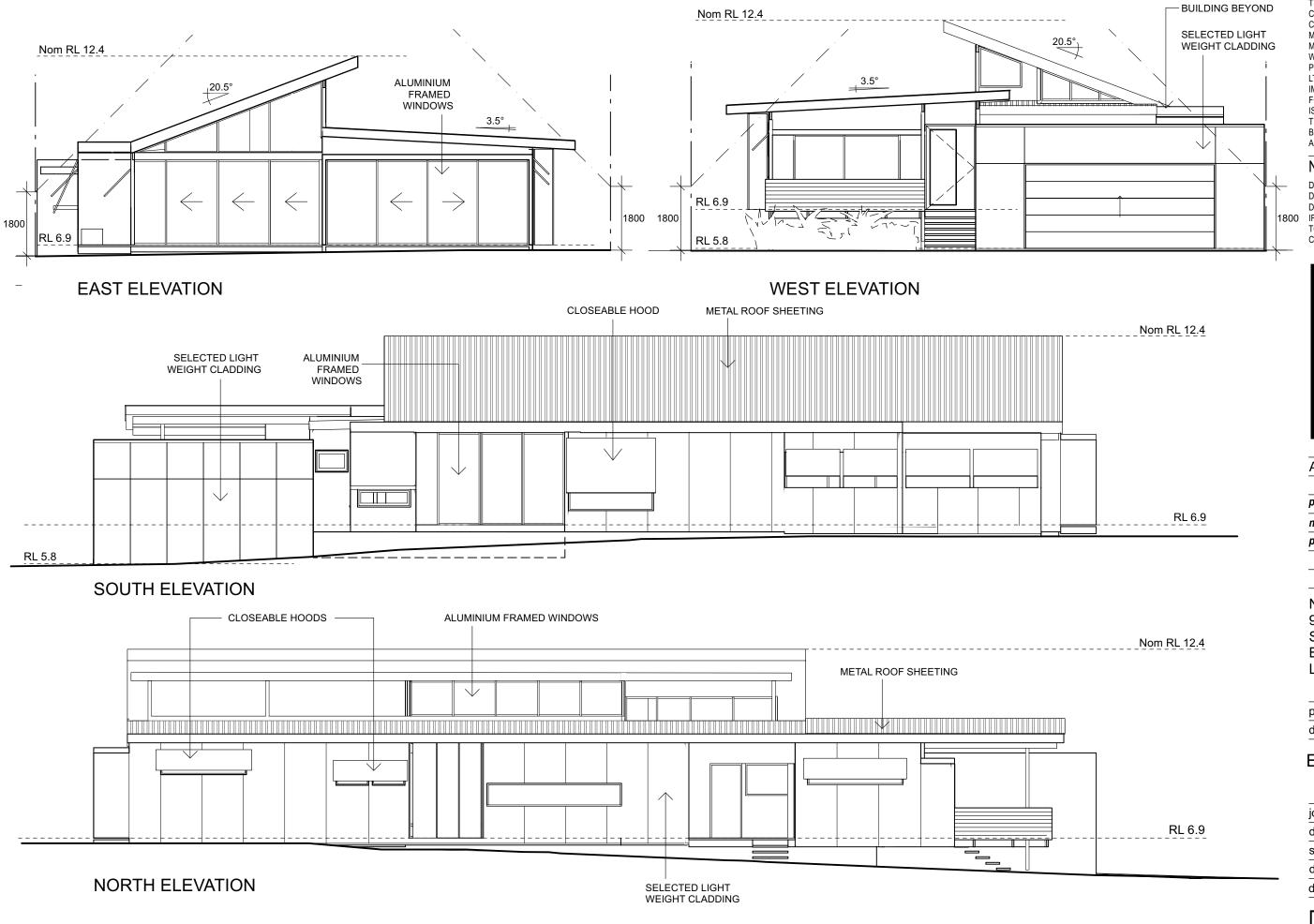


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project title drawing title

ELEVATIONS

job number 3901

drawn by DOB

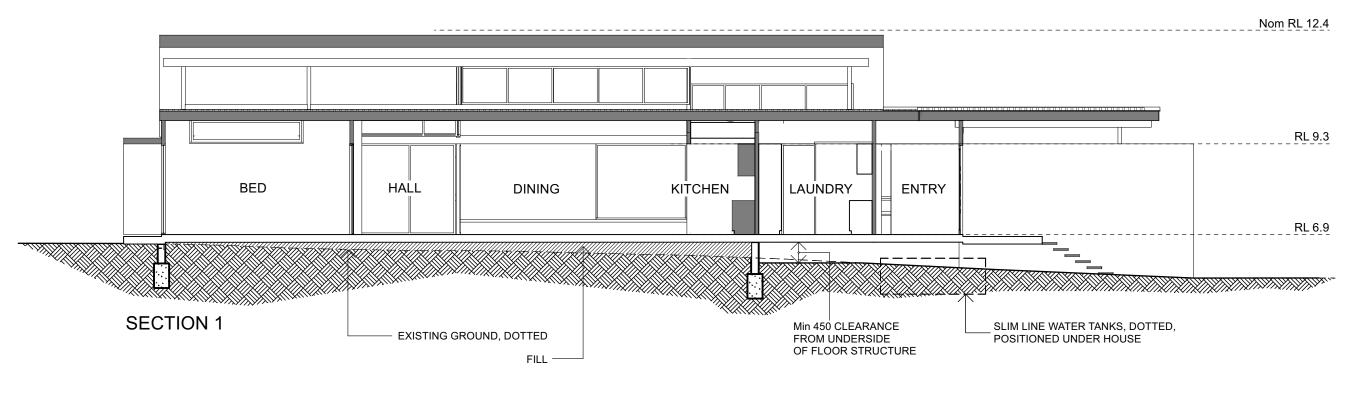
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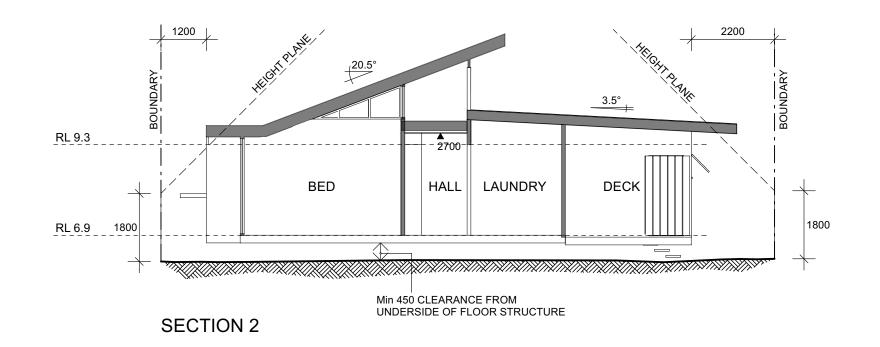
