



City of Nedlands

Technical Services Reports

Committee Consideration – 8 September 2020
Council Resolution – 22 September 2020

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TS15.20	Allen Park Cottage
Committee	8 September 2020
Council	22 September 2020
Applicant	City of Nedlands
Employee Disclosure under section 5.70 Local Government Act 1995	Nil.
Director	Jim Duff – Director Technical Services
Attachments	1. Hodge Collard Preston Architectural Report dated 30 June 2019 2. Bushfire Management Report dated 24 January 2020

Executive Summary

The purpose of this report is for Council to consider the future options for Allen Park Cottage.

The Allen Park Cottage is a 100-year-old cottage located in the “Heritage Precinct” of Allen Park, Swanbourne. The cottage is a 1a residential dwelling and has been utilised by the “Friends of Allen Park Bushcare Group” (FOAPBG) who provide volunteer services to the City by means of bush care activities, clean up days and group meetings.

Recommendation to Committee

That Council:

1. **approve the use of the \$150,000 budget to construct a custom-built extension to the rear of the Allen Park Pavilion Building that incorporates a meeting room, small kitchen and storage for equipment. An extension to the Pavilion Building also provides for the (FOAPBG) to have access to shower, changeroom and toilet facilities.**
2. **allow the (FOAPBG) to continue to use the Allan Park Cottage as a meeting venue during the construction of the extension to the building.**
3. **direct the CEO to repurpose or demolish the building and restore the area through a revegetation program**

Discussion/Overview

Discussion

At the Special Council Meeting of 30 June 2020, Council resolved to adopt the City of Nedlands Statutory 2020/21 Annual Budget with a 0.0% increase in rates income when compared to 2019/20. In addition, the Chief Executive Officer was assigned specific (KRA's) that includes the requirement to 5.3.2 (Review the City's tangible assets with the intention of enhancing services, reducing costs and debt, and where possible increasing rate of return generated by assets).

In response to Council's resolution and the budgetary considerations noted in the CEO's key results area, Administration recommends that Council approve the use of \$150,000 budget to construct a custom-built meeting facility to the rear of the Allen Park Pavilion, to support the ongoing work of the FOAPBG, with any surplus funds being allocated for repurposing or demolition of the Allen Park Cottage.

Currently, the FOAPBG do not have a formal Lease or Management Licence arrangement in place to use the Allen Park Cottage as a meeting venue. Council received a briefing in late 2018 regarding the benefits of formalising its Management Licence Framework. Under a standard management licence, the FOAPBG would be required to pay an annual fee of \$10,000 for exclusive use of the facility. However, given the potential value of the Bushcare Volunteerism contributed by the FOAPBG, perhaps this could be approved through Council as a future cost neutral Management Licence.

Background

The existing cottage at 108 Wood Street, Swanbourne is said to be approximately 100 years old and is located within the Heritage Precinct of Allen Park. The site is currently zoned under Parks and Recreation. The building has a southern front elevation facing Clare Copse with no formal vehicle or pedestrian access. The building is classified as Class 1a residential and has been utilized as a meeting place by the "Friends of Allen Park Bushcare Group" (FOAPBG,) who undertake voluntary activities in the surrounding bushland as well as conduct meetings and general gatherings of the group.

Administration commissioned Hodge Collard Preston Architects to undertake a full structural assessment and development of detailed specifications for the building to be upgraded, to achieve the compliance certification as a (Class 9b) community building (refer to Attachment 1).

Construction costs are projected to be \$250,000 exclusive of GST and on-costs. Due to the condition and age of the building, there is a significant risk that unforeseen items may arise during the works which has the potential to exceed the available budget.

Allen Park Cottage is located within a Class A forest. Administration engaged Stratagen JBS&G to undertake a Bushfire Attack Level Assessment (BAL) and Bushfire Management Plan, to better understand the risks associated with a building in this location. The report identified the Cottage as being within the highest BAL-FZ level and would be subject to significant ember attack in the event of a bush fire in the surrounding area (refer to Attachment 2).

Process

During the 2016/17 financial year, the City commissioned the development of a Master Plan for the Allen Park Precinct. This was formally endorsed by Council in December 2017. During the consultation process, the FOAPBG provided feedback for the retention and upgrading of the Cottage.

The adopted Allen Park Master Plan incorporated recommendations as below:

Heritage Precinct

“That the City continue to support the precinct and preserve the area to demonstrate commitment to the heritage value of the occupants.”

“That the City develop criteria and policy to assist in determining any future additions/inclusions to the heritage precinct.”

“That the City support the existing users to upkeep the infrastructure through project planning and advice, supporting grant and funding applications and provision of lease arrangements to operate from the upgraded facilities.”

“It is recommended that additional signage be introduced to the heritage precinct to highlight the historical value, including entrance signage and interpretive trails around the buildings and locations.”

The Master Plan identified the following capital items which have been incorporated into the LTFP.

• Allowance for support bushland revegetation	\$50,000
• Allowance for additional seating	\$7,500
• Allowance for trails improvement	\$100,000
• Allowance for upgrade to playground (nature play)	\$102,000
• Allowance for additional precinct signage	\$30,000

As a result, Council listed \$50,000 in the 2017/18 budget for renovation of the Cottage, along with \$100,000 listed under ‘Grants’.

The FOAPBG approached Lotterywest seeking \$100,000 funding assistance and was subsequently advised they were unsuccessful as they did not meet the necessary funding criteria. The Cottage was then listed again in the 2018/19 budget under the same cost share arrangement. During the City’s mid-year budget review process in March 2019, Administration submitted a budget amendment request to increase the overall budget to \$397,600 exclusive of on costs, which comprised of \$257,600 municipal funding and \$140,000 of potential grant funds for the Allen Park Cottage.

Administration briefed Council on 6 February 2020 and were requested to investigate potential sources of alternative funding through Lotterywest and the Heritage Council. Lotterywest responded to the City advising they would not consider a grant application on the following basis:

- If the grant was for conservation or restoration for heritage purposes; and
- If the grant was for maintenance works.

Heritage Council grants through the Department of Planning, Lands and Heritage (DPLH) are unlikely to be supported on the following basis:

- The cottage and the precinct are not registered as State Heritage places and therefore do not have statutory protection.
- Funding for 2019/20 has been fully committed, and in previous years was not made available to local governments.
- In order for the FOAPBG to be eligible to apply for a heritage grant, they would need to be able to demonstrate they are responsible for the maintenance of the building as part of a lease agreement, which requires all parties to agree and the lease to be endorsed by Council.

The DPLH mentioned that as the Allen Park Heritage Precinct is a classified place by the National Trust, it may be eligible for their heritage appeals service, however this would require the appeal organisers to have stewardship of the cottage. Currently the FOAPBG do not have a lease, nor stewardship of the cottage.

Building Condition

The FOAPBG Cottage presents in a very poor condition. The entire structure is supported by stumps that have decayed causing sections of the building to subside, consequently effecting the buildings structural integrity. In turn, large cracks are clearly evident where the brick courses have pulled away and the bond between connecting walls is failing. The cladding and other external finishes predominantly Asbestos containing material.

Around the time that the mid-year budget was being approved in March 2019, the City became aware of termites having accessed the roof space during a routine annual termite check. As this could significantly impact the scope of works proposed, the commencement of works was put on hold temporarily and a building inspection was organised to check the extent of the damage. This has now been completed and a building inspector has confirmed the roof structure to be in sound condition, but with some minor termite damage to the pine battens that form part of the ceiling structure. Termite treatment has been implemented and is being regularly monitored.

Compliance

In advance of undertaking any works, the City's Building Department confirmed that for the scope of works, a building permit would be required and, considering the building's current use as a community facility and not a general residence, the building would need to be re-classified as a 9b assembly building suitable for general public/community use.

As a change of classification from 1a to 9b, this means the new building permit application would need to be assessed against all provisions of the National Construction Code BCA 2019, including structural, fire safety and services and energy efficiency. In addition, the building would need to comply with the required accessibility provisions including disability access to and within the building, a parking bay with fully accessible path of travel to the building and the provision of an accessible toilet.

The combination of new building requirements as a result of the building use re-classification and the need to comply with DDA have significant implications on the budget for the project. The existing scope upon which costings and budget are based, does not take the additional requirements of a 9b assembly building into consideration. It is anticipated the costs of renovation would be greater than previously anticipated and previously budgeted.

Risk

The City engaged Stratagen JBS&G to undertake a Bushfire Management Plan for the Heritage Precinct. It was highlighted in the plan the location of the Cottage was in a “High Risk” area surrounded by Class A forest which places it in the highest (Bushfire Attack Level – Fire Zone) BAL – FZ.

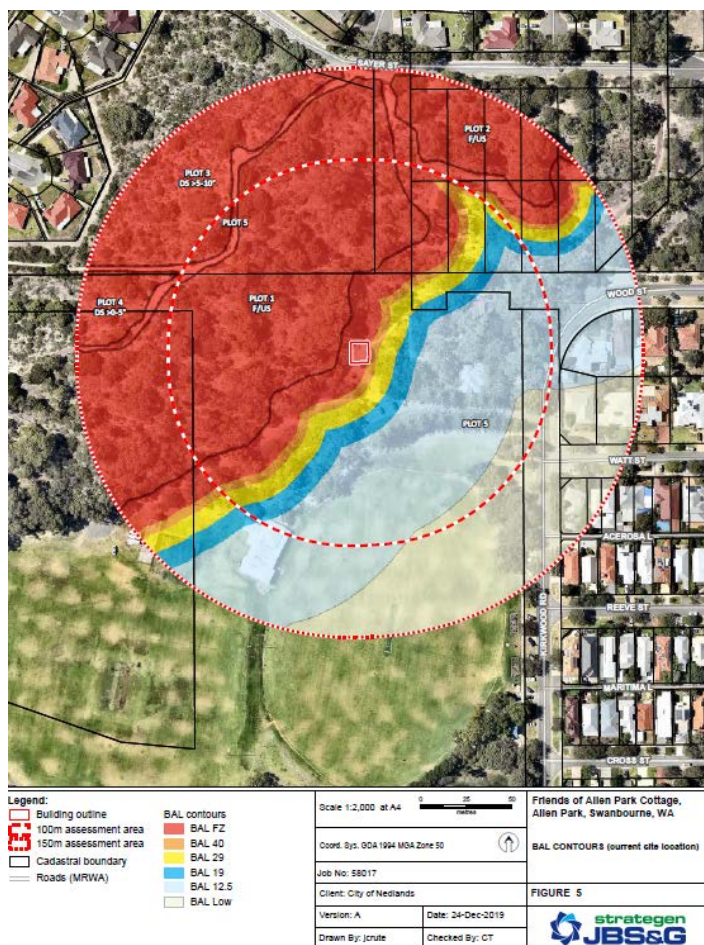


Figure 1: Showing cottage location inside BAL-FZ

The BAL contour map above indicates that the current site is situated within BAL-FZ and is likely subject to significant radiant heat and ember attack. For compliance to be achieved there is potential to reduce the radiant heat impacts on the subject site in its current location.

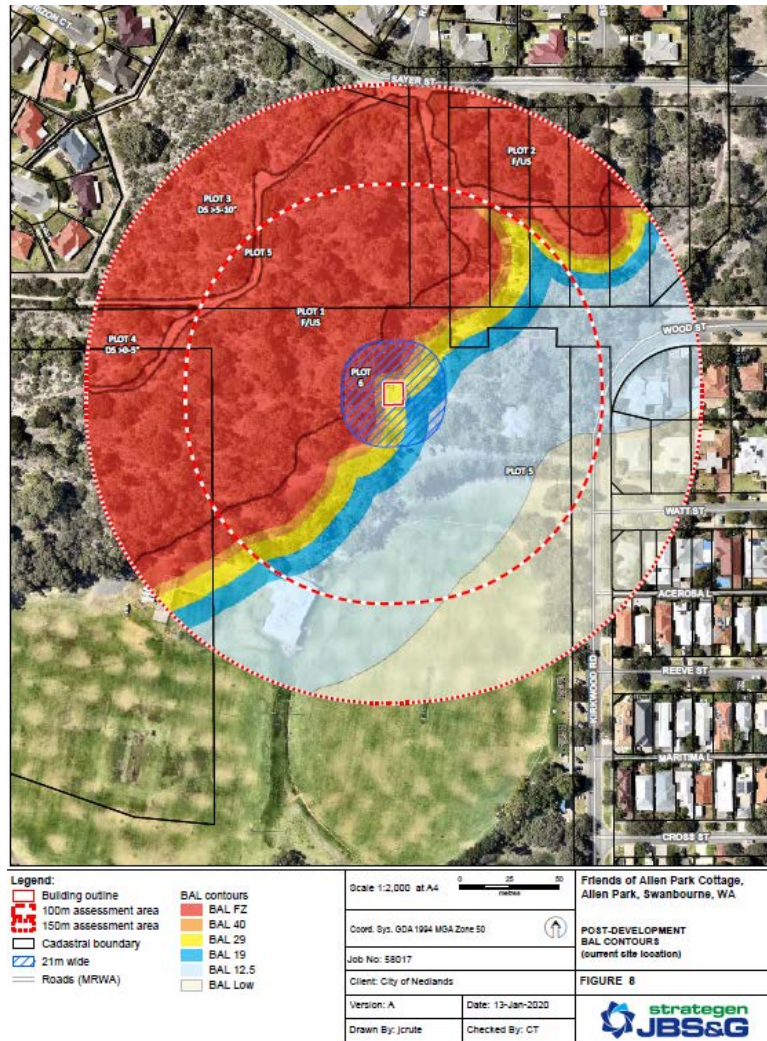


Figure 2: Showing 21 metre Asset protection Zone

Reduced risk through the implementation of a 21-metre-wide Asset Protection Zone (APZ) as depicted in the image above.

In order to renovate the building in its existing location, the City requires approval of a clearing permit from the Department of Water, Environment and Recreation to comply with the 21 metre buffer zone recommended through the bushfire management plan.

Due to the change in building classification from 1a to 9b, the City will be required to comply with the *Disability Discrimination Act 1992*.

Should the City call for Tenders (RFT) as required by the Regulations, the City may not have sufficient budget in the 2019/20 financial year to award the tender.

Legislation

The Local Government Act 1995

Planning and Development Act 2005

Planning and Development Regulations 2009

State Planning Policy 3.7 Planning in bushfire prone areas

Building Act 2011

Disability Discrimination Act 1992

Key Relevant Previous Council Decisions:

At the Ordinary Council meeting of 19 December 2017, Council resolved:

Item 13.5 – Allen Park Master Plan

“Council endorses the Allen Park Master Plan, as provided in Attachment 1, as a guiding document for future uses, activities, preservation, capital budgets and grant.”

At the Ordinary Council meeting of 26 March 2019, Council resolved:

Item CPS06.19 Mid-Year Budget Review – 2018-19

“receives and adopts, in accordance with Regulation 33A of the Local Government (Financial Management) Regulations 1996, the mid-year budget review and the revised Rate Setting Statement for the year ending 30 June 2019.”

Consultation

As part of the Allen Park Master Plan process the City undertook an extensive public consultation which culminated in the adoption of the Allen Park Master Plan in December 2017. Administration has been involved in ongoing dialogue with the FOAPBG regarding progression of identified elements of the Allen Park Master Plan. Administration met with the FOAPBG on Wednesday 11 December 2019 to discuss their concerns regarding the current condition of the cottage, and to gather a better understanding of the work they undertake in the bushland, as well as their current use of the cottage. Also discussed was what the group require in order to be able to undertake their activities, with the main requirements being:

- A place to hold and conduct meetings of the group;
- Kitchen facilities;
- WC facilities; and
- Storage facilities.

Petition

Council was presented with a petition at its Ordinary Meeting held on the 23 June 2020. Its signatories are requesting the City to restore the cottage for use by the Friends group. This Petition was received by Council, with no further action.

Strategic Implications

How well does it fit with our strategic direction?

Section 05 of the Strategic Community Plan “Our Priorities” states that we will ensure our buildings meet City and State Government Standards, particularly public safety and accessibility.

Who benefits?

At present providing an upgrade to the Allen Park Cottage will be only benefit the current user group “Friends of Allen park Bushland Group”. It is envisaged that by building a multi-use facility in proximity it will ensure equitable distribution of benefits to the community.

Does it involve a tolerable risk?

Renovating the cottage in its current location is a “High Risk” due to the impacts of surrounding bushland and its proximity inside the current bushfire attack zone. This means the building itself is at a high risk of ember attack should the surrounding bushland experience a fire. The risk can be managed by relocating demolishing the existing cottage and building a more robust multi use facility and locating it outside of the BAL zone.

Do we have the information we need?

Based on the age and condition of the current asset and the information provided by Stratagen, we now have robust evidence / data and analysis of options in order for a decision to be made on the future of this facility.

Budget/Financial Implications

Proposal 1

Renovate the Allen Park Cottage in its current location incorporating all necessary bush fire protection measures / modifications and retain the Allen Park Cottage as a Heritage Building. Noting there is a requirement to implement significant bushfire protection modifications to the exterior of the Cottage that could potentially compromise the aesthetic and heritage values of the building. Alternatively, there will be a requirement to reduce the potential fuel loading surrounding the building through clearing of vegetation for a distance of 21m surrounding the building.

Hodge Collard Preston Architects have undertaken a full assessment of the cottage and provided a conceptual design and cost estimate for the proposed alterations to enable the building to achieve compliance as a community building (Class 9b).

Construction costs are projected to be \$250,000 exclusive of GST and projected on-costs. Due to the condition and age of the building, there is a substantial risk that unforeseen items may arise if a renovation is undertaken which could impact the construction budget (refer Table 1 below).

Table 1. Concept Design and Cost Estimate

Construction Cost (Exc GST)	\$215,000
Design + Contingency	\$35,000
Construction Cost + Contingency (Exc GST)	\$250,000
Bush Fire Protection Measures/ Modifications	TBC = \$60,000 - \$70,000
Temporary accommodation works	Excluded
Consultant fees + Disbursements	Excluded
Cost escalation to RFT	Excluded
Paving upgrade around building	Excluded
Air Conditioning	Excluded
External sewer and water service upgrade works	Excluded
External electrical infrastructure upgrade works	Excluded

Should Council wish to renovate the Allen Park Cottage and achieve the (9b Assembly Building) classification, the following alternate recommendation applies:

Implement the works as contained in the Hodge Collard Preston Architects Report.

- a. Secure approval from DWER for a clearing permit to clear a 21m buffer around the existing building as recommended within the Bush Fire Attach and Bush Management Report.
- b. Implement the clearing permit requirements arising from any clearing permit approval as may be issued by DERW.
- c. Arrange a change to the Cottage land-use classification to allow the building to be occupied as a public meeting place.
- d. Negotiate with the FOAPBG to enter into a formal lease arrangement that would enable the group to attract future grant funding.
- e. Liaise with the Friends of Allen Park Group to identify an alternative meeting venue and storage facility close by for the duration of the proposed renovation works.

Proposal 2

Renovate the Allen Park Cottage in its current location incorporating all necessary bush fire protection modifications at an estimated cost of \$300,000-\$350,000 exclusive of GST and on-costs.

- a. Amend the current land vesting to allow the Cottage to be used as a public meeting place for the FOAPBG.
- b. Prepare a Lease or Management Licence to arrangement in conjunction with the FOAPBG to allow Allen Park Cottage as a meeting venue.

Proposal 3

Based on the information outlined in this report, Administration recommends that Council approve the use of the \$150,000 budget to construct of a custom-built extension to the rear of the Allen Park Pavilion Building that incorporates a meeting room, small kitchen and storage for equipment. An extension to the Pavilion Building also provides for the FOAPBG to have access to shower, changeroom and toilet facilities.

Allow the FOAPBG to continue to use the Allan Park Cottage as a meeting venue during the construction of the extension to the building and repurpose or demolish the Allen Park Cottage.

Direct the direct the CEO to repurpose or demolish the building and restore the area through a revegetation program

Can we afford it?

The long-term financial plan allows for renewal of assets with a focus on upgrading the condition of all City buildings to a required modern standard. Consideration must be given to the current age and condition of the asset to ensure that any capital outlay prolongs the life of the asset and does not over capitalise.

How does the option impact upon rates?

The cost of the upgrade to this facility is equivalent to 1.5% of rates income based on 2020/2021 financial report.

Community Facility – 118 Wood Street, Swanbourne

Report

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Project Overview

BACKGROUND

The existing cottage at 118 Wood Street, Swanbourne is owned by City of Nedlands. The purpose of this report is to investigate the conversion of the residential building Class 1a to a community building Class 9b.

Due to the change of building classification (From a NCC Building Class 1a to Class 9b), some modification works will need to be undertaken in order to meet the requirements of the National Construction Code (NCC).

Hodge Collard Preston Architects have been engaged by the City of Nedlands to produce the following scope of works:

- Undertake a site measure of the existing cottage at 118 Wood Street, Swanbourne.
- Produce an existing site plan and floor plan of cottage.
- Produce concept plan of proposed alterations to enable the building to be used as a community building. (Class 9b)
- Produce a summary report detailing required works to generally bring the building up to meet standard of compliance and realise the concept proposals.
- Produce costings for the proposed concept options

PROJECT TEAM

Client	City of Nedlands
Architect	Hodge Collard Preston Architects
Quantity Surveyor	Owen Consulting

CONSULTANTS PREVIOUSLY ENGAGED BY CITY OF NEDLANDS

Structural Consultants	Peritas Group
Building Inspection	ProConsult
Contamination Consultant	Environmental Site Services

LOCATION



City of Nedlands

Community Facility – 118 Wood Street, Swanbourne

EXISTING SITE / LOCATION

The location of the existing cottage is at the west end of Wood Street within the Allen Park Heritage Precinct. The street enters Allen Park where Wood Street becomes Kirkwood Road. The property address is 118 Wood Street, Allen Park Heritage Precinct.

The site is currently zoned under Parks and Recreation

The building has a southern front elevation facing Clare Copse, though no formal vehicle or pedestrian access links the two. A pedestrian footpath connects to Wood Street from the rear of the property and provides the only disabled access to the building. There is no pedestrian footpath located along the verge of Clare Copse, rather, a path connects to the footpath leading from Wood Street to the rear of the property.

A rough asphalt driveway is located to the southern side of the cottage, leading to Clare Copse although there is no existing crossover linking the two. The driveway terminates at a bank parking bays on Clare Copse, vehicle access to the site is currently achieved by mounting the kerb in the parking bays or by driving off of the existing oval access road to the southwest of the cottage.

There are 7 no. public car parking bays located to the southern side of the property on Clare Copse, across the road from the oval in Allen Park Lower. The only parking available on Wood Street is 1 no. disabled car bay.

There is no fencing to the property. A sandstone retaining wall borders the cottage on the north, west and southern sides.

Refer to Appendices drawing **61.19-SK01** for the Site Plan.

Existing Building - External

The existing residential building is approximately 100m² gross floor area (including verandah areas). The wall construction of the existing 'original' building consists of timber framing externally clad with asbestos sheet and jointing strips. A newer addition comprises a cavity brick verandah with a skillion lean to roof along the northern side of the building.

The roof construction consists of timber framing with zincalume roof sheeting.

The house runs along a north – south axis. The north elevation is the 'rear' of the building, which is the 'main entry' to the building. The brickwork verandah that runs the length of the north elevation is now used as a storage space. Set back 2.0m from the northern face of the building is a sandstone retaining wall, replacing a 700mm high stone and mortar retaining wall that runs along the base of the northern elevation.

The southern elevation is the front of the cottage, facing south towards Allen Park's ovals. On the western side of the southern elevation, the living room is surmounted by a flying gable and projects beyond the central passage and bedroom, the setback between them being occupied by a 2m deep enclosed lean-to verandah.

The bedroom sits in the centre of the eastern elevation and is covered with a hip roof. From the northern edge of this springs a shallow lean-to roof covering the bathroom, with a shallower lean-to roof springing from the north of that to cover the enclosed brickwork verandah along the north of the cottage.

In the southeast corner timber planking runs horizontally from the ground up to the asbestos panels cladding the verandah. These recede as the ground level rises along the eastern elevation, until it is level with the base of the panelling. There has been extensive damage to the panels underneath the bedroom with some missing entirely.

In the north western corner of the house sits the kitchen, covered by a hip roof with an aluminium framed window looking west.

Refer to Appendices drawing **61.19-SK02** for the existing residence plan.

Refer to Appendices drawing **61.19-SK03** for the existing residence elevations.

Existing Building - Internal

The interior walls and ceilings of the original building are lath and plaster with no cornices. The floors are jarrah boarding in the original building, with vinyl tiling to the floor of the southern verandah and concrete floors to the northern verandah. The floor of the bathroom is white ceramic tiles with coving of the same tiles to the walls.

The front verandah is currently disused and is in poor condition. The southern and eastern walls are finished with painted panels (composition to be confirmed), these show evidence of water damage, as does the floor. The north and western walls are lined with ship lap weather boards and are in an average state. There is a window in the eastern wall and a larger window in the eastern corner of the southern wall which shows signs of damage.

Main entry to the building is now through the door on the northern end of the eastern elevation, through to the verandah that runs the full width of the building. The interior walls of the northern verandah vary in finish. To the north, north east and northwest the walls are unfinished brick. The walls shared with the central passage, kitchen and bathroom on the southern side of the verandah are lined with ship lap weather boards.

The central passage links the three original rooms of the house, the kitchen in the northwest, living room in the southwest and bedroom in the east with the two verandahs north and south. The living room has a central window in the southern wall, which has been replaced with an aluminium frame. Centred in the north wall is a brick chimney projecting some 450mm into the room. The fireplace has a timber mantle above it and the surround below the mantle has been painted red.

The kitchen has a brick chimney back to back with the one in the living room to the south, within the projection into the kitchen is a wood burning stove. Adjacent to the projection is an electric upright stove and oven with a separate range-hood above. Kitchen benches with a stainless steel sink and cupboards are located on the northern wall

The bedroom to the east of the central passage has two windows, one in the east and a double hung window in the southern wall, looking into the southern verandah.

Refer to Appendices drawing **61.19-SK02** for the existing residence plan.

Refer to Appendices drawing **61.19-SK03** for the existing residence elevations.

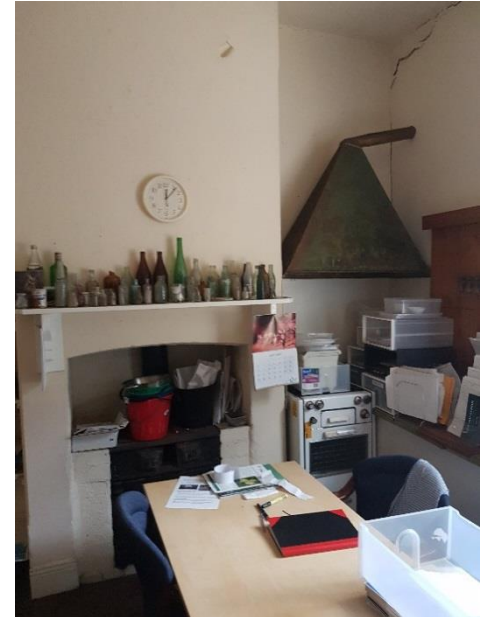
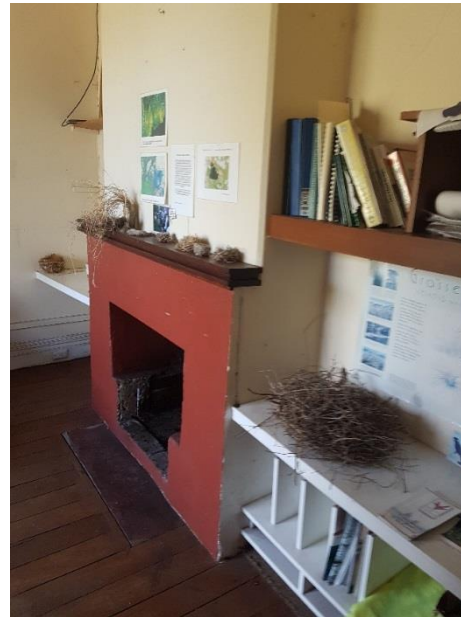
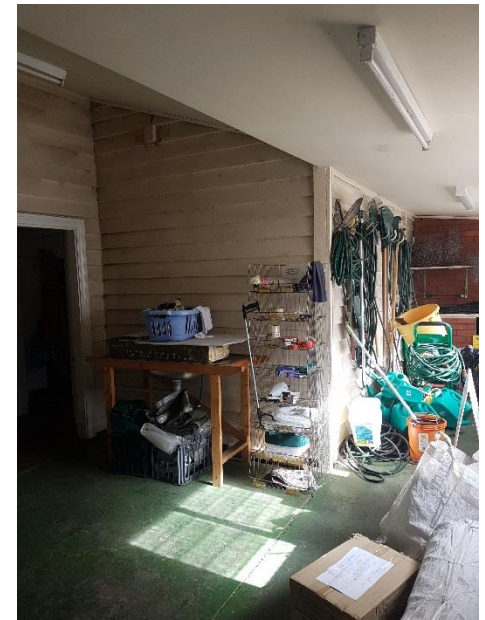
Existing Photos



City of Nedlands

Community Facility – 118 Wood Street, Swanbourne

Existing Photos



Proposed Alterations

Upon reviewing the existing residence and investigating the complications involved in converting the residence Class 1a to a multipurpose community building Class 9b, we propose a concept that minimises internal alterations and avoids extensions to the building footprint.

Converting class 1a to class 9b

Converting the cottage from a class 1a single residence to a compliant 9b public assembly building requires alterations to comply with different standards relating to structure, material compliance, services and fire prevention. Differences between standards pertaining to the two classes should be rectified in consultation with the City of Nedlands and the building surveyor.

Alterations & conversions of buildings from one class to another is typically a consultation process between the local government and private building surveyor. Some requirements / alterations for compliance may not be achievable or practical and a 'judgement call' will be required by the certifying party

Identified Limitations / Compliance Items

The following is a summary list of design limitations and compliance items identified by the specialist consultants which need to be addressed in the proposal. Details of each item are contained within the Consultants reports within the attached Appendices:

- The existing residence contains a number of small rooms and fireplaces, maximum room dimensions of 4.3m and minimum room dimensions of 2m; these limitations provide spatial challenges in accommodating 'useable' community meeting spaces within the existing rooms.
- Due to the age of the building, there are many unforeseen structure compliance issues which cannot be determined without a comprehensive investigation including demolishing some of the existing building components.
- Materials used in the building must comply with its new class of 9b, noncompliant materials should be identified and removed.
- The current building does not comply with current energy efficiency standards, in replacing the roof & wall cladding the whole building should be brought up to current standards.

- Access
 - Though the property is adjacent to car parking on Clare Copse, the only accessible means of entry to the cottage is via a paved footpath leading from Wood Street. The existing path has not been assessed for compliance.
 - One accessible car parking space is available on Wood Street, adjacent to the path leading to the property.
 - The cottage floor varies in composition and level, the southern and northern verandahs are at different levels to the rest of the cottage. Though the step from the northern verandah is minimal, the level of the southern verandah renders the area a non-accessible space.
- Toilets
 - A new toilet is required to comply with AS1428-Design for Access and Mobility. Refer Appendices drawing **61.19-SK05**.
- Stormwater
 - Risk identified
 - Currently stormwater from the cottage's downpipes is being discharged too close to the building, causing damage to the property and ground settlement.
 - Work to be carried out:
 - Soakwells should be installed on the property to provide a means for stormwater discharge without damaging the cottage's foundations, downpipes from the cottage should discharge into these new soakwells.
- Electrical

The electrical services of the existing cottage would require refurbishment in order to meet requirements for safety and lighting of a class 9b

 - Emergency and exit lighting should be installed in accordance with Australian standards for a class 9b
 - Confirmation all power is RCD protected
 - The status and compliance of existing cabling in the building should be ascertained by an electrical consultant.
- Structural (Refer to appendices **Structural Assessment**)

Peritas were engaged by City of Nedlands to carry out a structural investigation on the property. The report outlines a number of structural risks faced by the property as well as remedial works to be carried out to mitigate them.

 - Main findings risks:
 - Perimeter timber stumps supporting the floor and walls are heavily deteriorated due to termite damage /weathering, causing floors to slope toward external walls. Cracking was also present in external walls due to settlement from the decaying posts.

- Stormwater runoff from down pipes currently adds to ground settlement.
 - Main remedial works to be carried out to ensure structural integrity
 - Re-stump damaged timber posts, a concrete foundation will be required under all posts. Recommended to clad external perimeter stumps.
 - Crack stitching to be carried out on masonry walls showing cracking due to ground settlement
 - Ensure that roof has adequate tie-down capacity
- Building report (Refer to appendices **Building Report**)

ProConsult were engaged by City of Nedlands to inspect the building with a view to identify major defects and safety hazards. The inspection and reporting are limited to a visual assessment of the building members.

 - Main findings risks:
 - Areas of the roof are rusted through and leaking into the roof void space
 - Downpipes are discharging too close to the building, causing ponding, damp and subsidence damage in several areas
 - Perimeter stumps have had termite attack, excess water flow around and general sinkage
 - Renovation action items:
 - Stumps will need to be addressed first as any internal works will cause further damage to stumps until rectified
 - Roof cover to be made watertight for winter mainly rusted through roof sheets to be replaced
 - Downpipes extended & connected to soakwells
 - Maintain seal of any obvious exterior wall or frame water entry points around property prior to winter as a temporary measure
 - Review of internal floor, wall, ceiling materials for public building class compliance
- Bushfire Report

As the property is being looked at from the perspective of converting it from class 1a to 9b, Australian standards for construction in a bushfire prone area do not technically apply, *however*, on previous projects fire engineers and local government have made compliance with the standards a requirement. The property sits within a bushfire zone with a BAL of FZ, as such, the following steps could be taken. A full bushfire report will need to be conducted by an accredited assessor to identify any additional issues.

 - A minimum setback of 10m from the classified vegetation must be achieved, trees will have to be cleared for the building to comply.
 - All roof/wall junctions, eaves and openings must be sealed

- All external doors and windows must comply with AS3959
 - The subfloor space must be enclosed by a wall that complies with AS3959 requirements.
 - All roof penetrations must be sealed and all roof openings fitted with ember guards
 - All above-ground, exposed water and gas supply pipes must be metal
- External Cladding
 - City of Nedlands have requested that all on site Asbestos be removed (Refer to appendices **Asbestos Register** compiled by Environmental site services) this means removing and replacing the current asbestos external cladding.
 - Replacing the current external cladding means bringing the external envelope of the building up to compliance with current building requirements.
- Universal Access Compliance
 - Doorways to be increased in width with compliant door hardware or removed where a compliant door is not possible.
 - Door height thresholds to be addressed
 - Universal Access toilet facility required
 - The front verandah area is 100mm lower than the main house level, as such this area is technically not accessible for universal access
- Energy Efficiency

The existing cottage would require major refurbishment to meet energy efficiency requirements for a modern class 9b structure, measures to be taken include but may not be limited to:

 - Provide ceiling insulation / Roof insulation to meet total R-Value of R3.2
 - Cavity insulation to be installed to external walls to meet total R-Value of R2.8
 - Floor insulation to be installed to meet total R-Value of R1.0
 - Replace all external windows with aluminium frames, toughened low-e glass.
- Contamination
 - Refer to appendices **Asbestos Register** compiled by Environmental site services.

Proposal Risks

The following is a general list of possible risks which cannot be fully determined without invasive investigations:

- Condition of the buildings foundations
- Electrical cabling conditions and compliance
- Unforeseen structural / construction issues which may become apparent during demolition / construction
- Building materials compliance

PROPOSED ALTERATIONS

For details of the proposed alteration. Refer to Appendices drawing **61.19-SK05 & 61.19-SK06**

Concept Costing = \$250,000 + GST. Refer to Appendices for full costing details

The Concept Proposal will minimise the amount of internal alterations to the existing building which will minimise construction risk.

In consultation with the City of Nedlands, it is proposed to:

- Replace the existing kitchen with an accessible compliant tea preparation area as shown in Appendices drawing **61.19-SK05**.
- Replace the existing bathroom with a Universal Access Toilet as shown in Appendices drawing **61.19-SK05**.
- Convert the northern enclosed verandah into the main entry
- Remove all on-site asbestos, refer to appendices **Asbestos Register** compiled by Environmental site services.
- Implement bushfire resistant construction for a BAL of FZ
- Replace the roof cover to meet structural and energy efficiency requirements for a class 9b
- Achieve compliance with energy efficiency requirements by means of insulation and replacement of windows in the building envelope
- Install soakwells and route new downpipes to discharge into them to avoid soil settlement

A summary of the scope of works for proposed alteration is as follows:

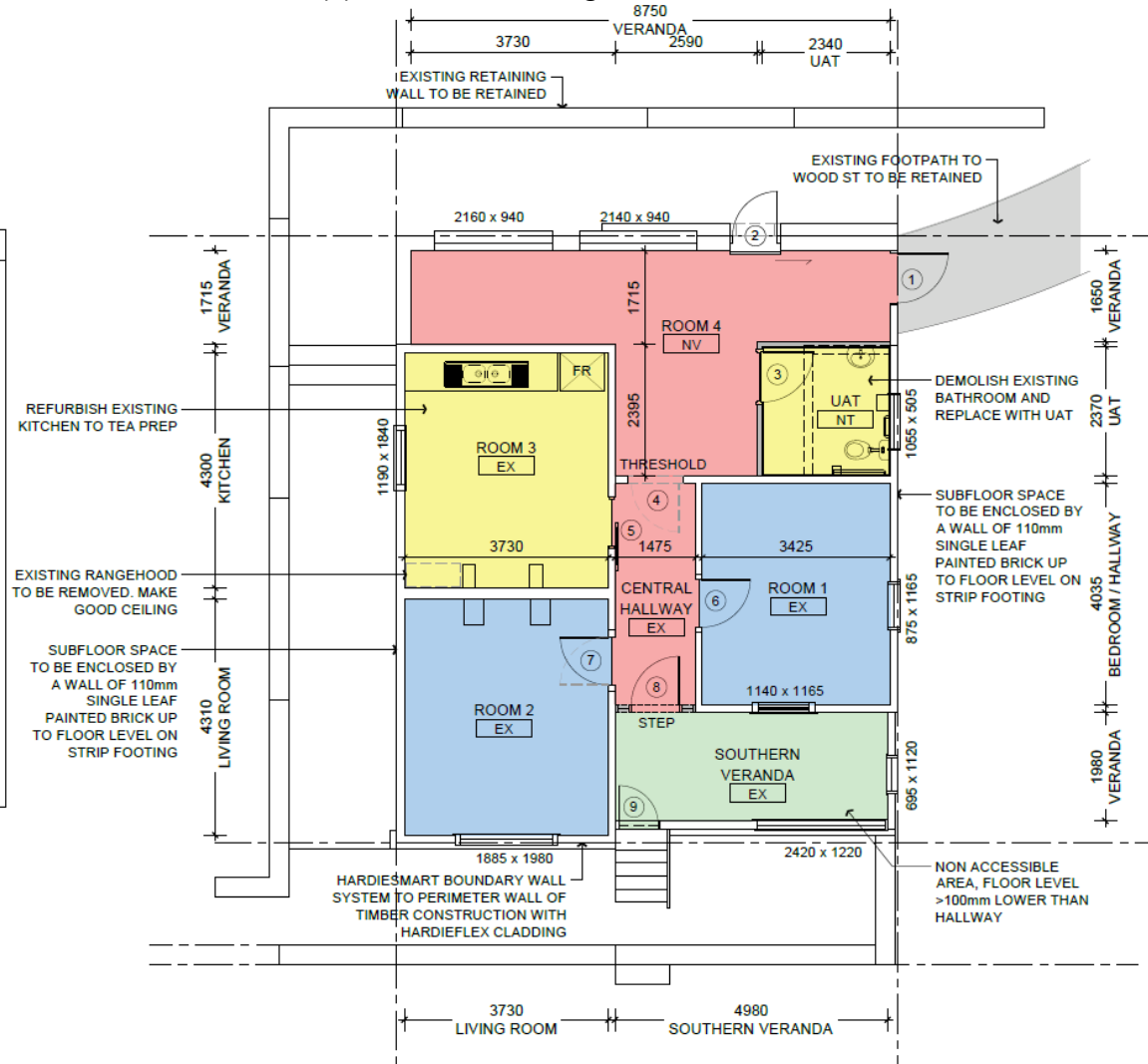
- Accessibility:
 - Demolish the existing bathroom and construct a UAT in its place
 - Remove the door at the northern end of the central hallway, widening the door frame to achieve a 1000mm wide continuous accessible path of travel
 - Provide compliant door hardware to all doors
 - Convert the door frame to the kitchen into a sliding door
 - Raise floor to the southern enclosed verandah to match floor level at the central hallway.
 - Replace the sliding door in the northern verandah with a 920mm clear swing door, widen the door frame to suit
- Refurbish existing kitchen into an accessible compliant tea preparation area.

