

GEOTECHNICAL RISK ASSESSMENT REPORT

FOR PROPOSED ALTERATIONS & ADDITIONS

AT

17 KANANGRA CRESCENT

CLONTARF, NSW, 2093

Prepared by: Prime Consulting Engineers Pty Ltd.

Ref: R-25-1238

Date: 28-Jan-25

Amendment: -

Prepared by: KK

Checked by: BG

Email: info@primeengineers.com.au Web: www.primeengineers.com.au

Address: Level M/ 394 Lane Cove Road, Macquarie Park, NSW, 2113



Dear Mr. Gareth & Mrs. Stephaine Faulker,

Re: <u>Geotechnical Report – Proposed alterations & additions at 17 Kanangra</u> <u>Crescent, Clontarf, NSW, 2093</u>

Introduction

Prime Consulting Engineers has been engaged by Mr. Gareth & Mrs. Stephaine Faulker to prepare a Geotechnical Report for proposed alterations & addition at 17 Kanangra Crescent, Clontarf NSW, 2093.

Site Geology

The underlying site geology consists of Wianamatta group Hawkesbury Sandstone. This is a Mesozoic era sandstone containing medium to coarse-grained quartz sandstone with very minor shale and laminate lenses. Refer to 1:100000 Sydney geologic mapping for more details (available via references).

From the observations from the site inspection, it was deemed unnecessary to perform any extra/special investigation of the underlying site geology.



Figure 1: 1:100000 Sydney Geologic Mapping

Email: info@primeengineers.com.au Web: www.primeengineers.com.au



Rwb Shale, carbonaceous claystone, laminite, fine to medium-grained lithic sandstone,		
Rwm	Fine to medium-grained lithic sandstone.	
Rwa	Black to dark-grey shale and laminite.	
Rm	Interbedded shale, laminite, and medium-grained quartz sandstone.	
Rh	Medium to coarse-grained quartz sandstone, very minor shale and laminite lenses.	

Preliminary Assessment

Checklist for assessment:

1.0 Landslip Risk Class:

As per Manly DCP 2013, Map C, the given property falls under potential geotechnical landslip hazard area zone G2.

Landslip Risk class zone 'G2'.



Figure 2: Land slip risk map for 6 Abernethy St, Seaforth (site location marked in red)

Email: <u>info@primeengineers.com.au</u>
Web: <u>www.primeengineers.com.au</u>



Note

Zone	Description	Slope_Angle	Council_Require
G1	Steeper slopes, generally near coastal or harbourside areas	>25 dea	Geotechnical assessment is required
G2	Flanking slopes	15 to 25 deg	Geotechnical assessment may be required
G3	Beach foredune and alluvial flats	<5 deg	Should follow good engineering practice
G4	Ridge crests, major spur slopes and dissected plateau areas	<15 deg	Geotechnical assessment may be required

2.0 Site Location

The property is bounded by Kanangra Crescent in the northern boundary and neighboring property at 15 Kanangra Crescent on eastern side and 19 Kanangra Crescent on western side, and 14 Heaton Avenue in southern boundary with site sloping towards Heaton Avenue at the back. Council Landslide risk map (Figure 2) places the property in land-slip risk zone 'G2' (slope 15-25deg) – refer to figure 2.

3.0 Proposed Development

The proposed alteration and addition includes the construction of a ground floor Terrace with slab on ground foundation and addition of timber deck Terrace on level above. The plan also encompasses the excavation of existing ground to facilitate the building of new swimming pool area on first floor, as show on the architectural details prepared by JAH Design refer <u>Appendix 'C'</u>.

Terrace works include minor excavation for footing systems to be founded on underlying rock. The proposed swimming pool is to be located on the north-western side of the existing building with max depth of 1.8m. with coping level at 68.70m AHD on existing average ground level of 68.53m AHD.

4.0 Existing Site Description

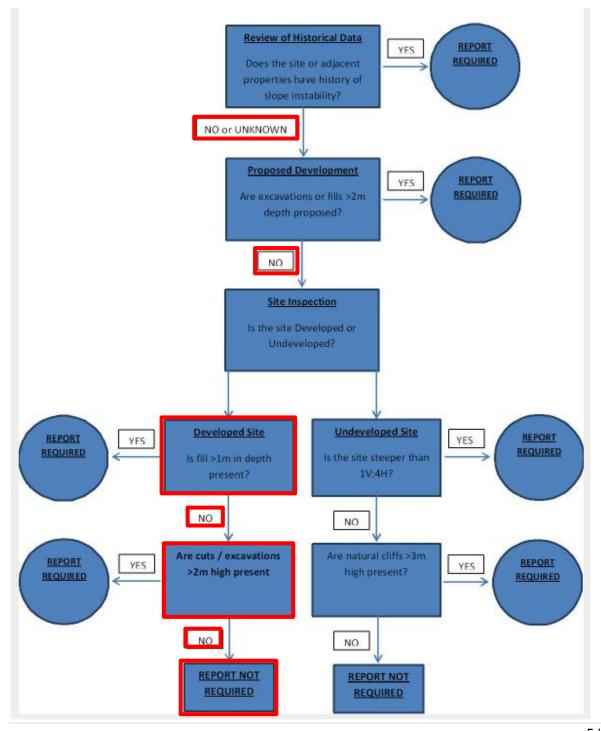
- The slope from front to the rear of the property varies and is moderate-high (ranging 15 to 25 degree) with rock outcrop on few locations.
- Topsoil profile is residual clay overlaying sandstone, removal of unconsolidated topsoil and depending on the depth to the rock layer, piering the structural footing would be required.
- No evidence of particularly high risk/hazard zones (unstable slip zones) across the entirety
 of the site.

Please refer to Appendix A for the photographic record.



5.0 Recommendations

Based on the above items, and the attached flowchart that indicates the principal factors considered in the assessment, it is suggested that Geotechnical assessment is not required.





6.0 Date of Assessment

Date: 28-Jan-25

7.0 Assessment By:

Bijaya Giri MIEAust, CPEng NER

Conclusions

From evidence obtained, as well as assessment of existing geological data for the site, it has been determined that the proposed works will not adversely affect the geotechnical stability of the site.

Provided all recommendations above are adhered to, the construction works will be completed following good geotechnical and structural engineering practice.

The development will not cause detrimental impacts because of stormwater discharge from the land and will not cause detrimental impact on the existing subsurface flow conditions including those of other properties.

It is understood that a geotechnical report is not required for the proposed development. However, PCE recommends that a Geotechnical Engineer is engaged during the construction process which includes excavation next to existing buildings, such that they can monitor and evaluate the ground conditions in real time. This will allow for immediate adjustment to construction practices as necessary, mitigating potential risk related to soil stability and structural integrity of existing buildings.

