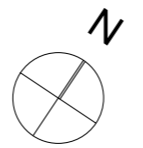


**PROPOSED RESIDENCE  
AT NARARA ECOVILLAGE**

REV	DATE	NOTES



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ARCHITECT

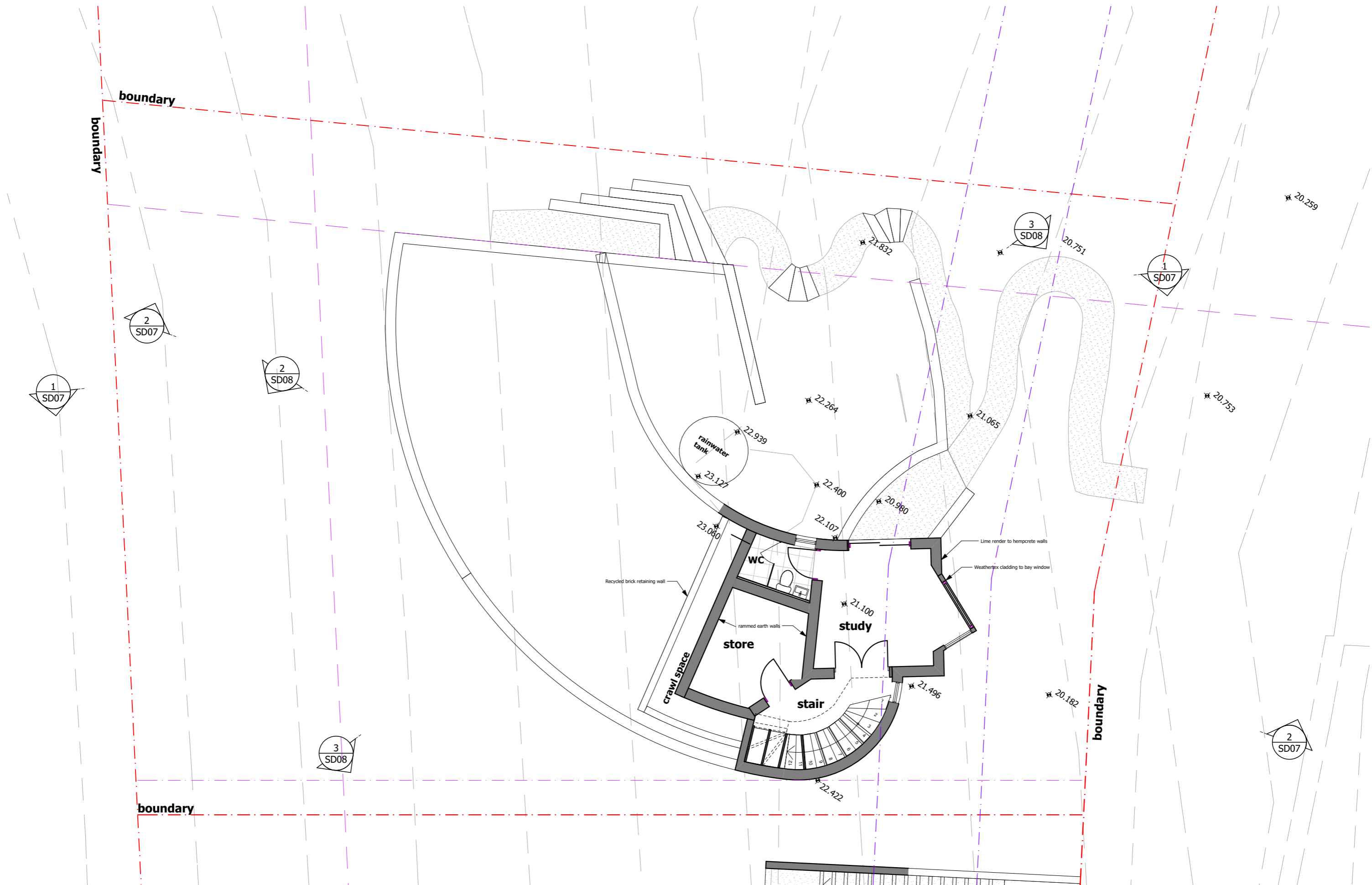
Ph/Fx: (02) 97980516  
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DATE 26/05/2017

