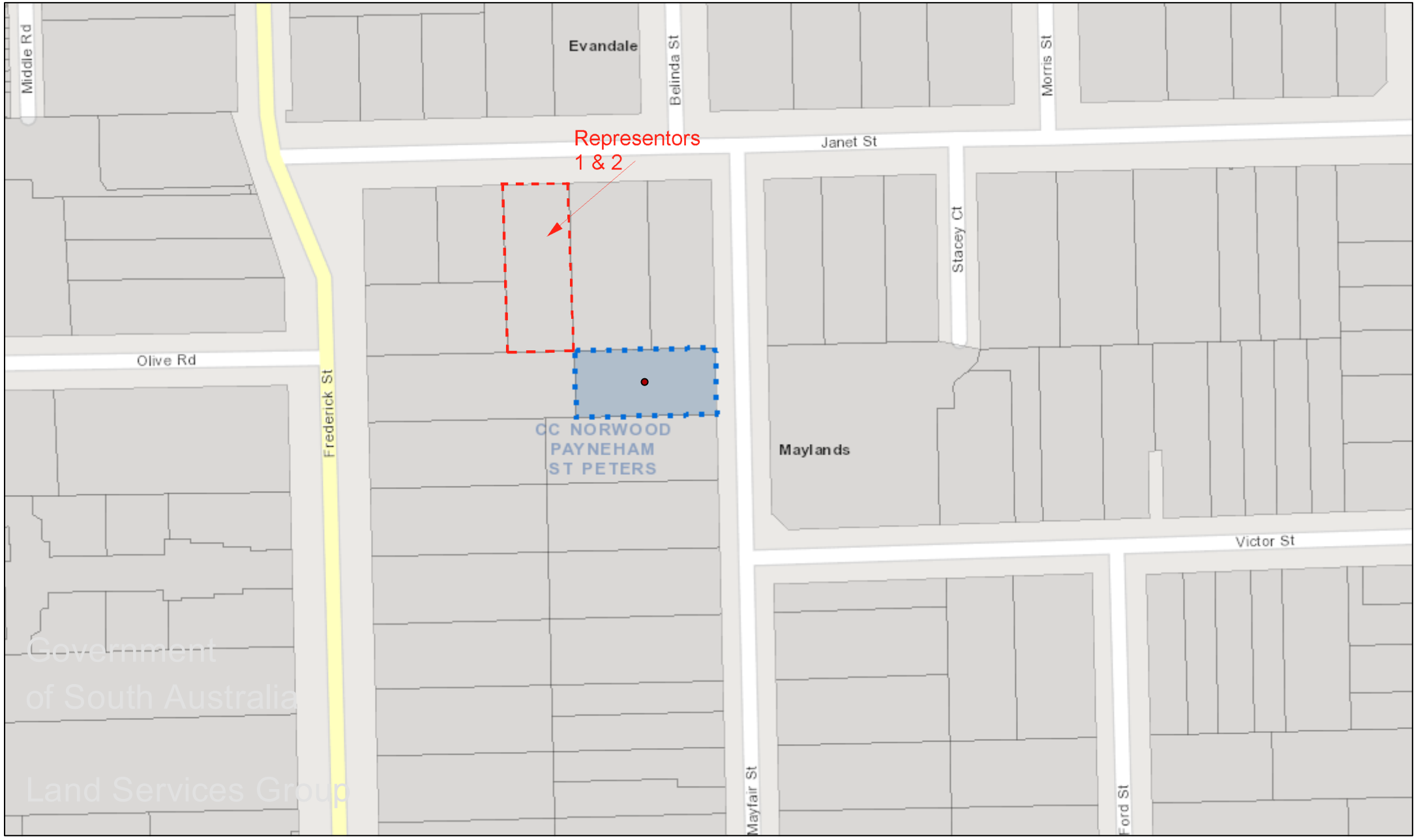
SAPPA Report

The SA Property and Planning Atlas is available on the Plan SA website: https://sappa.plan.sa.gov.au

Representation Map

Out of Map range:

Representor 3 - 112 Osmond Tce, Norwood
Representor 4 - 12 St Peters St, St Peters



Details of Representations

Application Summary

Application ID	22029884
Proposal	Demolition of a Representative Building and all ancillary structures
Location	26 MAYFAIR ST MAYLANDS SA 5069

Representations

Representor 1 - Mengshi Jia

Name	Mengshi Jia
Address	5 JANET STREET MAYLANDS SA, 5069 Australia
Submission Date	30/10/2022 03:45 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development with some concerns

Reasons
We are not able to afford any backyard fence reconstruction cost, especially with the part next to my backyard fence. Refuse to pay any cost. No building or construction taller than my backyard fence due to protect our privacy and shield sunshine to my house or backyard.

Attached Documents

Representations

Representor 2 - Jianjing Zhang

Name	Jianjing Zhang
Address	5 JANET STREET MAYLANDS SA, 5069 Australia
Submission Date	30/10/2022 03:49 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development with some concerns

Reasons
We are not able to afford any backyard fence reconstruction cost, especially with the part next to my backyard fence. Refuse to pay any cost. No building or construction taller than my backyard fence due to protect our privacy and shield sunshine to my house or backyard.

Attached Documents

Representations

Representor 3 - Sandy Wilkinson

Name	Sandy Wilkinson
Address	112 Osmond Terrace NORWOOD SA, 5067 Australia
Submission Date	02/11/2022 03:33 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	Yes
My position is	I oppose the development

Reasons

It is fortunate that this part of Maylands is subject to a Historic Area Overlay with this villa being afforded protection by virtue being a Representative Item, and an charming one that bookends the northern end of Mayfair Street. I would have no objection to the post WWII house to its south or the 1950s cream brick house at 24 being demolished, but this 1880's sandstone villa is a crucially important Representative Item in this streetscape. The whole point of having Heritage and Representative Items protected is to protect houses like this, that are run down and in need of extensive renovation and restoration. Fully renovated character homes generally sell for too much to be viable to demolish anyway, so it is only properties like this that these protections need to be effectively applied. Only the visible front sandstone and red brick quoin walls and perhaps one room depth of the exterior side walls and roof form need to be retained. The tmk engineering report suggests that the cost of underpinning would outweigh the cost of a new replacement dwelling and that therefore it is beyond reasonable repair. I come back to my point that it is only houses that are run down like this that generally are the subject of DA's to demolish them like this. There is a recent example at 98 Frederick Street, Maylands which was being similarly argued to be demolished, which the NPStP Council refused and which was instead successfully renovated. We had a recent project in Eastwood, where the front wall of a pair of maisonette cottages was severley falling away, much worse that this example, due to a leaking downpipe saturating the soil in the front corner of the house, as is the case here. We had engineers look at it and had underpinning quoted. The underpinning of the front two rooms and passages including internal walls took about 20 underpins at $3500 per underpin. The quote came in a $60 odd K, which equates to less than $2K per square metre. (A new build with matching 3.67m (12 foot) ceiling height would be more than $3K per square metre.) Our experience was that after we fixed the storm water, the wall stabilised, without even needing to be under-set and we are instead having it pushed back to plumb for $20K. I would suggest the application be refused and the applicant asked to submit a DA to undertake partial demolition of the balance of the house behind the frontage and interior walls if they so wish. If an engineering report like this were used to justify the demolition of a typical run down Representative Item like this, in need of extensive renovation, that the purpose of the Historic Area overaly would be fundamentally undermined and would in practice not be saving any of the buildings like this that might otherwise be demolished and only protect the ones that never would have been demolished anyway.

Attached Documents

26-Mayfair-Street-Maylands-1138225.jpeg
Maylands-demo-for-replacement-1138226.jpeg
Mayland-replacement-1138227.jpeg
98-Frederick-Street-Maylands-1138228.jpeg
Russell-Stonework-Quote-1138229.jpeg


52

RUSSELL STONEWORK

7th November 2021

18 Peterson Street
Somerton Park, SA, 5044

Sandy Wilkinson

RE: 69-71 Main Street, Eastwood

REPAIRS TO STONEWALLING AND BRICK QUOINS

- Prop ceiling, remove cornice, clear top of wall from obstructions.
- Clean out all previous crack repairs in walls and including crack at junction of brick quoin and stone walling.
- Move wall back to perpendicular and stabilize cracks with wedges and mortar.
- Re-align window quoins with front wall.
- Clean out behind bowed brick quoin of left- hand doorway and move back into correct position.
- Re-align brick quoin at S W corner back to correct position.
- Make good all brick pointing.
- Re-point front stonework ashlars with appropriately coloured lime mortar with ruled lines in ashlar pattern and painted with a colour to be chosen.
- Leave the site clean.

Time and materials $ 19,240.00

LIME MORTARS

1 part lime putty: 4 parts clean washed sand
1 part lime putty: 1 part clean washed sand and 1 part fine sand

Tel 0429 492 128 Lic. BLD 10957

Representations

Representor 4 - St Peters Residents Association Inc

Name	St Peters Residents Association Inc
Address	12 St Peters Street ST PETERS SA, 5069 Australia
Submission Date	02/11/2022 04:58 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	Yes
My position is	I oppose the development

Reasons

The St Peters Residents Association opposes this application as it is for the demolition od a Representative Building. The engineers report that the building is in poor condition because the bluestone footing are not up to code and and that it has unarticulated masonry walls (no control joints). No Victorian era building has other than bluestone footings and lime mortar buildings do not have control joints. The underpinning of the dwelling and crack repairs would cost less than a new construction. The stone walls, after paint removal and re-pointing would reinstate the value of the property. While not yet legislated, changes proposed to the P&D Code could mean that an application for the demolition of a Representative Building should not be approved until the details of the replacement is known

Attached Documents

Development application: 22029884
26 Mayfair St Maylands SA 5069

Response to representations to oppose our demolition consent DA for 26 Mayfair St Maylands.

Background

We bought this property fully intending to restore the facade and four original rooms and build a new extension at the rear. We do value character homes and were fully committed to doing what we could to save this building.

We met with City of Norwood Payneham & St Peters Council's heritage advisor, David Brown, to discuss the property prior to settlement. Subsequent visits with builders, engineers and with the ability to view the damage to the interior closely we were advised we may need to reconsider our approach. Hence we engaged TMK engineers to do a full structural report. They have one of the few full time forensic structural engineers in Adelaide specialising in this type of house and they take the default position of trying to save character homes, as we do.

Condition of Building

While superficially it appears just removing the paint and underpinning would solve the problems, it is not that simple. The house has been neglected for a very long time and has some significant structural issues as detailed by the TMK engineers report.

A summary of the technical issues:

- The front northern corner needs to be completely rebuilt as the stone bonding is beyond repair.
- Every wall of the house is severely cracked, hence the plasterboard lining to all internal walls hiding the damage. The movement is so severe that the plasterboard lining is tearing and cracking.
- Just keeping the front walls and two rooms is not a feasible option due to the condition of the building, and the cost to make good to the remaining walls, floors, roof, windows, doors, etc is significant.
- Overall, the residence is in a severely derelict state and uninhabitable without prior extensive structural repair and renovations.

We have subsequently had David Brown visit for a more detailed look post settlement, and he is fully aware of the condition of the building.

The conclusion of the engineer is that the building is not feasible economic to restore and would cost more than a new dwelling.

Other Issues Raised

Fencing: Any impact on fencing is not relevant to this demolition consent. Any fencing changes will be subject to normal council fencing regulations and there is no intent to force any neighbour to upgrade their fencing initially.

Height: Any new dwelling will be subject to the council's heritage overlay requirements of single story and %50 footprint and setbacks from back fencing.

Regards,

Mark Andersen
Paree Vergis

IMPARTA
ENGINEERS

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MELBOURNE
P: +61 3 9036 3079

SYDNEY
P: +61 2 9509 0700

Our ref: 1290922JAC(1)

30 November 2022

City of Norwood Payneham & St Peters
175 The Parade
KENT TOWN SA 5067

Attention: **Mr Nenad Milasinovic**

Dear Sir

Site: **26 Mayfair Street MAYLANDS SA 5069**
Property Owner: **Paree Vergis & Mark Anderson**
Reference: **22029884**
Subject: **Structural Condition Assessment**

In accordance with your instructions, our Mr James Cibich attended the above site in company with the property owner and tenant on 30 September 2022. You requested we report on the structural condition of the dwelling as part of an assessment for a demolition proposal. We are pleased to present our findings and conclusions.

BUILDING & SITE DESCRIPTION

The single storey building is of masonry construction with timber floors and bluestone strip footings, and faces east onto Mayfair Street. The steel sheet roof is conventionally timber framed and is 'M-shaped' at the rear, forming a box gutter above the central area of the building (refer Figure 1). The wet areas and rear lean-to have concrete slab floors. The internal walls are clad with fibrous plaster supported on battens.

The original house comprises an entry/hallway, three bedrooms, a living room, a rear alcove area and the bathroom. What is likely the original lean-to structure has been enclosed and incorporates a water closet (WC), laundry rear entry, and the kitchen. The front entrance verandah has decorative truss columns with a corrugated sheet roof and a concrete slab.

The roof stormwater discharges into downpipes. The downpipe at the south-eastern corner (collecting the southern catchment) discharges onto the bath directly below it. The northern catchment discharges to the Mayfair Street footpath via a flying downpipe. The rear catchment of the original roof discharges via a flying downpipe toward the rear outbuilding. The rear lean-to / verandah catchment discharges via a downpipe buried beneath mulch (it is unclear where this downpipe discharges). The condition of any sub-surface pipework (including stormwater and sewer) is unknown. The building is surrounded by several trees and other vegetation, as shown on Figure 1.

References in square brackets [x] are to photo numbers at the end of this report.

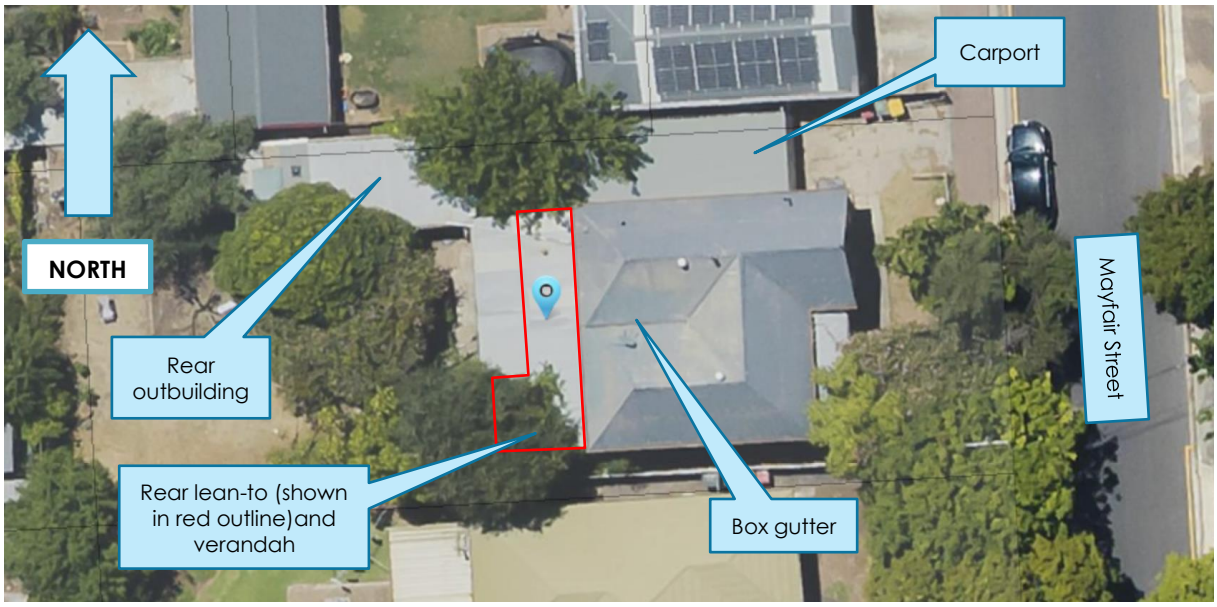

Figure 1 – Aerial image of site from the SA Property and Planning Atlas

BUILDING CONDITION

Evidence of previous footing movements (such as crack repairs) as well as evidence of recent movements were observed throughout and around the outside of the building. We provide the following summary of our observations.

Due to the number of instances of damage identified, we have not included each in our report. We have included the most significant items for your consideration. We have included a copy of our site notes, which shows the instances of internal damage marked up on a floor plan of the building, as Figure 2 below. Should a more comprehensive catalogue of cracking be required, we would be pleased to provide it upon receipt of your further instructions.

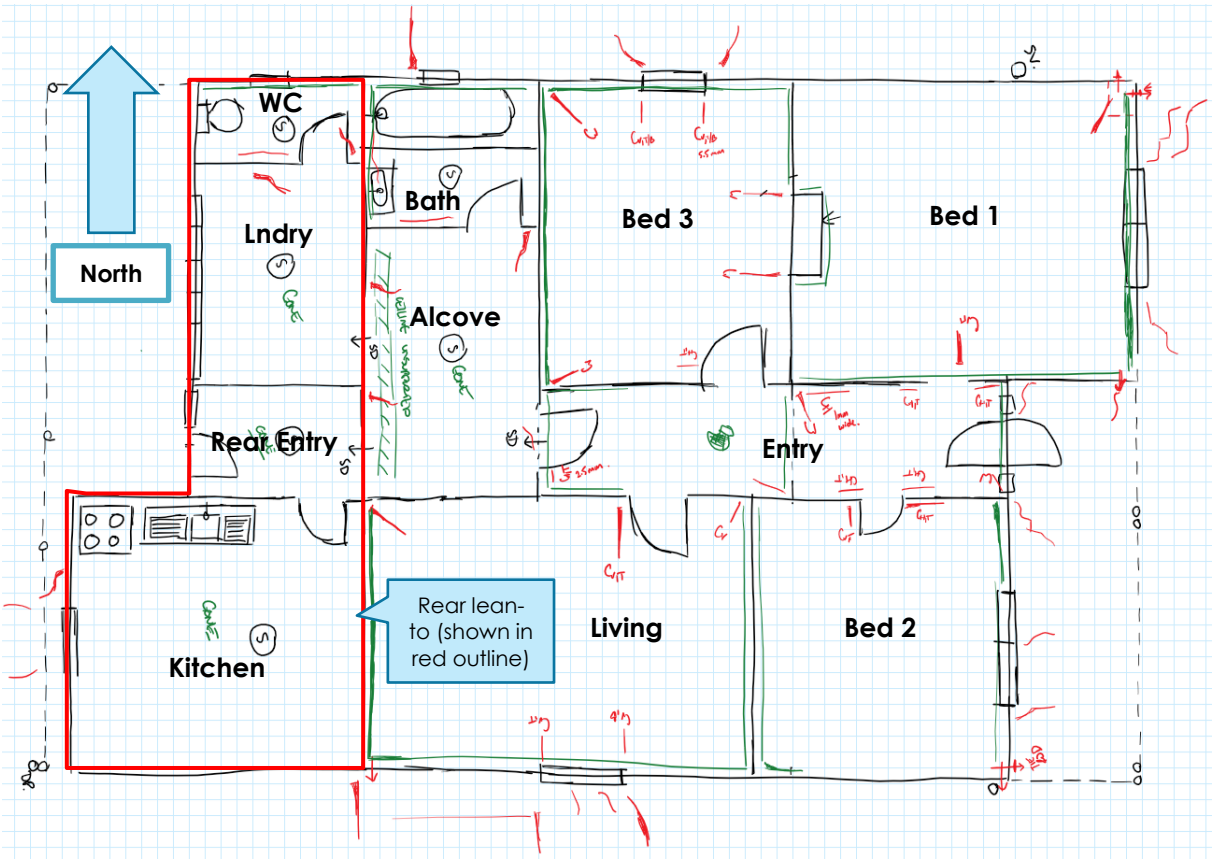

*Figure 2 – **Red** is damage to walls, **green** is damage to ceilings & cornices, **blue** is damage to floors, **yellow** highlighting indicate the most severe settlement that may require structural correction*

In the following, references to 'damage categories' are to those defined by Table C1 in Appendix C of AS 2870 *Residential Slabs and Footings*. We acknowledge that the Standard has regard mostly to dwellings constructed with modern footings constructed in accordance with the Standard and cannot necessary be applied to a more historic building (such as this one).

Main Roof Cavity

- The roof sheeting was corroded and is not weatherproof. Several holes in the sheeting and moisture stains to framing were observed to the roof space accessible from the hallway inspection opening.
- The rear box gutter is likely undersized and non-compliant with current requirements of AS/NZS 3500.3 (including overflow provisions). It appears the rear box gutter has leaked and caused moisture damage to the hallway ceiling in the past.
- Whilst moisture staining was observed to much of the framing, no structural damage was observed other than splitting of valley boards (noting that all framing was not inspected). However, moisture damage may be severe enough to some members that would require their replacement if the roof sheeting was replaced.
- Parts of the roof were not correctly coupled. It is also likely the framing would be undersized and non-compliant with the current Australian Standard, AS 1684.2 *Residential timber-framed construction Part 2: Non-cyclonic areas.*
- The roof sheeting requires replacement, which will likely require upgrading of the roof frame and, possibly, tie-downs to supporting walls.
- It is unclear whether the front stone gable wall is restrained by the roof frame. It is likely additional framing will also be required to restrain the head of this wall. We do not expect that this additional framing would be onerous.

External Condition

Tie-rods have been installed through ceiling/roof cavity at ceiling level to tie several elevations together. Tie-rods were historically installed to buildings suffering differential footing movement to mitigate wall cracking and rotation. This method has been abandoned in modern practice because it was rarely successful when it was implemented in the past.