- Energy efficiency:
 - Insulate the roof/ceiling, wall and subfloor spaces to meet NCC Section J requirements for minimum R-Values
 - Roof / Ceiling total R-Value to be minimum R3.2
 - Subfloor total R-Value to be minimum R1.0
 - External timber wall total R-Value to be minimum R2.8
 - All external windows to be replaced with aluminium frames with toughened low-e glass
- Bushfire resistance:
 - All external doors & windows to be protected by compliant bushfire shutters
 - Perimeter walls to timber stud structure to be fitted with 'Hardiesmart' Boundary Wall System
 - Min 6mm Hardiflex Cladding
 - Hardiewrap Weather Barrier
 - Fire Resistant Insulation
 - Roof/wall junction sealed to prevent openings greater than 3mm by use of fascia / eaves linings with FRL of -/30/30
 - Subfloor space to be enclosed by a wall of 110mm thick single leaf painted face brick on strip footing up to floor level.
 - Surrounding vegetation to be cleared to achieve 10m clearance from building envelope to vegetation.
- Roof cladding, gutters, downpipes and battens to be replaced with Colorbond roof, including flashings and anticon insulation
- Remove all on-site asbestos, refer to appendices **Asbestos Register** compiled by Environmental site services.
- All above ground water and gas supply pipes must be metal
- Structural
 - Re-stump damaged timber posts, a concrete foundation will be required under all posts.
 - Crack stitching to be carried out on masonry walls showing cracking due to ground settlement
- Stormwater
 - Soakwells should be installed on the property to provide a means for stormwater discharge without damaging the cottage's foundations, downpipes from the cottage should discharge into these new soakwells.
- Electrical
 - Emergency and exit lighting should be installed in accordance with Australian standards for a class 9b
 - All power must be RCD protected

PROPOSED ALTERATIONS

For details of the proposed alteration. Refer to Appendices drawing **61.19-SK05 & 61.19-SK06**

INTERNAL FINISHES SCHEDULE:	
ROOM 1	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING
ROOM 2	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING
ROOM 3	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING, TILED BACKSPLASH TO WALL BEHIND SINK.
ROOM 4	<ul style="list-style-type: none"> NEW VINYL TO CONCRETE FLOOR REPAINT ALL WALLS, NO CEILING, NEW ROOF EXPOSED
UAT	<ul style="list-style-type: none"> NEW TILING TO FLOOR WITH TILED SKIRTING PAINT TO ALL WALLS & CEILING, TILED BACKSPLASH TO WALL BEHIND HAND BASIN
CENTRAL HALLWAY	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING
SOUTHERN VERANDA	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING



DOOR LEGEND:	
1.	NEW DOOR WITH A SOLID CORE, SEALED SO AS TO PROVIDE NO GAPS GREATER THAN 3mm. 980 x 2160mm, ENSURE DOOR HARDWARE IS COMPLIANT WITH AS1428.1. ENSURE PAVING LEVEL AT THRESHOLD
2.	NEW NON-ACCESSIBLE DOOR 820 x 2100mm, TO HAVE A SOLID CORE, SEALED SO AS TO PROVIDE NO GAP GREATER THAN 3mm
3.	NEW DOOR TO UAT 920 x 2100mm, TO COMPLY WITH AS1428.1 REQUIREMENTS
4.	EXISTING DOOR TO BE REMOVED, FRAME WIDENED TO PROVIDE ACCESSIBLE PATH OF TRAVEL
5.	EXISTING DOOR FRAME REPLACED WITH SLIDING DOOR 850 x 2100mm, TO COMPLY WITH FOOD STANDARD REQUIREMENTS FOR ENTRY TO TEA ROOM
6.	EXISTING DOOR TO BE RETAINED 880 x 2100mm, HARDWARE TO BE REPLACED WITH ALTERNATIVES COMPLIANT WITH AS1428.1
7.	EXISTING NON-COMPLIANT DOOR TO BE RE-HUNG 880 x 2100mm, HARDWARE TO BE REPLACED WITH ALTERNATIVES COMPLIANT WITH AS1428.1
8.	EXISTING NON-ACCESSIBLE DOOR TO BE RETAINED, 880 x 2100
9.	NEW NON-ACCESSIBLE DOOR TO VERANDA, 720 x 2060mm. SOLID CORE, SEALED SO AS TO PROVIDE NO GAP GREATER THAN 3mm

WINDOW NOTE:	
REPLACE ALL EXTERNAL WINDOWS WITH NEW ALUMINIUM FRAMES, TOUGHENED LOW-E GLASS	

CONCLUSION

Hodge Collard Preston and the Specialist Consultants engaged by the City of Nedlands have produced this report to investigate the conversion of the existing residence at 118 Wood Street to a Multi-User Community Building.

The report outlines a list of design and construction items to bring the Residence up to the required NCC and Australian Standards requirements for a Class 9b – Public Building.

There are a number of improvements that are required to bring the building into conformance with current code requirements including; design issues, construction detailing, energy efficiency, bushfire resistance and universal access.

There are limitations involved in investigating the existing building which includes the inability to gain access to foundations, wall cavities and other possible construction compliance issues which cannot be determined until demolition commences, the Quantity Surveyor has allowed contingency sums within his report to account for these 'unknowns'.

We have provided a concept proposal for the City of Nedlands to consider. The concept provides a range of internal spaces for local community groups to use whilst avoiding major alterations internally or externally. **Construction cost of: \$250,000 + GST**

Due to the condition & age of the building, there is a substantial risk unforeseen items may arise if a renovation is undertaken which could affect the construction budget.

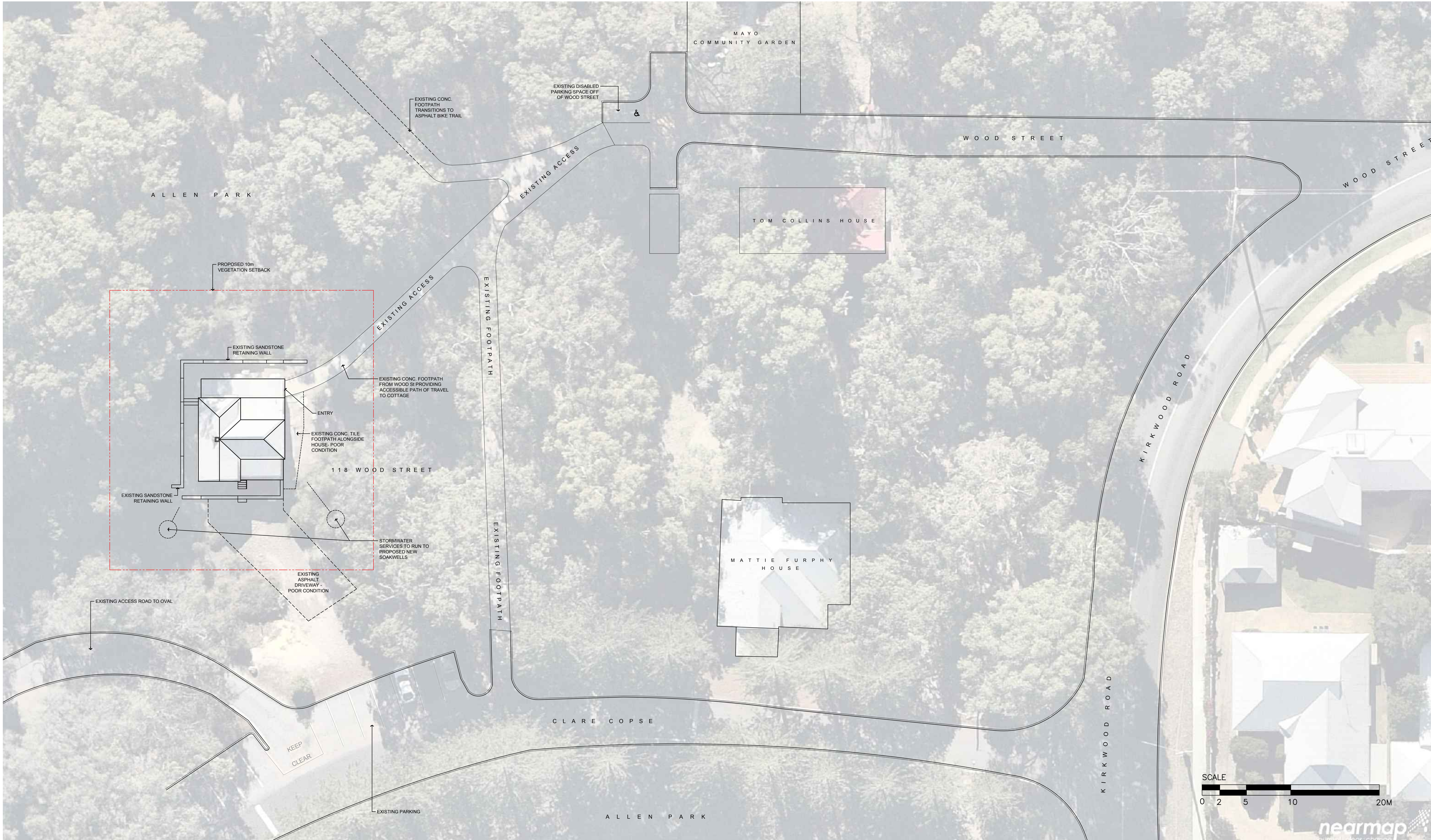
The report outlines a majority of items to address but a detailed design & documentation process will be required to clearly identify all items & costs for the building conversion.

APPENDICES

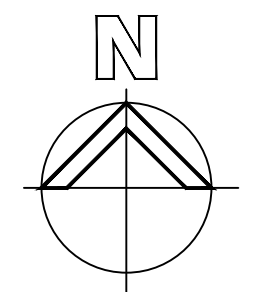
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City of Nedlands

Community Facility – 118 Wood Street, Swanbourne



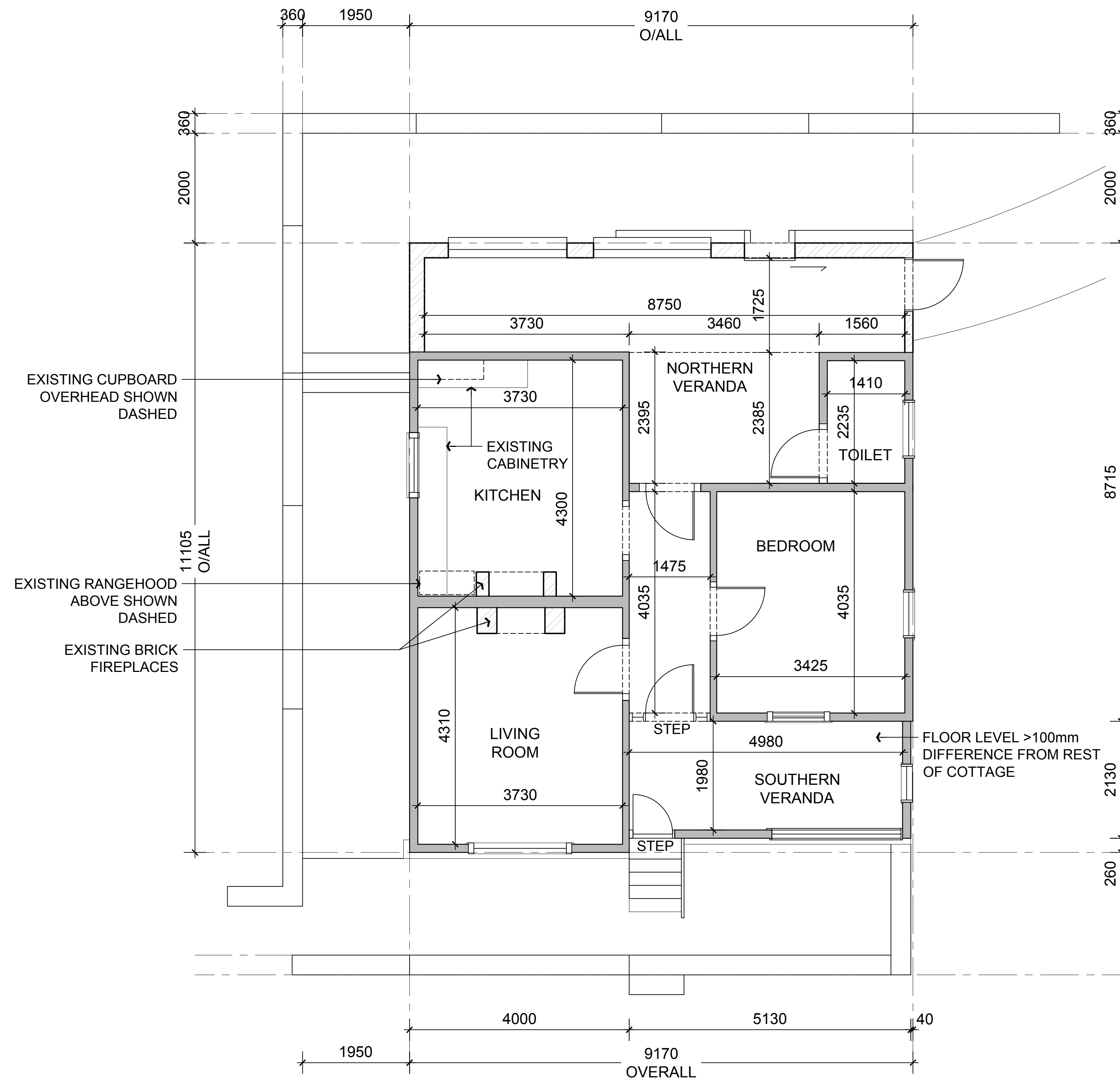
PROPOSED SITE PLAN
SCALE 1:200 @ A1



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drawn	checked	drawn	checked	date
project	description	MS	NP	03.06.2019
location	description	checked	NP	project no
118 WOOD St, SWANBOURNE	WOOD St COTTAGE REVIEW	1:200	61.19	dwg no
		@ A1	SK01	rev
			A	

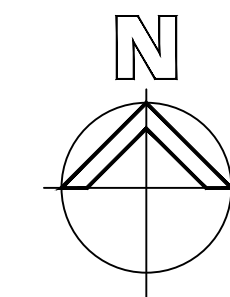
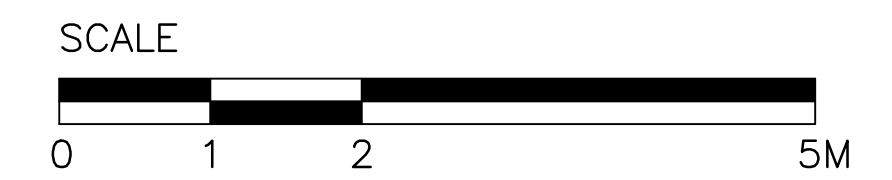
Third Floor, 38 Richardson Street,
West Perth, WA 6005
PO Box 743, West Perth, WA 6872
Ph: (08) 9322 5144
Fax: (08) 9322 5740
Email: admin@hpcarch.com

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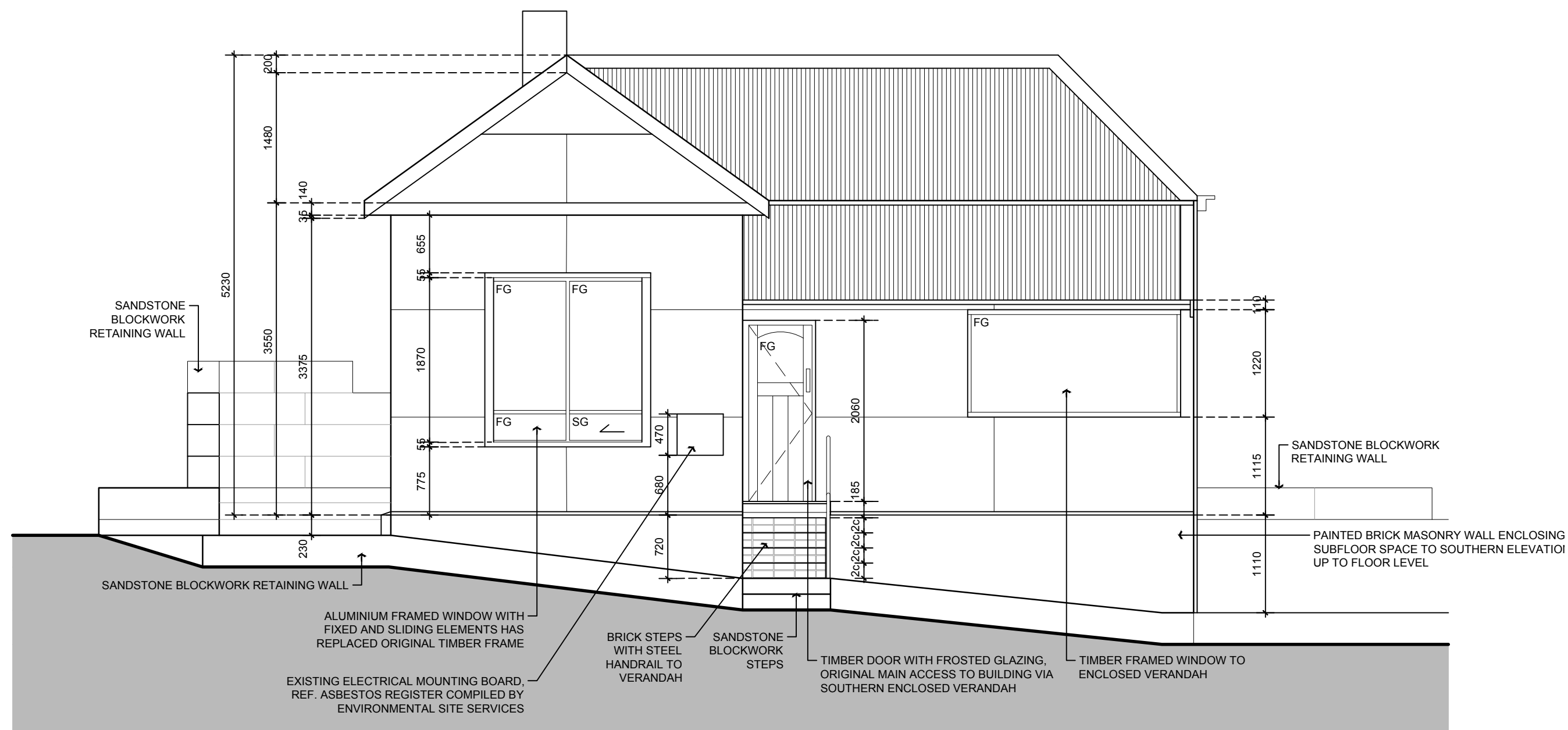


EXISTING FLOOR PLAN
SCALE 1:50 @ A1

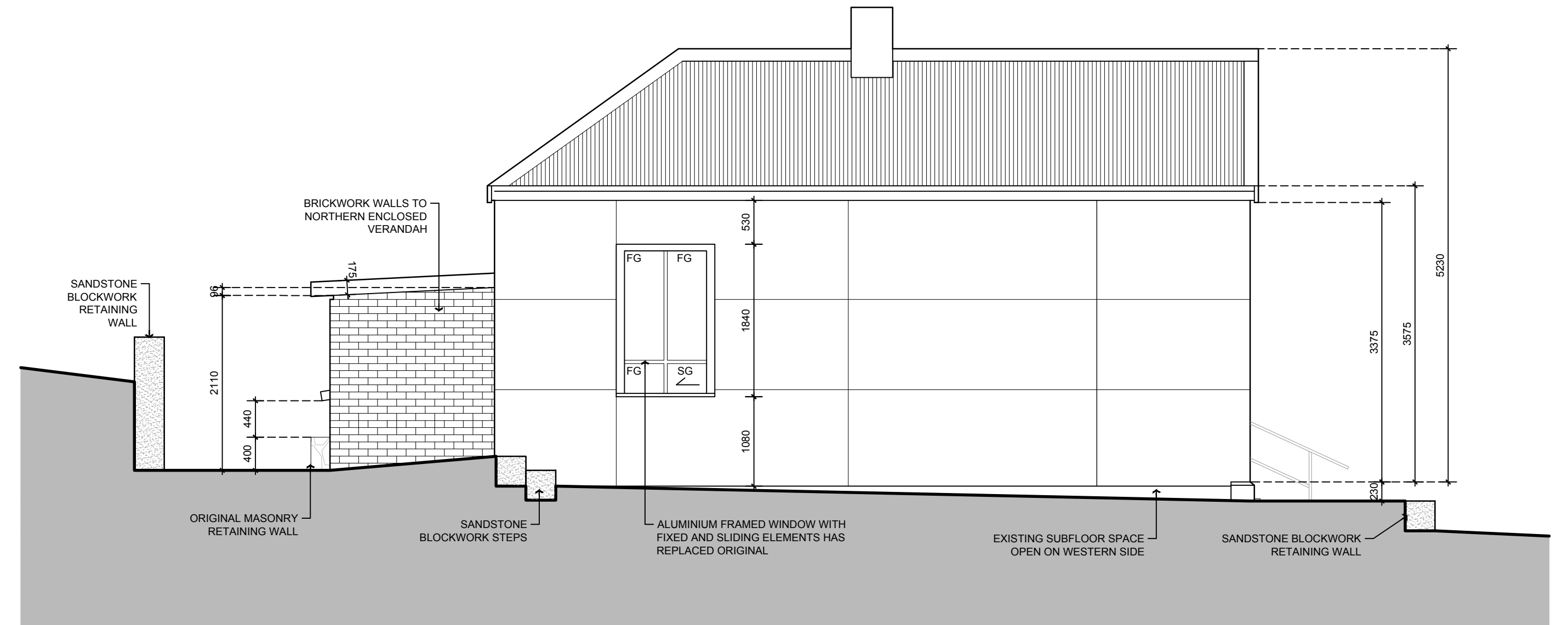
NOTE:
ALL DIMENSIONS TO BE CONFIRMED ON SITE BY SURVEY



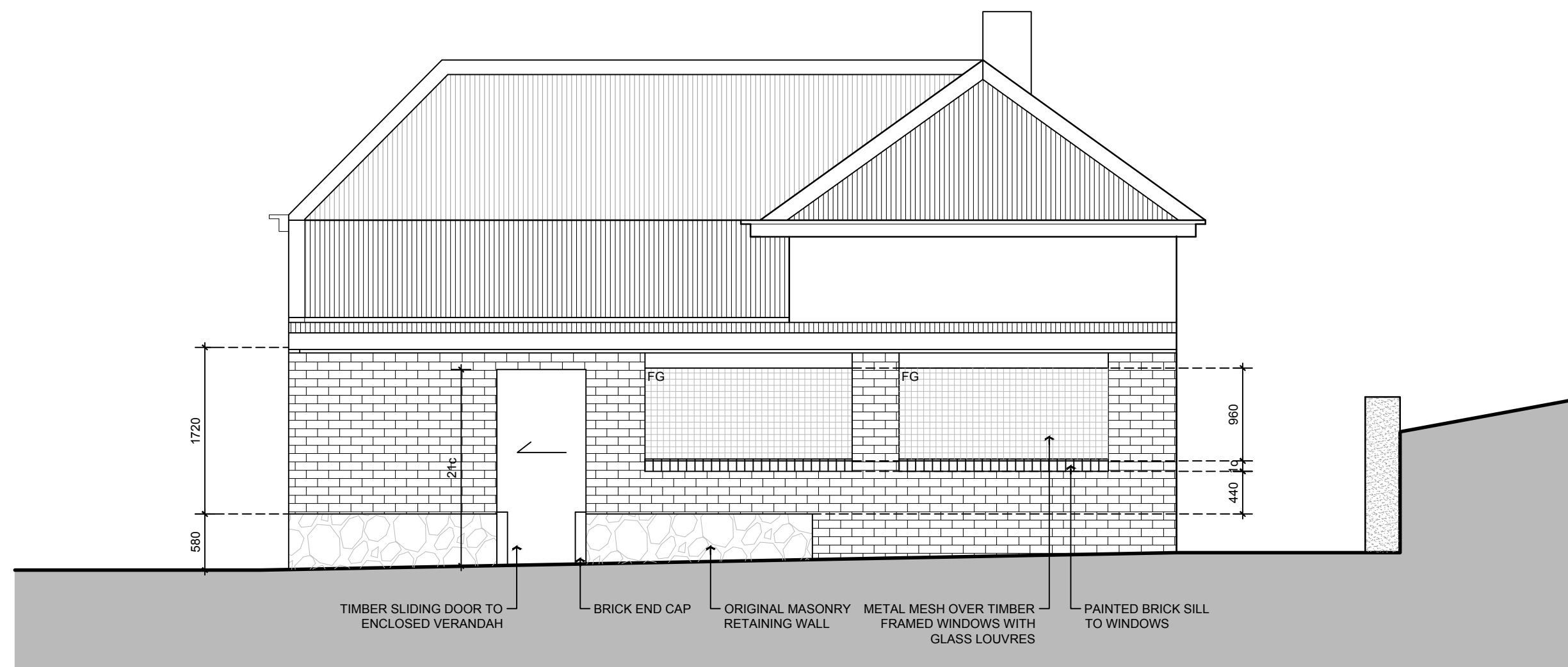
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project	location	drawn	checked	description
WOOD St COTTAGE REVIEW	118 WOOD St, SWANBOURNE	MS	NP	EXISTING FLOOR PLAN
scale	date	project no	dwg no	rev
1:50 @A1	30.06.2019	61.19	SK02	A
Hodge Collard Preston ARCHITECTS Third Floor, 38 Richardson Street, West Perth, WA 6005 PO Box 743, West Perth, WA 6872 Ph: (08) 9322 5144 Fax: (08) 9322 5740 Email: admin@hpcarch.com				



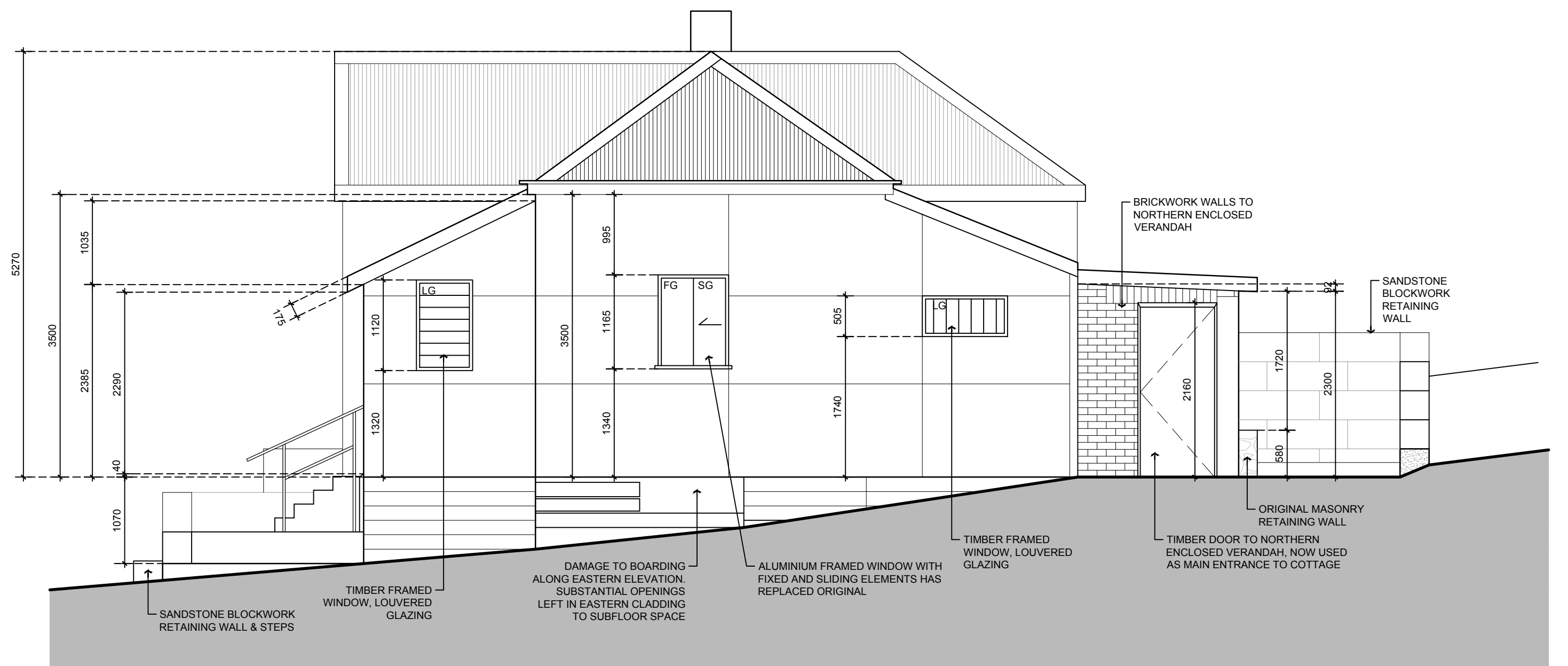
E1 ELEVATION - SOUTHERN
SCALE: 1:50 @ A1



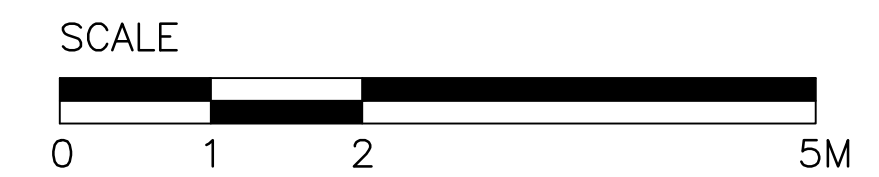
E2 ELEVATION - WESTERN
SCALE: 1:50 @ A1



E3 ELEVATION - NORTHERN
SCALE: 1:50 @ A1



E4 ELEVATION - EASTERN
SCALE: 1:50 @ A1

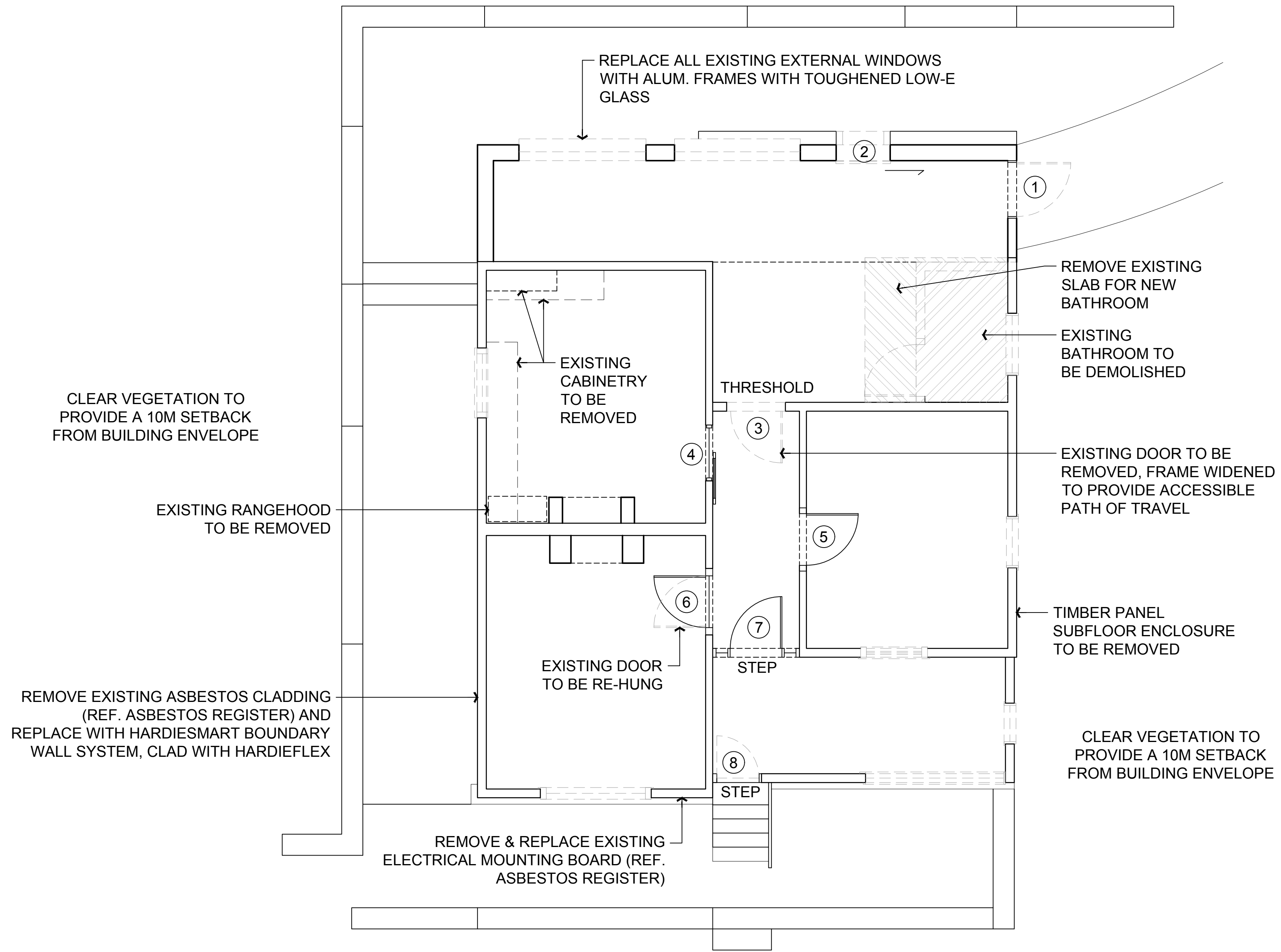


EXISTING ELEVATIONS
SCALE 1:50 @ A1

NOTE:
ALL DIMENSIONS TO BE CONFIRMED ON SITE BY SURVEY

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revision/issue	description	drawn	checked	date
project	WOOD St COTTAGE REVIEW	drawn	description	
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scale	1:50 @ A1	date	30.06.2019	
Hodge Collard Preston ARCHITECTS		project no	61.19	dwg no SK03
Third Floor, 38 Richardson Street, West Perth, WA 6005 PO Box 743, West Perth, WA 6872 Ph: (08) 9322 5144 Fax: (08) 9322 5740 Email: admin@hpcarch.com		rev	A	

CLEAR VEGETATION TO PROVIDE A 10M SETBACK FROM BUILDING ENVELOPE



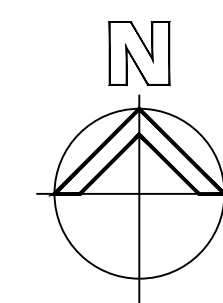
DOOR LEGEND:

1. EXISTING DOOR TO BE REMOVED, REPLACED WITH SOLID CORE DOOR SEALED SO AS TO PROVIDE NO GAP GREATER THAN 3mm.
2. EXISTING SLIDING DOOR TO BE REPLACED WITH SOLID CORE SWING DOOR 920mm CLEAR, SEALED SO AS TO PROVIDE NO GAP GREATER THAN 3mm. WIDEN DOOR FRAME TO FIT NEW DOOR. BRICK CAPPING TO OLD RETAINING WALL IN DOORWAY TO BE REMOVED AND ENDS OF WALL MADE GOOD
3. EXISTING DOOR TO BE REMOVED, FRAME WIDENED TO PROVIDE ACCESSIBLE PATH OF TRAVEL
4. EXISTING DOOR FRAME REPLACED WITH SLIDING DOOR 850 x 2100mm, TO COMPLY WITH FOOD STANDARD REQUIREMENTS FOR ENTRY TO TEA ROOM
5. EXISTING DOOR TO BE RETAINED 880 x 2100mm, HARDWARE TO BE REPLACED WITH ALTERNATIVES COMPLIANT WITH AS1428.1
6. EXISTING NON-COMPLIANT DOOR TO BE RE-HUNG 880 x 2100mm, HARDWARE TO BE REPLACED WITH ALTERNATIVES COMPLIANT WITH AS1428.1
7. EXISTING NON-ACCESSIBLE DOOR TO BE RETAINED, 880 x 2100
8. EXISTING DOOR TO BE REMOVED, REPLACED WITH SOLID CORE DOOR SEALED SO AS TO PROVIDE NO GAP GREATER THAN 3mm

NOTE:

REMOVE ALL ON-SITE ASBESTOS, REFER TO APPENDICES **ASBESTOS REGISTER** COMPILED BY ENVIRONMENTAL SITE SERVICES

SCALE



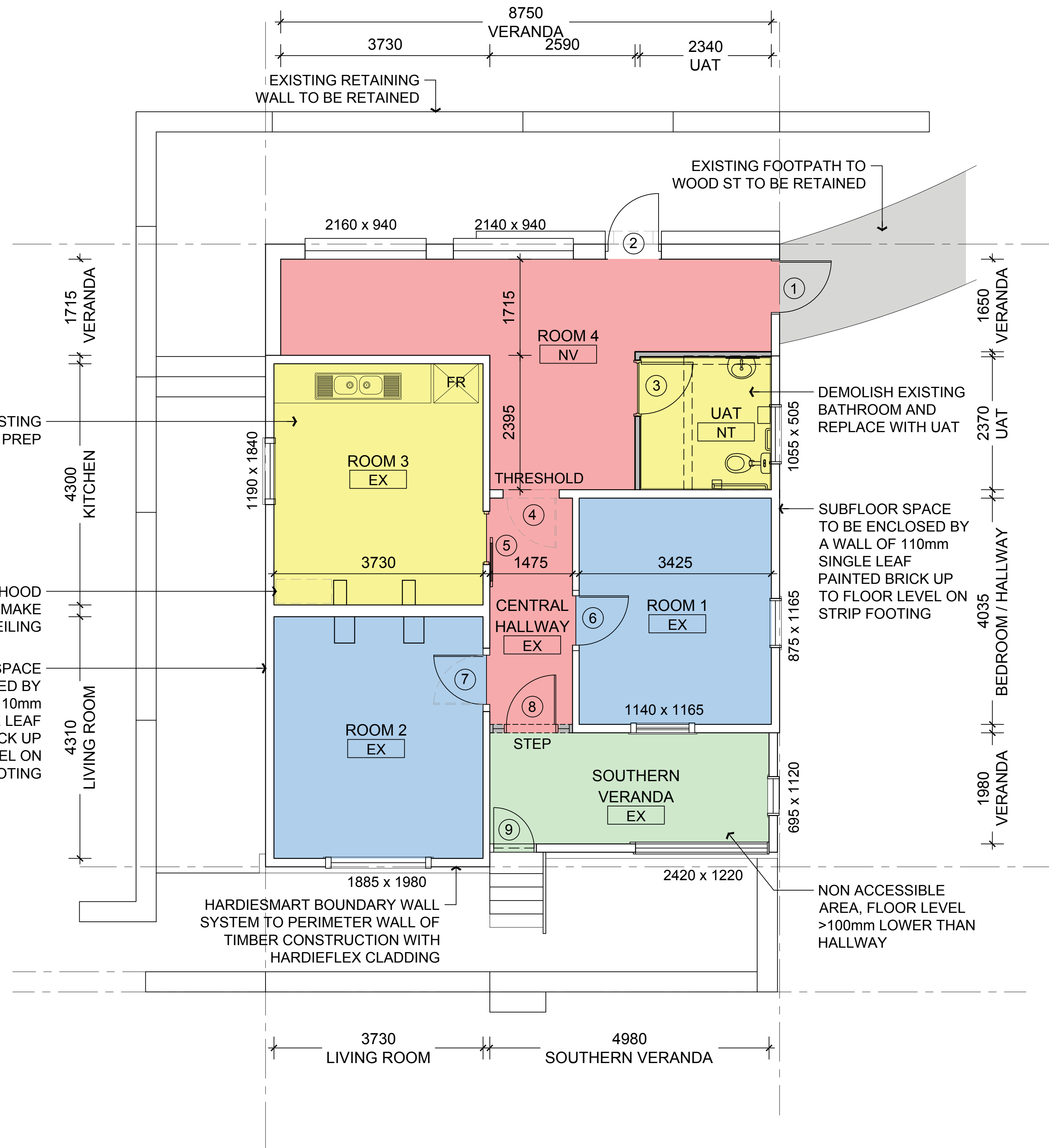
DEMOLITION PLAN
SCALE 1:50 @ A1

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revision/ issue	description	drawn	checked	date
project	WOOD St COTTAGE REVIEW	drawn	description	
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		checked	NP	
		scale	date	30.06.2019
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		@A1	dwg no	SK04
			rev	A