**SD01**

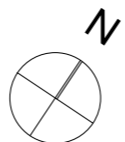
**SITE PLAN**

draft DA



**PROPOSED RESIDENCE  
AT NARARA ECOVILLAGE**

REV	DATE	NOTES



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DATE 26/05/2017

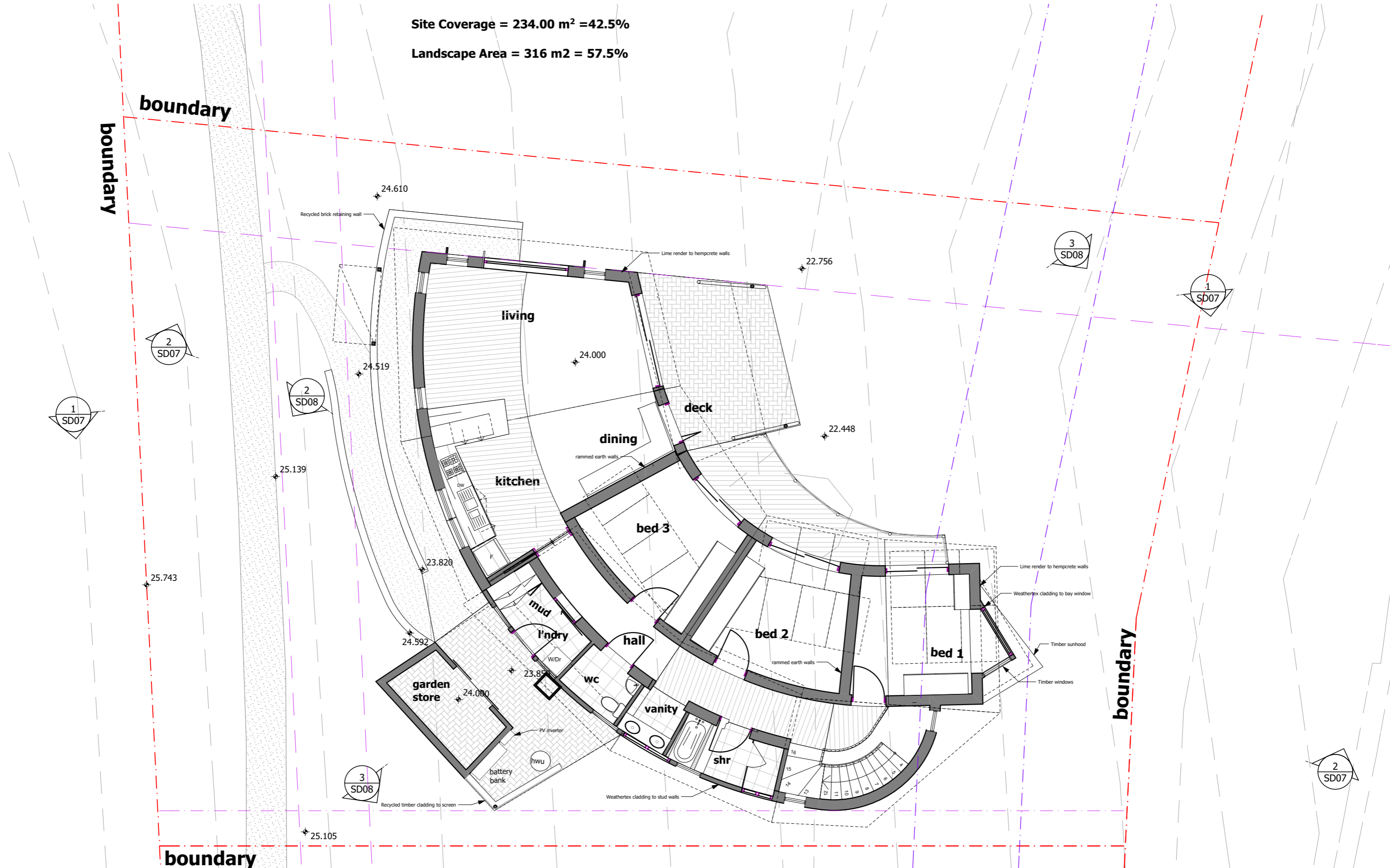
**SD02**

**LOWER GROUND  
PLAN**

draft DA

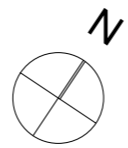
Site Coverage = 234.00 m<sup>2</sup> = 42.5%