East Side

- The front landscaping appears to have been poorly maintained and was overgrown at the time of our inspection.
- The roof sheeting and eaves gutters appeared in poor condition from the eastern side. The ridge capping appears to have disconnected from the sheeting.
- The verandah guttering, sheeting and fascia / bargeboards were in poor condition.
- The perimeter concrete paths are cracked and undulated.
- The north-eastern corner of the dwelling appears to have settled and rotated, causing considerable cracking to the footing and brickwork. The render has also delaminated from the footing and low-level brickwork. Cracks in the brickwork in the northern face of this corner were measured to be up to 10 and 24mm wide. Repairs to previous cracking were also observed to this corner.
- Other parts of the front elevation and return walls are cracked. Most cracks show evidence of previous repairs indicating the movement is ongoing.
- The verandah slab is cracked and undulated.
- Half the eastern half of the verandah soffit linings have been removed, and the remaining linings are in poor condition. The verandah framing and sheeting also appeared in poor condition. The decorative truss columns were in reasonable condition and could be salvaged.
- There are no sub-floor vent bricks along the eastern elevation.

North Side

- The roof sheeting and eaves gutters appeared in poor condition from the northern side. The ridge capping has disconnected from the sheeting.
- The northern elevation is cracked in several locations, as shown in the photos. All cracks show evidence of previous repairs indicating the movement is ongoing.
- Cracking adjacent to the bathroom window was measured as 15mm wide.
- The driveway pavement was cracked and undulated.
- There are only two sub-floor vent bricks along the northern elevation.

South Side

- The render to the brickwork at the south-eastern corner has been repaired. It appears the render to the footing is also delaminating at this corner.
- The paintwork on the southern elevation's rendered brickwork is delaminating.
- The southern elevation is cracked in several locations, as shown in the photos. All cracks show evidence of previous repairs indicating the movement is ongoing.
- There are only two sub-floor vent bricks along the southern elevation. One of those vent bricks is at pavement level, which may allow surface stormwater to drain into the sub-floor.
- The meter box appeared relatively modern, indicating the dwelling's electrics may have been recently upgraded. However, we are not experts in electrical installations so cannot comment on the compliance to current regulations.
- The lean-to structure has settled away from the main dwelling, causing cracking to the southern elevation at the joint between the two structures. From filling material and evidence of previous repair at this junction, it appears this movement is ongoing.
- The lean-to barge board is in poor condition and is rotated off the structure.

West Side

- The west elevation's northern end is timber framed and clad with likely asbestos containing cement sheeting. The sheeting was cracked in several locations. The timber frame appeared in reasonable structural condition but requires redecoration and maintenance.
- The rear verandah soffit was in poor condition and likely requires replacement.
- The western elevation is cracked in several locations, as shown in the photos. All cracks shown evidence of previous repairs indicating the movement is ongoing.
- There is no sump or downpipe to the box gutter outlet of the main roof. The fascia appeared to be rotten at the outlet.
- The lean-to / verandah roof appeared to be less than 5 degree pitch and of corrugated sheet profile (although we did not measure the roof pitch or inspect this roof).

Interior Condition

Several instances of previous cracking and repair were observed throughout the home's internal fibrous plaster wall finishes as well as ceilings and cornices. We have not documented all instances of previous repair or cracking in the following sections.

Bulging was also identified in some locations. "Bulging" refers to where the plaster is placed into compression by differential footing movement, which causes it to arch away from the substrate. Bulging can be evidence of footing movement reversal and, in turn, evidence of seasonal movement.

The internal walls are lined with fibrous plaster supported off timber battens fixed to the masonry walls. It is likely that these fibrous plaster linings were not the original finish to the internal walls (the walls were most likely finished with render and hard plaster set coat on the brickwork), and that they were provided in an attempt to disguise cracking to the brickwork. We consider this evidence that the home has been subjected to past differential footing movements.

Entry

- The carpet floor covering requires replacement. It appears there is a vinyl tile floor covering beneath the existing carpet. The vinyl system may contain asbestos and may need removal as part of the carpet's replacement.
- Water entry, apparently from the box gutter's eastern end, has caused a hole in the hallway ceiling.
- Several instances of previous cracking and repair were observed.
- Filling material has been used to fill the gap between the eastern wall and cornice.
- More recent cracking was also observed to walls and cornices.

Bed 1

- Considerable gap filling has been undertaken to the north-eastern wall/wall joint.
- A gap has formed at the western wall / cornice junction.
- A 10mm wide crack is located above the doorway.
- The ceiling paint is peeling.

Bed 2

- The western cornice was undulated. It appears a fireplace has been removed from this room, which may have caused some misalignment along the cornice.
- There is a hole in the ceiling (cause unknown).
- Several instances of previous cracking and repair were observed.
- More recent cracking was also observed to walls and cornices.

Living

- It appears the ceiling has been previously moisture damaged and repaired. The cornice was misaligned at this location, which requires decorative repair.
- The floor in the south-western corner drops towards the corner.
- The two widest cracks in this room were measured to be 10mm wide (north-western corner) and 4.5mm wide (above door) respectively.
- Several other instances of previous cracking and repair were observed.

Bed 3

- Several instances of previous cracking and repair were observed.
- More recent cracking was also observed to walls and cornices.

Alcove

- The floor is covered with a vinyl tile product (as identified beneath the hallway carpet). This covering may contain asbestos.
- The ceiling has disconnected from its support at the western end. The ceiling, ceiling framing, and all connected services require replacement. This ceiling may collapse if left unattended.
- Several instances of previous cracking and repair were observed.
- More recent cracking was also observed to walls and cornices.
- What appears to be the original electric meter / fuse box is located in this room. It appears to have been decommissioned.

Bath

- The bathroom was in poor condition and requires complete refurbishment.
- It is likely the sub-floor plumbing also requires replacement.
- The masonry walls have suffered from damp attack and require significant maintenance and possible local rebuilding.

Laundry

- The laundry floor slab is cracked. Based on the building's age, it is likely that the slab is relatively thin (compared to modern construction) and lightly reinforced (if not unreinforced). It would be advisable to replace the laundry slab.
- If the laundry slab is being replaced, it may be economically efficient / beneficial for the performance of the lean-to area to reconstruct the lean-to on a modern footing.
- The ceiling linings appear to be poorly supported (or have detached from their supports) and were sagging along their eastern side.

WC

- The WC was in poor condition and requires refurbishment.
- Tiles have delaminated / were delaminating from the floor and walls (only a skirt tile has been provided).
- The walls are suffering from rising damp and require maintenance. If the lean-to is not reconstructed, damp proof treatment will be required to all masonry walls.
- The bathroom basin waste passes along the western WC wall and exists the northern elevation. The wall was suffering from damp at the pipe penetration, indicating long-term exposure to moisture (likely from absence of waterproofing in the bathroom or pipe leakage).

Kitchen

- The kitchen floor tiling was cracked and in a poor condition. The floor tiles require replacement. The slab substrate may also require replacement (as per the lean-to discussion in Laundry).
- The kitchen itself is aged and requires replacement.
- Several instances of previous cracking and repair were observed.
- More recent cracking was also observed to walls and cornices.
- The ceiling linings were missing from the north-western corner. The roof/ceiling framing that was observed in this area appeared in poor condition and is likely non-compliant with current Australian Standards.

Rear Entry

- Several instances of previous cracking and repair were observed.
- More recent cracking was also observed to walls and cornices.

SOIL CONDITIONS

No site-specific soil information has been obtained. According to the *Soils Association Map of the Adelaide Region* (the Map), published in 1989 by the CSIRO and the South Australian Department of Mines and Energy (as it was then), the site is likely founded on a Red Brown Earth Type 3 soil profile (RB3).

RB3 soil profiles are known to contain layers of highly plastic clay (also commonly referred to as "reactive clay") to considerable depth. The profiles are generally "highly reactive" in accordance with the classification of the relevant Australian Standard, AS 2870 *Residential Slabs and Footings*.

The actual foundation soil conditions at this site can be determined by recovering soil borehole samples and assessing them. If you would like us to arrange this, we would be pleased to do so upon receipt of your further instruction.

The implications of this soil profile are that when soil moisture changes occur, the footings will be subjected to pressure from vertical soil movements. If differential deflections occur, these may cause cracking in brittle materials such as face and plastered masonry.

In the case of older houses such as the subject dwelling, the footings are bluestone slabs (or some other form of stone masonry) of low strength and are quite shallow. These footings are rarely able to control footing movements to non-damaging proportions when normal seasonal soil movements occur due to Adelaide's Mediterranean climate of hot, dry summers and cool, wet winter/springs.

When larger soil movements occur, due to poor drainage or the soil drying effect of trees, it is very likely that larger, more widespread cracking will occur.

A characteristic of strip footings when they are subjected to seasonal soil moisture changes is that they also undergo lateral rotation. Over time, the outside of the footing drops relative to the inner edge and this movement is translated to the walls which develop an outward lean. Whilst roof and ceiling framing can resist this outward lean to some extent, the common result is gaps along the wall/ceiling joint or cornice, and bowing of walls between ceiling and floor. No bowing was observed to this dwelling, indicating there may have been insufficient rotation to cause it at this time, or that the top of the walls are inadequately restrained by the roof frame to cause bowing.

DISCUSSION

Footing Movement Related Damage

From the extent of previous crack repairs observed both externally and internally, it appears footing movement has been an ongoing problem for this building. In most buildings of a similar age and foundation soil type to this one, the occurrence of cracking can be mitigated with good landscape maintenance (such as appropriate selection and placement of vegetation, and regular watering during dry months). These strategies are relatively inexpensive and simple to implement (such as removal of trees / vegetation that are too close to the building, or the installation of dripper systems or concrete perimeter pavements). As identified earlier in this report, it appears the previous owner of this property did not carryout regular maintenance of the landscaping around the home, which may explain much of the differential footing movement it appears to have undergone.

Most cracking was measured to be within Damage Category 1 (Very Slight, < 1mm wide) or 2 (Slight, < 5mm wide) of Table C1 of AS 2870 *Residential Slabs & Footings*.

However, some cracks were determined to be in the more severe categories: the gapping in the north-eastern corner of Bed 1 was measured to be approximately 25 – 30mm. If this measurement reflects the movement in the substrate, this puts the movement at this corner beyond Damage Category 4 (Severe, 15 – 25mm wide). The cracks above the doorway in Bed 1 and in the Living's north-western corner were measured as 10mm wide; Damage Category 3 (Moderate, 5 – 15mm wide). However, we note all internal cracking that was measured was undertaken on the fibrous plaster linings, which are more flexible than the masonry substrate behind it. The cracking to the substate may be more severe (this could be confirmed by removing the fibrous plaster linings, if required). The external cracking to the northern elevation was between Damage Category 3 and 4.

In our experience, the condition of the main dwelling is not entirely inconsistent with one of its age and construction. Even though the previous cracking and repair is considerable, most is cosmetic in nature and does not represent a concern to the safety of occupants. The cracking can be cosmetically repaired from time to time. This is consistent with guidance provided in Appendix B of AS 2870, although we acknowledge that the Standard has regard mostly to dwellings constructed with modern footings constructed in accordance with the Standard and cannot necessary be applied to a more historic building (such as this one). We also acknowledge that the current cracking is likely only to be a portion of the footing movement related damage this building has undergone over its life.

The more severe damage (particularly to the building's north-eastern corner) probably requires structural correction. This would likely involve, at least, partial reconstruction of the walls in this corner. The footings may also need to be stabilised, although this would require closer consideration for reasons discussion further below.

In our opinion, the remainder of the main dwelling could be structurally stabilised in its current condition by implementing measures to control the foundation soil's moisture state. This would include carrying out surface stormwater upgrades around the home, improvements to roof drainage and directing all downpipe discharge to the street water table, construction of new pavements, removal of some trees and vegetation, and implementation of regular landscape maintenance. The home could then be decoratively repaired (although it should be expected that maintenance will be required from time to time if the moisture control measures are ineffective, such as in extreme conditions like drought or pipe leakage).

Correcting Previous Footing Movements & More Invasive Stabilising Measures

Comprehensively stabilising buildings that have been affected by and correcting previous rotations caused by reactive clay related footing movements generally requires structural intervention (such as the installation of concrete underpins and jacking platforms). We expect underpinning and jacking the building would be successful in correcting the most severe instances of past movements without requiring wholesale reconstruction. It should also be noted that underpinning and jacking is not always successful in remediating past footing movements, because the jacking process is often disrupted by debris contained in cracks or difficulties in realigning rotated footings.

Generally speaking, underpinning should only be considered for buildings founded on reactive clay as a last resort. This is because local underpinning creates a "stable" point (i.e. a part of the building less susceptible to footing movement) that the rest of the building (that has not been stabilised and is still subject to footing movement) can move against. Consequently, local underpinning can resolve cracking in one area of the building, but cause cracking to occur in other areas.

Underpinning is also considered to be an expensive and disruptive undertaking, costing tens of thousands of dollars. External underpins requires removal of perimeter paving (where external access is available). Internal underpins (or for external underpins where external access is unavailable) requires removal of timber floors.

In summary, we expect efforts to *correct* the previous movements to the building would incur significant costs. Also, these efforts may not result in the building being crack-free into the future (although it should be highly effective at mitigating them). Otherwise, if the building were to be stabilised in its current condition, we anticipate only one area of the building would require structural intervention (north-eastern corner of Bed 1). Other improvements to drainage (such as stormwater, pavements, and removal of trees from around the building) could be implemented to improve the building's stability.

Bathroom, Laundry, WC & Plumbing

As noted above, the wet areas of this building were in poor condition, with evidence of deterioration of the building fabric and movement / cracking to walls and floors. Due to the extent of deterioration, we expect these rooms will need to be completely refurbished, which may require rebuilding of some walls that have suffered from damp attack. If the walls are not reconstructed, they will require damp proof treatment.

These wet areas are not compliant with modern requirements. If it were to be made compliant with the current requirements of Volume 2 of the National Construction Code (NCC), we expect it would need to be reconstructed entirely (including demolition of the floor slab and provision of new waste pipework).

The sewer and waste pipework were not available for our inspection. However, based on the apparent age of the house, we expect this pipework is of iron and/or earthenware material. Earthenware pipework is notorious for leaking when buried in reactive clay soil, because the brittle construction is vulnerable to breaking or separating at joints from differential soil movement. Leaking sewer and waste pipework contribute to differential footing movement. As part of strategies to mitigate footing movement, it would be necessary to inspect the sewer and waste pipework and, in all likelihood, replace it with PVC material (with the provision of flexible connections).

Also, if footing movement continues to occur to the building, upgrades to the bathroom may be disrupted over time (potentially causing cracking to the shower alcove and other waterproofing issues).

Rear Lean-to

In our opinion, the rear lean-to is in a poor condition and requires, at least, significant maintenance (refer also to the previous sub-section). It may be more economically viable to reconstruct this part of the building, including on a new stiffer footing.

Sub-floor Ventilation

There is inadequate sub-floor ventilation to this building according to the current provisions of the National Construction Code (NCC). This could lead to elevated humidity in the sub-floor space and moisture related issues, such as rot of framing or floorboards. We expect additional sub-floor vent bricks will be required to all four sides of the main dwelling.

The existing sub-floor vent that is at paving level should also be moved, or the pavement should be lowered, to mitigate against the possibility of surface stormwater draining into the sub-floor through the vent.

Rising and Falling Damp

Rising and falling damp were observed during our inspection. To mitigate the re-occurrence of rising damp, it would be necessary to treat the affected wall with some form of damp proofing measure. Chemical treatments (such as resin injection of the lower mortar joints) are available, however, their success is dependent on achieving penetration of the chemical across the entire mortar joint, and ensuring the treatment is not bridged by render or plaster finishes. A more assured method of treatment is physically undersetting each wall with a plastic damp proof course (DPC), which requires reconstructing the lower courses of each wall.

Damp affected masonry elements would need replacing or repointing (as applicable). However, more severely affected masonry (such as in the bathroom and WC) may require local rebuilding.

Roofing & Roof Frame

The existing roofing requires replacement due to its deteriorated condition. It is also likely the rear box gutter is non-compliant with current requirements of AS/NZS 3500.3, which may explain the apparent leakage above the hallway ceiling.

The existing roof framing of the main dwelling, whilst moisture stained, did not appear to have been structurally compromised. However, it is unlikely that the existing roof construction complies with the current requirements of AS 1684.2. If the roof cladding was to be replaced, it is likely considerable maintenance would be required to the roof frame. This would likely include provision of new roof battens, underpurlins and struts, and new valley boards. Tie-downs to the existing walls may also need to be upgraded, which would involve chasing straps into the existing plaster wall finishes and replastering.

The ceiling frame in the Alcove is no longer properly supported and requires reconstruction.

The roof framing above the kitchen area was in poor condition. It is likely this roof frame would require considerable maintenance if not reconstruction (this may occur in any case if the lean-to was reconstructed on a new footing, refer to our previous discussions).

Verandahs

The front verandah was in poor condition and requires reconstruction. The roof pitch was too shallow for the corrugated sheet profile currently installed. The decorative truss columns could probably be salvaged and reinstated. The slab requires replacement.

The rear verandah soffit was in poor condition and requires replacement. The condition of the framing is unknown because it was concealed by the soffit. However, it is possible the framing is similar to / the same as that observed above the kitchen, meaning the discussion regarding the kitchen roof, above, is also applicable to the rear verandah.

Electricity Meter Box

Whilst we are not expert in electrics, the meter box appeared to be relatively modern. This may indicate the electrical services in this dwelling have been upgraded to modern standards. However, we are not experts in electrical installations. Therefore, if this matter is important to Council's assessment, we recommend seeking the advice of a licensed electrician.

SUMMARY

As a result of our investigation, we provide the following opinions.

1. The building has undergone differential footing movement throughout its past, resulting in cracking and rotation of walls and other structural elements.
2. The condition of the main dwelling is not inconsistent with one of its age and construction. Most of the main dwelling could be stabilised in its existing condition through various strategies to control the moisture content of the reactive clay foundation soils. We do not expect these strategies would be costly, although they would need regular appraisal.
3. It may be necessary to locally reconstruct the walls in the dwelling's north-eastern corner to remediate the more severe movement that has occurred to this area. It may also be necessary to underpin the footing at this location (however, regard should be had to the associated risks of local underpinning as discussed above).
4. To *correct all previous building movements*, it would probably be necessary to install underpins / jacking platforms beneath all footings. These works would be considerably expensive, and would not guarantee the prevention of all cracking into the future. Full reinstatement of the building's *original* condition may not be achievable without considerable reconstruction works.
5. The wet areas (bathroom, laundry and WC) require replacement.
6. The rear lean-to (which incorporates the laundry, WC, and kitchen) requires considerable maintenance, which we expect will require rebuilding the floors and some walls. It may be economically viable and structurally advantageous to reconstruct the lean-to on a modern footing. This could be confirmed by arranging a cost analysis (costing of construction works are beyond the area of our expertise).
7. Dampness is an issue for the building. It is likely damp proofing measures (such as undersetting or chemical damp proof course treatment) will be required to permanently resolve the issue.
8. The roof sheeting requires replacement. Is likely that the roof frame to the main dwelling will require framing upgrades, as discussed above.
9. The sub-floor ventilation is inadequate and will require upgrading, as discussed above.
10. The front and rear verandahs require reconstruction, as discussed above.
11. The stormwater, sewer and waste pipework probably require replacement with modern PVC pipework (at the very least, it requires investigation).
12. The electrics and wiring may have been upgraded recently and may be compliant with current regulations (this should be confirmed by an electrician as it is beyond our area of expertise).

We trust this report is sufficient for your present requirements. If you have any further queries regarding this matter, please do not hesitate to contact the undersigned.

Yours faithfully

James Cibich BE(Hons) LL.B, MIEAust CPEng NER
Imparta Engineers
Phone: (08) 8150 5500
james@impartaengineers.com.au

The conclusions reached in this report have been based on opinions derived from site observations and our experience in understanding the causes of building damage. If you consider that the circumstances in this matter justify any additional testing or measurement, please contact the undersigned so that we can discuss whether any appropriate testing or procedure may be available at this time.

