

APPENDIX 4 – DETAILS OF PROPOSED FENCE DESIGN AND INFRASTRUCTURE AT OPERATIONS BASE

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Attachments to Appendix 4

- Attachment 1: Proposed fence design
- Attachment 2: Proposed fence design (water crossing)
- Attachment 3: Operations Manager House (preliminary plan)
- Attachment 4: Wildlife Ecologist House (preliminary plan)
- Attachment 5: Field Ecologists/Land Management Officer Cabins (preliminary plan)
- Attachment 6: Visiting staff accommodation (preliminary plan)
- Attachment 7: Communal kitchen (preliminary plan)
- Attachment 8: Ablution block (preliminary plan)
- Attachment 9: Office (preliminary plan)

1 Summary

The proposal involves the construction of a feral proof fence designed in accordance with the drawings in Attachments 1 and 2, the location of which is shown in Figures A4-1 and A4-2. These are proven designs that have most recently been used for AWC's successful Mt Gibson Wildlife Sanctuary reintroduction project. Some subtle design improvements have been included to this proposal including the use of more plain support wires and changes to the gate mechanism.

Critical to ensuring the success of the Pilliga reintroduction project is the construction of an operations base to provide land management and science staff accommodation and operations facilities close to the fence location (location shown in Figure A4-2). The operations base ensures that staff are on hand to respond to issues such as damage to the fence or security of the fenced area.

The operations base design has been developed to be consistent with the principles of the NPWS facilities manual, OEH sustainability assessment guidelines, NPWS policies and procedures. The design and layout also minimises visual impact through a set-back from public roads, and incorporates designs that use colour schemes that will blend into the vegetation of the Pilliga forest. Further, the standard design principles are reflective of Australian designs and traditions with a strong use of colour-bond cladding and roofing.

The operations base will aim to be ultimately self-sufficient for energy and water, utilising rainwater harvesting off all buildings, and solar PV systems to supplement power supply. Notwithstanding this, a generator power supply will service the base during the initial phases of construction, and a bore may be installed should rainwater harvesting prove insufficient – particularly for providing suitable quantities of water for fire-fighting.

As shown in the layout diagram in Figure A4-3, key elements of the operations base include:

- accommodation:
 - 3 bedroom house for the Operations Manager (OM)
 - 2 bedroom house for the Wildlife Ecologist (WE)
 - self-contained cabins x 4 for the Field Ecologists (FE) and Land Management Officers (LMO)
 - block accommodation with 8 single rooms for visiting personnel;
 - communal living area (including kitchen and laundry); and
 - communal ablutions block.
- workplace facilities:
 - office for up to 8 people
 - large workshop of at least 20 m by 9 m, of a height sufficient to park machinery, with a lockable bay for secure tool and equipment storage
 - private bushfire shelter
 - power system with solar, batteries and 20 kVA diesel generator
 - rainwater storage, and
 - chemical and general storage.

The base will be self-supporting with services such as:

- solar power generation supplemented with a diesel generator;
- gas for cooking and water heating;
- rainfall capture; and
- compost and offsite waste disposal.

2 Height and siting

The project involves establishment of new buildings off Harris Road, within the Pilliga State Conservation Area (SCA). The site is approximately 600 m from the intersection of Harris Road and Railway Survey Road, and some 70 km from the town of Narrabri. The proposed site contains no existing infrastructure, however the site has had previous usage during logging operations, and the planned operations base makes use of old 'snigging' tracks to minimize further disturbance. The site is relatively flat, with a gentle fall to Coghill Creek, and is not located on ridgelines, hill-tops or in drainage flow-paths.

Public access will be strictly regulated with no access to unauthorised persons to the operations base and feral predator-proof fence area. This restriction will aid in security, safety and the success of the proposal. Authorised persons include representatives of AWC and NSW including our partners who are engaged in project delivery. Examples include resident AWC staff; visiting AWC staff; NSW Government staff; contractors; volunteers involved in activities such as bird surveys; external researchers such as university students and, from time to time, guests involved in promoting awareness and outreach (e.g. representatives of media, Federal and local government, local community organisations, representatives of other conservation projects and participants in the philanthropic sector relevant to conservation).

In addition to the factors noted above, AWC have also considered the following when selecting the proposed site:

- Positioning for ease of access by AWC staff to the proposed feral predator-proof fence area to maintain patrols (2-3 patrols per week) and provide rapid response in the event of impact to the fence, noting that other conservation fence projects have seen a significant loss of native species where the fence has not been patrolled or maintained adequately (for example, Currawinya NP, QLD).
- Advice from OEH staff.
- Emergency egress in the event of a critical incident such as bushfire. The site offers three routes of egress, as well as using natural and artificial fire breaks to improve fire security (Coghill Creek, Harris Road, Railway Survey Road).
- Positioning out of potential flood zones.
- Positioning the site off a major public-use road to assist with security and dust impact on staff and buildings.
- Avoiding threatened native flora and fauna and ecological communities.
- Complying with Rural Fire Services (RFS) requirements i.e. Area Protection Zones (APZs) and establishment of fire and maintenance tracks in a bushfire prone area Fire Danger Indicator (FDI) 80.
- Privacy and comfort for AWC staff living and working at the site.
- Cultural and heritage surveys.

Numerous alternative options were considered including purchasing or leasing nearby farmland and alternative sites within the SCA, before selecting the proposed site which was identified to best meet the above considerations.

The proposed site is disturbed, vegetation having been cleared for grazing by early settlers. The regrowth is mapped as predominantly PCT 411 Buloke, a small amount of PCT 88 Pilliga Box and a smattering of PCT 399 Red Gum. The topography of the site is flat and is currently unimproved land, however as mentioned above, is disturbed land.

It is anticipated that up to 11 ha of vegetation will be cleared without significant impact to the local environment. AWC intends to reduce vegetation clearing where possible through retention of canopies and planting of native species subject to RFS requirements.

Surveys undertaken by suitably qualified consultants engaged by AWC, supported by members of the local aboriginal land councils, identified no cultural or heritage sites within the building envelope.

The buildings will be of single storey design with pitched roofing for the main buildings and skillion roofing over decking to maximise use of the natural elements (i.e. capture sun for photovoltaic (PV) panels fitted to building roofs). Spacing between buildings allows for passive design elements to be implemented to reduce greenhouse gas emissions, along with affording privacy and liveability to resident AWC staff, and providing shelter from Harris Road (set-back not less than 40 m, see Figure A4-4). Harris Road is a low usage track (by the public) partly given it is a loop track, and not a throughway. The spacing also ensures no overshadowing will occur.

A private bushfire shelter will be installed to provide a place of refuge in the event of a significant wildfire incident that prevents staff within the base exiting to a safe area. The placement of the shelter provides direct access to the accommodation areas – those points where staff may be caught unawares of fires. The shelter will be a large, insulated, steel cubicle, installed below ground level, and is designed to provide refuge for up to 1 hour – whilst the fire front passes.

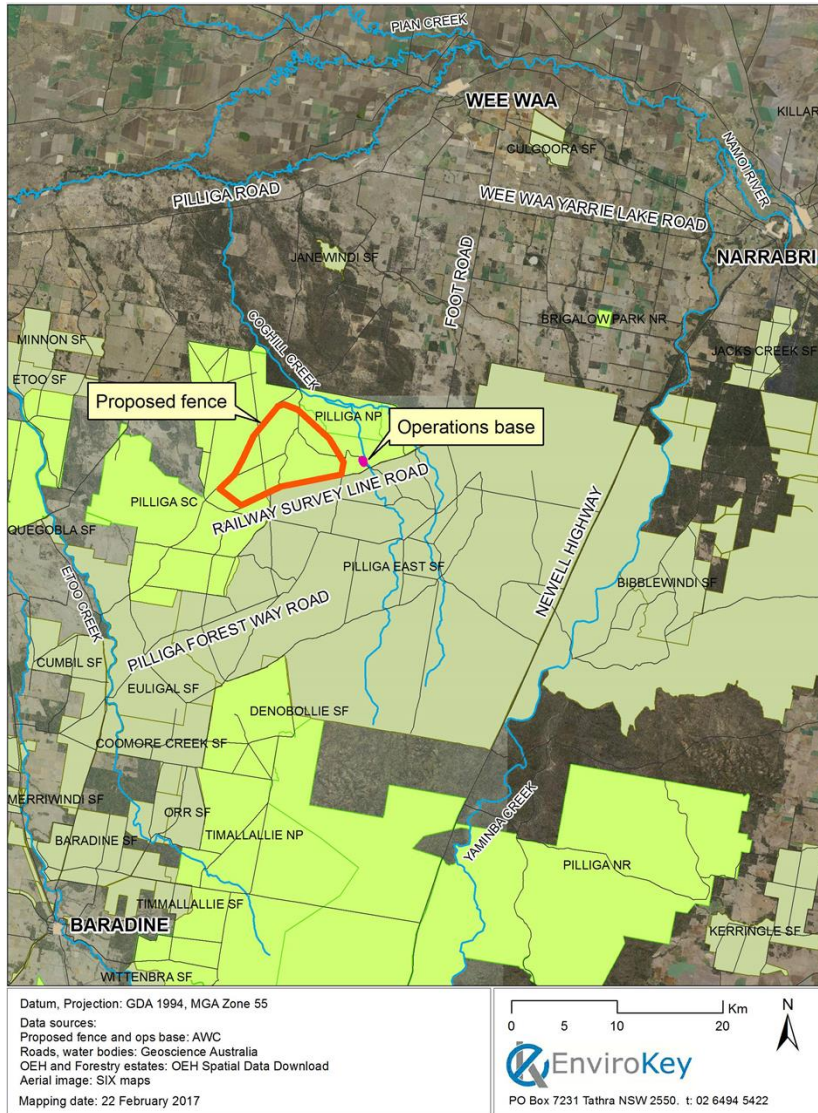


Figure A4-1: Regional settings of the proposed fence and operations base

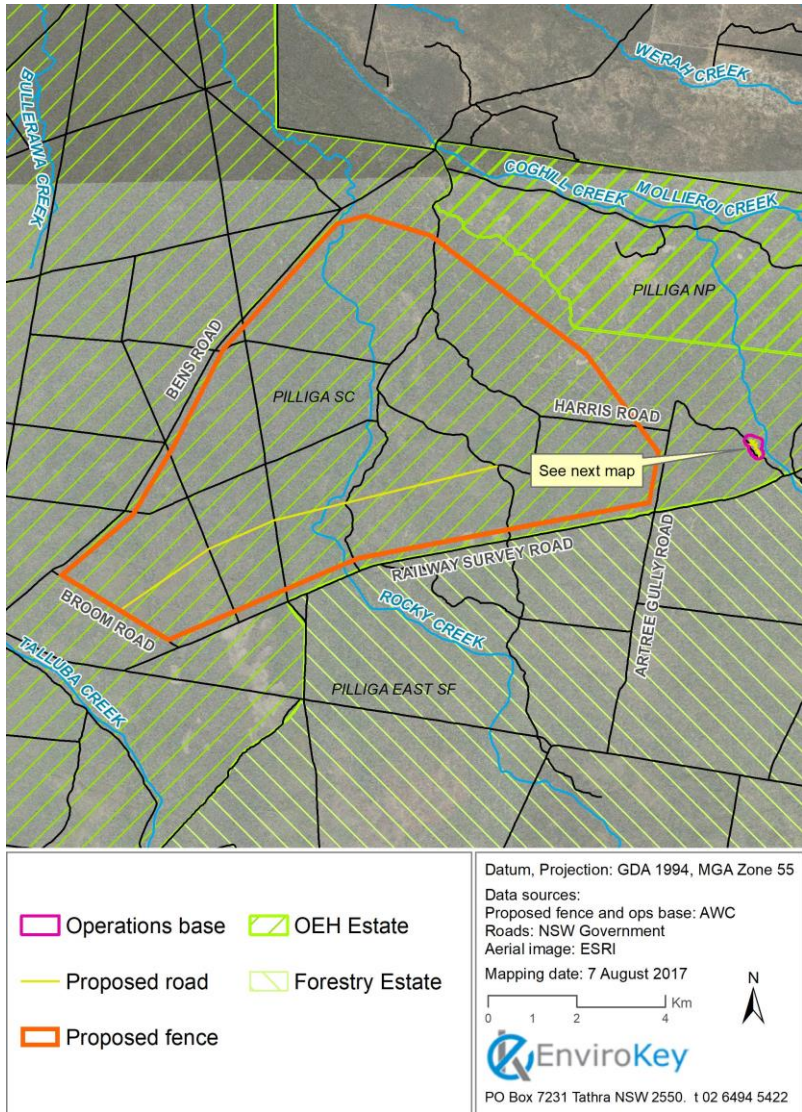


Figure A4-2: Proximity of proposed fence and operations base

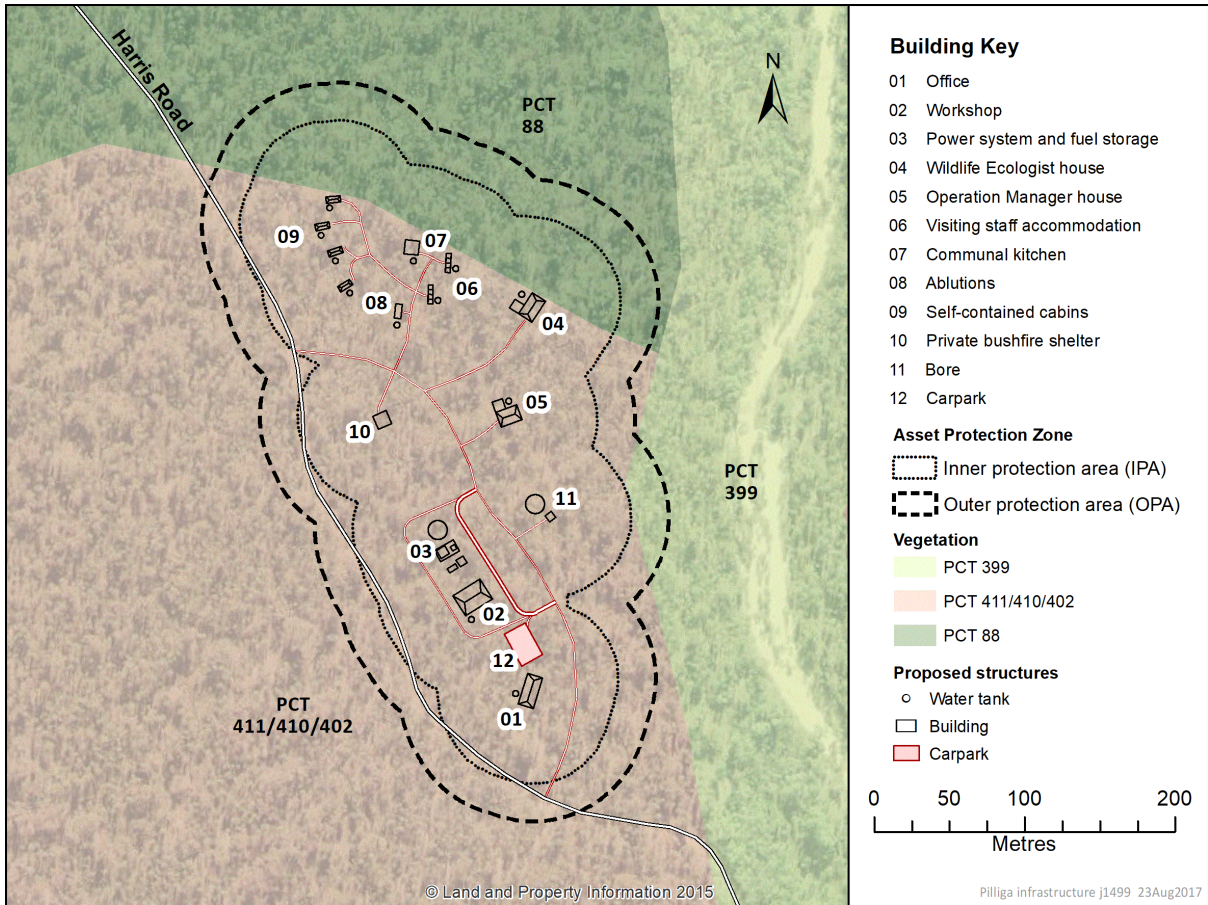


Figure A4-3: Site map of proposed operations base

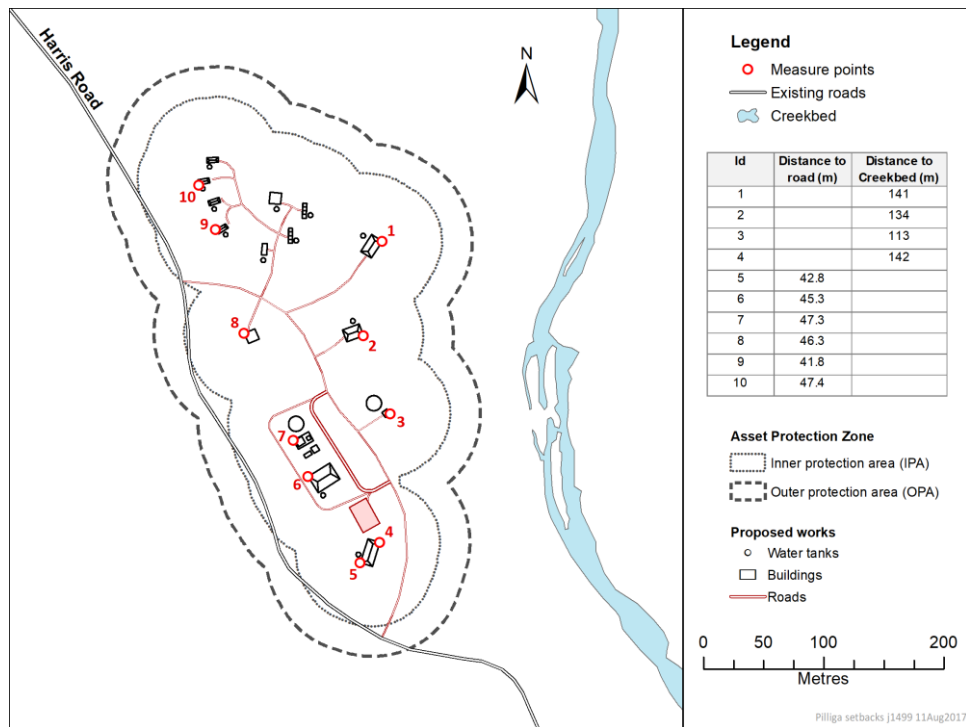


Figure A4-4: Site map of proposed operations base with setbacks

Photographs of the proposed operations base site showing vegetation



Photo:AWC



Photo:AWC



Photo:AWC

3 Separation and setbacks

As detailed previously, AWC has sited each building to allow for passive design elements to be implemented to reduce greenhouse gas emissions, along with affording visual and acoustic privacy to AWC staff, planting of native species and ensuring set-back from Harris Road.

The operations base has two main points of access and egress to Harris Road which will be clearly sign posted, 'authorised persons only', with relevant contact information for key AWC contacts. These access points allow emergency egress, while creating a clear delineation between living and working areas. AWC will install wayfinding signage within the operations base (which will only be visible within the operations base) and may install low-key fencing along Harris Road to further discourage entry by unauthorised persons. In addition, all buildings will be secured when not in use and security features such as sensor lighting (at dark) will be installed where required. All signage will be compliant with NSW Government requirements and any night lights with the NSW Dark Sky Planning Guide.

The building designs and layout of the operations base fuse to create living and working spaces open to experiencing the natural sights and sounds while blending into the local environment.

The building designs will be consistent with the requirements of the NSW Dark Sky Planning Guideline and all other legislative and NSW government requirements.

4 Density and footprint

The operations base has been planned to minimise, where possible, the footprint whilst also remaining consistent with the essential considerations as detailed previously including compliance with RFS planning, visual and acoustic privacy, setback from Harris Road, and to maximise passive design elements. There are no extraneous or unnecessary design elements.

The building designs offer minimal ground or soil disturbance and are predominantly of a prefabricated modular construction (built off-site), transported for installation on ground penetrating concrete footings. In addition, footings will be required for the verandahs and carports. The workshop and battery storage areas will require concrete slabs which will be removed if required at the completion of the project (refer to deconstruction section of this document).

The layout of the operations base has been planned to ensure the best outcome for the project balancing the requirements of NPWS and OEHL, the proposed activity, AWC staff, the environment and most importantly to ensure safety of staff during emergency incidents such as bushfires.

The operations base is self-sufficient and therefore careful consideration has been made when locating service infrastructure and communal ablutions, living and working facilities to minimise energy use, water use and wastage. Based on AWC's experience at more than 25 managed properties throughout Australia in mainly remote areas, AWC has designed and sited the buildings and services to optimise their use and efficiency.