Landscape Area = 316 m<sup>2</sup> = 57.5%



PROPOSED RESIDENCE  
AT NARARA ECOVILLAGE

REV	DATE	NOTES

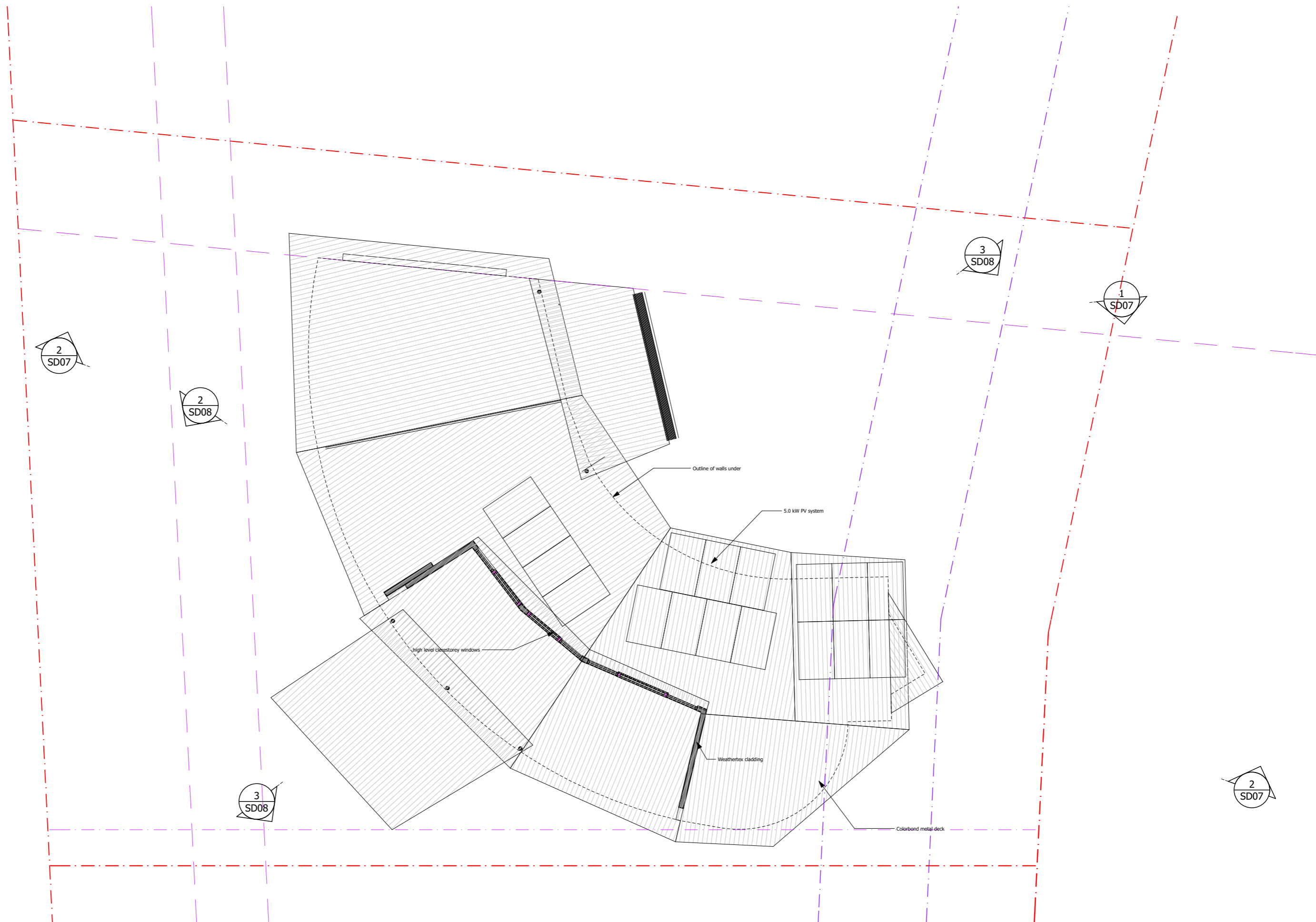


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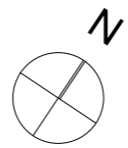
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DATE 26/05/2017  
SD03

draft DA  
**GROUND FLOOR  
PLAN**



**PROPOSED RESIDENCE  
AT NARARA ECOVILLAGE**

REV	DATE	NOTES



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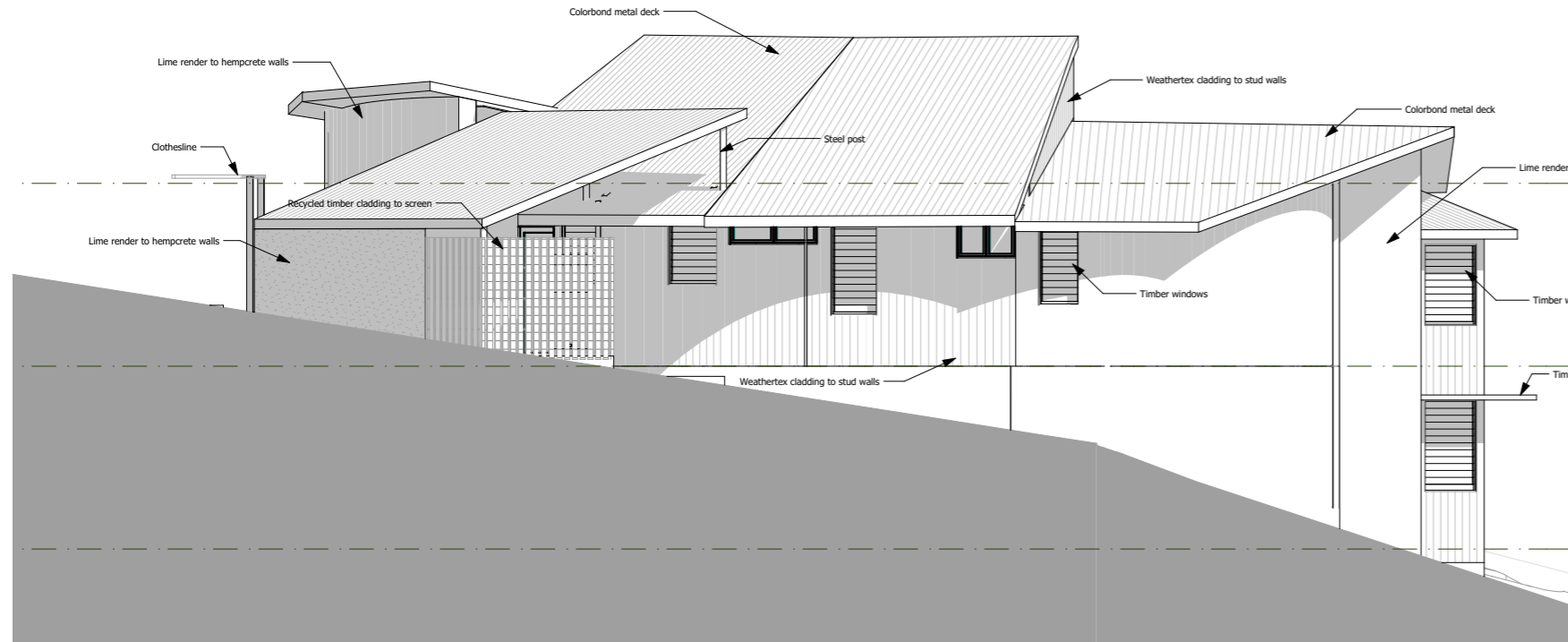
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DATE **26/05/2017**