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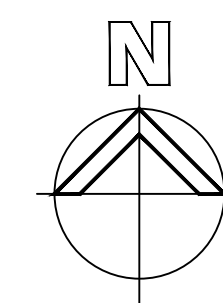
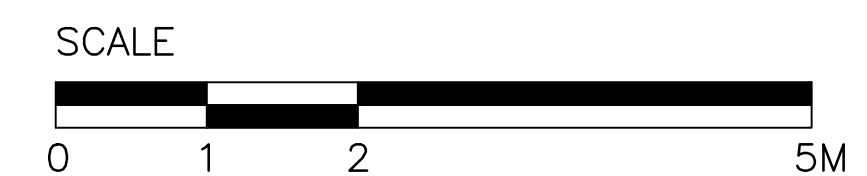
INTERNAL FINISHES SCHEDULE:	
ROOM 1	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING
ROOM 2	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING
ROOM 3	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING, TILED BACKSPLASH TO WALL BEHIND SINK.
ROOM 4	<ul style="list-style-type: none"> NEW VINYL TO CONCRETE FLOOR REPAINT ALL WALLS, NO CEILING, NEW ROOF EXPOSED
UAT	<ul style="list-style-type: none"> NEW TILING TO FLOOR WITH TILED SKIRTING PAINT TO ALL WALLS & CEILING, TILED BACKSPLASH TO WALL BEHIND HAND BASIN
CENTRAL HALLWAY	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING
SOUTHERN VERANDA	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING



DOOR LEGEND:	
1.	NEW DOOR WITH A SOLID CORE, SEALED SO AS TO PROVIDE NO GAPS GREATER THAN 3mm. 980 x 2160mm, ENSURE DOOR HARDWARE IS COMPLIANT WITH AS1428.1. ENSURE PAVING LEVEL AT THRESHOLD
2.	EXISTING SLIDING DOOR TO BE REPLACED WITH SOLID CORE SWING DOOR 920mm CLEAR, SEALED SO AS TO PROVIDE NO GAP GREATER THAN 3mm. WIDEN DOOR FRAME TO FIT NEW DOOR. BRICK CAPPING TO OLD RETAINING WALL IN DOORWAY TO BE REMOVED AND ENDS OF WALL MADE GOOD
3.	NEW DOOR TO UAT 920 x 2100mm, TO COMPLY WITH AS1428.1 REQUIREMENTS
4.	EXISTING DOOR TO BE REMOVED, FRAME WIDENED TO PROVIDE ACCESSIBLE PATH OF TRAVEL
5.	EXISTING DOOR FRAME REPLACED WITH SLIDING DOOR 850 x 2100mm, TO COMPLY WITH FOOD STANDARD REQUIREMENTS FOR ENTRY TO TEA ROOM
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9.	NEW NON-ACCESSIBLE DOOR TO VERANDA, 720 x 2060mm. SOLID CORE, SEALED SO AS TO PROVIDE NO GAP GREATER THAN 3mm

WINDOW NOTE:	
REPLACE ALL EXTERNAL WINDOWS WITH NEW ALUMINIUM FRAMES, TOUGHENED LOW-E GLASS	

PROPOSED FLOOR PLAN
SCALE 1:50 @ A1



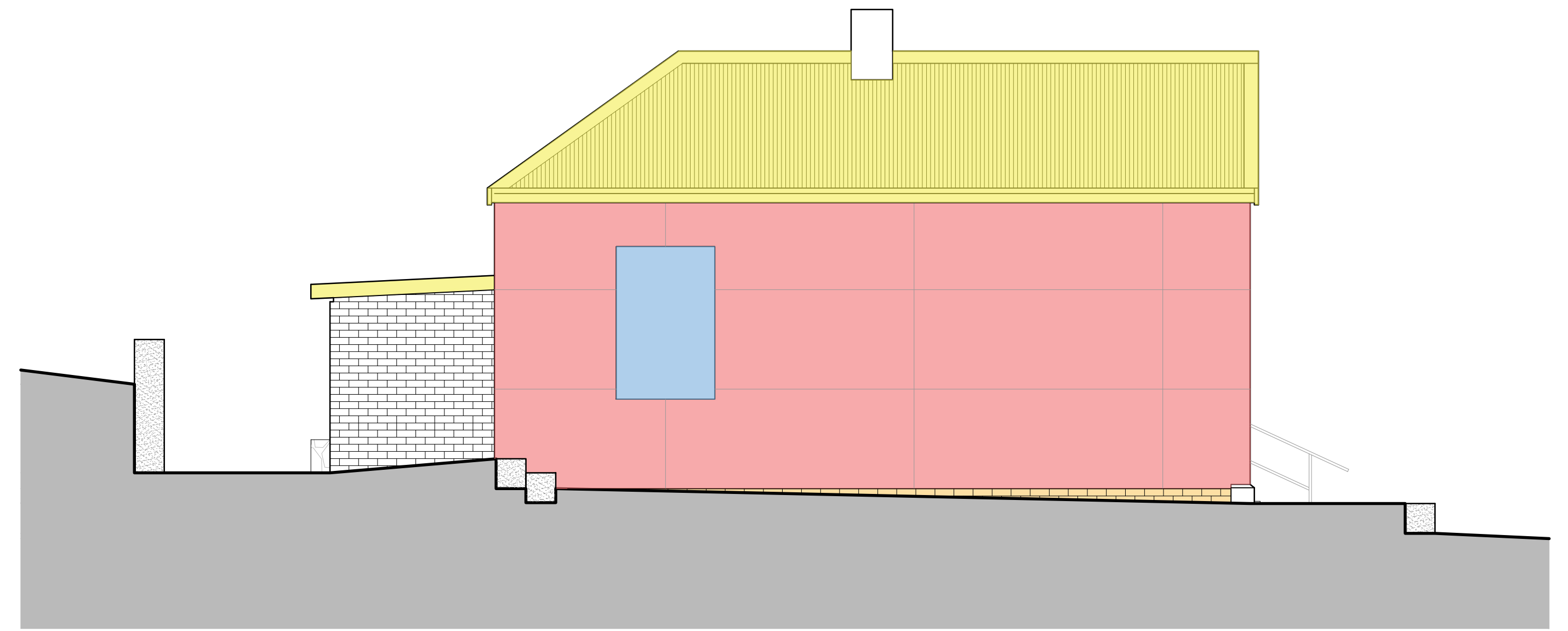
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revision/ issue	description	drawn	checked	date
project	WOOD St COTTAGE REVIEW	drawn	description	
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		scale	date	30.06.2019
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			dwg no	SK05
			rev	A

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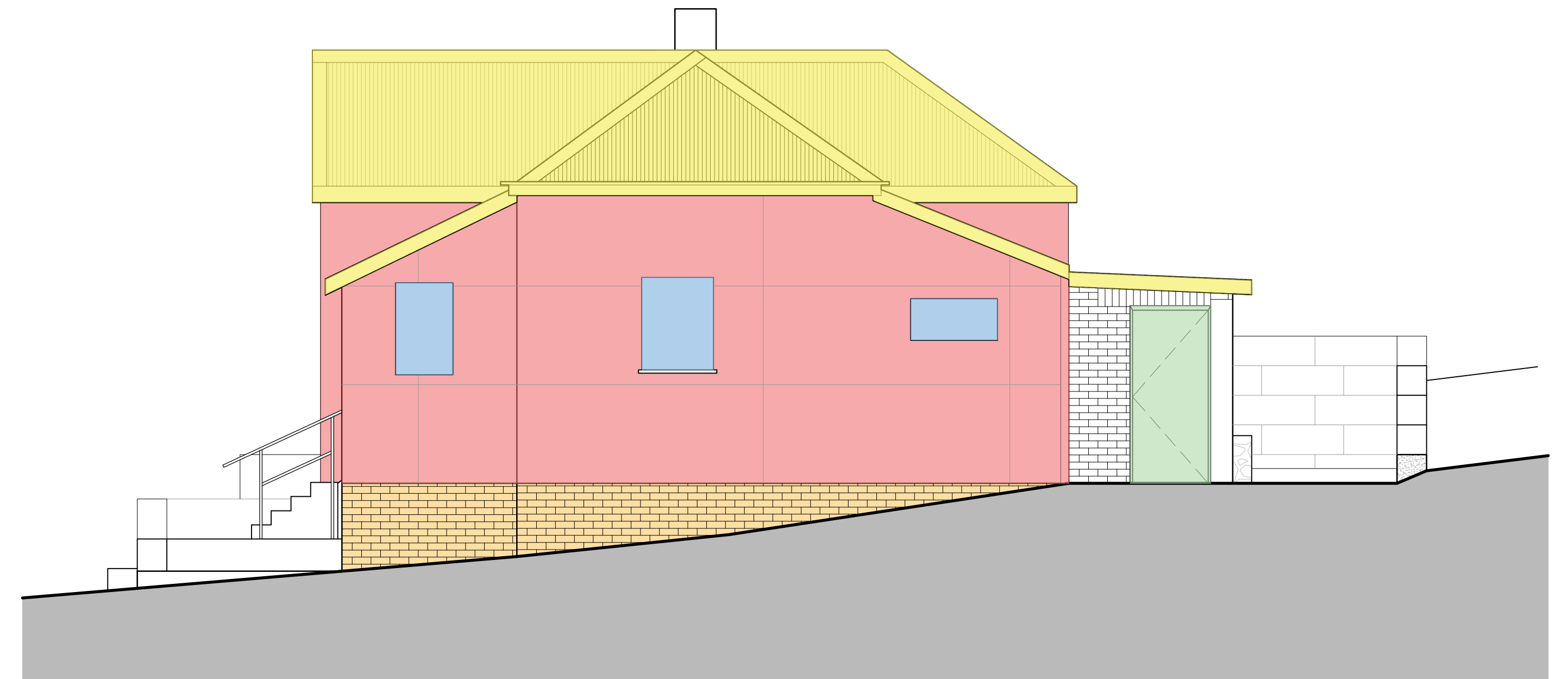
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SCALE: 1:50 @ A1



E2 ELEVATION - WESTERN
SCALE: 1:50 @ A1



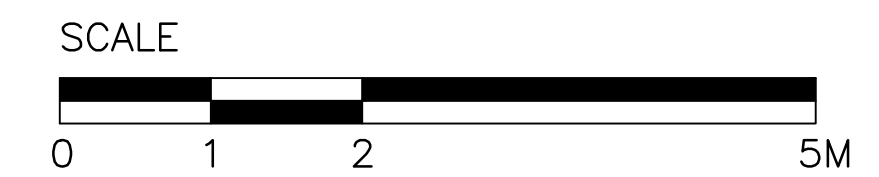
E3 ELEVATION - NORTHERN
SCALE: 1:50 @ A1



E4 ELEVATION - EASTERN
SCALE: 1:50 @ A1

DOOR LEGEND:

- REMOVE ALL EXTERNAL CLADDING TO TIMBER FRAME, REFER TO APPENDICES **ASBESTOS REGISTER** COMPILED BY ENVIRONMENTAL SITE SERVICES. REPLACE WITH JAMES HARDIE 'HARDIESMART' BOUNDARY WALL SYSTEM WITH 'HARDIFLEX' CLADDING
- REPLACE ALL EXTERNAL WINDOWS WITH NEW ALUMINIUM FRAMES WITH TOUGHENED LOW-E GLASS
ALL EXTERNAL WINDOWS TO BE PROTECTED BY BUSHFIRE SHUTTERS
- ALL EXTERNAL DOORS TO BE REPLACED WITH SOLID CORE DOORS TO COMPLY WITH AS3959, SEALED SO AS TO PROVIDE NO GAPS GREATER THAN 3mm
- ROOF CLADDING, GUTTERS, DOWNPIPES & BATTENS TO BE REPLACED WITH COLORBOND ROOF, INCLUDING FLASHINGS AND ANTICON INSULATION
- REMOVE ALL ON-SITE ASBESTOS, REFER APPENDICES **ASBESTOS REGISTER** COMPILED BY ENVIRONMENTAL SITE SERVICES.
- SUBFLOOR SPACE TO BE ENCLOSED BY A WALL OF 110mm THICK SINGLE LEAF PAINTED FACE BRICK UP TO FLOOR LEVEL ON STRIP FOOTING.



PROPOSED ELEVATIONS
SCALE 1:50 @ A1

NOTE:
ALL DIMENSIONS TO BE CONFIRMED ON SITE BY SURVEY

A	ISSUED FOR CITY REVIEW	MS	NP	03.07.2019
revision/ issue	description	drawn	checked	date
project	WOOD St COTTAGE REVIEW	drawn	description	
location	118 WOOD St, SWANBOURNE	MS	PROPOSED COTTAGE ELEVATIONS	
		checked	NP	
		scale	date	30.06.2019
		1:50	project no	61.19
		@A1	dwg no	SK06
			rev	A

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West Perth, WA 6005
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BUILDING INSPECTION | PROCONSULT

City of Nedlands

Community Facility – 118 Wood Street, Swanbourne

Hodge Collard Preston
ARCHITECTS

|



BUILDING INSPECTION

Complies with Australian Standard AS 4349.1-2007
Inspection of Buildings Part 1: Pre-Purchase
Inspections of Residential Buildings - Appendix C

May 07, 2019

PROPERTY ADDRESS

118 Wood Street,
Swanbourne, WA
6010, Australia

Inspection Date: 07 May 2019

Inspected by: Andrew Scales, Builder's Registration No: 10599

T: 0407 477 600

E: andrew@proconsult.com.au

Contents

03	Description of Building	04	General Details	05	Summary of Inspection
06	Areas Inspected	07	Areas Not Inspected	08	Inspection
09	General Photographs	10	Defects & Safety Issues	11	Other Inspections & Reports Required
12	Conclusion & Summary	13	Contact	14	Terms & Conditions
15	Definitions				

03 Description of Building

Type of Building:

✓ House and community building

Number of Stories:

✓ Single Storey

Age of Building:

✓ Over 70 years

Roof Covering:

✓ Tin roof

Roof Frame:

✓ Hardwood Pitched Roof, Hardwood ceiling joists

External Walls:

✓ Weather Board Walls, Fibro Sheeting

Floor Construction:

✓ Timber floor and timber stumps , Timber Joist Construction

Internal Walls:

✓ Timber Framed Walls

Building Tenancy:

✓ Occupied

Building Furnished:

✓ Yes

Building Frontage Faces:

✓ Not Checked

Hot Water Unit:

✓ Not Checked

Solar:

✓ Not Checked

Airconditioning:

✓ Not Checked

Mains (Submains) Power Board:

✓ 2 x RCD's

Smoke Alarms:

✓ Not Checked

04 General

Weather Conditions at the time of the inspection:

✓ Dry

Recent weather conditions:

✓ Showers

Date and time of inspection:

✓ 07 May 2019

05 Summary of Inspection

Results of Building Inspection - Summary

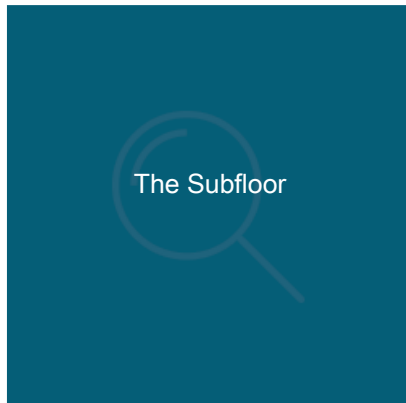
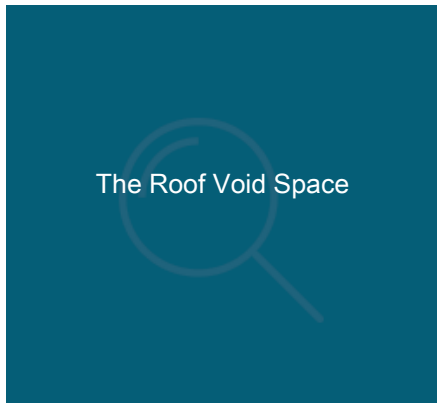
	Found	Not Found
Safety Hazard		✓
Major Defect		✓
Minor Defect		✓

Please refer to the report for explanations.

The overall condition of this residential Dwelling in the context of its age, type and general expectations of similar properties is Not Checked.

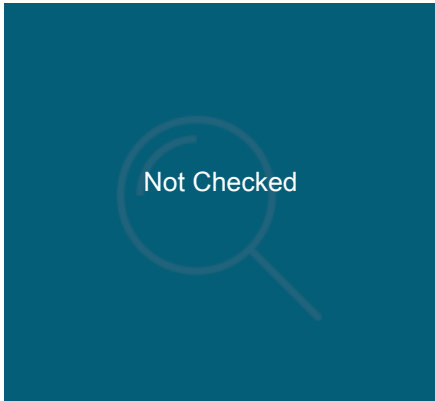
06 Areas Inspected

The areas inspected were

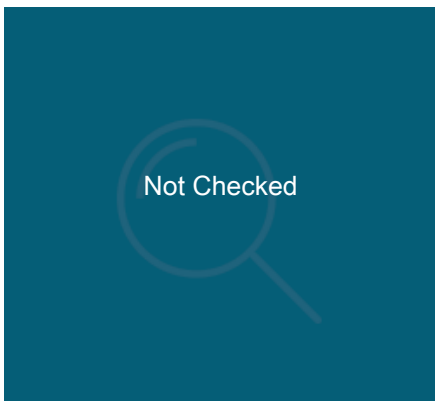


07 Areas Not Inspected

The areas NOT accessible for any inspection were



The areas in which visual inspection was obstructed



08 Inspection

Kitchen

Ceiling

Comments

EXPLANATIONS

Comments :

The kitchen ceiling has some plaster delaminating and cracking bulges off the battens due to previous minor water damage from rusted tin roofing sheets and general perimeter subsidence/stump sinkage

Walls

Comments

EXPLANATIONS

Comments :

The kitchen area in the main has the most movement with ceiling and wall cracking damage
The Western elevation and floor has some heavy perimeter floor stump sinkage

General comments and materials used within the property
The walls throughout the main internal area of the property are plaster on timber framed and clad walls
The ceilings throughout are plaster and lath battens within the main property.

There does not appear to be any asbestos based products within the property other than the following :-

There will most likely be asbestos within the kitchen stove area and at the back of the kitchen sink area, behind the electric fuse board and as previously mentioned the WC area.

The majority of the exterior cladding however will all be asbestos based.

Other Room

Room Name

Gardening brick type store area at the rear

Walls

Other

EXPLANATIONS

Comments :

Termite mud trail on the internal weatherboard element backing onto the kitchen area and under the leanto gardeners enclosed area at the rear.
A termite bait box has been installed in the past few weeks.

Damp and mould on the ceiling behind the toilet area close to the side entry door
General roof cover repairs required

The ceiling lining in this area has been replaced or added in the past and is not asbestos based in this section
However the toilet cubicle does have asbestos based cement sheet ceiling and wall linings.

IMAGES

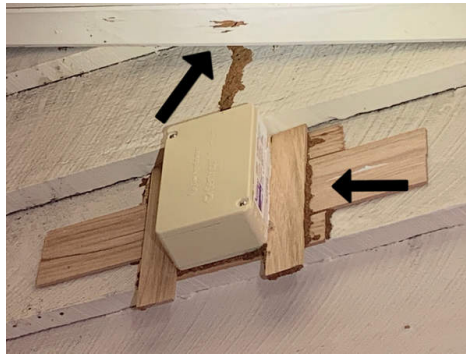


Photo Ref #1



Photo Ref #2

Roof Void Space

Roof structure

Other

EXPLANATIONS

Comments :

The ceilings are plaster and lath battens
The 6mm thick pine lath battens are nailed to the hardwood ceiling joists with a 5mm gap between each for the ceiling plaster to go in between and lock in and stick.

The battens appear in a reasonably good condition and did not want to disrupt anything however the pine lath battens are what the termite will have been eating and the mud trail entry point shows the main start and exit point

Termite wise I believe the bait has worked and the damage will in the main be within the lath battens extent unknown for now however to be addressed when the renovation works begin as and where required. No visible signs showing however at the time yet there will have been activity for certain. The ceiling lining is not actually a structure however a lining although can be a safety hazard if plaster falls off obviously

The hardwood timber roof structure is in a generally good condition and no termite damage is visible to the main roof structure

The rusted and leaking areas of the tin roof must be addressed prior to the onset of winter.

IMAGES



Photo Ref #3



Photo Ref #4

IMAGES



Photo Ref #5



Photo Ref #6

IMAGES



Photo Ref #7



Photo Ref #8

IMAGES



Photo Ref #9



Photo Ref #10

IMAGES



Photo Ref #11



Photo Ref #12

IMAGES



Photo Ref #13



Photo Ref #14

IMAGES



Photo Ref #15



Photo Ref #16

IMAGES



Photo Ref #17

Site

Drainage

Other

EXPLANATIONS

Comments :

The property has been built on a sloping site with falls from both the rear and the raised side. The property would benefit from having a French drain or slotted coil drainage installed around the rear and side so as to divert as much water flow around the property. This is not an expensive process and should certainly be considered.

Sub Floor

Piers

Other

EXPLANATIONS

Comments :

The Western elevation side stumps have had termite attack excess water flow around and general sinkage

Towards the back and North end of the property the kitchen area floor joists are on the ground and are not elevated on stumps or ant caps that can be seen and the termite will have come up as they have on the kitchen side wall where the bait box has been placed

The Eastern elevation is in a must better and elevated condition

Ant caps in the main were installed throughout which is good

Heavy stump sinkage and damage on the high sided Western side.

IMAGES



Photo Ref #18



Photo Ref #19

IMAGES



Photo Ref #20



Photo Ref #21

IMAGES



Photo Ref #22



Photo Ref #23

IMAGES



Photo Ref #24

Roof Exterior

Roof Covering

Other

EXPLANATIONS

Comments :

Sheets rusted through in spots here

IMAGES



Photo Ref #25



Photo Ref #26

IMAGES



Photo Ref #27



Photo Ref #28

Downpipes

Other

EXPLANATIONS

Comments :

The grey down pipe here is dispersing down the vulnerable side of the building by the kitchen causing ponding, damp and subsidence damage And again on the rear brick store

IMAGES



Photo Ref #29



Photo Ref #30

IMAGES



Photo Ref #31

08a Inspection: Pests

Summary Only

The Purpose of the inspection: is to give advice about the condition of the property with regard to timber pests.

Weather Conditions at the time of the Inspection: Dry

Contact the Inspector: Should you have any difficulty in understanding anything contained within this report then you should immediately contact the inspector and have the matter explained to you prior to acting on this report.

IMPORTANT DISCLAIMER

- This Summary is supplied to allow a quick and superficial overview of the inspection results.
- This Summary is NOT the Report and cannot be relied upon on its own.
- This Summary must be read in conjunction with the full report and not in isolation from the report.
- If there should happen to be any discrepancy between anything in the Report and anything in this Summary, the information in the Report shall override that in this Summary.
- The Report is subject to conditions and limitations. Your attention is particularly drawn to the Clauses, Disclaimer of Liability to Third Parties, Limited Liability to a Purchaser within the Australian Capital Territory and to the Notice to the Purchaser at the back of this Report.

ACCESS

Are there any Area(s) and/or Section(s) to which Access should be gained? Not Checked

TIMBER PEST ACTIVITY

Were active subterranean termites (live specimens) found?	No - Read the Report in Full
Was visual evidence of subterranean termite workings or damage found?	Yes - Read the Report in Full
Was visible evidence of borers of seasoned timbers found?	No - Read the Report in Full
Was evidence of damage caused by wood decay (rot) fungi found?	Yes - Read the Report in Full
Are further inspections recommended?	Not Checked
Where any major safety hazards identified?	Yes
In our opinion, the susceptibility of this property to timber pests is considered to be	High

For complete and accurate information You must refer to the following Complete Visual Timber Pest Report.

Important: We strongly recommend the purchaser make inquiry from the vendor about Timber Pests and in particular Termites for this property.

Termites

Were active (live) termites found?

None found

Was a termite nest observed?

None found

Was evidence of termite workings or termite damage found?

Yes observed

Was a Durable Notice found?

Yes

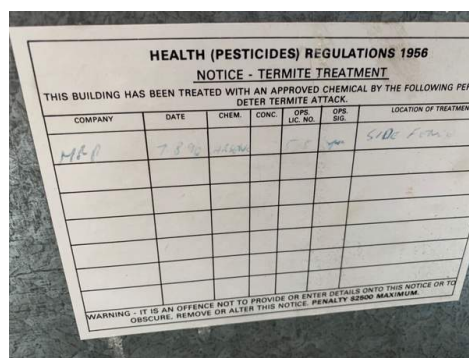


Photo Ref #32



Photo Ref #33

Fungal Decay

Was evidence of Fungal Decay found?

Yes observed

Conducive Conditions

Was evidence of water leaks found?

Yes found

Was evidence of poor drainage, especially in the sub floor, found?

Yes found

Unsuitable timbers: Are timbers exposed to weather &/or water fit for purpose?

Yes

Was evidence of mould, especially on ceilings and walls, found?

Yes

EXPLANATIONS

Comments :

Behind the WC on the sloping rear store

Conducive to Undetected Entry

Are there timbers in contact with the ground?

Yes timbers in contact with ground

Summary

Were any major safety hazards identified?

Yes

Susceptibility to timber pests is considered to be?

High

Do you recommend a Subterranean Termite treatment program?

Yes full treatment required however maintenance and renovation works to be discussed first

09 General Photographs



Photograph 1

10 Defects and Safety Issues

Safety Hazards in this Building:

No Safety Hazards Identified

Major Defects in this Building:

No Major Defects Identified

11 Other Inspections and Reports Required

Further Inspections Recommended



Renovation process
advice and approximate
costs required when
ready

12 Conclusion & Summary

The purpose of the inspection is to identify the major defects and safety hazards associated with the property at the time of the inspection. The inspection and reporting is limited to a visual assessment of the Building Members in accord with Appendix C AS4349.1-2007.

The overall condition of this building has been compared to similar constructed buildings of approximately the same age where those buildings have had a maintenance program implemented to ensure that the building members are still fit for purpose.

The incidence of Major Defects in this Residential Building as compared with similar Buildings is considered:

Not Checked

The incidence of Minor Defects in this Residential Building as compared with similar Buildings is considered:

Not Checked

The overall condition of this residential Dwelling in the context of its age, type and general expectations of similar properties is:

Not Checked

Overall Condition Comments:

This report is not a full structural, maintenance and termite inspection.

It is limited as per the original request due to roof concerns and removing sheeting to gain access so as to view properly and report accordingly. However I believe the next stage is a full renovation program.

I have however made other recommendations outside of the scope and in future can also give 3 year maintenance plans and rectification guidance, including approximate costs and budget guidelines if so required for the whole building which is usually beneficial.

Works to be addressed ASAP

- 1) Roof cover to be made watertight for winter mainly rusted through roof sheets as per photos and on sloping roof gable behind the WC. Approximately 5 metal sheets replaced at a cost of say \$1200
- 2) Downpipes extended and shoo shoots added to push the water away from the structure as much as possible check gutters and downpipes in general when addressing to make safe for winter. Approximate costs say \$700
- 3) Maintain seal any obvious exterior wall or frame water entry points around the property prior to the onset of winter and only as a temporary measure due to the future renovation programme

The stumps on the Western side will require attention obviously as soon as funds allow given the damage on the perimeter main load bearing wall. The re-stumping cost will depend upon the quality of leveling and amount required or requested however the costs given the subfloor in general will be approximately \$5-10,000 depending upon the city's preference and preparation required pending renovation requirements.

Renovation

Works to be addressed first will need to be the stumping element as any internal make good prior will be pointless as this work will cause twisting and movement damage as discussed on site.

There will need to be a sequence of process and budget costs put in place obviously in due course to which I would be happy to assist if required.

I have identified the asbestos content areas and I did not see any imminent danger of collapse or safety issues within the property for now. There is no need for termite damage repair costs at present given the general circumstances.

Hopefully, this along with the on-site discussion has been of a help and please do not hesitate to contact me with any other information you may need as I am always available for ongoing discussions and cost advice over the phone at no additional cost.

Please Note: This is a general appraisal only and cannot be relied on its own - read the report in its entirety.

This Summary is supplied to allow a quick and superficial overview of the inspection results. This Summary is NOT the Report and cannot be relied upon on its own. This Summary must be read in conjunction with the full report and not in isolation from the report. If there should happen to be any discrepancy between anything in this Report and anything in this summary, the information in the report shall override that in this summary.

13 Contact

We take this opportunity to thank you for your instructions.

If you have any queries, please do not hesitate to contact our inspector.

Yours faithfully,



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T: 0407 477 600

14 Terms & Conditions

Part 1: Purpose and Scope of Inspection

This report complies with Australian Standard AS4349.1 - 2007 Inspection of Buildings, Part 1: Pre Purchase Inspections - Residential Buildings.

Inspection Agreement - Individual title property

Requirement for Inspection agreement AS 4349.1 - 2007 requires that an inspection agreement be entered into between the inspector & the client prior to the conduct of the inspection. This agreement sets out specific limitations on the scope of the inspection and on limits that apply in carrying it out. Where specific State or Territory requirements apply in addition to the scope of work in this agreement, or where the inspector and client agree to additional matters being covered, that additional scope is listed at the end of this agreement. It is assumed that the existing use of the building will continue.

Purpose of Inspection

The purpose of the inspection is to provide advice to a prospective purchaser or other interested party regarding the condition of the property on the date and at the time of the inspection. The advice is limited to the reporting of the condition of the Building Elements in accord with Appendix B or C AS4349.1-2007 (Appendix B for Strata or Company Title and Appendix C for other residential buildings).

Important Information and Disclaimer

Any person who relies upon the contents of this report does so acknowledging that the following clauses both below **and** at the end of this report. These define the Scope and Limitations of the inspection and form an integral part of the report. Before you decide to purchase this property you should read and understand all of the information contained herein. It will help explain what is involved in a Residential Pre-Purchase Building Inspection Report, the difficulties faced by an inspector and why it is not possible to guarantee that a property is free of defects, latent or otherwise. This information forms an integral part of the report. If there is anything contained within this report that is not clear or you have difficulty understanding, please contact the inspector prior to acting on this report.

The extent and thoroughness of this inspection has been limited by our reading of what was reasonable by way of time, intrusion and risk of doing physical damage to the property being inspected. We have not inspected woodwork or other parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the structure is free from defect. Identification of hazardous materials or situations that may be in the building or on or near the property is outside the scope of this inspection. This report is not a certificate of compliance of the property within the requirements of any Act, regulation, ordinance, local law or by-law, and is not a warranty against problems developing with the building in the future. This report does not include the identification of unauthorised building work or of work not compliant with building regulations. With respect to minor defects, the inspection is limited to reporting on their overall extent. It is not intended to detail each and every individual minor defect or imperfection. This service is provided on an independent professional basis. It seeks to present a factual, unbiased and balanced assessment. We have no financial interest in any work that may be recommended or in any share of commission if the property is sold.

Scope of Inspection

The inspection comprised a visual assessment of the property to identify major defects and safety hazards, and to form an opinion regarding the general condition of the property at the time of inspection. An estimate of the cost of rectification of defects is outside the scope of the Standard and therefore does not form part of this report.

AS 4349.1 - 2007 requires that the basis for comparison is a building of similar age and similar type to the subject building and which is in reasonable condition, having been adequately maintained over the life of the building. This means that building being inspected may not comply with Australian Standards, building regulations or specific state or territory requirements applicable at the time of the inspection.

What is reported on:

- The inspection includes subjective appraisal by an inspector competent to assess the condition of residential buildings. It involves a subjective assessment so different inspectors or even the same inspector on a different occasion may reach different conclusions
- The inspection comprises a visual assessment of the property to identify major defects and to form an opinion regarding the general condition of the property at the time of inspection.
- The following areas shall be inspected where applicable:
 - The interior of the building: ceilings; walls; floors; windows; doors & frames; kitchen; bathroom; WC; ensuite; laundry; stairs & damp problems
 - The exterior of the building: walls (including lintels, claddings, doors & windows); timber or steel frames & structures; chimneys; stairs; balconies, verandas, patios, decks, suspended concrete floors, balustrades
 - The roof exterior: roof (including tiles, shingles & slates, roof sheeting, gables, flashings); skylights, vents, flues; valleys; guttering; downpipes; eaves, fascias and barges
 - The roof space: roof covering; roof framing; sarking; party walls; insulation
 - The sub-floor space: timber floor (including supports, floor, ventilation, drainage, damp); suspended concrete floors
 - The property within 30m of the house and within the boundaries of the site: car accommodation, detached laundry, ablution facilities and garden sheds; retaining walls (where supporting other structures and landscaping retaining walls > 700mm high); paths & driveways; steps ; fencing (excluding swimming pool fences) ; surface water (drainage effectiveness)

What is not reported on:

- general exclusions detailed in the standard AS 4349.1 - 2007
- Parts of a building that are under construction
- The inspection is not intended to include rigorous assessment of all building elements in a property
- Defects that would only be apparent under particular weather conditions or when using particular fittings & fixtures
- Defects not apparent due to occupancy or occupancy behavior eg non use of a leaking shower
- The inspection report is not a certificate of compliance of the property within the requirements of any Act, regulation, ordinance, local law or by-law and is not a warranty against problems developing with the building in the future
- Unauthorized building work or of work not compliant with building regulations
- Title and ownership matters, matters concerning easements, covenants, restrictions, zoning certificates and all other law-related matters
- Estimation of the cost of rectification of specific defects.
- Specifics excluded by the standard AS 4349.1 - 2007 Footings below ground, concealed damp-proof course, electrical installations, operation of smoke detectors, light switches and fittings, TV, sound and communication and security systems, concealed plumbing, adequacy of roof drainage as installed, gas fittings and fixtures, air conditioning, automatic garage door mechanisms, swimming pools and associated filtration and similar equipment, the operation of fireplaces and solid fuel heaters, including chimneys and flues, alarm systems, intercom systems, soft floor coverings, electrical appliances including dishwashers, incinerators, ovens, ducted vacuum systems, paint coatings except external protective coatings, health hazards e.g., allergies, soil toxicity, lead content, radon, presence of asbestos or urea formaldehyde), timber and metal framing sizes and adequacy, concealed tie downs and bracing, timber pest activity, other mechanical or electrical equipment (such as gates, inclinators), soil conditions, control joints, sustainable development provisions, concealed framing-timbers or any areas concealed by wall linings or sidings, landscaping, rubbish, floor cover, furniture and accessories, stored items, insulation, environmental matters e.g. BASIX, water tanks, BCA environmental provisions, energy efficiency, lighting efficiency.

Special Requirements

It is acknowledged that there are no special requirements placed on this inspection that are outside the scope of the abovementioned Australian Standard.

Limitations

This report is limited to a visual inspection of areas where safe and reasonable access is available and access permitted on the date and at the time of inspection. The Inspection will be carried out in accordance with AS4349.1-2007. The purpose of the inspection is to provide advice to a prospective purchaser regarding the condition of the property at the date and time of inspection. Areas for Inspection shall cover all safe and accessible areas. It does not purport to be geological as to foundation integrity or soil conditions, engineering as to structural, nor does it cover the condition of electrical, plumbing, gas or motorised appliances. It is strongly recommended that an appropriately qualified contractor check these services prior to purchase.

As a matter of course, and in the interests of safety, all prospective purchasers should have an electrical report carried out by a suitably qualified contractor.

This report is limited to (unless otherwise noted) the main structure on the site and any other building, structure or outbuilding within 30m of the main structure and within the site boundaries including fences.

Safe and Reasonable Access

Only areas to which safe and reasonable access is available were inspected. The Australian Standard 4349.1 defines reasonable access as "areas where safe, unobstructed access is provided and the minimum clearances specified below are available, or where these clearances are not available, areas within the inspector's unobstructed line of sight and within arm's length. Reasonable access does not include removing screws and bolts to access covers." Reasonable access does not include the use of destructive or invasive inspection methods nor does it include cutting or making access traps or moving heavy furniture, floor coverings or stored goods.

Dimensions for Reasonable Access

Roof Interior - Access opening = 400 x 500 mm - Crawl Space = 600 x 600mm - Height accessible from a 3.6m ladder.

Roof Exterior - Must be accessible from a 3.6m ladder placed on the ground.

Important Maintenance Advice regarding Integrated Pest Management (IPM) for Protecting against Timber Pests:

Any structure can be attacked by Timber Pests. Periodic maintenance should include measures to minimise possibilities of infestation in and around a property. Factors which may lead to infestation from Timber Pests include situations where the edge of the concrete slab is covered by soil or garden debris, filled areas, areas with less than 400mm clearance, foam insulation at foundations, earth/wood contact, damp areas, leaking pipes, etc; form-work timbers, scrap timber, tree stumps, mulch, tree branches touching the structure, wood rot, etc. Gardens, pathways or turf abutting or concealing the edge of a concrete slab will allow for concealed entry by timber pests. Any timber in contact with soil such as form-work, scrap timbers or stumps must be removed from under and around the buildings and any leaks repaired. You should endeavour to ensure such conditions DO NOT occur around your property.

We further advise that you engage a professional pest control firm to provide a suitable termite management program in accord with AS 3660 to minimise the risk of termite attack. There is no way of preventing termite attack. Even AS 3660 advises when a complete termite management system is installed in accordance with AS 3660.1-2000 for pre-construction termite work or 3660.2-2000 for post-construction termite work and the Australian Pesticides and Veterinary Medicines Authority (APVMA) product label directions are followed precisely, termites may still bridge the management system. However, if the labels directions are followed and the Standard adhered to, and bridging occurs, evidence of the termite ingress will normally be evident to the inspector. Therefore regular inspections in line with the recommendations in this report are essential in addition to any suitable termite management system you install.

You should read and understand the following important information. It will help explain what is involved in a timber pest inspection, the difficulties faced by a timber pest inspector and why it is not possible to guarantee that a property is free of timber pests. It also details important information about what you can do to help protect your property from timber pests. This information forms an integral part of the report.

CONCRETE SLAB HOMES

Homes constructed on concrete slabs pose special problems with respect to termite attack. If the edge of the slab is concealed by concrete paths, patios, pavers, garden beds, lawns, foliage, etc then it is possible for termites to affect concealed entry into the property. They can then cause extensive damage to concealed framing timbers. Even the most experienced inspector may be unable to detect their presence due to concealment by wall linings. Only when the termites attack timbers in the roof void, which may in turn be concealed by insulation, can their presence be detected. Where termite damage is located in the roof it should be expected that concealed framing timbers will be extensively damaged. With a concrete slab home it is imperative that you expose the edge of the slab and ensure that foliage and garden beds do not cover the slab edge. Weep holes must be kept free of obstructions. It is strongly recommended that you have a termite inspection in accordance with AS 3660.2 carried out as recommended in this report.

