

Removability Plan For Proposed New Residence

125 Alcorn Street
Suffolk Park NSW 2481

Our Ref: N21 249

For: Scott McClelland

2 February 2024



A QUALITY ASSURED COMPANY

CERTIFIED QUALITY ASSURANCE – ISO AS/NZS 9001, 4801 & 14001

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Westera Partners Ref: N21-249

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Revision	Author	Approved for Issue	Date
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B	Kaan Whittall	Joshua Neale	24.01.2024

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1 INTRODUCTION

Westera Partners have been commissioned to design and document the structural engineering for the proposed residence at 125 Alcorn Street, Suffolk Park, outlined in the architectural drawings by Those Architects, dated 18/12/2023, and attached to this report.

It is noted that this project is located within the Byron Shire Council predicted coastal erosion and coastal hazard zone, and therefore is subjected to development control outlined in the Byron Shire Council Development Control Plan (DCP); more specifically, Chapter 1, Part J: Coastal Erosion Lands. This report has been prepared in response to the requirements set out in the DCP.

The dwelling consists of two components separated by a lightweight courtyard roof. There is a garage and studio structure located within 'Precinct 3', and main two-storey residence located within 'Precinct 2' (refer fig. 1). The garage and studio are located in-front of the main house on Alcorn Street, creating difficulty in the removal of the main house first, when the precinct 2 impact line is triggered. It has therefore been proposed in this report that both buildings are to be treated solely as to fall within precinct 2 hazard zones. Subsequently, the removal of the two structures will be in accordance with J2.2 of the Byron Development Control Plan 2010.

This Removability Plan has been designed in accordance with Australian Standard (AS)1170 Structural Design Actions and AS1684, AS1720 Timber Framing and Tie-Down Standards, AS4100 Steelwork Components, AS 3600 Concrete Code, and applicable standards referenced therein.

This particular site has good clear roadway access to the front and the rear of the property boundary for workers and their equipment.

Westera Partners have designed the removability plan to take away the individual modules in a safe and timely manner, meeting the council's prescriptive measures detailed in the Byron Shire Council Development Standard.

The structure of this scheme is comparable in methodology and procedure to that of the recent Council approved project at 135 Alcorn St, Suffolk Park. & DA 10.2018.409.1 and 81 Alcorn Street.

2 DESIGN

The proposed new dwelling is a modular design in construction comprising prefabricated manageable cassettes, structural panels, (excluding identified sacrificial elements).

The modular cassettes and panels are designed in such a way as to be easily dismantled and each element either carried by hand or lifted by crane for removal.

The proposed materials throughout the design are lightweight in nature. All connecting fixings such as bolts and screws are 316 stainless steel or Hot Dipped Galvanised grade and greased. All supporting documentation will be kept onsite. Reference Westera Partners drawings, job number N21-249 and dated 02/02/2024.

The architect has designed all the sanitary ware and joinery for easy and swift removal. The proposed electrical wiring design layout also minimises the amount of cutting when separating the modules for removal.

A waffle pod design has been employed for the ground floors slab, this will enable easier demolition and create less concrete waste.

3 DEVELOPMENT STANDARDS

3.1 Structure Location

The main structure is located outside the 20-metre erosion escarpment line and sits within 'Precinct 2', with the garage and studio located within 'Precinct 3', in accordance with part J of the Byron Development Control Plan 2010. For precinct positions see fig. 1 and refer Those Architects drawings, job no 21011 dated 18/12/2023.