MAIN ROOF

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

EAST SIDE

Photo 7

Photo 8

Photo 9

Photo 10

Photo 11

Photo 12

Photo 13

Photo 14

Photo 15

Photo 16

Photo 17

Photo 18

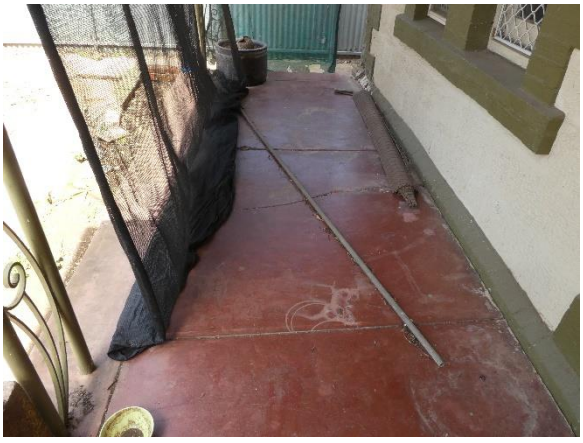

Photo 19

Photo 20

Photo 21

Photo 22

Photo 23

Photo 24

NORTH SIDE

Photo 25

Photo 26

Photo 27

Photo 28

Photo 29

Photo 30

Photo 31

Photo 32

Photo 33

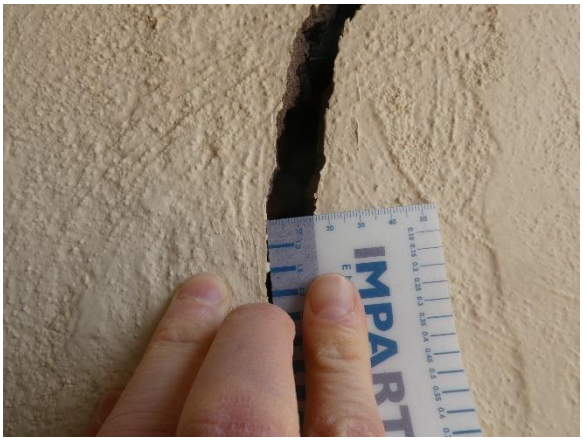

Photo 34

SOUTH SIDE

Photo 35

Photo 36

Photo 37

Photo 38

Photo 39

Photo 40

Photo 41

Photo 42

Photo 43

Photo 44

WEST SIDE

Photo 45

Photo 46

Photo 47

Photo 48

ENTRY

Photo 49

Photo 50

Photo 51

Photo 52

Photo 53

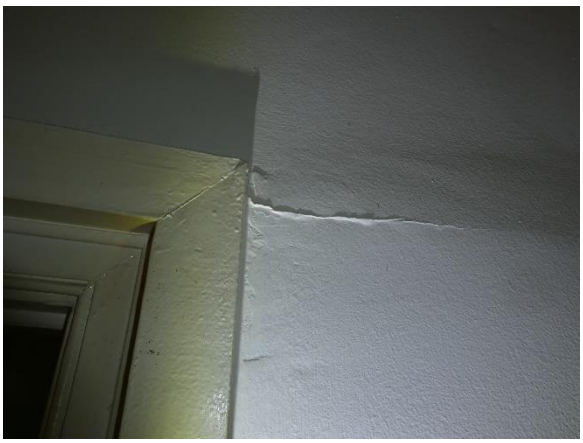

Photo 54

Photo 55

Photo 56

Photo 57

Photo 58

BED 1

Photo 59

Photo 60

Photo 61

Photo 62

Photo 63

Photo 64

BED 2

Photo 65

Photo 66

Photo 67

Photo 68

Photo 69

Photo 70

Photo 71

Photo 72

LIVING

Photo 73

Photo 74

Photo 75

Photo 76

Photo 77

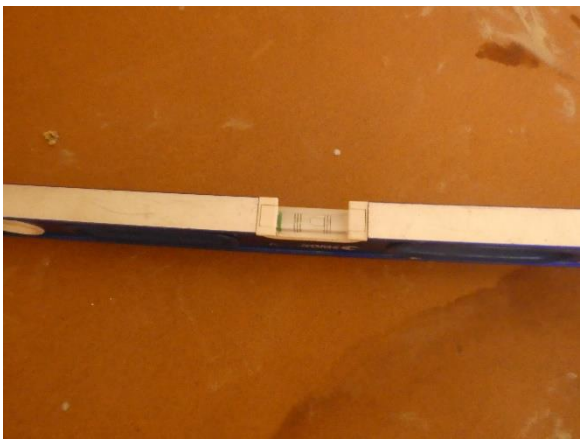

Photo 78

Photo 79

Photo 80

Photo 81

Photo 82

BED 3

Photo 83

Photo 84

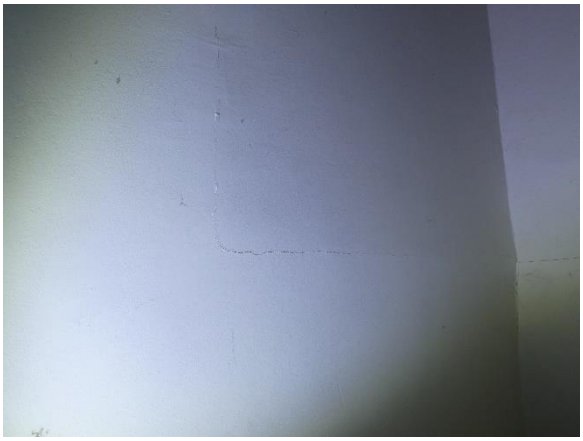

Photo 85

Photo 86

ALCOVE

Photo 87

Photo 88

Photo 89

Photo 90

Photo 91

Photo 92

Photo 93

Photo 94

BATH

Photo 95

Photo 96

Photo 97

Photo 98

Photo 99

Photo 100

LAUNDRY

Photo 101

Photo 102

Photo 103

Photo 104

WC

Photo 105

Photo 106

Photo 107

Photo 108

KITCHEN

Photo 109

Photo 110

Photo 111

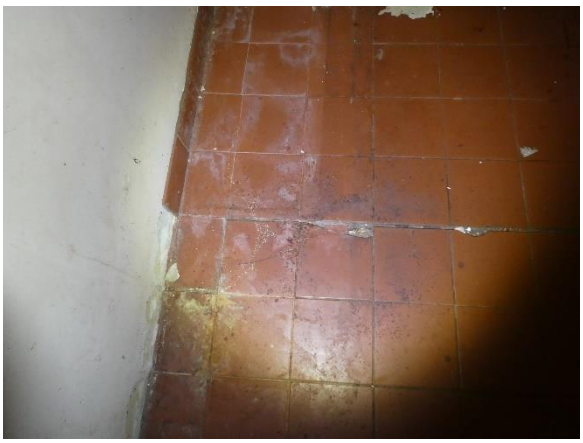

Photo 112

Photo 113

Photo 114

REAR ENTRY

Photo 115

Photo 116

James Cibich

From: James Cibich
Sent: Monday, 16 January 2023 10:48 AM
To: Nenad Milasinovic
Subject: RE: 26 Mayfair Street, Maylands

Hi Nenad,

Thanks for your patience in waiting for my response on this one. It's been a busy start to the year! And yes my break was good (although too short!). I hope you had an enjoyable break and your 2023 is starting well.

I have provided responses to your queries below in red.

Do not hesitate to contact me if you wish to discuss.

Kind regards,

James Cibich
BE(Hons), LL.B, MIEAust CPEng NER
Diagnostic Structural Engineer

372 Grange Road, Kidman Park SA 5025
PO Box 594 Henley Beach SA 5022
M: 0401 231 535 E: james@impartaengineers.com.au

IMPARTA
ENGINEERS

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From: Nenad Milasinovic <NMilasinovic@npsp.sa.gov.au>
Sent: Friday, 13 January 2023 9:59 AM
To: James Cibich <James@impartaengineers.com.au>
Subject: RE: 26 Mayfair Street, Maylands

Hi James

Just a brief email to see if you have had an opportunity to consider my email below please.

Best regards

Nenad Milasinovic
SENIOR URBAN PLANNER

City of Norwood Payneham & St Peters
175 The Parade, Norwood SA 5067
Telephone 8366 4537
Facsimile 8332 6338
Email NMilasinovic@npsp.sa.gov.au
Website www.npsp.sa.gov.au

Think before you print.

From: Nenad Milasinovic
Sent: Wednesday, 4 January 2023 5:25 PM
To: 'James Cibich' <James@impartaengineers.com.au>
Subject: 26 Mayfair Street, Maylands

Hi James

Firstly, Happy New Year – I hope you had a break over the festive period and if so, that it was enjoyable.

In terms of this property, I am in the process of finalising my planning assessment of this Application.

Having regard to your detailed report, it is my understanding that the extent of the most severe damage is concentrated around the north-eastern corner of the dwelling (ie. ie. Bedroom 1) yes – further detail provided below, with the remainder of the dwelling suffering damage that appears to be of a cosmetic nature (ie. very slight to slight cracking) which in turn is not uncommon for a dwelling of this era in this part of Adelaide yes with regards to masonry wall cracking, but note that the internal wall surfaces are covered by fibrous plaster 'false walls' (which hides the true extent of masonry cracking), and also note my feedback on the roof, roof structure, and the condition of the rear lean-to. Furthermore, the extent of very slight to slight cracking can be better managed moving forward through improved soil moisture management (such as you have suggested by addressing any sewer leaks and installing sub-soil irrigation for example). This is mostly correct. The most severe damage to the masonry walls of this dwelling is to the north-eastern corner as you have indicated. The damage (including to the north-eastern corner) is not a 'structural concern' for the building, but it does require maintenance to prevent its further deterioration (noting that further deterioration may lead to structural issues (although I would expect that such issues are years away)). The 'maintenance' would involve local repair / rebuilding of brickwork and stabilising the footing. Methods for stabilising the footing vary depending on what is trying to be achieved (it can include basic soil moisture management, but may also include underpinning – the latter should only be adopted as a last resort and only with a strict understanding of the performance risks as outlined in my report). In my experience, soil moisture management is effective at stabilising these types of dwellings and should be adopted as a 'first tier' approach. If soil moisture management is ineffective after a period of implementation (two or so years depending on the results), more invasive approaches (such as underpinning) may be considered.

In this context, is it possible for you to provide me with an indicative cost estimate please with respect to structurally rectifying the north-eastern section of the house, namely reconstructing the walls and stabilising the corresponding footings. With this information in mind, I can make a determination as to whether the structural integrity of the building is beyond reasonable repair or otherwise as called for by the relevant demolition control planning assessment policy,

contained in the Planning & Design Code. I have no expertise in cost estimation so I'm afraid I am unable to provide a value for your consideration. However, I provide the following 'scopes' for the 'maintenance' works that I expect would be required to mitigate the deterioration of the north-eastern corner. You may be able to have this costed by a quantity surveyor or by a maintenance or building contractor. Note that I provide two options, a 'best case' and 'worst case' scope. The 'best case' is where the dwelling responds well to soil moisture management, the 'worst case' pertains to where soil moisture management is ineffective and structural augmentation of the footing becomes necessary. It is my view that 'best case' would probably be successful and should be adopted for Council's purposes. However, Council should also be aware that the 'worst case' situation is possible and only further engineering evaluation over time can lead to a better understanding of the likelihood of it being required. Note also that these scopes are for the north-eastern corner only and that no 'correction' of previous footing movements are allowed (such as jacking the building to correct any previous settlement). I refer you to my report regarding other issues with the dwelling that require attention (roof, lean-to etc).

Best case scope:

1. Carry out landscape maintenance.
2. Check all plumbing and upgrade / repair as required (including stormwater).
3. Repair masonry to north-eastern corner. A conservative cost estimate would include rebuilding a section of wall 1m x 1m x 4m high at this corner, although I expect only the lower 1m or so masonry would need reconstruction (the rest could be repointed). The actual extent of repair would need to be confirmed by a masonry contractor.
4. An allowance should be made for replacement of some brickwork that has deteriorated from salt damp etc.
5. Re-render footing plinth.

Worst case scope:

1. As per 'Best case scope'.
2. In addition, install 6 / 300mm diameter x 4.5 metre reinforced concrete deep bored pier underpins. N32 concrete and reinforced with 4/N16 bars and W8 ligs at 300mm centres.
3. Replace path adjacent to underpins as required.

Best regards

Nenad Milasinovic
SENIOR URBAN PLANNER

City of Norwood Payneham & St Peters
175 The Parade, Norwood SA 5067
Telephone 8366 4537
Facsimile 8332 6338
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Our ref: 1290922JAC(2)

27 September 2023

City Of Norwood Payneham & St Peters
175 The Parade
KENT TOWN SA 5067

Attention: **Mr Kieran Fairbrother**

Dear Sir

Site: **26 Mayfair Street MAYLANDS SA 5069**
Property Owner: **Paree Vergis & Mark Anderson**
Reference: **22029884**
Subject: **Re-inspection of Dwelling**

This report is supplementary to our earlier report on this matter dated 30 November 2022 (our 'Previous Report'), prepared following our original site attendance of 30 September 2022. We also provided additional advice to Council in our email to Mr Nenad Milasinovic of 16 January 2023, a copy of which we have attached to this report for completeness.

In accordance with your instructions, our Mr James Cibich re-attended the above site in company with the property owners, Ms Paree Vergis and Mr Mark Anderson, on 21 August 2023. You requested we inspect the dwelling after linings had been removed from some of the internal walls and provide further comment on the dwelling's structural condition. You also requested we review a report provided by the property owner that was prepared by structural engineering firm Magryn & Associates Pty Ltd dated August 2023 (the Magryn Report).

OBSERVATIONS

As discussed in our Previous Report, the internal walls of this dwelling have been lined with fibrous plaster sheets installed over timber battens fixed onto the structural masonry walls. Covering internal walls with 'false' linings was (and remains) a common strategy used to conceal the effects of differential footing movement, particularly in buildings suffering from considerable movements or movements that proved difficult to prevent.

Since our September 2022 inspection, the property owner has removed linings from Bed 1, Bed 2 and the Living Room (with reference to the room names used in our Previous Report). As expected, the removal of the linings has exposed cracking to several of the underlying masonry walls, and areas of missing render and hard plaster wall finish. Where the hard plaster was missing from internal faces of the external walls, it appeared the walls were of stone masonry construction. The internal walls appear to be mostly clay brick construction.

Key observations made during our recent inspection include:

- 20mm wide crack in Bed 1's southern wall (common with the Entry).
- Considerable areas of missing render and hard plaster finish to internal walls.
- The walls in the north-eastern corner of Bed 1 are leaning outwardly (consistent with observations made in our Previous Report).
- Tie-rods have been chased into the plaster finish of several internal walls. Tie rods were typically installed in historic masonry dwellings in an attempt to stabilise building suffering from differential footing movement.
- The top courses of Bed 2's northern wall (common with the Entry) are bowed out of plane and are also suffering from differential vertical movement.
- Bed 2's eastern wall is leaning outwardly.
- The Living Room ceiling has detached from the frame at its south-eastern corner.
- The top of the Living Room's northern wall (common with the Entry/Hallway) has rotated out of plane and the brickwork has considerable cracking in the area of a tie-rod connection.

We have also reviewed photographs of the damage taken during our 2022 inspection for comparison against those taken during our recent inspection. We did not identify any noticeable change in the damage (other than the new damage revealed by the removal of internal linings, as discussed above).

COMMENTS ON FINDINGS

In our Previous Report at page 8, we advised:

> *Most cracking was measured to be within Damage Category 1 (Very Slight, < 1mm wide) or 2 (Slight, < 5mm wide) of Table C1 of AS 2870 Residential Slabs & Footings.*
>
> *However, some cracks were determined to be in the more severe categories: the gapping in the north-eastern corner of Bed 1 was measured to be approximately 25 – 30mm. If this measurement reflects the movement in the substrate, this puts the movement at this corner beyond Damage Category 4 (Severe, 15 – 25mm wide). The cracks above the doorway in Bed 1 and in the Living's north-western corner were measured as 10mm wide; Damage Category 3 (Moderate, 5 – 15mm wide). However, we note all internal cracking that was measured was undertaken on the fibrous plaster linings, which are more flexible than the masonry substrate behind it. The cracking to the substate may be more severe (this could be confirmed by removing the fibrous plaster linings, if required). The external cracking to the northern elevation was between Damage Category 3 and 4.*

The removal of the fibrous plaster linings exposed damage to the walls of Bed 1, Bed 2 and the Living Room that were, by our assessment, either within or beyond Damage Category 4 (the most severe damage category provided in Table C1 of AS 2870). In our opinion, this damage warrants, at least, local reconstruction of the affected walls down to sound brickwork. We advise that the extent of rebuilding work required cannot be definitively determined until a masonry contractor commences work. However, we expect the lower half of the affected walls could be retained structurally (noting other limitations with retaining the existing structure discussed further below and in our Previous Report).

The removal of the fibrous plaster linings also revealed considerable areas of missing hard plaster finish to the internal walls. In our experience, the unsightly appearance of missing plaster can cause concern to the lay observer, although the structural implication is usually not significant in and of itself. Once the masonry substate is repaired, the walls can be replastered to return a more pleasant aesthetic.

Due to the extent of deterioration to the hard plaster, we expect the hard plaster and render would need to be removed and reinstated to all walls internally. Removal of the hard plaster may also reveal further issues and deterioration in the masonry substrate, that may require additional rebuilding. Again, this can only be definitively assessed once repairs are attempted.

New information notwithstanding, we maintain our view as set-out in our Previous Report that the dwelling *could* be stabilised in its current condition (after the above-mentioned repairs are undertaken) through various strategies to control the moisture state of the reactive clay foundation soils. The current damage to this dwelling is more severe than what we expect would be considered acceptable by a reasonable building owner. However, this damage is likely the cumulative effects of decades of inadequate maintenance – noting the internal masonry walls have not been repaired since they were covered by the fibrous plaster linings, which could have occurred as much as 60 years ago or more (based on the fibrous plaster material that was used).

This is consistent with the apparently slow changing nature of the damage. Despite the property not being well maintained over several years, and it being unoccupied in the 11 or so months since our 2022 inspection, no significant change to the damage or the building has occurred since our 2022 inspection. In our opinion, this indicates that the dwelling is not remarkably unstable in its current form despite an absence of maintenance. Therefore, we expect if the dwelling and landscaping were better maintained, the building's stability could also be improved.

Although, we should make clear that, because this building has bluestone masonry footings and is of solid masonry construction, it will be far more susceptible to the deleterious effects of differential footing movement than a dwelling constructed with a new footing and modern building methods. Consequently, if the property owners are to retain the existing dwelling, it will require greater diligence and maintenance than if they were to construct a new dwelling. This would most likely result in more regular appearance of wall and ceiling cracking (compared to a new dwelling), even if site moisture management is improved and repairs are completed to the superstructure. We expect any damage that does occur after this time could be repaired cosmetically.

If the property owner wishes to implement a more assured method of improving the dwelling's stability, it might be necessary to consider underpinning the entire dwelling (noting commentary in our Previous Report regarding the risks of underpinning).

We also state for absolute clarity that it is not guaranteed that this building will not need to be entirely underpinned. If attempts to stabilise the foundation through soil moisture management are unsuccessful, complete underpinning of the building may prove necessary. If the entire building is underpinned after the building has already been renovated and the site's landscaping improved, those renovations and landscape improvements may need to be entirely redone and/or other significant works would need to be undertaken to the building (such as removal of timber floors internally or concrete paths externally).

COMMENT ON MAGRYN REPORT

As requested, we have reviewed the Magryn Report. From our interpretation of the report, the observations and measurements mostly align with those made by this office (as set out in both of our reports).

In our opinion, the extent of works set out in the 'Repair Works Required' section on page 11 is not unreasonable. Although, this office takes the view that underpinning the entire building may not be required, whereas the Magryn Report recommends the entire building be underpinned if a repair were to be attempted (noting Magryn do not recommend a repair be

attempted). As explained above, it is our view that the building could be repaired without underpinning it entirely. However, we also refer to our discussion above regarding the longevity of repairs and the 're-work' that may be required to repairs and landscaping improvements if measures to stabilise the foundation's moisture state are unsuccessful.

SUMMARY

As a result of our further inspection, we modify and/or confirm the opinions of our Previous Report to be as follows.

1. The building has undergone differential footing movement throughout its past, resulting in cracking and rotation of walls and other structural elements.
2. The condition of the main dwelling is not inconsistent with one of its age and construction. Although, due to an absence of maintenance over many years, more considerable repairs are currently required to restore the dwelling to a more habitable standard than a well maintained dwelling of the era. Most of the main dwelling could be stabilised in its existing condition through various strategies to control the moisture content of the reactive clay foundation soils. We do not expect these strategies would be costly, although they would need regular appraisal.
3. It is necessary to locally reconstruct the walls in the dwelling's north-eastern corner to remediate the more severe movement that has occurred to this area. It may also be necessary to underpin the footing at this location (however, regard should be had to the associated risks of local underpinning as discussed in our Previous Report).
4. It is necessary to locally reconstruct the top halves of:
    a. the southern wall of Bed 1,
    b. the northern wall of Bed 2, and
    c. the northern wall of the Living Room.
5. It will likely be necessary to remove and replace hard plaster internal finishes to all walls. Removal of hard plater and other fibrous plaster 'false linings' may also expose further damaged or deteriorated brickwork that may necessitate further masonry rebuilding.
6. To correct all previous building movements and/or to provide a less maintenance reliant method of stabilising the dwelling, it would probably be necessary to install underpins / jacking platforms beneath all footings. These works would be considerably expensive, and would not guarantee the prevention of all cracking into the future. Full reinstatement of the building's *original* condition may not be achievable without considerable reconstruction works.
7. The wet areas (bathroom, laundry and WC) require replacement.
8. The rear lean-to (which incorporates the laundry, WC, and kitchen) requires considerable maintenance, which we expect will require rebuilding the floors and some walls. It may be economically viable and structurally advantageous to demolish and reconstruct the lean-to on a modern footing. This could be confirmed by arranging a cost analysis (costing of construction works are beyond the area of our expertise).
9. Dampness is an issue for the building. It is likely damp proofing measures (such as undersetting or chemical damp proof course treatment) will be required to permanently resolve the issue.
10. The roof sheeting requires replacement. Is likely that the roof frame to the main dwelling will require framing upgrades, as discussed in our Previous Report.
11. The sub-floor ventilation is inadequate and will require upgrading, as discussed above.
12. The front and rear verandahs require reconstruction, as discussed in our Previous Report.
13. The stormwater, sewer and waste pipework probably require replacement with modern PVC pipework (at the very least, it requires investigation).
14. The electrics and wiring may have been upgraded recently and may be compliant with current regulations (this should be confirmed by an electrician as it is beyond our area of expertise).

We trust this report is sufficient for your present requirements. If you have any further queries regarding this matter, please do not hesitate to contact the undersigned.