Your faithfully, Bijaya Giri MIEAust, CPEng NER

Signature:

Email: info@primeengineers.com.au Web: www.primeengineers.com.au



References

1. NSW Government

https://www.regional.nsw.gov.au/meg/geoscience/products-and-data/maps/geological-maps

https://search.geoscience.nsw.gov.au/product/135

2. Manly DCP Schedules https://eservices.northernbeaches.nsw.gov.au/ePlanning/live/Pages/Plan/Book.aspx?ex hibit=MDCP

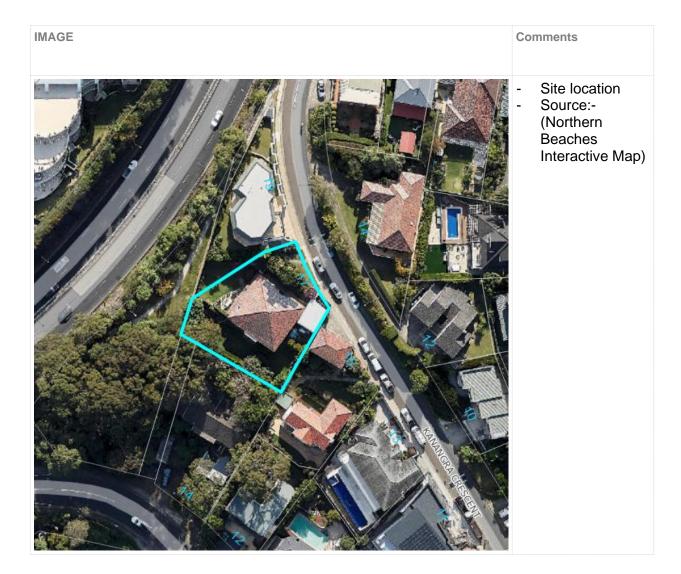
- 3. Google Maps
- Northern Beaches Interactive Map https://eservices.northernbeaches.nsw.gov.au/ePlanning/live/Public/XC.Track/SearchPr
 operty.aspx?id=470704

Email: <u>info@primeengineers.com.au</u>
Web: <u>www.primeengineers.com.au</u>



APPENDIX A











- Street view of the property
- No changes proposed.





- Front of the property
- Location for swimming pool.

Email: <u>info@primeengineers.com.au</u>
Web: <u>www.primeengineers.com.au</u>









- Side of the property.
 Location for
- Terrace.



Rear of the Property.



APPENDIX B



Risk Mitigation Practice

Some Guidelines for Hillside Construction

Advice:

Geotechnical Assessment: Obtain advice from a qualified, experienced geotechnical practitioner at early stage of planning and before site works.

Planning:

Site Planning:

Having obtained geotechnical advice, plan the development with the risk arising from the identified hazards and consequences in mind.

Design & Construction:

House Design:

- Use flexible structures which incorporate properly designed brickwork, timber or steel frames, timber or panel cladding.
- Consider use of split levels.
- Use decks for recreational areas where appropriate.

Site Clearing:

Retain natural vegetation wherever practicable.

Access & Driveways:

- Satisfy requirements below for cuts, fills, retaining walls and drainage. Council specifications for grades may need to be modified.
- Driveways and parking areas may need to be fully supported on piers

Earthworks:

Retain natural contours wherever possible

Cuts:

- Minimise depth.
- Support with engineered retaining walls or batter to appropriate slope.
- Provide drainage measures and erosion control.

Fills:

- Minimise depth.
- Strip vegetation and topsoil and key into natural slopes prior to filling.
- Use clean fill materials and compact to engineering standards.
- Batter to appropriate slope or support with engineered retaining wall.
- Provide surface drainage and appropriate subsurface drainage.

Rock Outcrops & Boulders:

Email: info@primeengineers.com.au Web: www.primeengineers.com.au



Remove or stabilise boulders which may have unacceptable risk. Support rock faces where necessary.

Retaining walls:

- Engineer design to resist applied soil and water forces.
- Found on rock where practicable.
- Provide subsurface drainage within wall backfill and surface drainage on slope above.
- Construct wall as soon as possible after cut/fill operation.

Footings:

- Found within rock where practicable.
- Use rows of piers or strip footings oriented up and down slope.
- Design for lateral creep pressures if necessary.
- Backfill footing excavations to exclude ingress of surface water.

Swimming Pools:

- Engineer designed.
- Support on piers to rock where practicable.
- Provide with under-drainage and gravity drain outlet where practicable.
- Design for high soil pressures which may develop on uphill side whilst there may be little or no lateral support on downhill side.

Drainage:

Surface:

- Provide at tops of cut and fill slopes.
- Discharge to street drainage or natural water courses.
- Provide general falls to prevent blockage by siltation and incorporate silt traps.
- Line to minimise infiltration and make flexible where possible.
- Special structures to dissipate energy at changes of slope and/or direction.

Sub-Surface:

- Provide filter around subsurface drain.
- Provide drain behind retaining walls.
- Use flexible pipelines with access for maintenance.
- Prevent inflow of surface water.

Septic & Sullage:

- Usually requires pump-out or mains sewer systems; absorption trenches may be possible in some areas if risk is acceptable.
- Storage tanks should be water-tight and adequately founded.

Erosion Control & Landscaping:

- Control erosion as this may lead to instability.



- Revegetate cleared area.

Drawing and site visits during construction:

Drawings:

- Building Application drawings should be viewed by geotechnical consultant.

Site Visits:

- Site Visits by consultant may be appropriate during construction.

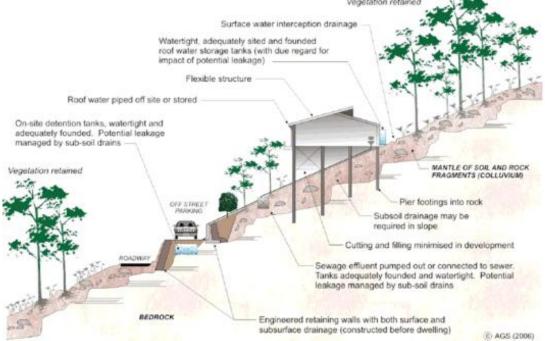
Inspection and maintenance by owner:

Owner's Responsibility:

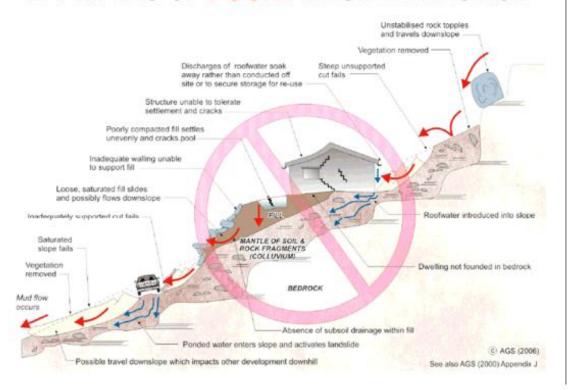
- Clean drainage systems; repair broken joints in drains and leaks in supply pipes.
- Where structural distress is evident see advice.
- If seepage observed, determine causes or seek advice on consequences.