5 Design and appearance

AWC will utilise simple and practical designs that blend with the natural landscape of the Pilliga forest, as well as being suitable to the local environmental conditions. The design intent is to:

- Be respectful and appropriate to the location and the parkland setting.
- Be contemporary and Australian, without being imitative or false in its intentions.
- Incorporate high quality materials and a subdued and complementary colour palette.
- Be fit for purpose.
- Be consistent with NPWS facilities development policies and procedures.

A colour palette reminiscent of the sclerophyll forests that dominate the Pilliga forest with shades of blue, grey and white, complemented with wood tones, is used throughout the buildings. Use of colour-bond for roofing and cladding, with the addition of covered verandahs, evokes the Australian spirit of the design.

AWC has opted for low maintenance, robust and quality flooring, fitting and fixtures to ensure the buildings remain at a high standard throughout the life of the project as well as materials resistant to environmental risks such as termites with steel and/or treated pine frames, concrete footings and use of 'Modwood flameshield' or equivalent incorporated into the designs.

The designs reflect modern living and working requirements, with open spaces and privacy afforded to accommodate the resident AWC staff and families for the duration of the project. In addition, verandahs with skillion roofs incorporate generous outdoor living for the temperate climate and make the most of the natural setting.

The accommodation and office buildings will be modular and prefabricated (constructed off-site) to a high quality using reputable builders with Australian made materials used where possible. The buildings and all materials will meet the Building Code of Australia (BCA) and other relevant Standards and Statutory Requirements such as the Premises Standards and AS3959-2009 Construction of buildings in bushfire-prone areas. In addition, as per the requirements of the National Construction Code (NCC), a National House Energy Rating Scheme (NatHERS) rating of 6 stars for the residential buildings (excluding short-term accommodation) will be achieved. For the short-term accommodation, office and communal areas, AWC will aim to achieve a National Australian Built Environment Rating System (NABERS) rating of 4 stars.

In addition, all construction will be undertaken in accordance with relevant Park Specific Strategies and in accordance with relevant Approvals. AWC will meet the requirements where applicable of the:

- NSW Government Sustainability Policy,
- NSW State Environmental Planning Policy (Infrastructure),
- NSW National Parks Construction Assessment Procedure,
- NSW Dark Sky Planning Guideline,
- DECCW Park Facilities Manual,
- DECCW Construction Assessment Procedures,
- NSW Planning for Bushfire Protection,
- Disability (Access to Premises – Buildings) Standards 2010,
- National Parks and Wildlife Act 1974,
- NPWS Sewage Manual, and
- Any other relevant requirement.

Photograph of sclerophyll forests in the Pilliga inspiring the colour palette



Photo:AWC

Colour Palette inspired by sclerophyll forests in the Pilliga



6 Orientation, solar access and ventilation

Where possible, the buildings will be sited to optimise the natural elements of the sun and wind to ensure capture of winter sun, protection from hot summers and taking advantage of any cool breezes in summer. Using passive design strategies, the buildings aim to achieve relatively comfortable temperatures all year round, subsequently reducing greenhouse gas emissions.

Natural ventilation will be enhanced with effective design of shading (use of block-out blinds) and windows to encourage sun penetration in winter and protect the spaces in summer. Where possible this effect will be further enhanced through selection of appropriate floor

coverings as well as through use of high ceilings, pitched roofing, skillion roofing, and ceiling fans.

Insulation of floors, walls and ceilings combined with building position, verandahs, skillion roofing, window placement and blackout blinds will assist with creating thermally passive spaces. The aim is to stabilise internal temperatures making spaces cooler during the day and warmer at night.

Clear glazing will promote daylight penetration with block-out blinds to protect from glare and excess radiant heat where necessary. Solar energy will be captured through PV panels installed on the roof of all buildings. Subject to water quality testing, solar hot water systems with gas boosters may be utilised.

Building occupants (staff) will have the ability to manually adjust block-out blinds and to use air conditioning systems in extreme heat and cold. Noting that as the buildings are self-sufficient with all energy generated on site, staff will be mindful of limiting use of mechanical heating and cooling devices.

AWC will aim to achieve a NatHERS rating of 6 stars for all new residential buildings and NABERS rating of 4 stars for the office and communal living areas.

7 Amenity

The site of the operations base has no adverse impact on significant viewpoints. Vegetation (mainly dense regrowth on an otherwise degraded area) will only be cleared to allow for the construction of the buildings and to meet the requirements of the RFS (inner and outer protection areas). With the exception of the construction period, the buildings are not expected to produce on-going noise, dust, odour or similar that impacts adversely or affects the tranquility or amenity of the EMA project area.

During construction periods any potential noise or dust impacts will be addressed via the preparation of a detailed Construction Management Plan (CMP) prior to the commencement of works. The CMP will outline such detail as construction hours, use of equipment and tools, waste management, traffic management, noise management, dust management, work health safety, etc.

This proposal will significantly benefit the public by conserving the Pilliga, as well as restoring regionally extinct fauna, and protecting communities of important and sensitive flora. Further, opportunities for employment, commercial supply arrangements, education and enjoyment at the Pilliga will be increased by the proposal. Overall, it is considered that the proposal will result in immense public benefit, without any significant adverse impacts on the amenity.

8 Materials choice and embodied energy

The design of the operations base will aim to minimise impacts to the environment whilst also providing opportunities for minimising carbon emissions. Designs will aim to deliver buildings that minimise greenhouse gas emissions, with an overall goal of becoming carbon neutral.

To support this goal, and to enhance opportunities for the local community, materials and labour will be sourced locally, including the engagement of local skilled and unskilled labour

to assist with the implementation and completion of buildings, and for ongoing maintenance. There is no existing infrastructure at the proposed site for the operations base.

Materials will be prioritised to create healthy buildings through the selection of low VOC sealants, adhesives and paints and low/zero formaldehyde composite wood products. Low environmental impact products, including reused or FSC-certified timber and high recycled content materials will also be prioritised. Floor finishes and furnishings will be selected from GECA-certified (or similar) product lists where available.

Visitor accommodation will be sourced from quality secondhand stock, which will be refreshed with colour-bond cladding, verandahs with skillion roof and upgrades as necessary to meet the design intent of the operations base buildings.

All buildings, with the exception of the workshop and infrastructure services, will be modular and prefabricated (off-site) using Australian contractors to meet the BCA and any other relevant requirements and standards as described above. The workshop will be erected on-site from kit form, while infrastructure services will be erected on-site by skilled labour. Equipment and materials will be sourced locally.

Where possible, steel will be used for framings to assist in combating termites, a known environmental local risk.

9 Energy use

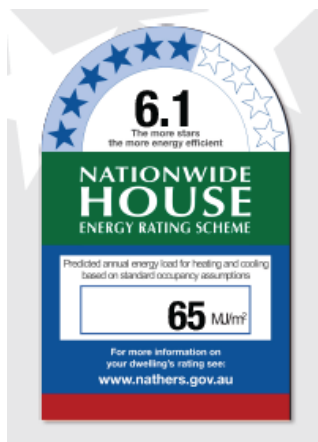
Due to the location and nature of the site, the operations base will be self-sufficient with the majority of energy sourced from a hybrid power system combining PV panels, battery storage and diesel generation. In addition, gas will be used for cooking and water heating. The operations base development aims to minimise demand for energy, selecting energy efficient appliances where possible, and ensuring strategies are in place such as:

- Selecting star-rated equipment with a minimum 4-star rating where possible.
- Using LED lighting and other low energy lighting where possible.
- Applying passive design elements to moderate room temperatures reducing the need for artificial heating and cooling.
- Selecting low-energy, high-efficiency inverter air-conditioning systems for limited use.
- Houses will aim to achieve a minimum NatHERS 6 star energy rating.
- All other buildings (with exception of the workshop) will aim to achieve a NABERS rating of 4 stars. This will be measured through self-assessment.

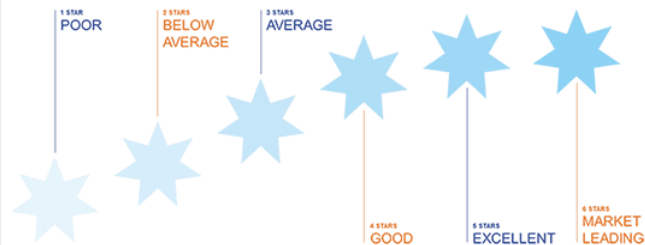
AWC has addressed the above considerations relevant to this proposal in previous sections of this document.

The workshop, ablutions block and infrastructure services structures will not be subjected to the rating system due their type of use, however as noted above AWC is conscious of minimising energy use as the operations base is self-sufficient generating the majority of its energy through the hybrid power system.

Ratings AWC is striving to achieve for the operations base



THE NABERS RATING SCALE



10 Water use

The remote location of the operations base necessitates that the base must be self-sufficient with rainfall harvesting from available roof space, and where rainfall harvesting proves inadequate, the use of a bore to access ground water. The use of a bore will be subject to an assessment of rain harvesting and accessibility of the groundwater table and water quality.

It is not anticipated to recycle grey water (typically used on gardens) as gardens will not be established within the SCA. Strategies to minimise water use will include:

- Selecting low-flow Water Efficiency Labelling and Standards (WELS)-rated fittings and fixtures, where available.
- Selecting WELS-rated appliances and equipment where available.
- Maximising rainwater capture through design.
- Meeting the requirements of the OEH Park Facilities Manual and consideration of the NPWS Sewage Manual.

AWC has incorporated the relevant above considerations in its design.

As the site will be self-sufficient, AWC will not seek to obtain an accredited rating for water use, however AWC staff will be conscious of minimising water use due to the operations base water source being limited to local rain capture and a single bore.

11 Miscellaneous materials

As described in previous sections, new materials will be prioritised to create healthy spaces through selection of low VOC sealants, adhesives and paints and low/zero formaldehyde composite wood products. Materials containing PVC, volatile organic compounds, copper chrome arsenate and herbicides and pesticides will also be avoided where possible.

12 Waste management and recycling

A Waste Management Plan (WMP) will be developed for the Pilliga Operations Base. The WMP will detail:

- Collection of recyclable materials using receptacles located adjacent to the workshop. This would typically include paper and card products, aluminum and steel, and glass. The actual recycling will be subject to that able to be managed with local suppliers.
- Selection of materials and products that minimise extraneous wrappings and packaging.
- Installation of septic tanks and leach drains (or equivalent) for each accommodation and office unit with waste drainage. Sewerage management systems will be installed in accordance with relevant regulations and the NPWS Sewage Manual, and no closer than 130 m from watercourses.
- The removal of all trade waste from the construction of the fence and operations base. No trade waste will be buried or disposed of on site.

13 Sustainability during construction

AWC will ensure that the buildings are consistent with and satisfy the requirements of the Building Code of Australia (BCA), Australian Standards, legislation (such as bushfire and disability) and any other OEH requirements (such as the Facilities Manual and Dark Sky Planning). Typically this will be achieved through engaging a BCA consultant.

The BCA consultant will issue certifications to prove compliance such as Certificate of Design Compliance (CDC) and an Occupancy Certificate. In addition, contractors will provide NatHERS compliance confirming the houses achieve the 6-star rating. AWC will conduct NABERS surveys of the visitor accommodation, communal buildings and office using the NABERS suite of tools provided online.

The practical completion (PC) milestone of each building will not be accepted until proof of compliance is received.

A construction management plan (CMP) will be drafted prior to commencement of construction, detailing construction hours, use of equipment and tools, waste management, traffic management, noise management, dust management, work health safety, etc. during construction. In addition, any works on site need to comply with the AWC PSS plans including Work Health Safety Management Plan (WHSMP), Environmental Management Plan (EMP) and any other relevant requirements. A project risk assessment will also be undertaken with staff, contractors and relevant visiting stakeholders being required to sign on to the risk assessment.

These requirements will be detailed in contracts and will be enforced through contract administration activities such as reviewing plans to ensure they comply with requirements, certifying contract works milestones (linked to progress payments) are achieved as agreed, conducting safety audits during works, etc.

In addition, AWC will ensure reputable and registered contractors are engaged for the works.

14 Sustainability during operation, ongoing use and deconstruction

During the operation of the facilities, energy and water use and waste generation will be monitored and reviewed periodically to ensure that the buildings are performing optimally and in-line with best practice. This includes monthly reviews in accordance with AWC operations of fuel and energy usage.

The maintenance requirements will be developed to be consistent with NPWS Facilities Manual or as otherwise agreed.

The maintenance requirements will be informed by environmental monitoring standards, as well as detailed frequency and specific requirements. Generally, however maintenance will occur as needed to ensure that the buildings remain in good condition and fit for purpose. Maintenance activities and asset condition will be provided in a format consistent with OEH's Asset Management System (AMS).

The design of facilities minimises impacts associated with decommissioning, should the OEH decide to decommission in the future. For instance,

- use of prefabricated and modular buildings that may be removed upon completion of the project;
- limiting ground disturbance and penetrations where possible;
- use of reputable and registered builders and contractors;
- use of long-life materials (for example, galvanized wire and steel products).

15 Contribution to park management activities

The contributions the proposal offers include:

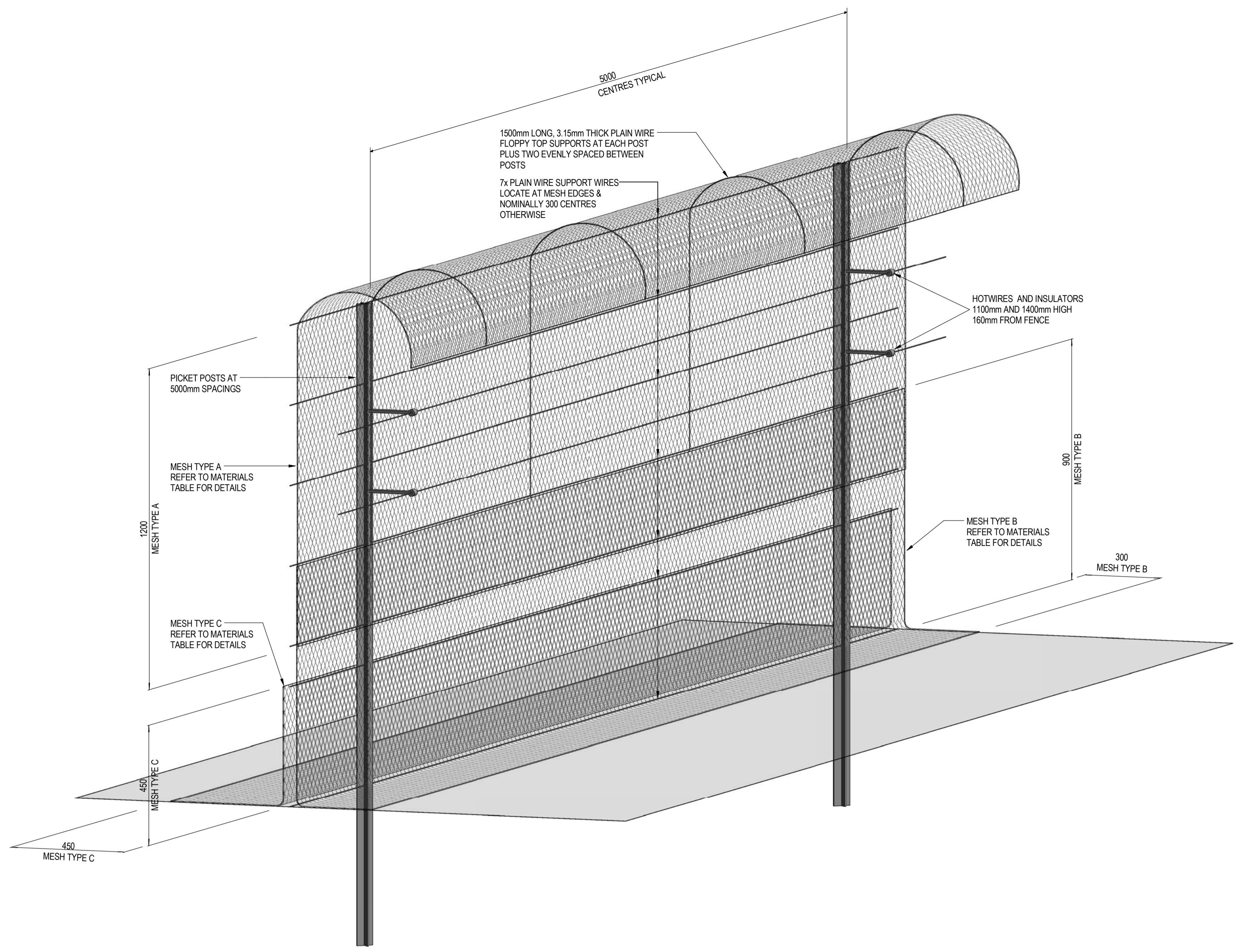
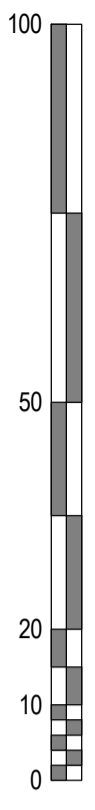
- A high likelihood of success in reintroducing mammal species which are listed as regionally extinct in NSW and for which predation by foxes and feral cats is the most significant threatening process.
- Substantial increase in the population of at least six threatened mammal species, currently listed as extinct in NSW.
- Substantial benefits for other species, including many species listed as threatened in NSW, as a result of the removal of feral animals including, but not limited to, Eastern Pygmy-possum, Koala, Black-striped Wallaby and Pilliga Mouse.
- Significant increase in scientific knowledge as a result of the proposal.
- Restoration of ecosystem processes such as digging/turnover of soil by small mammals.

The Pilliga operations base will be developed primarily for use by representatives of AWC and NSW including our partners who are engaged in project delivery. Examples include resident AWC staff; visiting AWC staff; NSW Government staff; contractors; volunteers involved in activities such as bird surveys; external researchers such as university students and, from time to time, guests involved in promoting awareness and outreach (e.g. representatives of media, Federal and local government, local community organisations, representatives of other conservation projects and participants in the philanthropic sector relevant to conservation).

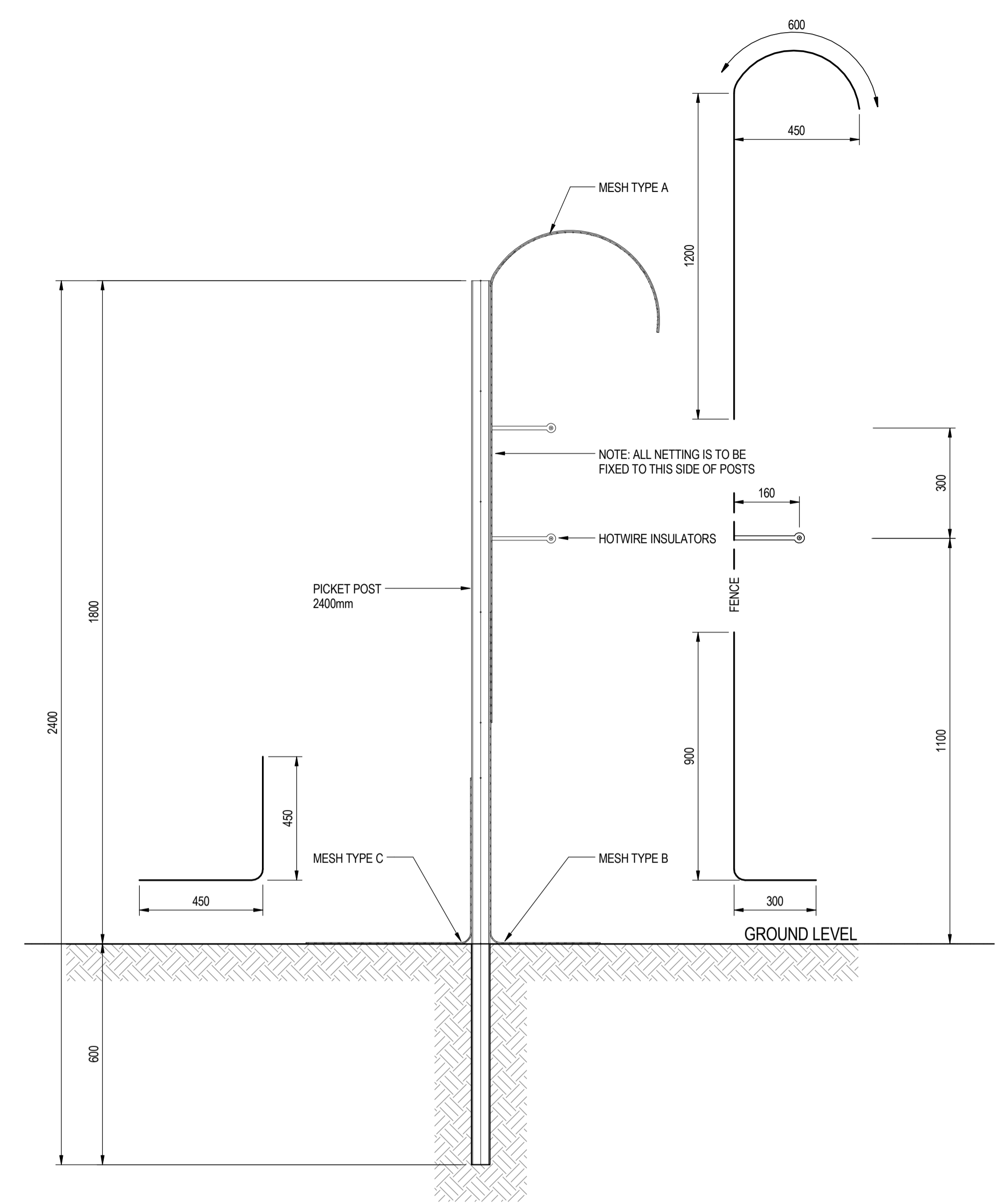
The establishment of the operations base plays a key role in realising the benefits of the proposal, including:

- it is essential to ensure the integrity of the fence and therefore secure the environmental benefits of the project including the reintroduction of threatened mammals;
- it is essential to adequately support the very substantial increase in scientific activity that will occur and which will require scientists to be based in the Pilliga;
- it will play a critical role in supporting public education and stakeholder engagement activities; and
- it will deliver economic benefits through the proposed investment in local communities in the establishment of the base and during the ongoing operation of the project.