Yours faithfully

James Cibich BE(Hons) LL.B, MIEAust CPEng NER
Imparta Engineers
Phone: (08) 8150 5500
james@impartaengineers.com.au

Attached
- Photos
- Email to Council of 16 January 2023

Photo 1 – Bed 1 southern wall (shared with entry)

Photo 2 – Close up of crackingshown in Photo 1

Photo 3 – Bed 1's northern wall

Photo 4 – Bed 1's northern wall

Photo 5 – Rotation of Bed 1's eastern wall

Photo 6 – Rotation of Bed 1's northern wall

Photo 7 – Tie-rod chased into norhtern wall of Bed 1, distortion to walls and deterioration of plaster

Photo 8 – Bed 2's northern wall, brickwork to top half of wall requires reconstruction

Photo 9 – View of northern Bed 2 wall showing out of plane movement

Photo 10 – Overall view of Bed 2's northern wall showing conditino of plaster

Photo 11 – Internal view of external wall showing random stone masonry construciton

Photo 12 – Rotation of Bed 2's eastern wall consistent with long-term settlment towards east

Photo 13 – Living room's ceiling has detached from frame in south-eastern corner

Photo 14 – Overall veiw of living room's northern wall

Photo 15 – Tie rod end plate in Living room's northern wall, rotation of brickwork around end plate

Photo 16 – Gap between straight edge and living room's northern wall shows distortion to top brick courses

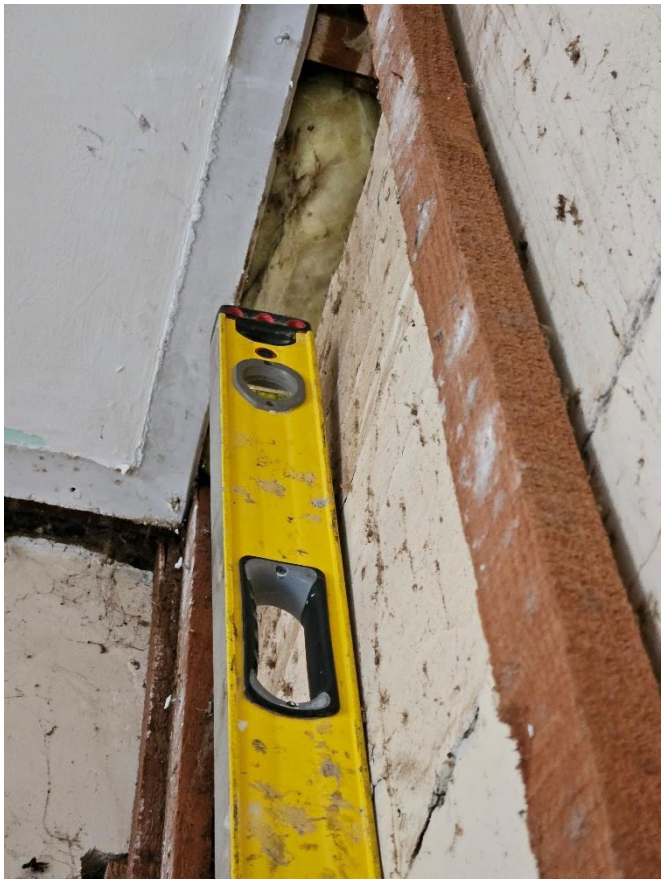


Photo 17 – Close up of top of straight edge shown in Photo 16

Photo 18 – Cracking to Living room's northern wall

Photo 19 – Cracking to Living room's northern wall

ROBB

9 November 2023

Kieran Fairbrother
SENIOR URBAN PLANNER
City of Norwood Payneham & St. Peters
175 The Parade, Norwood SA 5067

By Email

OUR REF: 23-P100.01

Dear Kieran

RE: - Existing Dwelling at 26 Mayfair Street MAYLANDS SA – Remedial and Repair Works

Robb Partners associate, Kym Fuss, attended the site in the presence of Ms. Paree Vergis & Mr. Mark Anderson on Friday 24th November 2023 for the purpose of familiarisation with the existing structural integrity of the dwelling, and recorded digital images for cost and record purposes.

We attach our Opinions of Probable Construction Cost (OPC1) for two scenarios for the current dwelling.

1) Remedial and Repair Works to Existing Dwelling : - The first OPCC is for remediation works to the existing dwelling in accordance with the recommendations contained in Reports Ref: 1290922JAC(1) dated 30 November 2023, and 1290922JAC(2) dated 27 September 2023, as-prepared by IMPARTA Engineers, and also with our observed structural conditions during visit to the site at which time we recorded issues which weren't necessarily covered by the IMPARTA documents.

It would be necessary for a building contractor to engage the services of a pier-boring subcontractor for the purposes of boring up to 5.0m deep for underpinning the existing footings, and as such we have assumed that the widths of the adjacent streets are such that manoeuvring of such a rig into the property would be possible.

Remedial and Repair Works to Existing Dwelling

The Imparta reports recommends the underpinning of the external wall footings to the western, northern and eastern walls, installation of 450mm diameter bored reinforced concrete piers approximately 4.50m deep at 1.20m centres plus hand-excavated 'beams' poured on top of the piers and grouted up to the underside of the existing footing.

We offer that our experience has shown that this underpinning is only likely to succeed if the footing is of an integral and rigid construction, however Imparta states that the footings are 'bluestone flags' which are held together with a what appears to be most likely lime-mortar mix.

This type of footing generally is not very integral when worked around, however for the purpose of the attached OPCC No. 1 and in the absence of any additional structural information it has been assumed that the footing can be underpinned in the method suggested by Imparta.

The Imparta report does mention that the roof sheeting requires replacement, and that the roof structure possibly is not compliant and as such would need to be either strengthened or rebuilt to attain compliance in any case.

Our OPCC allows for the complete removal of existing and construction of new roof structure, gutters, flashings and cappings, and down pipes.

We have allowed to construct new ceilings in paint-finished flush plasterboard in lieu of matching the existing fibrous plaster ceilings; The existing ceilings would have to be replaced because of the complete roof and structure replacement

Western 'Extension'.
We have included a cost to demolish and then reconstruct the predominantly wet area extension comprising WC,Laundry and kitchen to the south of the original structure based on a brick-veneer construction with standard plasterboard ceilings on a stiffened raft slab and footings.

Departures from Imparta Reports
We have departed slightly from Imparta's recommendations in that our OPCC includes the use of an industry-recognised stainless steel brickwork tie (HELIBAR) for placement into mortar courses at 3-course height centres over cracks, epoxied into the mortar coursing.

We have also allowed for complete new electrical services because removal and replacement of the roof and ceilings plus rebuilding of the top 'half' of some of the internal walls would necessitate this, in our opinion.

Opinion of Probable Construction Cost (OPCC) for 'Suggested' Remedial Works to Existing.

Our Opinion of Probable Construction Cost for the remedial and repair works to the existing dwelling suggested by Imparta including a cost for replacement of the western addition is in the vicinity of **$890,000.00 including 10% GST.**

However even with the expenditure of this amount of money, the owners would still have a dwelling With somewhat compromised structural integrity with only 3 of the 4 external walls being underpinned.

We have recently provided OPCCs for identical repair/remedial work to similar-sized cottages in the Goodwood area with final figures being in the vicinity of **$1.0m including GST**

ROBB

IMPARTA 'WORST CASE SCENARIO'
Underpinning of All External Footings to Dwelling plus Western Extension Replacement
We have prepared/extrapolated also an 'estimated' cost to include for underpinning of **all** external footings of the dwelling plus replacement of the western extension.

In order to enable access to the southern external wall footings by the boring rig for the purpose of underpinning the footings, there would need to be substantial demolition and replacement of the northern wall plus the majority of the internal walls.

The greater majority of the floorboards, joists and bearers plus any dwarf walls and their footings would need to be removed, because it is quite possible that the mass of a suitably-sized boring rig would be quite likely to fracture whatever footings or substructure exists.

A sensibly-priced replacement of internal floor and footings would be to construct a stiffened raft slab within the confines of the external footings rather than to underpin weak footings and dwarf walls etc with a replacement timber floor structure and boards.

Our OPCC for the suggested repair work to the original dwelling plus the replacement of the western Extension as a Worst Case Scenario as outlined above would be in the vicinity of **$1.20+ M including 10% GST** if all footings including the internal footings had to be underpinned with bored piers.

Notes and Exclusions to The Estimated Costs

We bring the following to your attention regarding the attached estimated costs, namely: -

- We have included a percentage against construction costs to allow for the engagement of an architect plus structural engineers,heritage architect and services engineers because of the bespoke type of construction that either of the two above scenarios would entail, neither would be considered as being 'standard';
- We have included allowance for full time on-site supervision during the works which such bespoke construction would require; Preliminaries have been assessed at 25% which includes supervision, maintenance of the site, insurances, contractor's overhead and profit margin;
- An allowance of 15% has been included for Design Development, Estimating and Tendering Contingency due to the fluctuations resultant of the unknowns of the subcontractor and head contractor pricing regimes and the almost constant rise in materials costs which we are currently experiencing in the pricing of works;
- An allowance of 10% has been included for a Construction Contingency to take into account costs resultant of potential 'unknowns' at the site.
- We have included our assessment of escalation in construction costs based on either of the two scenarios achieving completion by December 2024.

We trust that the above is sufficient for your current requirements, however please do not hesitate to contact the writer at the office should you wish to discuss the above and attached, or have any queries or require additional information

Yours faithfully
Robb Partners

Kym Fuss

Associate

(Mob: 0412412749)

Elemental Summary

Project: 26 Mayfair Street MAYLANDS
Building: 26 Mayfair Street MAYLANDS
Details: 26 Mayfair Street Maylands

Code	Description	Quantity	Unit	Total
AR	Demolition, Sundry Associated Works			23,767
SB	Substructure			8,550
UP	Underpinning of External Walls Only			157,426
RF	Roof Struct.ure and Covering			34,490
EW	External Walls			26,655
ND	Internal and External Doors			7,325
FF	Floor Finishes			15,754
WF	Wall Repair Works and Finishes			50,396
WF	'Crack-Stitching' of Walls			17,985
CF	Ceiling Finishes			19,616
FT	Fitments			2,850
AP	Appliances			650
LP	Electrical Services			17,565
HS	Hydraulic Services			14,900
XD	External Sewer Drainage			6,115
XK	External Stormwater Drainage			7,465
XP	Paving			6,290
XL	Landscaping			10,000
	Sub-Total_1			**427,799**
	DEDUCT Included NET cost (rounded) Rear Extension -- See Attached Summary			**-91,000**
	Sub-Total_2			**336,799**
DC	Design Development/Estimating/Tendering Contingency, 15%			50,520
PR	Contractor's Preliminaries Costs, Overhead and Profit Margin, 25%			96,830
SC	Statutory Authorities' Fees and Charges, 0.45%			2,179
CC	Construction Contingency Allowance, 10%			48,633
E1	Escalation in Costs from current day until Completion of Construction, possibly 8 months			21,398
E2	Escalation in Costs from construction start until Completion of Construction, likely 12 months			18,082
PF	Allowance for Professional Fees for Architect, Heritage Architect, Structural Engineer etc, 12% excluding escalation factors			64,195
	Sub-Total excluding GST			**638,635**
GS	GST at 10%			63,864
	TOTAL CONSTRUCTION COST including 10% GST			**702,499**
	NOTES & EXCLUSIONS	1	Note	
	NOTES	1	Note	
	This estimate is a high-level Opinion of Probable Repair and Reconstruction Cost based on the following: -	1	Note	
	:- Complete removal of the existing roof covering and structure and ceilings and replacement with new;	1	Note	

Elemental Summary

Project: 26 Mayfair Street MAYLANDS
Building: 26 Mayfair Street MAYLANDS
Details: 26 Mayfair Street Maylands

Code	Description	Quantity	Unit	Total
	:- Demolition of existing lean-to extension at the rear of the dwelling and replacement with new;	1	Note	
	:- digital images plus some dimensions of existing dwelling recorded at the site on Friday 24th November 2023	1	Note	
	:- The contents of Structural Condition Assessment of Existing Residence reports Ref: 1290922JAC(1) & 1290922JAC(2) prepared by IMPARTA Engineers have also been taken into consideration for the basis of the estimated costs.	1	Note	
	:- Our visit to site in the company of the owners Paree Vergis & Mark Anderson on Friday 24th November 2023	1	Note	
	:- We can only assume that a suitable auger machine will be able to access and traverse the site to bore in-ground pier excavations ... should these underpinning piers need to be trenched by hand, considerable additional cost will be applicable.	1	Note	
	:- Provisional Sum allowances have been included in for rebuilding of brick plinth and silicone injection to obviate future rising damp issues.	1	Note	
	:- We have included costs to repair cracked brickwork to internal walls with stainless steel ties as 6mm diameter Helibar (HBR60) every 3rd course as recommended by the manufacturer, although this is not included in the reports provided by IMPARTA Engineers	1	Note	
	:- This Opinion of Probable Cost is based on the works being tendered by a minimum of three no. genuinely interested and competent builders, and does not take into consideration a premium likely to be applied if a single-select builder is engaged without a 'conventional' hard-money tender process.	1	Note	
	GENERAL EXCLUSIONS - The following are excluded from this estimate, namely:	1	Note	
	Soil remediation (unlikely)	1	Note	
	Feature light fittings, washing machine, dishwasher, refrigerator and the like	1	Note	
	Premium due to procurement method other than "hard-money" tendering by a minimum of at least 3 competent and genuinely interested contractors;	1	Note	
	Staged works;	1	Note	
	Out-of-Hours costs;	1	Note	
	Relocation costs;	1	Note	

Elemental Detail

Project: 26 Mayfair Street MAYLANDS **Details:** 26 Mayfair Street Maylands
Building: 26 Mayfair Street MAYLANDS

Code	Description	Quantity	Unit	Rate	Total
Demolition, Sundry Associated Works					
	Demolish existing bath, bathroom floor	5	m2	95.00	445
	Demolish existing ceilings & framing, and any remaining cornices, assuming all previous lathe & plaster ceilings already (previously) demolished	106	m2	29.00	35
	Demolish external cavity/rubble wall section of southern wall Bed 1 including all necessary sawcutting, propping etc	7	m2	135.00	891
	Demolish front verandah slab but salvaging steel tube columns	10	m2	42.00	438
	Demolish rear lean-to area & dispose	30	m2	60.00	1,806
	Demolish rear verandah	13	m2	45.00	580
	Demolish roof sheeting, gutters, down pipes, flashings and roof structure	120	m2	45.00	5,400
	Demolish the 'top-half' of internal walls to southern wall of Bed 1, the northern wall of Bed 2, and the northern wall of the Living Room including all necessary sawcutting, propping etc.	28	m	45.00	1,239
	Remove existing doors and door linings, architraves	6	no	150.00	900
	Remove remaining plaster from walls and clean/brush down	312	m2	15.00	4,676
	Remove timber battens from walls, assumed at 450mm ccs	755	m	1.25	944
	Remove remaining fibrous plaster and timber battens	50	m2	18.45	913
	Demolish existing paving to driveway, eastern side of house for access to footings	59	m2	0.00	0
	Hack off cement render to external face of footings to all external walls	42	m	75.00	3,150
	Install salvaged front verandah steel tube columns, repaint	2	no	735.00	1,470
	Construct bath hob	1	Item	880.00	880
	Demolition, Sundry Associated Works				**23,767**
Substructure					
	Stiffened raft slab to rear lean-to addition	30	m2	285.00	8,550
	Substructure				**8,550**
Underpinning of External Walls Only					
	After demolition of existing paving to provide access to footings to Western, Northern and Eastern walls ONLY	1	NOTE		
	Carefully hack off cement render to external face of footing plinths to all external walls	42	m	150.00	6,300
	Initial Underpins Installation @ 1.20m ccs	1	NOTE		
	A-Position an auger rig of suitable capacity along the walls nominated above, drill and pour 450mm diameter piers x 4.50m deep at 1.20m centres at an angle from footing face to found 'centrally' under the footing with 4N16 reinforcement vertically, top of pier to finish 400mm below underside of footings	17	no	1,992.46	35,396
	B-Hand-excavate below stone/rubble footing for spreader footing 1.0m long x 1.20m wide x 400 deep, pour concrete and float surface to compact flat finish NB: It is necessary to excavate working space out from the pier location to access under the footing	17	no	1,037.70	18,435
	C-Grout between spreader pad and underside of bluestone flag footing with expanding grout	17	no	273.00	4,641
	Secondary Underpins Installation @ 1.20m ccs	1	NOTE		
	Carry out operations A, B & C above for secondary underpins installation	14	no	3,303.18	46,244
	Provisional Allowance for rebuilding of brick footing plinths in sections	42	m	405.00	17,010

Elemental Detail

Project: 26 Mayfair Street MAYLANDS **Details:** 26 Mayfair Street Maylands
Building: 26 Mayfair Street MAYLANDS

Code	Description	Quantity	Unit	Rate	Total
Underpinning of External Walls Only					*(Continued)*
	Provisional Allowance for either silicone injection or undersetting to perimeter wall bases to prevent potential future rising damp	42	m	700.00	29,400
	Underpinning of External Walls Only				**157,426**
Roof Struct.ure and Covering					
	Roof complete to original cottage based on existing configuration	103	m2	215.00	22,145
	"Flat' roof to lean-to extension	30	m2	180.00	5,400
	Eastern (front) verandah roof including structure	10	m2	165.00	1,650
	Rear verandah roof	13	m2	165.00	2,145
	Posts & shoes to rear verandah	7	no	450.00	3,150
	Roof Struct.ure and Covering				**34,490**
External Walls					
	Brick veneer wall rear lean-to including insulation, painted plasterboard internal liing etc	51	m2	310.00	15,810
	Aluminium domestic indows incl flyscreens to rear lean-to	6	m2	455.00	2,730
	Paint finish to existing timber windows both faces	26	m2	35.00	910
	Clean-off and repaint external walls including picking-out quoins	131	m2	55.00	7,205
	External Walls				**26,655**
Internal and External Doors					
	Internal doors complete including linings, architraves, paint finish	7	no	825.00	5,775
	New external rear door complete	1	no	1,100.00	1,100
	Make good and repaint reused front door and frame/sidelights both faces	1	Item	450.00	450
	Internal and External Doors				**7,325**
Floor Finishes					
	After all repair works and clean-up, sand existing timber floors and apply 3 coats polyurethane clear finish to timber floor to original cottage	106	m2	35.00	3,710
	Period' timber skirting, painted finish	90	m	65.00	5,850
	Tiled floor to WC and laundry, rear entry	14	m2	105.00	1,470
	Tile skirting	21	m	20.00	420
	Sheet vinyl flooring to kitchen	14	m2	55.00	770
	Vinyl skirting	16	m	14.00	224
	Tiled floor Bath & alcove	13	m2	105.00	1,365
	Tile skirting	16	m	20.00	320
	Front verandah painted concrete slab complete	10	m2	105.00	1,050
	Replacement slab to original bathroom	5	m2	115.00	575
	Floor Finishes				**15,754**
Wall Repair Works and Finishes					
	Rebuild 'top-half' section of walls southern wall of Bed 1, the northern wall of Bed 2, and the northern wall of the Living Room. 28m2	1	Item	10,337.10	10,337

Elemental Detail

Project: 26 Mayfair Street MAYLANDS **Details:** 26 Mayfair Street Maylands
Building: 26 Mayfair Street MAYLANDS

Code	Description	Quantity	Unit	Rate	Total
Wall Repair Works and Finishes					*(Continued)*
	Replaster and repaint all walls	362	m2	59.00	21,358
	Prop front (eastern) wall of dwelling, and rebuild 'rubble' internal leaf in stonework	1	Item	16,460.00	16,460
	Replaster and paint eastern wall face of rear lean-to	29	m2	77.00	2,241
	Wall Repair Works and Finishes				**50,396**
'Crack-Stitching' of Walls					
WF	Repair cracked brickwork to internal walls with stainless steel ties as 6mm diameter Helibar (HBR60) every 3rd course (258mm spacing vertically) in accordance with manufacturer's recommended centres and spacings - noting that this item accounts STRICTLYfor currently-visible wall cracking and excludes to areas where top 'half' of walls being demolished and rebuilt. Provisional lineal metres of crack-stitching, lm allowed	131	no	137.00	17,985
	'Crack-Stitching' of Walls				**17,985**
Ceiling Finishes					
	10mm 'SupaCeil' plasterboard ceiling on/including timber battens/steel firring fixed to underside bottom truss chord/framing at 600mm centres, flushed and painted including to lean-to addition	136	m2	100.00	13,600
	50mm Standard plasterboard cornice to rear 'lean-to' extension	41	m	16.00	651
	Square-set cornice to front secton of dwelling	103	m	27.00	2,781
	Insulation laid on ceiling	136	m2	19.00	2,584
	Ceiling Finishes				**19,616**
Fitments					
	Vanity unit	1	Item	650.00	650
	Bench cupboard kitchen	1	Item	2,200.00	2,200
	Fitments				**2,850**
Appliances					
	Stove	1	Item	650.00	650
	Appliances				**650**
Electrical Services					
	New electrical power and lighting (batten-holders only, no light fittings) to original cottage	103	m2	105.00	10,815
	Provisional Sum Allowance for standard light fittings	1	PS	3,000.00	3,000
	Reuse salvaged switchboard	1	Item	incl'd	0
	New electrical power and lighting (batten-holders only, no light fittings) to rear lean-to incl connection/direct wiring stove	30	m2	125.00	3,750
	Electrical Services				**17,565**
Hydraulic Services					
	Double-drainer sink and mixer	1	no	2,450.00	2,450
	Floor waste and connection to sewer	4	no	650.00	2,600
	Hot water service, electric mains pressure	1	no	2,500.00	2,500
	Laundry trough & cabinet	1	no	950.00	950

Elemental Detail

Project: 26 Mayfair Street MAYLANDS
Building: 26 Mayfair Street MAYLANDS
Details: 26 Mayfair Street Maylands

