



















			IGHT - 30watt or 18watt LED T - 120watt or 40watt LED IGHT WITH SENSOR GHT HEIGHT IT		
ENERGY EFFICIENCY REQUIREN	IENTS	FAN LIGHT (2) IXL TA	STIC OR SIM		
	Lab annabar 22 G		DCATION TBC ONSITE)		
Client: Diver Wolf Lennes	Job number: 22-6				
Client: River Wolf Homes	Date: 11/07/24				
FLOOR SPECIFICATION:					
Floor construction: Raft Slab Insulation: N/a Insulation location: N/a		DUCTED A/C & HEATIN DUUBLE POWER F LIGHT POINT FOR IN CEILING	NG POINT POINT AND SINGLE DUCTED HEATER		
WALL SPECIFICATION:		TV TELEVISION COAXIAL	POINT		
Mall construction light usight pladding bound (Augu & Timber)					
Wall construction Lightweight cladding board (Axon & Timber) Insulation: R2.7 batts + sarking to all external including garage – R2.5 batts to all internal wall Insulation location: All external walls & internal wall		I DATA POINT			
ROOF & CEILING SPECIFICATION:					
Roof construction: Metal roof Insulation: R5.0 batts + R1.3 roof Blanket Insulation location: Entire ceiling footprint (porch excluded)		B.C.A 3.12.3 BUILDING SEALING & PENETRATION S TO B.C.A 3.12.3 B.C.A 3.12.1.2(c) PROVIDE THERMAL BREAK AS PER B.C (IF APPLICABLE)	B.C.A 3.12.3 BUILDING SEALING & PENETRATION SEALING TO B.C.A 3.12.3 B.C.A 3.12.1.2(c) PROVIDE THERMAL BREAK AS PER B.C.A 3.12.1.2()c (IF APPLICABLE)		
Window frame type: Aluminium frame Glazing min requirements: Double glazing		B.C.A 3.12.5.5(d) ARTIFICIAL LIGHTING AROUND THE PERIMETER OF A BUILDING MUST - (I) BE CONTROLLED BY A DAYLIGHT SE	ENSOR; OR		
Refer to energy efficiency report for all U value		OF NOT LESS THAN 40 LUMENS/W			
AIR LEAKAGE:		ALTERNATE METER BOX LOCATION TO ONSITE TO BUILDERS DISCRETION TO CONDITIONS & TO MINIMISE P.C. ADJU) BE VERIFIED) SUIT SITE JSTMENT		
 Exhaust fans to be sealed Windows and sliding doors are to be fitted with weather s External doors to be weather stripped Gaps & cracks around doors, windows and service penetra All others requirement as per energy report. 	REFER TO PROJECT SPECIFICATION F • LIGHT SWITCHES COLOUR AND STYL • LIGHT FITTINGS DETAILS • ELECTRIC/GAS WALL OVEN/UND BEN • ELECTRIC/GAS HOT PLATE • ELECTRIC/GAS UPRIGHT COOKING F • DISHWASHER PROVISION • RANGEHOOD • ELECTRIC/GAS HOT WATER SERVICE • HEATER TYPE, SIZE AND LOCATION • COOLER TYPE, SIZE AND LOCATION	REFER TO PROJECT SPECIFICATION FOR: • LIGHT SWITCHES COLOUR AND STYLE • LIGHT FITTINGS DETAILS • ELECTRIC/GAS WALL OVEN/UND BENCH OVEN • ELECTRIC/GAS HOT PLATE • ELECTRIC/GAS HOT PLATE • DISHWASHER PROVISION • RANGEHOOD • ELECTRIC/GAS HOT WATER SERVICE • HEATER TYPE, SIZE AND LOCATION • COOLER TYPE, SIZE AND LOCATION			
 In Class1 building (dwelling) 5W/sqm On a verandah or balcony attached to the class 1 building BUILDIN In a class 10 building (Garage, shed) 3V/sqm 	4W/sqm G PERMIT DOCUMENT	NEW LIGHTING TO BE MAX 5w/m2 TO (DWELLLING) & MAX 3w/m2 TO EXTE (GARAGE)	AREA OF CLASS 1A ENT OF CLASS 10A		
7 A ISSUE DATE:	7965904521052	BIZE TITLE: WORKING DRAWINGS	REF: ISSUE		
B Con Iemel	G PERMITS (m) 045 507 289 (e) info@terneldesin.com.au (w) www.terneldesin.com.au	A2 ELECTRICAL PLAN THIS IS SHEET 8 OF DRAWINGS REFERRED TO IN THE CONTRACT DATED: SIGNED OWNER:	22-62 C DATE: 01/07/24 DRAWN: MT CHECKED: DRAW		