Upon completion of the reintroductions, facilities for improving and increasing park visitation will be developed including campground and education facilities. These facilities will be subject of future reviews.



FENCE ISOMETRIC



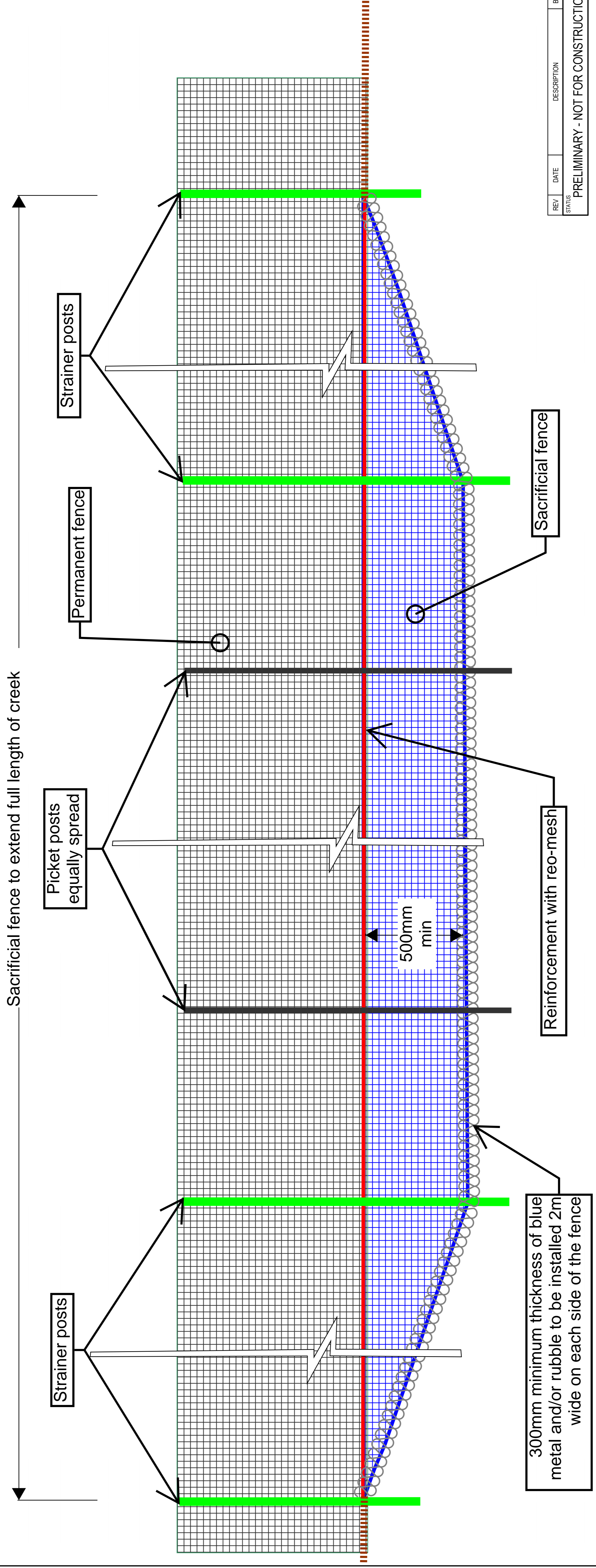
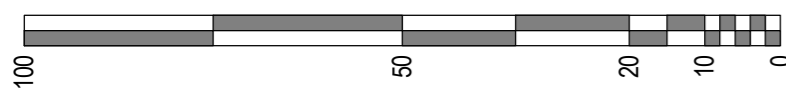
TYPICAL SECTION
1:10

MATERIALS GUIDE						
MARK	MATERIAL	COATING	GAUGE	DETAILS	COMMENTS	QUANTITY
A	1800mm NETTING	HEAVY GALVANISED OR BETTER	1.4mm	40mm APERTURE		
B	1200mm NETTING	HEAVY GALVANISED OR BETTER	1.4mm	30mm APERTURE		
C	900mm NETTING	HEAVY GALVANISED OR BETTER	1.4mm	30mm APERTURE	NETTING WRAPS AROUND PICKETS	
	2.5mm PLAIN WIRE (SUPPORT PLAINS)	HIGH TENSILE	2.5mm		7 SUPPORT WIRES	
	2.5mm PLAIN WIRE (SUPPORT PLAINS)	HIGH TENSILE	2.5mm		2 HOT WIRES	
	3.15mm PLAIN WIRE (FLOPPY TOP SUPPORTS)	HIGH TENSILE	3.15mm		1500mm SECTION OF WIRE AT EVERY PICKET, AND TWO SPACED BETWEEN PICKETS	
	TIE WIRE				ROLLS OF TIE WIRE TO TIE PLAINS TO POSTS AND PICKETS	
	C-CLIPS	HEAVY GALVANISED/LONG LIFE			NETTING TO BE CLIPPED IN A MANNER TO MINIMISE OPENINGS	
	PICKETS 2400mm	HEAVY GALVANISED			EVERY 5m	
	INTERMEDIATE POSTS 80nb	HEAVY GALVANISED			ALLOW FOR A POST EVERY 500m. SPACING OF INTERMEDIATES MAY VARY AND WILL BE FINALISED AT TIME OF ORDERING	
	STRAINER ASSEMBLIES (INCLUSIVE OF ALL FIXINGS): • MAIN POST 80nb • END POST 50nb • TOP RAIL 40nb	HEAVY GALVANISED			ALLOW FOR STRAINER ASSEMBLIES ON CORNERS AND GATES. QUANTITIES YET TO BE DETERMINED	
	INTERMEDIATE POSTS 40nb (INCLUSIVE OF ALL NECESSARY FIXINGS)	GALVANISED			USED WHERE THERE IS A SLIGHT ANGLE IN THE FENCE, ON INTERMEDIATE POST WHERE STRAINER ASSEMBLY IS NOT REQUIRED. FINAL QUANTITIES MAY VARY	
	HOT WIRE STAND-OFFS AND INSULATORS TO STAND WIRES 160mm OFF THE FENCE				TWO PER POST (INCLUDES ALL PICKETS, STRAINER POSTS AND INTERMEDIATE POSTS)	

D	15/03/17	RE-ISSUED FOR TENDER	DC	KH
C	01/02/17	RE-ISSUED FOR TENDER	DC	KH
B	17/01/17	ISSUED FOR TENDER	DC	KH
A	20/12/16	ISSUED FOR CLIENT REVIEW & APPROVAL	DC	KS
REV	DATE	DESCRIPTION	BY	APPD
STATUS FINAL				

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CLIENT	AUSTRALIAN WILDLIFE CONSERVANCY			
PROJECT	FERAL PROOF FENCE			
TITLE	FENCE DETAILS			
SCALE	As indicated @ A1	DATE	DESIGNED KH	DRAWN DC
CHECKED KH				
JOB No	16-396	DRG No	S1.01	REV D



REV	DATE	DESCRIPTION	BY	APPD
STATUS: PRELIMINARY - NOT FOR CONSTRUCTION				

pritchard francis
 civil and structural
 engineering consultants
 Level 1, 439 Roberts Road
 Subiaco WA 6008
 PO Box 2700
 Subiaco WA 6004
 Telephone: (08) 9382 3111
 admin@prfeng.com.au

CLIENT	AUSTRALIAN WILDLIFE CONSERVANCY
PROJECT	FERAL PROOF FENCE

TITLE	Sacrificial Fence Across Creek Schematic Layout			
SCALE	@A1	DATE	DESIGNED	DRAWN
JOB No	16-388	DATE	DESIGNED	DRAWN
			Author	Checked
			SK01	REV
				Checker

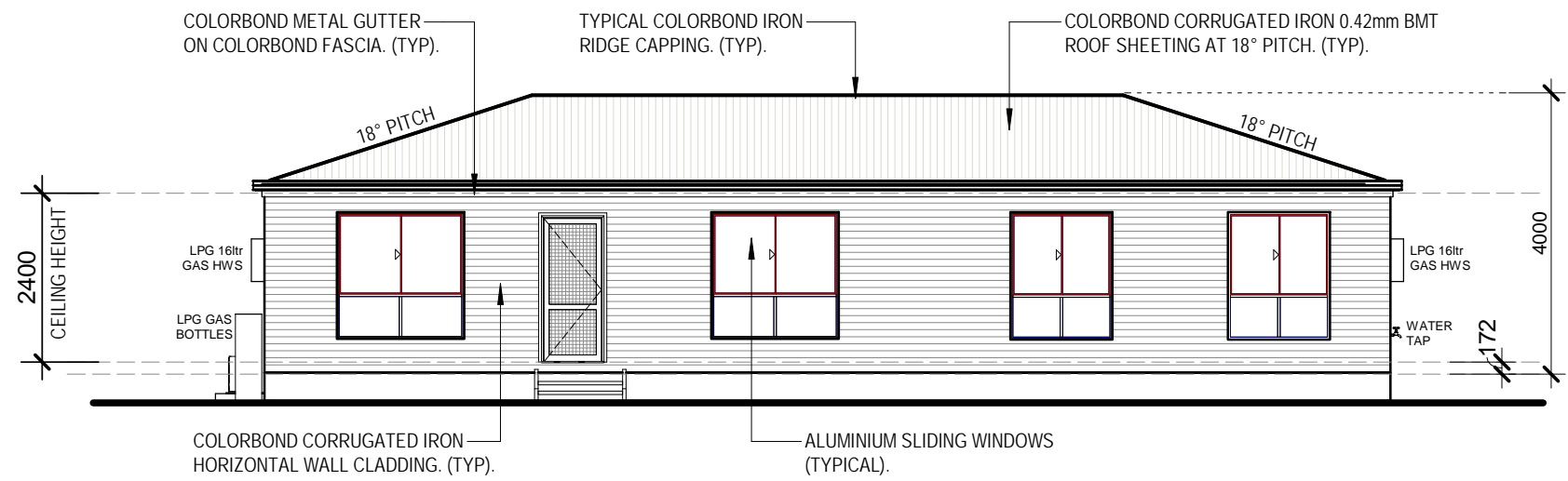
AREAS

Dwelling 121.60m² (13.08 SQS)

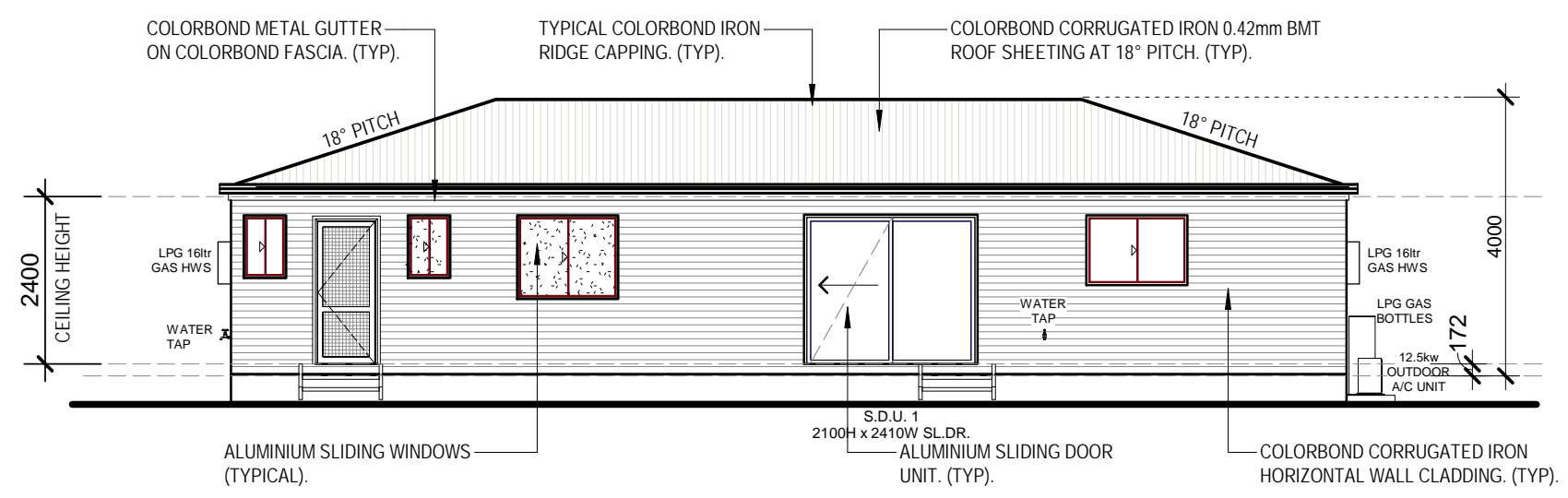


PROPOSED FLOOR PLAN 1:100

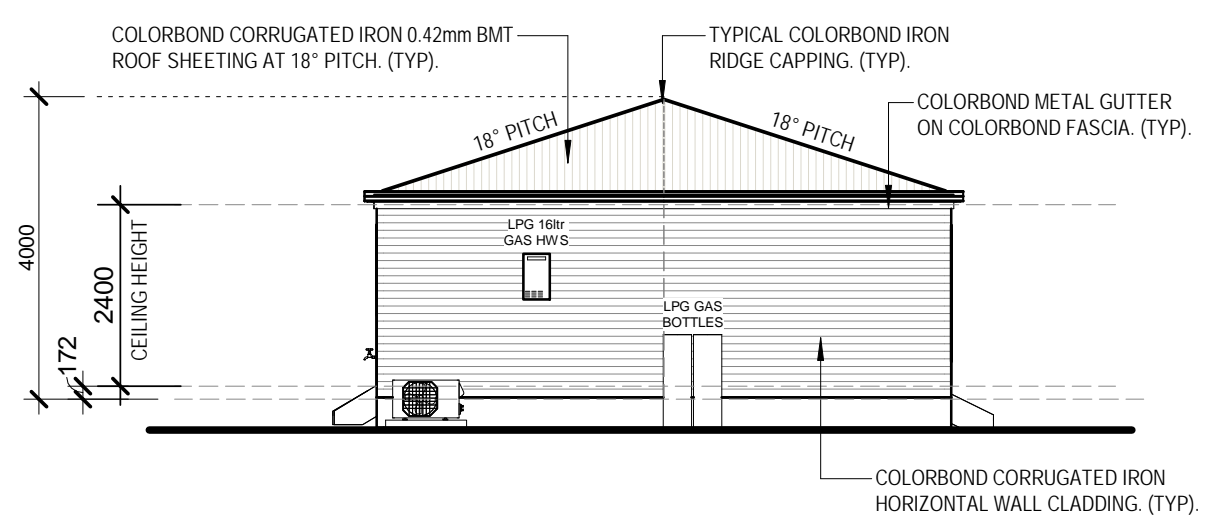
◆ S.A.
 SMOKE ALARMS - INSTALL AC POWERED ALARMS WITH BATTERY BACK-UP AND BE INTERCONNECTED WHERE THERE IS MORE THAN ONE ALARM IN ACCORDANCE WITH B.C.A. PART 3.7.2 - 'SMOKE ALARM'



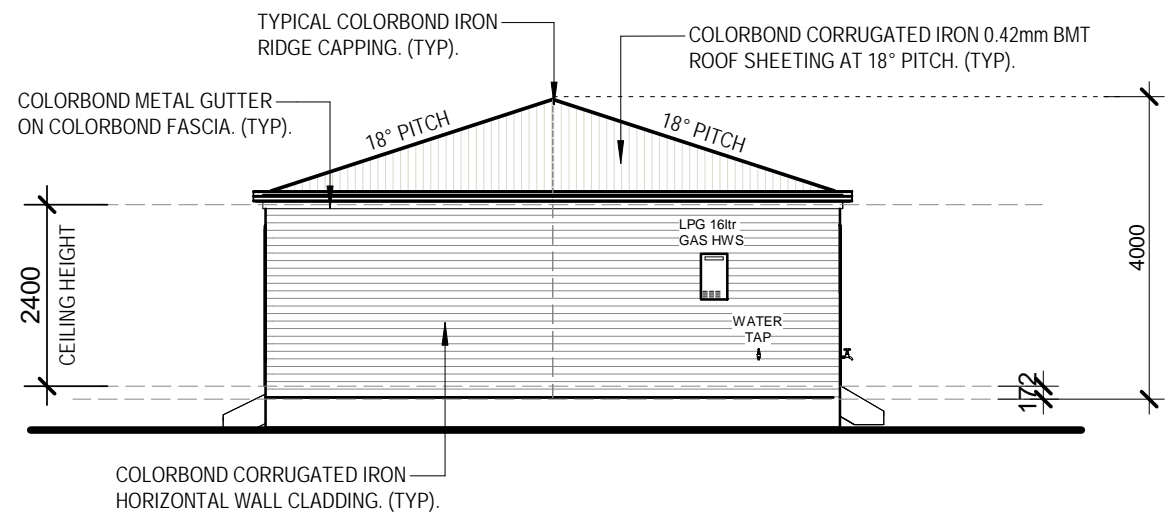
PROPOSED front ELEVATION 1:100



PROPOSED rear ELEVATION 1:100



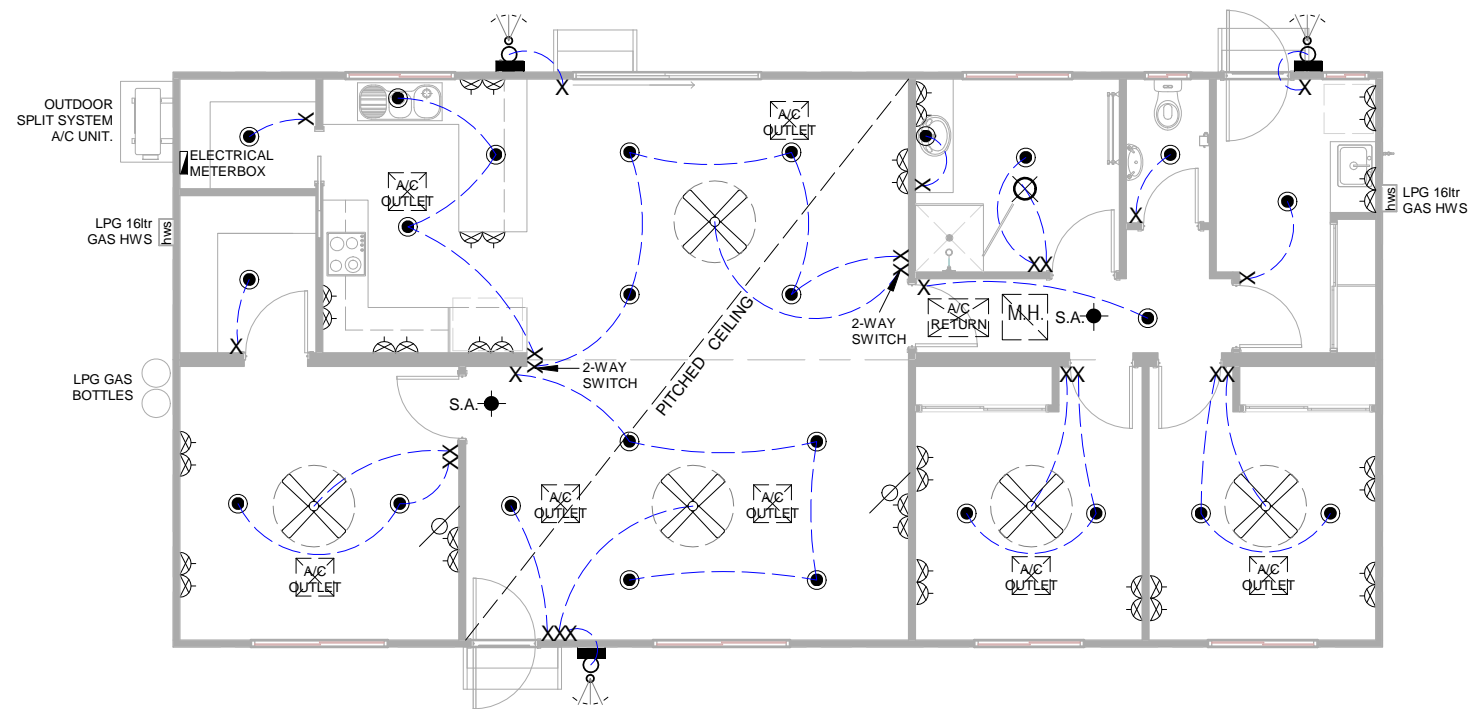
PROPOSED side ELEVATION 1:100.