EXAMPLES OF GOOD HILLSIDE PRACTICE Vegetation retain Surface water interception drainage



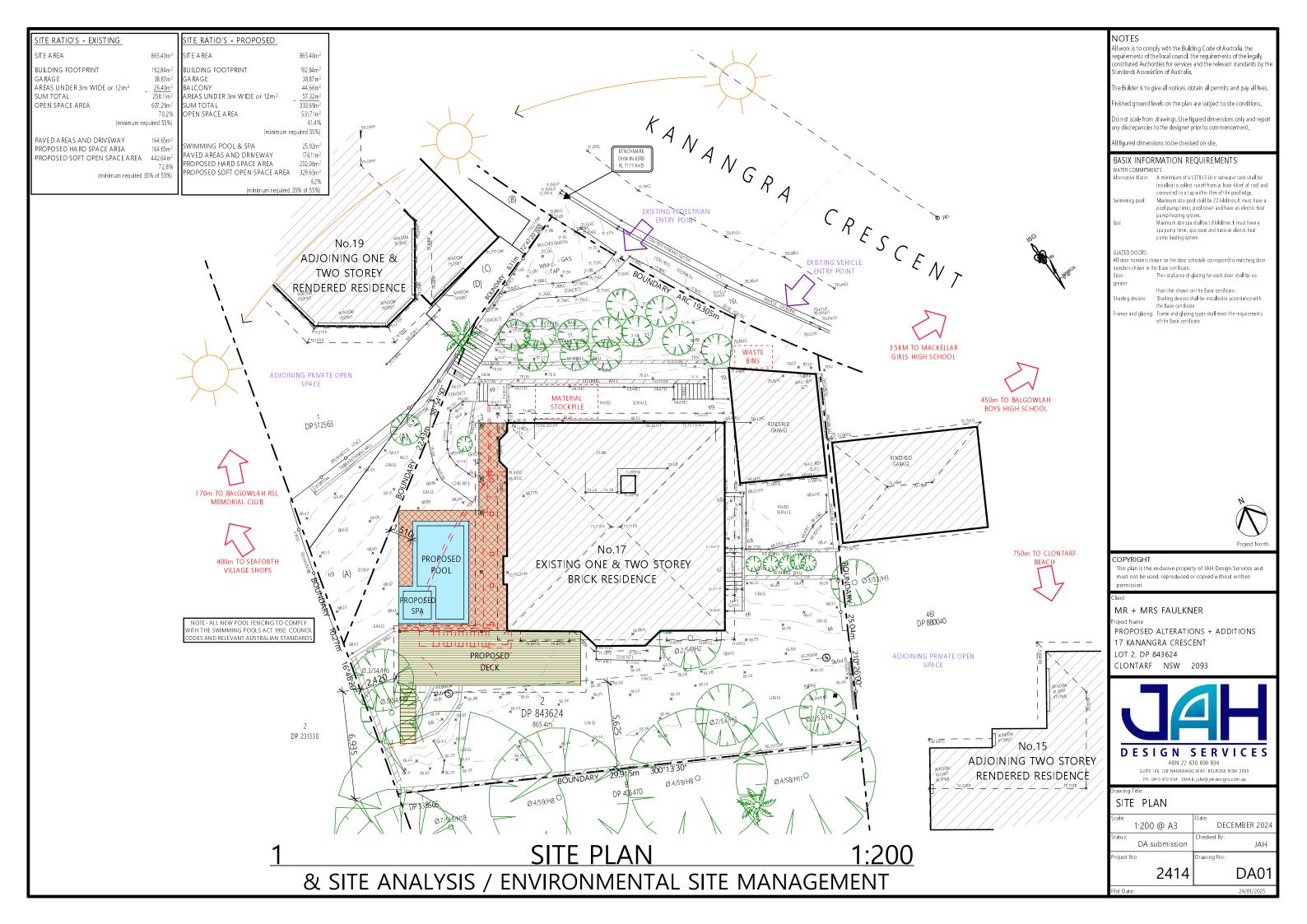
EXAMPLES OF POOR HILLSIDE PRACTICE

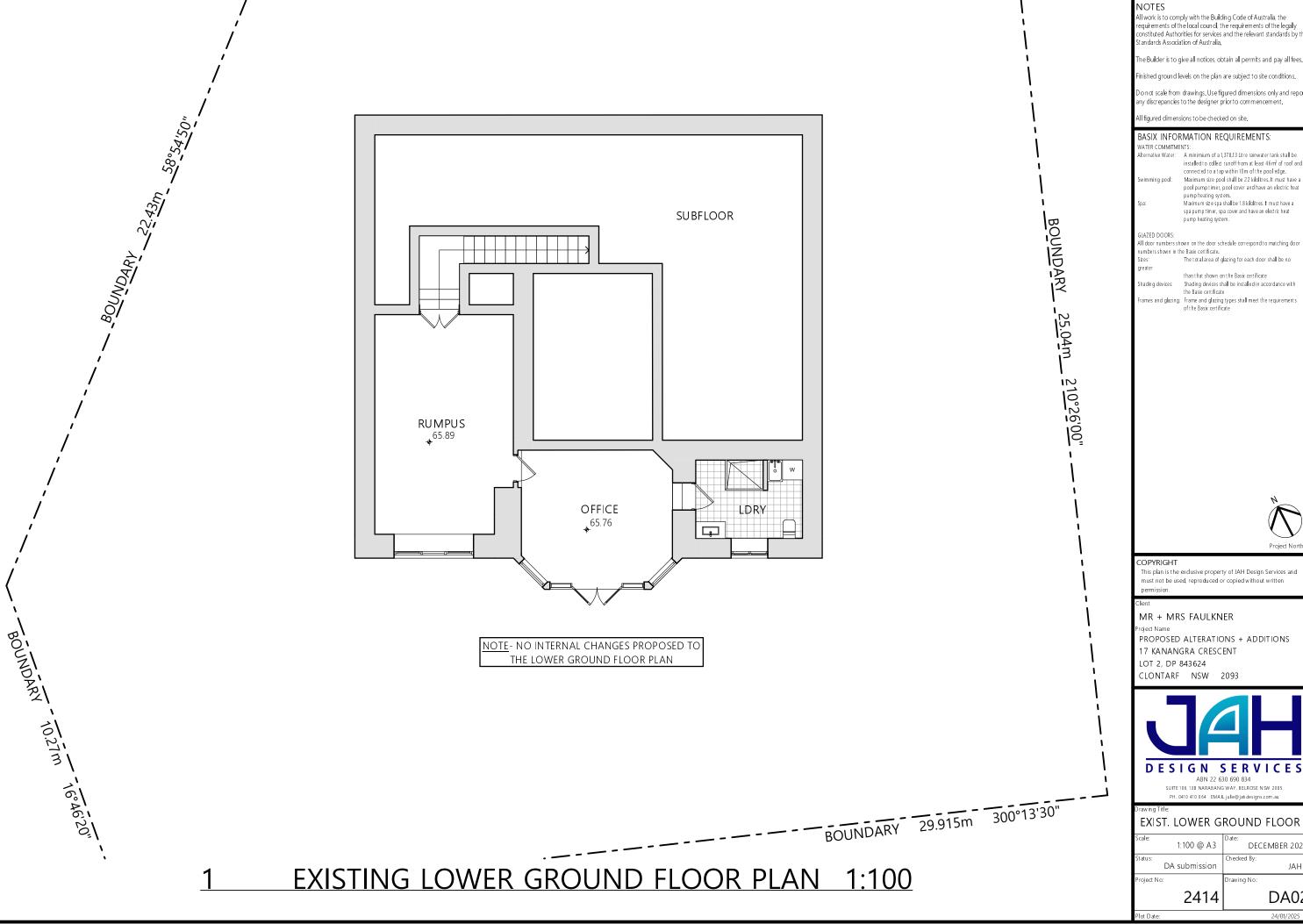




APPENDIX C

Email: info@primeengineers.com.au
Web: www.primeengineers.com.au





xII work is to comply with the Building Code of Australia, the equirements of the local council, the requirements of the legally constituted Authorities for services and the relevant standards by the standards by the standards by the standards by the standards Association of Australia.