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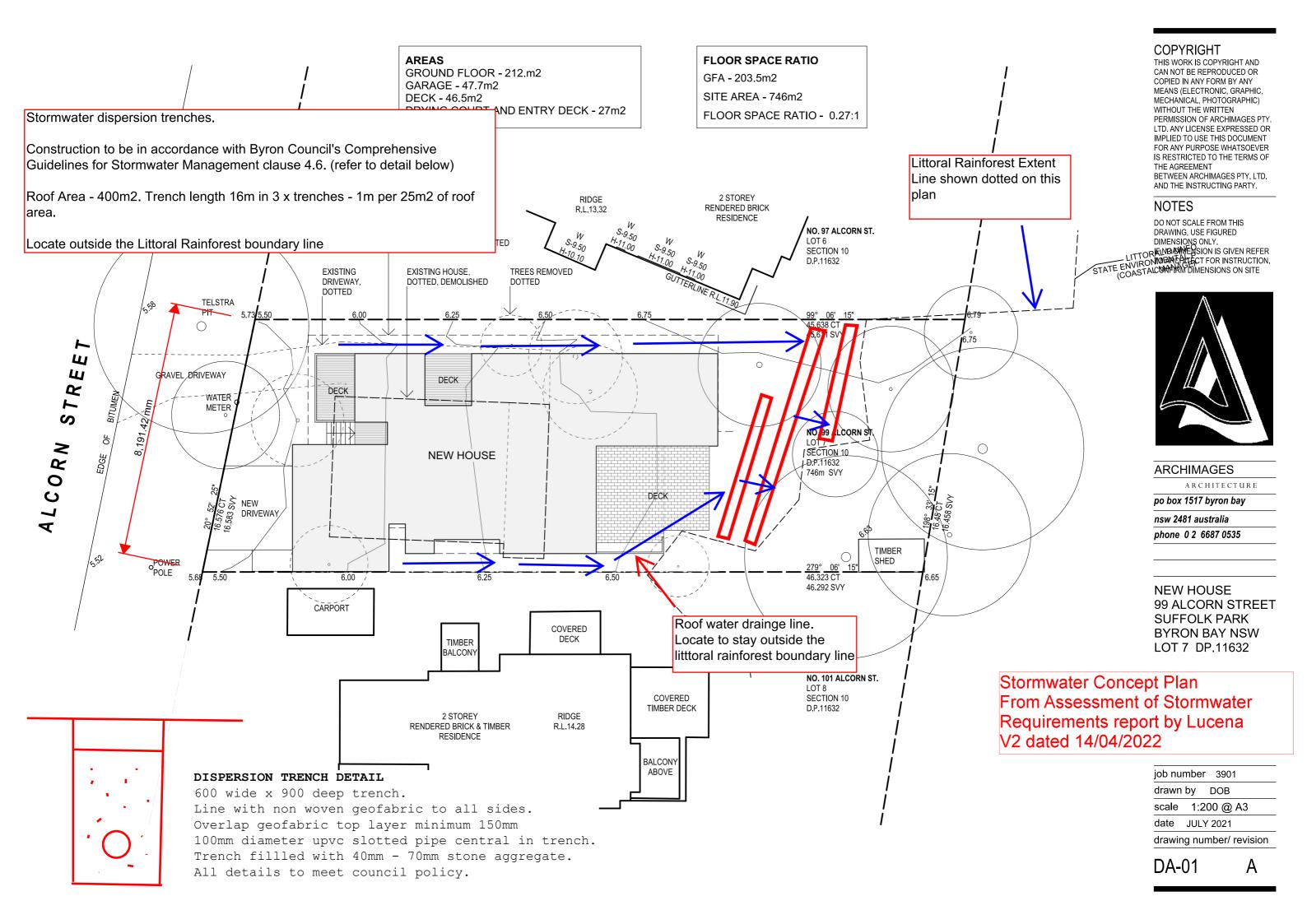
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Assessment of Demountability of Proposed New Residence at 99 Alcorn Street Suffolk Park