SUBTERRANEAN TERMITES

No property is safe from termites! Termites are the cause of the greatest economic losses of timber in service in Australia. Independent data compiled by State Forestry shows 1 in every 5 homes is attacked by termites at some stage in its life. More recent data would indicate that this is now as high as 1 in every 3. Australia's subterranean termite species (white ants) are the most destructive timber pests in the world. In fact it can take "as little as 3 months for a termite colony to severely damage almost all the timber in a home".

How Termites Attack your Home. The most destructive species live in large underground nests containing several million timber destroying insects. The problem arises when a nest matures near your home. Your home provides natural shelter and a food source for the termites. The gallery system of a single colony may exploit food sources over as much as one hectare, with individual galleries extending up to 50 metres to enter your home, where there is a smorgasbord of timber to feast upon. Even concrete slabs do not act as a barrier; they can penetrate through cracks in the slab to gain access to your home. They even build mud tubes to gain access to above ground timbers. In rare cases termites may create their nest in the cavity wall of the property without making ground contact. In these cases it may be impossible to determine their presence until extensive timber damage occurs.

Termite Damage; Once in contact with the timber they excavate it often leaving only a thin veneer on the outside. If left undiscovered the economic species can cause many thousands of dollars damage and cost two to five thousand dollars (or more) to treat.

Subterranean Termite Ecology: These termites are social insects usually living in underground nests. Nests may be in trees or in rare instances they may be in above ground areas within the property. They tunnel underground to enter the building and then remain hidden within the timber making it very difficult to locate them. Where timbers are concealed, as in most modern homes, it makes it even more difficult to locate their presence. Especially if gardens have been built up around the home and termite barriers are either not in place or poorly maintained. Termites form nests in all sorts of locations and they are usually not visible. There may be more than one nest on a property. The diet of termites in the natural environment is the various hardwood and softwood species growing throughout Australia. These same timbers are used in buildings. Worker termites move out from their underground nest into surrounding areas where they obtain food and return to nurture the other casts of termites within the nest. Termites are extremely sensitive to temperature, humidity and light and hence cannot move over ground like most insects.

They travel in mud encrusted tunnels to the source of food. Detection of termites is usually by locating these mud tunnels rising from the ground into the affected structure. This takes an expert eye.

Termite barriers protect a building by forcing termites to show themselves. Termites can build mud tunnels around termite barriers to reach the timber above. The presence of termite tracks or leads does not necessarily mean that termites have entered the timber though. A clear view of walls and piers and easy access to the sub-floor means that detection should be fairly easy. However many styles of construction do not lend themselves to ready detection of termites. The design of some properties is such that they make the detection by a pest inspector difficult, if not impossible.

The tapping and probing of walls and internal timbers is an adjunct or additional means of detection of termites but is not as reliable as locating tracks. The use of a moisture meter is a useful aid for determining the presence of termites concealed behind thin wall panels, but it only detects high levels of activity. Older damage that has dried out will not be recorded. It may also provide false readings. Termite tracks may be present in the ceiling space however some roofs of a low pitch and with the presence of sisalation, insulation, air conditioning ductwork and hot water services may prevent a full inspection of the timbers in these areas. Therefore since foolproof and absolute certain detection is not possible the use of protective barriers and regular inspections is a necessary step in protecting timbers from termite attack.

Borers of Seasoned Timbers

Borers are the larvae of various species of beetles. The adult beetles lay their eggs within the timber. The eggs hatch out into larvae (grubs) which bore through the timber and can cause significant structural damage. The larvae may reside totally concealed within the timber for a period of several years before passing into a dormant pupal stage. Within the pupal case they metamorphose (change) into the adult beetle which cuts a hole in the outer surface of the timber to emerge, mate and lay further eggs to continue the cycle. It is only through the presence of these emergence holes, and the frass formed when the beetles cut the exit holes that their presence can be detected. Where floors are covered by carpets, tiling, or other floor coverings and where no access to the underfloor area is available it is not possible to determine whether borers are present or not. This is particularly the case with the upper floors of a dwelling.

Borers of 'green' unseasoned timber may also be present. However these species will naturally die out as the timbers dry out in service. Whilst some emergence holes may occur in a new property it would be unusual for such a borer to cause structural damage, though the exit holes may be unsightly.

Anobium borer (furniture beetle) and Queensland pine borer: These beetles are responsible for instances of flooring collapse, often triggered by a heavy object being placed on the floor (or a person stepping on the affected area!) Pine timbers are favoured by this beetle and, while the sapwood is preferred, the heartwood is sometimes attacked. Attack by this beetle is usually observed in timbers that have been in service for 10-20 years or more and mostly involves flooring and timber wall panelling. The *frass* from the flight holes (faeces and chewed wood) is fine and gritty. Wood attacked by these borers is often honeycombed.

Lyctus borer (powder post beetle): These borers only attack the sapwood of certain susceptible species of hardwood timber. Since it is a requirement that structural timbers contain no more than 25% Lyctus susceptible

sapwood these borers are not normally associated with structural damage. Replacement of affected timbers is not recommended and treatment is not approved. Where decorative timbers are affected the emergence holes may be considered unsightly in which case timber replacement is the only option. Powder post beetles mostly attack during the first 6-12 months of service life of timber. As only the sapwood is destroyed, larger dimensional timbers (such as rafters, bearers and joists) in a house are seldom weakened significantly to cause collapse. In small dimensional timbers (such as tiling and ceiling battens) the sapwood may be extensive, and its destruction may result in collapse. Replacement of these timbers is the only option available.

TIMBER DECAY FUNGI

The fruiting bodies of wood decay fungi vary in size, shape and colour. The type of fungi encountered by pest controllers usually reside in poorly ventilated subfloors, below wet areas of the home, exterior timbers and in areas that retain water in the soil. The durability and type of timbers are factors along with the temperature and environment. Destruction of affected timbers varies with the symptoms involved. Removal of the moisture source usually alleviates the problem. Fungal decay is attractive to termites and if the problem is not rectified it may well lead to future termite attack.

TERMS & LIMITATIONS:

Important Information Any person who relies upon the contents of this report does so acknowledging that the following clauses which define the Scope and Limitations of the inspection form an integral part of the report.

- 1. THIS IS A VISUAL INSPECTION ONLY** in accord with the requirements of AS 4349.3 Inspection of buildings Part 3: Timber pest inspections. Visual inspection was limited to those areas and sections of the property to which reasonable access (See Definition) was both available and permitted on the date of Inspection. The inspection DID NOT include breaking apart, dismantling, removing or moving objects including, but not limited to, foliage, mouldings, roof insulation/sisalation, floor or wall coverings, sidings, ceilings, floors, furnishings, appliances or personal possessions. The inspector CANNOT see inside walls, between floors, inside skillion roofing, inside the eaves, behind stored goods in cupboards, in other areas that are concealed or obstructed. The inspector DID NOT dig, gouge, force or perform any other invasive procedures. An invasive inspection will not be performed unless a separate contract is entered into. In an occupied property it must be understood that furnishings or household items may be concealing evidence of Timber Pests which may only be revealed when the items are moved or removed. In the case of Strata type properties only the interior of the unit is inspected. Photos in this report are included for a general overview of any damage or issues identified. They may not necessarily identify or show the full extent of damage or issues. Where issues or damage are identified you should satisfy yourself as to their extent.
- 2. SCOPE OF REPORT:** This Report is confined to reporting on the discovery, or non discovery, of infestation and/or damage caused by subterranean and dampwood termites (white ants), borers of seasoned timber and wood decay fungi (hereinafter referred to as "Timber Pests"), present on the date of the Inspection. The Inspection did not cover any other pests and this Report does not comment on them. Dry wood termites (Family: KALOTERMITIDAE) and European House Borer (*Hylotrupes bujulus Linnaeus*) were excluded from the Inspection, but have been reported on if, in the course of the Inspection, any visual evidence of infestation happened to be found. If *Cryptotermes brevis* (West Indian Dry Wood Termite) or *Hylotrupes bujulus Linnaeus* are discovered we are required by law to notify Government Authorities. If reported a special purpose report may be necessary.
- 3. LIMITATIONS:** Nothing contained in the Report implies that any inaccessible or partly inaccessible areas or sections of the property being inspected by the Inspector on the date of the Inspection were not, or have not been, infested by Timber Pests. Accordingly this Report is not a guarantee that an infestation and/or damage does not exist in any inaccessible or partly inaccessible areas or sections of the property. Nor is it a guarantee that a future infestation of Timber Pests will not occur or be found.
- 4. DETERMINING Extent of damage:** The Report is NOT a structural damage Report. We claim no expertise in building and any observations or recommendations about timber damage should not be taken as expert opinion and CANNOT be relied upon. If any evidence of Timber Pest activity and/or damage resulting from Timber Pest activity is reported either in the structure(s) or the grounds of the property, then You must assume that there may be concealed structural damage within the building(s). This concealed damage may only be found when wall linings, cladding or insulation is removed to reveal previously concealed timbers. An invasive Timber Pest Inspection (for which a separate contract is required) is strongly recommended and You should arrange for a qualified person such as a Builder, Engineer, or Architect to carry out a structural inspection and to determine the full extent of the damage and the extent of repairs that may be required. You agree that neither We nor the individual conducting the Inspection is responsible or liable for the repair of any damage whether disclosed by the report or not.
- 5. MOULD:** Mildew and non wood decay fungi are commonly known as Mould and is not considered a Timber Pest but may be an indicator of poor ventilation or the presence of termites, wood decay or water leaks. Mould and their spores may cause health problems or allergic reactions such as asthma and dermatitis in some people.
- 6. DISCLAIMER OF LIABILITY:** No liability shall be accepted on account of failure of the Report to notify any Termite activity and/or damage present at or prior to the date of the Report in any areas(s) or section(s) of the subject property physically inaccessible for inspection, or to which access for Inspection is denied by or to the Licensed Inspector (including but not limited to any area(s) or section(s) so specified by the Report).
- 7. DISCLAIMER OF LIABILITY TO THIRD PARTIES**

Compensation will only be payable for losses arising in contract or tort sustained by the Client named on the front of this report. Any third party acting or relying on this Report, in whole or in part, does so entirely at their own risk. However, if ordered by a Real Estate Agent or a Vendor for the purpose of auctioning a property then the Inspection Report may be ordered up to seven (7) days prior to the auction, copies may be given out prior to the auction and the Report will have a life of 14 days during which time it may be transferred to the purchaser. Providing the purchaser agrees to the terms of this agreement then they may rely on the report subject to the terms and conditions of this agreement and the Report itself.

Note: In the ACT under the Civil Law (Sale of Residential Property) Act 2003 and Regulations the report resulting from this inspection may be passed to the purchaser as part of the sale process providing it is carried out not more than three months prior to listing and is not more than six months old.

8. COMPLAINTS PROCEDURE

In the event of any dispute or claim arising out of, or relating to the Inspection or the Report, You must notify Us as soon as possible of the dispute or claim by email, fax or mail. You must allow Us (which includes persons nominated by Us) to visit the property (which visit must occur within twenty eight (28) days of your notification to Us) and give Us full access in order that We may fully investigate the complaint. You will be provided with a written response to your dispute or claim within twenty eight (28) days of the date of the inspection.

If You are not satisfied with our response You must within twenty one (21) days of Your receipt of Our written response refer the matter to a Mediator nominated by Us from the Institute of Arbitrators and Mediators of Australia. The cost of the Mediator will be borne equally by both parties or as agreed as part of the mediated settlement.

Should the dispute or claim not be resolved by mediation then the dispute or claim will proceed to arbitration. The Institute of Arbitrators and Mediators of Australia will appoint an Arbitrator who will hear and resolve the dispute. The arbitration, subject to any directions of Arbitrator, will proceed in the following manner:

- (a) The parties must submit all written submissions and evidence to the Arbitrator within twenty one (21) days of the appointment of the Arbitrator; and
- (b) The arbitration will be held within twenty one (21) days of the Arbitrator receiving the written submissions.

The Arbitrator will make a decision determining the dispute or claim within twenty one (21) of the final day of the arbitration. The Arbitrator may, as part of his determination, determine what costs, if any, each of the parties are to pay and the time by which the parties must be paid any settlement or costs.

The decision of the Arbitrator is final and binding on both parties. Should the Arbitrator order either party to pay any settlement amount or costs to the other party but not specify a time for payment then such payment shall be made within twenty one (21) days of the order.

In the event You do not comply with the above Complaints Procedure and commence litigation against Us then You agree to fully indemnify Us against any awards, costs, legal fees and expenses incurred by Us in having your litigation set aside or adjourned to permit the foregoing Complaints Procedure to complete.

15 Definitions

High: The frequency and/or magnitude of defects are beyond the inspector's expectations when compared to similar buildings of approximately the same age that have been reasonably well maintained.

Typical: The frequency and/or magnitude of defects are consistent with the inspector's expectations when compared to similar buildings of approximately the same age that have been reasonably well maintained.

Low: The frequency and/or magnitude of defects are lower than the inspector's expectations when compared to similar buildings of approximately the same age that have been reasonably well maintained.

Above Average: The overall condition is above that consistent with dwellings of approximately the same age and construction. Most items and areas are well maintained and show a reasonable standard of workmanship when compared with buildings of similar age and construction.

Average: The overall condition is consistent with dwellings of approximately the same age and construction. There will be areas or items requiring some repair or maintenance.

Below Average: The Building and its parts show some significant defects and/or poor non-tradesman like workmanship and/or long term neglect and/or defects requiring major repairs or reconstruction of major building elements.

Major Defect: Is a Defect requiring building works to avoid unsafe conditions, loss of function or further worsening of the defective item.

Minor Defect: Any Defect other than what is described as a major defect.

Accessible area: is any area of the property and structures allowing the inspector safe and reasonable access within the scope of the inspection.

STRUCTURAL | PERITAS GROUP

City of Nedlands

Community Facility – 118 Wood Street, Swanbourne

Hodge Collard Preston
ARCHITECTS

|

24th May 2019

Ms Pollyanne Fisher
City of Nedlands
71 Stirling Hwy
Nedlands WA 6009

Dear Pollyanne,

RE: 118 WOOD STREET, SWANBOURNE- STRUCTURAL CONDITION REPORT

1. INTRODUCTION

A representative of this office attended the above location on the 16th May 2019 to complete a visual inspection at the above-mentioned address. The purpose of the inspection is to visually assess the overall structural integrity of the building and highlight any areas of concern.

The inspection was limited to what was visible and accessible at the time. This report outlines the findings of that inspection and advice on any remediation required to ensure the integrity of the building remains structurally adequate.

It is understood that future use of this building is intended to host various community events and the City of Nedlands intend to change the building classification to 9b. In accordance with the Current BCA the building would be classified as a Class 1a building, i.e. a common residence. The building will have to be upgraded to meet the requirements specified for a class 9b building. The requirement likely to have the most substantial impact on the upgrade works from a structural perspective is the floor loading requirements, which is more than 2.5 times greater than its current 1a classification.

2. OBSERVATIONS

The building is single storey and comprises typical timber Jarrah framed construction with a masonry chimney located between the kitchen and lounge room. The building is located on slightly sloping ground with the floor supported on timber posts. The posts decrease in height towards the back of the building where the floor meets a concrete slab at the rear of building. It is understood that the rear of the building is an addition with walls being typical cavity masonry wall. The original date of construction is unknown to the author of this report. However, it was verbally communicated during the inspection that the original building was transported to this location.

2.1 Floor

The floor comprises jarrah floor boards. It was apparent that the floor was not level and was typically falling towards the external walls of the building. The degree of slope is estimated to range between 1-3 degrees based on measurements taken during the inspection. A mark up showing the direction of slope is shown appended to this report.

The cause of the sloped floors is due to decay of the timber posts supporting the floor located around perimeter of the building. This is apparent upon inspection of these posts due deterioration from weathering and/or termite damage. The exact cause could not be determined during the inspection. The substructure supporting the floor appeared to be in good condition with no decay noted.

The floor substructure was found to be consistent with typical construction methodology. It comprises the following:

- Timber Stumps – 120x120x 700mm maximum height, at an approximate 1500 grid North-South and 1800 East West.
- Timber Bearers – 70x100dp at 1800 centres spanning North-South.
- Timber Joists – 500x100dp at 500 centres spanning East-West.
- Timber Floor Boards – 130x20dp.

All timber appeared to be jarrah. The grade of timber is assumed to be minimum grade F17.

2.2 Walls

The walls are clad in asbestos sheeting externally with plaster internally. There was excessive cracking to the plaster located in the kitchen and lounge. The cracked plaster is located either side of the kitchen and lounge partition wall in the upper corners. The cracks are severe with light penetrating from outside. The cracks have been caused from settlement due to the decaying timber posts.

The masonry walls located at the rear of the building appeared to be in an overall good condition. However, there was moderate cracking noted in various locations, particularly around window and door openings. The cracking did not appear to pose an immediate threat to the structural integrity at the time of the inspection. The cracking is likely due to ground settlement which is exacerbated by storm water runoff from down pipes. It is recommended that all down pipe run off be directed away from the building and the cracks remediated via crack stitching.

2.3 Ceiling

The ceiling appeared to be in good condition in a general sense based on our inspection, the ceiling space was not inspected. There were areas that appeared to be water damaged and minor cracking present. In our opinion, these minor defects did not appear to adversely affect the structural integrity of the ceiling structure. Given the termite activity noted it is recommended that the ceiling structure be thoroughly inspected upon commencing remedial works to confirm its condition. Should the ceiling remain uninspected there is increased risk of collapse due to hidden defects.

2.4 Roof

The roof sheeting appears appeared to be in good condition in a general sense. An area of roof near the chimney facing west was no long fixed down. In a storm event, high winds may cause the loose sheeting to peel away becoming airborne debris with the potential to cause damage or injury. It is recommended this be screwed back down.

3. COMMENTARY

3.1 Compliance

State legislation relating to existing structures is addressed in the Building Act (2011) and the Building Regulations (2012). Within the Building Regulations; Part 8, Division 2A, regulation 48A, clause 2(a), it states that the 'Owner of an existing building that is a Class 2 to Class 9 building must ensure that the safety measures in each part of the building are capable of performing to a standard set out in the relevant building standards for the part', where:

- Safety measures are defined as measures relating to the building use and application.
- Relevant building standards, in relation to a part of a building, means each requirement in relation to the technical aspects of the construction of the part applicable to the part at the time of its construction.

In layman's terms, the regulations require an existing structure requiring maintenance to be compliant with the standards in place at the time of its construction, and that it does not have to be remediated to be compliant with current Australian Standards.

It is our understanding that the City of Nedlands intends to change the use of the building to meet future needs, and in doing so will need to re-classify the building from a 1a to a 9b classification. This will require the building be remediated to meet current standards. The greatest impact being the 4.0KPa (400kg/m²) floor live load requirement in accordance with AS1170.1 which will require floor remediation/strengthening works.

The BCA defines a class 9b building as an assembly area, for example theatres, cinemas and halls. The layout of the building in its current state is intended for use as a residence and it is questionable as to whether the building can be used as an assembly area in which the floor will ever experience the full live load requirements. Upon consultation with a BCA consultant it maybe suitable to adopt an alternative solution such as signage to limit the number of people into the building at any one time.

Alternatively, should the building use and classification remain 'as is'. The building defects must be remediated to restore the structural integrity of the building but need not comply with current standards for a 1a classification.

3.2 General Remedial Works

The following outlines the general required remedial works to ensure the structural integrity regardless of the building's use and classification.

It could not be determined if the plaster wall cracking to the lounge and kitchen had any adverse effects on the timber wall framing at this location. Upon completion of restumping it is recommended that the cladding be removed at the wall frame invested to determine if remedial works are required.

The cracked masonry walls to the rear do not appear to pose an immediate threat to the structural integrity of the walls. However, if left may worsen overtime. It is recommended that crack stitching be adopted to the cracked masonry areas. Information of crack stitching procedure has been appended to this report and a mark-up of the crack locations.

The roof structure was not inspected and its current condition is unknown. Assuming that roof sheeting is replaced it is recommended that the roof be inspected once sheeting is removed and deteriorated timbers replaced to be of equal size and grade.

In our experience, the most common non-compliance with older timber framed buildings is the tie down capacity of the roof. The details provided in the appended drawings are common roof strengthening details that maybe applicable to the building roof in question. The extent and quantity of details required will need to be confirmed upon review of the roof structure once the sheeting is removed and

will vary depending on the classification of the building. The requirements and extent of works for a 9b class building are likely to be greater than if the building use and classification remain 'as is'.

3.3 Remedial Works to Classification 1a

The following outlines the required remedial works to ensure the structural integrity should the building retain its current use and classification.

It is recommended that the floor be re-stumped and all damaged timber posts replaced. The damaged posts were found to be present to the external perimeter of the building. Should the floor remain unlevel in its current state it will not affect the structural integrity and therefore is not a structural requirement to be re-levelled. It is recommended that the stumps located on the external perimeter of the building be protected from the weather by means of cladding.

3.4 Remedial Works to Classification 9b

The following outlines the required remedial works to ensure the structural integrity of the building should the use and classification be upgrade to 9b.

Our findings show that the existing timber floor structure is adequate to support a 4.0KPa (400kg/m²) or 4.5kN point in accordance with the loading requirements set out in AS1170.1 for a 9b class building. This is based on our observations made during the inspection and assumes F17 grade timbers in good condition free from any decay. This assumption should be confirmed during remedial works and damaged timbers replaced as required.

The soil bearing below the timber posts was found to exceed 100KPa which is a common allowable bearing pressure adopted for residential sites. A 400x400x200dp concrete foundation is required below each post which can be installed during re-stumping where all damaged timber posts must be replaced. It is not a structural requirement to re-level the floor. It is recommended that the stumps located on the external perimeter of the building be protected from the weather by means of cladding.

It is recommended that ground conditions be tested by a qualified geotechnical engineer to reduce the risk of ground settlement.

4. CONCLUSIONS

State building regulations do not require any remediation be undertaken to a structure to bring it up to compliance with the current National Construction Code (NCC), provided there are no plans to expand on the existing structure or change its usage and therefore classification under the NCC. The structure is however required to be structurally adequate.

Our review indicates that with the items observed, the building remains structurally adequate in the short term. However, if the items observed are not addressed, the root causes will remain unchecked and the damage in some areas will continue to worsen and may compromise the structural integrity of the building. Specifically, the decay to the stumps requires attention to reduce the risk of further damage.

Should the City of Nedlands decided to change the building's usage to an assembly hall and in turn upgrade the classification to 9b. The extent of remedial works to the floor structure is greater than if it was to remain 'as is'.

The wall and roof remedial works as a minimum must ensure that the roof has adequate tie down capacity. The extent of remedial works for a 9b class building is expected to be greater in order to comply with current standards.

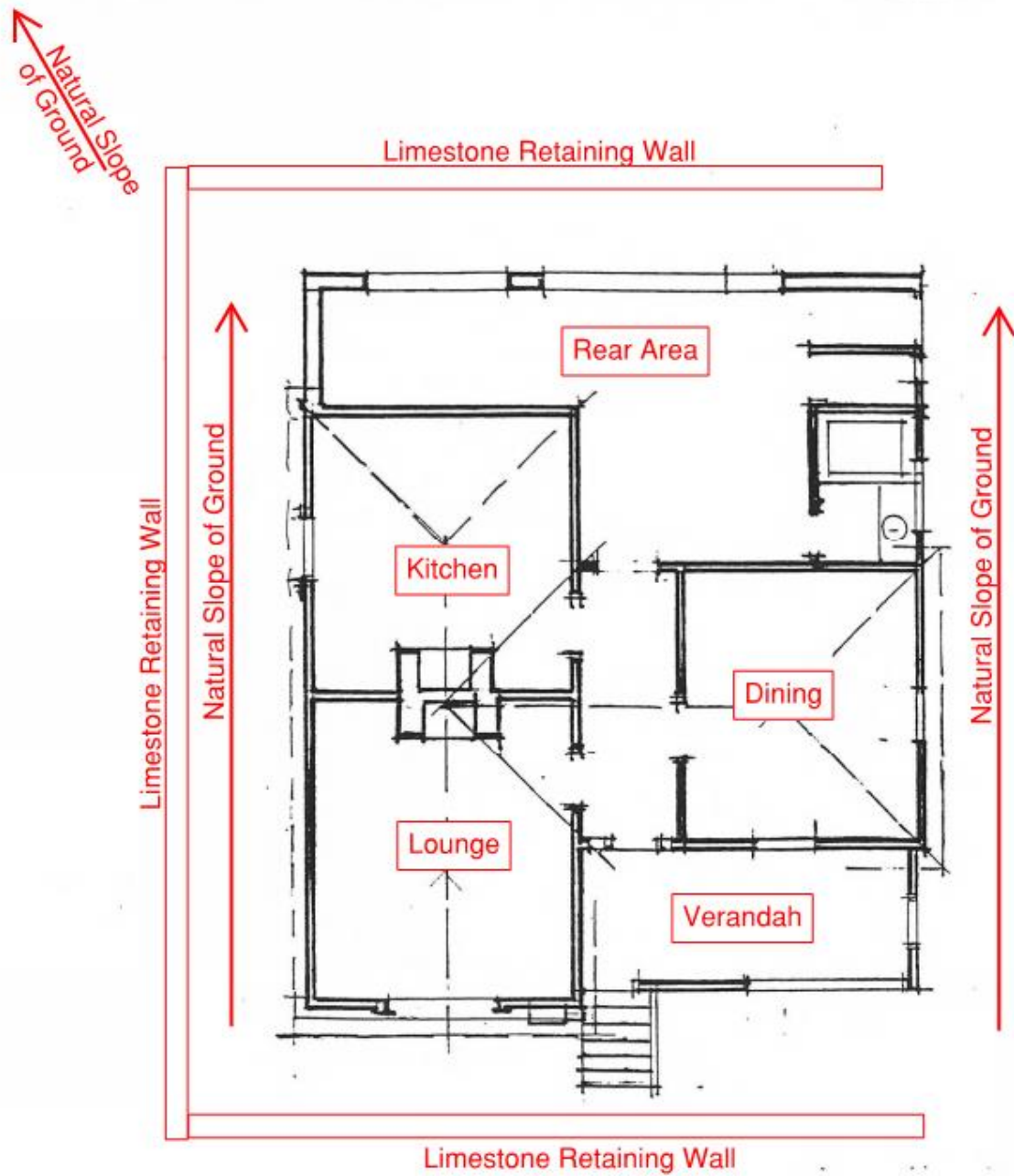
Yours sincerely,



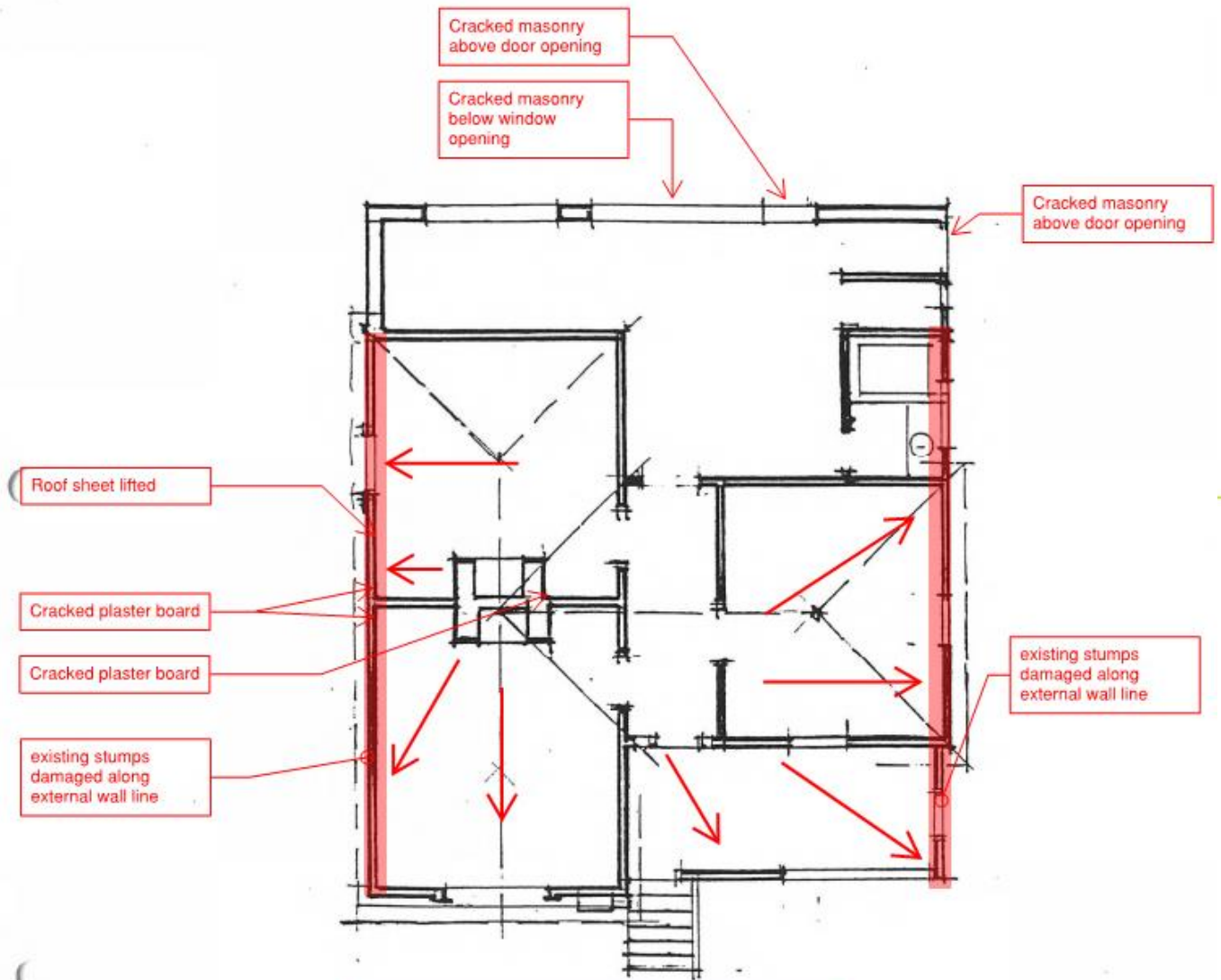
Joel Bisschops
Senior Structural Engineer



APPENDIX A – Sketches



General Plan



Note:
This mark up does not covers all defect items visually noted during our inspection.

Note:
The arrows marked up typically indicates the slope of the fall as noted during our inspection dated 16/05/2019

Building Defects

APPENDIX B – Photographic Evidence



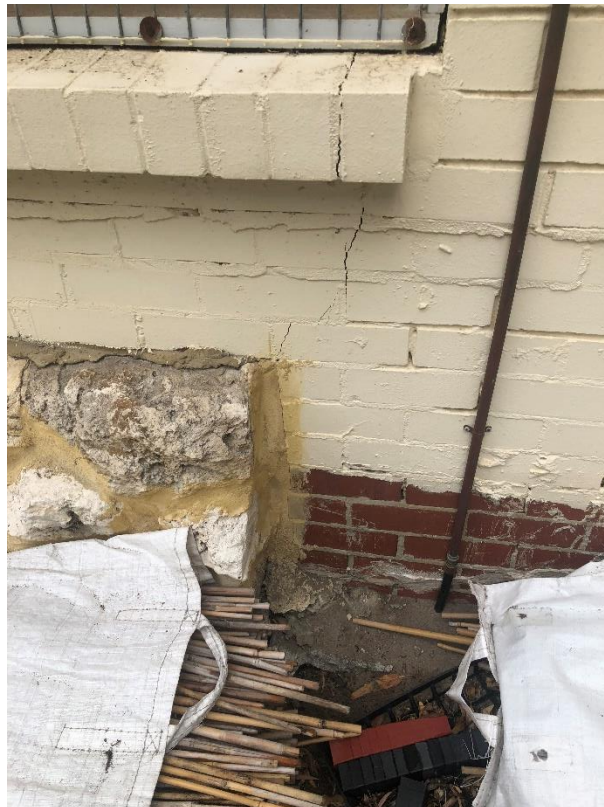
Photograph 1 – Front of Building



Photograph 2 – Rear of Building



Photograph 3 – Masonry Wall-Cracking Above Door Opening



Photograph 4 – Masonry Wall-Cracking Below Window Opening



Photograph 5 – West Side of Building-Roof Sheetting Not Fixed Down



Photograph6 – Cracked Plaster Wall-Lounge Room



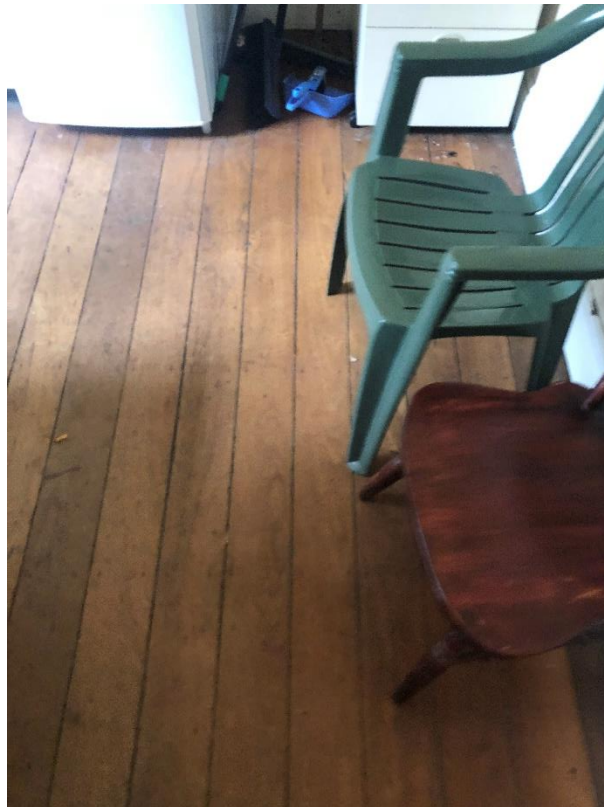
Photograph 7 – Cracked Plaster Wall-Kitchen



Photograph 8 – Water Damage to Ceiling



Photograph 9 – Cracked plaster Ceiling – Dining Room



Photograph 10 – Floor Boards



Photograph 11 – Damaged Timber Stump



Photograph 12 – Damaged Timber Stump



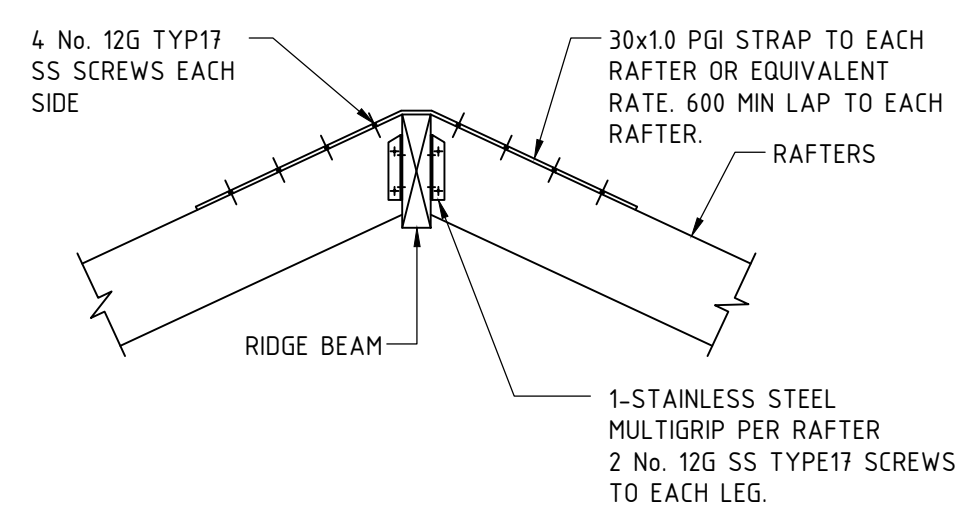
Photograph 13 – Subfloor Structure



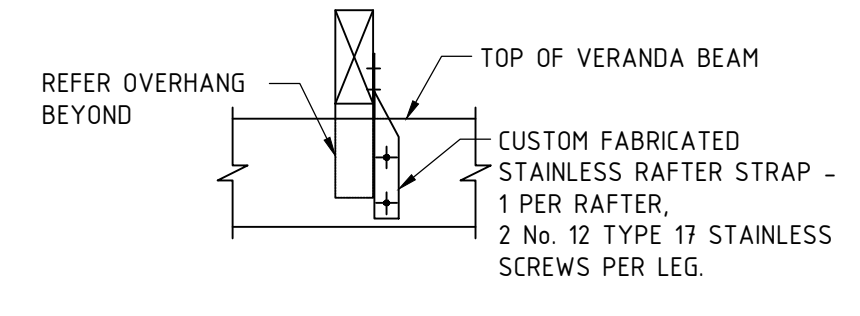
Photograph 14 – Subfloor Structure

APPENDIX C – Details

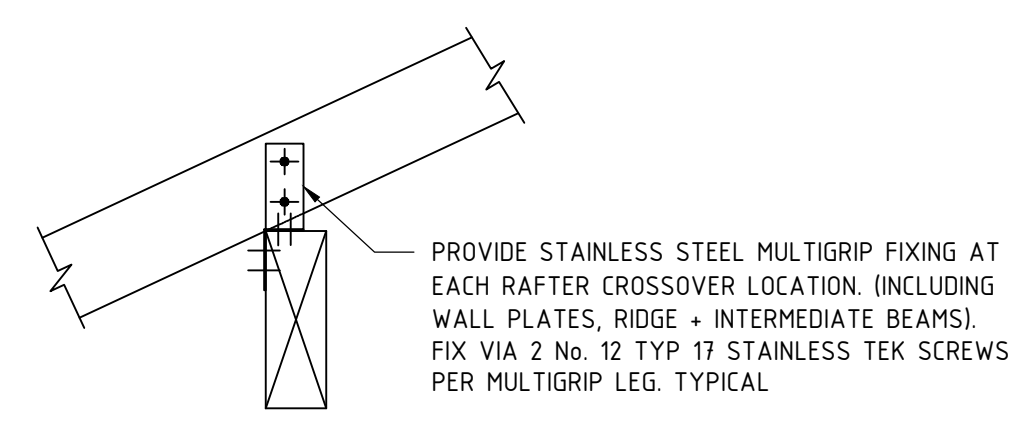




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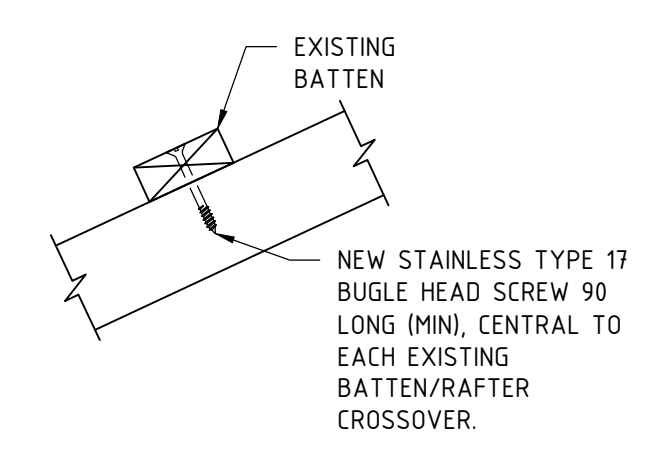


2 DETAIL
SCALE 1:10

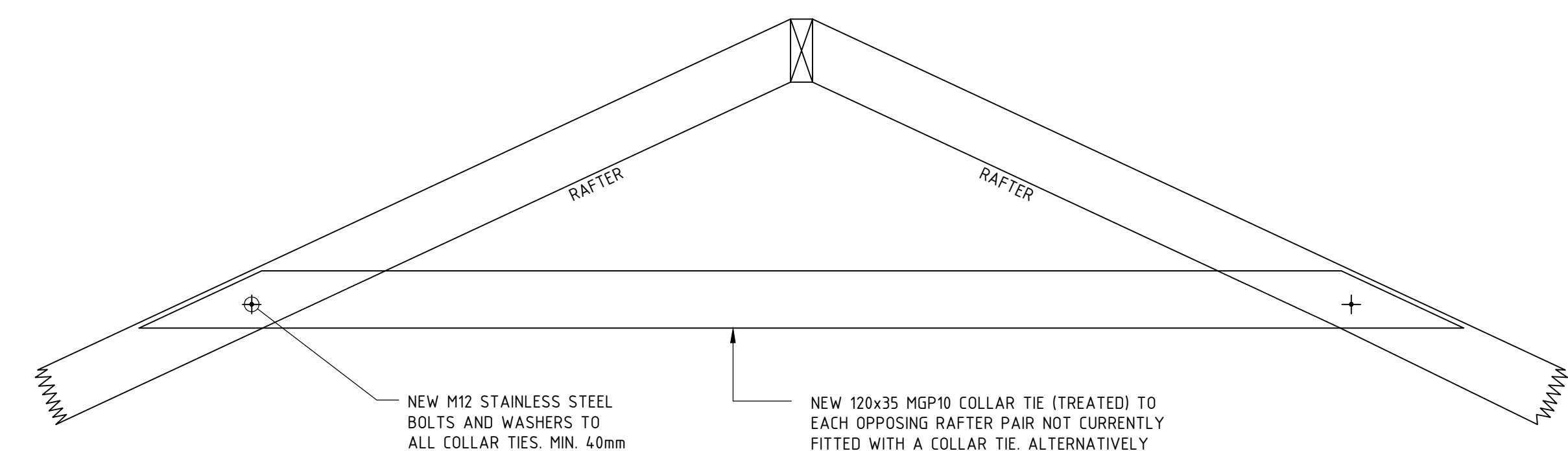


NOTE:
THIS DETAIL APPLIES TO ALL RAFTER TO WALL PLATE, RIDGE BEAM/INTERMEDIATE BEAM INTERFACES.