ELECTRICAL SCHEDULE POWER OUTLETS

SINGLE GPO - 300mm

SINGLE GPO - 1100mm

SINGLE GPO - 1350mm

DOUBLE GPO - 300mm

DOUBLE GPO - 1100mm

DOUBLE GPO - 1350mm

FLOOR GPO

SWITCHES

TWO WAY SWITCH THREE WAY SWITCH

DIMMER SWITCH

PENDANT LIGHT

LIGHT FITTINGS

LED DOWN LIGHTS - 11watt (100mm CLEARANCE)

DOUBLE GPO - EXTERNAL

SINGLE GPO - EXTERNAL

SINGLE GPO - DISHWASHER

SINGLE GPO - MICROWAVE

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2 WAY

3 WAY

M/D

🕂 14w

🕀 11w

WP WP

BUSHFIRE PROTECTION BAL 12.5 NOTES Notes: to be read in conjunction with AS 3959 - 2018 **Building Element** BAL-12.5 External Walls The exposed components of an external wall that are within 400mm from a horizontal surface shall be Screens Screens protecting external doors and windows a) non combustible material or a max 2mm aperture made of corrosion resistar b) timber logs of a species with a density of 680 kg/m³ or greater at a 12 percent moisture content; of a The frame supporting the screen shall be made minimum nominal overall thickness of 90mm and a minimum thickness of 70mm; and gauge planed, or a) metal c) cladding that is fixed externally to a timber- framed or a steel framed wall and isb) bushfire resisting timber i) non- combustible material; or c) timber species from E2 ii) fibre-cement external cladding, a minimum of 6mm in thickness; or Windows Behind bushfire shutters -, or iii) bushfire- resisting timber: or Behind Screens -, or Less than 400mm off horizontal surface frame iv) a timber species from E1: v) or a combination of items i),ii),iii) or iv) above or a) bushfire-resisting timber or d) a combination of any of items a), b), or c) above b) timber species from E2 or c) metal or d) metal reinforced PVC-U Glazing less than 400mm from horizontal surf Joints All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or - Grade A safety glass minimum 4mm or glass butt-jointed to prevent gaps greater than 3mm Requirements apply to external face of double Openable portions of windows shall be screen External cladding Shall be covered, sealed, overlapped, backed or butt-jointed to prevent gaps greater than 3mm or Shall be protected by sarking type material applied over the outer face of the frame prior to fixing any External Doors Side Hung (including Behind bushfire shutters -, or external cladding Behind Screens -, or French doors, panel Vents and weepholes Shall be screened with a mesh with a maximum aperture of 2mm, made of corrosion resistant steel, Doors shall befold and bi-fold doors) bronze or aluminium, except where the vents and weepholes are less than 3mm, or are located in an a) non-combustible; or external wall of a subfloor space b) solid having min thickness of 35mm for the c) hollow core with non-conbustible kickplate Floors Enclosed NR d) hollow core protected externally by screen (Bearers, joists, Unenclosed NR e) fully framed glazed door, where the framin flooring) from a timber species form E2 NR Sub-Floors Enclosed Where doors incorporate glazing the glazing s (Posts, stumps, Unenclosed NR Joinery less than 400mm from horizontal surfa a) Bushfire-resisting timber or columns, etc) b) Timber species from E2 or Verandahs, decks, Decking may be spaced . Spaced decking is nominally spaced at 3mm; however that spacing may c) Metal or steps, ramps and range from 0-5mm during service d) Metal reinf PVC-U landings There is no requirement to enclose the subfloor spaces Joinery greater than 400mm from horizontal materials used to enclose a subfloor space less than 400mm from the ground shall comply as walls Door iambs Supports- NR Less than 400mm from horizontal surface Framing- NR a) Bushfire-resisting timber or Decking, stair treads, and the trafficable surfaces of ramps and landings less than 300mm from b) Timber species from E1 or glazed elements that are less than 400 from the surface of the deck shall be made from c) Metal or a) Non-combustible material; or d) Metal reinforced PVC-U b) Bushfire-resisting timber: or Greater than 400mm from horizontal surface c) Timber species listed in E1: or Weather strips, draught excluders or draught d) a combination of any items a), b) or c) including PVC-U for enclosed subfloor spaces Sliding Door Behind bushfire shutters -, or Balustrades, handrails NR Behind Screens -, or Tested Systems AS1530.8.1 at 12.5 kW / m² Glazed Door - grade A safety glass Joinerv less than 400mm from horizontal surface Window joinery - 650 kg / m² Timber Summary a) Bushfire-resisting timber or Remainder - 750 kg / m² b) Timber species from E2 or Roof a) Roof tiles, roof sheets, and roof covering accessories shall be non-combustible c) Metal or b) The roof/ wall junction shall be sealed to prevent openings greater than 3mm d) Metal reinforced PVC-U c) Roof ventilation openings shall be fitted with ember guards There is no requirement to screen the openab the screens shall comply with prescribed requ Sliding doors shall be tight- fitting in the frame Ember guards used to protect roof ventilation Ember guards a mesh with a max 2mm aperture made of con Sheet Sheet roofs shall-Water and Gas Above ground, exposed water and gas supply a) be fully sarked, except that foil backed insulation blankets may be installed over the battens; and supply pipes b) have any gaps greater than 3mm sealed at the fascia or wall line and at valleys, hips and ridges byi) a mesh or perforated sheet with a maximum aperture of 2mm, made of corrosion resistant steel, bronze or aluminium : or ii) mineral wool: or iii) other non- combustible material: or iv) a combination of any items i), ii) iii) above **Roof Penetrations** a) shall be adequately sealed with non-combustible material at the roof to prevent gaps greater than 3mm b) openings shall be fitted with ember guards. (not applicable to exhaust flues c) all overhead glazing shall be grade A safety glass Eaves linings, fascia a) gables shall comply as the same as walls b) eaves penetrations shall be protected the same as roof penetrations & gables c) eaves ventilation openings greater than 3mm shall be fitted with amber guards NA- with the exception of box gutters which shall be non-combustible and flashed at the junction with the roof with non-combustible material Gutters and downpipes shall be made from Bushfire shutters a) non- combustible material. or