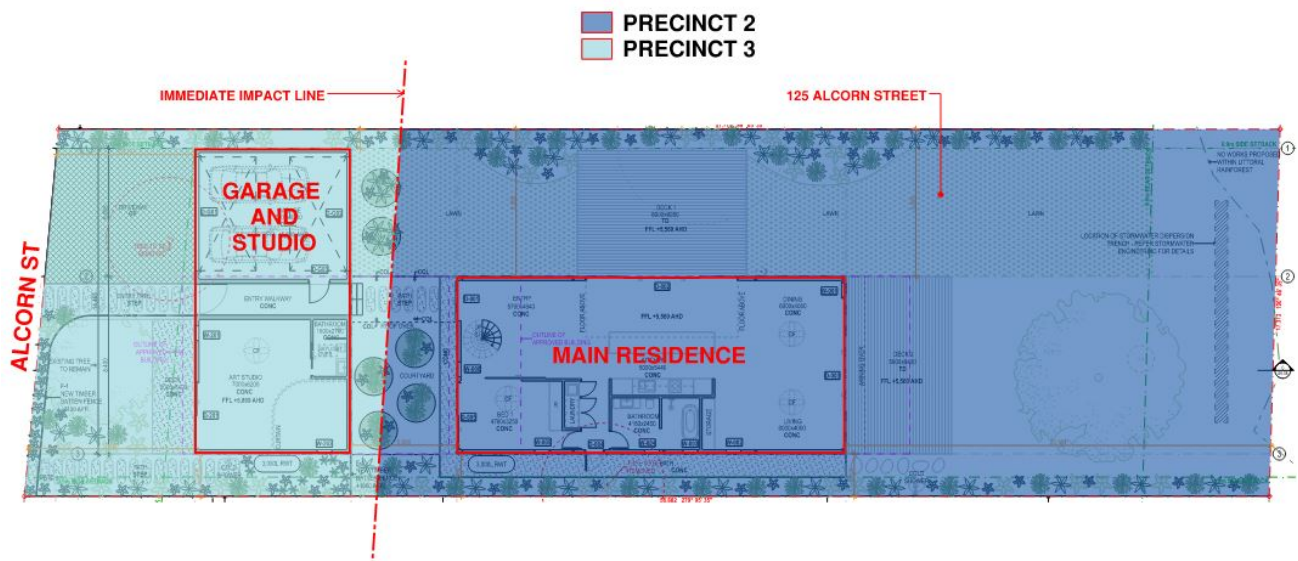


Figure 1 Proposed Site at 125 Alcorn Street, Suffolk Park

3.2 Module Description

The main building consists of a series of modular components sitting between bolted steel portal frames.

The first-floor system is elevated and set upon a steel/timber floor frame supported by steel columns and timber cassette walls. This upper section of the structure employs bolted connections throughout for easier disassembly.

The ground floors consist of a Waffle pod design, this design reduces the volume of concrete to help make it easier to cut and remove. These slabs are sacrificial elements.

The first-floor system will be removed before the removal of the ground floor module sections, once all systems are removed the sacrificial slab can be cut and disposed of.

The garage and studio component will follow the same design and removal methodology as the main structure.

Refer Those Architects drawings, job no 21011 dated 18/12/2023.

3.3 Modular Components

The modular components comprise of prefabricated manageable mezzanine floor cassettes plus structural wall panels.

The roof comprises of sheeting, insulation and bolted cold-formed steel purlins.

Fully bolted and removable Portal frames.

Reference Westera Partners drawings, job number N21-249 and dated 02/02/2024, and Those Architects drawings, job no 21011 dated 18/12/2023.

3.4 The Removal and Relocation Procedure Plan

- a. The whole procedure will utilise one small 15T Franna type crane, a large flatbed truck and skip.
- b. Access is from the front of the property on Alcorn Street, the vehicles will approach from the south. See fig 1.
- c. There are currently no obstacles expected at the residence site.
- d. Westera Partners certification of plan see appendix A.
- e. Sacrificial elements include.
 - Internal slabs
 - High level pad footings

3.5 Relocation Equipment Requirement

The whole removal procedure will involve one crane, a truck and various tools and workers together with the necessary hand tools for dismantling.

4 EQUIPMENT

All equipment required for the removability activity is to be sourced at the time it is needed. A written procedural document shall be stored on site. See Appendix C2 for procedure, together with the sourcing of crane and truck.