ne Builder is to give all notices, obtain all permits and pay all fees.

in is hed ground levels on the plan are subject to site conditions.

not scale from drawings. Use figured dimensions only and report

BASIX INFORMATION REQUIREMENTS:

connected to a tap within 10m of the pool edge. Maximum size pool shall be 22 kilolitres. It must have a

pool pump timer, pool cover and have an electric heat pump heating system. Maximum size spa shall be 1.8 kilolitres. It must have a

spa pump timer, spa cover and have an electric heat pump heating system.

All door numbers shown on the door schedule correspond to matching door

The total area of glazing for each door shall be no

than that shown on the Basic certificate

Shading devices shall be installed in accordance with the Basix certificate



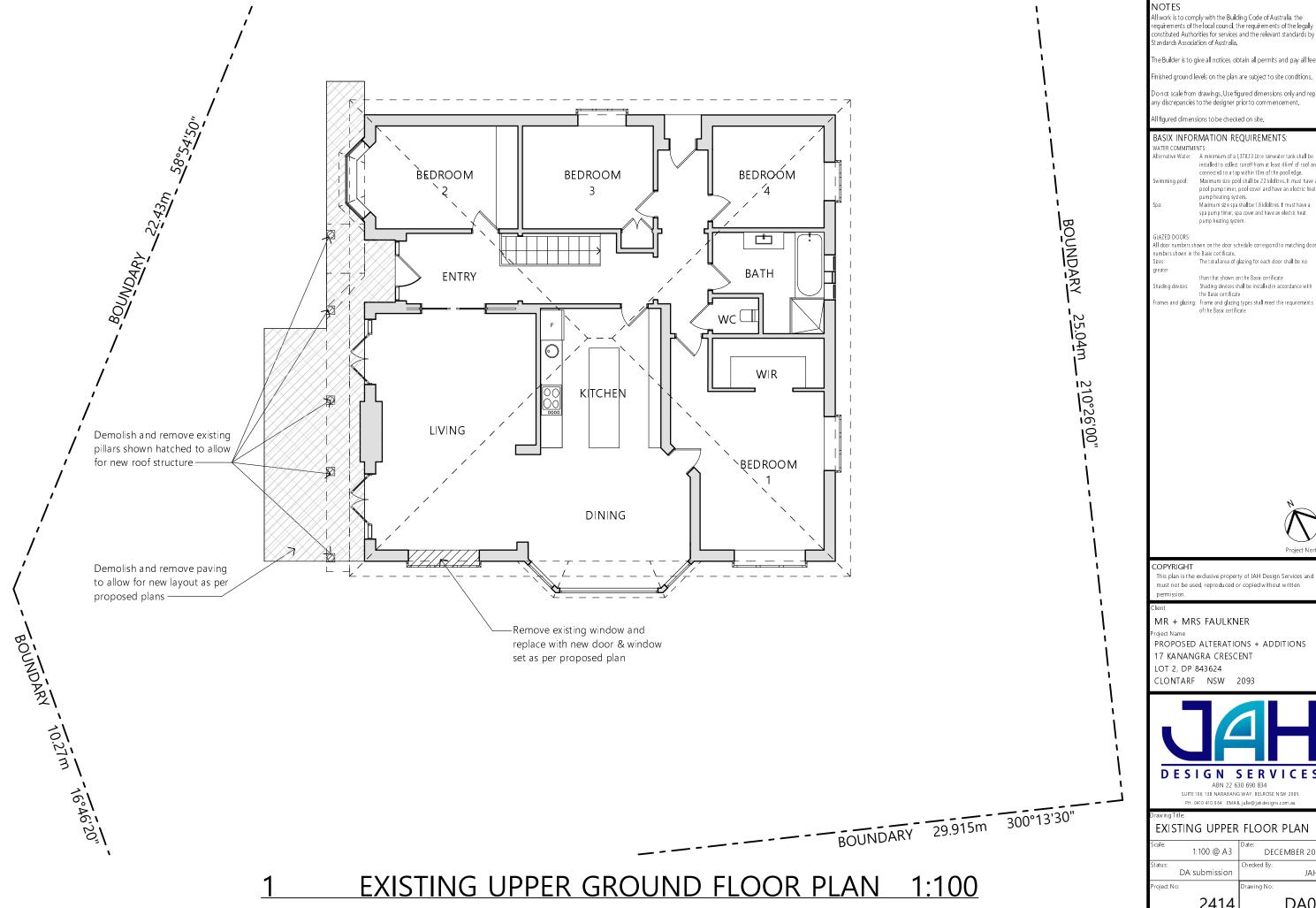
must not be used, reproduced or copied without written



PH. 0410 410 064 EMAIL julie@jah.designs.com.a

EXIST. LOWER GROUND FLOOR

	2414		DA02
Project N	0:	Drawing No.:	
ot atus.	DA submission	checked by.	JAH
Status:		Checked By:	
	1:100 @ A3	DEC	EMBER 2024
Scale:		Date:	



xII work is to comply with the Building Code of Australia, the equirements of the local council, the requirements of the legally constituted Authorities for services and the relevant standards by the standards by the standards by the standards by the standards Association of Australia.

ne Builder is to give all notices, obtain all permits and pay all fees.

in is hed ground levels on the plan are subject to site conditions.

not scale from drawings. Use figured dimensions only and report ny discrepancies to the designer prior to commencement.

all figured dimensions to be checked on site.

BASIX INFORMATION REQUIREMENTS:

installed to collect runoff from at least 46 m² of roof and

connected to a tap within 10m of the pool edge. Maximum size pool shall be 22 kilolitres. It must have a

pump heating system.

Maximum size spa shall be 1.8 kilolitres. It must have a

spa pump timer, spa cover and have an electric heat pump heating system.