3 DETAIL
SCALE 1:10

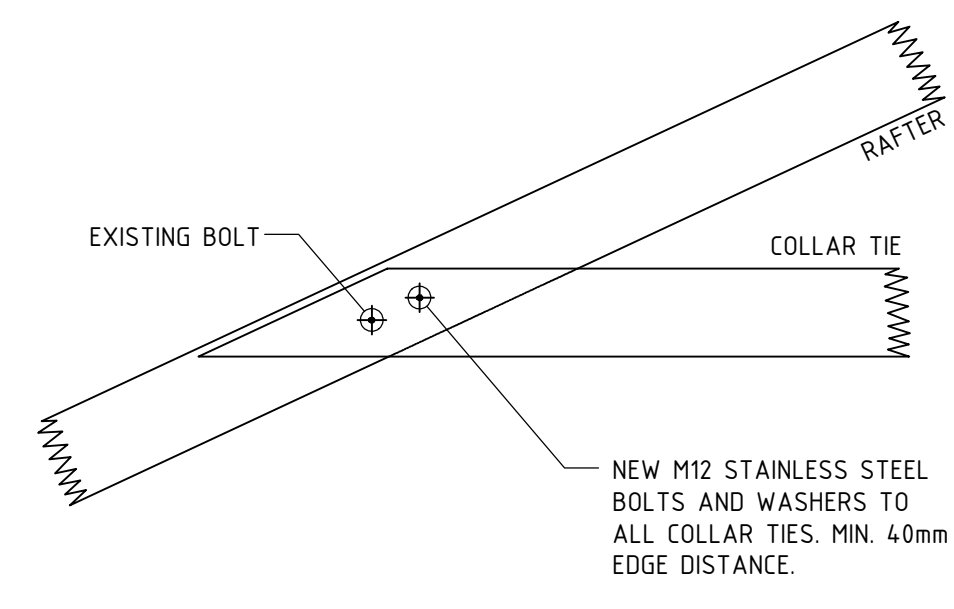


4 DETAIL
SCALE 1:10



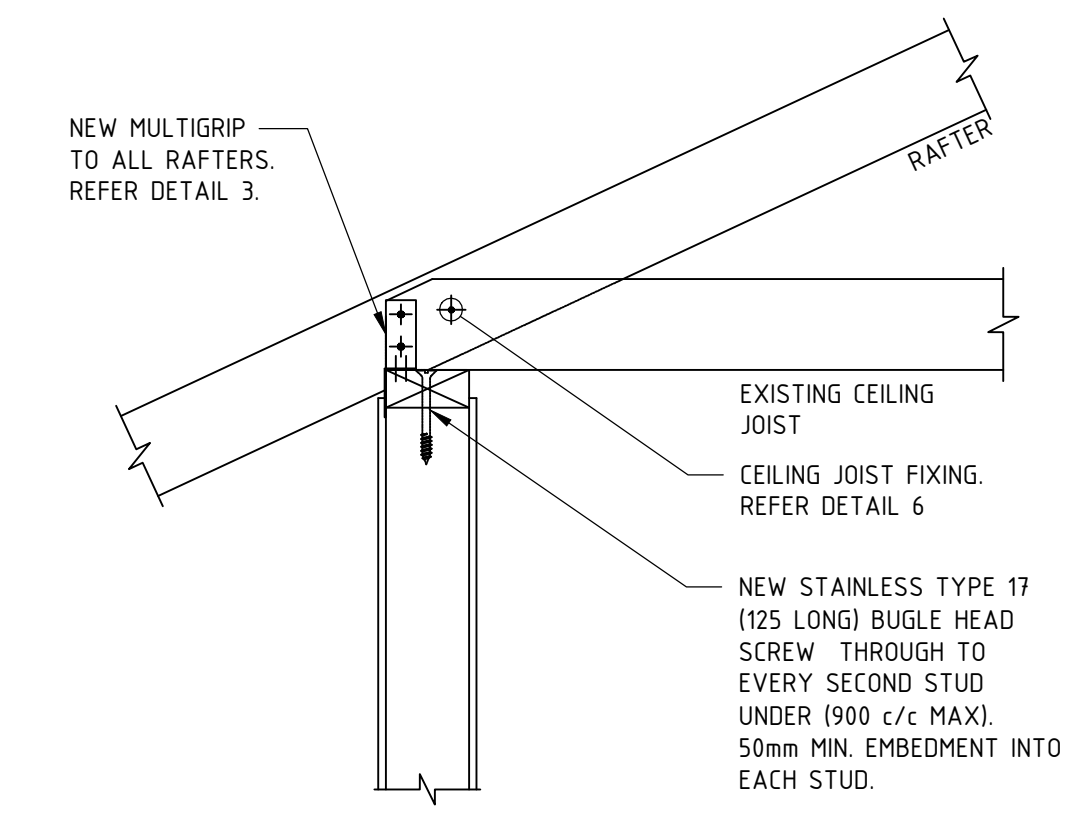
NOTE:
THIS DETAIL IS NOT REQUIRED WHERE EXISTING COLLAR TIE SPACING IS LESS THAN 1200mm.

5 DETAIL
SCALE 1:10



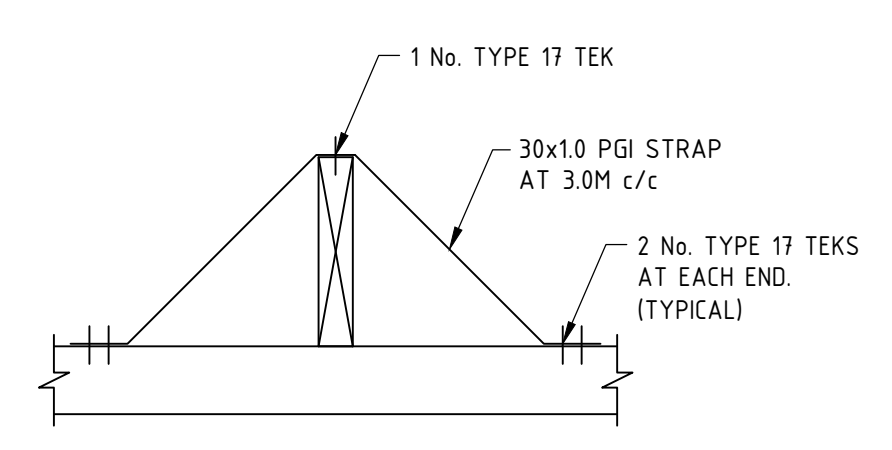
NOTE:
ALTERNATIVELY, EXISTING BOLT CAN BE REMOVED AND REPLACED WITH A NEW BOLT.

6 DETAIL
SCALE 1:10



NOTE:
THIS DETAIL ASSUMES ADEQUATE TIE DOWN OF STUDS TO BOTTOM PLATE. SUBJECT TO LOCALISED INVESTIGATION.

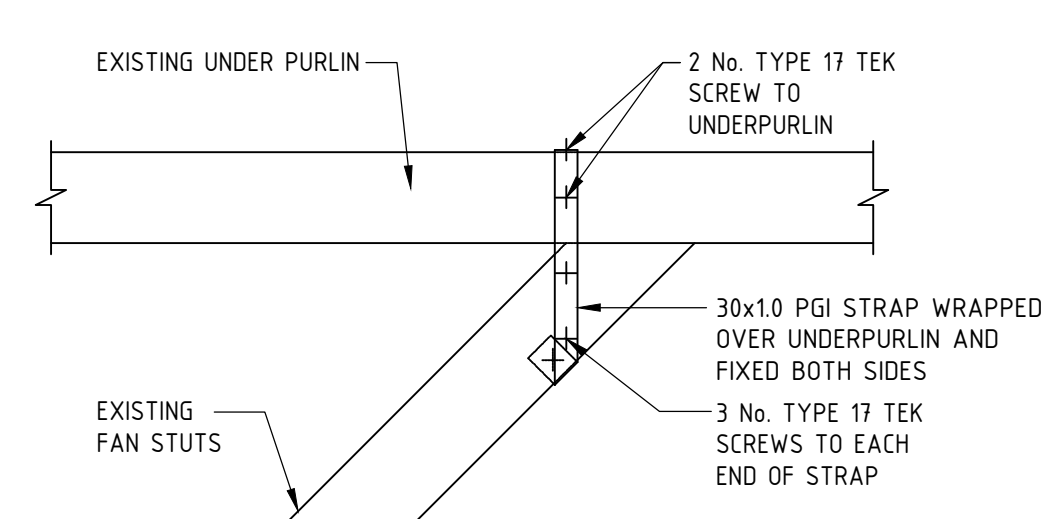
7 DETAIL
SCALE 1:10



STRAP BRACING TO TIMBER BEAM

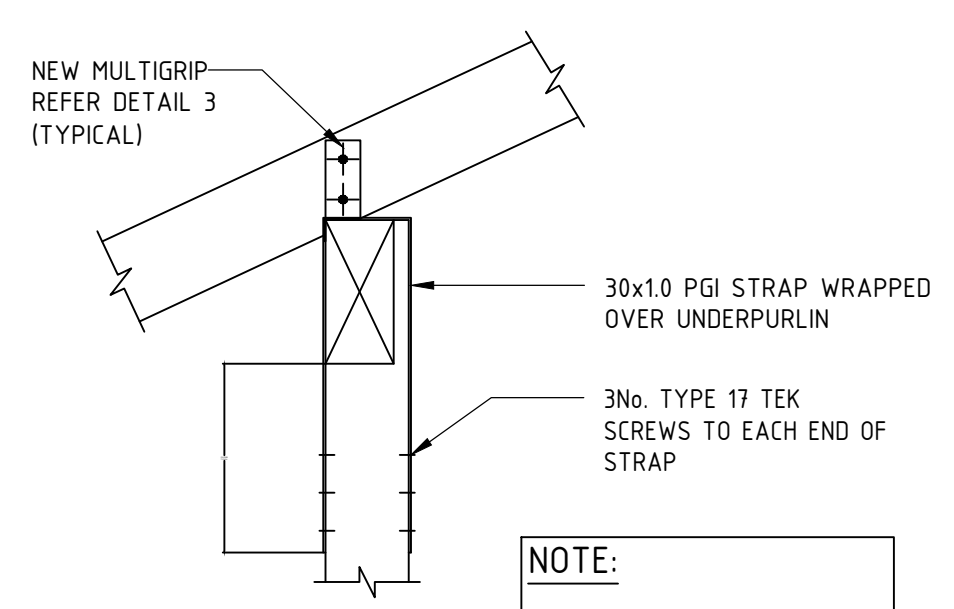
NOTE:
PROVIDE ROTATIONAL RESTRAINT AS SHOWN AT 3.0M c/c MAX

8 DETAIL
SCALE 1:10



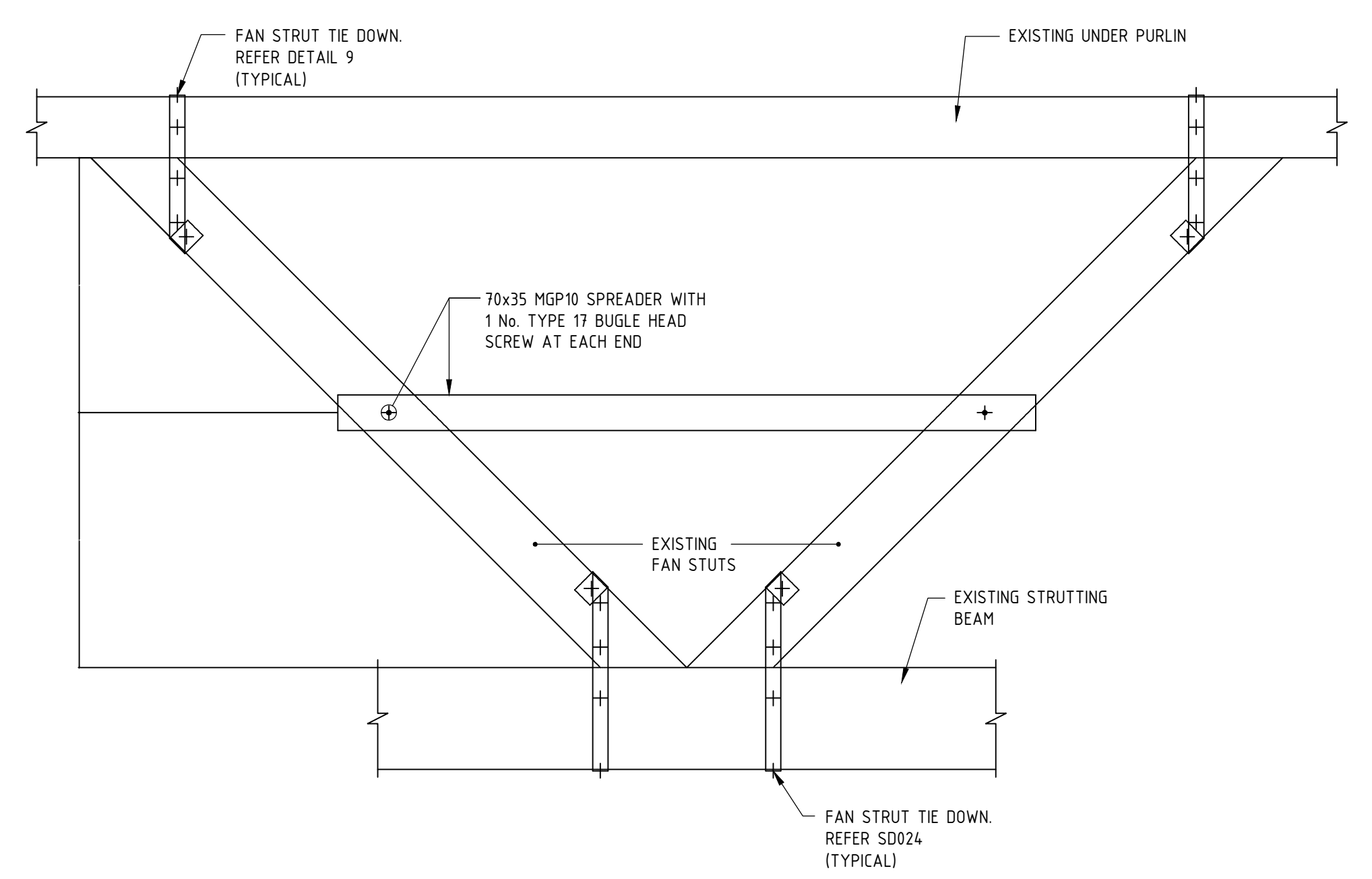
NOTE:
SAME INTENT APPLIES AT BOTTOM OF FAN STRUT.

9 DETAIL
SCALE 1:10



NOTE:
SAME INTENT APPLIES AT BOTTOM OF "TOM STRUT".

10 DETAIL
SCALE 1:10



11 DETAIL
SCALE 1:10

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CLIENT
CITY OF NEDLANDS

74 GOODWOOD PDE
BURSWOOD
WA 6100

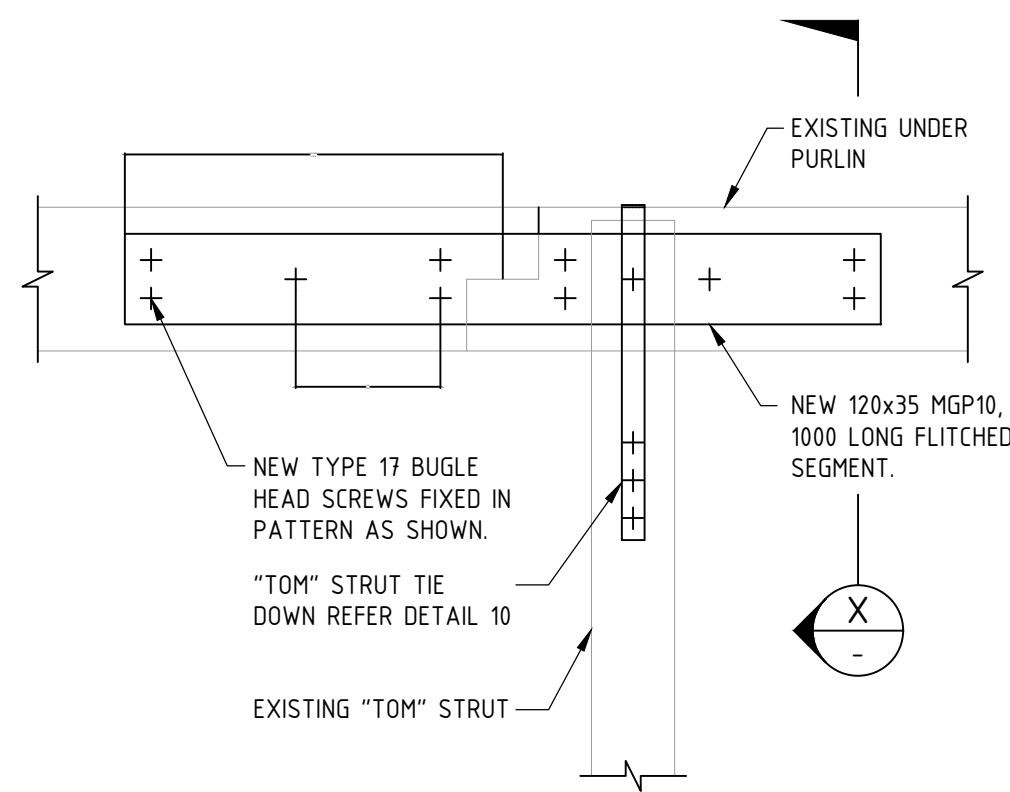
PHONE : (08) 6336 9299
FAX: (08) 6336 9288
WEB: WWW.PERITASGROUP.COM.AU
EMAIL: ENQUIRE@PERITASGROUP.COM.AU

PROJECT TITLE
EXISTING RESIDENCE
118 WOOD STREET
SWANBOURNE
WA 6010

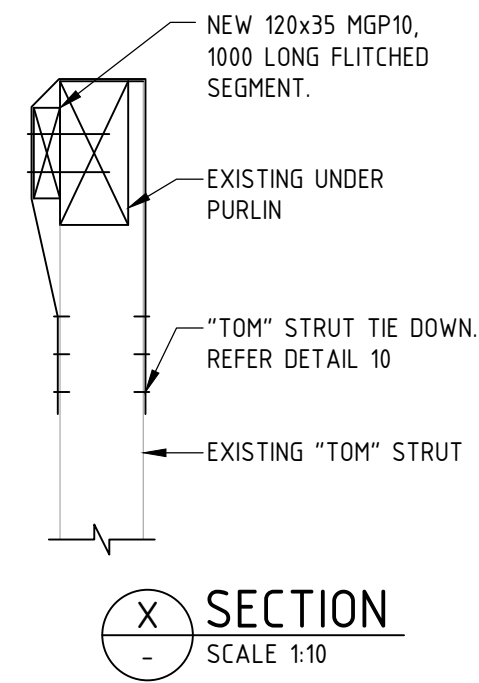
DRAWING TITLE
TYPICAL DETAILS
SHEET 1

DESIGNER	DRAFTSPERSON	PROJECT NUMBER	DRAWING NUMBER	SHEET SIZE	SCALE	REVISION
J BISSCHOPS	S CROCKETTT	PS19191	ST-01.01	A1	1:10	A

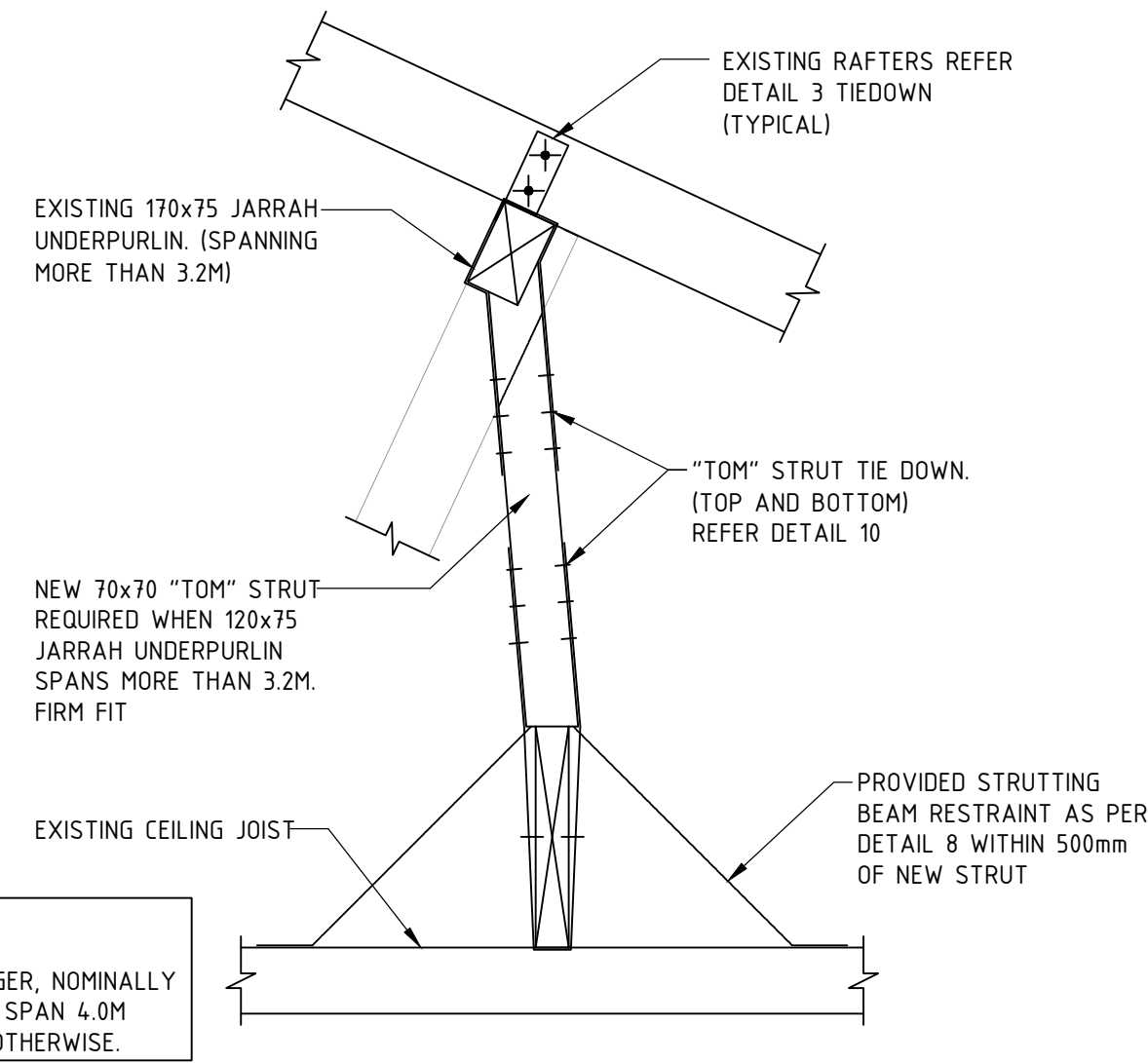
Signature: Edward McLarty
B.E. M.I.E. Aust. (P. Eng., NPER, RPEQ, RBPINT)
Manager, Structural Engineering



12 DETAIL
SCALE 1:10

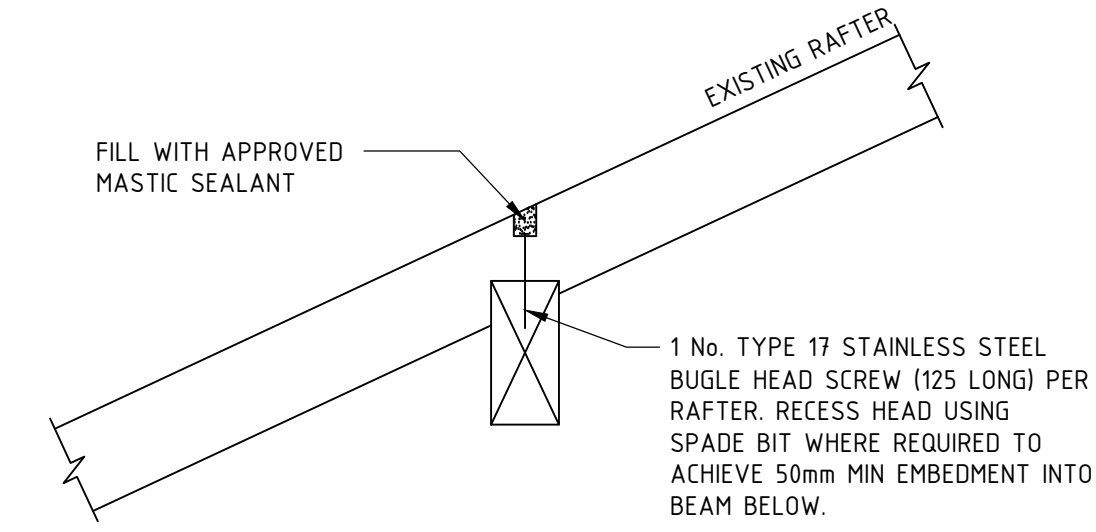


SECTION X-X
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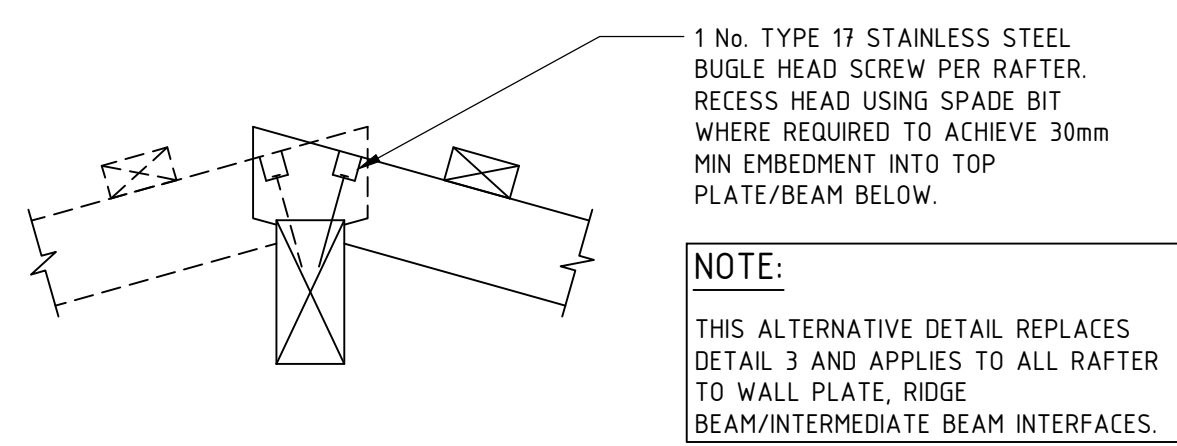


13 DETAIL
SCALE 1:10

NOTE:
EXISTING CEILING HANGER, NOMINALLY 300X45 JARRAH. MAX SPAN 4.0M BUILDER TO CONFIRM OTHERWISE.

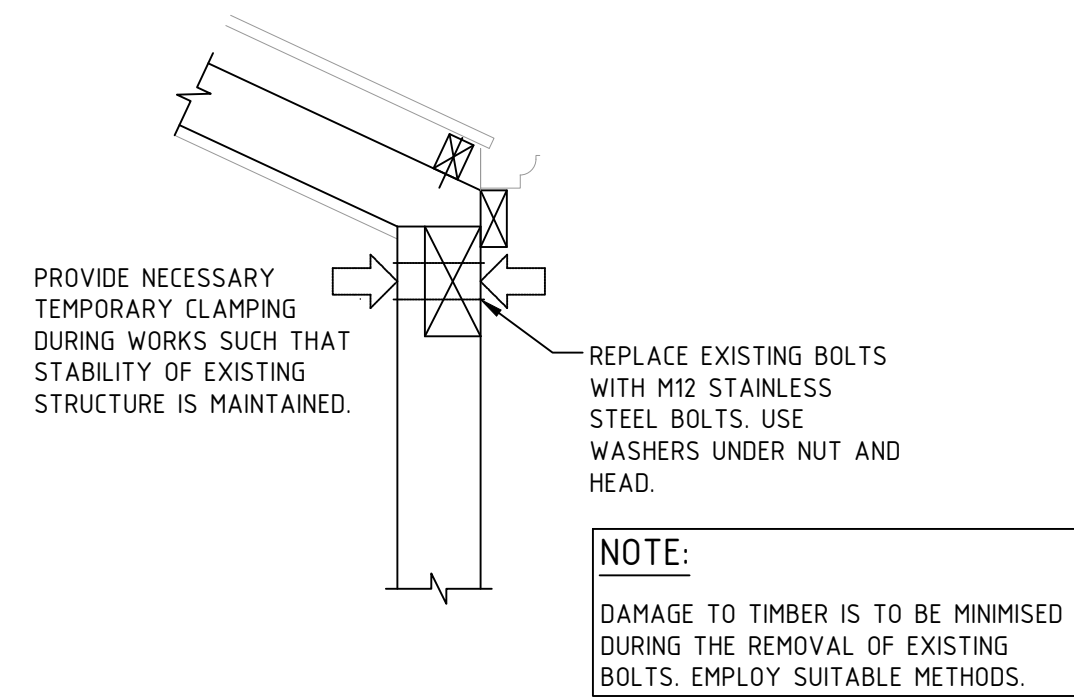


14 DETAIL
SCALE 1:10



15 DETAIL
SCALE 1:10

NOTE:
THIS ALTERNATIVE DETAIL REPLACES DETAIL 3 AND APPLIES TO ALL RAFTER TO WALL PLATE, RIDGE BEAM/INTERMEDIATE BEAM INTERFACES.



16 DETAIL
SCALE 1:10

NOTE:
DAMAGE TO TIMBER IS TO BE MINIMISED DURING THE REMOVAL OF EXISTING BOLTS. EMPLOY SUITABLE METHODS.

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CLIENT:
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PROJECT TITLE:
EXISTING RESIDENCE
118 WOOD STREET
SWANBOURNE
WA. 6010

DRAWING TITLE:
TYPICAL DETAILS
SHEET 2

DESIGNER	DRAFTSPERSON	PROJECT NUMBER	DRAWING NUMBER	REVISION	SHEET SIZE	SCALE
Edward McLarty B.E. M.I.E. Aust. (P Eng, NPER, RPEO, RBPINT) Manager Structural Engineering	J BISSCHOPS	PS19191	ST-01.02	A	A1	1:10

APPENDIX D – Masonry Crack Stitching

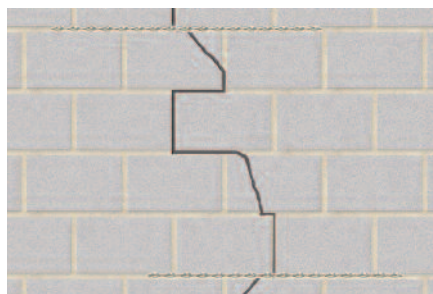
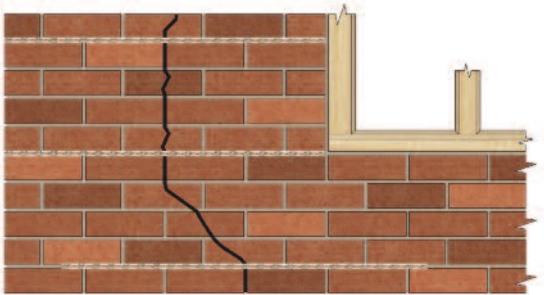


Crack Stitching

A reliable and cost-effective means of repairing and stabilising cracked masonry

Applications

- Rapid and permanent solution to cracked masonry
- Suitable for all forms of masonry structure



Features

- Fully concealed, non-disruptive repair solution
- More reliable than crack injection methods
- HeliBond cementitious grout is injectable and rapidly produces high compressive strength
- HeliBars and HeliBond grout combine to create excellent tensile strength within the masonry
- No additional stresses are introduced during installation
- Masonry remains flexible enough to accommodate normal building movement
- Tensile loads are redistributed
- Reduces likelihood of further cracking nearby
- Avoids costly and disruptive taking down and rebuilding



HeliBar is inserted into HeliBond grout within a cut slot

Over 50 standard repair specifications are available online, covering all common structural faults.

Relevant Repair Details: CS01 to CS03



Scan the QR Code for full Product Information, Case Studies and downloadable Repair Details

Installation Procedures

1. HeliBar to be long enough to extend a minimum of 500mm either side of the crack or 500mm beyond the outer cracks if two or more adjacent cracks are being stitched using one rod.
2. Where a crack is less than 500mm from the end of a wall or an opening, the HeliBar is to be continued for at least 200mm around the corner and bonded into the adjoining wall or bent back and fixed into the reveal, avoiding any DPC.
3. For solid masonry in excess of 230mm thick and in a cavity wall where both leaves are cracked, the wall must be crack stitched on both sides.
4. If there is render, this thickness must be added to the depth of slot. Crack stitching must be installed in the masonry and never in the render.
5. Ensure the masonry is well wetted or primed to prevent premature drying of the HeliBond due to rapid de-watering, especially in hot conditions. Ideally additional wetting of the slot should be carried out 1 to 2 minutes prior to injecting the HeliBond grout.
6. Do not use HeliBond when the air temperature is +4°C and falling or apply over ice. In all instances the slot must be thoroughly damp or primed prior to injection of the HeliBond grout.



1. Rake out or cut slots into the horizontal mortar beds, a minimum of 500mm either side of the crack



4. Using the HeliBar Insertion Tool, push one HeliBar into the grout to obtain good coverage



2. Clean out slots and flush with clean water and thoroughly soak the substrate within the slot



5. Insert a further bead of HeliBond over the exposed HeliBar, finishing 10 – 15mm from the face, and 'iron' firmly into the slot using the HeliBar Finger Trowel



3. Using the Helifix Pointing Gun, inject a bead of HeliBond along the back of the slot



6. Re-point the mortar bed and make good the vertical crack with CrackBond TE

Slot Depth and Spacing

	Single leaf	Solid /multi-leaf masonry		
		Up to 110mm	110mm to 230mm	Over 230mm
Depth of slot	25 – 35mm	25 – 40 mm	25 – 40mm On both sides	
Vertical Spacing	Every 4 courses (approx. 340mm)			

Characteristic Material Properties

HeliBar Diameter	4.5mm	6.0mm	SuperSix	8.0mm	10.0mm
Product Code	HBR45	HBR60	HBR60S	HBR80	HBR10
Cross Sectional Area (mm ²)	5.6	8.1	9.4	10.0	15.0
Stock Length (m)	7.0	7.0	7.0	7.0	7.0
Pitch (mm)	25	29	30	39	45
Ultimate Tensile Strength (MPa)	1400	1112	1200	1100	1088
Tensile Strength (kN)	8.0	9.5	11.2	11.4	16.7
0.2% Proof Stress (MPa)	1150	840	1000	860	770
Shear Strength — Averaged (MPa)	900	650	770	700	750
Grade of Stainless Steel	ASTM304	ASTM316	ASTM304	ASTM316	ASTM316
Weight (g/m)	53	58	73	80	120
RECOMMENDED TOOLING					
For cutting slots:	Chisel, mortar saw or angle grinder with chest guard and vacuum				
For mixing HeliBond grout:	3-jaw-chuck drill with mixing paddle				
For injection of HeliBond into slots:	Helifix Pointing Gun CS with mortar nozzle				
For smoothing pointing:	Standard finger trowel				



SUSTAINABLE STRUCTURAL SOLUTIONS

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January 2014

CONTAMINATION EXPERT | ENVIRONMENTAL SITE SERVICES

City of Nedlands

Community Facility – 118 Wood Street, Swanbourne

Hodge Collard Preston
ARCHITECTS

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ASBESTOS REGISTER

Friends of Allen Park Cottage

118 Wood Street, Swanbourne 6010

31 August 2017

PREPARED FOR:

Shannon Berdal on behalf of City of Nedlands
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DOCUMENT CONTROL

REVISIONS

Date	Rev	Details	Section	Page	Prepared	Checked	Authorised
31/08/2017	Rev0	ALL	ALL	ALL	Leigh Hodson <i>LHodson</i>	Matt Gorski <i>MGorski</i>	Leigh Hodson <i>LHodson</i>

DISTRIBUTION LIST

Copy Holder Details	Copy Number
Shannon Berdal	1

REVIEW

Frequency	Date
Annual	03 August 2018

STATEMENT OF LIMITATIONS

This report was prepared in agreement with Shannon Berdal on behalf of City of Nedlands and Environmental Site Services. The inspection was completed in a thorough and conscientious manner and no other warranty expressed or implied is made. This report should only be presented in full and may not be used to support any other objective other than that set out in the scope of the report.

The audit was conducted in the form of a visual inspection incorporating a non-invasive sampling program.

Owing to the fact that asbestos material was widely used in the construction industry and the limitations of non-invasive sampling, some asbestos material may not be identified.

Such locations include:

- Beneath floor coverings
- Within wall cavities
- Within soils
- Service shafts concealed within the building structure
- Areas deemed unsafe at the time of the audit
- Energised services such as gas and electrical
- Voids only accessible through major demolition works
- Former asbestos containing fence lines snapped off at ground level
- Areas which would require the dismantling of equipment
- Asbestos containing packers to all of the structure including the roof cavity and floor substructure
- Underground pipe work including conduits, storm water services, and water services

Only destructive sampling or substantial demolition would locate all asbestos material. Any material discovered and suspected of being asbestos containing should be assessed in its own right and expert opinion sought in its management.

EXECUTIVE SUMMARY

The key findings and recommendations of the Asbestos Audit undertaken on 3/08/2017 at Friends of Allen Park Cottage by Leigh Hodson are summarised below.