5 SERVICES

No mains electricity is required during the deconstruction. It is proposed that the mains switchboard has one main circuit breaker located in each side wall of the garage. This will remain in place after the removal.

All sewer plumbing will be cut and capped at ground level and the mains water shall be turned off at the meter by qualified tradesperson. All of the remaining underfloor or exposed plumbing attached to the upper floor modules will be sacrificial.

6 APPENDICES

6.1 Appendix A – Westera Partners Certification

2 February 2024

Byron Shire Council
PO Box 219
MULLUMBIMBY NSW 2482

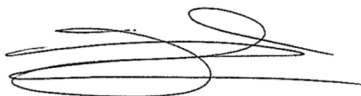
**RE: REMOVABILITY PLAN FOR PROPOSED RESIDENCE AT 125
 ALCORN STREET BYRON BAY**

OUR REF: N21-249

Westera Partners are satisfied that the proposed design is structurally adequate and is compliant with the planned removal activities.

Westera Partners certify that our set of structural drawings N21-249 together with this removability report satisfies Byron Shire Council requirements for temporary and readily removable structures in the event of a coastal erosion event for precinct 2

Yours faithfully



Joshua Neale CPENG (NER 2311697) Design Practitioner 2334 NSW
for and on behalf of
WESTERA PARTNERS PTY LTD

6.2 Appendix B1 – Modular components

Roof sheeting. Quantity- 75

- Max Size 8.5m x 0.7m (varying lengths)
- Max weight 20kg

Floor cassettes Quantity- 12

- Max Size 4.5m x 1800mm x 300mm (Varying lengths)
- Max weight 150kg

Wall panels. Quantity- 25 Max

- Max Size 3.5m x 120mm x 3m(Varying lengths)
- Max weight 110kg
- Steel 'K' frames 150kg (3)

Portal frames. Quantity - 7 (28 steel members)

- Max Size 4.5m long (Varying lengths)
- Max weight 200kg (min 30Kg)

Steel bearers, struts and columns Quantity- 80

- Max Size 5.0m (Varying lengths)
- Max weight 140kg Each

Windows/doors Quantity- 22

- Max Size 3m x 2m (Varying lengths)
- Max weight 80kg

Decking – individual deck boards, joists and bearers

- Max Size 6m long
- Max weight 20kg

6.2 Appendix B2- Tool list

Precinct 2 does not require an onsite tool kit. below are tools that are needed for the removal

- 2x 4m Extension ladder
- 8 x Acro props
- Timber gluts
- 2 x 36" extension sockets
- Socket and driver bit needed 4 off each
- 8 x Ratchet strap tie downs (heavy duty)
- Step ladder
- Safety harness x 2
- 5 tone flat top Truck and Crane
 - Kennards Hire Byron bay 135 135
 - Hertz Trucks and Busses Byron bay 02 6680 7925
 - Byron Crane Hire 041806 650 213

6.3 Appendix C1 – Relocation Steps Precinct 2

Relocation procedure steps (No time frame)

1. Cut services, remove joinery/sanitary
 - Appoint Truck and Crane company (refer tool list).
 - Appoint Electrical and plumbing trades.
 - Cut power and remove all sanitary ware and joinery load onto vehicle.

2. Roof
 - Dismantle roof covering starting from the rear. Using cordless drills and supplied bits, lowering elements to the ground and load. Safety Harnesses must be worn.
 - Unbolt and remove timber trusses and rafters, load.
 - Remove all doors and windows, from ground floor and first floor.
 - Remove sheeting, joinery, and sanitary off site.

3. Upper floor (Main house)
 - Dismantle first floor wall panels one at a time strap and crane to the front of the property. Working front of the of main house.
 - Modules can be then cut in half to fit onto the truck bed if necessary.
 - Remove flooring cassettes as needed.
 - Remove stairs.
 - Remove all floor and wall sections off site.