All door numbers shown on the door schedule correspond to matching door

The total area of glazing for each door shall be no

than that shown on the Basic certificate



This plan is the exclusive property of JAH Design Services and nust not be used, reproduced or copied without written

MR + MRS FAULKNER

PROPOSED ALTERATIONS + ADDITIONS



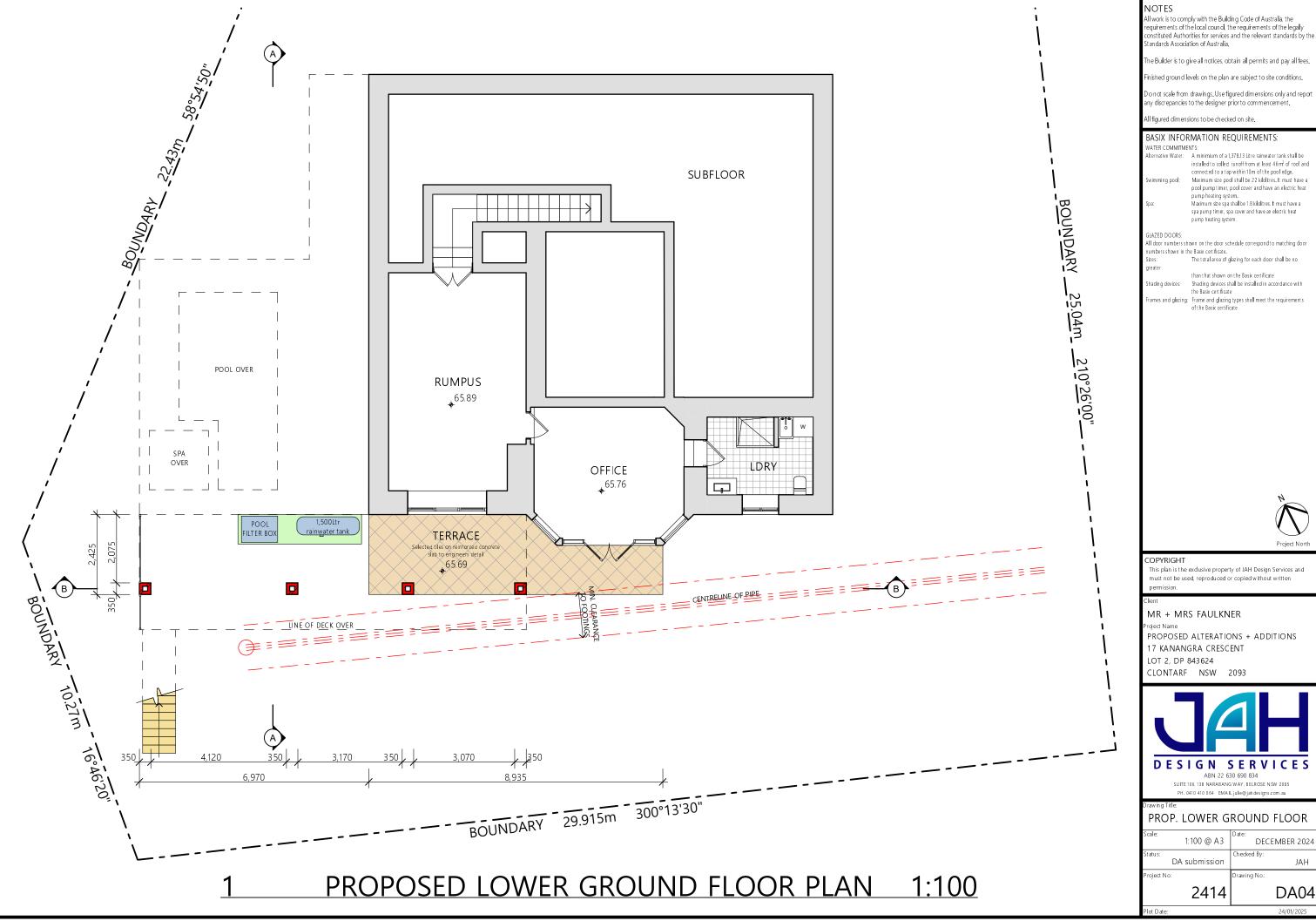
SUITE 106, 13B NARABANG WAY, BELROSE NSW 2085 PH. 0410 410 064 EMAIL julie@jah.designs.com.a

EXISTING UPPER FLOOR PLAN

Scale:	1:100 @ A3	Date: DECEMBER 202	4
St at u s:	DA submission	Checked By: JAH	
Project N	Vo:	Drawing No.:	