KEY FINDINGS

Asbestos

Friable asbestos material was identified in the following locations:

Item No.	Internal/ External	Building	Room/Area	Location	Material Description
Nil					

Bonded asbestos material was identified in the following locations:

Item No.	Internal/ External	Building	Room/Area	Location	Material Description
20724	Internal	Friends of Allen Park Cottage	Ground Floor Enclosed Porch - 005	Window frame putty	Mastic
20722	Internal	Friends of Allen Park Cottage	Ground Floor Kitchen - 009	Stove	Gaskets (rope/woven)
20727	Internal	Friends of Allen Park Cottage	Ground Floor Store Room - 010	Sink	Bituminous Product
20725	Internal	Friends of Allen Park Cottage	Ground Floor WC - 011	Wall Cladding	Cement Product
20715	Internal	Friends of Allen Park Cottage	Ground Floor WC - 011	Ceiling lining	Cement Product
20723	External	Friends of Allen Park Cottage	External Ground Southern Elevation - 001	Wall & Gable Cladding	Cement Product
20716	External	Friends of Allen Park Cottage	External Ground Southern Elevation - 001	Electrical Mounting Board	Electrical Mounting Board
20714	External	Friends of Allen Park Cottage	External Ground Southern Elevation - 001	Joint strips to walls	Cement Product
20732	External	Friends of Allen Park Cottage	External Ground Western Elevation - 002	Wall Cladding	Cement Product
20730	External	Friends of Allen Park Cottage	External Ground Western Elevation - 002	Joint strips to walls	Cement Product
20721	External	Friends of Allen Park Cottage	External Ground Northern Elevation - 003	Joint strips	Cement Product
20718	External	Friends of Allen Park Cottage	External Ground Northern Elevation - 003	Wall Cladding	Cement Product
20733	External	Friends of Allen Park Cottage	External Ground Eastern Elevation - 004	Joint strips	Cement Product
20729	External	Friends of Allen Park Cottage	External Ground Eastern Elevation - 004	Debris	Cement Product

Areas of Limited or No Access

Building	Room/Area	Reason
All areas were accessed		

KEY RECOMMENDATIONS

Based on the site inspection, Environmental Site Services recommends the following:

- Elimination and Removal of asbestos material is the preferred control option as it removes the hazard from the property/workplace, however the removal process does pose an increased risk to personnel engaged in the removal. Asbestos removal work must be conducted in accordance with the Code of Practice for Safe Removal of Asbestos [NOHSC: 2002 (2005)] and is to be carried out by a licensed asbestos contractor.
- Where removal is not the preferred option and asbestos containing materials are to remain in situ the management of the asbestos material is to be undertaken in accordance with the Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018(2005)] this ensures asbestos materials are not damaged or allowed to deteriorate to such an extent that building occupants, employees, external contractors, or visitors are unnecessarily exposed to airborne asbestos fibres.
 - Implementation of an Asbestos Management Plan (AMP) to comply with asbestos legislation. The AMP should identify those who are responsible for decision making in the asbestos management process and their roles and responsibilities.
 - Repair damaged or deteriorated materials, where noted repairs should be carried out as soon as practicable, such methods may include:
 - Encapsulation which refers to the coating of the outer surface of the asbestos material by the application of some form of compound that usually penetrates to the substrate and hardens the material.
 - Sealing is the process of covering the surface of the material with a protective coating impermeable to asbestos. Either of these options helps protect the asbestos from mechanical damage and is designed to reduce the risk of exposure by preventing the release of asbestos fibres into the airborne environment. This control method is not considered to be an acceptable alternative to repairing or removing severely damaged asbestos materials.
 - Repairs to be carried out as recommended by a licensed asbestos contractor
 - Maintain caution labels on asbestos material
 - Maintain asbestos register onsite
 - Inspect asbestos material as defined in survey results register
 - Conduct risk assessment before accessing roof or conducting any works that may disturb roofing material and limit to necessary works, restrict access to conduct only necessary works and restrict to personnel adequately trained in working with asbestos containing materials
- A hazardous material survey prior to major refurbishment or demolition

INTRODUCTION

Environmental Site Services was requested by Shannon Berdal on behalf of City of Nedlands to inspect the property being Friends of Allen Park Cottage for the purpose of conducting and compiling an asbestos risk assessment and register.

The inspection was conducted to fulfil the person in control of a premise's obligations under legislation and codes of practice. The conducted audit and register provides the following information:

- A register of asbestos material onsite
- A risk assessment of those materials
- Action rating and recommendations on the management of those asbestos materials

An Environmental Site Services hazardous material consultant conducted a visual inspection and non-invasive sampling program on the property. The inspection was limited by non-invasive sampling, access to some areas, and the widespread ad hoc use of asbestos in the construction industry. Environmental Site Services recommends invasive sampling techniques be employed where any major refurbishment or major demolition works are to take place.

RISK ASSESSMENT

The purpose of the risk assessment in this report is to assess the potential risk to building occupiers, contractors and the general public from asbestos material. The risk assessment is used in determining control measures for the management of asbestos material.

To assess the risk posed by the presence of asbestos material, all relevant factors must be considered. The factors include:

- Product Type
- Condition (e.g. is the item intact or damaged, what is the nature and extent of the damage)
- Friability / Surface Treatment
- Asbestos Type
- Extent (e.g. is there sufficient quantity of the material to cause significant exposure)
- Accessibility (e.g. is the material in a populated area near sensitive receptors)
- Disturbance potential (i.e. how likely is the material to be disturbed given the information above)

Condition, friability, accessibility, disturbance potential and professional judgement are used to determine the risk rating of the material.

It should be noted that a high risk rating does not necessarily pose an immediate health threat when used in conjunction with control recommendations.

PRODUCT TYPE

The product type categorises asbestos materials

Product Type	1	Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, asbestos cement etc).
	2	AIB, millboards, other low-density insulation boards, asbestos textiles, gaskets, ropes and woven textiles, asbestos paper and felt.
	3	Thermal insulation (eg pipe and boiler lagging), sprayed asbestos, loose asbestos, asbestos mattresses and packing.

CONDITION ASSESSMENT

The condition assessment of the asbestos material identifies the degree of damage or deterioration.

Good	0	Good condition – Asbestos materials with no signs of damage and/or deterioration of material.
Fair	1	Fair condition – Asbestos materials with minor signs of damage and/or deterioration, including but not limited to minor cracking, minor damage, minor wear and tear.
Poor	2	Poor condition – Asbestos materials with a significant amount of damage and/or deterioration of material, or that the material is unserviceable for its intended use. This includes but is not limited to significant cracking and other mechanical and physical damage, weathering and water damage.
Very Poor	3	Very poor condition – Asbestos materials with a high amount of damage or deterioration, or visible debris

FRIABILITY / SURFACE TREATMENT

Friable material describes the ease in which material can be crumbled with hand pressure and is therefore likely to emit or release airborne fibres.

Non -Friable Asbestos (Bonded)	0	Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles Non-Friable or bonded asbestos typically comprised of asbestos fibres tightly bound in a non-asbestos matrix such as vinyl or cement.
Enclosed	1	Enclosed sprays and laggings, asbestos insulating board/AIB (with exposed face painted or encapsulated), asbestos cement sheets etc
Unsealed	2	Unsealed AIB, or encapsulated lagging and sprays
Friable Asbestos	3	Unsealed lagging and sprays Examples of friable asbestos material include asbestos lagging, sprayed insulation, millboard, felt and woven asbestos matting. Material can be crumbled with hand pressure. Bonded materials may become friable due to damage from mechanical force. Materials such as asbestos containing cement pipe or sheeting may release airborne asbestos fibres if subjected to drilling, sawing or sanding.

ACCESSIBILITY/DISTURBANCE POTENTIAL

Describes the likelihood of disturbance and accessibility of material.

Rare	0	Rare disturbance activity – Asbestos materials that are rarely accessed, e.g. seldom used store room
Low	1	Low disturbance potential/accessibility – Asbestos materials that are not easily accessible and/or are not in locations in which they are likely to sustain damage.
Moderate	2	Moderate disturbance potential/accessibility – Asbestos materials that are visible but where physical accesses is impeded and/or are in locations in which they may sustain impact and may result in damage or deterioration of the material.
High	3	High disturbance potential/accessibility – Asbestos materials that are in a physical location where building occupants might readily access them without use of assistance and/or in locations in which they are likely to sustain damage or deterioration of the material.

ASBESTOS TYPE

Asbestos mineralogy

Asbestos Type	1	Chrysotile
	2	Amphibole asbestos excluding Crocidolite. e.g Amosite or Fibrous Anthophyllite, Actinolite or Tremolite
	3	Crocidolite

RISK RATING

The risk factors described above are used to rank the health risk posed by the presence of asbestos containing materials.

Very Low	1 - 4	These materials pose a very low risk health risk to employees, contractors and the general public providing the material stays in its current state and continues to have low accessibility
Low	5-7	These asbestos materials pose a low health risk to employees, contractors and the general public providing the material stays in its current state and continues to have low accessibility.
Moderate	8 -11	A moderate risk rating applies to materials that pose a health risk if not managed correctly.
High	12 -15	High risk rating materials pose a risk to health and require management to reduce risk.

ASBESTOS ACTION RATING SYSTEM

The asbestos action rating system is used to implement risk management of asbestos hazards. The rating system assists in ranking asbestos risks, planning of reinspections and removal/abatement works.

Action 1: High Risk Rating - Restrict Access and Organise Removal/Encapsulation Urgently	
A1 (High Risk Score 12 -15)	Material is damaged and further deterioration is likely. Due to these conditions there is an increased risk of exposure. It is recommended access to the area be restricted and material removed/encapsulated urgently by a licensed asbestos removalist. Client to be contacted immediately.
Action 2: Moderate Risk - Organise Removal/Encapsulation Works as soon as Practicable	
A2 (Medium Risk Score 8-11)	Material is damaged and while not posing an immediate hazard presents a moderate health risk as material is unstable. Removal/encapsulation measures are to be put in place by a licensed removalist as soon as practicable. Material of a moderate risk can be reduced to a low health risk if managed correctly.
Action 3: Low Risk – Inspect Regularly	
A3 (Low Risk Score 5-7)	Material in its current condition presents a low risk, the material should be inspected regularly. No remedial action required. Removal should take place by a licensed asbestos removalist during major refurbishment/demolition.
Action 4: Very Low Risk Potential – Inspect annually	
A4 (Very Low Risk Score 1-4)	Material is in good condition and presents a very low risk. Material is unlikely to be damaged under normal circumstances. Inspection should be undertaken annually. No remedial action required. Removal should take place by a licensed asbestos removalist during major refurbishment/demolition.

20717	Location			Description		Risk	
Internal/ External:	Internal			Material Description:	Vinyl Tiles	Condition:	-
Level:	Ground Floor			Sample No.:	ESS 004424	Friability:	-
Building:	Friends of Allen Park Cottage			Sample Status:	No Asbestos Detected	Disturbance Potential:	-
Extent (approx.):	10 m ²	Current Label:	Labelled	Sample Ref:	BA3259/02	Risk Rating:	-
Room/Area:	005 - Enclosed Porch - Floor					Action Rating:	-

Control Recommendations

Nil



20720	Location			Description		Risk	
Internal/ External:	Internal			Material Description:	Vinyl Tiles	Condition:	-
Level:	Ground Floor			Sample No.:	ESS 004423	Friability:	-
Building:	Friends of Allen Park Cottage			Sample Status:	No Asbestos Detected	Disturbance Potential:	-
Extent (approx.):	10 m ²	Current Label:	Labelled	Sample Ref:	BA3259/01	Risk Rating:	-
Room/Area:	005 - Enclosed Porch - Floor - Second blue vinyl floor covering beneath beige vinyl tiles.					Action Rating:	-

Control Recommendations

Nil



20724		Location		Description		Risk	
Internal/ External:	Internal		Material Description:	Mastic	Condition:	-	
Level:	Ground Floor		Sample No.:	ESS 004627	Friability:	-	
Building:	Friends of Allen Park Cottage		Sample Status:	No Asbestos Detected	Disturbance Potential:	-	
Extent (approx.):	3 no	Current Label:	Unlabelled	Sample Ref:	BA3259/08	Risk Rating:	-
Room/Area:	005 - Enclosed Porch - Window frame putty				Action Rating:	-	

Control Recommendations

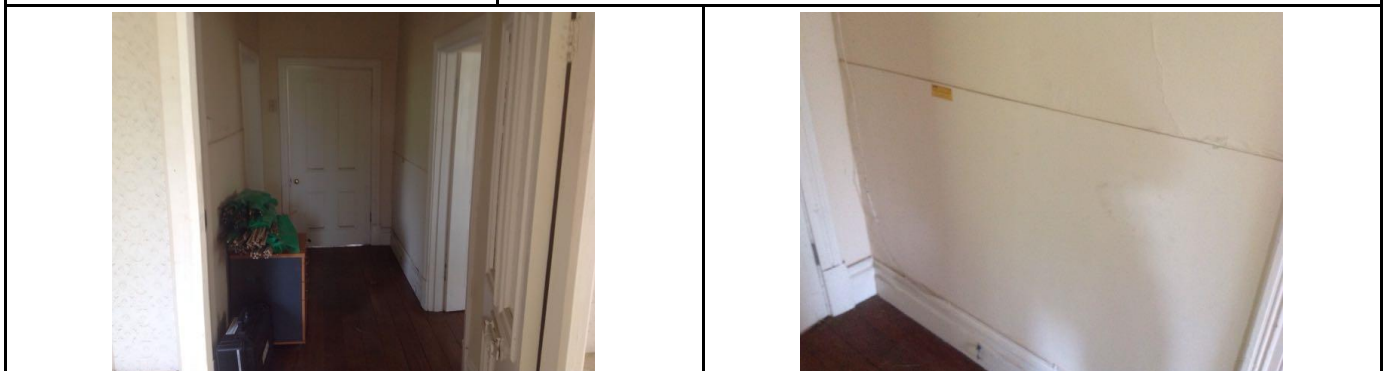
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20728		Location		Description		Risk	
Internal/ External:	Internal		Material Description:	Cement Product	Condition:	-	
Level:	Ground Floor		Sample No.:	Assumed same as ESS 004425	Friability:	-	
Building:	Friends of Allen Park Cottage		Sample Status:	No Asbestos Detected	Disturbance Potential:	-	
Extent (approx.):	2 m ²	Current Label:	Labelled	Sample Ref:	BA3259/03	Risk Rating:	-
Room/Area:	006 - Hall - Infill panel				Action Rating:	-	

Control Recommendations

Nil		Remove "May Contain Asbestos" label					
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20713		Location		Description		Risk	
Internal/ External:	Internal		Material Description:	Cement Product		Condition:	-
Level:	Ground Floor		Sample No.:	Assumed same as ESS 004425		Friability:	-
Building:	Friends of Allen Park Cottage		Sample Status:	No Asbestos Detected		Disturbance Potential:	-
Extent (approx.):	8 m ²	Current Label:	Labelled	Sample Ref:	BA3259/03	Risk Rating:	-
Room/Area:	007 - Front room - Infill panel				Action Rating:	-	

Control Recommendations

Nil Remove "May Contain Asbestos" label



20719		Location		Description		Risk	
Internal/ External:	Internal		Material Description:	Cement Product		Condition:	-
Level:	Ground Floor		Sample No.:	ESS 004425		Friability:	-
Building:	Friends of Allen Park Cottage		Sample Status:	No Asbestos Detected		Disturbance Potential:	-
Extent (approx.):	16 m ²	Current Label:	Labelled	Sample Ref:	BA3259/03	Risk Rating:	-
Room/Area:	008 - Bedroom - Infill panel				Action Rating:	-	

Control Recommendations

Nil Remove "May Contain Asbestos" label



20722		Location		Description		Risk	
Internal/ External:	Internal		Material Description:	Gaskets (rope/woven)	Condition:	Good (Undamaged)	
Level:	Ground Floor		Sample No.:	Not Sampled	Friability:	Non Friable	
Building:	Friends of Allen Park Cottage		Sample Status:	Assumed Asbestos	Disturbance Potential:	Rare	
Extent (approx.):	1 no	Current Label:	Labelled	Sample Ref:	-	Risk Rating:	Low
Room/Area:	009 - Kitchen - Stove				Action Rating:	A3	

Control Recommendations

Removal by licensed asbestos contractor during refurbishment or demolition.
Maintain warning label. Whilst material remains in-situ inspect annually.

If removing, consult:

NOHSC 2002 (2005) Part 12 Section 12.4 Removal of Asbestos Gaskets and Rope from Plant and Equipment;

NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)

If mitigating potential risks, consult:

NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)



20726		Location		Description		Risk	
Internal/ External:	Internal		Material Description:	Vinyl Tiles	Condition:	-	
Level:	Ground Floor		Sample No.:	ESS 004426	Friability:	-	
Building:	Friends of Allen Park Cottage		Sample Status:	No Asbestos Detected	Disturbance Potential:	-	
Extent (approx.):	1 m ²	Current Label:	Unlabelled	Sample Ref:	BA3259/04	Risk Rating:	-
Room/Area:	009 - Kitchen - Vinyl floor covering - Within cupboard				Action Rating:	-	

Control Recommendations

Nil



20727		Location		Description		Risk	
Internal/ External:	Internal			Material Description:	Bituminous Product	Condition:	Good (Undamaged)
Level:	Ground Floor			Sample No.:	ESS 004427	Friability:	Non Friable
Building:	Friends of Allen Park Cottage			Sample Status:	Asbestos Detected	Disturbance Potential:	Rare
Extent (approx.):	1 no	Current Label:	Labelled	Sample Ref:	BA3259/05	Risk Rating:	Very Low
Room/Area:	010 - Store Room - Sink					Action Rating:	A4

Control Recommendations

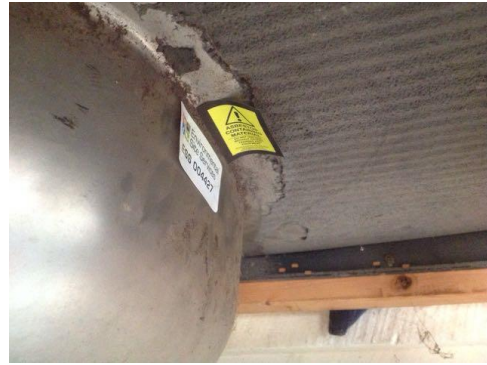
Removal by licensed asbestos contractor during refurbishment or demolition.
Maintain warning label. Whilst material remains in-situ inspect annually.

If removing, consult:

NOHSC 2002 (2005) Part 12 Section 12.6 Removal of Asbestos Mastics and Bitumen;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)

If mitigating potential risks, consult:

NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)



20715		Location		Description		Risk	
Internal/ External:	Internal			Material Description:	Cement Product	Condition:	Good (Undamaged)
Level:	Ground Floor			Sample No.:	Assumed same as ESS 004428	Friability:	Non Friable
Building:	Friends of Allen Park Cottage			Sample Status:	Asbestos Detected	Disturbance Potential:	Low
Extent (approx.):	6 m ²	Current Label:	Labelled	Sample Ref:	BA3259/06	Risk Rating:	Very Low
Room/Area:	011 - WC - Ceiling lining					Action Rating:	A4

Control Recommendations

Removal by licensed asbestos contractor during refurbishment or demolition.
Maintain warning label. Whilst material remains in-situ inspect annually.

If removing, consult:

NOHSC 2002 (2005) Part 12 Section 12.1 Removal of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)

If mitigating potential risks, consult:

NOHSC 2018 (2005) Appendix E: Sealing, Painting, Coating and Cleaning of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)



20725		Location		Description		Risk	
Internal/ External:	Internal	Material Description:	Cement Product	Condition:	Good (Undamaged)		
Level:	Ground Floor	Sample No.:	ESS 004428	Friability:	Non Friable		
Building:	Friends of Allen Park Cottage	Sample Status:	Asbestos Detected	Disturbance Potential:	Low		
Extent (approx.):	30 m ²	Current Label:	Labelled	Sample Ref:	BA3259/06	Risk Rating:	Very Low
Room/Area:	011 - WC - Wall Cladding				Action Rating:	A4	

Control Recommendations

Removal by licensed asbestos contractor during refurbishment or demolition.
Maintain warning label. Whilst material remains in-situ inspect annually.

If removing, consult:

NOHSC 2002 (2005) Part 12 Section 12.1 Removal of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)

If mitigating potential risks, consult:

NOHSC 2018 (2005) Appendix E: Sealing, Painting, Coating and Cleaning of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)



20714		Location		Description		Risk	
Internal/ External:	External	Material Description:	Cement Product	Condition:	Good (Undamaged)		
Level:	External Ground	Sample No.:	Assumed same as ESS 004626	Friability:	Non Friable		
Building:	Friends of Allen Park Cottage	Sample Status:	Asbestos Detected	Disturbance Potential:	Low		
Extent (approx.):	20 lin m	Current Label:	Labelled	Sample Ref:	BA3259/07	Risk Rating:	Very Low
Room/Area:	001 - Southern Elevation - Joint strips to walls				Action Rating:	A4	

Control Recommendations

Removal by licensed asbestos contractor during refurbishment or demolition.
Maintain warning label. Whilst material remains in-situ inspect annually.

If removing, consult:

NOHSC 2002 (2005) Part 12 Section 12.1 Removal of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)

If mitigating potential risks, consult:

NOHSC 2018 (2005) Appendix E: Sealing, Painting, Coating and Cleaning of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)



20716		Location		Description		Risk	
Internal/ External:	External		Material Description:	Electrical Mounting Board	Condition:	Good (Undamaged)	
Level:	External Ground		Sample No.:	Not Sampled	Friability:	Non Friable	
Building:	Friends of Allen Park Cottage		Sample Status:	Assumed Asbestos	Disturbance Potential:	Low	
Extent (approx.):	1 no	Current Label:	Labelled	Sample Ref:	-	Risk Rating:	Low
Room/Area:	001 - Southern Elevation - Electrical Mounting Board				Action Rating:	A3	

Control Recommendations

Removal by licensed asbestos contractor during refurbishment or demolition.
Maintain warning label. Whilst material remains in-situ inspect annually.

If removing, consult:

NOHSC 2002 (2005) Part 12 Section 12.5 Removal of Asbestos Switchboards or Meter boards;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)

If mitigating potential risks, consult:

NOHSC 2018 (2005) Appendix H: Working on Electrical Mounting Boards (switchboards) Containing Asbestos;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)



20723		Location		Description		Risk	
Internal/ External:	External		Material Description:	Cement Product	Condition:	Poor (Damaged)	
Level:	External Ground		Sample No.:	Assumed same as ESS 004626	Friability:	Non Friable	
Building:	Friends of Allen Park Cottage		Sample Status:	Asbestos Detected	Disturbance Potential:	Low	
Extent (approx.):	25 m ²	Current Label:	Labelled	Sample Ref:	BA3259/07	Risk Rating:	Low
Room/Area:	001 - Southern Elevation - Wall & Gable Cladding				Action Rating:	A3	

Control Recommendations

Removal by licensed asbestos contractor during refurbishment or demolition.
Maintain warning label. Whilst material remains in-situ inspect annually.

If removing, consult:

NOHSC 2002 (2005) Part 12 Section 12.1 Removal of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)

If mitigating potential risks, consult:

NOHSC 2018 (2005) Appendix E: Sealing, Painting, Coating and Cleaning of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)



20731		Location		Description		Risk	
Internal/ External:	External		Material Description:	Mastic	Condition:	-	
Level:	External Ground		Sample No.:	ESS 004627	Friability:	-	
Building:	Friends of Allen Park Cottage		Sample Status:	No Asbestos Detected	Disturbance Potential:	-	
Extent (approx.):	2 lin m	Current Label:	Unlabelled	Sample Ref:	BA3259/08	Risk Rating:	-
Room/Area:	001 - Southern Elevation - Window frame putty				Action Rating:	-	

Control Recommendations

Nil



20730		Location		Description		Risk	
Internal/ External:	External		Material Description:	Cement Product	Condition:	Fair (Minor Damage)	
Level:	External Ground		Sample No.:	Not Sampled	Friability:	Non Friable	
Building:	Friends of Allen Park Cottage		Sample Status:	Assumed Asbestos	Disturbance Potential:	Low	
Extent (approx.):	50 lin m	Current Label:	Unlabelled	Sample Ref:	-	Risk Rating:	Low
Room/Area:	002 - Western Elevation - Joint strips to walls				Action Rating:	A3	

Control Recommendations

Removal by licensed asbestos contractor during refurbishment or demolition.
Affix warning label. Whilst material remains in-situ inspect annually.

If removing, consult:

NOHSC 2002 (2005) Part 12 Section 12.1 Removal of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)

If mitigating potential risks, consult:

NOHSC 2018 (2005) Appendix E: Sealing, Painting, Coating and Cleaning of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)



20732		Location		Description		Risk	
Internal/ External:	External		Material Description:	Cement Product	Condition:	Fair (Minor Damage)	
Level:	External Ground		Sample No.:	ESS 004626	Friability:	Non Friable	
Building:	Friends of Allen Park Cottage		Sample Status:	Asbestos Detected	Disturbance Potential:	Low	
Extent (approx.):	25 m ²	Current Label:	Labelled	Sample Ref:	BA3259/07	Risk Rating:	Low
Room/Area:	002 - Western Elevation - Wall Cladding				Action Rating:	A3	

Control Recommendations

Removal by licensed asbestos contractor during refurbishment or demolition.
Maintain warning label. Whilst material remains in-situ inspect annually.

If removing, consult:

NOHSC 2002 (2005) Part 12 Section 12.1 Removal of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)

If mitigating potential risks, consult:

NOHSC 2018 (2005) Appendix E: Sealing, Painting, Coating and Cleaning of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)



20718		Location		Description		Risk	
Internal/ External:	External		Material Description:	Cement Product	Condition:	Good (Undamaged)	
Level:	External Ground		Sample No.:	Assumed same as ESS 004626	Friability:	Non Friable	
Building:	Friends of Allen Park Cottage		Sample Status:	Asbestos Detected	Disturbance Potential:	Rare	
Extent (approx.):	4 m ²	Current Label:	Labelled	Sample Ref:	BA3259/07	Risk Rating:	Very Low
Room/Area:	003 - Northern Elevation - Wall Cladding				Action Rating:	A4	

Control Recommendations

Removal by licensed asbestos contractor during refurbishment or demolition.
Maintain warning label. Whilst material remains in-situ inspect annually.

If removing, consult:

NOHSC 2002 (2005) Part 12 Section 12.1 Removal of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)

If mitigating potential risks, consult:

NOHSC 2018 (2005) Appendix E: Sealing, Painting, Coating and Cleaning of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)



20721		Location		Description		Risk	
Internal/ External:	External		Material Description:	Cement Product	Condition:	Good (Undamaged)	
Level:	External Ground		Sample No.:	Not Sampled	Friability:	Non Friable	
Building:	Friends of Allen Park Cottage		Sample Status:	Assumed Asbestos	Disturbance Potential:	Rare	
Extent (approx.):	2 lin m	Current Label:	Labelled	Sample Ref:	-	Risk Rating:	Very Low
Room/Area:	003 - Northern Elevation - Joint strips				Action Rating:	A4	

Control Recommendations

Removal by licensed asbestos contractor during refurbishment or demolition.
Maintain warning label. Whilst material remains in-situ inspect annually.

If removing, consult:

NOHSC 2002 (2005) Part 12 Section 12.1 Removal of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)

If mitigating potential risks, consult:

NOHSC 2018 (2005) Appendix E: Sealing, Painting, Coating and Cleaning of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)



20729		Location		Description		Risk	
Internal/ External:	External		Material Description:	Cement Product	Condition:	Very Poor (High Amount of Damage)	
Level:	External Ground		Sample No.:	Assumed same as ESS 004626	Friability:	Non Friable	
Building:	Friends of Allen Park Cottage		Sample Status:	Asbestos Detected	Disturbance Potential:	Moderate	
Extent (approx.):	>3 no	Current Label:	Unlabelled	Sample Ref:	-	Risk Rating:	Low
Room/Area:	004 - Eastern Elevation - Debris				Action Rating:	A2	

Control Recommendations

Environmentally clean/Emu pick area
All debris found was removed for analysis

If removing, consult:

NOHSC 2002 (2005) Part 12 Section 12.1 Removal of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)

If mitigating potential risks, consult:

NOHSC 2018 (2005) Appendix E: Sealing, Painting, Coating and Cleaning of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)



20733		Location		Description		Risk	
Internal/ External:	External		Material Description:	Cement Product	Condition:	Fair (Minor Damage)	
Level:	External Ground		Sample No.:	Not Sampled	Friability:	Non Friable	
Building:	Friends of Allen Park Cottage		Sample Status:	Assumed Asbestos	Disturbance Potential:	Low	
Extent (approx.):	20 lin m	Current Label:	Unlabelled	Sample Ref:	-	Risk Rating:	Low
Room/Area:	004 - Eastern Elevation - Joint strips				Action Rating:	A3	

Control Recommendations

Removal by licensed asbestos contractor during refurbishment or demolition.
Affix warning label. Whilst material remains in-situ inspect annually.

If removing, consult:

NOHSC 2002 (2005) Part 12 Section 12.1 Removal of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)

If mitigating potential risks, consult:

NOHSC 2018 (2005) Appendix E: Sealing, Painting, Coating and Cleaning of Asbestos Cement Products;
NOHSC 2018 (2005) Appendix C: Selection and Use of Personal Protective Equipment (PPE)



End of report

DISCLAIMER

This report is prepared for the client's objectives and is formulated on this basis only. All limitations and conditions in the writing of this report are clearly agreed to by the client and Environmental Sites Services prior to its formulation and may not be suitable or applicable for any other use other than that of the original intended objective. No other parties other than the client and Environmental Sites Services should use this information without firstly conferring with Environmental Sites Services.

Whilst all due care is taken, any information within this report that has relied on information from previous assessments made by others including visual inspections, laboratory testing and overall methodologies cannot be guaranteed for its accuracy or competency by Environmental Sites Services.

This report should be reproduced in full at all times when either reviewed or accessed. If the report is to be used by a third party for whatever means, the scope and limitations of the report should be clearly defined to the third party.

APPENDIX A – LEGISLATIVE REQUIREMENTS

This information is provided for guidance only, owing to frequent changes to legislation. It is the duty of those in charge of employees or premises to keep up to date with any changes.

LEGISLATION AND CODES OF PRACTICE

- Occupational Safety and Health Act 1984
- Occupational Safety and Health Regulations 1996
- Code of Practice for Management and Control of Asbestos in Workplaces [NOHSC:2018(2005)]

INSPECTION REQUIREMENTS

The Occupational Safety and Health Act 1984 requires an employer to provide a safe workplace and as far as practicable ensure that workplace does not present a hazard to employees.

The Occupational Safety and Health Regulations 1996 requires the employer, main contractor, a self-employed person or the person having control of the workplace to engage a competent person to identify and assess risks from asbestos hazards in the workplace in accordance with the Code of Practice for Management and Control of Asbestos in Workplaces [NOHSC: 2018(2005)]

REINSPECTION AND REVIEW

As per the Code of Practice a register review including risk assessments must be undertaken annually (at a minimum) with any changes to the condition of the asbestos material to be updated in the register.

REPORTING REQUIREMENTS

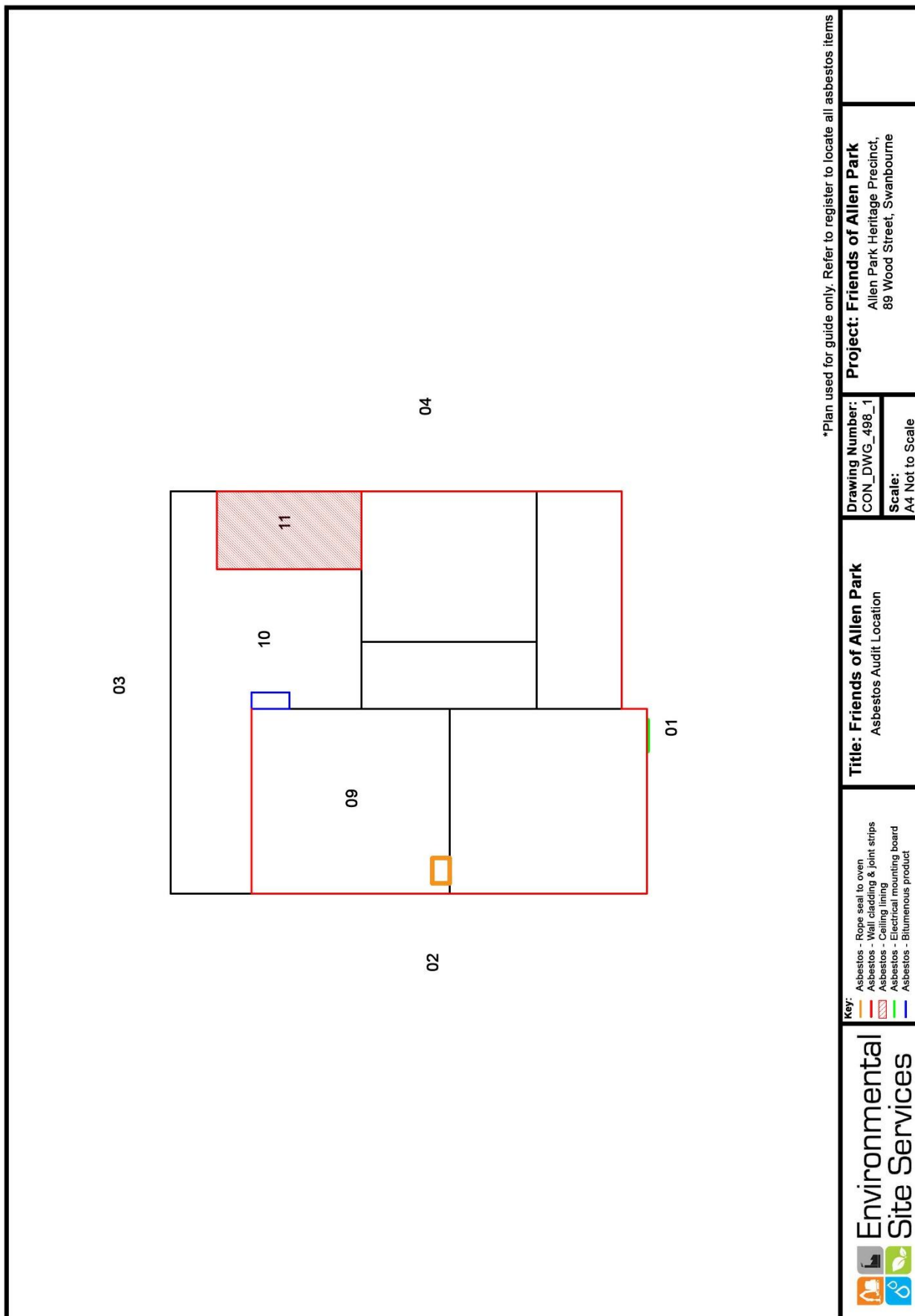
A workplace asbestos register must be held onsite where asbestos is present.

The register must include the location, extent, laboratory analysis, presumptions, limitations, risk assessments, control measures, and management recommendations.

WARNING SIGNS AND LABELLING

Warning signs and labels should supplement the workplace asbestos register to warn building occupiers and those working on the building of the presence of asbestos material. A competent person is to be engaged to determine the suitable location and number of signs/labels.

APPENDIX B - SITE PLAN



APPENDIX C - LABORATORY RESULTS



**Lifetree
Environmental
Pty Ltd**

6/101 Collins Rd, Willetton, Perth, WA 6155
Phone: 08 9354 7405
Fax: 08 6323 1028
Email: info@lifetreecenvironmental.com.au
www.lifetreecenvironmental.com.au

CERTIFICATE FOR THE QUALITATIVE IDENTIFICATION OF ASBESTOS AND OTHER FIBRES

Client: Environmental Site Services
Contact Name: John Breed
Client Address: 43 Stiles Avenue, Burswood WA
Contact No.: (08) 9355 4010
Client Job No.: E-00498

Certificate Number: BA3259
Date Sampled: 03.08.17
Sampled by: Leigh Hodson
Date Received: 10.08.17
Date Analysed: 11.08.17

Test Method: All analysis is carried out using the PLM and DS method as detailed in accordance with AS4964-2004 'Method for the qualitative identification of asbestos in bulk samples' and Lifetree Environmental Pty Ltd in-house Procedures Manual 1.

Notes: The results contained within this report relate only to sample(s) submitted for testing, in the condition received at the laboratory. No responsibility is accepted for errors, which may have arisen during sampling, packaging or transportation of samples by external clients. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Job Number: E-00498				
Lab No.	Client Sample No.	Sample Description	Sample Weight (g)	Identification Type(s)
BA3259/01	ESS004423	Linoleum Flooring W/ Backing	2.91g	No Asbestos Detected Organic Fibres Detected Synthetic Fibres Detected
BA3259/02	ESS004424	Vinyl Tiles	1.49g	No Asbestos Detected
BA3259/03	ESS004425	Cement Product	0.44g	No Asbestos Detected Organic Fibres Detected
BA3259/04	ESS004426	Linoleum Flooring W/ Backing	1.31g	No Asbestos Detected Organic Fibres Detected
BA3259/05	ESS004427	Bituminous Product	0.32g	Chrysotile Asbestos Detected
BA3259/06	ESS004428	Cement Product	0.39g	Chrysotile Asbestos Detected Amosite Asbestos Detected Organic Fibres Detected
BA3259/07	ESS004626	Cement Product	6.29g	Chrysotile Asbestos Detected Amosite Asbestos Detected Organic Fibres Detected
BA3259/08	ESS004627	Mastic	1.33g	No Asbestos Detected

Approved Identifier:
Name: C Tan

Approved Signatory:
Name: C Tan

Signature: _____




NATA Accredited Laboratory Number: 19181
Accredited for compliance with ISO/IEC 17025 – Testing.
This test report shall not be reproduced, except in full,
without written approval from Lifetree Environmental
Pty Ltd.