28 April 2022

for

Archimages PO box 1517 Byron Bay NSW 2479

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Document Control

Rev No	Date	Revision Details	Prepared	Verified	Approved
V1	28-5-2021	Original	PL	PL	John a.
V2	14-4-2022	Amended to include littoral rainforest zone restrictions	PL	PL	Johna.

1. Introduction

At the request of the owner, Lucena Engineers have assessed the proposed new residence at 99 Alcorn Street Suffolk Park to meet the construction requirements for demountability, set out in Councils' policy – DCP 2010 Chapter 1 Part J.

2. Description

The proposed building is a single storey timber framed and lightweight clad structure with a Combination of suspended timber and concrete slab on ground flooring. Plans of the proposed works are attached in appendix A.

The building is located at the west end of the site, in a location identified on councils coastal Erosion Development Control Plan number 15 of 17 as behind the immediate impact line. This position places the building in Precinct 2.

In Precinct 2 residential buildings must be relocatable – Refer to section J2.2 of DCP 2010 Chapter 1. For information, the relevant portion is attached in appendix B.

The major points of the policy are:

- 1. The building must be capable of being relocated in the event that the erosion escarpment approaches to within 50m of the building.
- 2. The building shall be constructed so that it can be easily relocated by road vehicle.

There are additional criteria as noted in appendix B.

The site is constrained by a Littoral Rainforest Zone, as depicted on drawing DA-01 of the architectural set. The demountability exercise is to be undertaken without interfering with this zone.

3. Assessment and Recommendations

The building is to be constructed using conventional timber framing techniques for the floors, walls and roofs. Approximately 30% of the main floor is to be framed from timber joists and bearers, supporting the upper walls and roof. The garage area and the main living area to the east end of the building will be constructed on a conventional concrete slab on ground, for the purposes of meeting Basix requirements.

Access to the site is directly from Alcorn street, with a 16.5m frontage to the road reserve.