**SD04**

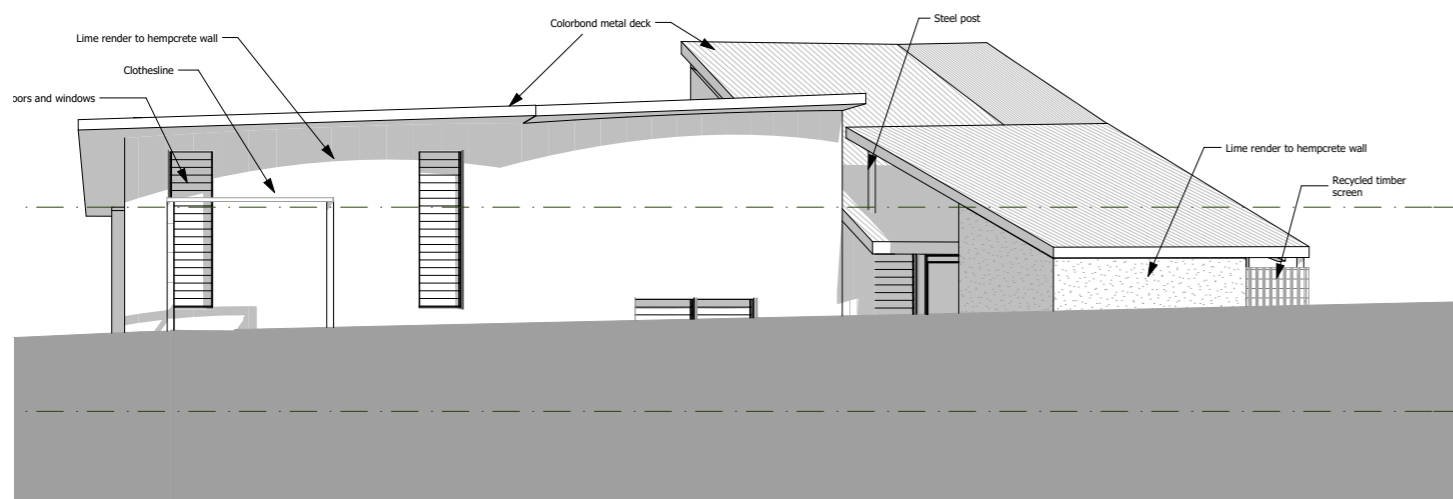
**ROOF PLAN**

draft DA





**SOUTH EAST ELEVATION**



**SOUTH WEST ELEVATION**



PROPOSED RESIDENCE  
AT NARARA ECOVILLAGE

REV	DATE	NOTES

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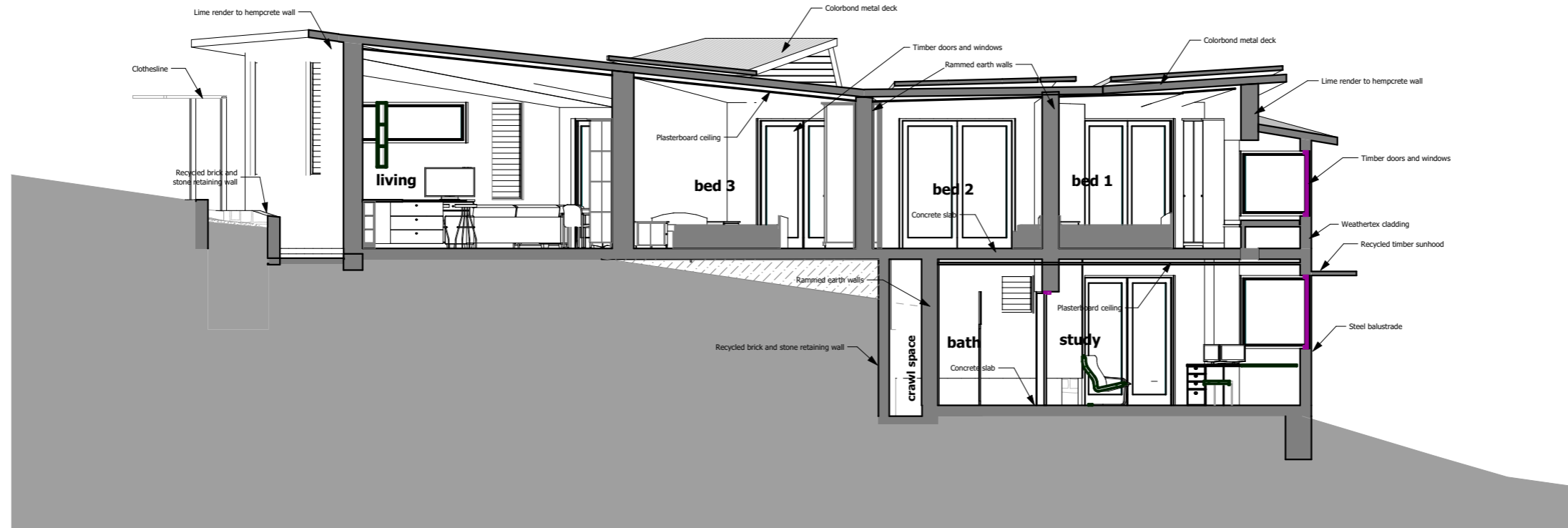
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DATE 26/05/2017