Lifetree Environmental Pty Ltd	QC Form 027	Revision No.05
Page 1 of 1	Issue Date: 01.06.2014	Approved By: ST

QUANTITY SURVEYORS | OWEN CONSULTING

City of Nedlands

Community Facility – 118 Wood Street, Swanbourne

Hodge Collard Preston
ARCHITECTS

|

owen consulting

quantity surveyors + construction consultants

1 July 2019

WOOD STREET COTTAGE

Refurbishment and Conversion Works

Concept Design cost estimate

Construction Cost (excl GST) - refer attached	\$ 215,000.00
Design + construction contingency	\$ 35,000.00
Construction Cost + Contingency (excl GST)	\$ 250,000.00
<i>Temporary accommodation / relocation costs</i>	<i>excluded</i>
<i>Consultant fees + disbursements</i>	<i>excluded</i>
<i>Cost escalation to tender (past 2019)</i>	<i>excluded</i>

Notes

- * This cost estimate is preliminary only based on Hodge Collard Preston's concept drawings dated 6.06.2019, plus structural, asbestos and building condition reports

Specific estimate exclusions

- * Paving upgrade around building
- * Air-conditioning
- * External sewer and water service upgrade
- * External electrical infrastructure upgrade

Project: 19050 - Wood Street Cottage

Details: Concept design cost estimate

Building: Refurbishment and Conversion

Item	Description	Quantity	Unit	Rate	Total
BUILDING					
PR - Preliminaries					
1	Allowance for builders preliminaries costs		item		35,000
DE - Demolition					
2	Demolition work to suit upgrade (incl. asbestos removal)		item		15,000
					15,000
SB - Substructure					
3	Floor re-stumping and levelling	90	m2	60.00	5,400
4	Raise floor to southern verandah	10	m2	200.00	2,000
5	New floor to UAT	6	m2	150.00	900
6	Insulate subfloor	90	m2	40.00	3,600
7	Strip footing to perimeter wall (enclose subfloor)	18	m	150.00	2,700
8	Termite treatment		item		1,500
					16,100
RF - Roof					
9	New roof sheeting, cappings and anticon	130	m2	80.00	10,400
10	New roof battens	130	m2	25.00	3,250
11	Refurbishment of existing roof framing (plan area)	100	m2	50.00	5,000
12	Tie downs to existing roof structure	40	m	25.00	1,000
13	Eaves gutters	50	m	60.00	3,000
14	Downpipes	4	no	250.00	1,000
15	Sand and paint existing barge and gutter boards	65	m	40.00	2,600
					26,250
EW - External Walls					
16	External wall framing repairs	90	m2	30.00	2,700
17	Insulation to external walls	90	m2	25.00	2,250
18	Hardie's cladding and paint	90	m2	90.00	8,100
19	110 painted brickwork (enclose underfloor)	12	m2	150.00	1,800
20	Crack repairs to existing brickwork		item		2,500
					17,350
WW - Windows					
21	New aluminium windows (toughened low-e glass)	17	m2	550.00	9,350
22	Bushfire shutters/screens to windows	17	m2	450.00	7,650
					17,000
ED - External Doors					
23	Refurbish and paint existing entry door, frame and sidelights (retain hardware)	1	no	800.00	800
24	New timber entry door, frame, hardware and paint	3	no	1,200.00	3,600
25	Bushfire shutters/screens to doors	8	m2	500.00	4,000

Project: 19050 - Wood Street Cottage

Details: Concept design cost estimate

Building: Refurbishment and Conversion

Item	Description	Quantity	Unit	Rate	Total
(Continued)					8,400
NW - Internal Walls					
26	New stud framed lined walls - UAT	15	m2	160.00	2,400
27	New lining to internal face of external walls - UAT	15	m2	50.00	750
28	Modify door opening width	1	no	500.00	500
					3,650
ND - Internal Doors					
29	Refurbish and paint existing door and frame (new hardware)	2	no	600.00	1,200
30	Frame only to widened opening (msd.sep)	1	no	300.00	300
31	Timber door, frame, hardware and paint	1	no	1,100.00	1,100
32	Timber sliding door, frame, hardware and paint	1	no	1,100.00	1,100
					3,700
WF - Wall Finishes					
33	Make good and paint existing walls	250	m2	30.00	7,500
34	Paint to new internal walls and wall linings	45	m2	20.00	900
35	Wall tiling (splashbacks + skirting)	5	m2	140.00	700
					9,100
FF - Floor Finishes					
36	Re-finish existing timber floors	57	m2	50.00	2,850
37	Vinyl flooring	27	m2	80.00	2,160
38	Floor tiling - UAT	6	m2	140.00	840
39	Skirting modifications to suit upgrade		item		600
					6,450
CF - Ceiling Finishes					
40	Make good and re-paint existing ceilings	84	m2	50.00	4,200
41	Patch ceiling where rangehood removed	1	no	500.00	500
42	New paint ceiling - UAT	6	m2	125.00	750
43	New ceiling insulation	90	m2	25.00	2,250
					7,700
FT - Fitments					
44	Fixed cabinetworks - - tea prep		item		5,000
45	UAT mirror, grab rails and dispensers		item		1,200
46	Fire extinguishers and blankets		item		600
					6,800
HY - Hydraulic Services					
47	Sanitary plumbing, fixtures and tapware - UAT		item		10,000
48	Sanitary plumbing, fixtures and tapware - tea prep		item		5,000
49	Stormwater drainage from new downpipes		item		5,000

Project: 19050 - Wood Street Cottage

Details: Concept design cost estimate

Building: Refurbishment and Conversion

Item	Description	Quantity	Unit	Rate	Total
------	-------------	----------	------	------	-------

(Continued)

50	External sewer and water service upgrade		note		excluded
					20,000
	ME - Mechanical Services				
51	Toilet exhaust system		item		2,500
52	Air conditioning		note		excluded
					2,500
	EL - Electrical Services				
53	Internal electrical services upgrade		item		10,000
54	External electrical infrastructure upgrade		note		excluded
					10,000
	XP - Site Preparation				
55	Clear vegetation to form a 10m setback around cottage		item		10,000
					10,000
	XR - Roads, Footpaths & Paved Areas				
56	Paving upgrade around building		note		excluded
	TOTAL CONSTRUCTION COST (excl GST)		Total		215,000

215,000



City of Nedlands
Bushfire Management Plan

Friends of Allen Park Cottage
Allen Park, Swanbourne, WA, 6010

24 January 2020

58017/126945 (Rev A)

JBS&G Australia Pty Ltd T/A Strategen-JBS&G

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Figure 7: Post development vegetation classification and effective slope (current site location).....17

Figure 8: Post development BAL contours (current site location).....18

Appendices

Appendix A APZ standards (Schedule 1 of the Guidelines)

Appendix B Vegetation plot photos and description

Appendix C Vegetation Management Areas – Site Pictures

Appendix D Water technical standards of the Guidelines

Appendix E City of Nedlands Firebreak Notice

Appendix F Architect Review

1. Proposal details

1.1 Proposal summary

The client is seeking bushfire risk assessment and management recommendations to determine risk mitigation options and potential renovation/relocation of Friends of Allen Park Cottage, situated at Allen Park, Swanbourne. Site details are summarised in Table 1 and a spatial depiction of the current site location and potential relocation area are contained in Figure 1 and Figure 2 respectively.

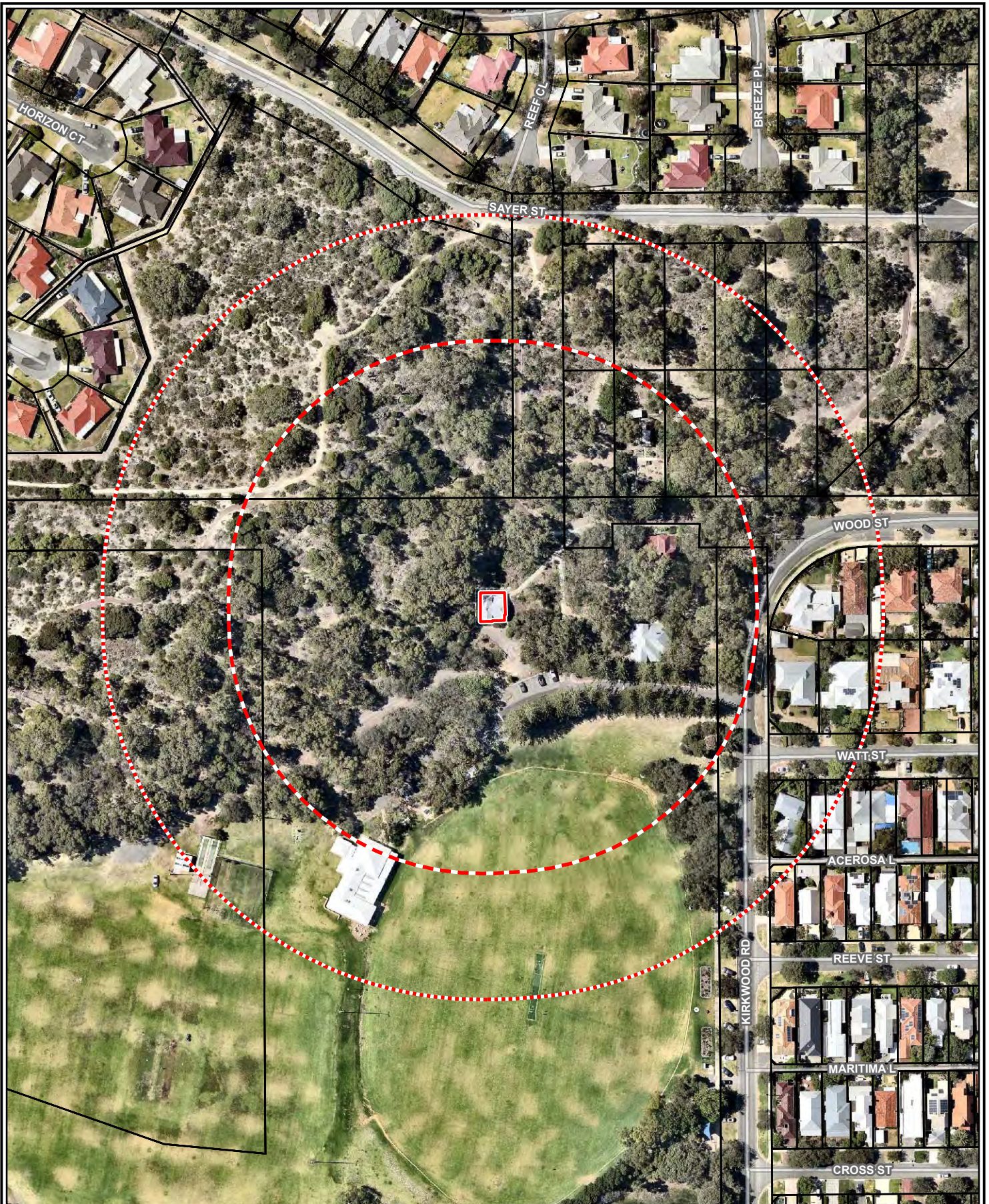
Both the current site location and potential relocation area are designated as bushfire prone on the *State Map of Bush Fire Prone Areas* (DFES 2020), as depicted in Plate 1.






Table 1: Proposal summary

Site details	
Property address	Lot 500 (61) Clement Street, Swanbourne WA 6010 (R7804)
Lot size	14.047 ha
Landowner	City of Nedlands
Local government area	City of Nedlands
Development	
Proposed development	Potential renovation or relocation of Friends of Allen Park Cottage
Relevant bushfire policy and guidelines/standards	<i>State Planning Policy 3.7 Planning in Bushfire Prone Areas</i> (SPP 3.7; WAPC 2015). <i>Guidelines for Planning in Bushfire Prone Areas</i> (the Guidelines; WAPC 2017). AS3959-2018 Construction of buildings in bushfire prone areas (SA 2018).
Requirements	Bushfire Management Plan (BMP; this document).

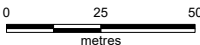


Plate 1: Results of State Map of Bush Fire Prone Areas (DFES 2020)




- Legend:**
-  Building outline
 -  100m assessment area
 -  150m assessment area
 -  Cadastral boundary
 -  Roads (MRWA)

Scale 1:2,000 at A4



Coord. Sys. GDA 1994 MGA Zone 50



Job No: 58017

Client: City of Nedlands

Version: A Date: 10-Jan-2020

Drawn By: jcrute Checked By: CT

**Friends of Allen Park Cottage,
Allen Park, Swanbourne, WA**

SITE OVERVIEW (current site location)

FIGURE 1

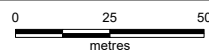




Legend:

- Proposed relocation site
- 100m assessment area
- 150m assessment area
- Cadastral boundary
- Roads (MRWA)

Scale 1:2,000 at A4



Coord. Sys. GDA 1994 MGA Zone 50



Job No: 58017

Client: City of Nedlands

Version: A

Date: 10-Jan-2020

Drawn By: jcrute

Checked By: CT

**Friends of Allen Park Cottage,
Allen Park, Swanbourne, WA**

SITE OVERVIEW (potential relocation area)

FIGURE 2



2. Environmental considerations

2.1 Native vegetation – modification and clearing

A search of publicly available environmental data relating to the project area has been undertaken and is summarised in Table 2.

Table 2: Summary of environmental values

Environmental value	Present within or adjacent to the project area	Description
Environmentally Sensitive Area	N/A	There are no Environmentally Sensitive Areas (ESAs) mapped within the project area. The nearest ESA occurs approximately 350m to the west of the project area.
Swan Bioplan Regionally Significant Natural Area	N/A	The project area is not identified as a regionally significant natural area.
Ecological linkages	N/A	The project area is situated within the intersection of two Regional Ecological Linkages (LINK_ID: 2 and LINK_ID: 4).
Wetlands	Adjacent	There are no Geomorphic Wetlands mapped within the project area.
Waterways	N/A	There are no waterways or surface water features mapped within the project area.
Threatened Ecological Communities listed under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	Within and adjacent	EPBC Act listed 'Endangered' Banksia Woodlands of the Swan Coastal Plain is mapped as likely to occur within the project area, however given the absence of key Banksia species from the project area it is not likely that the TEC is present. EPBC Act listed 'Critically Endangered' Tuart Woodlands and Forests of the Swan Coastal Plain may occur within the project area.
Threatened and priority flora	N/A	No Threatened or Priority flora species have been mapped within the project area.
Fauna habitat listed under the EPBC Act	Within and adjacent	The project area has been mapped as a potential foraging area and as a possible breeding area for the EPBC Act listed 'Endangered' Carnaby's Black Cockatoo, and is mapped within the buffer of a confirmed roosting area. EPBC Act listed 'Vulnerable' Forest Red-tailed Black Cockatoo have also been sighted foraging in the vicinity of the project area and surrounds.
Threatened and priority fauna	N/A	One Threatened or Priority bird species has been recorded within the project area.
Bush Forever Site	N/A	There are no Bush Forever sites mapped within the project area.
DBCA managed lands and lands and waters (includes legislated lands and waters and lands of interest)	N/A	The project area is not located within DBCA managed lands.
Conservation covenants	N/A	There are no conservation covenants enacted over the project area.

Regional vegetation surveys and mapping of the Swan Coastal Plain indicates the project area and adjacent land is contained within the Cottesloe Complex – Central and South. This vegetation complex is described as:

- mosaic of woodland of *Eucalyptus gomphocephala* – *E. marginata* – *E. calophylla*; closed heath on limestone outcrops.

2.2 Revegetation / Landscape Plans

No revegetation is proposed as part of the proposal.

Landscaping around the Site will be required to consist of low threat and managed gardens and street scaping in accordance with AS 3959—2018 Construction of Buildings in Bushfire-Prone Areas (AS 3959; SA 2018) Clause 2.2.3.2 (f) and Schedule 1 of the Guidelines (refer to Appendix A).

3. Bushfire assessment results

3.1 Assessment inputs

3.1.1 Vegetation classification

Strategen-JBS&G assessed classified vegetation and exclusions within the 150 m assessment area for both the current site location and potential relocation area through on-ground verification on 18 December 2019 in accordance with AS 3959 and the *Visual Guide for Bushfire Risk Assessment in Western Australia* (DoP 2016). Georeferenced site photos and a description of the vegetation classifications and exclusions are contained in Appendix B. A spatial depiction of the vegetation classifications and exclusions for both the current site location and potential relocation area are contained in Figure 3 and Figure 4 respectively.

The predominant vegetation classifications consisted of:

- Class A forest to the northwest, consisting of a three-tiered eucalyptus (Tuart) canopy
- Class D scrub to the north, consisting of coastal heath vegetation with a continuous horizontal fuel profile greater than 2 m in height
- Class C shrubland vegetation to the west, consisting of coastal heath vegetation with a continuous horizontal fuel profile less than 2 m in height.

The predominant vegetation exclusions consisted of a combination of non-vegetated land (e.g. roads, footpaths, buildings, car parks, other infrastructure, sealed areas, etc) and low threat managed vegetation (e.g. managed turf areas, playing fields, managed gardens, parkland cleared areas with a managed understory, managed landscaping, etc) in accordance with AS 3959 Clauses 2.2.3.2 (e) and (f) respectively.

3.1.2 Effective slope

Strategen-JBS&G assessed effective slope under classified vegetation within the 150 m assessment area through on-ground verification on 18 December 2019 in accordance with AS 3959. Results were cross-referenced with DPIRD 2m contour data and depicted for both the current site location and potential relocation area in Figure 3 and Figure 4 respectively.

3.1.3 Summary of inputs

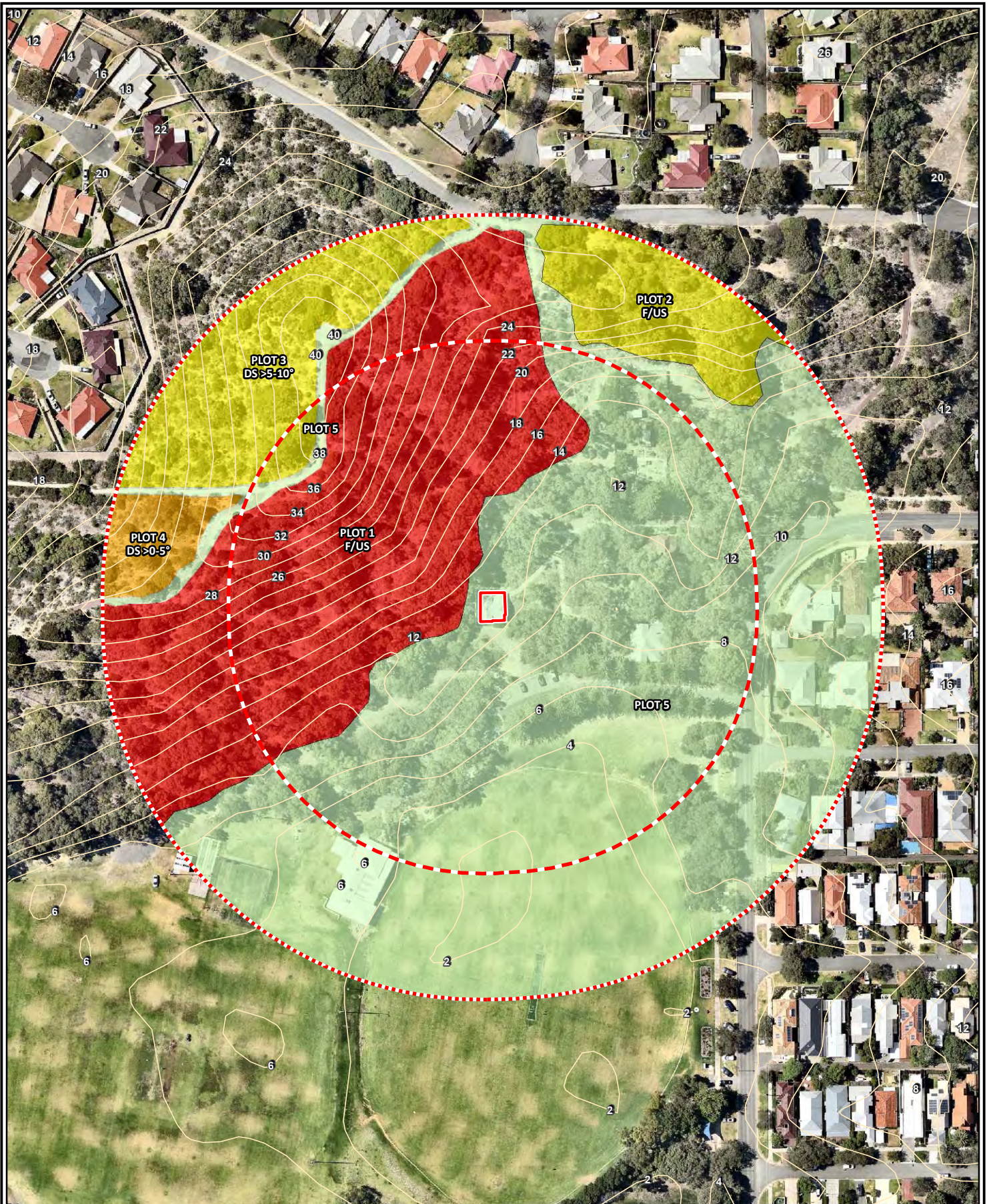
As previously stated, Figure 3 and Figure 4 illustrate the current vegetation classifications, exclusions and effective slope for the current site location and potential relocation area respectively. These assessment inputs are summarised in Table 3.

Table 3: Summary of vegetation classifications, exclusions and effective slope

Vegetation plot	Vegetation classification	Effective slope	Comments
1	Class A Forest	Flat/upslope (0°)	Remnant native vegetation and dune rehabilitation areas (unmanaged)
2	Class D Scrub	Flat/upslope (0°)	Remnant native vegetation (unmanaged)
3	Class D Scrub	Downslope >5–10°	Remnant native vegetation (unmanaged)
4	Class C Shrubland	Downslope >0–5°	Remnant native vegetation (unmanaged)
5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Mixture of managed low-threat vegetation, carpark, roads and non-vegetated areas.



Legend: Proposed relocation site 100m assessment area 150m assessment area Cadastral boundary Topographic contours (mAHD) Roads (MRWA)	Vegetation classification Class A Forest Class C Shrubland Class D Scrub Clause 2.2.3.2 (e) & (f)	Scale 1:2,000 at A4 	Friends of Allen Park Cottage, Allen Park, Swanbourne, WA VEGETATION CLASSIFICATION AND EFFECTIVE SLOPE (potential relocation area)
		Coord. Sys. GDA 1994 MGA Zone 50 	
Job No: 58017 Client: City of Nedlands		FIGURE 4	
Version: A Drawn By: jcrute	Date: 10-Jan-2020 Checked By: CT		



Legend: Building outline 100m assessment area 150m assessment area Topographic contours (mAHD)	Vegetation classification Class A Class C Shrubland Class D Scrub Clause 2.2.3.2 (e) & (f)	Scale 1:2,000 at A4 	Friends of Allen Park Cottage, Allen Park, Swanbourne, WA
		Coord. Sys. GDA 1994 MGA Zone 50 	VEGETATION CLASSIFICATION AND EFFECTIVE SLOPE (current site location)
Job No: 58017		FIGURE 3	
Client: City of Nedlands			
Version: A	Date: 10-Jan-2020		
Drawn By: jcrute	Checked By: CT		

3.2 Assessment outputs

3.2.1 Bushfire Attack Level (BAL) contour assessment

Strategen-JBS&G has undertaken a BAL contour assessment in accordance with Method 1 of AS 3959 for both the current site location and potential relocation area, as depicted in Figure 5 and Figure 6 respectively. The Method 1 procedure incorporates the following factors:

- state-adopted FDI 80 rating
- vegetation classification
- effective slope
- distance maintained between proposed development areas and the classified vegetation.

The BAL rating gives an indication of the level of bushfire attack (i.e. the radiant heat flux) that may be received by the building and subsequently informs the standard of building construction and/or setbacks required for the building to potentially withstand such impacts.

The BAL contours are based on:

- current vegetation classifications and effective slope observed at the time of inspection in relation to both the current site location and potential relocation area
- consideration of ongoing revegetation within Allen Park, particularly within the dune restoration area.

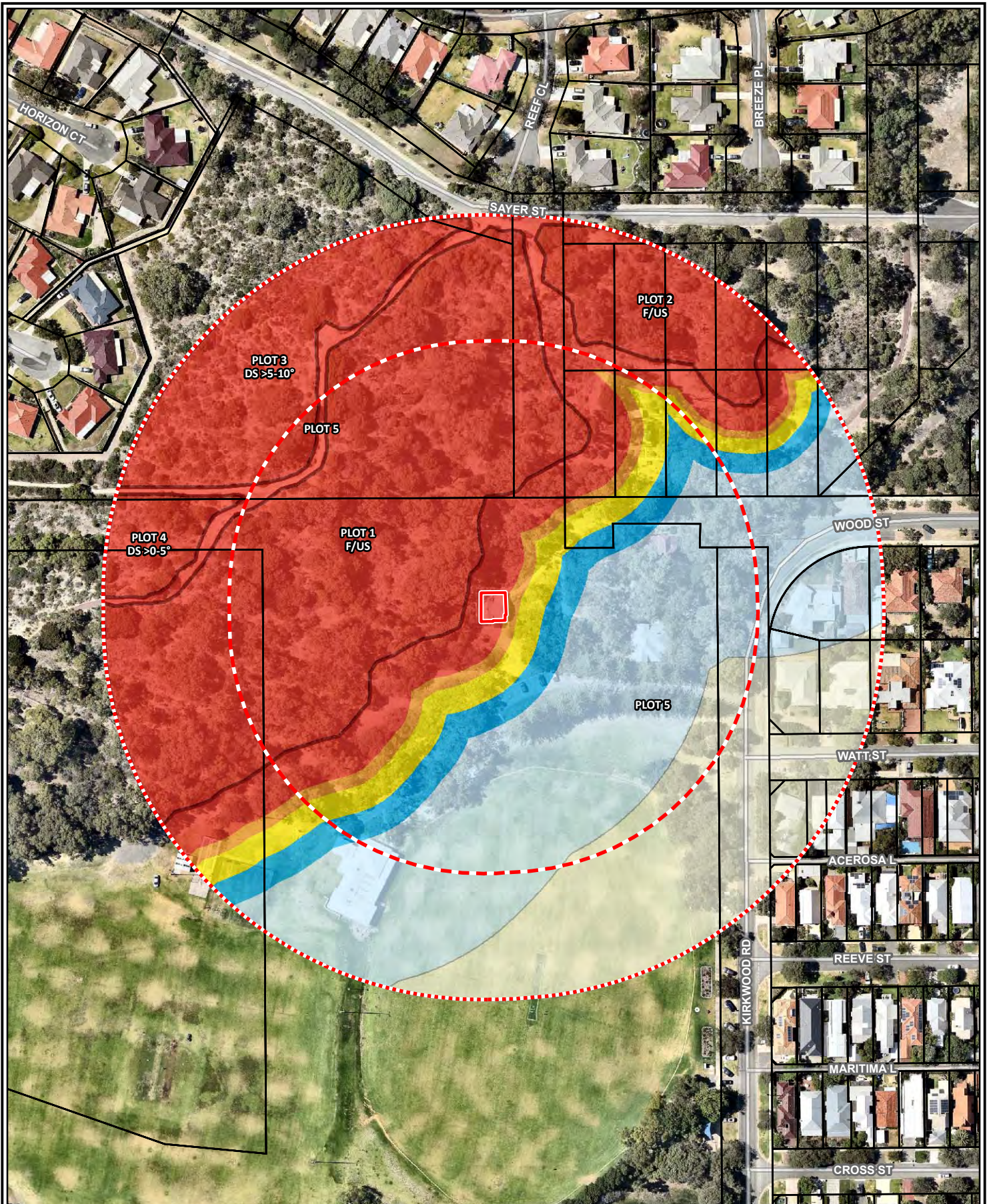
Results of the BAL contour assessment for the both the current site location and potential relocation area are detailed in Table 4 and Table 5 and illustrated in Figure 5 and Figure 6. The highest BAL applicable to the cottage in its current location is BAL-FZ and if relocated to the potential relocation area, BAL-29 will be achieved. Further amendment to the building location that increases the separation distance between the building and adjacent Class A forest vegetation will result in further reduction of the BAL rating.

Table 4: BAL contour assessment results – current site location

Method 1 BAL determination				
Plot	Vegetation classification / exclusion clause	Effective slope	Separation distance	Highest BAL
1	Class A Forest	Flat/upslope (0°)	3 m	BAL-FZ
2	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
3	Class D Scrub	Downslope >5-10°	83 m	BAL-12.5
4	Class C Shrubland	Downslope >0-5°	>100 m	BAL-Low
5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	BAL-Low

Table 5: BAL contour assessment results – potential relocation area

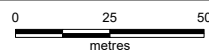
Method 1 BAL determination				
Plot	Vegetation classification / exclusion clause	Effective slope	Separation distance	Highest BAL
1	Class A Forest	Flat/upslope (0°)	21 m	BAL-29
2	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
3	Class D Scrub	Downslope >5-10°	>100 m	BAL-Low
4	Class C Shrubland	Downslope >0-5°	>100 m	BAL-Low
5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	BAL-Low



Legend:

- Building outline
- 100m assessment area
- 150m assessment area
- Cadastral boundary
- Roads (MRWA)
- BAL FZ
- BAL 40
- BAL 29
- BAL 19
- BAL 12.5
- BAL Low

Scale 1:2,000 at A4



Coord. Sys. GDA 1994 MGA Zone 50



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Client: City of Nedlands

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Date: 24-Dec-2019

Drawn By: jcrute

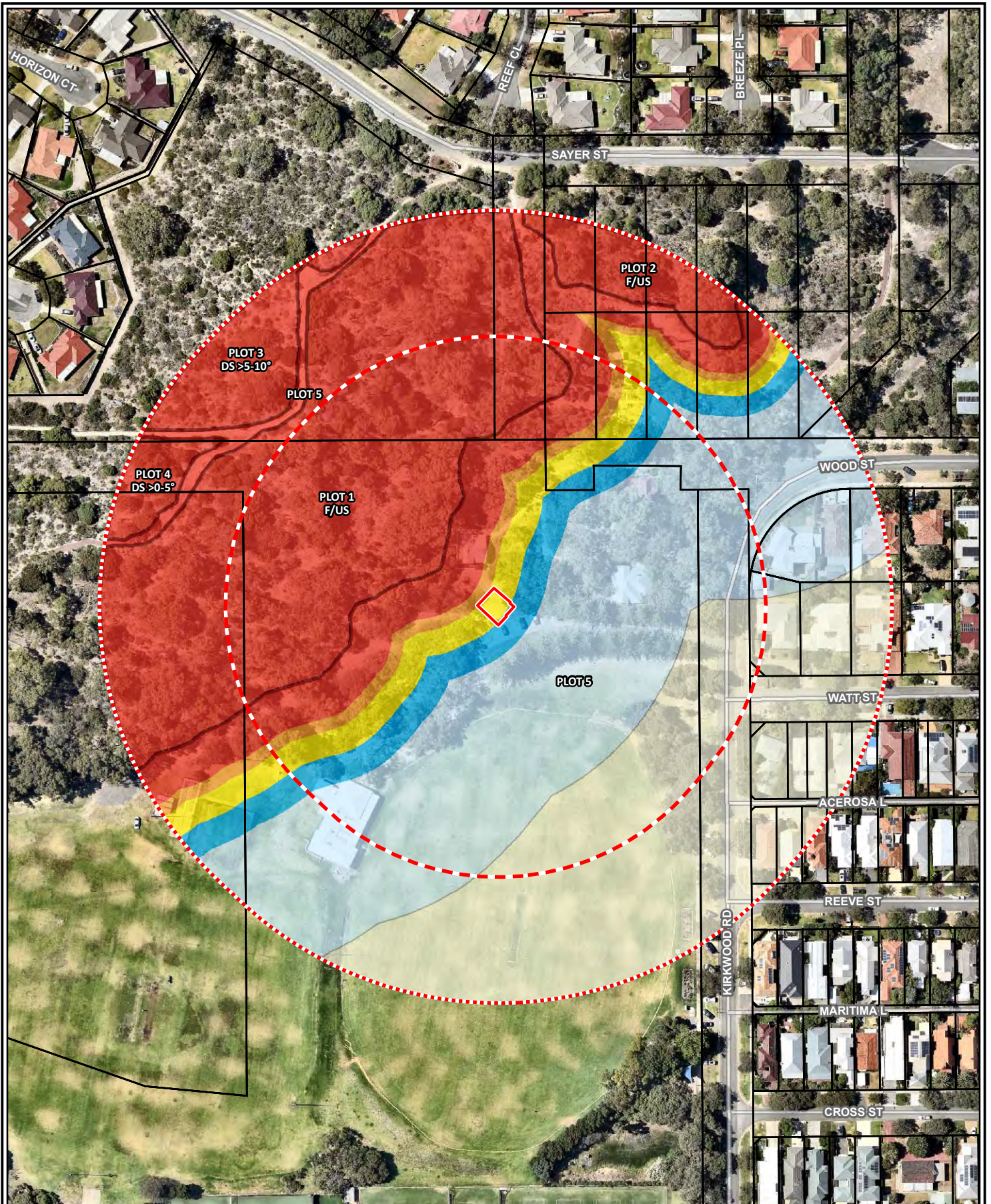
Checked By: CT

**Friends of Allen Park Cottage,
Allen Park, Swanbourne, WA**












BAL CONTOURS (current site location)

FIGURE 5

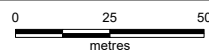




Legend:

-  Proposed relocation site
-  100m assessment area
-  150m assessment area
-  Cadastral boundary
-  Roads (MRWA)
-  BAL contours
-  BAL 40
-  BAL 29
-  BAL 19
-  BAL 12.5
-  BAL Low

Scale 1:2,000 at A4



Coord. Sys. GDA 1994 MGA Zone 50



Job No: 58017

Client: City of Nedlands

Version: A

Date: 24-Dec-2019

Drawn By: jcrute

Checked By: CT

**Friends of Allen Park Cottage,
Allen Park, Swanbourne, WA**

BAL CONTOURS (potential relocation area)

FIGURE 6



4. Identification of bushfire hazard issues

4.1 Bushfire context

Within the 150 m wide assessment area, there is unmanaged vegetation to the north and west associated with the remnant native vegetation and the bushland restoration area (associated with Plot 1). This vegetation consists of Class A forest and presents the most likely bushfire threat to the proposed development. Currently, separation from this vegetation is provided by a 3 m wide area of bare sand that runs around the Cottage.

Areas to the south and east of the current site are predominately urban in the form of roads, residential areas, schools and low threat managed landscaping/playing fields that do not pose a bushfire threat.

When considering the topography of the site, bushfire behaviour is expected to be reduced on approach given the relatively short fire runs expected and the steep gradient that the fire will need to travel down. Downhill fires will have a reduced rate of spread on a slope up to about -10 degrees. Beyond that, they travel approximately 0.6 times the speed of a fire on flat land, regardless of any further increase in slope.

However, it is anticipated that the subject site would be subject to significant ember attack due to the nature of the vegetation present. Ember attack and radiant heat presents the most significant threat to the structure in its current location. If relocated, radiant heat will be somewhat mitigated to a BAL-29 rating; however, ember attack will still present a significant threat to the cottage.

4.2 Bushfire hazard issues

As outlined in section 4.1, the most significant and likely hazard to the cottage in its current location and condition is ember attack and radiant heat. In a bushfire event, ember attack is the primary cause of property loss. It is considered likely that embers, resulting from a fire, would impact the site well in advance of any direct flame/heat impacts. Should bushfire threat be imminent in direct proximity to the current site, then the cottage may be exposed to direct flame contact and highly elevated levels of radiant heat (i.e. BAL-FZ).

The current condition of the cottage increases its susceptibility to ember attack and radiant heat. Given its age and weathered condition, the cottage has numerous gaps and points of entry that make it vulnerable to ember attack. Embers can penetrate these areas and lead to the ignition of fire from within the cottage.

The bushfire risks to cottage can be managed through the application of acceptable solutions under the Guidelines, including provision for bushfire construction standards where relevant, provision of adequate emergency water supply and vehicular access, as well as through a direct bushfire suppression response if required. Direct response to a bushfire event will come via a number of nearby Fire and Rescue stations including Claremont; Dalglish and Vincent. Strategen-JBS&G notes that Claremont has undertaken an inspection of Allen Park and have a pre-formulated response plan in place in the event of an incident.

The change of siting will further reduce the susceptibility and potential impact to the cottage in the unlikely event of a bushfire. It is also anticipated that upon completion of any works, there will be a reduced bushfire risk through the management of existing vegetation that has a direct interface with the cottage. The extent of this management can be refined once location of the cottage has been determined.

On this basis, Strategen-JBS&G considers the bushfire hazards adjacent to site and the associated bushfire risks are manageable through standard acceptable solution responses outlined in this BMP. These responses have been formulated to ensure a suitable, compliant and effective bushfire management outcome is achieved for protection of future life, property and environmental assets.

5. Assessment against the bushfire protection criteria

5.1 Compliance table

While not strictly required for this development as the proposed works are not subject to SPP 3.7, an acceptable solutions assessment against the bushfire protection criteria of the Guidelines has been undertaken for both the current site location and potential relocation area, as provided in Table 6 and Table 7 respectively.

Table 6: Compliance with the bushfire protection criteria of the Guidelines – current site location

Bushfire protection criteria	Method of compliance	Proposed bushfire management strategies
	Acceptable solutions	
Element 1: Location	A1.1 Development location	The BAL contour map (Figure 5) indicates that the current site is situated within BAL-FZ and is likely subject to significant radiant heat and ember attack. For compliance to be achieved for this acceptable solution, there is potential to reduce the radiant heat impacts on the subject site in its current location through the implementation of a 21 m wide Asset Protection Zone (APZ), as depicted in Figure 7 and Figure 8.
Element 2: Siting and design	A2.1 Asset Protection Zone	In order for the cottage to attain a compliant BAL-29 rating in its current location, a 21 m wide APZ around the site will need to be established and is to be landscaped and maintained in a low threat state as an APZ in accordance with Schedule 1 of the Guidelines (refer to Appendix A). The resulting increase in separation distance to the adjacent Class A forest and subsequent reduction in BAL impact is depicted in Figure 7 and Figure 8 respectively. If not implemented, the cottage will retain its BAL-FZ rating and is unlikely to be able to withstand the radiant heat and ember attack impacts associated with a bushfire.
Element 3: Vehicular access	A3.1 Two access routes	Access to the public road network is currently available via driveway/Clare Copse, which provides connection onto Kirkwood Road. Kirkwood Road then provides for travel in more than two directions including: <ul style="list-style-type: none"> • South to North Street which connects to West Coast Highway to the east and Martine Parade to the west • North then east along Wood Street which provides multiple connections away from the site to the north/east. The existing driveway/Clare Copse access onto the two-way public road in Kirkwood Road is deemed acceptable from a compliance perspective and given the proximity of the cottage to the existing built-up urban area to the east and that the cottage is not a permanent residence, the overall risk of the current access preventing evacuation from the site in the event of bushfire is low.
	A3.2 Public road	N/A – no new public roads are proposed or required for this site.
	A3.3 Cul-de-sac (including a dead-end-road)	N/A – no cul-de-sacs are proposed or required for this site and the site is not serviced by an existing cul-de-sac.
	A3.4 Battle-axe	N/A – no battle-axes are proposed or required for this site and the site is not serviced by an existing battle-axe.
	A3.5 Private driveway longer than 50 m	The cottage is located further than 50 m from a public road and the access along Clare Copse, the associated carpark and driveway to the cottage provides sufficient access to allow for vehicles to pass and fire appliances to manoeuvre and turnaround in the event of a bushfire. Compliance with the acceptable solution for private driveways is therefore deemed to be met.
	A3.6 Emergency access way	No permanent emergency access ways (EAW) are proposed or required for this site.
	A3.7 Fire service access routes	N/A – Fire service Access routes are not required for this site due to its proximity to the Clare Copse. In the event of a bushfire, firefighters will be able to safely set up within the car park and undertake direct asset protection as required. Clare Copse provides safe egress for firefighters.

Bushfire protection criteria	Method of compliance	Proposed bushfire management strategies
	Acceptable solutions	
	A3.8 Firebreak width	N/A – firebreaks are not required in relation to the site.
Element 4: Water	A4.1 Reticulated areas	The site is connected to reticulated water supply via surrounding development in accordance with Water Corporation’s Design Standard 63 requirements (refer to Appendix D). Existing water hydrants are located at 200 m intervals along Kirkwood Road and the water reticulation is therefore compliant with this acceptable solution.
	A4.2 Non-reticulated areas	N/A – the site is located within an existing reticulated area.
	A4.3 Individual lots within non-reticulated areas (Only for use if creating 1 additional lot and cannot be applied cumulatively)	N/A – the site is located within an existing reticulated area.