To meet the requirements for demountability, the building will need to be broken up into smaller portions that are appropriately sized to allow them to be moved using road transport equipment. Our comments are as follows:

- 1. The building elements constructed on the timber framed floor can be broken into 4 main modules refer to the architectural drawing Number DA-02 in Appendix C for the proposed module arrangement. The building framing would be arranged specifically with these module perimeters in mind, so that the separation process would be straightforward.
- 2. The garage will need to be removed prior to the modules above being separated and removed. This process will involve removing the roof element in two pieces, and then removing the wall frames to the 4 sides. Construction of the roof and wall elements will need to be undertaken allowing for the elements to be separated and removed in this way.

- 3. Once the garage and timber floor elements have been removed, the living, kitchen, dining and bed 1 area can be broken into transportable pieces. This will involve the following:
 - a. The roof will be separated into elements of around 3m width and 7m length. These will be craned from the building and loaded onto flat-bed truck transport.
 - b. Kitchen cabinetry and bathroom cabinets will be removed.
 - c. Walls will be broken into transportable lengths and loaded onto transport using cranes.
 - d. Decking area will be cut into transportable elements and loaded to transport.
- 4. Once the roof and wall elements are removed from site, the remaining elements will consist of concrete slabs on ground. Removal of these items will require the slabs to be cut into pieces and loaded onto transport. The element size anticipated is in the order of 2m x 2m.
- 5. At the completion of the removal of the major building elements, the site can be cleared of remaining landscaping elements and general rubbish and debris.

To achieve removal of the building from the site, preparation works will be necessary. This will include the following:

- 6. Remove the front fencing, bin enclosure and front steps.
- 7. Disconnect all services including power, water supply, sanitary drainage and data connection.
- 8. Provide additional bracing and stabilisation to the building, as the roof and wall elements are removed. This will involve bringing to site sufficient new timbers and propping members to support wall and roof elements as the building is dismantled.
- 9. Once the main building elements are removed from site, demolish and remove from site all remaining building items including footings and slabs, service pipes etc.

In order to allow the above demountability process to occur, at construction the following elements will need to be instituted:

- 10. Cladding used is to be installed so that the panels can be readily accessed for removal. Joining strips in the cladding located at break positions will assist with this process.
- 11. Floor framing at the module perimeters is to be fabricated with a join that will allow the floor to be separated easily. This could include locating double bearers and double joists at the break lines.
- 12. Similarly, wall frames are to have vertical break positions installed with cladding cover strips provided to allow access to the break line.
- 13. Roof framing is to have the structure constructed in such a way that will allow the roof to be supported by the remaining loadbearing elements of the individual module as the separation is undertaken. Double ridge beams and double rafters etc. are to be installed to assist in this regard.
- 14. Where roof elements are to be separated, framing is to be arranged so that the break line can be created with the least damage to the framing. This may require providing double rafters or trusses at the break lines so that the edges of the elements are supported on a rafter or truss.
- 15. At the time of removal, the transport corridor to the new location is to be assessed for height clearance. The minimum available height is to be confirmed, and the module height assessed to determine if the module roof needs to be removed.
- 16. To remove the building modules from the site will likely require the trimming of existing trees along the access to Alcorn Street.

Littoral Rainforest Zone Requirements

The site has a Littoral Rainforest Zone located at the eastern end of the property, as indicated on the site plan number DA-01.

The requirement is that the demounting exercise is to be undertaken without interfering with this area.

Due to the area being located at the rear of the site, the works can be undertaken whilst remaining out of this area. Please refer to the construction management plan in appendix C for the location of the area, and the protection required to be instituted prior to the works commencing.

4. Conclusion

As requested, Lucena Engineers has undertaken an assessment of the demountability of the proposed residence to be constructed at 99 Alcorn Street Suffolk Park.

In our opinion, the building can be constructed to allow removal from the site in accordance with the requirements of DCP 2010 Chapter 1 Section J2.2.

Included in section 3 of this report are recommendations regarding construction requirements to allow the removal of the building. These recommendations are to be instituted in the building design plans submitted for construction certificate approval.

the plans also indicate the location of the Littoral Rainforest Zone, and the protection required to be instituted prior to works commencing.

Appendix B – Extract from Section J2.2		

- use of not more than one 4WD vehicle for the entire relocation procedure (more may be used in practice but relocation must not rely on more than one being available);
- d) manoeuvring details, including turning templates for laden vehicles to exit the site^(D) and provision of sufficient hard surface area to accommodate manoeuvring:
- e) removal of any obstacles on-site or en-route;
- f) certification by a practicing structural engineer that each module is stable and safe under towing conditions, and
- g) removal of all elements, including decks, foundations and supports .
- 6. The relocation procedure must not require equipment reliant on mains electricity, such as power tools or winches, and must require no more than three people to achieve all necessary tasks.
- 7. All equipment required for the relocation procedure must be stored on-site and under cover, and maintained in a sound working condition at all times. The relocation procedure must be documented and stored on-site.