2414

DA03

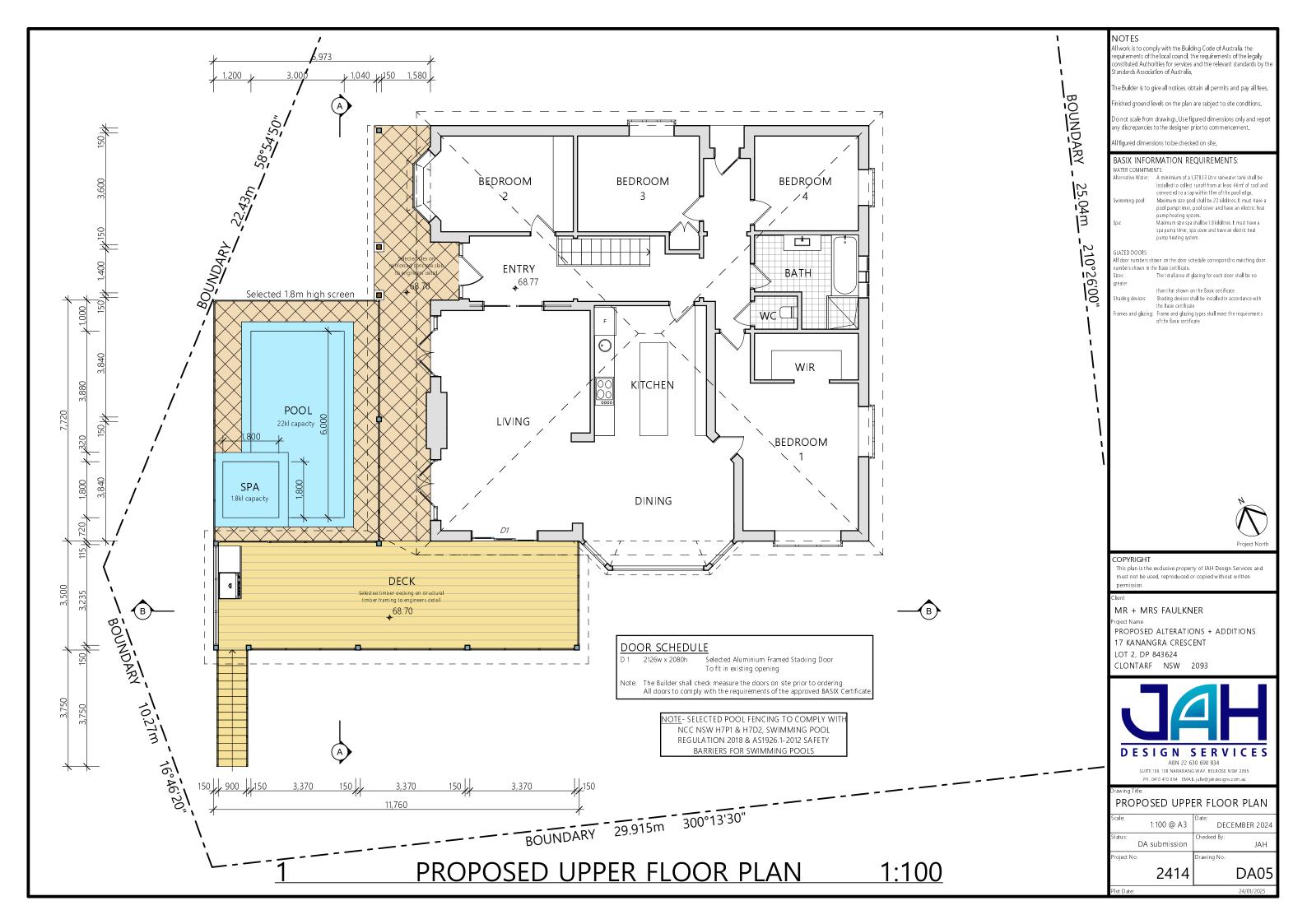


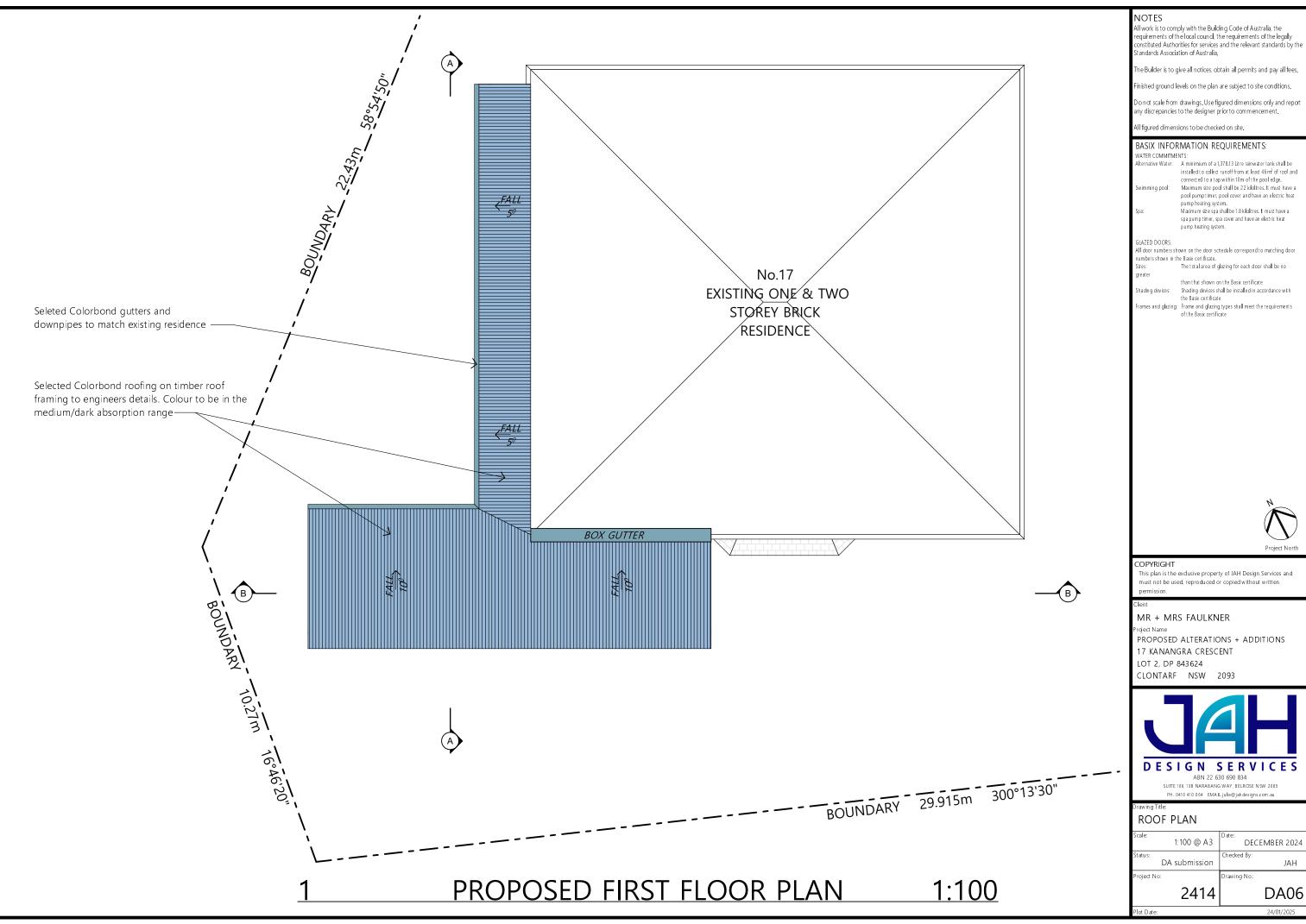
constituted Authorities for services and the relevant standards by th Standards Association of Australia.