**SD06**

**SE & SW  
ELEVATIONS**

draft DA



**SECTION BB**



**SECTION AA**

PROPOSED RESIDENCE  
AT NARARA ECOVILLAGE

REV	DATE	NOTES

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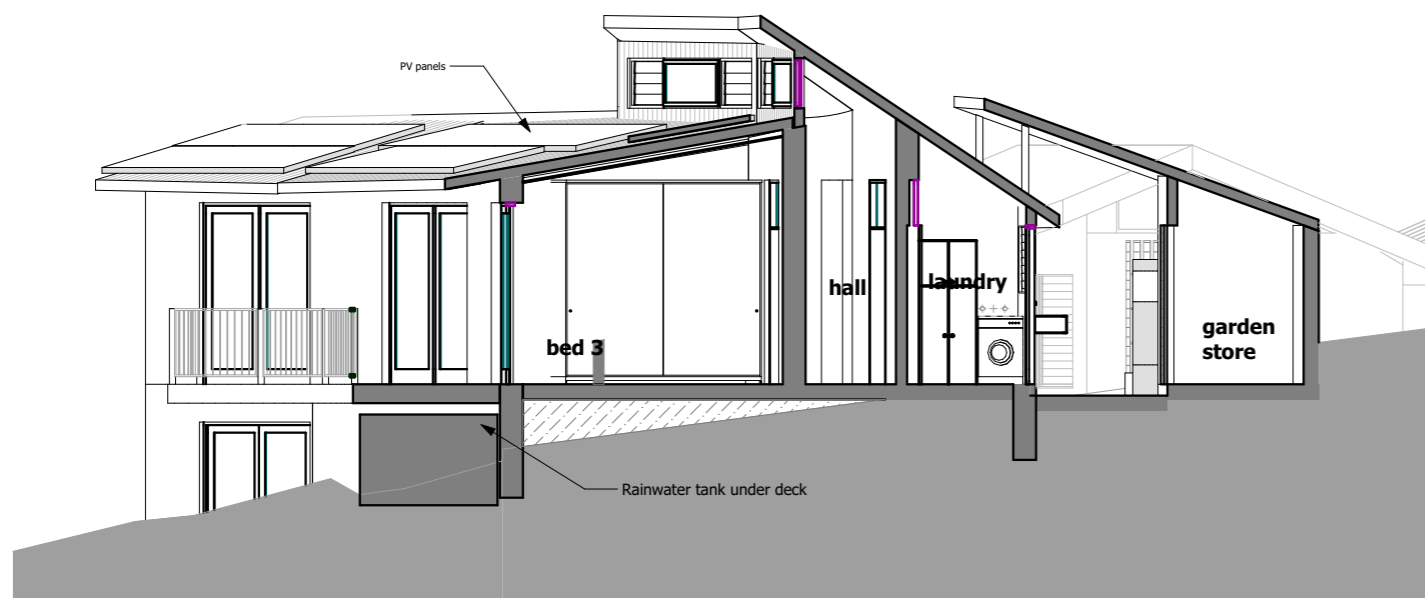
**SD07**

**SECTION AA & BB**

draft DA



**SECTION CC**



**SECTION DD**



PROPOSED RESIDENCE  
AT NARARA ECOVILLAGE

REV	DATE	NOTES

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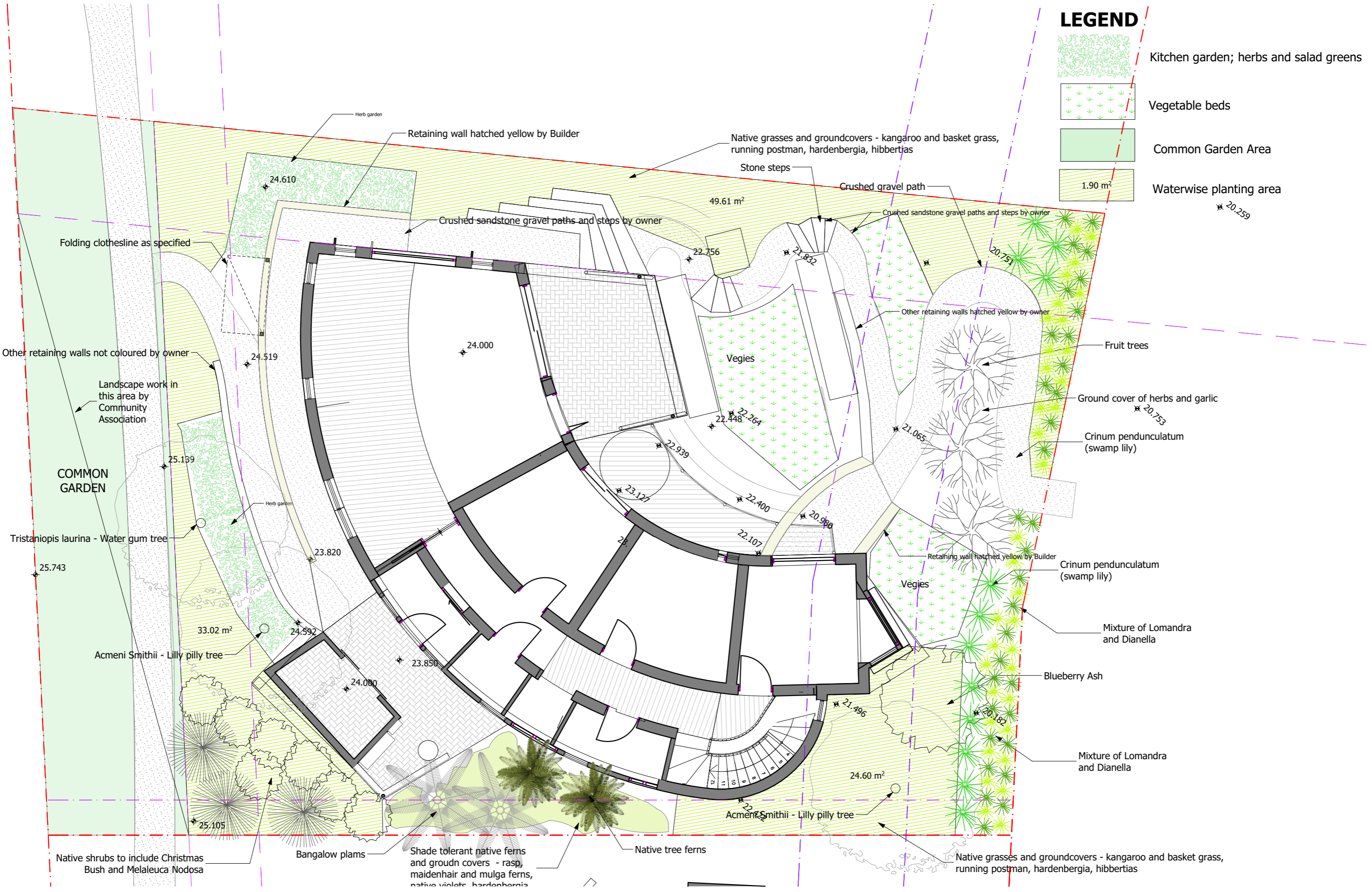
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DATE 26/05/2017

draft DA

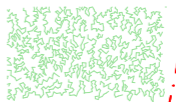

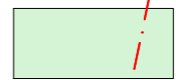
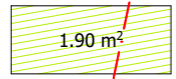
**SD08**