Existing Buildings

In this clause, "gross floor area"^(D) means the sum of all the floor plan areas^(D) of a building, where "floor plan area"^(D) has the meaning ascribed to it in Part C of this plan (Residential Development).

Extensions or alterations to existing buildings will be considered on their merits. Consideration will be given to the location of the erosion escarpment, the type of building involved and access to the site^(D). Alterations or extensions will be considered where there will be no adverse effect on the ability of the building to be removed in an emergency. Generally extensions to existing buildings will be limited to:

- (a) where the gross floor area^(D) of the existing building is less than 100 m² extensions that will make the gross floor area^(D) no greater than 100 m²;
- (b) where the gross floor area^(D) of the existing building is 100 m² or more 10% of the gross floor area^(D) of the existing building at the date of commencement,

providing that only one such extension per building will be permitted since 1989.

Where an existing building is destroyed totally or partially through accident or damage caused by other than coastal processes, the building may be repaired or rebuilt so that:

- (a) the total floor area of the rebuilt or repaired building is no greater than the total floor area before the damage occurred;
- (b) the repairs or rebuilding have no detrimental effect on the ability of the building to be relocated in an emergency;
- (c) where possible, the building is relocated at the time of rebuilding or repair to a position on the site^(D) as far as possible from the erosion escarpment; and
- (d) the repairs or rebuilding are effected within 12 months of the date when the damage occurred.

J2.2 Element – Precinct 2 - Between The Immediate Impact Line^(D) And The 50 Year Erosion Line^(D)

Element Objective

To ensure the impact of coastal processes on potential development is minimised by ensuring any development is readily relocated as the erosion escarpment nears the development.

Performance Criteria

Development in Precinct 2 must be designed to be relocate or demolished, or to cease operation, should the erosion escarpment come within 50 metres.

Prescriptive measures

Development within this precinct will be granted on the understanding that any consent granted will be subject to the proviso that must the erosion escarpment come within 50 metres of any building then the development consent will cease.

If the development consent does cease then the owner of the land will be responsible for the removal of any or all buildings from the site^(D), or, where possible, to a location on the site^(D) further than 50 metres from the erosion escarpment. Prior to lodging an application with Council, the developer of the land must determine whether buildings are to be relocatable or demolished, should the consent cease.

Notwithstanding the above, all Class 1 residential buildings (dwelling-houses^(D)) must be relocatable. Extensions to existing dwellings^(D) may also be required to be demountable, taking into consideration the additional floor space proposed and the likely effect of the extension on the ability of the building to be relocated in an emergency.

The dwelling-house^(D) must be designed and constructed so that it can be easily removed from the site^(D) by road vehicle. The plans of the building must include an adequate description of the removal procedures.

The dwelling^(D) must be located so as to maximise as far as practicable the distance from the nearest point of the building to the seaward boundary of the site^(D).

Conditions of consent likely to apply to dwellings^(D) on land within Precinct 2 are as follows:

- a) (**Prior to issue of a Construction Certificate**) A certificate is to be provided from a practising structural engineer as to the adequacy of this building to be easily dismounted and readily removed from the site^(D) by road vehicle.
- b) (**Prior to issue of a Construction Certificate**) A restriction as to user must be placed on the title pursuant to the provisions of section 88E of the Conveyancing Act 1919, stating:
 - "The subject land and any improvements erected thereon must not be used for the purpose of (land use) in the event that the erosion escarpment, as defined by the Works and Services Director of the Council of the Shire of Byron from time to time, comes to within 50 metres of any buildings or any part thereof at any time erected on the said land."
- c) Subsequent to any approval being given for a relocatable dwelling^(D), no works must be carried out on the property which might hinder the ready relocation of the building. Such works might include the construction of walls, fences, screens, enclosures, brick veneering, landscaping or the fixing of joints or structural members by welding or other means.
- d) This development consent must cease if at any time the erosion escarpment, as defined by the Works and Services Director of the Council of the Shire of Byron, comes to within 50 metres of any building associated with this development. The owner of the land must then remove that building.

Appendix C – Plan showing Building Demountability Scheme