Code	Description	Quantity	Unit	Rate	Total
Hydraulic Services					*(Continued)*
	New bath and mixer	1	no	2,250.00	2,250
	WC and cistern	1	no	2,650.00	2,650
	External bibcocks & reticulation to same	2	no	750.00	1,500
	Hydraulic Services				**14,900**
External Sewer Drainage					
	Excavate, remove, and supply & lay new 100mm PVC sewer drain and connect to fittings	39	m	135.00	5,265
	Connect to existing point	1	Item	850.00	850
	External Sewer Drainage				**6,115**
External Stormwater Drainage					
	Excavate, remove, and supply & lay new 100mm PVC sewer drain and connect to fittings	49	m	135.00	6,615
	Connect to existing point	1	Item	850.00	850
	External Stormwater Drainage				**7,465**
Paving					
	Broom-finished reinforced concrete paving including preparation, basecourse etc	74	m2	85.00	6,290
	Paving				**6,290**
Landscaping					
	Allowance for landscape planting, irrigation, mulching etc	1	Item	10,000.00	10,000
	Landscaping				**10,000**

Elemental Summary

ROBB PARTNERS

Project: 26 Mayfair Street MAYLANDS
Building: 26 Mayfair Street MAYLANDS
Details: 26 Mayfair Street Maylands - Rear Extension ONLY

Code	Description	Quantity	Unit	Total
AR	Demolition, Sundry Associated Works			2,386
SB	Substructure			8,550
RF	Roof Struct.ure and Covering			10,695
EW	External Walls			18,540
ND	Internal and External Doors			2,750
FF	Floor Finishes			2,884
CF	Ceiling Finishes			4,221
FT	Fitments			2,200
AP	Appliances			650
LP	Electrical Services			3,750
HS	Hydraulic Services			4,700
XD	External Sewer Drainage			6,115
XK	External Stormwater Drainage			7,465
XP	Paving			6,290
XL	Landscaping			10,000
	NET COST Sub-Total Excl GST			**91,196**
	NOTES & EXCLUSIONS-As Applicable	1	Note	
	NOTES	1	Note	
	This estimate is a high-level Opinion of Probable Repair and Reconstruction Cost based on the following: -	1	Note	
	:- Complete removal of the existing roof covering and structure and ceilings and replacement with new;	1	Note	
	:- Demolition of existing lean-to extension at the rear of the dwelling and replacement with new;	1	Note	
	:- digital images plus some dimensions of existing dwelling recorded at the site on Friday 24th November 2023	1	Note	
	:- The contents of Structural Condition Assessment of Existing Residence reports Ref: 1290922JAC(1) & 1290922JAC(2) prepared by IMPARTA Engineers have also been taken into consideration for the basis of the estimated costs.	1	Note	
	:- Our visit to site in the company of the owners Paree Vergis & Mark Anderson on Friday 24th November 2023	1	Note	
	:- We can only assume that a suitable auger machine will be able to access and traverse the site to bore in-ground pier excavations ... should these underpinning piers need to be trenched by hand, considerable additional cost will be applicable.	1	Note	
	:- Provisional Sum allowances have been included in for rebuilding of brick plinth and silicone injection to obviate future rising damp issues.	1	Note	
	:- We have included costs to repair cracked brickwork to internal walls with stainless steel ties as 6mm diameter Helibar (HBR60) every 3rd course as recommended by the manufacturer, although this is not included in the reports provided by IMPARTA Engineers	1	Note	
	:- This Opinion of Probable Cost is based on the works being tendered by a minimum of three no. genuinely interested and competent builders, and does not take into consideration a premium likely to be applied if a single-select builder is engaged without a 'conventional' hard-money tender process.	1	Note	
	GENERAL EXCLUSIONS - The following are excluded from this estimate, namely:	1	Note	

Elemental Summary

Project: 26 Mayfair Street MAYLANDS
Building: 26 Mayfair Street MAYLANDS
Details: 26 Mayfair Street Maylands - Rear Extension ONLY

Code	Description	Quantity	Unit	Total
	Soil remediation (unlikely)	1	Note	
	Feature light fittings, washing machine, dishwasher, refrigerator and the like	1	Note	
	Premium due to procurement method other than "hard-money" tendering by a minimum of at least 3 competent and genuinely interested contractors;	1	Note	
	Staged works;	1	Note	
	Out-of-Hours costs;	1	Note	
	Relocation costs;	1	Note	

HERITAGE IMPACT REPORT

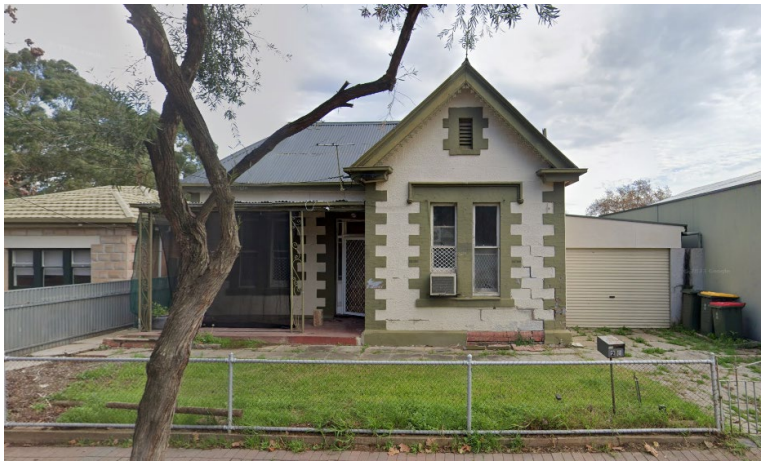
bbarchitects

PROPERTY ADDRESS:	**26 Mayfair Street Maylands**
APPLICATION NUMBER:	**22029884**
DATE:	9 January 2024
PROPOSAL:	Demolition
HERITAGE STATUS:	REPRESENTATIVE BUILDING MAYLANDS HISTORIC AREA OVERLAY
HERITAGE ADVISOR:	David Brown, BB Architects
PLANNER:	Kieran Fairbrother

City of Norwood Payneham & St Peters

ADVICE SOUGHT

I met with the applicants prior to their purchasing the property, and again several times after the purchase. I have been on the property and inside the house twice.



DESCRIPTION

The building is an Edwardian sandstone fronted villa. The site is located in the Established Neighbourhood Zone within the Maylands Historic Area Overlay.

PROPOSAL

The proposal is for complete demolition of the existing dwelling on the site. This is due to the structural integrity and the severely dilapidated condition of the building.

COMMENTS

The existing house clearly demonstrates the historic characteristics noted in the Historic Area Statement. It was likely constructed in the early 1900s, and is a traditional double fronted villa style dwelling constructed from peck faced sandstone with red brick quoins and surrounds. The design of the dwelling is typical of reasonable quality Edwardian houses constructed at the time with some understated but notable details for the time including the profiled brick main window hood moulding, finial, gable vent, adjustable front wall brick vents, and lace detailing remaining on the gable barge boards.

While the façade has been changed somewhat, it could be relatively easily restored by stripping the paint off and reconstructing an authentic verandah and front fence.

The house is set at the northern end of Mayfair Street in an immediate context of houses that do not demonstrate the characteristics noted in the Historic Area Statement. The adjacent house to the south is a post WW2 dwelling, and across the road are a group of late 20th century units. The next houses to the south on both sides of the street are Interwar Bungalows, then there are several Victorian era dwellings. The property is the northern most site in Mayfair Street in the Historic Area overlay, with the overlay only being applied to the western side of the street in this portion.

Unfortunately, the house was reworked in the mid 20th century with the original verandah being removed, and the brick and stone being painted over. The house was unoccupied for a reasonable time, and has suffered significant movement due to soil movement. This is evidenced by all the internal walls being lined with timber battens and plasterboard to cover the cracks, along with the clearly visible cracking on the exterior.

I met on site with the new owners to review the condition of the interior shortly after purchase, but due to the walls being lined, it was not possible to provide any useful advice. At that time the owners were looking to restore and add on to the building and had organised to meet several buildings on site. I visited the site later once some exploratory work was carried out and viewed the condition of the property and it became evident that restoration was likely to not be a viable outcome.

While I am always reluctant for houses of this design quality to be demolished, this is one of the very few I have seen recently where the condition is so bad that rectification is an unreasonable outcome give the economics of the required works, and likelihood of ongoing problems in the future. The location at the extreme end of the Historic Area overlay is also a factor as this is the only remaining character dwelling in the immediate context.

5.3 DEVELOPMENT NUMBER 23028657 - TOM CRAVEN - 64 NINTH AVENUE AND 66 NINTH AVENUE JOSLIN

DEVELOPMENT NO.:	23028657
APPLICANT:	Tom Craven
ADDRESS:	64 NINTH AV JOSLIN SA 5070 66 NINTH AV JOSLIN SA 5070
NATURE OF DEVELOPMENT:	Construction of tennis court lighting
ZONING INFORMATION:	**Zones:** • Established Neighbourhood **Overlays:** • Airport Building Heights (Regulated) • Character Area • Hazards (Flooding - General) • Prescribed Wells Area • Regulated and Significant Tree • Stormwater Management • Urban Tree Canopy **Technical Numeric Variations (TNVs):** • Minimum Frontage (Minimum frontage for a detached dwelling is 15m; semi-detached dwelling is 12m) • Minimum Site Area (Minimum site area for a detached dwelling is 500 sqm; semi-detached dwelling is 500 sqm) • Maximum Building Height (Levels) (Maximum building height is 2 levels) • Minimum Side Boundary Setback (Minimum side boundary setback is 1.5m for the first building level; 3m for any second building level or higher) • Site Coverage (Maximum site coverage is 50 per cent)
LODGEMENT DATE:	12 Oct 2023
RELEVANT AUTHORITY:	Assessment panel/Assessment manager at City of Norwood, Payneham and St. Peters
PLANNING & DESIGN CODE VERSION:	P&D Code (in effect) - Version 2023.13 - 31/08/2023
CATEGORY OF DEVELOPMENT:	Code Assessed - Performance Assessed
NOTIFICATION:	Yes
RECOMMENDING OFFICER:	Edmund Feary Senior Urban Planner
REFERRALS STATUTORY:	N/A
REFERRALS NON-STATUTORY:	N/A

CONTENTS:

DETAILED DESCRIPTION OF PROPOSAL:

The applicant proposes the construction of a series of tennis court lighting poles, with associated lighting. The tennis court (which does not require Development Approval) is associated with the dwelling at 64 Ninth Avenue.

While the elevation drawing provided by TMK Engineering shows a maximum height of 7m, the lighting analysis provided is based on a height of 6m. For the avoidance of doubt, 6m is the proposed height, with the elevation simply being a standard drawing which does not reflect the specific proposal. As these plans are technically consistent (since 6m is within the implied range of a 7m maximum), no updated plan is technically required, but a condition is recommended to further clarify this point.

BACKGROUND:

The owner of 64 Ninth Avenue, Joslin, has purchased the adjoining block (#66), with the intent of demolishing the dwelling on the site, and using it as a tennis court.

This is one of a series of applications including:

- 23017194- Swimming pool
- 23028653- Tennis court fencing
- 23037656- Outbuilding

The construction of the tennis court as such does not constitute development, nor does it vary an existing approval, and therefore does not require an application. None of the other three applications have triggered public notification. The swimming pool and outbuilding have both received Development Approval, but the fencing has thus far only received Planning Consent.

SUBJECT LAND & LOCALITY:

Site Description:

Location reference: 64 NINTH AV JOSLIN SA 5070
Title ref.: CT 5739/76 **Plan Parcel:** D3652 AL149 **Council:** THE CITY OF NORWOOD PAYNEHAM AND ST PETERS

Location reference: 66 NINTH AV JOSLIN SA 5070
Title ref.: CT 5726/291 **Plan Parcel:** D3652 AL150 **Council:** THE CITY OF NORWOOD PAYNEHAM AND ST PETERS

Shape: Rectangular

Frontage Width: Combined ~31.7m, 66 Ninth Ave, Joslin ~15.3m

Area: Combined 1502sqm, 66 Ninth Ave, Joslin ~730sqm

Topography: Mostly flat

Existing Structures: One detached dwelling on each allotment

Existing Vegetation: Front yard of 66 Ninth Ave has two mature trees on a lawn area, with another lawn area at the rear.

The subject land is both 64 and 66 Ninth Avenue, Joslin. The tennis court itself would be located on the allotment at 66 Ninth Ave, Joslin, but would be associated with the dwelling at 64 Ninth Ave, Joslin.

Locality

The locality is formed by both sides of Ninth Avenue, between Lambert Road and Koolaman Street, including the units with the address of 6 Koolaman Street, which run to the rear of the site.

The locality is predominately made up of detached dwellings, though there are units at both 6 Koolaman Street (16 units) and 72 Ninth Avenue (5 units). The street has a mix of housing styles, but is predominately single storey, with two examples of “outwardly” two storey buildings being outliers in the streetscape. The locality has a moderate level of tree canopy, with two significant street trees opposite the site being the most notable examples. There are stobie poles on both sides of the street. Fencing is mixed, though masonry and metal infill fencing is common in the streetscape.

There is one example of a tennis court in the locality, though this is a smaller “half-court” type arrangement with a basketball court, located at 74 Ninth Avenue.

CONSENT TYPE REQUIRED:

Planning Consent

CATEGORY OF DEVELOPMENT:

- **PER ELEMENT:**
  Other - Residential - Tennis Court Lights: Code Assessed - Performance Assessed

- **OVERALL APPLICATION CATEGORY:**
  Code Assessed - Performance Assessed

- **REASON**
  P&D Code; No pathway provided

PUBLIC NOTIFICATION

- **REASON**
  Development is not of a kind exempted by Table 5 of the Established Neighbourhood Zone, and is not minor in nature only

- **LIST OF REPRESENTATIONS**
  Three (3) representations were received during the notification period.

Given Name	Family Name	Address	Wishes to be Heard	In Support
Kevin	Naughton	60 Ninth Ave, Joslin	No	Yes
Vera	Vismara	3/6 Koolaman St, Joslin	No	No
Nola	Place	63 Nelson St, Rozelle, NSW (owner of 12/6 Koolaman St, Joslin and intends to move in soon)	No	Yes, with concerns

- **SUMMARY**
  Representors concerns related to:
  - Visual impact of light poles;
  - Noise impacts of playing tennis late at night; and,
  - Light spill.

AGENCY REFERRALS

Not required.

INTERNAL REFERRALS

Not required.

PLANNING ASSESSMENT

The application has been assessed against the relevant provisions of the Planning & Design Code, which are contained in Appendix One.

Land Use

The proposed tennis court is associated with the residential use of the land, given its association to the dwelling at 64 Ninth Avenue. Residential uses are the primarily envisaged use within the Established Neighbourhood Zone, as per PO 1.1 of the Zone:

> *"Predominantly residential development with complementary non-residential activities compatible with the established development pattern of the neighbourhood."*

If the tennis court were to cease being used in association with the dwelling, it would constitute a change of use, and a Development Application would be required.

Height

The proposed light poles are 6m tall. The Zone does envisage two storey buildings, and a 6m height is consistent with a two-storey form.

The following Performance Outcomes should be noted:

> Established Neighbourhood Zone PO 4.1
> *Buildings contribute to the prevailing character of the neighbourhood and complements the height of nearby buildings.*
>
> Established Neighbourhood Zone PO 11.1
> *Residential ancillary buildings and structures are sited and designed to not detract from the streetscape or appearance of buildings on the site or neighbouring properties.*
>
> Character Area Overlay PO 2.2
> *Development is consistent with the prevailing building and wall heights in the character area.*
>
> Character Area Overlay PO 4.1
> *Ancillary development, including carports, outbuildings and garages, complements the character of the area and associated building(s).*

It should also be noted that the Character Area Statement identifies the following with respect to building height:

> *Single storey, with some two storey to the rear of buildings (with single storey appearance to primary street frontage).*

If a building were proposed of 6m in height in the same position as the proposed light poles, that would likely have significant impacts. However, as the light poles are not a "building", it is debateable whether ENZ PO 4.1 applies. Regardless, the proposed light poles are a far less visually obtrusive structure than any building would be. Given their low scale, despite their height, they are considered to suitably accord with the principles outlined above, since their scale is complementary to the scale of the prevailing built form in the locality.

Setbacks, Design & Appearance

The proposed poles are located along the service line of the tennis court. This is slightly behind the building lines of both adjacent dwellings, though they would be taller than these dwellings. Nonetheless, as noted above, given their slender nature, they have a modest scale, which is considered to be compatible with the Character Area.

Heritage

The site is not in a Historic Area, and there are no adjacent heritage places. As such, there are not considered to be any heritage implications.

Traffic Impact, Access and Parking

The proposed works have no impact on traffic or access, given that the works are associated with an existing dwelling, and do not alter any access arrangements.

Environmental Factors

Noise Emissions

The relevant policy is Performance Outcome 4.1 of the Interfaces Between Land Uses module:

> *Development that emits noise (other than music) does not unreasonably impact the amenity of sensitive receivers (or lawfully approved sensitive receivers).*

Nonetheless, it is considered that noise is not actually a relevant consideration in the assessment. As noted by the applicant, the construction of the tennis court itself is effectively landscaping works, and it does not require Development Approval. As such, the operation of the tennis court is not a relevant consideration in this Development Application. Rather, the question is whether the constructing and operation of the lighting associated with the tennis court, is acceptable.

Therefore, it is considered that the development which seeks consent in this application, does not emit noise, and therefore does not unreasonable impact audible amenity.

Light Spill

The relevant Code policy in relation to light spill is Interface Between Land Uses Performance Outcome 6.1:

> *External lighting is positioned and designed to not cause unreasonable light spill impact on adjacent sensitive receivers (or lawfully approved sensitive receivers).*

An Obtrusive Lighting Analysis has been prepared by Environmental Lighting Australia, who are suitably qualified in the area of assessing such impacts. This Analysis has assessed the proposal against AS/NZS 4282:2019 in both horizontal and vertical planes. It has concluded that the proposed lighting would have impacts that meet the provisions of this Australian Standard.

The Australian Standard includes different metrics for "curfew" and "non-curfew" hours. The "curfew" in the Australian Standard is 11pm-6am, though it does allow for the "controlling authority" to specify otherwise. The assessment conducted by Environmental Lighting Australia has considered the proposal against the non-curfew standards. As such, a condition is proposed that the lighting must be turned off between 11pm and 6am, in order to comply with the standard curfew.

Given that the proposal would comply with the relevant Australian Standard, this is considered to not be unreasonable, and therefore satisfies the Performance Outcome above.

CONCLUSION

The proposal seeks to construct lighting towers associated with a domestic tennis court at 66 Ninth Avenue, Joslin. The proposed lighting towers present within a minimal scale which complements the surrounding dwellings. They are also set back from the street consistent with the existing dwellings.

The lighting would be consistent with AS/NZS4282:2019, meaning that it would not result in unreasonable light spill.

The application is considered to sufficiently accord with the provisions of the Planning and Design Code so as to warrant approval.

RECOMMENDATION

It is recommended that the Council Assessment Panel resolve that:

1. Pursuant to Section 107(2)(c) of the Planning, Development and Infrastructure Act 2016, and having undertaken an assessment of the application against the Planning and Design Code, the application is NOT seriously at variance with the provisions of the Planning and Design Code; and

2. Development Application Number 23028657, by Tom Craven is granted Planning Consent subject to the following conditions and notes:

CONDITIONS
Planning Consent

Condition 1
The development granted Planning Consent shall be undertaken and completed in accordance with the stamped plans and documentation, except where varied by conditions below (if any).

Condition 2
The lighting herein approved shall only be operated in the “non-curfew” hours as specified by AS/NZS 4282:2019 i.e. outside the hours of 11pm-6am.

Condition 3
The proposed lighting poles shall be 6m in height, as stipulated on the Lighting Design Analysis prepared by Environmental Lighting Australia and dated 20 September 2023.

ADVISORY NOTES
Planning Consent

Advisory Note 1
No work can commence on this development unless a Development Approval has been obtained. If one or more Consents have been granted on this Decision Notification Form, you must not start any site works or building work or change of use of the land until you have received notification that Development Approval has been granted.

Advisory Note 2
Consents issued for this Development Application will remain valid for the following periods of time:

1. Planning Consent is valid for 24 months following the date of issue, within which time Development Approval must be obtained;
2. Development Approval is valid for 24 months following the date of issue, within which time works must have substantially commenced on site;

3. Works must be substantially completed within 3 years of the date on which Development Approval is issued.

If an extension is required to any of the above-mentioned timeframes a request can be made for an extension of time by emailing the Planning Department at townhall@npsp.sa.gov.au. Whether or not an extension of time will be granted will be at the discretion of the relevant authority.

Advisory Note 3
Appeal Rights - General rights of review and appeal exist in relation to any assessment, request, direction or act of a relevant authority in relation to the determination of this application, including conditions.

Advisory Note 4
The Applicant is reminded of its responsibilities under the *Environment Protection Act 1993*, to not harm the environment. Specifically, paint, plaster, concrete, brick wastes and wash waters should not be discharged into the stormwater system, litter should be appropriately stored on site pending removal, excavation and site disturbance should be limited, entry/exit points to the site should be managed to prevent soil being carried off site by vehicles, sediment barriers should be used (particularly on sloping sites), and material stockpiles should all be placed on site and not on the footpath or public roads or reserves. Further information is available by contacting the EPA.

Advisory Note 5
The granting of this consent does not remove the need for the beneficiary to obtain all other consents which may be required by any other legislation.

The Applicant's attention is particularly drawn to the requirements of the *Fences Act 1975* regarding notification of any neighbours affected by new boundary development or boundary fencing. Further information is available in the 'Fences and the Law' booklet available through the Legal Services Commission.