**SECTIONS CC & DD**





**LEGEND**

-  Kitchen garden; herbs and salad greens
-  Vegetable beds
-  Common Garden Area
-  Waterwise planting area

**PROPOSED RESIDENCE  
AT NARARA ECOVILLAGE**

REV	DATE	NOTES

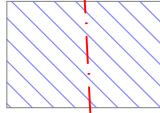
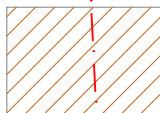

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**DATE** 26/05/2017

**SD09** **LANDSCAPE** **draft DA**

**LEGEND**

-  **PROPOSED AREAS OF FILL**
-  **PROPOSED AREAS OF CUT**
-  **SEDIMENT CONTROL FENCE**

**TRAFFIC CONTROL**  
 Traffic control works shall be installed & maintained in accordance with AS 1742.3 (Traffic Control Devices for Work on Roads) &/or RTA Traffic Control at Work Sites Manual Version 4/06/2010. Local Constraints may not allow signs and devices to be placed as exactly in accordance with this plan. Judgement will therefore be necessary to place signs and devices as close as possible to the spacing indicated.

Signs should generally be placed 1.0 m clear of the travelled path. For works exceeding longer than 2 weeks, long term signs (Truck turning signs) shall be mounted on poles 2.2m above ground level. Signs are to be Class 1 Retro-reflective (Day/Night) and positioned adjacent to the footpath or high on gal. posts in clear view of passing motorists. At the end of the days shift or when traffic controllers are absent for an extended period, cover or remove signs.

**WASTE RESOURCE MANAGEMENT**  
 Generation of waste on site to be kept to a minimum. Before sending any waste to landfill, check to see if the left over material can be used on site, placed in any community recycling facilities within the Ecovillage or be used by other building contractors working in the village. Contact your Narara Registered Assessor to get information on recycling facilities/opportunities within the village.

**EXISTING TREES AND VEGETATION**  
 Before clearing any existing trees or vegetation, please check with the lot owner and your Narara Registered Assessor to confirm that it is acceptable to be removed.

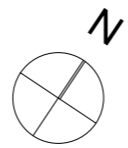
**MAINTENANCE**  
 Ensure that work site is kept secure, clean and tidy. Inspect sediment fences, bunds and diversion banks on a weekly basis. Repair any damage or deterioration.

Orange construction and service installation to allow progressive back filling and to minimise opening of excavations. Re-use stockpiled material on site wherever possible. After backfilling remove any excess spoil from site.

Stockpile top soil separately from general excavated material. Wherever possible provide covers over stockpiled materials.