PROJECT: **PROPOSED RESIDENCE**

SITE LOCATION: 204 BUNGOWER RD. MOOROODUC

b) timber species from E1, or

c) bushfire- resisting timber, or a combination of a), b), c)

CLIENTS: **RIVERWOLF HOMES**

(w) www.terneldesign.com.au lusive owner of this drawing, any infringement may result in legal action

Design and Drafting

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DRAWING TITLE

BUIL

s shall be a mesh or perforated nt steel, bronze or aluminum e from	sheet with	
es shall be made from		
ace shall be s blocks with no restriction on g e glazed unit s only ned	lazing methods	
e lower 400mm on the outside for the lower 4	00mm	
۱ ng is made from materials spec	ified for bushfire shutters, or	
shall comply with the glazing re	quirements for windows	
() ID		
surface NR		
NR seals shall be installed at the b	ase of side hung external doors	
ace		
le part of the sliding door. How	vever, if screened,	
irements s		
openings, sub-floor vents and rrosion resistant steel, bronze of	weepholes to be, or aluminum	
pipes shall be metal		
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	MINICC	SIZE
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724 DRAWN: M E: 09/09/2024	B.P.N: DP-	AD 44755
	SHEET NO:	9
DING PERMITS		

PROPOSED SOLUTION

It is proposed to construct stabilised rammed earth walls to the dwelling dining and living rooms and also to an alfresco feature wing wall.





The SRE walls are to be cement stabilised (~9% Portland cement content) and constructed in accordance with the best practice guidelines given within HB 195-2002 - The Australian Earth Building Handbook published by Standards Australia International Ltd and also in reference to Bulletin 5 Earth-Wall Construction produced by the CSIRO in 1987. Installation is to be undertaken by a contractor with experience in SRE wall construction.

The walls are to be constructed over a reinforced concrete slab on ground designed and certified by a registered engineer in accordance with AS2870 – 2011. Along with typical soil classification, abnormally moisture conditions, etc, AS2870 requires that the footing design take into account the applicable wall movement tolerance (general considered articulated full masonry per AS2870) including the amount and form of articulation to be provided.



Figure 1 - Example of an RE wall with exposed edgebeam and window over showing shrinkage joint. Photo courtesy of https://www.aseg.net/rammed-earth-building-gallery/

The structural design of the wall has been certified by a registered engineer in accordance with HB 195-2002. Structural aspects of the wall have not been assessed or considered by CodeCert Pty Ltd as part of this performance solution report. All structural adequacy provisions are considered to be the responsibility of the design engineer, with suitable certification of the design provided to the relevant building surveyor.