Advisory Note 6
The Applicant is advised that construction noise is not allowed:

1. on any Sunday or public holiday; or
2. after 7pm or before 7am on any other day

Advisory Note 7
The Applicant is advised that any works undertaken on Council owned land (including but not limited to works relating to crossovers, driveways, footpaths, street trees and stormwater connections) will require the approval of the Council pursuant to the *Local Government Act 1999* prior to any works being undertaken. Further information may be obtained by contacting Council's Public Realm Compliance Officer on 8366 4513.

Advisory Note 8
The Applicant is advised that the condition of the footpath, kerbing, vehicular crossing point, street tree(s) and any other Council infrastructure located adjacent to the subject land will be inspected by the Council prior to the commencement of building work and at the completion of building work. Any damage to Council infrastructure that occurs during construction must be rectified as soon as practicable and in any event, no later than four (4) weeks after substantial completion of the building work. The Council reserves its right to recover all costs associated with remedying any damage that has not been repaired in a timely manner from the appropriate person.

Advisory Note 9
The Council has not surveyed the subject land and has, for the purpose of its assessment, assumed that all dimensions and other details provided by the Applicant are correct and accurate.

Attachment 1

Ref: 23ADL-0577

URPS

Adelaide
27 Halifax Street
Enter via Symonds Pl
Adelaide SA 5000

08 8333 7999

Melbourne
Podium, Level 7
530 Collins Street
Melbourne VIC 3000

03 8593 9650

urps.com.au

27 September 2023

Geoff Parsons
Assessment Manager
City of Norwood Payneham & St Peters

Uploaded to PlanSA Portal

Dear Geoff

Proposed Tennis Court Lighting - 64-66 Ninth Ave Joslin

Introduction

URPS acts for Tom Craven, the Applicant in relation to the proposed development.

Council recently granted Development Approval for Development Application 23017194 which involved the construction of a swimming pool and associated structures. Development Application 23028653 has recently been submitted for fencing on the subject land.

This application relates to lighting for the tennis court to be positioned on 66 Ninth Ave.

In considering our assessment we've reviewed:

- Structural Calculations prepared by TMK Consulting Engineers.
- Lighting analysis prepared by Environmental Lighting Australia.
- The subject land and locality.
- The Planning and Design Code (version 2023.13, 31 August 2023).

Subject Land and Locality

The site comprises two contiguous allotments at 64-66 Ninth Ave, Joslin. It has a frontage of ~32m, depth of ~47m and an area of ~1511m^2. The site historically contained one dwelling on each allotment. Our client now resides No. 64 and has purchased the adjoining land at No. 66, with the intention of using both allotments as one integrated residential site.

The locality is entirely residential and low density in nature, although the presence of medium density residential units to the rear of the site is noted.

The Proposal

The proposal includes four tennis court lights on 7m high poles.

The tennis court fencing has been submitted to Council in DA 23028653.

The tennis court does not require Development Approval. Its formation does not involve building work, nor does it constitute a change of use - It is ancillary to the residential use of the site.

Procedural Matters

Approach to Assessment

Part 1 the Code is entitled "Rules of Interpretation". It includes the following information on the role of Designated Performance Features:

Policies - Desired Outcomes and Performance Outcomes

Zone, subzone, overlay and general development policies are comprised of desired outcomes (DOs) and performance outcomes (POs). These are applicable to performance assessed development and to restricted development.

Performance outcomes

Performance outcomes are policies designed to facilitate assessment according to specified factors, including land use, site dimensions and land division, built form, character and hazard risk minimisation.

Designated performance features

In order to assist a relevant authority to interpret the performance outcomes, in some cases the policy includes a standard outcome which will generally meet the corresponding performance outcome (a designated performance feature or DPF). A DPF provides a guide to a relevant authority as to what is generally considered to satisfy the corresponding performance outcome but does not need to necessarily be satisfied to meet the performance outcome, and does not derogate from the discretion to determine that the outcome is met in

another way, or from the need to assess development on its merits against all relevant policies.

(my underlining)

It is with the above approach in mind that we have assessed this application.

Categorisation

Section 105(b) of the Act prescribes that where development does not fall within the category of accepted development and does not fall within the category of impact assessed development it is code assessed development.

Section 107(1) of the Act prescribes that where a development cannot be assessed as deemed-to-satisfy development the application is performance assessed development and will be assessed on its merits against the Code.

Notification

The land is in the Established Neighbourhood Zone in the Planning and Design Code (the Code). Table 5 of the Zone identifies classes of performance assessed development that are excluded from notification, provided the development does not fall within a corresponding exception.

Lighting poles are not expressly identified in Table 5 and therefore require notification unless Council considers they are of a minor nature only and will not unreasonably impact on the owners or occupiers of land in the locality. Council can consider the lights minor for purposes of notification because:

- Only four lighting structures are proposed.
- The structures are only seven metres high and slender in nature,
- They are not located on any boundary.
- They are not in visually prominent positions as viewed from dwellings on adjoining land.
- Tennis court lighting is commonplace throughout the immediate locality and wider City of Norwood Payneham & St Peters Council area.
- The lighting analysis report reveals compliance with the illumination/luminance values in accordance with Australian Standard 4282.2019 Outdoor Lighting Obtrusive Effects.

For the above reasons the proposed tennis court will not unreasonably impact occupiers of land in the locality and therefore public notification is not required.

Planning Assessment

In our view, the most relevant planning considerations include:

- Land Use.
- Building Height.
- Amenity impacts (light spill).

Approach to Assessment

Part 1 – Rules of Interpretation of the Planning and Design Code (the Code) provides clarity on how to interpret the policies in the Code. Of particular note 'Designated Performance Features' (DPF) assist Councils to interpret Performance Outcomes (PO).

The Rules of Interpretation clearly state that a DPF provides a guide but does not need to necessarily be satisfied in order for a certain development to meet the PO i.e. the outcome can be met in another way:

In order to assist a relevant authority to interpret the performance outcomes, in some cases the policy includes a standard outcome which will generally meet the corresponding performance outcome (a designated performance feature or DPF). A DPF provides a guide to a relevant authority as to what is generally considered to satisfy the corresponding performance outcome but does not need to necessarily be satisfied to meet the performance outcome, and does not derogate from the discretion to determine that the outcome is met in another way, or from the need to assess development on its merits against all relevant policies.

It is with this approach in mind that we have assessed this development.

Land Use

The Desired Outcome (DO) for the Suburban Neighbourhood Zone seeks:

A neighbourhood that includes a range of housing types, with new buildings sympathetic to the predominant built form character and development patterns.

The proposed development does not alter the use of the land. Aspects of this application are to aid domestic tennis play for residents of the dwelling. These features do not alter the use of the land and therefore are acceptable in terms of land use.

Building Height

Lighting structures are located within the site and not on boundaries. They are slender in nature, and at a building height below Zone provisions.

Visual impact will be minimal due to the slender appearance of the lighting poles.

Amenity

Desired Outcome 1 under the general provisions in Part 4 of the Code states:

Development is located and designed to mitigate adverse effects on or from neighbouring and proximate land uses.

The following associated Performance Outcome 1 is also relevant:

External lighting is positioned and designed to not cause unreasonable light spill impact on adjacent sensitive receivers (or lawfully approved sensitive receivers).

The provisions that relate to light spill are qualitative, there is no numerical value that identifies whether the light spill/glare is acceptable. To aid in determining this value, the Australian Standard for Outdoor Lighting Obtrusive Effects (AS/NZS 4282:19) provides standards that are recognised by the Australian Government.

The Australian Standard provides for a maximum of 10 lux, among other technical lighting parameters, to spill up to 10 metres into adjoining yards. Light spill should not exceed 10 lux at the façade of such buildings limited vertically by the extent of any windows.

The proposed development has been designed in accordance with the AS/NZS 4282:19. The maximum illuminance value (Lux) within ten metres on adjoining land is less than 10 Lux and the intensity at vertical planes (Cd) is less than 12500 Cd.

The illuminance and luminous intensity at vertical planes pass the values in the relevant standard, as nominated by the compliance report. As such, it is fair to say that the proposed lighting has been designed to mitigate adverse effects to adjoining residents.

The general provisions of the Code seek for noise generating activities to achieve the relevant Environmental Protection (Noise) Policy criteria. Domestic noise under this policy refers to domestic machines and not 'people noise'.

Should 'people-noise' become excessive SA Police are authorised officers for making subjective assessments in such circumstance.

Noise generated from domestic tennis play is not expected to be worse than other backyard activities.

Conclusion

The proposal seeks to construct new lighting structures around a tennis court on the subject land, in association with the existing residential use of the land.

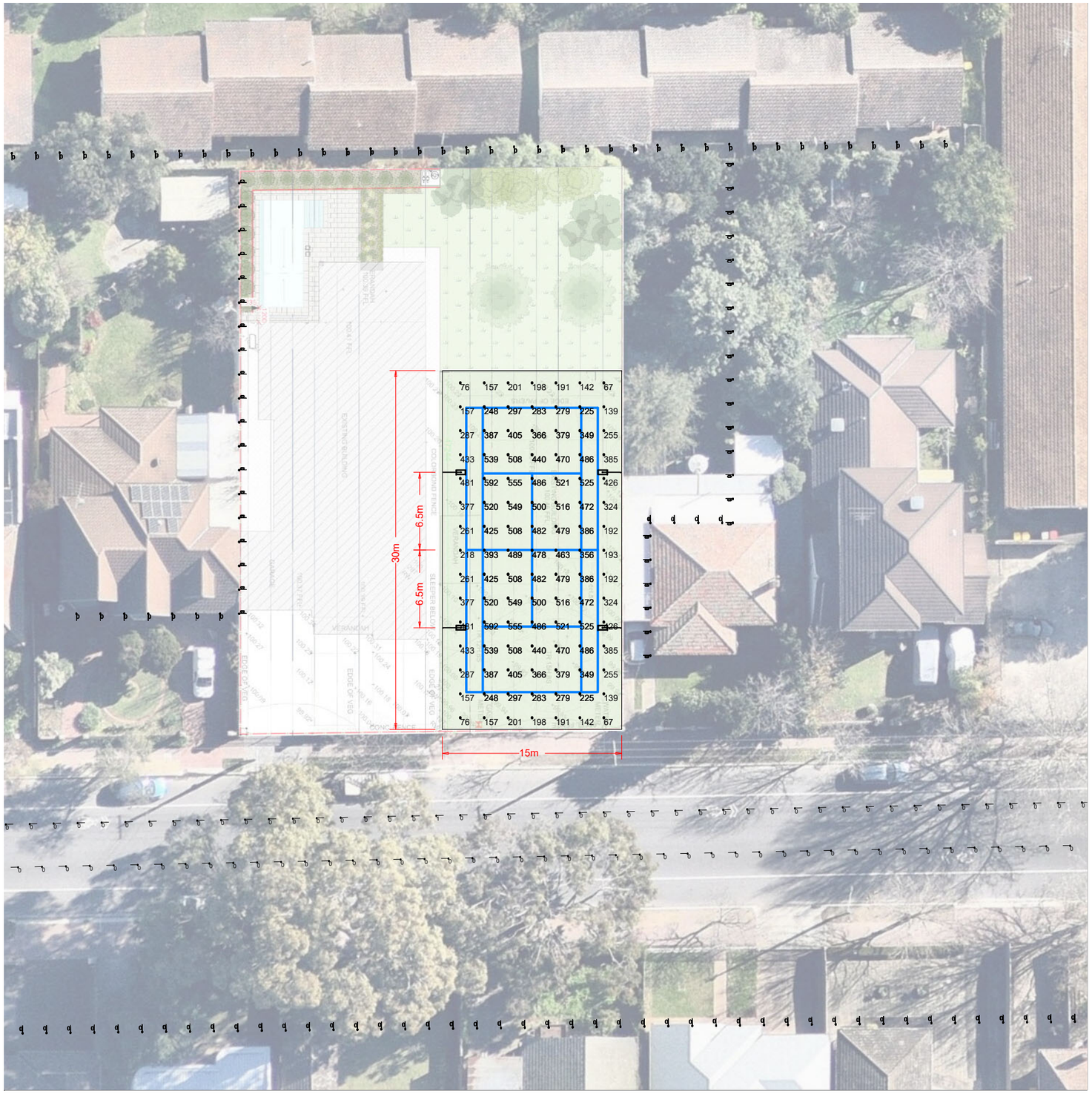
The visual impact of the new lights will be minimal due to the slender appearance of the lighting poles. These are also typical of tennis court lighting in a residential setting,

Light spill from the proposed light structures satisfies the parameters established by the relevant Australian Standard. As such Council can be satisfied that the lights have an appropriate impact on adjoining sensitive receivers.

For the reasons outlined above, the proposed development satisfies the relevant provisions of the Planning and Design Code and warrants planning consent.

Yours sincerely

Brigitte Williams
Consultant



Luminaire Schedule		
Qty	**Description**	**LLF**
2	ELA S360-FTMv3 - 1000mm OR	1.000
2	ELA S360-FTMv3 - 1000mm OR - BLS	1.000

LUMINAIRE MOUNTING:

Mounting Height: 6 metres
Mounting Bracket Outreach: 1000mm
Luminaire Upward Tilt: Nil (luminaire face mounted horizontal)

DESIGN NOTES:

Light Loss Factor (LLF) of 1.00 has been applied to all luminaires for the purpose of obtrusive light assessment.

Design complies with AS4282:2019.

No site visit by ELA prior to producing this lighting design.

CALCULATION POINTS:

TENNIS COURT:
Plane Height: 1m
Point Spacing: 2m
All calculation points as per AS2560.2

VERTICAL OBTRUSIVE LIGHT:
Grid starting height: 1.5m
Grid finishing height: 6.5m
Point spacing horizontally: 2m
Point Spacing vertically: 1m

Calculation Summary							
Project: AS2560.CALCULATIONS							
Label	**CalcType**	**Units**	**Avg**	**Max**	**Min**	**Min/Avg**	**Min/Max**
PPA	Illuminance	Lux	439.0	592	225	0.51	0.38
TPA	Illuminance	Lux	366.1	592	67	0.18	0.11

Obtrusive Light - Compliance Report

AS/NZS 4282:2019, A3 - Medium District Brightness, Non-Curfew L1
Filename: 64 Ninth Ave Joslin AGI
20/09/2023 9:41:54 PM

Illuminance

Maximum Allowable Value: 10 Lux

Calculations Tested (7):

Calculation Label	Test Results	Max. Illum.
OL - 68 Ninth Ave_Ill_Seg1	PASS	4
OL - 68 Ninth Ave_Ill_Seg2	PASS	1
OL - 68 Ninth Ave_Ill_Seg3	PASS	1
OL - 62 Ninth Ave_Ill_Seg1	PASS	0
OL - 62 Ninth Ave_Ill_Seg2	PASS	2
OL - 6 Koolaman St_Ill_Seg1	PASS	1
OL - Ninth Ave Properties_Ill_Seg1	PASS	0

Luminous Intensity (Cd) At Vertical Planes

Maximum Allowable Value: 12500 Cd

Calculations Tested (7):

Calculation Label	Test Results
OL - 68 Ninth Ave_Cd_Seg1	PASS
OL - 68 Ninth Ave_Cd_Seg2	PASS
OL - 68 Ninth Ave_Cd_Seg3	PASS
OL - 62 Ninth Ave_Cd_Seg1	PASS
OL - 62 Ninth Ave_Cd_Seg2	PASS
OL - 6 Koolaman St_Cd_Seg1	PASS
OL - Ninth Ave Properties_Cd_Seg1	PASS

Threshold Increment (TI)

Maximum Allowable Value: 20 %

Calculations Tested (2):

Calculation Label	Adaptation Luminance	Test Results
TI - Ninth Ave 1	1	PASS
TI - Ninth Ave 2	1	PASS

Upward Waste Light Ratio (UWLR)

Maximum Allowable Value: 2.0 %

Calculated UWLR: 0.0 %
Test Results: PASS

ELA is a certified licensee of the Australian Made Campaign. Please support Australian Manufacturing.

PROJECT: 64 NINTH AVENUE
JOSLIN SA 5070

PRODUCT: ELA UNILUX SHARP CUT OFF 360 WATT LED - TYPE FTMv3
6 METRE MOUNTING HEIGHT

LIGHTING DESIGN ANALYSIS # ELA230622A | Date:20/09/2023 | Page 1 of 1 | A3

ENVIRONMENTAL LIGHTING AUSTRALIA
tennislights.com
"Made on Phillip Island, enjoyed throughout Australia"

Environmental Lighting Australia Pty Ltd
3/33 The Concourse, Cowes Vic 3922
PO Box 8154, Croydon Vic 3136
ABN: 15 179 774 829
P: 03 5952 5587
E: sales@tennislights.com

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Fire • Green ESD • Lifts • Hydraulics
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STRUCTURAL CALCULATIONS AND DETAILS (SR1)

Builder / Agent:	-	**Job Number:**	1504215
Owner:	GREENPLAY AUSTRALIA PTY LTD	**Date:**	11/05/2015
Project:	TENNIS COURT LIGHT POLE	**Order No.**	
Project Location:	STANDARD		

The Calculations and Details enclosed give specific recommendations for the above mentioned building / structure. These must be read in conjunction with all listed attachments. Changes to the design or construction must not be made without further written advice from the Engineer. A full copy of this document is to be forwarded to all future owner(s).

This report is valid for a period of 24 months, based on current standards, regulations, etc.

ATTACHMENTS: CRCS, SDN, SD1, SC1-SC5

SITE INSPECTIONS:

1. As otherwise required by the Engineer or requested by the client / contractor.

NOTE: 1. These inspections will incur additional fees.
2. We require 24 hours notice when booking inspections.

ADDITIONAL NOTES/REQUIREMENTS:

1. This report is valid for a period of 24 months or a change is made to the BCA and/or relevant Australian Standard (whichever occurs first).

For and on behalf of
TMK Consulting Engineers

ANDREW MARTIN
Senior Associate / Team Leader

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CONDITIONS FOR THE USE OF STRUCTURAL CALCULATIONS AND DETAILS (CRCS)

1. GENERAL

1.1 These Structural Calculations and Details (hereinafter named the "Report") give specific recommendations for the particular building described in this report. This Report must be read in conjunction with all listed attachments. Changes to the design or construction must not be made without further written advice from the Engineer.

1.2 The Owner and all contactors will comply in all respects and at all times with all terms, conditions and recommendations contained in, or attached to, this Report.

1.2.1 It is essential that the Owner reads the entire report carefully as it contains important information, relating not only to the construction, but also to obligations and liabilities.

1.2.2 If the Owner requires different details to that recommended, our office must be notified prior to the commencement of construction, and advice will be given accordingly.

1.2.3 If there are any aspects of the Report that are not understood, please contact the Engineer.

1.3 The Engineer may (and the Owner hereby authorizes the Engineer to):

1.3.1 Issue instructions (including an instruction to cease construction) on behalf of the Owner to any person engaged in the construction of the building, or any part thereof, to ensure construction of the building in accordance with this Report and any modification thereof. If any modification as aforesaid may be likely to result in additional construction costs exceeding $3,500.00 (plus GST), the Engineer may issue an instruction to cease construction in order to obtain the approval of the Owner for such modification.

1.3.2 Make such modifications to the Report as the Engineer may deem necessary during the course of construction.

1.4 The Owner shall be responsible for, and indemnify the Engineer against, all and any costs and charges and all claims and demands made for any additional costs incurred by reason of any act, requirement or instruction of the Engineer made or given pursuant to Clause 1.3.

1.5 The Engineer shall not be liable for any defect in or damage to the building / construction caused by or contributed to by any breach of the terms, conditions and recommendations committed, permitted or allowed by the Owner.

1.6 Where more than one person is named as the Owner, all these terms, conditions and recommendations shall bind all such persons jointly and each such person severally, and any instruction or information given to the Engineer by any one such person shall be deemed to be given by all other such persons.

2. TERMS OF ENGAGEMENT

2.1 All work will be carried out in accordance with TMK's standard '*Terms and Conditions of Engagement for Consulting Services*'.

TMK Consulting Engineers
105 Waymouth Street Adelaide SA 5000
Civil • Environmental • Structural
Geotechnical • Mechanical • Electrical
Fire • Green ESD • Lifts • Hydraulics
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1. GENERAL

1.1 These notes shall be read in conjunction with the architectural drawings, the specifications and the Engineer's Report, etc.

1.2 All dimensions and levels shall be confirmed with the architectural drawings and / or checked on site.

1.3 Engineer's drawings must not be scaled.

1.4 The builder and / or agent shall be responsible for maintaining the stability of all structures and any elements until their completion and shall ensure that no part of structures or any elements are overstressed by excessive loading.

1.5 The specifications below shall apply unless noted otherwise.

1.6 Requests for information will generally be responded to by the engineer within 5 working days, whilst reviews of shop drawings generally within 10 working days.

2. CONCRETE

2.1 Concrete construction to comply with AS 3600-2009 *Concrete structures.*

2.2 Concrete shall be as follows:

- Grade N20 (i.e. 20 MPa) to slab on ground, footings protected by vapour barrier and residential strip / pad footings.
- Grade N25 to suspended slabs, beams, columns and non residential footings unprotected by vapour barrier.
- Grade N32 to members exposed to exterior environments or where concrete is to have a polished finish.
- Maximum aggregate 20 mm.
- Slump 80 mm.

2.2.1 For sites within 1 km of the shoreline of large expanses of salt water or heavy industrial areas where surfaces (e.g. verandahs, balconies, carports) are exposed, the surface shall be protected with suitable topping, sealer, tiles etc or the concrete grade shall be not less than N40.