**PROPOSED RESIDENCE AT NARARA ECOVILLAGE**

REV	DATE	NOTES

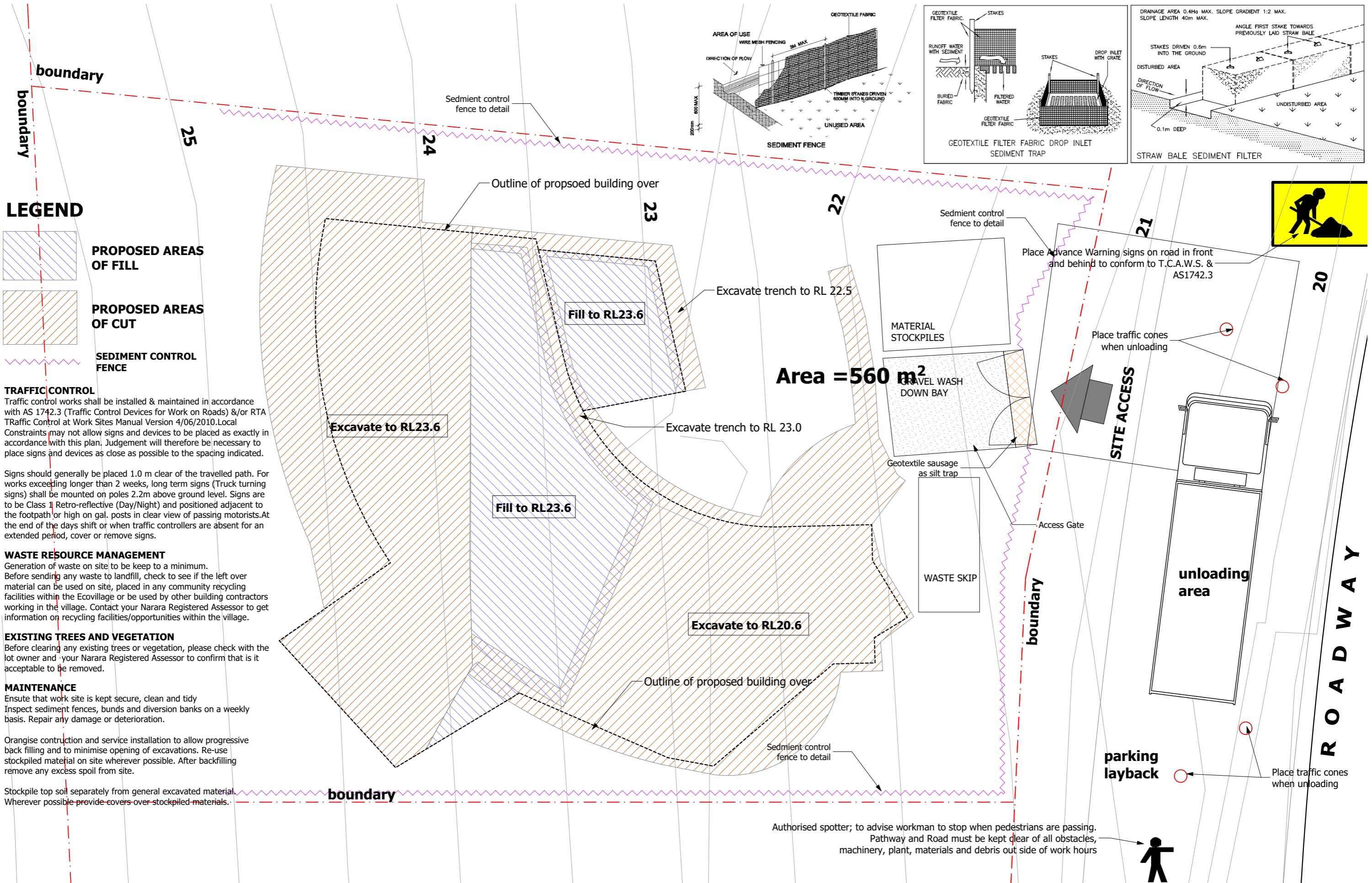


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**SCALE** 1:100 @ A3  
**DATE** 26/05/2017  
**SD10**

**CONSTRUCTION MANAGEMENT PLAN**  
 draft DA



BASIX SPECIFICATION	
Item	Description
Rainwater tank	3,500 litre connected to garden
Hot Water system	Sanden 250l. electric heat pump
NEV Recycled Water	connected to toilets and garden
Water Fixtures	Showers max. 6.5 l/minute Toilets 4 star WELS rating Taps 5 star WELS rating
Heating and Cooling	Ceiling fans only
Lighting	LED fixtures throughout
Renewable Energy	5kW PV system connect to NEV mini-grid
Appliances	Induction cook top, electric oven, ventilated fridge space, external & sheltered clothesline

THERMAL COMFORT SPECIFICATION		
Item	Material	Insulation
External Walls	300 mm th. Hempcrete fixed to stud wall framing with lime render both sides medium colour external	None
	Weatherex fixed to battens with breathable membrane fixed to stud wall framing with MGO board internally dark colour external	R2.5 high density polyester insulation
Internal walls	350 mm th. rammed earth wall	None
	MGO lined stud walls -	R2.5 high density polyester insulation
Roof	Metal deck with, light colour	Breathable membrane – CSR ProctorWrap HTR
Ceilings	Plasterboard	R5.0 polyester insulation
Floor structure	Concrete	
Floor finishes	Burnished concrete except floating timber to part living room, kitchen, hall, tiles to wet areas	N/A
Windows	Sliding windows, Sliding glazed doors, louvre and fixed windows - timber framed with single clear glass U value = 5.4 SHGC = 0.63 or equivalent Awning and casement windows, hinged glazed doors - timber framed with single clear glass U value = 5.4 SHGC = 0.56 or equivalent All external doors and windows to be fitted with draught excluding weather stripping	
Lighting	No recessed downlights	
General	Insulation, services and sealing of the building to be in accordance with BCA NSW 3.12. All exhaust fans to be max. 180 mm dia. be sealed or fitted with damper and exhaust through roof	

ENERGY EFFICIENCY	
Item	Description
Rainwater Pump	Efficient pump fitted with 30 l holding tank
Hot Water system	Electric heat pump fitted with timer to run during middle of day
Heating and Cooling	Ceiling fans only
Lighting	LED fixtures throughout 3.5 W/m2 for interior of houses 2.8 W/m2 for verandah, balcony or deck of houses, 2.0 W/m2 for outbuildings (sheds and garages).
Renewable Energy	Battery system to be connected to PV system within 5 years
Appliances	Fridge/freezer of 2.5 stars - Model No. Dishwasher 4 stars - Model No. Clothes washer 4 stars - Model No. Clothes dryer 2.5 stars - Model No.