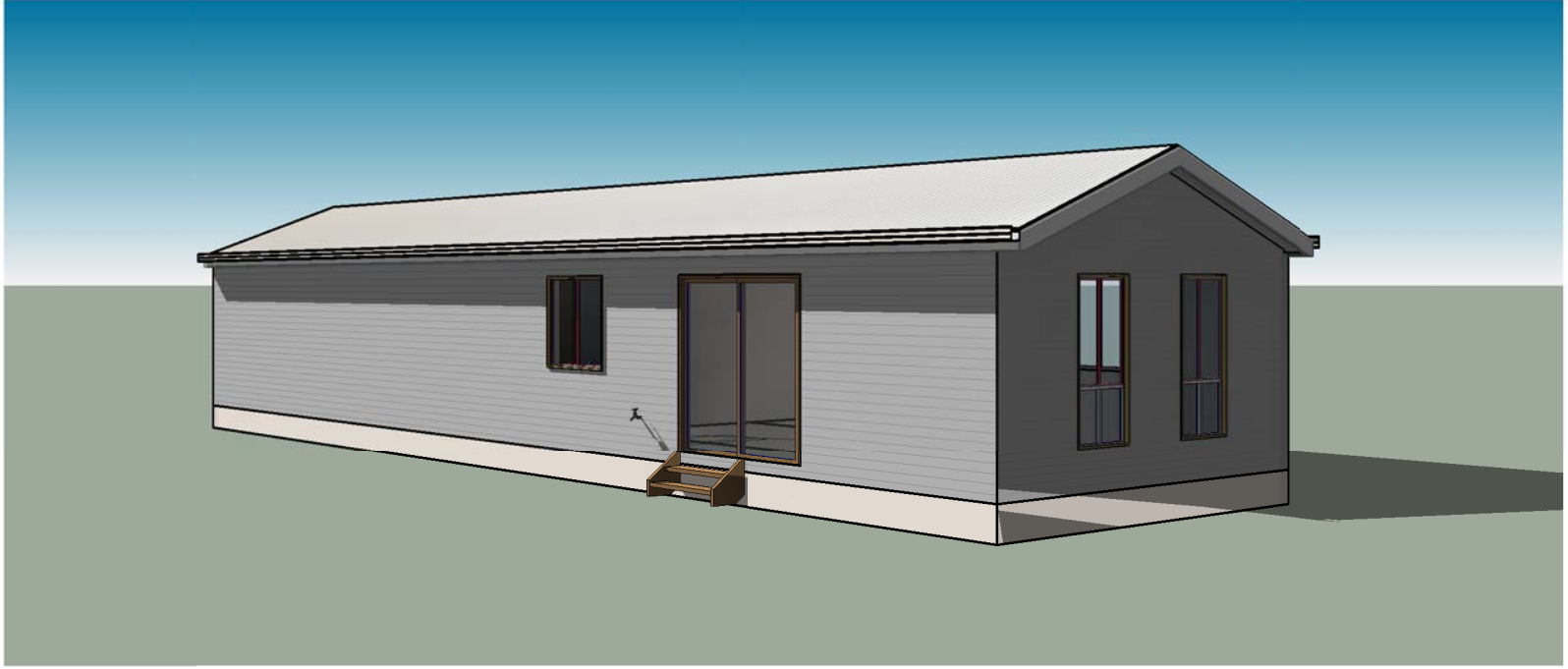
PROPOSED side ELEVATION 1:100.

ELECTRICAL LEGEND

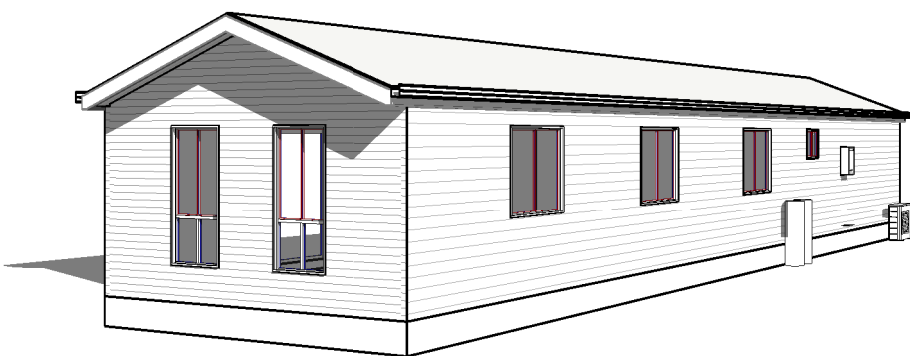
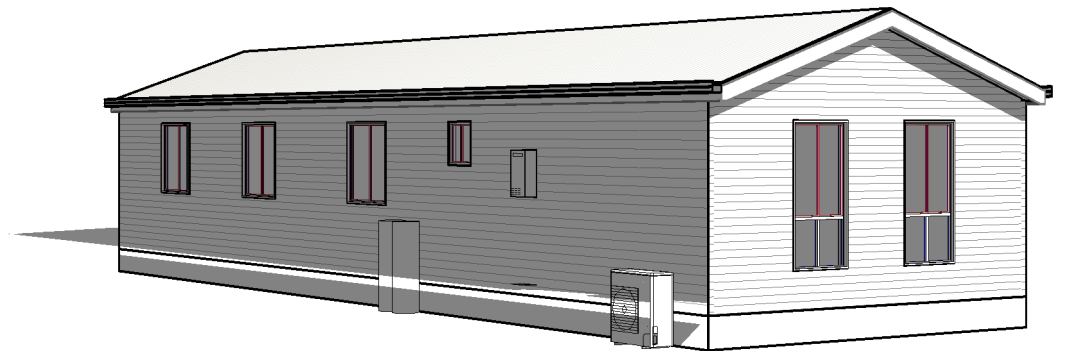
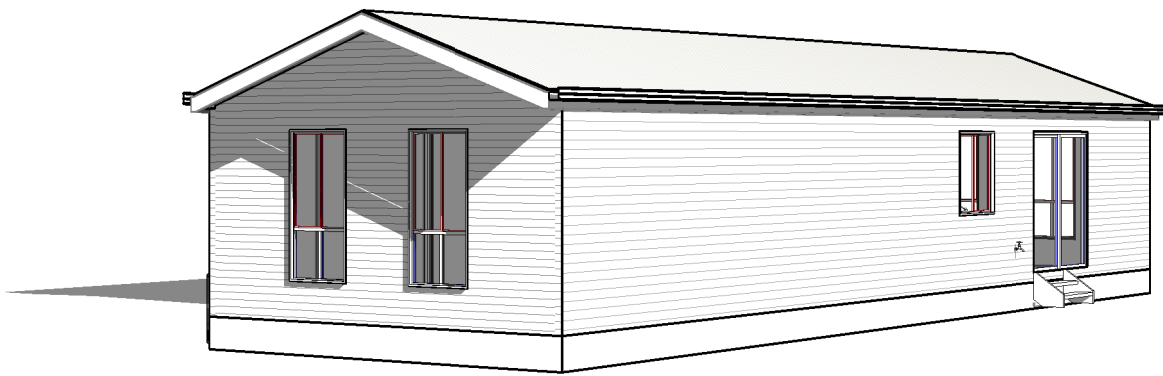
- 20W BATTEN HOLDER
- ◻ 20W WALL MOUNTED BATTEN HOLDER
- ⊙ 22W CIRCULAR FLUORESCENT LIGHT
- ⊙ 32W CIRCULAR FLUORESCENT LIGHT
- ⊙ 30W CIRCULAR LED LIGHT
- ▬ TWIN SLIMLINE FLUORESCENT LIGHT AND ACRYLIC DIFFUSER. (2 x 28W)
- ▬ SINGLE SLIMLINE FLUORESCENT LIGHT AND ACRYLIC DIFFUSER. (1 x 28W)
- 20W FLUORESCENT DOWN LIGHT.
- 15W LED DOWN LIGHT.
- X ELECTRICAL LIGHT SWITCH.
- ☛ LIGHT SENSOR
- ⊗ EXHAUST FAN & 20W LIGHT
- ⊗ EXHAUST FAN
- ⊗ 3-IN-1 -TWO HEATER, EXHAUST FAN & 60W LIGHT. (VENT TO ROOF SPACE ONLY).
- ⊗ 3-IN-1 -FOUR HEATER, EXHAUST FAN & 60W LIGHT. (VENT TO ROOF SPACE ONLY).
- S.A. SMOKE ALARMS - INSTALL AC POWERED ALARMS WITH BATTERY BACK-UP AND BE INTERCONNECTED WHERE THERE IS MORE THAN ONE ALARM IN ACCORDANCE WITH B.C.A. PART 3.7.2 - 'SMOKE ALARM'
- ▬ MOUNTED 300mm ABOVE F.L. UNLESS NOTED OTHERWISE.
- ▬ SINGLE G.P.O.
- ▬ EXTERNAL WEATHERPROOF G.P.O.
- ELECTRICAL WIRING.
- hws HOT WATER UNIT.
- M.H. MAN HOLE. (600 x 600).
- ▽ EXTERNAL FLOODLIGHT.
- ⊗ T.V. COAXIAL OUTLET.
- ⊗ TELEPHONE OUTLET.
- ◀ DATA OUTLET.
- ⊗ CEILING FAN WITH 24W LED LIGHT.
- ⊗ CEILING FAN.
- ▬ ELECTRICAL METER BOX.



PROPOSED ELECTRICAL LAYOUT PLAN 1:100

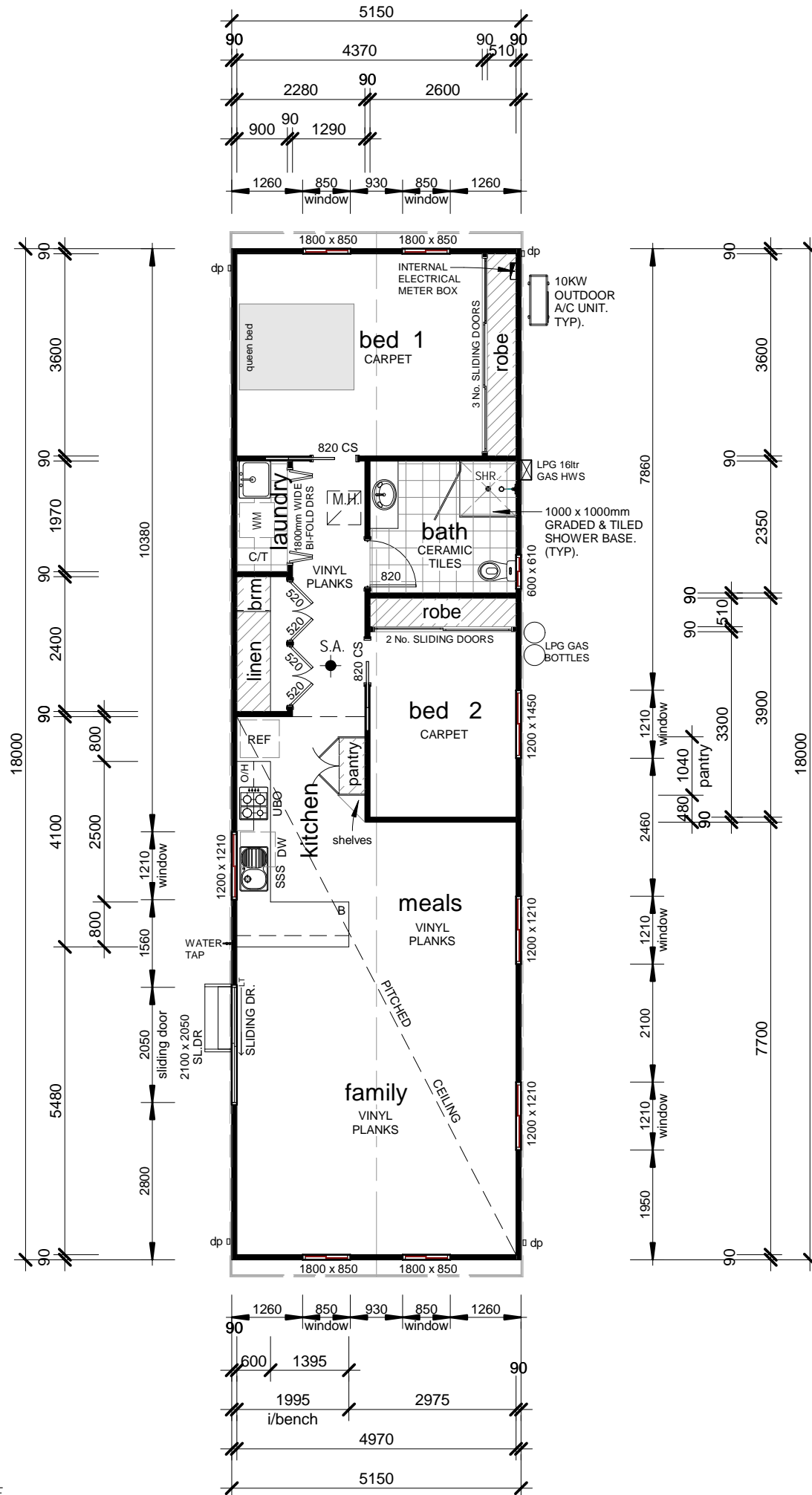


***PROPOSED 2 Bed House
FOR
AUSTRALIAN WILDLIFE CONSERVANCY***



AREAS

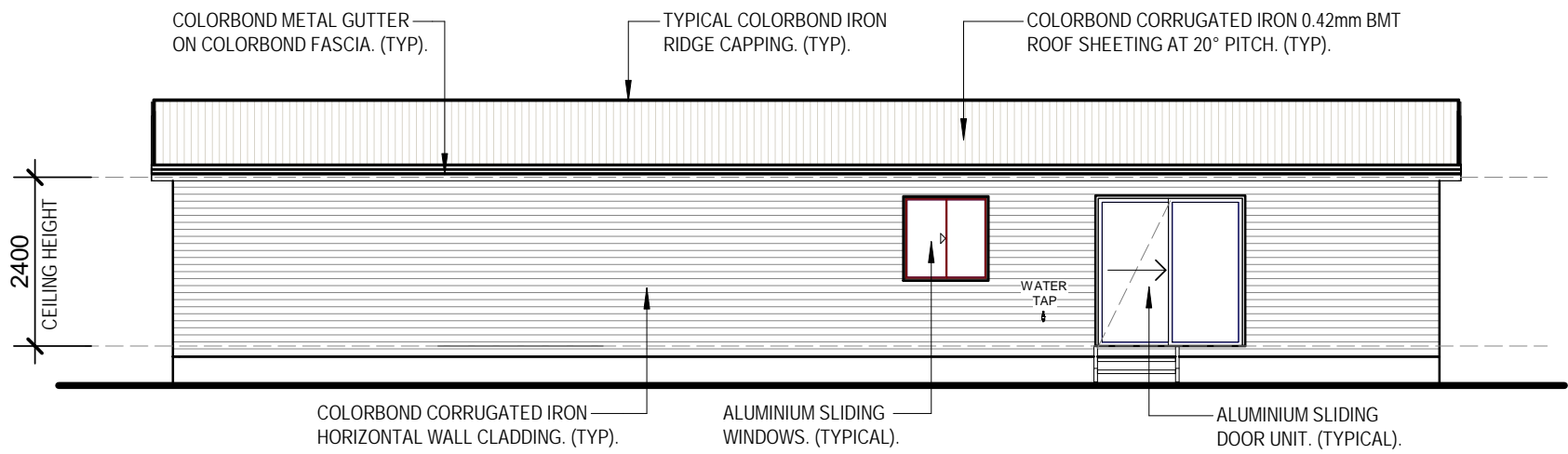
Cabin 92.70m² (9.98 SQS.)



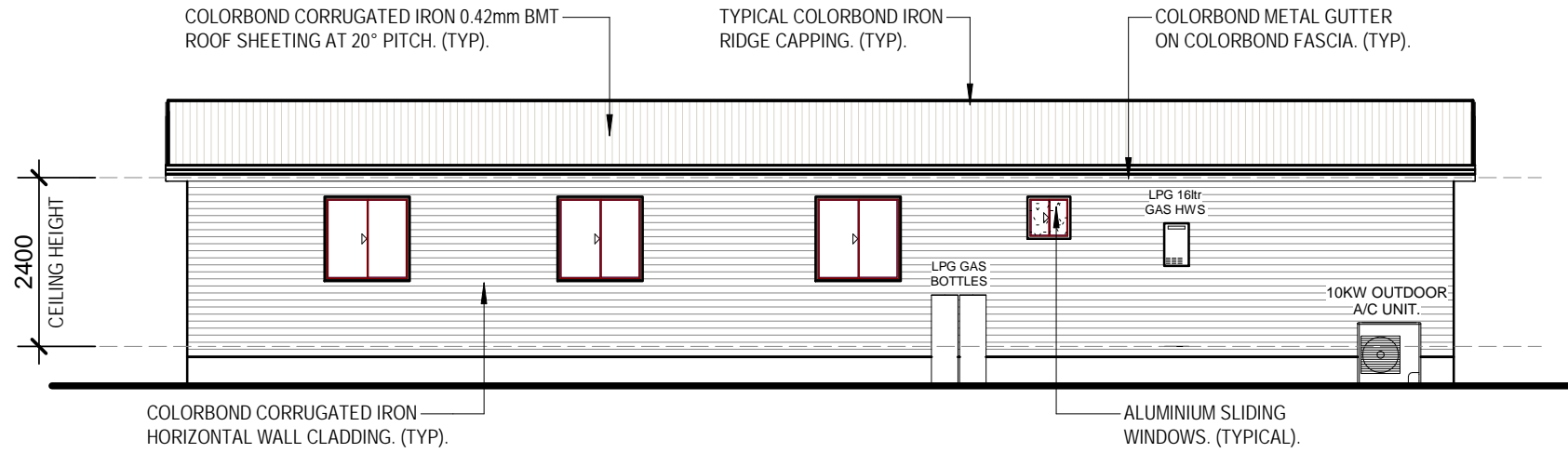
● S.A.

SMOKE ALARMS - INSTALL AC POWERED ALARMS WITH BATTERY BACK-UP AND BE INTERCONNECTED WHERE THERE IS MORE THAN ONE ALARM IN ACCORDANCE WITH B.C.A. PART 3.7.2 - 'SMOKE ALARM'

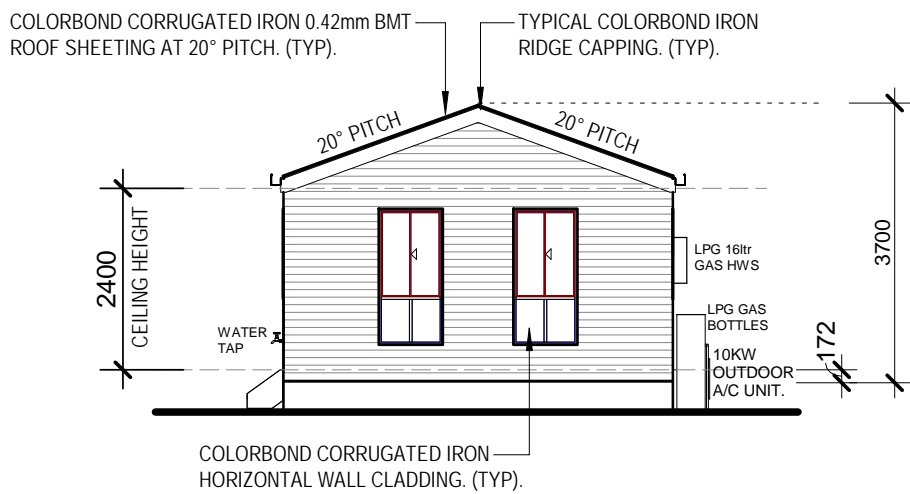
PROPOSED FLOOR PLAN. 1:100.