It has been noted that a 10MPa minimum compressive strength has been specified. As a minimum it is suggested that the engineer specify relevant testing to Appendix A HB195 to be $carried \ out \ and \ reported \ to \ the \ engineer/relevant \ building \ surveyor/architect/builder. \ Note$ that 10MPa is on the high side of compressive strengths achievable, which should be confirmed with the contractor and through testing prior to works commencing.

A lintel for the entry hallway opening should also be specified by the engineer .

Walls are specified as 300mm thick with reinforcing steel. Galvanised steel reinforcing should be specified by the engineer, at a minimum for all external walls where dampness may still occur within the wall.

The SRE wall is to be constructed with a minimum 150mm freeboard (distance of the base of the wall from the surrounding surface). This is to reduce the likelihood of the base of the wall having water pond or run against it during a flood/heavy rainfall event and to provide a termite inspection zone

The surface drainage surrounding the wall is to be constructed in accordance with the DTS provisions of the NCC given in clause 3.1.3.3(a), including falling away a minimum of 50mm over the first 1m.

3.1.3.3 Surface water drainage



- Stab-on-ground finished ground level adjacent to buildings: the external finished surface surrounding the stab must be drained to move surface water away from the building and graded to give a slope of not less than (see Figure 3.1.3.2)—
- 25 mm over the first 1 m from the building in low rainfall intensity areas for surfaces that are reasonably impermeable (such as concrete or clay paving); or (ii) 50 mm over the first 1 m from the building in any other case

Figure 2 - Extract from NCC2019

A damp-proof course (DPC) is to be provided between the SRE wall and the slab footing. This DPC may be provided through use of malthoid or a slurry of Bondal Silasec or similar applied to the slab prior to the first layer of earth being installed. A rebate is detailed to prevent any moisture entering at the wall/slab junction from migrating into the dwelling.

	IS	SDATE	AMENDMENTS
PROJECT: PROPOSED RESIDENCE			
AT: 204 BUNGOWER RD. MOOROODUC			



Where required by the engineer, control joints (to allow for articulation and shrinkage) are to be mechanically keyed per the engineers' details and suitably sealed as per Figure 3.2 of HB195, however adapted to suit the insulated setup proposed.



Figure 3 - Construction joint detail - HB195

During construction, ponding of water against the SRE wall is to be prevented. This is particularly the case on the internal slab side of the wall.

The following additives will be provided to the SRE wall to increase the water/damp resistance. All additives are to be provided in accordance with the manufacturer's instructions by an experienced contractor. Test patches are required to be undertaken prior to application of sealers to ensure a suitable finish.

- Tech-Dry Plasticure Provided as an admixture during the construction of the wall. Plasticure is a water repellent designed to make the wall permanently water repellent along with increasing salt and mould resistance.
- Tech-Dry Earth Binder To be applied as an internal water-resistant dust binding acrylic sealer. • Tech-Dry Earth Shield – To be applied to the external surface of the wall. As a solvent-based impregnant sealer, it will penetrate in the capillaries of the earth wall to provide further water repellent and dustsealing to the wall

Where windows and doors occur within the SRE wall, frames are to be sealed using a sealant compatible with both materials in line with the following diagram from Earth Building Association of Australia's Building with earth bricks & rammed earth in Australia ('EBAA') guidance book. Suitable sill flashings are to be provided, turned up at the rear and extending to face of all frames.



Figure 4 - Typical window detailing, noting the sill flashing and chamfered edge. Extract from Building with earth bricks and rammed earth in Australia



Figure 5 - Typical window detailing. Extract from Building with earth bricks and rammed earth in Australia

The top of the wall is to be suitably capped with either a cement/render capping/coping, metal flashing or other suitable method of flashing to prevent the direct exposure of the top of wall to weather. To the garage, this capping is to terminate over the roof flashing and fall towards the adjoining roof at a minimum 3 degrees in accordance with Standards Australia HB39:2015.



Figure 6 - Parapet flashing detail from HB39

Where the SRE wall occurs within wet areas, waterproofing must be provided in accordance with the DTS provisions. To the shower area it is expected that a suitable cement screed be utilised over the walls prior to the installation of a waterproofing membrane and tiles. These tiles are to terminate at a vertical waterstop installed at the intersection of the wall and glass shower screen. At the vanity unit the installed vessels (basins) are to be 75mm min clear from the SRE walls.



Figure 7 - Example of cement substrate of RE walling from EBAA



Figure 8 - Red line showing WPM to 1.8m min height with tiles over to DTS