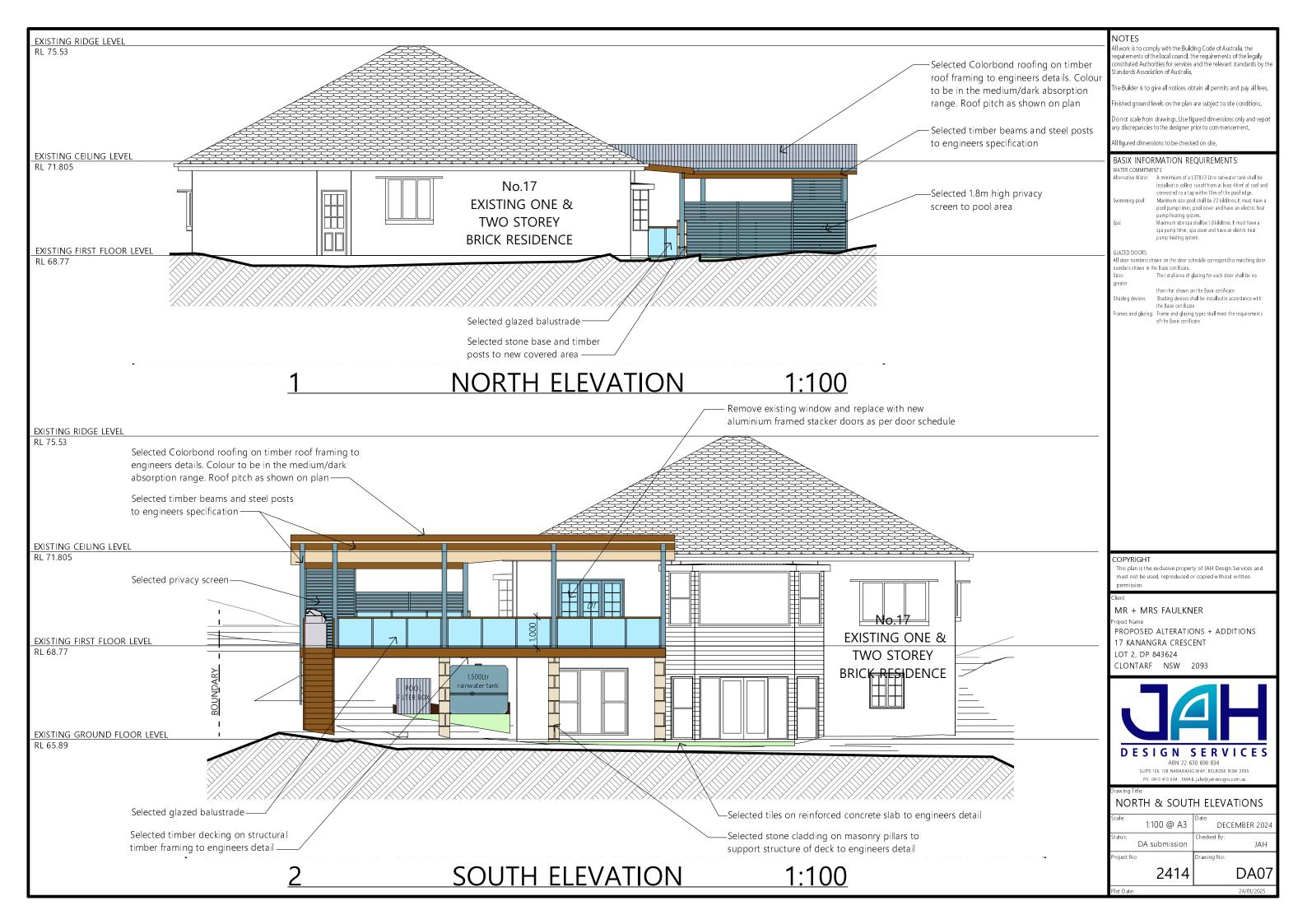


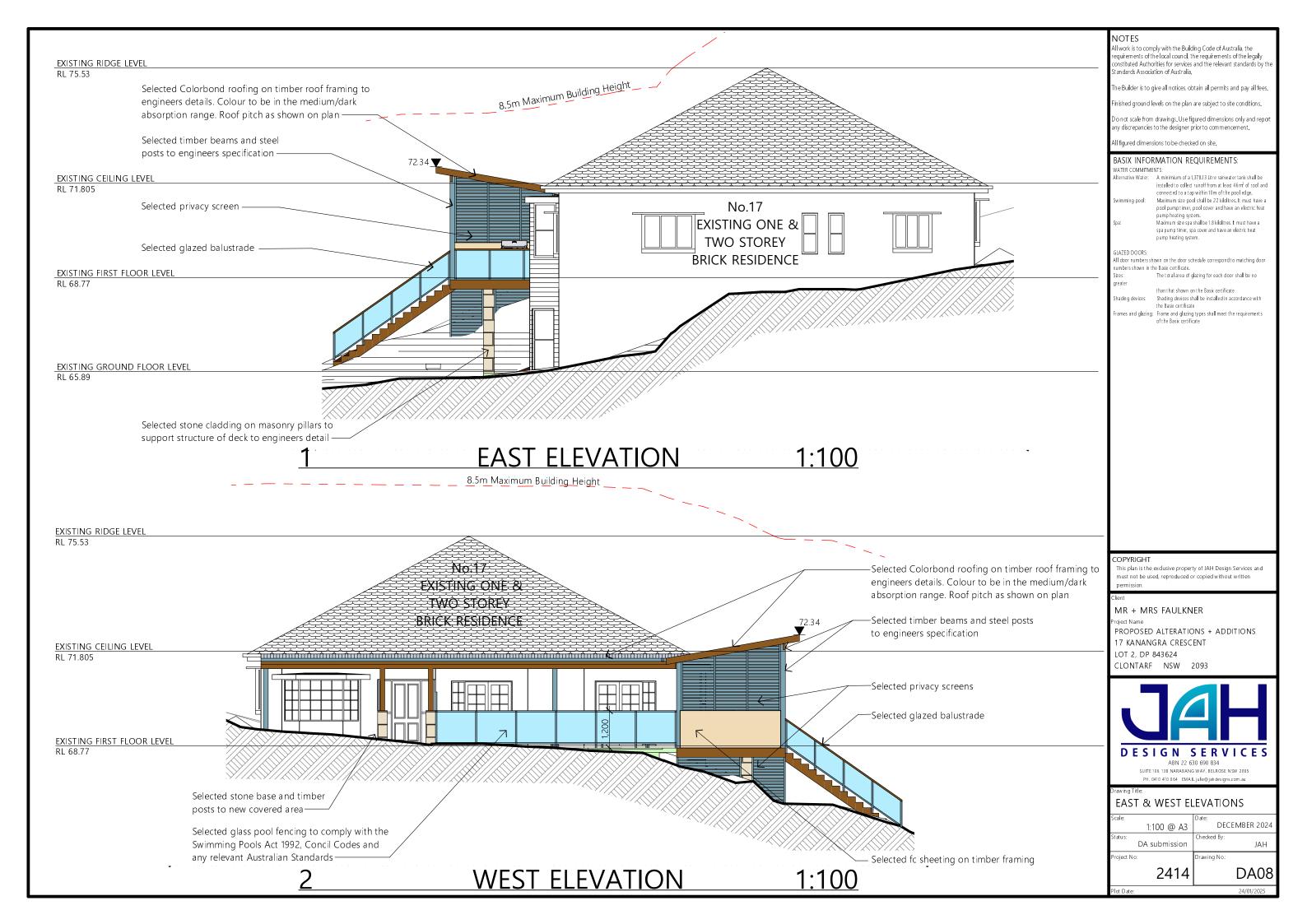
	2/1/		DVUV
Project N	0:	Drawing No.:	
	DA submission	,	JAH
Status:		Checked By:	
scale.	1:100 @ A3		EMBER 2024
Scale:		Date:	