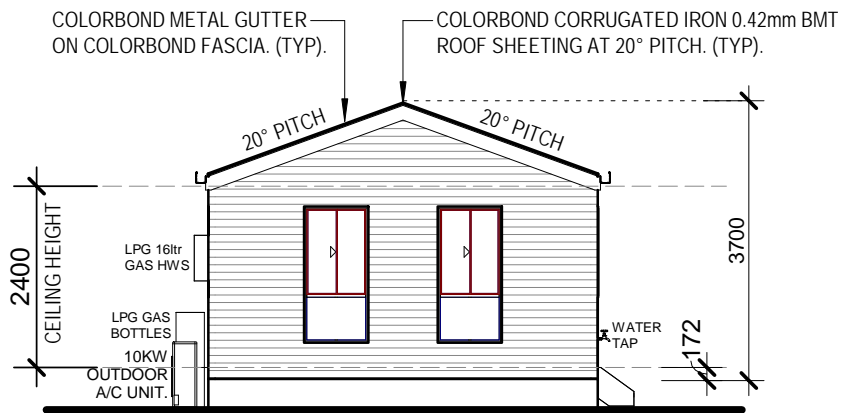
PROPOSED side ELEVATION 1:100.



PROPOSED side ELEVATION 1:100.



















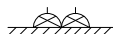








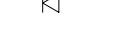



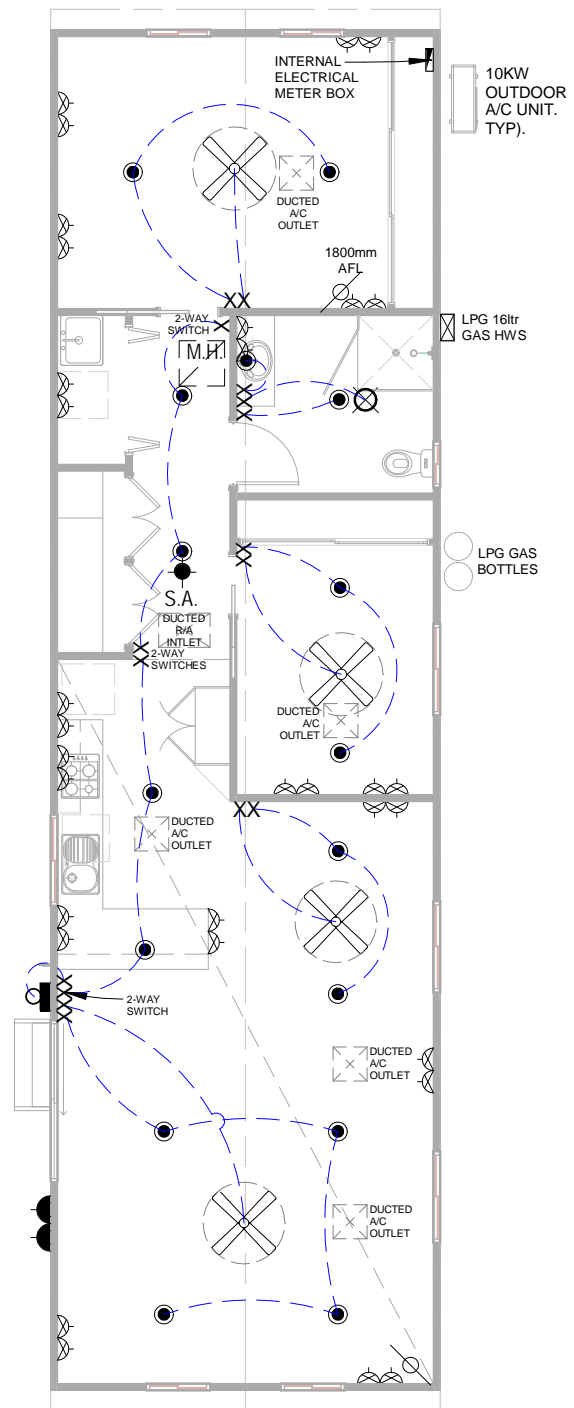
PROPOSED front ELEVATION 1:100



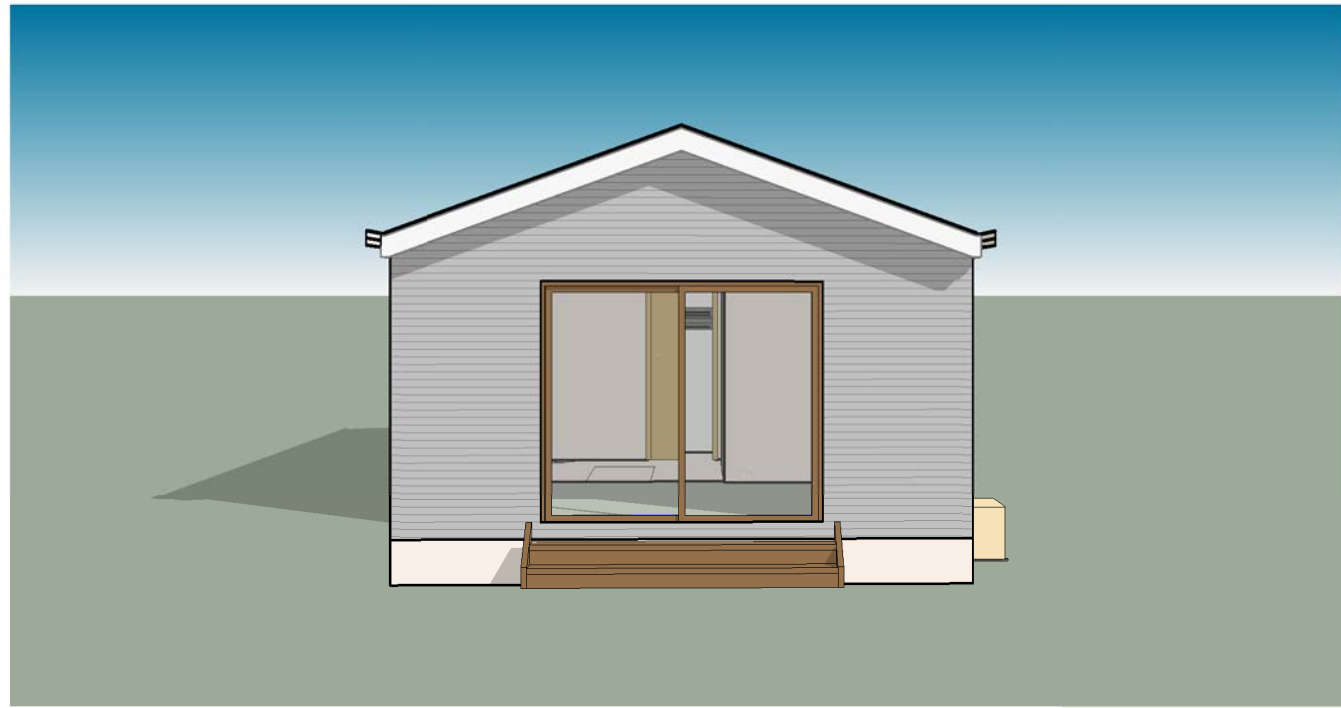
PROPOSED rear ELEVATION 1:100

ELECTRICAL LEGEND

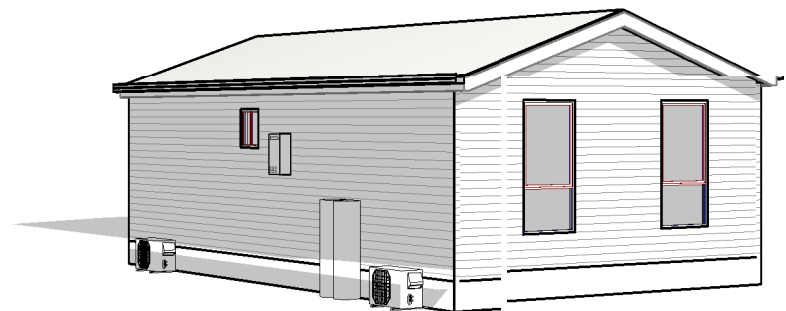
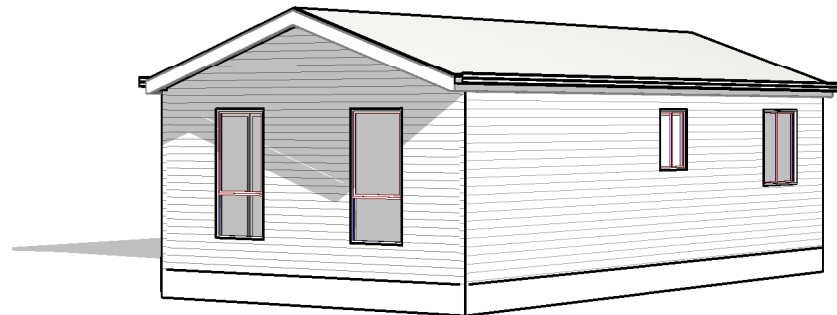
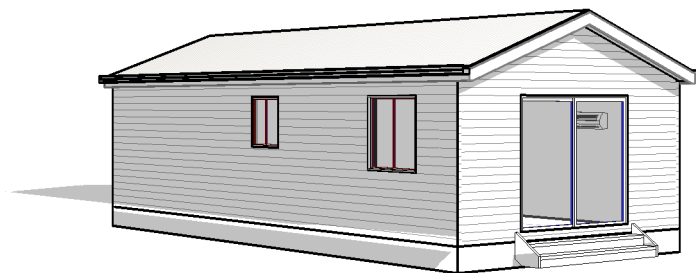
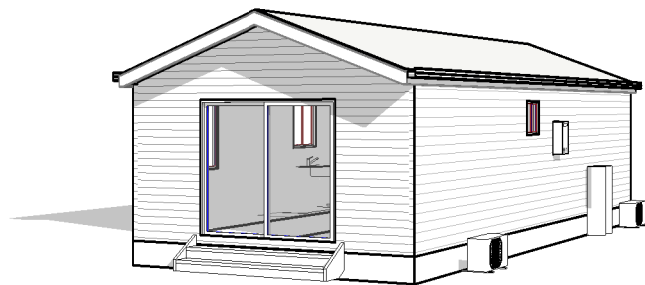
	20W BATTEN HOLDER
	20W WALL MOUNTED BATTEN HOLDER
	22W CIRCULAR FLUORESCENT LIGHT
	32W CIRCULAR FLUORESCENT LIGHT
	30W CIRCULAR LED LIGHT
	TWIN SLIMLINE FLUORESCENT LIGHT AND ACRYLIC DIFFUSER. (2 x 28W)
	SINGLE SLIMLINE FLUORESCENT LIGHT AND ACRYLIC DIFFUSER. (1 x 28W)
	20W FLUORESCENT DOWN LIGHT.
	15W LED DOWN LIGHT.
	ELECTRICAL LIGHT SWITCH.
	LIGHT SENSOR
	EXHAUST FAN & 20W LIGHT
	EXHAUST FAN
	3-IN-1 - TWO HEATER, EXHAUST FAN & 60W LIGHT. (VENT TO ROOF SPACE ONLY).
	3-IN-1 - FOUR HEATER, EXHAUST FAN & 60W LIGHT. (VENT TO ROOF SPACE ONLY).
	SMOKE ALARMS - INSTALL AC POWERED ALARMS WITH BATTERY BACK-UP AND BE INTERCONNECTED WHERE THERE IS MORE THAN ONE ALARM IN ACCORDANCE WITH B.C.A. PART 3.7.2 - 'SMOKE ALARM'
	DOUBLE G.P.O. { MOUNTED 300mm ABOVE F.f.l. UNLESS NOTED OTHERWISE }
	SINGLE G.P.O.
	EXTERNAL WEATHERPROOF G.P.O.
	ELECTRICAL WIRING.
	HOT WATER UNIT.
	MAN HOLE. (600 x 600).
	EXTERNAL FLOODLIGHT.
	T.V. COAXIAL OUTLET.
	TELEPHONE OUTLET.
	DATA OUTLET.
	CEILING FAN WITH 24W LED LIGHT.
	CEILING FAN.
	ELECTRICAL METER BOX.



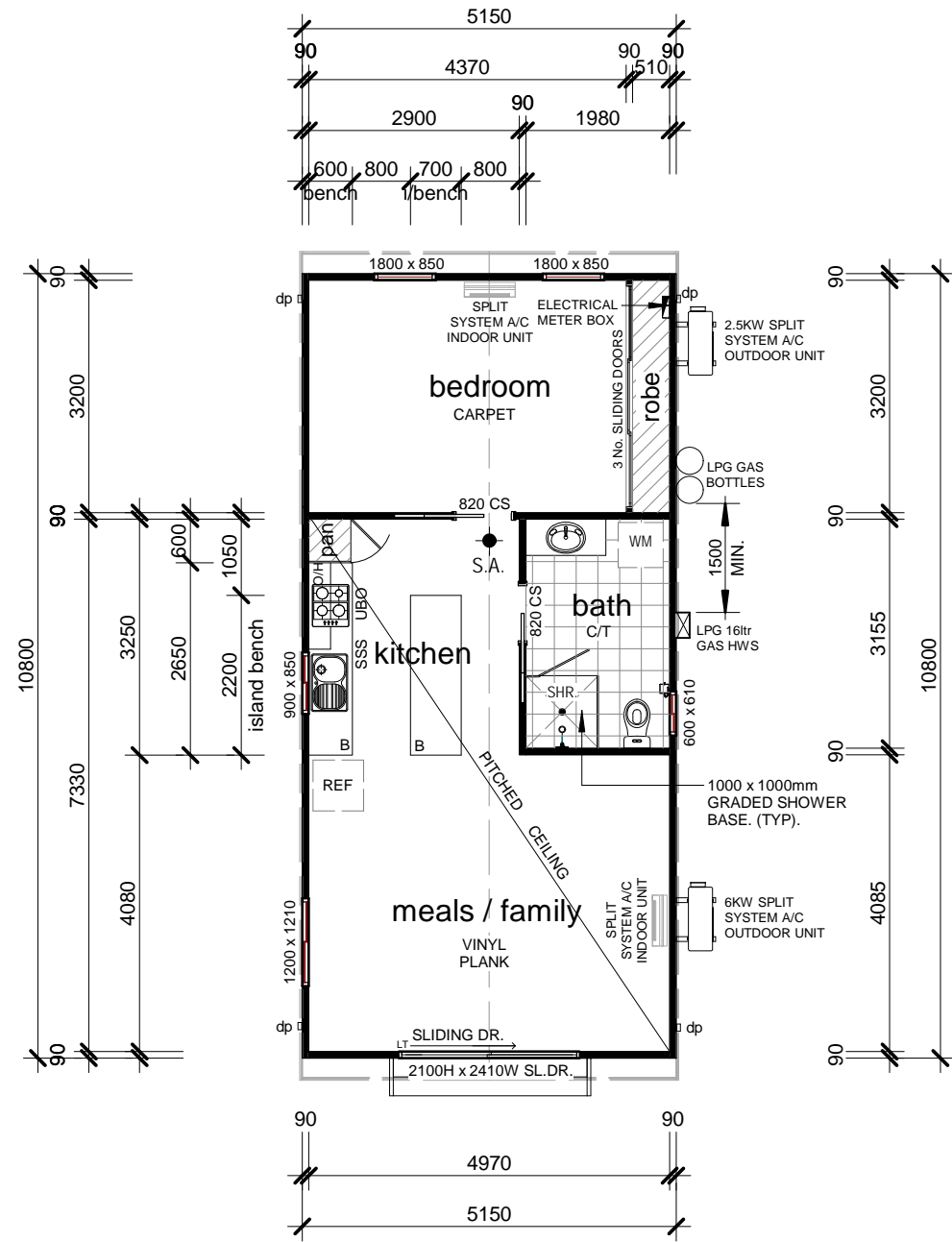
PROPOSED ELECTRICAL LAYOUT PLAN. 1:100.



***PROPOSED NEW CABIN
FOR
AUSTRALIAN WILDLIFE CONSERVANCY***



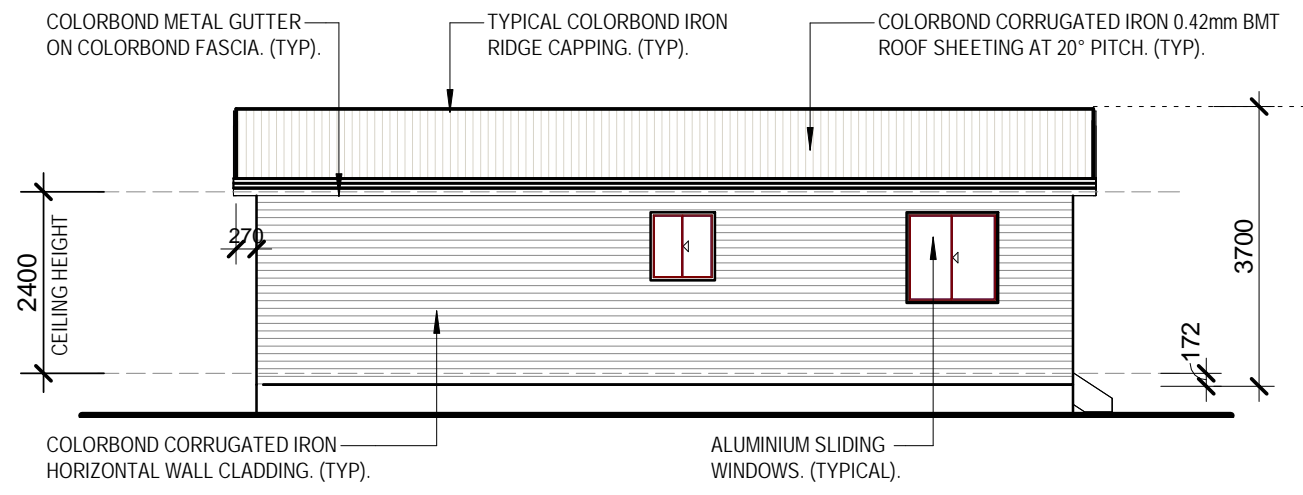
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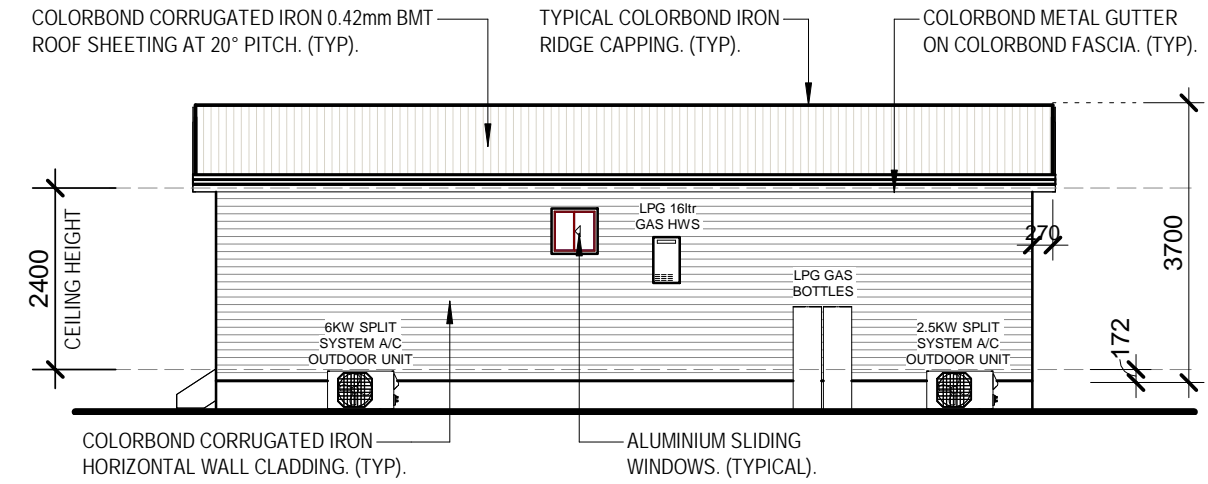
● S.A.
 SMOKE ALARMS - INSTALL AC POWERED ALARMS WITH BATTERY BACK-UP AND BE INTERCONNECTED WHERE THERE IS MORE THAN ONE ALARM IN ACCORDANCE WITH B.C.A. PART 3.7.2 - 'SMOKE ALARM'

AREAS	
Dwelling	55.62m ² (5.62 SQS.)