2.2.2 For sites containing high sulphate or highly saline soils (or in heavy industrial areas), the concrete surface is to be protected from the aggressive soil by a 0.2 mm branded and certified vapour barrier. Alternatively, use a concrete grade of N40 or greater.

2.3 Construction joints to be thoroughly scabbled of all laitance and poorly compacted material. Vertical joints to be poured against shuttering (refer also BF062 *Specification for the construction of footings and slabs (CRS)* Clause 2.7.3).

2.4 All concrete to be properly cured by keeping all exposed surfaces in a moist, damp condition for at least the first 7 days after placing, or by spraying with an approved curing compound, subject to compatibility with proposed surface finishes.

2.5 Minimum stripping times*:

- Slab-soffit 14 days, props 21 days.
- Beams-sides 3 days, soffit 21 days.
- Columns and Walls - (unloaded) 3 days.

**Specific instructions on formwork stripping times / de-propping etc are required in the cases of multi-level work.*

The system of propping including any re-shoring or back-propping proposals is the responsibility of the builder / contractor and is subject to the approval of the Superintendent.

2.6 In accordance with AS/NZS 4671-2001 *Steel reinforcing materials,* reinforcement designations are as follows:

- R: Plain round structural bar
- F: Hard drawn wire fabric
- W: Hard drawn wire bar
- N: Hot rolled deformed bar
- SL: Square ribbed fabric
- RL: Rectangular ribbed fabric

2.7 Provide 0.2 mm High Impact Resistance branded polythene membrane to AS 2870 throughout underside of floor slabs on ground, all laps to be 300 mm and sealed with a 50 mm wide strip of pressure-sensitive waterproof tape.

2.8 All filling to be non-clay material compacted in 150 mm layers to 90% maximum dry density in accordance with AS 3798 *Guidelines on earthworks for Commercial and Residential developments*.

2.9 Where rod reinforcement is spliced, the minimum lap length shall be:

Bar Size	Lap Length (mm)	Bar Size	Lap Length (mm)
N12	500	N28	1800
N16	750	N32	2150
N20	1000	N36	2600
N24	1450		

2.10 Laps to slab mesh to be one (1) full mesh panel plus 25 mm.

2.11 Clear concrete cover to reinforcement, (including fitments and wire ties), shall be:

- Internal slab on fill: 30 mm bottom and sides, 20 mm top.
- Footings protected by vapour barrier: 40 mm bottom and sides, 20 mm top.
- Residential footings unprotected by vapour barrier: 40 mm top, 50 mm bottom and sides.
- Non-residential footings unprotected by damp-proof membrane: 50 mm top, bottom and sides.
- Suspended slabs, beams and columns: 20 mm internal, 40 mm external.
- Where concrete is exposed to aggressive soils: 65 mm general, 55 mm where protected by an approved membrane.

2.12 Concrete is to be separated from the supporting brick work by two (2) layers of 0.5 mm thick viscourse.

2.13 Walls must not be built on suspended concrete slabs or beams until form work and props supporting same have been removed.

2.14 Tension cracks may occur in slabs, apply suitable sealant for exposed surfaces to prevent possible moisture ingress.

2.15 Provide 10 mm isolation joints where concrete is adjacent steel work / masonry. Provide suitable filler and sealant.

3. MASONRY

3.1 Construction to comply with AS 3700-2011 *Masonry structures*.

3.2 Minimum characteristic unconfined compressive strength of units to be as follows:

- Clay bricks: 40 MPa
- Concrete bricks: 10 MPa
- Concrete hollow blocks: 15 MPa

3.3 Mortar: Brick work: 1: 1 : 6 (Cement / Lime / Sand) Block work: 1: 1 : 6

3.4 Infill concrete grout to reinforced masonry to be Grade 15, slump 230 +/ - 30, 10 mm aggregate.

3.5 For hollow block retaining walls, all cores are to be grouted.

3.6 Grouting to reinforced masonry shall be compacted by rodding with a plain round bar. All air pockets and bubbles must be displaced during compaction. However, care must be taken to avoid damaging or dislodging the masonry or reinforcement while compacting the grout.

4. STEEL WORK

4.1 All Hot Rolled Steel to comply with AS 4100-1998 *Steel structures*, AS/NZS 4600-2005 *Cold formed welding structures* and AS 2327.1-2003 *Composite structures – Simply supported beams*.

4.2 All welding to comply with AS/NZS 1554, parts 1, 2 & 3.

4.3 All fillet welds to be 6 mm (category SP unless noted otherwise) extending the full length of the edges in contact, except where plate thicknesses are less than 6 mm, use a weld size to match.

4.4 The steel worker shall supply all HD bolts, nuts and all other bolts and washers required for the erection of the steel work, holes for HD bolts to be 3 mm oversize, holes for other bolts to be no more than 2 mm oversize. Minimum connection: 10 mm plate with 2 M16 8.8/S bolts unless otherwise noted.

4.5 Where HSFG bolts are required bolting shall comply with AS 4100.

4.7 All base plates, HD bolts and columns in concrete which is in contact with ground to have concrete cover of 75 mm minimum.

4.8 Minimum edge distance taken from centre of fastener *(Where 'D' is the nominal diameter of the fastener)* shall be:

- Sheared or hand flame cut edge: 1.75D
- Rolled plate, machine flame cut sawn or planed edge: 1.50D
- Rolled edge of a rolled section: 1.25D

4.8 Steel work to be concrete encased must first be wrapped with RF41 mesh. The reinforcement is to be placed 25 mm from the steel work.

4.9 Provide a 10 mm clearance between vertical faces of steel work and adjacent masonry walls. Provide W6 ties between steel work and masonry at 600 centres (max).

4.10 All steel work to be adequately propped and braced during construction until all permanent bracing, masonry and cladding has been erected.

4.11 All cold formed sections are to be constructed in accordance with the manufacturer's specifications. Trimming members the same size as the adjoining member shall be provided at no additional cost, to support all edges of sheeting at an angle other than 90 degrees to purlin / girt (refer to purlin manufacturer for details).

4.12 Steel work Protective coatings to be:

- Exposed external steel work within 1 km from breaking surf or within 100 m of salt water not subject to breaking surf, or heaving industrial areas, or corrosive water: Hot-Dip Galvanized, and painted.
- Exposed external steel work (not exposed to corrosive environment): Hot-Dip Galvanized, 'Dimet' treated or one coat sprayed Inorganic zinc silicate paint over class 2.5 abrasive blast surface.
- Steel work acting as downpipe or gutter: Hot-Dip Galvanized.
- Internal steel work (not exposed to moisture or corrosive environment): Red oxide zinc chromate primer (Rozc) over wire brush surface.

Note: All steelwork in contact with the ground, paving or soil etc, shall, in addition to the protection required above, be either wrapped with "Denso" tape or encased with concrete a minimum 75 mm thick.

4.13 Two (2) copies of shop detail drawings are to be submitted to the engineer and review of the same obtained before commencing fabrication. Review will not cover dimensions. Shop drawings will generally be reviewed by the engineers within 10 working days.

5. TIMBER

5.1 All to comply with AS 1720.1-2010 *Timber structures – Design methods* and AS 1684 *Residential timber framed construction*.

5.2 All MGP10 grade timber must exclude "heart in" material to give the timber a minimum joint group strength of JD4, in accordance with AS1720.

6. EARTHWORKS

All to comply with AS 3798-2007 *Guidelines on earthworks for commercial and residential developments.*

7. SITE INSPECTIONS

Must be carried out at the following stages (Refer to *Construction Report and Footing Recommendations (CR1)* for engineer recommendations):

- After site preparation and trenching for the footing beams.
- After the preparation of reinforcement, prior to the placement of any concrete.

Additional inspections may be carried out at the discretion of the Engineer and / or as requested by the Owner / Agent[1]:

- At the concrete pour.
- After completion of the masonry prior to construction of the roof to ensure correct placement of control joints.
- Upon completion of the installation of paving, stormwater drains, pipes and structures.

8. SURFACE PROTECTIVE COATINGS

All structural members and surfaces, i.e. beams, columns, walls, floors, ceilings, roofs and the like both internally and externally shall be coated with an approved protective coating to suit their intended use / exposure environment, which is to be applied in strict accordance with the manufacturer's recommendations and specifications (see also Clause 4.12).

9. RETAINING WALLS

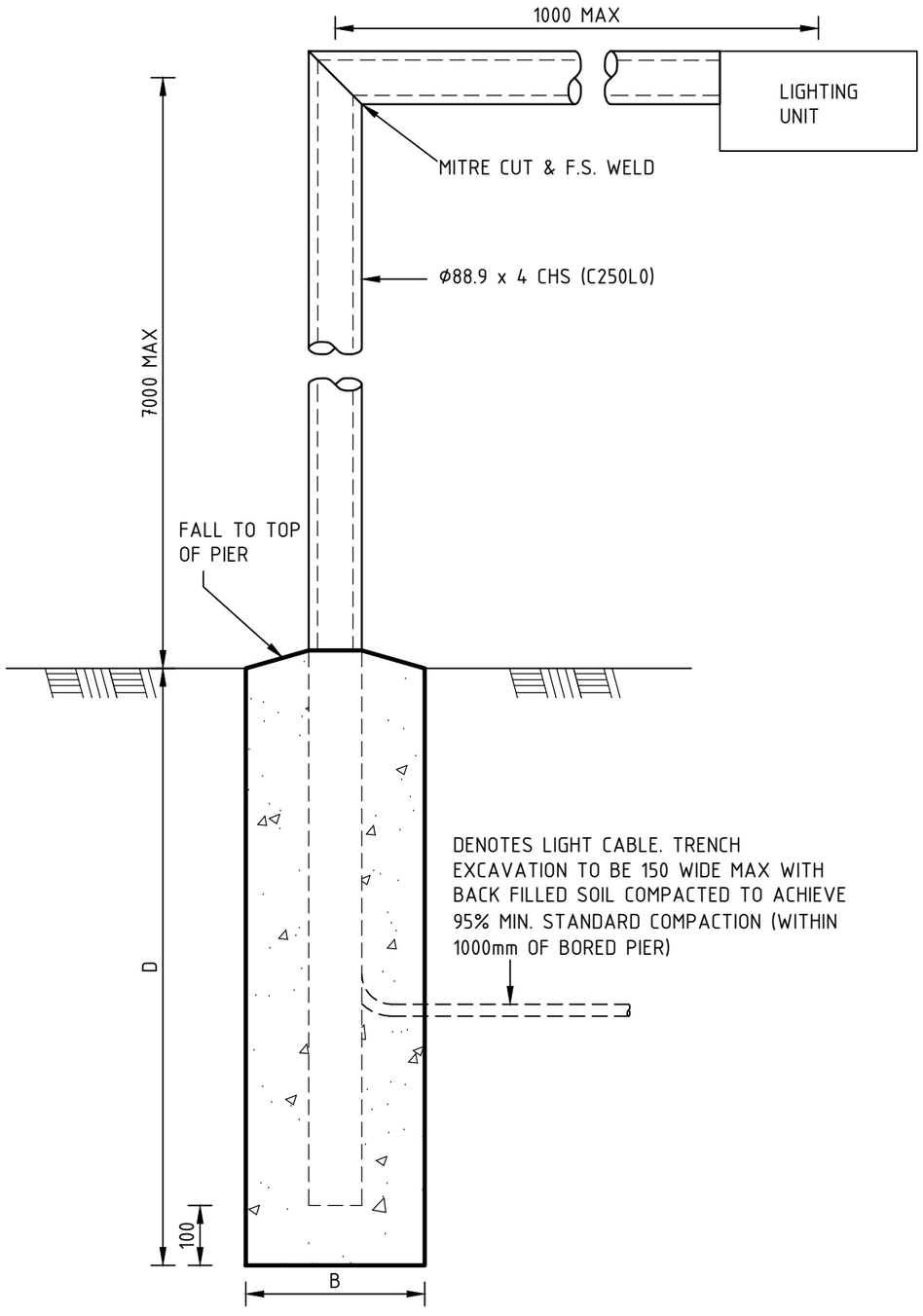
Refer to sheet BF063 *General notes for retaining wall construction (RWN).*

10. TERMITE PROTECTION

Termite protection system shall be in accordance with AS 3660.1-2000 *Termite management – New building work*.

[1] *Agent refers to architect, builder, project manager, contractor, supervisor or any other such person that has authority to act on the Owner's behalf.*

Attachment 1



LIGHT POLE FOOTING DETAILS

1:10

SOIL TYPE	PIER ø DIAMETER (B)	PIER DEPTH (D)
'POOR'	300 mm	1450 mm
'GOOD'	300 mm	1000 mm

NOTES:

1. MAXIMUM LIGHT POLE HEIGHT 7 m.
2. MAXIMUM LIGHTING UNIT EPA 0.25 m^2 (EFFECTIVE PROJECTED AREA).
3. BORED PIERS TO BE FULLY FOUNDED IN FIRM NATURAL GROUND OR CERTIFIED COMPACTED FILL, CONCRETE GRADE TO BE MIN. 25 MPa (REFER TO ATTACHMENT SDN)
4. THIS DESIGN ALLOWS FOR A MAXIMUM WIND SPEED OF 39 m/s (BASED ON AN IMPORTANCE LEVEL 1 STRUCTURE, TERRAIN CATEGORY 2, WIND REGION A).
5. SOIL DESCRIPTION:

   'POOR' - SOFT CLAY OF MEDIUM PLASTICITY, CLAYEY SILT, SAND OR LOOSE SANDY SILTS WITH COHESION 0-3 kPa.

   'GOOD' - FIRM CLAY OF MEDIUM TO HIGH PLASTICITY, SILTY CLAY, SANDY CLAY WITH COHESION GREATER THAN OR EQUAL TO 4 kPa.

No.	REVISION	DRAWN	CHECKED	DATE

PROPOSED STANDARD LIGHT POLE

FOR: GREENPLAY AUSTRALIA PTY LTD

Civil - Environmental
Structural - Geotechnical
Mechanical - Electrical
Fire - Security
Lifts - Hydraulics

105 Waymouth Street
Adelaide SA 5000
Telephone 08 8238 4100
Facsimile 08 8410 1405

ACN 062 965 888 / 008 080 046

TMK CONSULTING ENGINEERS

TITLE: FOOTING & LIGHT POLE DETAILS

SCALES	AS SHOWN
DRAWN	MY
DATE	MAY '15
ENGINEER	SBA

JOB No. 1504215

DWG. No. SD1

TMK Consulting Engineers
105 Waymouth Street Adelaide SA 5000
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Fire • Green ESD • Lifts • Hydraulics
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STRUCTURAL CALCULATIONS (SC1)

Builder / Agent:	-	**Job Number:**	1504215
Owner:	GREENPLAY AUSTRALIA PTY LTD	**Date:**	4/05/2015
Project:	TENNIS COURT LIGHT POLE		
Project Location:	STANDARD		

GENERAL NOTES:

1. These calculations are to be read in conjunction with the associated Architectural Drawings, Footing Construction Report, Structural Drawings and / or Details.

2. All work to comply with relevant Australian Standards including but not limited to:

AS/NZ 1170	-	Structural design actions
AS 1554	-	Structural steel welding
AS 4100	-	Steel structures
AS 1163	-	Structural steel hollow sections
AS 2159	-	Piling - Design and installation

WIND SPEED CALCULATION

These calculations comply with the requirements of AS/NZS 1170.2:2011 - Wind Actions (Amendments 1 & 2) and the Building Code of Australia (BCA Volume 1).

Site : **N/A**
Description : **Light pole standard design**

DESIGN WIND SPEEDS

Importance Level :	1	BCA Vol.1 - 2013 Table B1.2a
$R_{strength}$:	100 years	BCA Vol.1 - 2013 Table B1.2b
$R_{serviceability}$:	**20** years	
Wind region :	A	Figure 3.1
Terrain category :	2	Clause 4.2.1
Reference height, z :	**7** metres	
Terrain/height, $M_{z,cat}$:	0.95	Table 4.1
Direction, M_d :	**1.00**	Table 3.2
Shielding, M_s :	**1.00**	Clause 4.3
Topography, M_t :	**1.00**	Clause 4.4
$V_{R,strength}$:	41 m/s	Table 3.1
$V_{R,serviceability}$:	37 m/s	
=> $V_{des,strength}$:	**38.8 m/s**	Clause 2.3
=> $V_{des,serviceability}$:	**35.0 m/s**	

→ **For Designs to AS 4055-2012 Wind loads for housing (Table 2.2) use Wind Class N2**

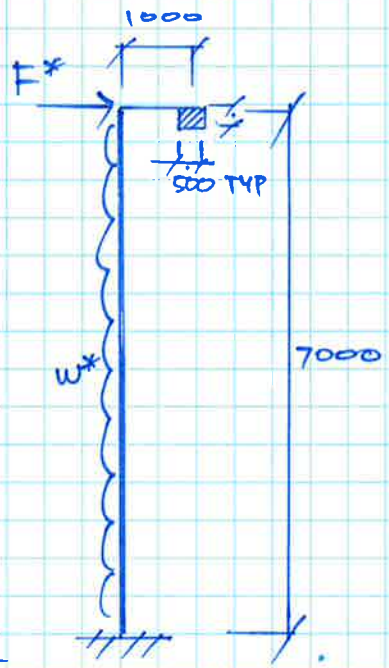
Notes on comparing results from AS/NZS 1170.2:2011 with AS 4055 - 2012 (Refer to Appendix A3 of AS 4055 - 2012)

AS 4055 - 2012 Wind Classifications were derived from a range of design scenarios evaluated using AS/NZS 1170.2:2011 - Wind Actions (incl. Amendments 1 & 2), in which the following criteria were applied:

1. The annual probability of exceedance - 1/500 (approximately equivalent to $R_{strength}$ = 500 years);
2. A factor of 0.95 on (strength) wind speed accounted for various effects unique to housing;
3. A 5% margin was allowed on the wind speed for assigning N and C classes;
4. Average roof height was taken as 6.5 metres;
5. In AS 4055 - 2012, $M_{z,cat}$ was derived from AS/NZS 1170.2:2011 using a reference height of 6.5 metres;
6. The topographic multiplier, M_t, was derived from the hill shape multiplier defined in Table A2 of AS 4055 - 2012, except that the **separation zone at the crest** (AS/NZS 1170.2:2011, Figure 4.4) was not included in AS 4055 - 2012 .

Consequently, although the **Design Gust Speeds $V_{h,u}$ and $V_{h,s}$ for N and C class sites for housing** do not exactly correspond to the values of **$V_{des,strength}$ and $V_{des,serviceability}$ from AS/NZS 1170.2:2011**, the correlation shown above between the **Design Wind Speeds** determined from AS/NZS 1170.2:2011 and the **N and C Wind Classifications** determined from AS 4055 - 2012 is acceptable for design purposes.

Light pole design



from windspeed calculation

$V_{des,strength} = 38.8 m/s$

$\therefore q_{strength} = 0.9 kPa$

$F^* = 1.2 \times 0.9 kPa \times (0.5m)^2$
$= 0.3 kN$

$w^* = 1.2 \times 0.9 kPa \times 0.09m$
$= 0.1 kN/m$

$\therefore M_x^* = \frac{0.1 kN/m \times (7.0m)^2}{2} + 0.3 kN \times 7.0m$
$= 4.6 kNm$

TORQUE, $M_z^* = 0.3 kN \times 1.0m$
$= 0.3 kNm$.

TRY 88.9 x 4.0 CHS C250LO

$\phi M_s = 6.49 kNm \geq M_x^*$ ∴ OK

$\phi M_z = 5.85 kNm \geq M_z^*$ ∴ OK

combined: $\frac{4.6 kNm}{6.49 kNm} + \frac{0.3 kNm}{5.85 kNm} = 0.76 \leq 1.0$ ∴ OK

∴ Adopt 88.9 x 4.0 CHS C250LO, embedded 100mm from the base of the bored pier

Checked : .....
Date : ...../...../.....