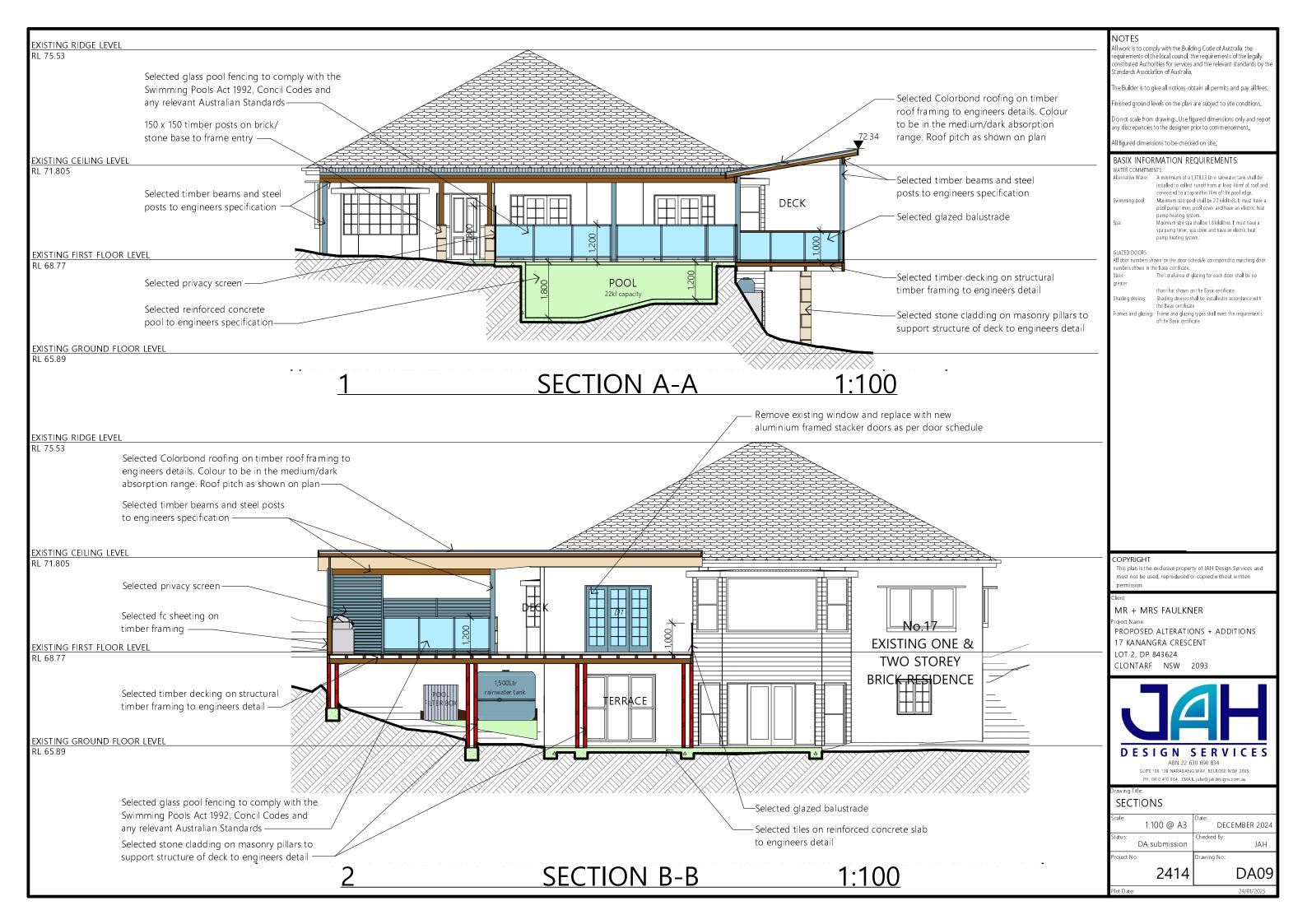


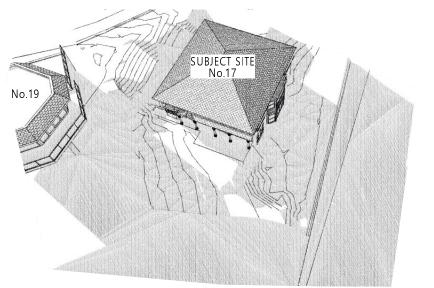


Scale:	1:100 @ A3	Date: DECEMBER 202	24
Status:	DA submission	Checked By: JAH	
Project N	0:	Drawing No.:	





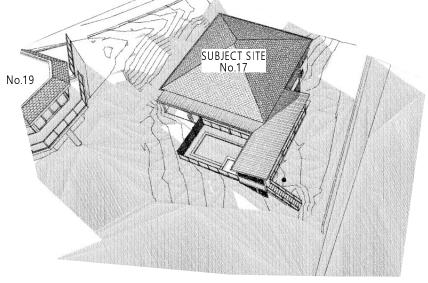




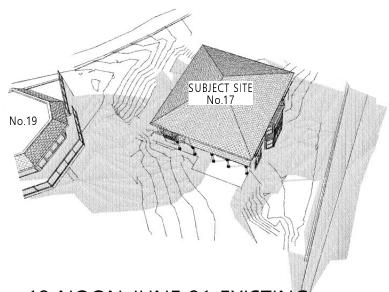
9AM JUNE 21 EXISTING

NO ADDITIONAL SHADOW CREATED ON ADJOINING PROPERTIES AT 9AM

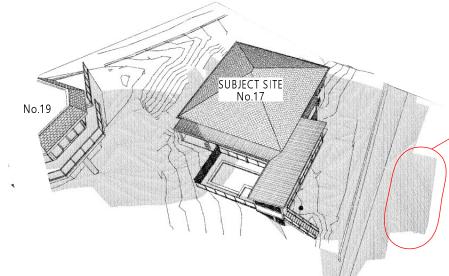
ON ADJOINING PROPERTIES AT 3PM



9AM JUNE 21 PROPOSED



12 NOON JUNE 21 EXISTING



12 NOON JUNE 21 PROPOSED

ADDITIONAL SHADOW ON REAR YARD OF 14 **HEATON AVENUE**

NOTE-LANDSCAPING FEATURES ARE NOT INDICATED ON THIS DIAGRAM. THE EXISTING TREES WOULD FULLY SHADE THIS ENTIRE AREA WITHOUT THE PROPOSED ADDITION



OPYRIGHT

NOTES

xII work is to comply with the Building Code of Australia, the equirements of the local council, the requirements of the legally constituted Authorities for services and the relevant standards by the standards by the standards by the standards by the standards Association of Australia.

ne Builder is to give all notices, obtain all permits and pay all fees. nished ground levels on the plan are subject to site conditions. not scale from drawings. Use figured dimensions only and report ny discrepancies to the designer prior to commencement

> installed to collect runoff from at least 46 m² of roof and connected to a tap within 10m of the pool edge. Maximum size pool shall be 22 kilolitres. It must have a pool pump timer, pool cover and have an electric heat pump heating system.
>
> Maximum size spa shall be 1.8 kilolitres. It must have a spa pump timer, spa cover and have an electric heat pump heating system.

All door numbers shown on the door schedule correspond to matching door

than that shown on the Basic certificate

The total area of glazing for each door shall be no

Shading devices shall be installed in accordance with the Basix certificate mes and glazing: Frame and glazing types shall meet the requirements of the Basix certificate

All figured dimensions to be checked on site. BASIX INFORMATION REQUIREMENTS:

This plan is the exclusive property of JAH Design Services and nust not be used, reproduced or copied without written

MR + MRS FAULKNER PROPOSED ALTERATIONS + ADDITIONS 17 KANANGRA CRESCENT LOT 2, DP 843624

CLONTARF NSW



ABN 22 630 690 834 Suite 106, 13B narabang way, belrose NSW 2085 PH. 0410 410 064 EMAIL julie@jah designs.com.au

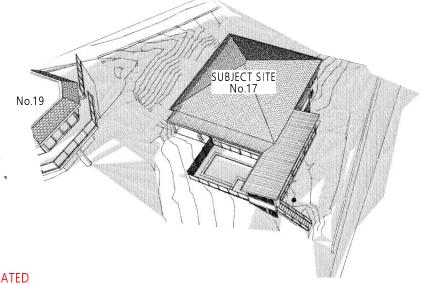
SHADOW DIAGRAMS

Scale:	DECEMBER 2024
Status: DA submission	Checked By: JAH
Project No:	Drawing No.:

DA10

2414





3PM JUNE 21 PROPOSED