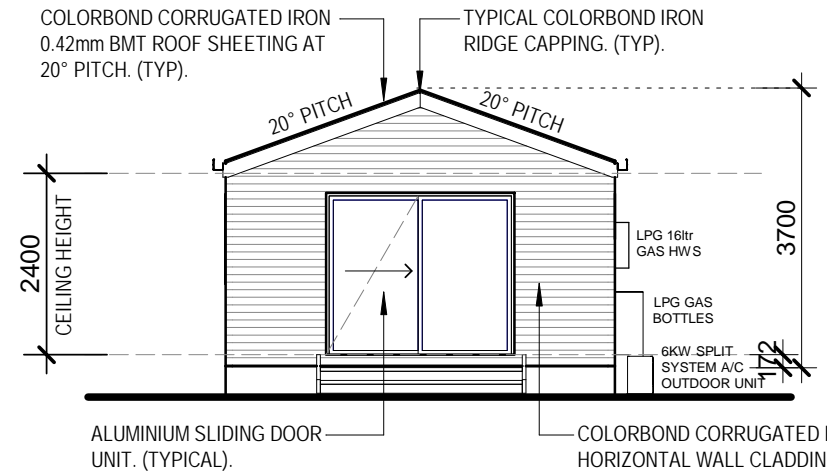
PROPOSED FLOOR PLAN 1:100



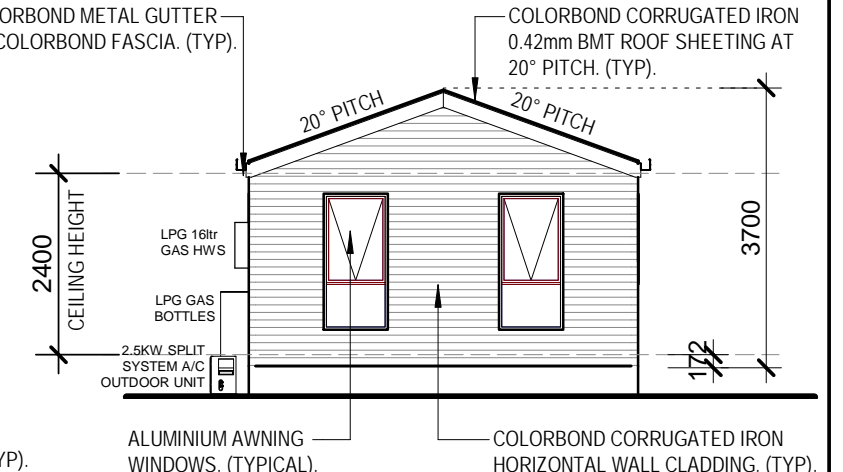
PROPOSED side ELEVATION 1:100



PROPOSED side ELEVATION 1:100



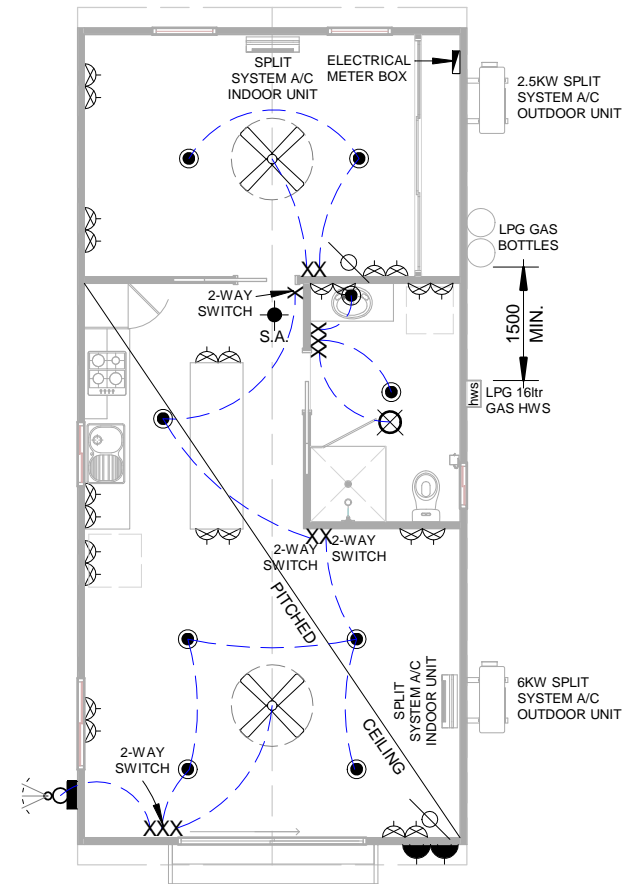
PROPOSED front ELEVATION



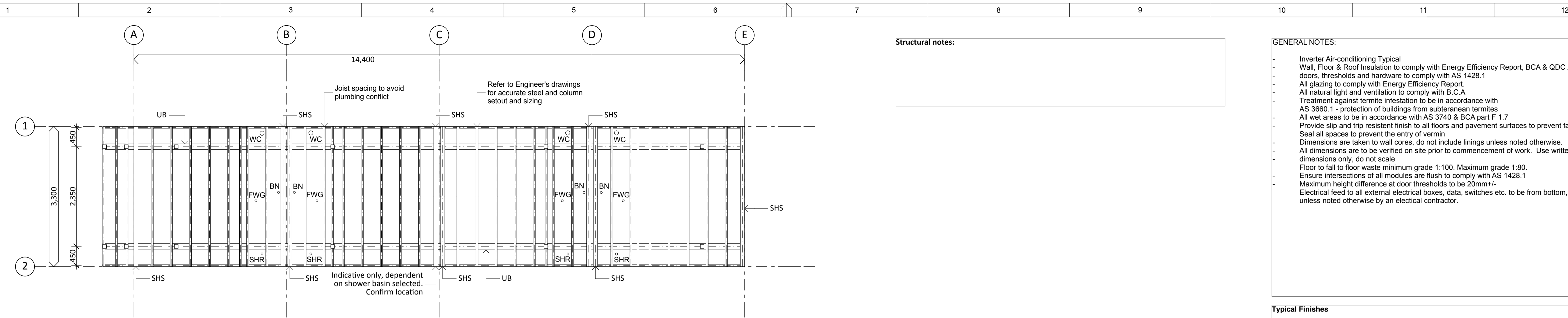
PROPOSED rear ELEVATION

ELECTRICAL LEGEND

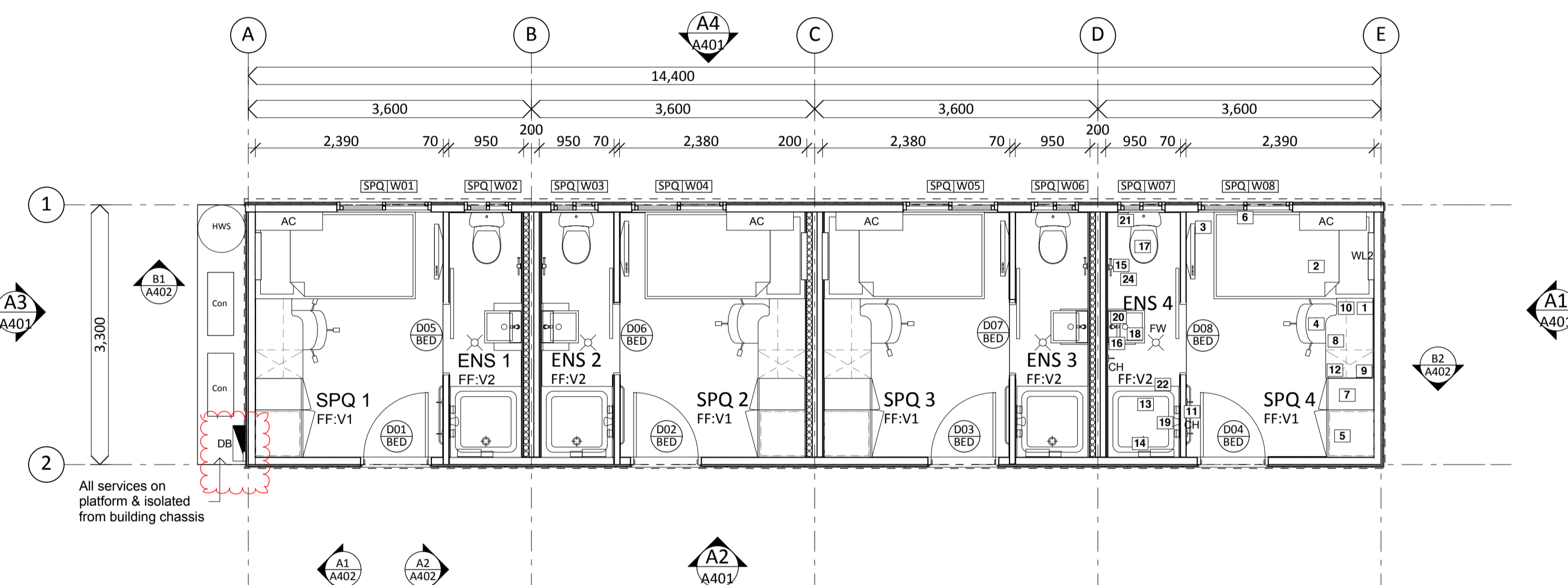
- 20W BATTEN HOLDER
- ◼ 20W WALL MOUNTED BATTEN HOLDER
- ⊙ 22W CIRCULAR FLUORESCENT LIGHT
- ⊙ 32W CIRCULAR FLUORESCENT LIGHT
- ⊙ 30W CIRCULAR LED LIGHT
- ▯ TWIN SLIMLINE FLUORESCENT LIGHT AND ACRYLIC DIFFUSER. (2 x 28W)
- ▯ SINGLE SLIMLINE FLUORESCENT LIGHT AND ACRYLIC DIFFUSER. (1 x 28W)
- 20W FLUORESCENT DOWN LIGHT.
- 15W LED DOWN LIGHT.
- X ELECTRICAL LIGHT SWITCH.
- ⊙ LIGHT SENSOR
- ⊗ EXHAUST FAN & 20W LIGHT
- ⊗ EXHAUST FAN
- ⊗ 3-IN-1 -TWO HEATER, EXHAUST FAN & 60W LIGHT. (VENT TO ROOF SPACE ONLY).
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- S.A. SMOKE ALARMS - INSTALL AC POWERED ALARMS WITH BATTERY BACK-UP AND BE INTERCONNECTED WHERE THERE IS MORE THAN ONE ALARM IN ACCORDANCE WITH B.C.A. PART 3.7.2 - 'SMOKE ALARM'
- ▯ MOUNTED 300mm ABOVE F.L. UNLESS NOTED OTHERWISE.
- ▯ SINGLE G.P.O.
- ▯ EXTERNAL WEATHERPROOF G.P.O.
- ELECTRICAL WIRING.
- hws HOT WATER UNIT.
- M.H. MAN HOLE. (600 x 600).
- ▽ EXTERNAL FLOODLIGHT.
- ⊙ T.V. COAXIAL OUTLET.
- ⊙ TELEPHONE OUTLET.
- ◀ DATA OUTLET.
- ⊗ CEILING FAN WITH 24W LED LIGHT.
- ⊗ CEILING FAN.
- ▯ ELECTRICAL METER BOX.



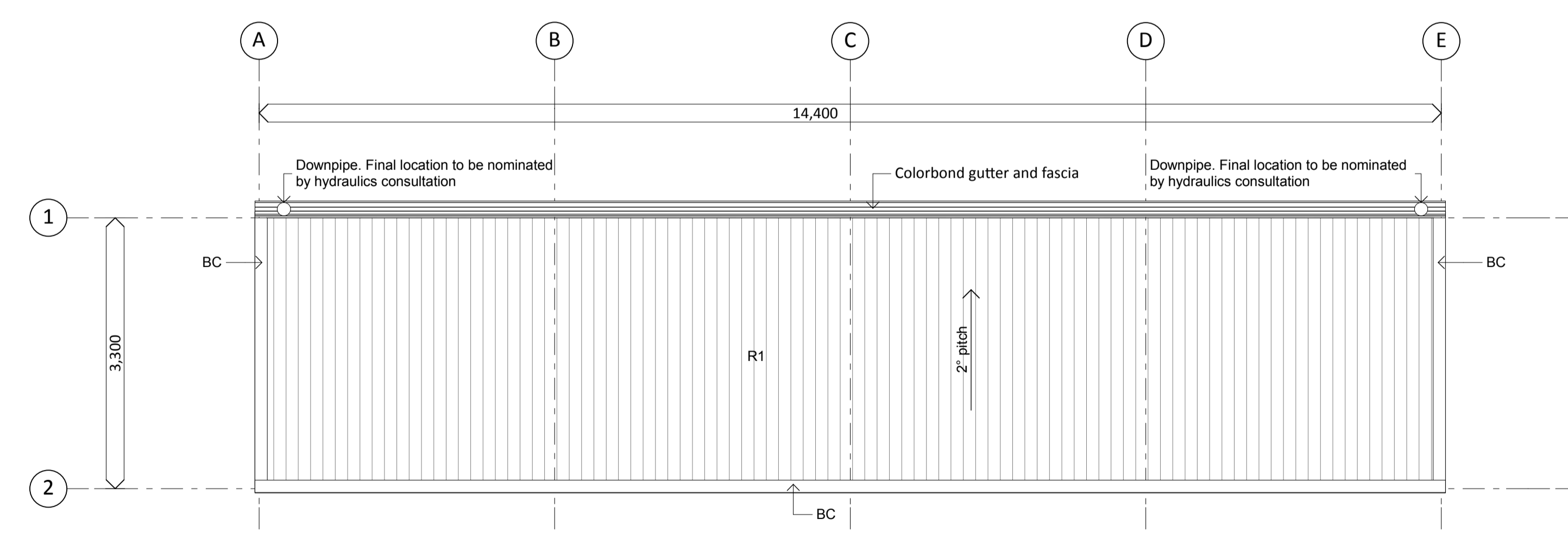
PROPOSED ELECTRICAL LAYOUT PLAN 1:100



01 Structural Plan



02 Floor Plan



Roof Plan

Structural notes:

GENERAL NOTES:

- Inverter Air-conditioning Typical
- Wall, Floor & Roof Insulation to comply with Energy Efficiency Report, BCA & QDC All doors, thresholds and hardware to comply with AS 1428.1
- All glazing to comply with Energy Efficiency Report.
- All natural light and ventilation to comply with B.C.A
- Treatment against termite infestation to be in accordance with AS 3660.1 - protection of buildings from subterranean termites
- All wet areas to be in accordance with AS 3740 & BCA part F 1.7
- Provide slip and trip resistant finish to all floors and pavement surfaces to prevent falls.
- Seal all spaces to prevent the entry of vermin
- Dimensions are taken to wall cores, do not include linings unless noted otherwise.
- All dimensions are to be verified on site prior to commencement of work. Use written dimensions only, do not scale
- Floor to fall to floor waste minimum grade 1:100. Maximum grade 1:80.
- Ensure intersections of all modules are flush to comply with AS 1428.1
- Maximum height difference at door thresholds to be 20mm+/-
- Electrical feed to all external electrical boxes, data, switches etc. to be from bottom, unless noted otherwise by an electrical contractor.

Typical Finishes

INTERNAL

Wall finish: Polyply 1
 SB: Water resistant splashback min 150. high

Wall Substrate: Villaboard to all wetareas, on all walls to ceiling height behind sanitary fittings & fixtures

Ceiling finish: Polyply 2

Floor:

- Substrate: Fibre cement substrate in wetareas
- V1: Vinyl R9 min
- V2: Vinyl R10 min
- V3: Vinyl R11 min
- V4: Rubber Flooring
- D1: Manufactured timber decking, Modwood or equivalent
- SK1: 100mm covered vinyl skirting to perimeter
- SK2: 100mm feathered Vinyl skirting (typical)

EXTERNAL

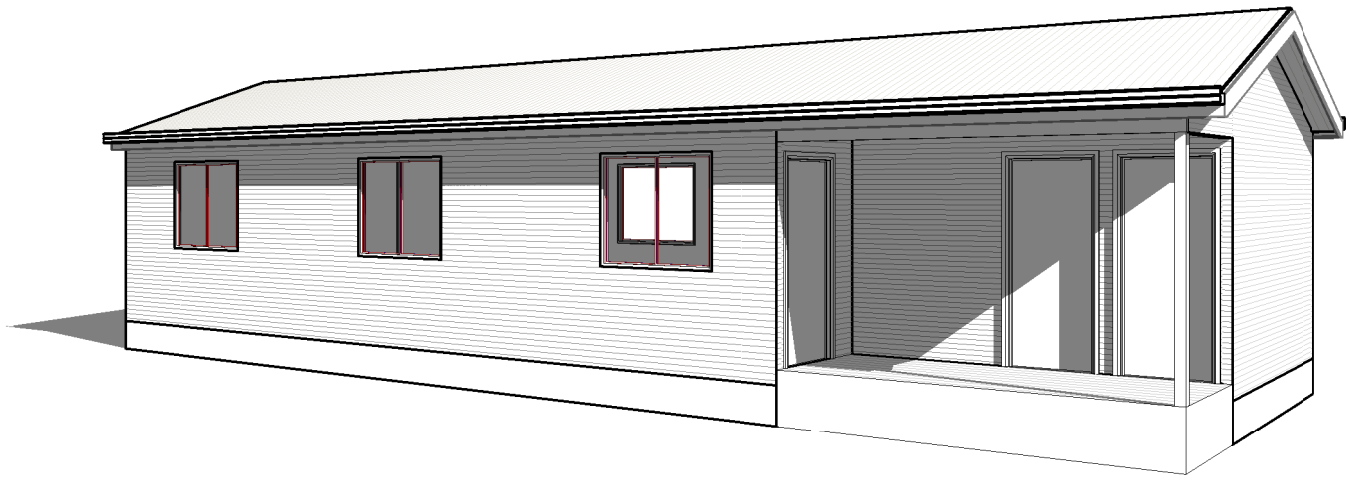
Cladding:

- CL 1: Stramit Corrugated - Colorbond Surfmist
- CL 2: Stramit Corrugated - Colorbond Windspray
- CL 3: Stramit Corrugated - Colorbond Deep Ocean
- WL1: External wall light

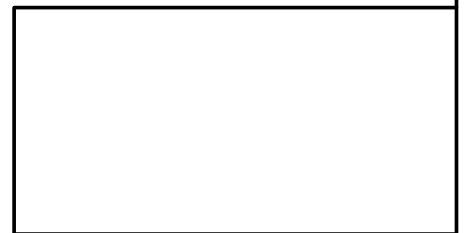
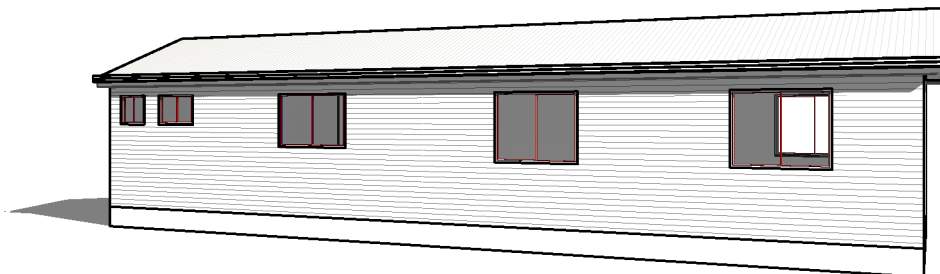
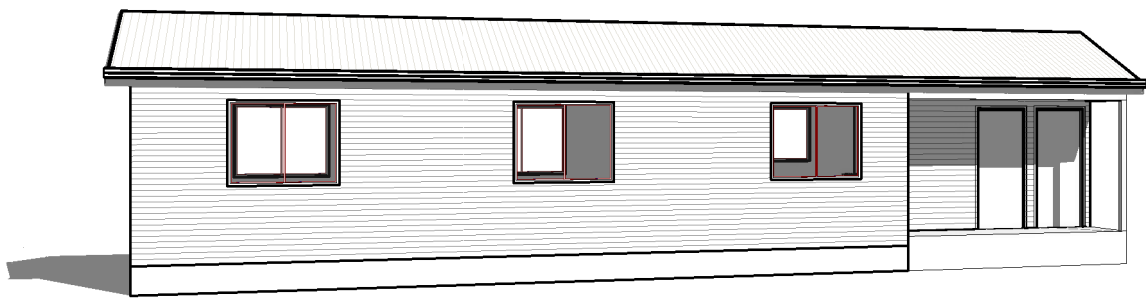
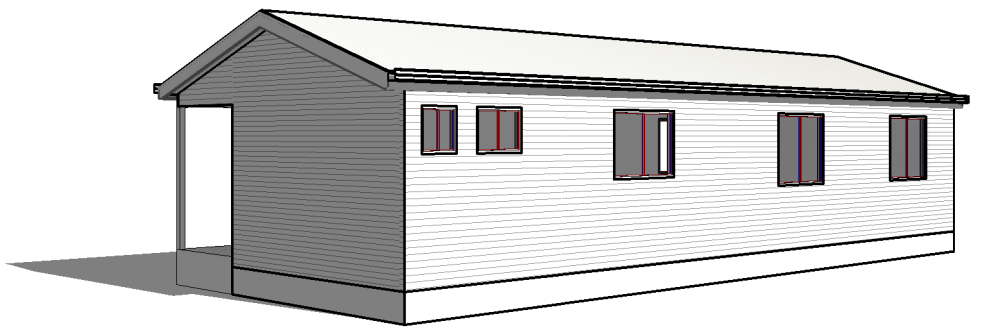
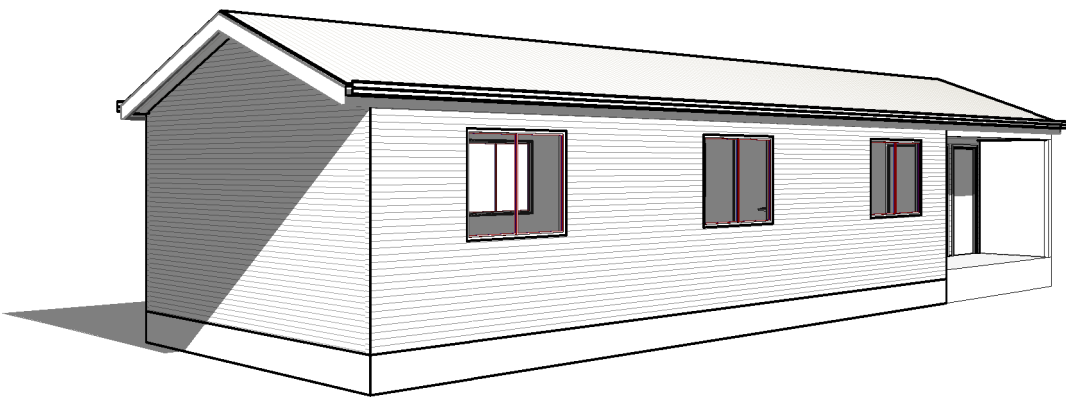
Roof:

- R1: Stramit or similar longspan zinalume
- R2: Insulated Panel
- BC: Barge Capping
- MJ: Module Joint, flashing

STRUCTURAL, FLOOR & ROOF PLAN



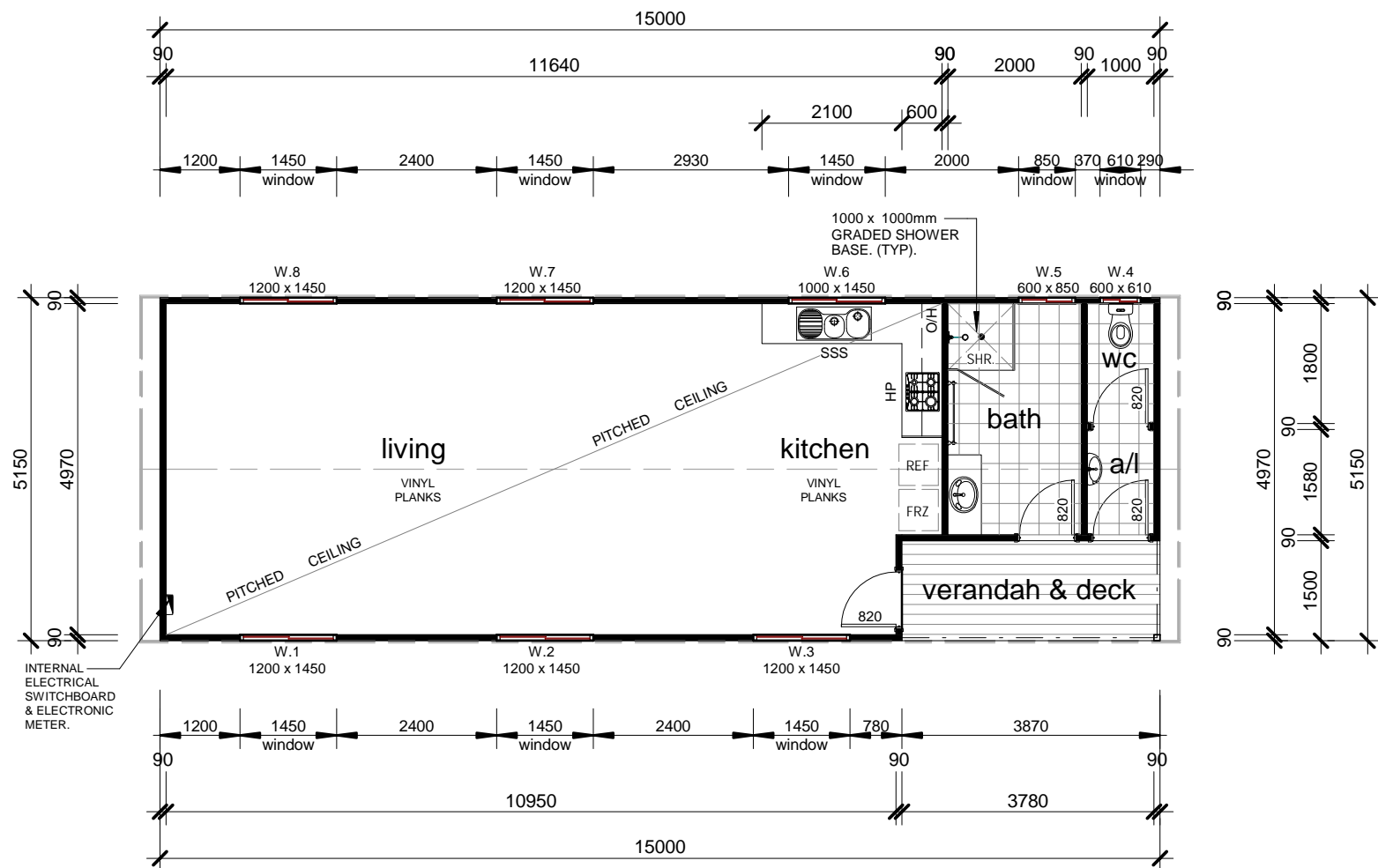
***PROPOSED NEW
COMMUNAL LIVING BUILDING
for
AUSTRALIAN WILDLIFE CONSERVANCY***



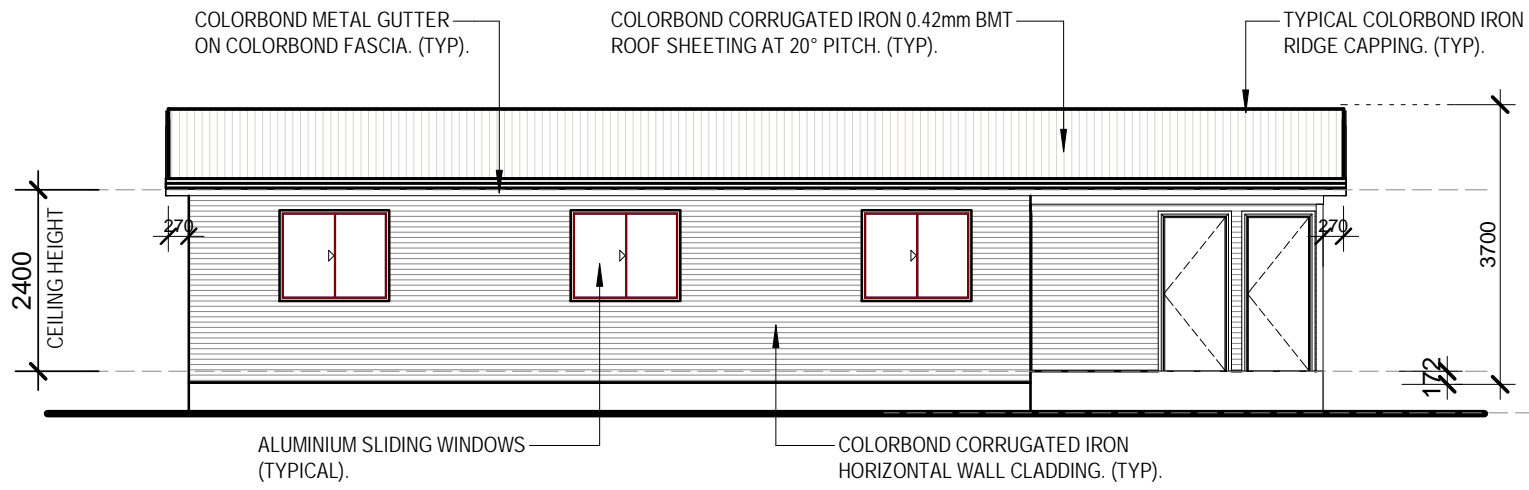
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AREAS

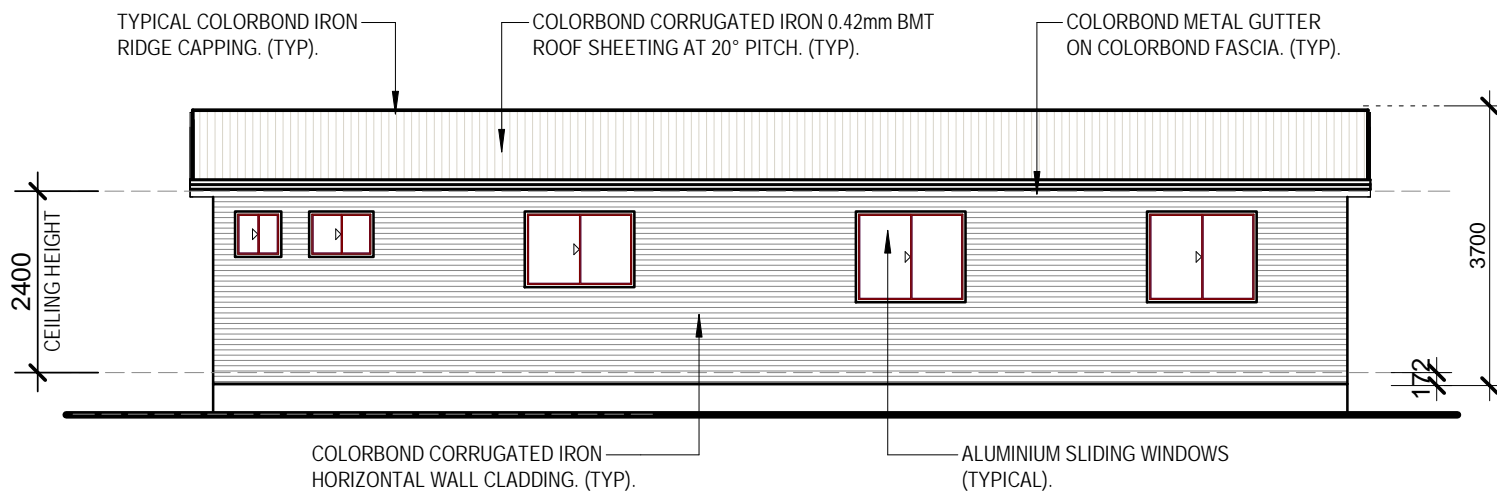
Communal Living Building 77.25m² (8.31 SQS.)



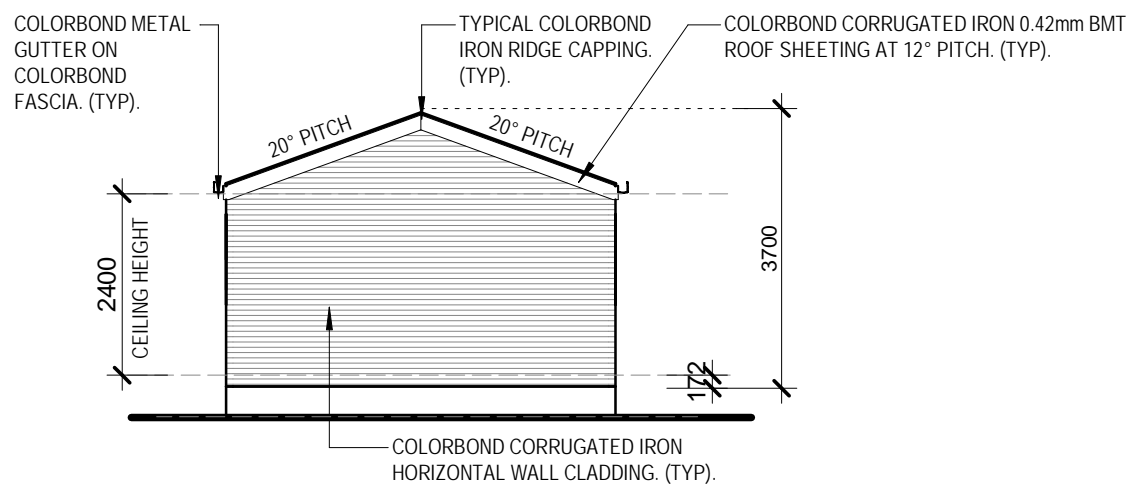
PROPOSED FLOOR PLAN. 1:100.



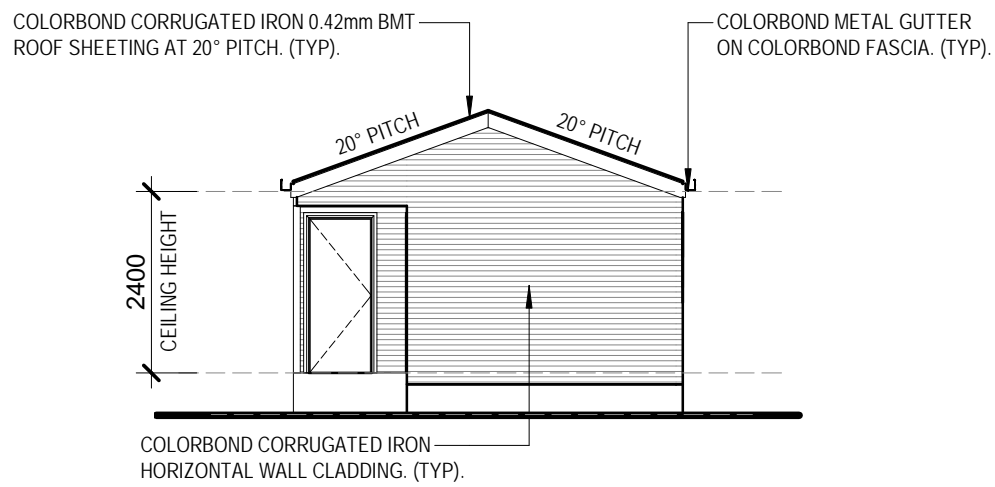
PROPOSED front ELEVATION 1:100



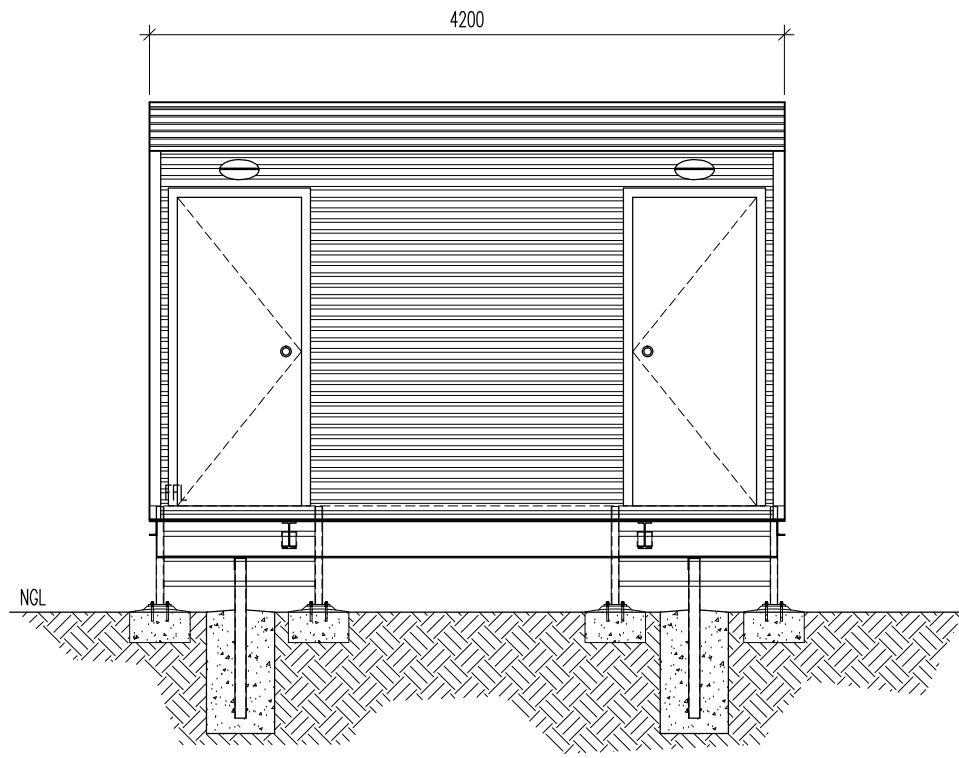
PROPOSED rear ELEVATION 1:100



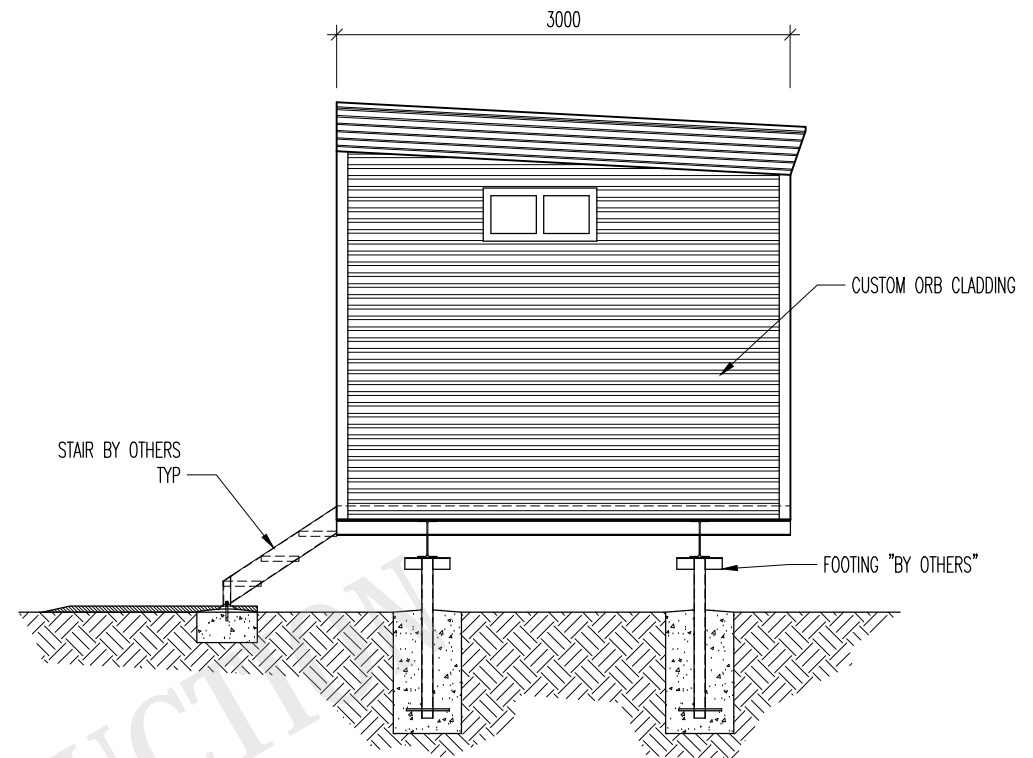
PROPOSED side ELEVATION 1:100.



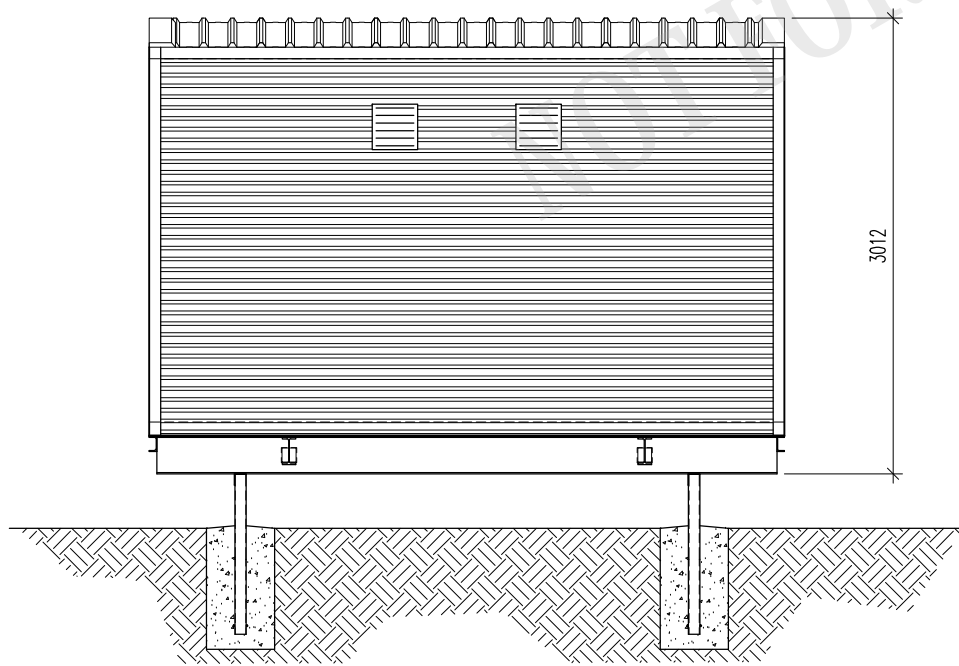
PROPOSED side ELEVATION 1:100.