PAD & PIER FOOTING DESIGN FOR NON-BUILDING STRUCTURES

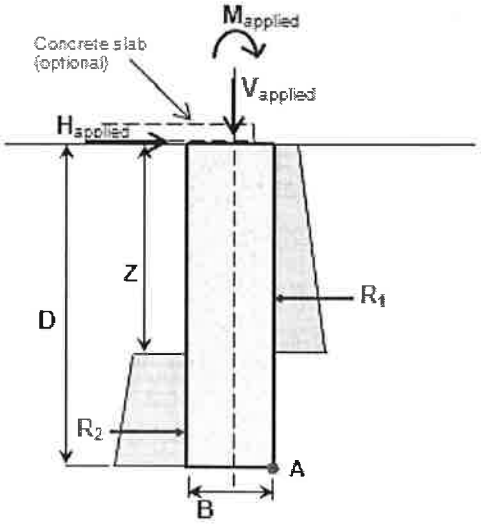
Type of Footing =	**B**	**S**=Square, **R**=Rectangular, **B**=Bored Pier			
Pier Diameter =	**300**	mm			
			Auto Size Calculation		
Footing Depth =	**1000**	mm	**Specific Size Calculation**		
Footing Concrete f'_c =	**20**	MPa			
Vertical Load =	**0.600**	kN	Overturning Loads Permanent?	**N**	**Y**=Yes, **N**=No
Horizontal Load =	**1.000**	kN			
Applied Moment =	**4.600**	kNm			
Soil Type =	Firm clay of medium to high plasticity, silty clay, sandy clay				(AS 4678-2002 Table D4)
Cohesion =	**4**	kPa	Concrete Slab ?	**N**	**Y**=Yes, **N**=No
Friction Angle =	**27**	degrees			
Density =	**18.0**	kN/m^3			
Bearing Capacity =	**360**	kPa			

RESISTANCE AGAINST UPLIFT

Footing weight =	1.70	kN
Interacting soil weight =	9.22	kN
Cohesion force on vertical faces =	2.10	kN
Contributing slab weight =	0.00	kN
0.9*Total load resisting uplift =	9.82	kN
Ratio 0.9*Resistance:Uplift =	**N/A**	**:.OK**

NOTE:

ϕ_{uplift} =	0.9
$\phi_{overturning}$ =	0.8
$\phi_{bearing}$ =	0.5



Forces Acting on Footing
Showing Soil Passive Pressure Distribution

RESISTANCE TO OVERTURNING

Disturbing Moment at point 'A' on base =	5.60	kNm
Passive pressure strength at surface =	14.52	kPa
Passive pressure strength at base =	62.46	kPa
Depth, Z, to passive pressure switch =	678	mm
Passive pressure strength at depth Z =	47.02	kPa
Total passive soil force (Upper zone, R_1) =	19.27	kN
Total passive soil force (Lower zone, R_2) =	4.58	kN
M.R. due to passive soil forces R_1 & R_2 =	6.20	kNm
M.R. due to cohesion on vertical faces =	0.31	kNm
M.R. due to friction on vertical faces =	0.16	kNm
M.R. due to gravity & applied vert. loads =	0.34	kNm
0.8*ΣM.R. (Due to all effects) =	5.61	kNm
Ratio (0.8*ΣM.R. : O.T. about point 'A') =	**1.002**	**>1.00 :.OK**

BEARING PRESSURE

Net Vertical Force at base of footing, $F_{v,u}$	2.64	kN
Maximum soil bearing capacity =	8.5	kN
	> 2.64 kN	**:.OK**

VERTICAL REINFORCEMENT

For design, M* =	4.60	kNm
Section modulus =	0.003	m^3
Cracking moment =	4.27	kNm
Vertical reinforcement required =	60	mm^2 central in footing

=> ADOPT 300 mm dia. x 1000 mm deep concrete pier.
(NOTE: No concrete slab has been allowed for in the design.)
Reinforcement required = 60 mm^2.

End of calculation

PAD & PIER FOOTING DESIGN FOR NON-BUILDING STRUCTURES

Type of Footing =	**B**	**S**=Square, **R**=Rectangular, **B**=Bored Pier			
Pier Diameter =	**300**	mm			
			Auto Size Calculation		
Footing Depth =	**1450**	mm	**Specific Size Calculation**		
Footing Concrete f'_c =	**20**	MPa			
Vertical Load =	**0.600**	kN	Overturning Loads Permanent?	**N**	**Y**=Yes, **N**=No
Horizontal Load =	**1.000**	kN			
Applied Moment =	**4.600**	kNm			
Soil Type =	Soft clay of medium to high plasticity, clayey silt, loose sandy silt				(AS 4678-2002 Table D4)
Cohesion =	**1**	kPa	Concrete Slab ?	**N**	**Y**=Yes, **N**=No
Friction Angle =	**27**	degrees			
Density =	**18.0**	kN/m^3			
Bearing Capacity =	**230**	kPa			

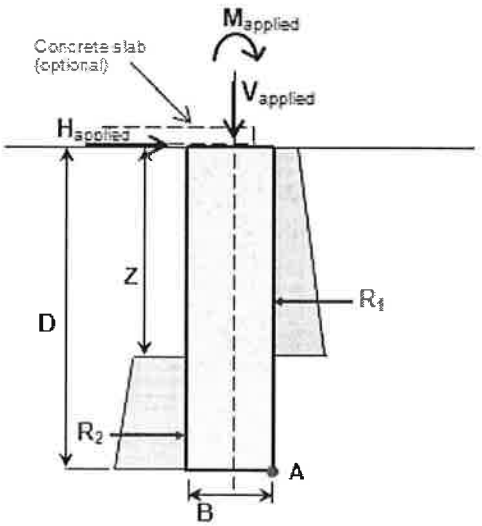
RESISTANCE AGAINST UPLIFT

Footing weight =	2.46	kN
Interacting soil weight =	24.01	kN
Cohesion force on vertical faces =	0.68	kN
Contributing slab weight =	0.00	kN
0.9*Total load resisting uplift =	23.82	kN
Ratio 0.9*Resistance:Uplift =	**N/A :.OK**	

NOTE: ϕ_{uplift} = 0.9; $\phi_{overturning}$ = 0.8; $\phi_{bearing}$ = 0.5

RESISTANCE TO OVERTURNING

Disturbing Moment at point 'A' on base =	6.05	kNm
Passive pressure strength at surface =	3.26	kPa
Passive pressure strength at base =	72.77	kPa
Depth, Z, to passive pressure switch =	1037	mm
Passive pressure strength at depth Z =	52.97	kPa
Total passive soil force (Upper zone, R_1) =	26.97	kN
Total passive soil force (Lower zone, R_2) =	6.95	kN
M.R. due to passive soil forces R_1 & R_2 =	6.86	kNm
M.R. due to cohesion on vertical faces =	0.10	kNm
M.R. due to friction on vertical faces =	0.33	kNm
M.R. due to gravity & applied vert. loads =	0.46	kNm
0.8*ΣM.R. (Due to all effects) =	6.20	kNm
Ratio (0.8*ΣM.R. : O.T. about point 'A') =	**1.025 >1.00 :.OK**	



Forces Acting on Footing
Showing Soil Passive Pressure Distribution

BEARING PRESSURE

Net Vertical Force at base of footing, $F_{v,u}$	3.55	kN
Maximum soil bearing capacity =	8.1	kN
	> 3.55 kN :.OK	

VERTICAL REINFORCEMENT

For design, M* =	4.60	kNm
Section modulus =	0.003	m^3
Cracking moment =	4.27	kNm
Vertical reinforcement required =	60	mm^2 central in footing

=> ADOPT 300 mm dia. x 1450 mm deep concrete pier.
(NOTE: No concrete slab has been allowed for in the design.)
Reinforcement required = 60 mm^2.

End of calculation

Attachment 1

DEVELOPMENT APPLICATION

Electricity Infrastructure Declaration

To

NPSP council

From

Tom Craven

Date of application

9/6/23

Location of proposed development:

66 Ninth Avenue

House no. 66

Lot no. 150

Street Ninth Avenue

Town/Suburb Joslin

Section no.

Hundred Joslin

Volume 5726

Folio 291

Nature of proposed development

Fencing

I, Tom Craven

(●) being the applicant

( ) a person acting on behalf of the applicant

for the development described above declare that the proposed development will involve the construction of a building which would, if constructed in accordance with the plans submitted, not be contrary to the regulations prescribed for the purposes of section 86 of the Electricity Act 1996. I make this declaration under clause 6(1) of Schedule 8 of the Planning, Development and Infrastructure (General) Regulations 2017.

Signed

Date 9/6/23

DEVELOPMENT APPLICATION

Electricity Infrastructure Declaration

Note 1

This declaration is only relevant to those development applications seeking authorisation for a form of development that involves the construction of a building (there is a definition of 'building' contained in section 3(1) of the Planning, Development and Infrastructure Act 2016), other than where the development is limited to –

a) an internal alteration of a building; or

b) an alteration to the walls of a building but not so as to alter the shape of the building.

Note 2

The requirements of section 86 of the Electricity Act 1996 do not apply in relation to:

a) an aerial line and a fence, sign or notice that is less than 2.0 m in height and is not designed for a person to stand on; or

b) a service line installed specifically to supply electricity to the building or structure by the operator of the transmission or distribution network from which the electricity is being supplied.

Note 3

Section 86 of the Electricity Act 1996 refers to the erection of buildings in proximity to powerlines. The regulations under this Act prescribe minimum safe clearance distances that must be complied with.

Note 4

The majority of applications will not have any powerline issues, as normal residential setbacks often cause the building to comply with the prescribed powerline clearance distances. Buildings/renovations located far away from powerlines, for example towards the back of properties, will usually also comply. Particular care needs to be taken where high voltage powerlines exist; or where the development:

- is on a major road;
- commercial/industrial in nature; or
- built to the property boundary.

Note 5

An information brochure: 'Building Safely Near Powerlines' has been prepared by the Technical Regulator to assist applicants and other interested persons. This brochure is available from council and the Office of the Technical Regulator. The brochure and other relevant information can also be found at sa.gov.au/energy/powerlinesafety

Note 6

In cases where applicants have obtained a written approval from the Technical Regulator to build the development specified above in its current form within the prescribed clearance distances, the applicant is able to sign the form.

SAPPA Report

The SA Property and Planning Atlas is available on the Plan SA website: https://sappa.plan.sa.gov.au

Attachment 2

Date created: January 8, 2024

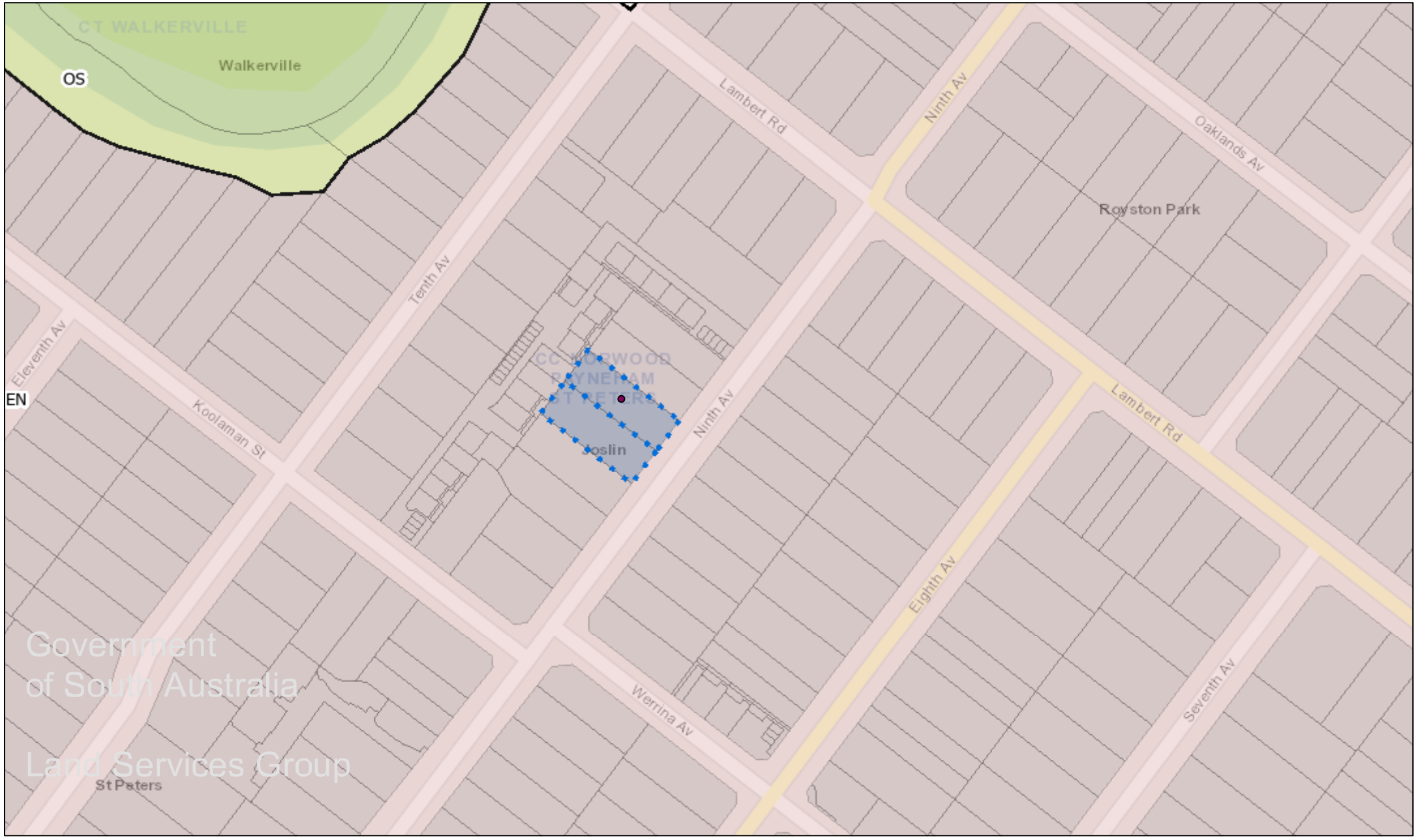
Disclaimer: The information provided above, is not represented to be accurate, current or complete at the time of printing this report. The Government of South Australia accepts no liability for the use of this data, or any reliance placed on it.

SAPPA Report

The SA Property and Planning Atlas is available on the Plan SA website: https://sappa.plan.sa.gov.au

Attachment 3

Date created:
January 8, 2024



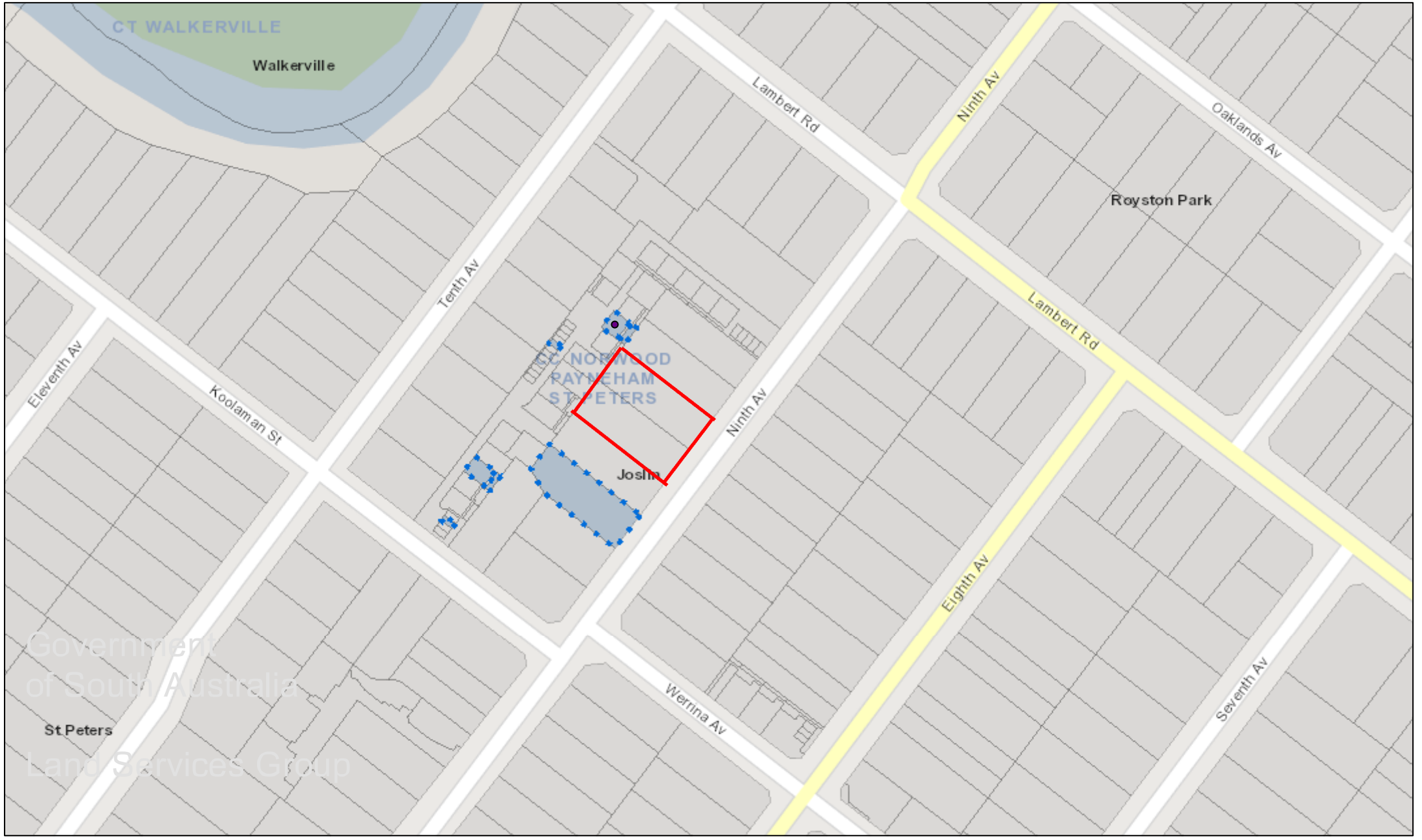
SAPPA Report

The SA Property and Planning Atlas is available on the Plan SA website: https://sappa.plan.sa.gov.au

Attachment 4

Date created: January 8, 2024

Note: Subject Land marked in red



Attachment 5

Details of Representations

Application Summary

Application ID	23028657
Proposal	Construction of tennis court lighting
Location	64 NINTH AV JOSLIN SA 5070, 66 NINTH AV JOSLIN SA 5070

Representations

Representor 1 - Kevin Naughton

Name	Kevin Naughton
Address	60 Ninth Avenue JOSLIN SA, 5070 Australia
Submission Date	24/11/2023 10:46 AM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development
Reasons	

Attached Documents

Representations

Representor 2 - Vera Vismara

Name	Vera Vismara
Address	3/6 Koolaman street JOSLIN SA, 5070 Australia
Submission Date	27/11/2023 11:24 AM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I oppose the development

Reasons

reasons for refusing: - this area has a unique character and beauty, with an harmonious tree canopy along the streets. 7mt tall metal poles would stand out and ruin it. - lights would allow people playing till late. Considering that this is a residential area and (most of the time) a quiet and silent suburb, far away from the noisy city, it would be really annoying having people disturbing it. Voice and noise can travel far. Sorry Tom, there are tennis courts on 4th avenue, please use those :)

Attached Documents

Representations

Representor 3 - Nola Place

Name	Nola Place
Address	63 nelson street ROZELLE NSW, 2039 Australia
Submission Date	01/12/2023 12:09 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development with some concerns

Reasons
I will be moving into u12/16 Koolaman street joslin later on this year as I am the owner of this property I am concerned about the effect the lighting will have on my small court yard at the back of my unit I'm concerned that the lighting would be very intrusive would the owner be willing to put up a higher back fence so the units at the back of his property would be less affected

Attached Documents

Ref: 23ADL-00577

URPS

Adelaide
12/154 Fullarton Rd
Rose Park, SA 5067

08 8333 7999

urps.com.au

10 January 2024

Ned Feary
Senior Urban Planner
City of Norwood Payneham & St Peters

Uploaded to Plan SA Portal

Dear Ned

Response to Representation - Application 23028657 - 64-66 Ninth Ave, Joslin

URPS acts on behalf of Tom Craven, the applicant in this application.

Summary of Representations

Representor	Address	Summary of Representation	Request to be heard?
Kevin Naughton	60 Ninth Avenue, Joslin	Supports the development	No
Vera Vismara	3/6 Koolaman street, Joslin	Visual impact of light poles Noise and amenity impacts associated with the use of a tennis court	No
Nola Place	63 Nelson Street, Rozelle	Impacts associated with lights	No

These concerns have been addressed separately below.

Height of the tennis court lights

Concerns were raised by one representor about the visual impact of the light poles.

The proposed height of the structures for tennis court lighting is commonplace throughout the locality and wider City of Norwood Payneham St Peters Council Area.

The structures are located within the site and behind the building line of the dwellings on the subject land and 68 Ninth Ave, this assists with mitigating visual impact (see figure 1).

Figure 1 - Proposed siting of the structures behind the building line of adjoining dwellings.

They are slender in nature, and at a building height below Zone provisions.

It is contended that visual impact will be minimal due to the slender appearance of the lighting poles and siting within the allotment.

Amenity impacts of tennis court use

Amenity concerns regarding noise from the use of the courts were raised by a representor.

The tennis court does not require Development Approval. Its formation does not involve building work, nor does it constitute a change of use - It is ancillary to the residential use of the site.

The general provisions of the Code seek for noise generating activities to achieve the relevant Environmental Protection (Noise) Policy criteria. Domestic noise under this policy refers to domestic machines and not 'people noise'.

Should 'people-noise' become excessive SA Police are authorised officers to make subjective assessments in such circumstances.

Noise generated from domestic tennis play is not expected to be worse than other backyard activities.

URPS

Light spill

Light spill concerns were raised by a representor.

The proposed development has been designed in accordance with the AS/NZS4282:19. The maximum illuminance value (Lux) within ten metres on adjoining land is less than 10 Lux and the intensity at vertical planes (Cd) is less than 12500 Cd.

The illuminance and luminous intensity at vertical planes pass the values in the relevant standard, as nominated by the compliance report. As such, it is fair to say that the proposed lighting has been designed to mitigate adverse effects to adjoining residents.

Further to the above, the lights are sited more than 25m from the units along the rear boundary of the subject site.

Conclusion

The proposal seeks to construct new lighting structures around a tennis court on the subject land, in association with the existing residential use of the land.

The visual impact of the new lights will be minimal due to the slender appearance of the lighting poles and siting. They are also typical of tennis court lighting in a residential setting.

The light spill from the proposed light structures satisfies the parameters established by the relevant Australian Standard. As such Council can be satisfied that the lights have an appropriate impact on adjoining sensitive receivers.

I maintain that the proposal merits Planning Consent. I confirm that I will appear at the CAP meeting where this application is to be determined to answer any questions of the CAP members, as necessary.

In the meantime, please let me know if you have any questions.

Yours sincerely

Brigitte Williams
Consultant

6. DEVELOPMENT APPLICATIONS – DEVELOPMENT ACT

7. REVIEW OF ASSESSMENT MANAGER DECISIONS

8. ERD COURT APPEALS

9. OTHER BUSINESS
(Of an urgent nature only)

10. CONFIDENTIAL REPORTS

11. CLOSURE