Table 7: Compliance with the bushfire protection criteria of the Guidelines – potential relocation area

Bushfire protection criteria	Method of compliance Acceptable solutions	Proposed bushfire management strategies
Element 1: Location	A1.1 Development location	Relocation of the site to the potential relocation area, as illustrated in Figure 6, would serve to increase the distance of separation to the adjacent Class A forest, reducing potential radiant heat impacts to a compliant level. The potential relocation of the site would allow the cottage to attain a BAL rating of BAL-29.
Element 2: Siting and design	A2.1 Asset Protection Zone	The potential relocation area is of sufficient distance from the adjacent plot of Class A forest to allow the cottage to attain a rating of BAL-29; therefore, no additional APZ provisions are necessary to achieve compliance.
Element 3: Vehicular access	A3.1 Two access routes	Access to the public road network is currently available via driveway/Clare Copse, which provides connection onto Kirkwood Road. Kirkwood Road then provides for travel in more than two directions including: <ul style="list-style-type: none"> • South to North Street which connects to West Coast Highway to the east and Martine Parade to the west • North then east along Wood Street which provides multiple connections away from the site to the north/east. The existing driveway/Clare Copse access onto the two-way public road in Kirkwood Road is deemed acceptable from a compliance perspective and given the proximity of the cottage to the existing built-up urban area to the east and that the cottage is not a permanent residence, the overall risk of the current access preventing evacuation from the site in the event of bushfire is low.
	A3.2 Public road	N/A – no new public roads are proposed or required for this site.
	A3.3 Cul-de-sac (including a dead-end-road)	N/A – no cul-de-sacs are proposed or required for this site and the site is not serviced by an existing cul-de-sac.
	A3.4 Battle-axe	N/A – no battle-axes are proposed or required for this site and the site is not serviced by an existing battle-axe.
	A3.5 Private driveway longer than 50 m	The cottage is located further than 50 m from a public road and the access along Clare Copse, the associated carpark and driveway to the cottage provides sufficient access to allow for vehicles to pass and fire appliances to manoeuvre and turnaround in the event of a bushfire. Compliance with the acceptable solution for private driveways is therefore deemed to be met.
	A3.6 Emergency access way	No permanent emergency access ways (EAW) are proposed or required for this site.
	A3.7 Fire service access routes	N/A – Fire service Access routes are not required for this site due to its proximity to the Clare Copse. In the event of a bushfire, firefighters will be able to safely set up within the car park and undertake direct asset protection as required. Clare Copse provides safe egress for firefighters.
	A3.8 Firebreak width	N/A – firebreaks are not required in relation to the site.
Element 4: Water	A4.1 Reticulated areas	The site is connected to reticulated water supply via surrounding development in accordance with Water Corporation’s Design Standard 63 requirements (refer to Appendix D). Existing water hydrants are located at 200 m intervals along Kirkwood Road and the water reticulation is therefore compliant with this acceptable solution.
	A4.2 Non-reticulated areas	N/A – the site is located within an existing reticulated area.
	A4.3 Individual lots within non-reticulated areas (Only for use if creating 1 additional lot and cannot be applied cumulatively)	N/A – the site is located within an existing reticulated area.

6. Bushfire Management Measures

Strategen-JBS&G makes the following bushfire management recommendations to improve and enhance the level of bushfire risk mitigation for the site.

6.1 Establishment of an Asset Protection Zone (APZ) and ongoing fuel management

As discussed in Section 4, the current siting of the Friends of Allen Park Cottage exposes the structure to potentially significant bushfire impacts. Should the siting of the cottage remain in its current location, consideration should be given to the establishment of an APZ around the building.

The establishment of a 21 m APZ around the cottage will have the effect of reducing the BAL rating to BAL-29, as shown in Table 8. The resulting increase in separation distance to the adjacent Class A forest and subsequent reduction in BAL impact is depicted in Figure 7 and Figure 8 respectively. Maintenance of the APZ is to be in accordance with Clause 2.2.3.2 (f) of AS 3959 and Schedule 1 of the Guidelines (refer to Appendix A).

Table 8: BAL contour assessment results – current site location with 21 m wide APZ installed

Method 1 BAL determination				
Plot	Vegetation classification / exclusion clause	Effective slope	Separation distance	Highest BAL
1	Class A Forest	Flat/upslope (0°)	21 m APZ	BAL-29
2	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
3	Class D Scrub	Downslope >5-10°	83 m	BAL-12.5
4	Class C Shrubland	Downslope >0-5°	>100 m	BAL-Low
5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	BAL-Low

Furthermore, it was observed during the site inspection that a number of understorey garden beds within the heritage precinct between Wood Street and Clare Copse (Appendix C) appear unmanaged and capable of supporting fire development/spread.

It is recommended that a works programme be undertaken to manage these areas in a low threat state (i.e. less than 2 t/ha) in accordance with Clause 2.2.3.2 (f) of AS 3959 and Schedule 1 of the Guidelines (refer to Appendix A) to reduce the likelihood of spot fires occurring within close proximity to the cottage.

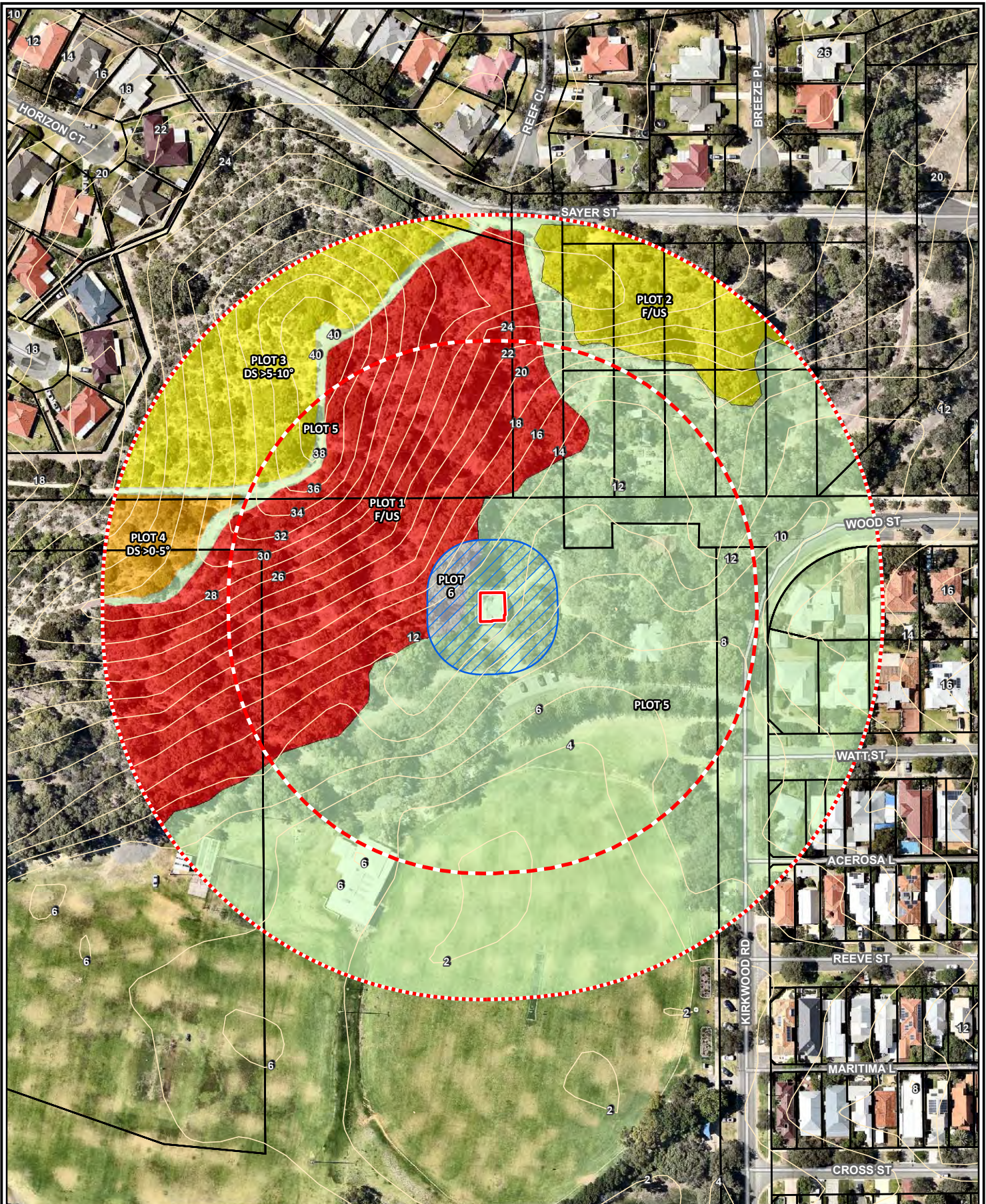
6.2 Building construction standards

Strategen-JBS&G understands that consideration is being given to converting the cottage from a Class 1a building to a Class 9b building and retaining its current siting. As a result of this conversion, the construction standards for buildings in a bushfire prone under AS3959 do not apply; however, Strategen-JBS&G recommends the actions listed in the architect's review (Appendix F) be implemented to increase the resilience of the cottage against bushfire impacts.

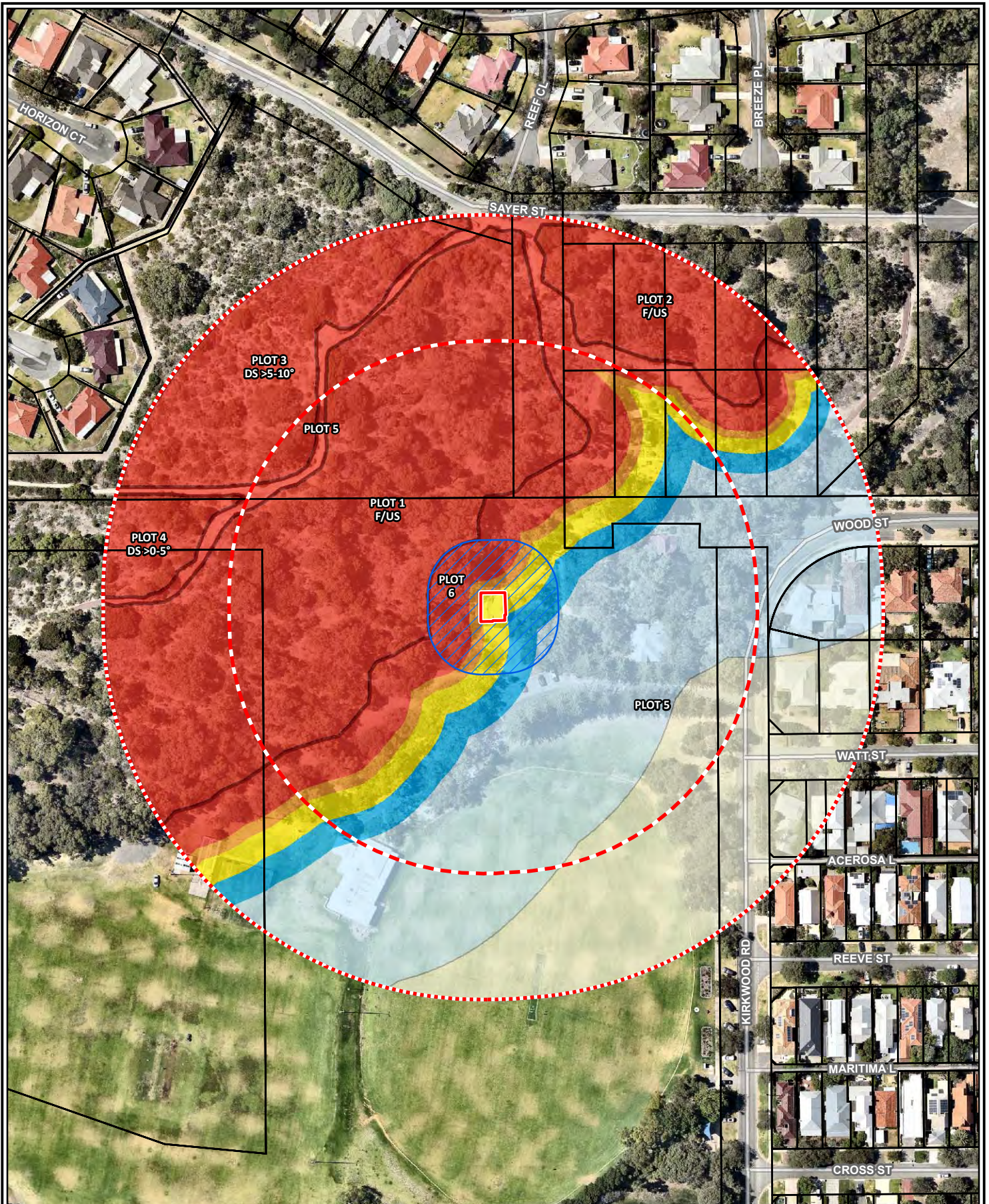
6.3 City of Nedlands annual firebreak notice

It is recommended that compliance with the City of Nedlands annual firebreak notice (Appendix E) be complied with at all times, as per the following provisions:

- Residential land - slash all grass and clear all inflammable matter on the land and verge to a height no greater than 5cm and to maintain all grass and all inflammable matter on the land and verge at a height no greater than 5cm up to and including the 31st day of March in the following year.
- All other land - slash all grass and clear all inflammable matter on the land and verge to a height no greater than 5cm, for a width of no less than three metres (3m), immediately inside the external boundaries of the property. In addition, trees must be trimmed back to provide a vertical clearance of a minimum three and a half metres (3.5m) to allow fire appliances to drive along the firebreak.



Legend: Building outline 100m assessment area 150m assessment area Cadastral boundary 21m wide APZ Topographic contours (mAH) Roads (MRWA)	Vegetation classification Class A Forest Class C Shrubland Class D Scrub Clause 2.2.3.2 (e) & (f) Area to be modified to non-vegetated and low threat state	Scale 1:2,000 at A4 		Friends of Allen Park Cottage, Allen Park, Swanbourne, WA POST-DEVELOPMENT VEGETATION CLASSIFICATION AND EFFECTIVE SLOPE (current site location)
		Coord. Sys. GDA 1994 MGA Zone 50 		
Job No: 58017 Client: City of Nedlands		Version: A Drawn By: jcrute	Date: 13-Jan-2020 Checked By: CT	



Legend:

- | | |
|----------------------|----------|
| Building outline | BAL FZ |
| 100m assessment area | BAL 40 |
| 150m assessment area | BAL 29 |
| Cadastral boundary | BAL 19 |
| 21m wide | BAL 12.5 |
| Roads (MRWA) | BAL Low |

Scale 1:2,000 at A4

Coord. Sys. GDA 1994 MGA Zone 50

Job No: 58017

Client: City of Nedlands

Version: A Date: 13-Jan-2020

Drawn By: jcrute Checked By: CT

**Friends of Allen Park Cottage,
Allen Park, Swanbourne, WA**

**POST-DEVELOPMENT
BAL CONTOURS
(current site location)**

FIGURE 8



7. Responsibilities for implementation and management of the bushfire measures

Implementation of the BMP applies to occupiers of the Friends of Allen Park Cottage and the City of Nedlands to ensure bushfire management measures are adopted and implemented on an ongoing basis. A bushfire responsibilities table is provided in Table 9 and Table 10 to drive implementation of all bushfire management works associated with this BMP for retaining the current cottage location or relocating the cottage.







Table 9: Responsibilities for implementation and management of the bushfire measures (current location)

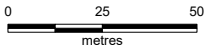

Implementation/management table	
Occupier/City – ongoing	
No.	Implementation action
1	Should the cottage be maintained in its current location, establish and maintain a 21 m wide Asset Protection Zone (APZ) to the dimensions and standards stated in the BMP.
2	Undertake fuel hazard reduction/low threat landscaping of understorey garden beds situated within the historic precinct (Figure 9), between the heritage cottages to the standards stated in this BMP.
3	Implement actions listed in the Architect’s Report to increase building resilience.
4	Comply with the City of Nedlands annual firebreak notice (as amended).
5	Maintain road verges in a low threat minimal fuel condition as per Clause 2.2.3.2 (f) of AS 3959.

Table 10: Responsibilities for implementation and management of the bushfire measures (proposed relocation)

Implementation/management table	
Occupier/City – ongoing	
No.	Implementation action
1	Undertake fuel hazard reduction/low threat landscaping of understorey garden beds situated within the historic precinct Figure 9, between the heritage cottages to the standards stated in this BMP.
2	Implement actions listed in the Architect’s Report to increase building resilience.
3	Comply with the City of Nedlands annual firebreak notice (as amended).
4	Maintain road verges in a low threat minimal fuel condition as per Clause 2.2.3.2 (f) of AS 3959.




- Legend:**
-  Building outline
 -  100m assessment area
 -  150m assessment area
 -  Cadastral boundary
 -  Managed low threat vegetation
 -  Roads (MRWA)

Scale 1:2,000 at A4			
Coord. Sys. GDA 1994 MGA Zone 50			
Job No: 58017			
Client: City of Nedlands			
Version: A	Date: 24-Jan-2020		
Drawn By: hsullivan	Checked By: CT		

Tom Collins House, Allen Park, Swanbourne, WA

BUSHFIRE MANAGEMENT MEASURES

FIGURE 9



8. References

Department of Fire and Emergency Services (DFES) 2020, *Map of Bush Fire Prone Areas*, [Online], Government of Western Australia, available from: <https://maps.slip.wa.gov.au/landgate/bushfireprone/> , [16/01/2020].

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Western Australian Planning Commission (WAPC) 2017, *Guidelines for Planning in Bushfire Prone Areas*, Version 1.3 August 2017, Western Australian Planning Commission, Perth.

9. Limitations

Scope of services

This report (“the report”) has been prepared by Strategen-JBS&G in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Strategen-JBS&G. In some circumstances, a range of factors such as time, budget, access and/or site disturbance constraints may have limited the scope of services. This report is strictly limited to the matters stated in it and is not to be read as extending, by implication, to any other matter in connection with the matters addressed in it.

Reliance on data

In preparing the report, Strategen-JBS&G has relied upon data and other information provided by the Client and other individuals and organisations, most of which are referred to in the report (“the data”). Except as otherwise expressly stated in the report, Strategen-JBS&G has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report (“conclusions”) are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. Strategen-JBS&G has also not attempted to determine whether any material matter has been omitted from the data. Strategen-JBS&G will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to Strategen-JBS&G. The making of any assumption does not imply that Strategen-JBS&G has made any enquiry to verify the correctness of that assumption.

The report is based on conditions encountered and information received at the time of preparation of this report or the time that site investigations were carried out. Strategen-JBS&G disclaims responsibility for any changes that may have occurred after this time. This report and any legal issues arising from it are governed by and construed in accordance with the law of Western Australia as at the date of this report.

Environmental conclusions

Within the limitations imposed by the scope of services, the preparation of this report has been undertaken and performed in a professional manner, in accordance with generally accepted environmental consulting practices. No other warranty, whether express or implied, is made.

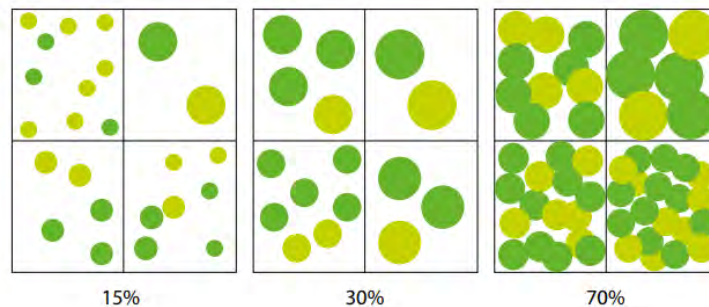
The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

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Appendix A APZ standards (Schedule 1 of the Guidelines)

Schedule 1: Standards for Asset Protection Zones

- **Fences:** within the APZ are constructed from non-combustible materials (e.g. iron, brick, limestone, metal post and wire). It is recommended that solid or slatted non-combustible perimeter fences are used.
- **Objects:** within 10 metres of a building, combustible objects must not be located close to the vulnerable parts of the building i.e. windows and doors.
- **Fine Fuel load:** combustible dead vegetation matter less than 6 millimetres in thickness reduced to and maintained at an average of two tonnes per hectare.
- **Trees (> 5 metres in height):** trunks at maturity should be a minimum distance of 6 metres from all elevations of the building, branches at maturity should not touch or overhang the building, lower branches should be removed to a height of 2 metres above the ground and or surface vegetation, canopy cover should be less than 15% with tree canopies at maturity well spread to at least 5 metres apart as to not form a continuous canopy.



- **Shrubs (0.5 metres to 5 metres in height):** should not be located under trees or within 3 metres of buildings, should not be planted in clumps greater than 5m² in area, clumps of shrubs should be separated from each other and any exposed window or door by at least 10 metres. Shrubs greater than 5 metres in height are to be treated as trees.
- **Ground covers (<0.5 metres in height):** can be planted under trees but must be properly maintained to remove dead plant material and any parts within 2 metres of a structure, but 3 metres from windows or doors if greater than 100 millimetres in height. Ground covers greater than 0.5 metres in height are to be treated as shrubs.
- **Grass:** should be managed to maintain a height of 100 millimetres or less.

Appendix B Vegetation plot photos and description



Photo ID: 1a

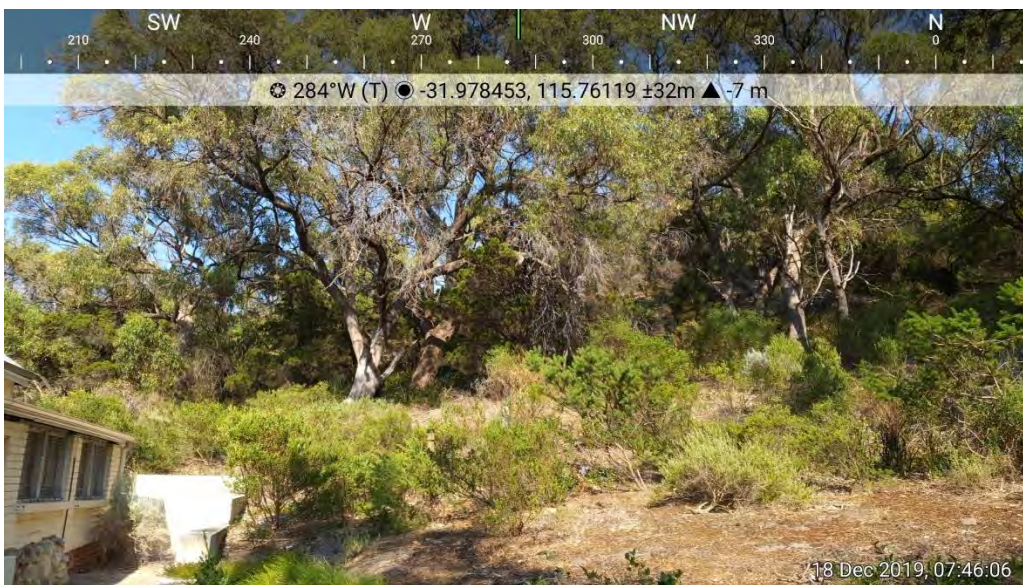


Photo ID: 2a

Plot number		Plot 1
Vegetation classification	Pre-development	Class A Forest
	Post-development	Class A Forest
Description / justification		Trees 10-30 m high at maturity, dominated by Eucalypts, multi-tiered structure comprising tall canopy layer, shrubby middle layer and grass/herb/sedge understorey



Photo ID: 2a

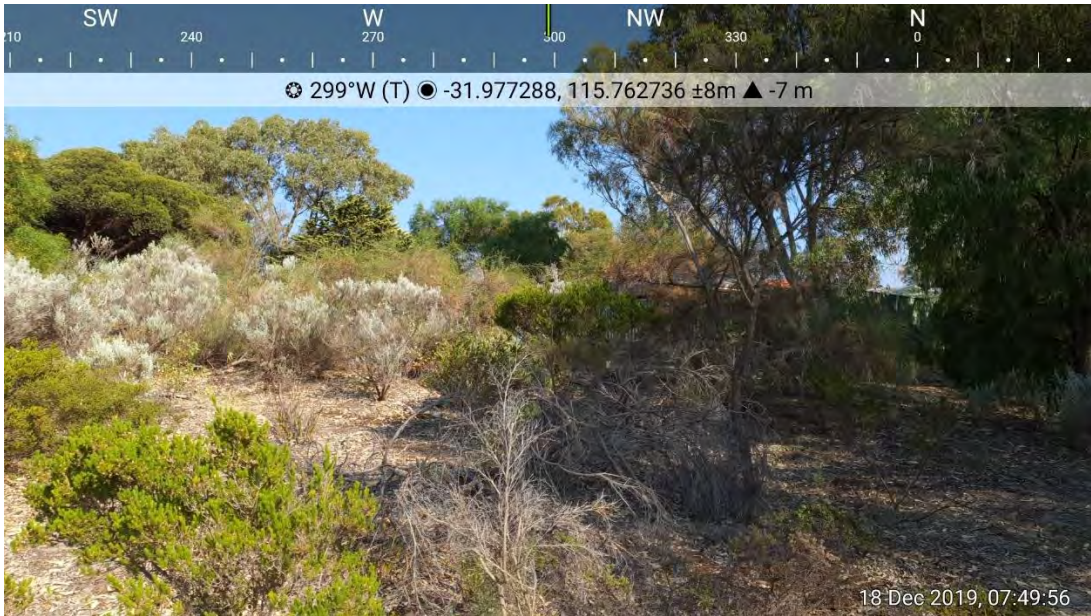


Photo ID: 2a

Plot number		Plot 2
Vegetation classification	Pre-development	Class D Scrub
	Post-development	Class D Scrub
Description / justification		Vegetation with a continuous horizontal and vertical structure, greater than 2 m high at maturity



Photo ID: 3a		
Plot number		Plot 3
Vegetation classification	Pre-development	Class D Scrub
	Post-development	Class D Scrub
Description / justification		Trees 2-30 m at maturity, dominated by trees with a grassy understorey (lacks shrubby middle layer and deep surface litter)



Photo ID: 4a



Photo ID: 4b

Plot number		Plot 5
Vegetation classification	Pre-development	Excluded Clause (e) & (f)
	Post-development	Excluded Clause (e) & (f)
Description / justification		Low threat cultivated gardens and maintained lawns within surrounding properties and non-vegetated areas including roads, footpaths, driveways and building footprints

Appendix C Vegetation Management Areas – Site Pictures



Picture 1: Garden Area looking West to Friends of Allen Park Cottage



Picture 2: Garden Area looking south towards Oval



Picture 3: Garden area looking west from Clare Copse



Picture 4: Garden area looking north from Clare Copse

Appendix D Water technical standards of the Guidelines

Reticulated areas	
Acceptable solution A4.1	The subdivision, development or land use is provided with a reticulated water supply in accordance with the specifications of the relevant water supply authority and Department of Fire and Emergency Services.
Explanatory note E4.1	Water supply authorities in Western Australia include the Water Corporation, Aqwest and the Busselton Water Board. The Water Corporation's 'No. 63 Water Reticulation Standard' is deemed to be the baseline criterion for developments and should be applied unless local water supply authorities' conditions apply.

Appendix E City of Nedlands Firebreak Notice

Bush Fire Notice

Owners/occupiers of land within the City of Nedlands are required under the Bush Fires Act 1954 to clear all flammable materials, immediately inside all external boundaries of the land and also immediately surrounding buildings on the land during the bush fire season.

The bush fire season begins 30 November and ends 31 March each year.

Please be advised that there are burning restrictions within the City of Nedlands. You cannot burn off at any time within the City of Nedlands under the City's Health Local Law, except with the written approval.

Prohibited burning period – 15 December to 31 March each year

Restricted burning period – 2 November to 30 April each year

Rangers patrol for compliance with the Bush Fire Notice and Bush Fire Act 1954. Residents are also welcome to report properties or areas they think may be a fire hazard so Rangers can investigate. Rangers perform inspections and issue notices under Section 33 of the Bush Fires Act 1954, which requires landowners and occupiers in the City of Nedlands to make preparations on their land to reduce the risk of fire during summer. To access the Bush Fire Notice, see document below.

Penalties apply for failure to comply with the Bush Fire Notice. Clearance of land is by mowing, slashing or grading to create a fire break or clearance of flammable material, subject to the type of property.

Residential land - slash all grass and clear all inflammable matter on the land and verge to a height no greater than 5cm and to maintain all grass and all inflammable matter on the land and verge at a height no greater than 5cm up to and including the 31st day of March in the following year.

All other land - slash all grass and clear all inflammable matter on the land and verge to a height no greater than 5cm, for a width of no less than three metres (3m), immediately inside the external boundaries of the property. In addition, trees must be trimmed back to provide a vertical clearance of a minimum three and a half metres (3.5m) to allow fire appliances to drive along the firebreak.

Appendix F Architect Review



- Bushfire Report

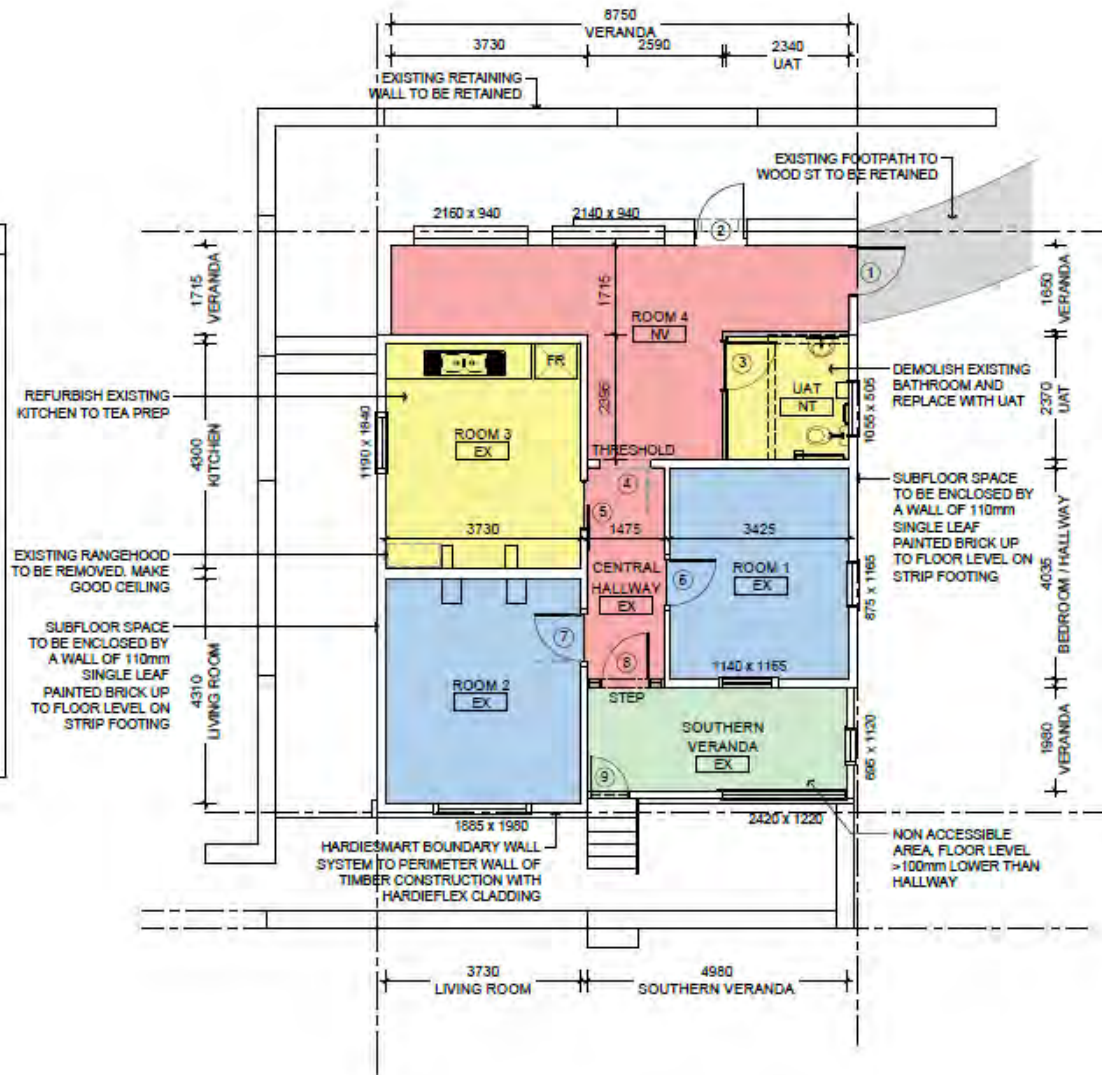
As the property is being looked at from the perspective of converting it from class 1a to 9b, Australian standards for construction in a bushfire prone area do not technically apply, however, on previous projects fire engineers and local government have made compliance with the standards a requirement. The property sits within a bushfire zone with a BAL of FZ, as such, the following steps could be taken. A full bushfire report will need to be conducted by an accredited assessor to identify any additional issues.

- A minimum setback of 10m from the classified vegetation must be achieved, trees will have to be cleared for the building to comply.
- All roof/wall junctions, eaves and openings must be sealed

- All external doors and windows must comply with AS3959
 - The subfloor space must be enclosed by a wall that complies with AS3959 requirements.
 - All roof penetrations must be sealed and all roof openings fitted with ember guards
 - All above-ground, exposed water and gas supply pipes must be metal
-
- Bushfire resistance:
 - All external doors & windows to be protected by compliant bushfire shutters
 - Perimeter walls to timber stud structure to be fitted with 'Hardiesmart' Boundary Wall System
 - Min 6mm Hardiflex Cladding
 - Hardiewrap Weather Barrier
 - Fire Resistant Insulation
 - Roof/wall junction sealed to prevent openings greater than 3mm by use of fascia / eaves linings with FRL of -/30/30
 - Subfloor space to be enclosed by a wall of 110mm thick single leaf painted face brick on strip footing up to floor level.
 - Surrounding vegetation to be cleared to achieve 10m clearance from building envelope to vegetation.
 - Roof cladding, gutters, downpipes and battens to be replaced with Colorbond roof, including flashings and anticon insulation
 - Remove all on-site asbestos, refer to appendices **Asbestos Register** compiled by Environmental site services.
 - All above ground water and gas supply pipes must be metal

Proposed Alterations

INTERNAL FINISHES SCHEDULE:	
ROOM 1	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING
ROOM 2	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING
ROOM 3	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING, TILED BACKSPLASH TO WALL BEHIND SINK.
ROOM 4	<ul style="list-style-type: none"> NEW VINYL TO CONCRETE FLOOR REPAINT ALL WALLS, NO CEILING, NEW ROOF EXPOSED
UAT	<ul style="list-style-type: none"> NEW TILING TO FLOOR WITH TILED SKIRTING PAINT TO ALL WALLS & CEILING, TILED BACKSPLASH TO WALL BEHIND HAND BASIN
CENTRAL HALLWAY	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING
SOUTHERN VERANDA	<ul style="list-style-type: none"> STRIP & SEAL EXISTING TIMBER FLOORING REPAINT ALL WALLS & CEILING



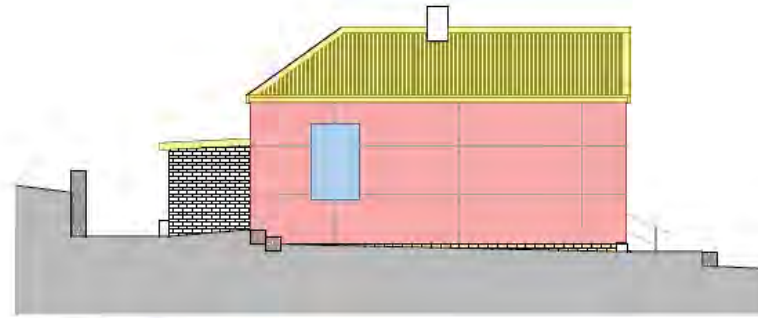
DOOR LEGEND:	
1.	NEW DOOR WITH A SOLID CORE, SEALED SO AS TO PROVIDE NO GAPS GREATER THAN 3mm. 980 x 2160mm. ENSURE DOOR HARDWARE IS COMPLIANT WITH AS1428.1. ENSURE PAVING LEVEL AT THRESHOLD
2.	EXISTING SLIDING DOOR TO BE REPLACED WITH SOLID CORE SWING DOOR 920mm CLEAR, SEALED SO AS TO PROVIDE NO GAP GREATER THAN 3mm. WIDEN DOOR FRAME TO FIT NEW DOOR. BRICK CAPPING TO OLD RETAINING WALL IN DOORWAY TO BE REMOVED AND ENDS OF WALL MADE GOOD
3.	NEW DOOR TO UAT 920 x 2100mm, TO COMPLY WITH AS1428.1 REQUIREMENTS
4.	EXISTING DOOR TO BE REMOVED, FRAME WIDENED TO PROVIDE ACCESSIBLE PATH OF TRAVEL
5.	EXISTING DOOR FRAME REPLACED WITH SLIDING DOOR 850 x 2100mm, TO COMPLY WITH FOOD STANDARD REQUIREMENTS FOR ENTRY TO TEA ROOM
6.	EXISTING DOOR TO BE RETAINED 880 x 2100mm, HARDWARE TO BE REPLACED WITH ALTERNATIVES COMPLIANT WITH AS1428.1
7.	EXISTING NON-COMPLIANT DOOR TO BE RE-HUNG 880 x 2100mm, HARDWARE TO BE REPLACED WITH ALTERNATIVES COMPLIANT WITH AS1428.1
8.	EXISTING NON-ACCESSIBLE DOOR TO BE RETAINED, 880 x 2100
9.	NEW NON-ACCESSIBLE DOOR TO VERANDA, 720 x 2060mm. SOLID CORE, SEALED SO AS TO PROVIDE NO GAP GREATER THAN 3mm

WINDOW NOTE:	
REPLACE ALL EXTERNAL WINDOWS WITH NEW ALUMINIUM FRAMES, TOUGHENED LOW-E GLASS	

SCALE



E1 ELEVATION - SOUTHERN
SCALE 1:50 @ A1



E2 ELEVATION - WESTERN
SCALE 1:50 @ A1



E3 ELEVATION - NORTHERN
SCALE 1:50 @ A1



E4 ELEVATION - EASTERN
SCALE 1:50 @ A1

DOOR LEGEND:

	REMOVE ALL EXTERNAL CLADDING TO TIMBER FRAME REFER TO APPENDICES ASBESTOS REGISTER COMPILED BY ENVIRONMENTAL SITE SERVICES. REPLACE WITH JAMES HARDIE 'HARDIESMART' BOUNDARY WALL SYSTEM WITH 'HARDIFLEX' CLADDING
	REPLACE ALL EXTERNAL WINDOWS WITH NEW ALUMINIUM FRAMES WITH TOUGHENED LOW-E GLASS ALL EXTERNAL WINDOWS TO BE PROTECTED BY BUSHFIRE SHUTTERS
	ALL EXTERNAL DOORS TO BE REPLACED WITH SOLID CORE DOORS TO COMPLY WITH AS3859, SEALED SO AS TO PROVIDE NO GAPS GREATER THAN 3mm
	ROOF CLADDING, GUTTERS, DOWNPIPES & BATTENS TO BE REPLACED WITH COLORBOND ROOF, INCLUDING FLASHINGS AND ANTI-CORN INSULATION
	REMOVE ALL ON-SITE ASBESTOS, REFER APPENDICES ASBESTOS REGISTER COMPILED BY ENVIRONMENTAL SITE SERVICES.
	SUBFLOOR SPACE TO BE ENCLOSED BY A WALL OF 110mm THICK SINGLE LEAF PAINTED FACE BRICK UP TO FLOOR LEVEL ON STRIP FOOTING.



PROPOSED ELEVATIONS
SCALE 1:50 @ A1

NOTE:
DIMENSIONS TO BE CONFIRMED ON SITE BY SURVEY

Project Name	118 WOOD ST, SWANBOURNE	No.	190	Date	30.06.2019
Client	WOOD ST COTTAGE REVIEW	Drawn	MS	Checked	MS
Project No.	118 WOOD ST, SWANBOURNE	Scale	1:50	Project No.	61,19
Architect	Collard Preston ARCHITECTS	Drawn By	MS	Checked By	SK06
Address	118 WOOD ST, SWANBOURNE	Scale	1:50	Project No.	61,19
Phone	(08) 9442 2100	Scale	1:50	Project No.	61,19
Fax	(08) 9442 2101	Scale	1:50	Project No.	61,19
Email	collard@collard.com.au	Scale	1:50	Project No.	61,19

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Document Status

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				Name	Date
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Final Report	Rev 0	For Client use	Euan Sutherland	Zac Cockerill (BPAD 37803, Level 2)	24 January 2020