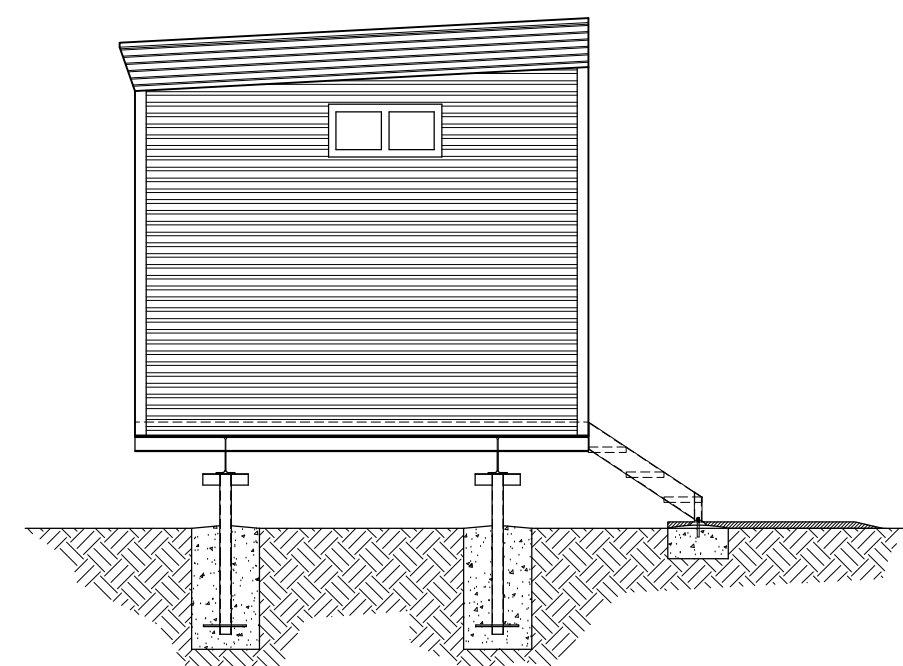
1 ELEVATION
S01



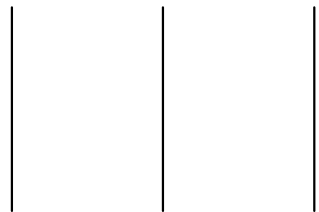
2 ELEVATION
S01

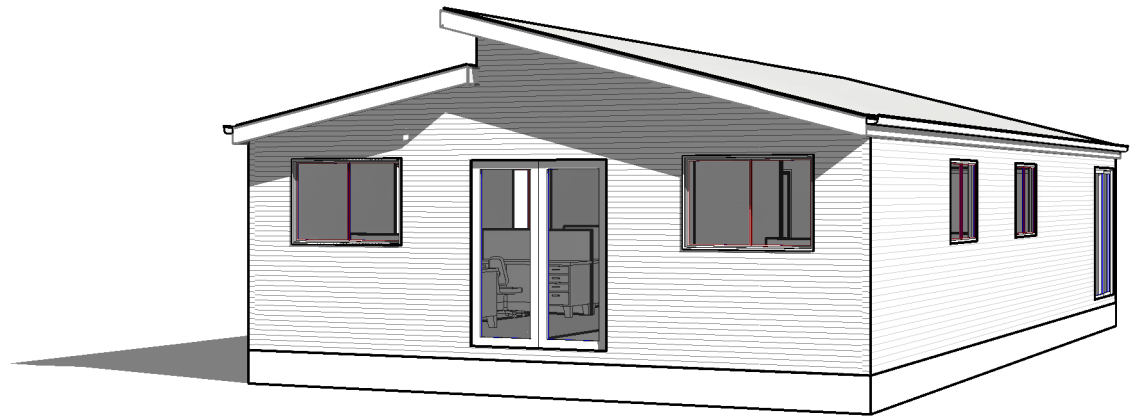
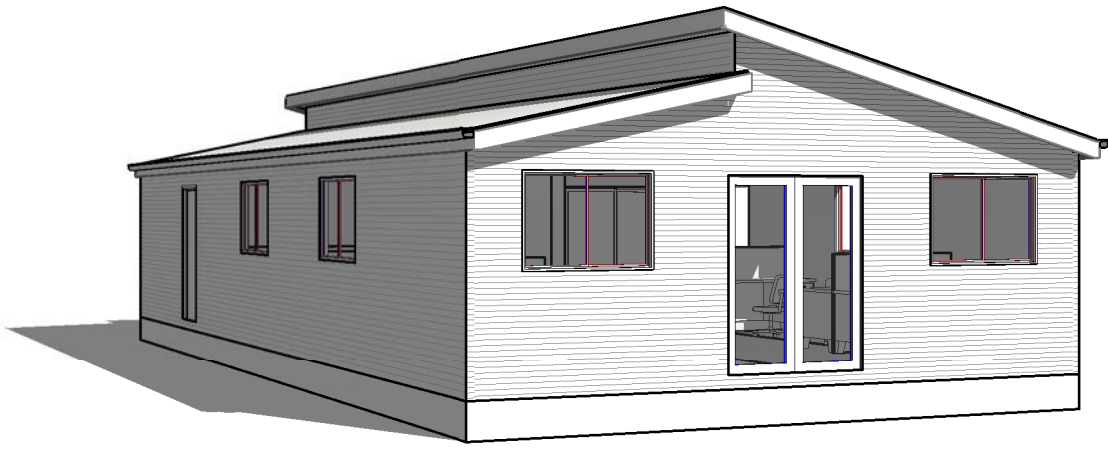


3 ELEVATION
S01

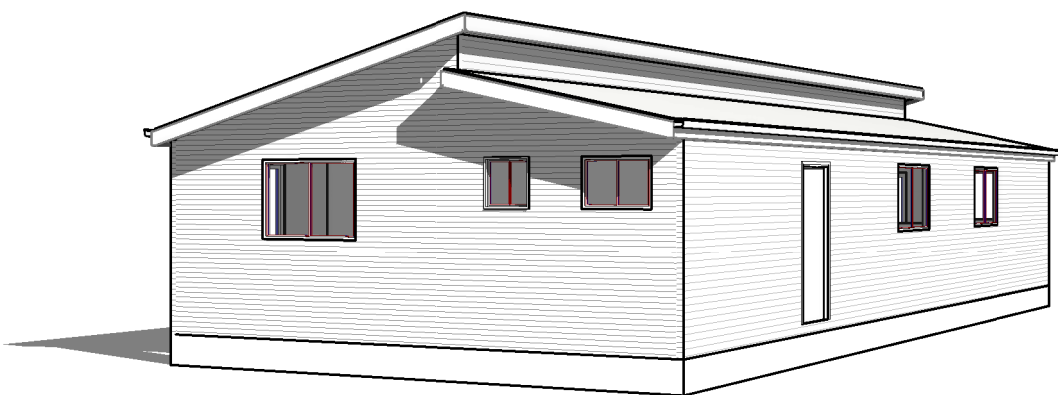
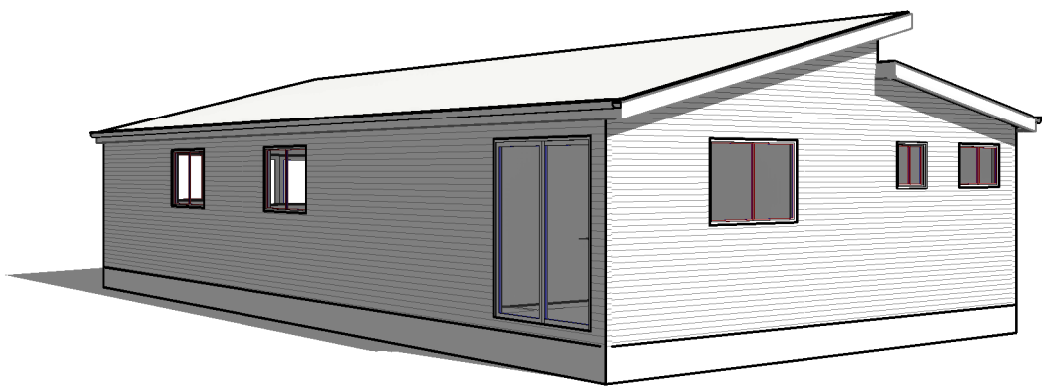


4 ELEVATION
S01



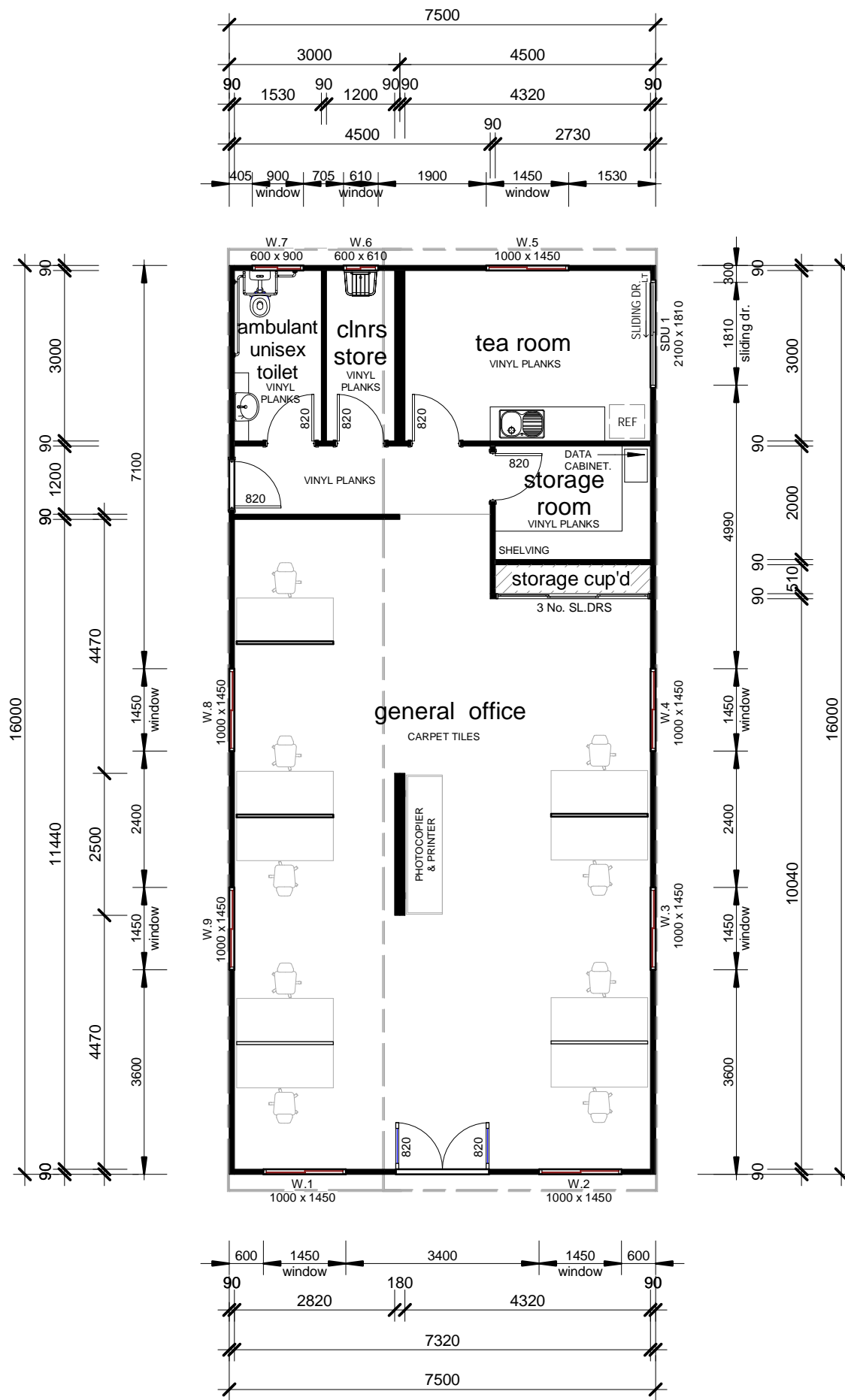


***PROPOSED NEW OFFICE BLOCK
for
AUSTRALIAN WILDLIFE CONSERVANCY***

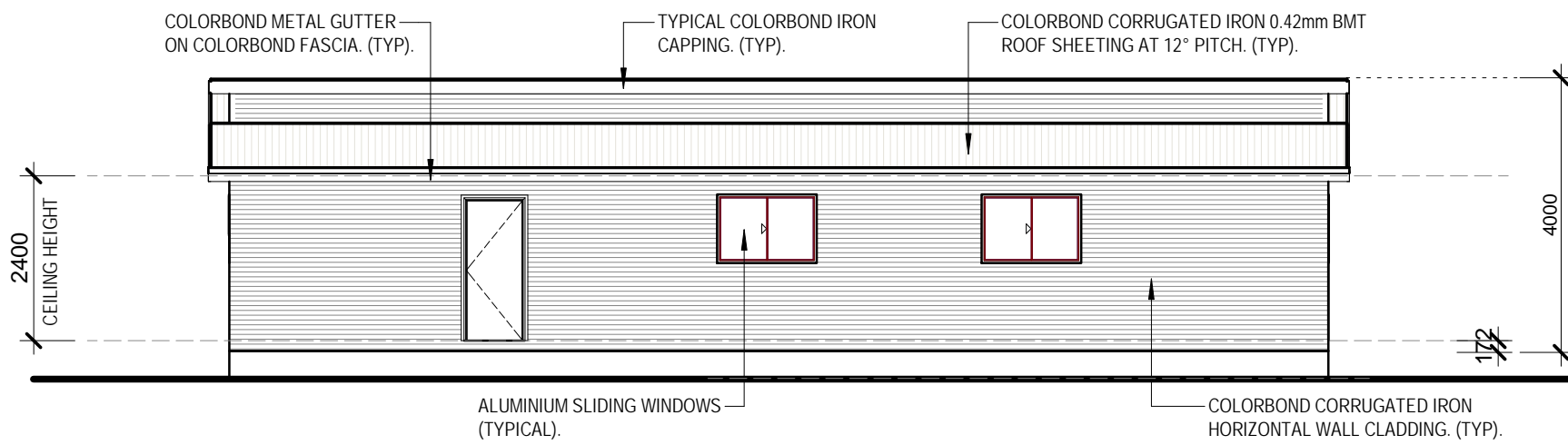


AREAS

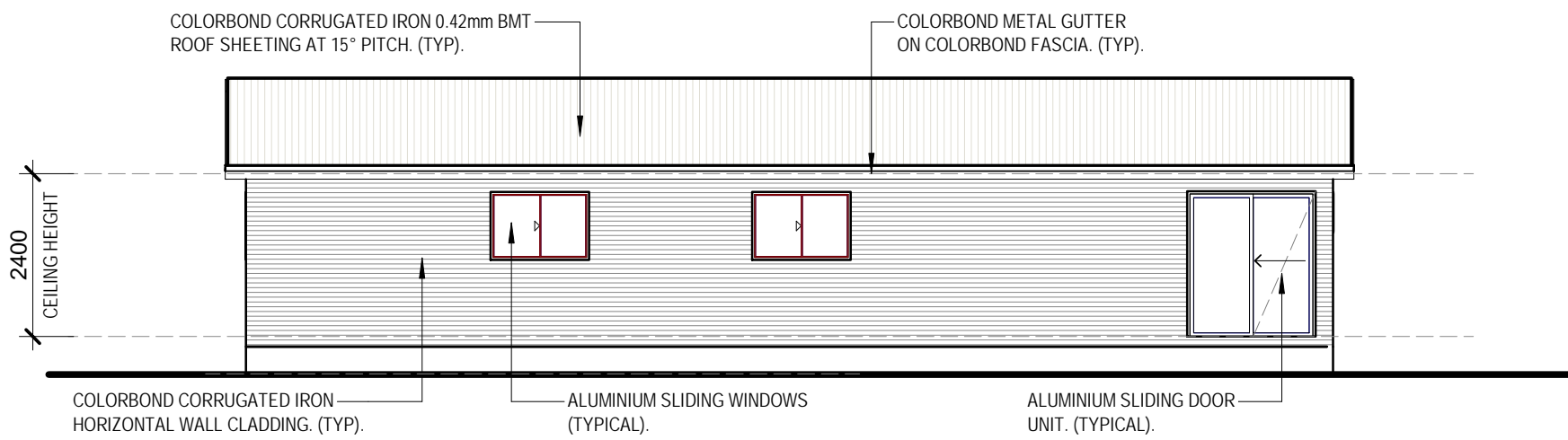
Office Block 120.00m² (12.92 SQS.)



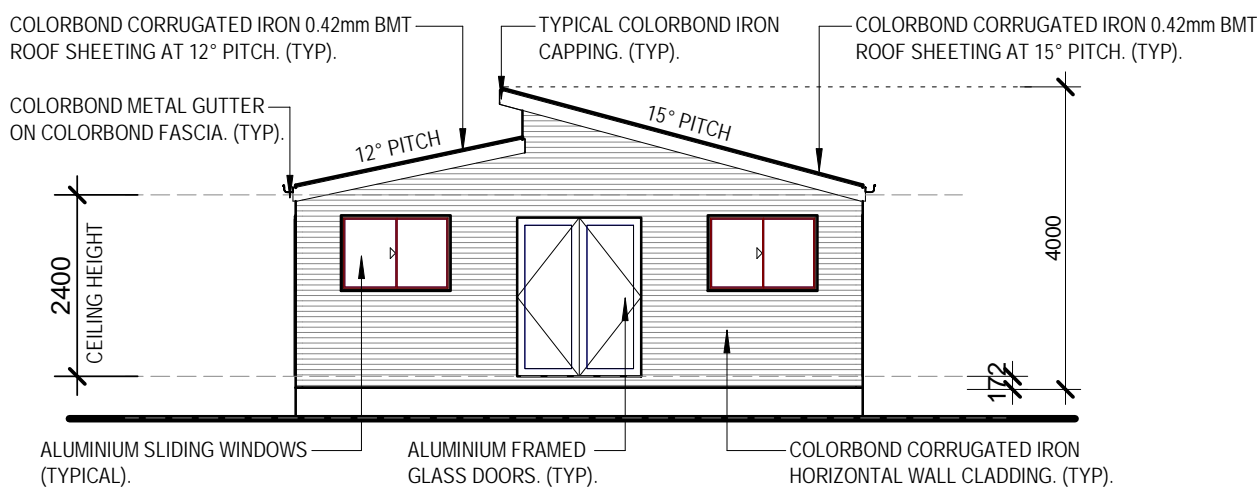
PROPOSED FLOOR PLAN. 1:100.



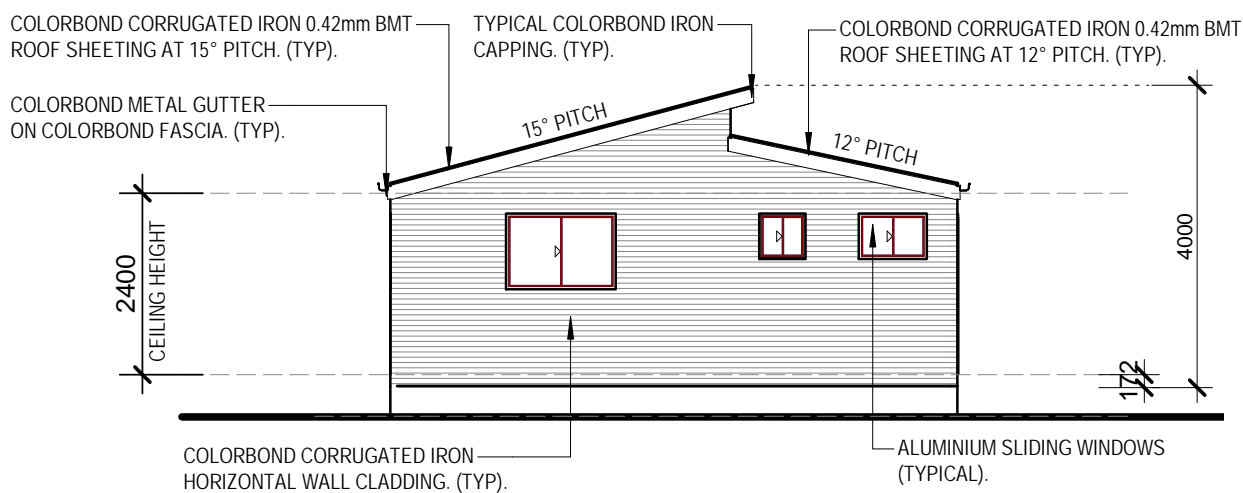
PROPOSED side ELEVATION 1:100.



PROPOSED side ELEVATION 1:100.



PROPOSED front ELEVATION 1:100



PROPOSED rear ELEVATION 1:100