4. Garage and main house
 - Starting with the garage.
 - Prop portal frames and remove bolted rafters/trusses first.
 - Remove remaining portal and other steel columns.
 - Repeat for Main house.
 - Load and remove walls and steel off site.

5. Decking
 - Dismantle and remove external decking, joists, and bearers.
 - Remove columns and concrete pad footings.
 - Load and remove.

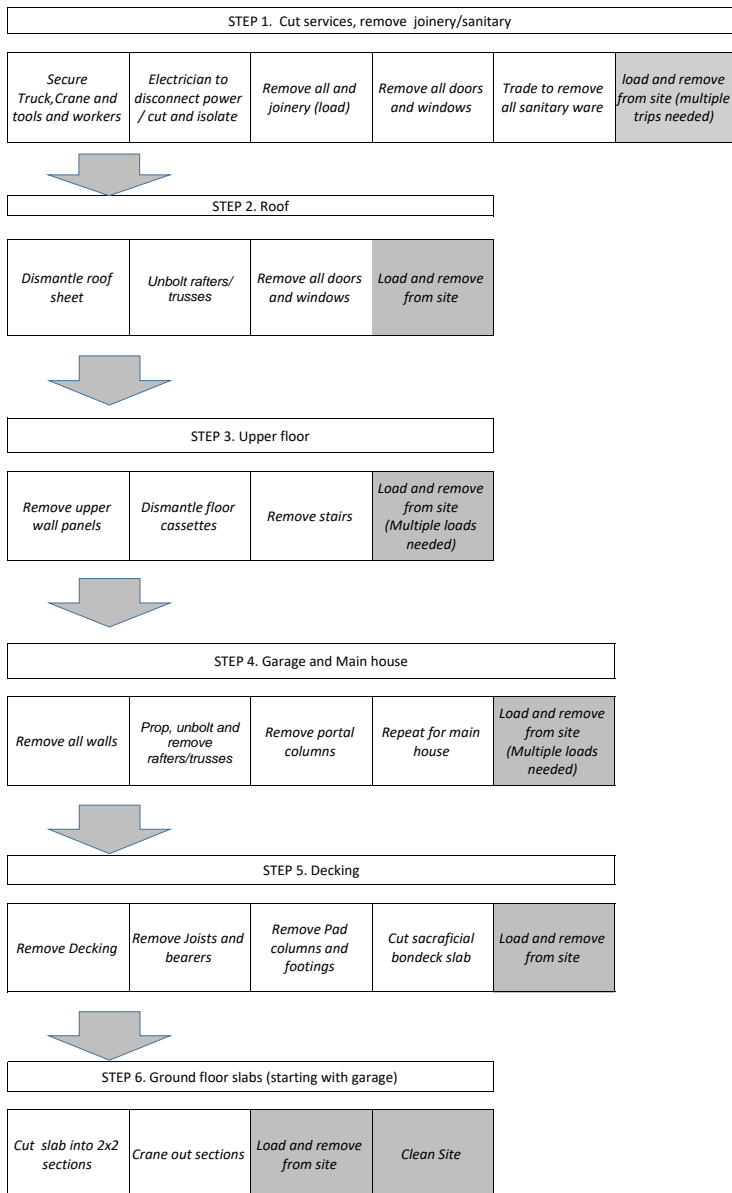
6. Slabs (starting with garage)
 - Cut waffle pod slab into 2m x 2m sections
 - Crane and load

- Clean up site.
 - Remove off site.

6.4 Appendix C2 – Relocation Flow chart.

Removability Steps for 125 Alcorn Street, Suffolk Park. Precinct 2

Refer to relocation procedure document Appendix C1 for detailed steps



6.5 Appendix D – Westera Partners Drawings

Westera Partners N21-249 set of drawings

6.6 Appendix E – Those architects’ drawings 21011

Those Architects 21011 set of drawings