MATERIAL SPECIFICATION																						
Item	Material	Notes																				
Renewable Materials	External walls - Hempcrete	Hempcrete which uses hemp fibres – a renewable plant material which is locally grown in the Hunter Valley. The frame of all external walls will be H2 timber sourced through the AFS (Australian Forestry Standard) chain of custody and treated with permethrin Light Organic Solvent Preservative																				
	External walls - Weatherex	The remaining external walls use Weatherex cladding which is made from waste materials from the timber logging and milling process and has a Platinum GreenTag rating																				
	Internal walls	A large portion of the internal walls will be rammed earth. Although not strictly a renewable product as there is only a finite amount of naturally occurring earth, it is a natural material that entails little energy in its production. It is hoped that the some of the significant amount of spoil that has been created with the subdivision infrastructure project could be used for the rammed earth. If this is the case then the energy involved in transporting such a product to the site from a remote quarry or location can be avoided and thus further reducing the impact.																				
	Floor finishes	The linoleum floor covering in the bedrooms is made from natural renewable materials – linseed oil, jute and flax.																				
Recycled Content	Fill	Most of the fill under the concrete slab will be salvaged from the excess spoil left over from the subdivision infrastructure works.																				
	Concrete	The floors will be made from reinforced concrete. The reinforcing steel is all made from recycled scrap metal. The concrete specified will use recycled aggregate from crushed concrete and other sources. The amount of Portland cement in the mix will be reduced by the use of substitutes such as fly ash which is a recycled waster product from coal power stations or blast furnace slag which is a by-product from steel production.																				
	Subfloor and foundation walls	Recycled bricks will be used for all subfloor, foundation and retaining walls and laid in lime mortar to allow for ease of disassembly.																				
	Insulation	The polyester insulation used in the roof and the lightweight walls is 100% recycled from PET bottles.																				
	Floor finishes	The timber flooring in the kitchen, living room and hallway will be recycled hardwood sourced from a mill on the north coast.																				
	Fixtures and fittings	Most of the light fittings will be second hand light fittings salvaged from demolition and recycling yards. Sanitary fixtures and bathroom fittings will be sourced as second hand where possible. The kitchen will be made from second hand or –repurposed cabinets and fittings where possible.																				
	External paving	External paving will use recycled bricks or concrete pavers and recycled crushed aggregate or sandstone for paths.																				
Durable Materials	Metal roofing	A warranty of 30 years should be available for the Bluescope Colorbond roof sheeting and 20 years for the Colorbond gutters and downpipes. The actual extent of the warranty will only be confirmed after the installation has been checked.																				
	PV system	The PV panels to be installed on the roof will have a 25 yr warranty. The PV inverter will have a 10 yr warranty																				
	External walls - Hempcrete	As the hempcrete walls are handmade, no product warranty can be provided. However, a sample of hempcrete has been found that has survived from the 6 <sup>th</sup> Century AD. It is fire and termite resistance and provided all round with decent eaves to ensure weather protection and so a long life is expected.																				
	Floor finishes	Internal floor finishes are all expected to have a long life and not likely to need replacement for decades. The burnished finish to the concrete floors in the dining/living room and study is integral to the slab and will not deteriorate. The recycled hardwood floor should last for many years although depending on wear, it may need re-surfacing possible once every ten years. The linoleum in the bedrooms is another long lasting product which will come with a 10 year warranty.																				
Low Health Impact Materials	External walls - Hempcrete	The external walls will primarily be hempcrete construction with lime render on both faces. This form of construction is breathable which will minimise the risk of condensation and the occurrence of mould inside the home.																				
	Insulation	The polyester insulation is low allergenic.																				
	Paints, adhesives and sealants	All paints and adhesives to be used internally in the home will be low VOC (volatile organic compound) in accordance with the following :- <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>USE</th> <th>VOC Content (grams/litre)</th> </tr> </thead> <tbody> <tr> <td>Timber Flooring Adhesive</td> <td>100</td> </tr> <tr> <td>Resilient Flooring Adhesives</td> <td>60</td> </tr> <tr> <td>Ceramic/Stone Tiling adhesives</td> <td>65</td> </tr> <tr> <td>Dry Wall and Panel Adhesives</td> <td>50</td> </tr> <tr> <td>Multi-purpose construction adhesives</td> <td>70</td> </tr> <tr> <td>Architectural sealants</td> <td>250</td> </tr> <tr> <td>Paint Interior undercoat/sealer</td> <td>65</td> </tr> <tr> <td>Paint interior - flat, low sheen and semi-gloss</td> <td>16</td> </tr> <tr> <td>Paint interior – gloss</td> <td>75</td> </tr> </tbody> </table> Interior paints generally will also be breathable mineral based paints. A schedule of all adhesives and sealants to be used on the project including data sheets confirming VOC levels to be submitted by the contractor prior to commencing construction.	USE	VOC Content (grams/litre)	Timber Flooring Adhesive	100	Resilient Flooring Adhesives	60	Ceramic/Stone Tiling adhesives	65	Dry Wall and Panel Adhesives	50	Multi-purpose construction adhesives	70	Architectural sealants	250	Paint Interior undercoat/sealer	65	Paint interior - flat, low sheen and semi-gloss	16	Paint interior – gloss	75
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Timber Flooring Adhesive	100																					
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Paint Interior undercoat/sealer	65																					
Paint interior - flat, low sheen and semi-gloss	16																					
Paint interior – gloss	75																					
End of Life	Design	The design has a lower level which will initially be a study/home office with separate toilet. This has its own access which allows flexibility in terms of a home business operation allowing the occupant to work from home when required. This space also has the potential to be closed off from the main dwelling on the upper floor and altered to become a separate dwelling space to allow for flexibility to adjust for changing family size and make-up.																				
	Disassembly	The roof sheeting and framed will all be screw fixed to allow for disassembly and recycling at end of life or when renovations occur. Similarly the Weatherex cladding will also be screw fixed and can be easily removed and be available for re-use. All structural steel work shall be bolt connected not welded and so can be easily disassembled for recycling.  Rammed earth walls can be broken up and the resultant material available to be used as fill. Recycled bricks used foundation and retaining walls will be laid in lime mortar to allow for ease of demolition and cleaning for re-use.																				
	Services	Service equipment such as the hot water system, PV inverter and battery bank will be located in a semi-open screened area next to the garden store and are readily accessible for servicing and replacement. The PV system will be located on roofs that are less than 3.0 m above decks from which they can be accessed which makes servicing and replacement straight forward. It is expected that by then end of the PV panel's life, there will be options for disassembling and recycling the panels will be available. There are already schemes to do this operating overseas and they should be introduced into Australia in the next few years.																				

revision	date	notes

PROPOSED  
RESIDENCE  
AT Lot 12  
NARARA  
ECOVILLAGE  
for Deborah &  
Daniel Mohr

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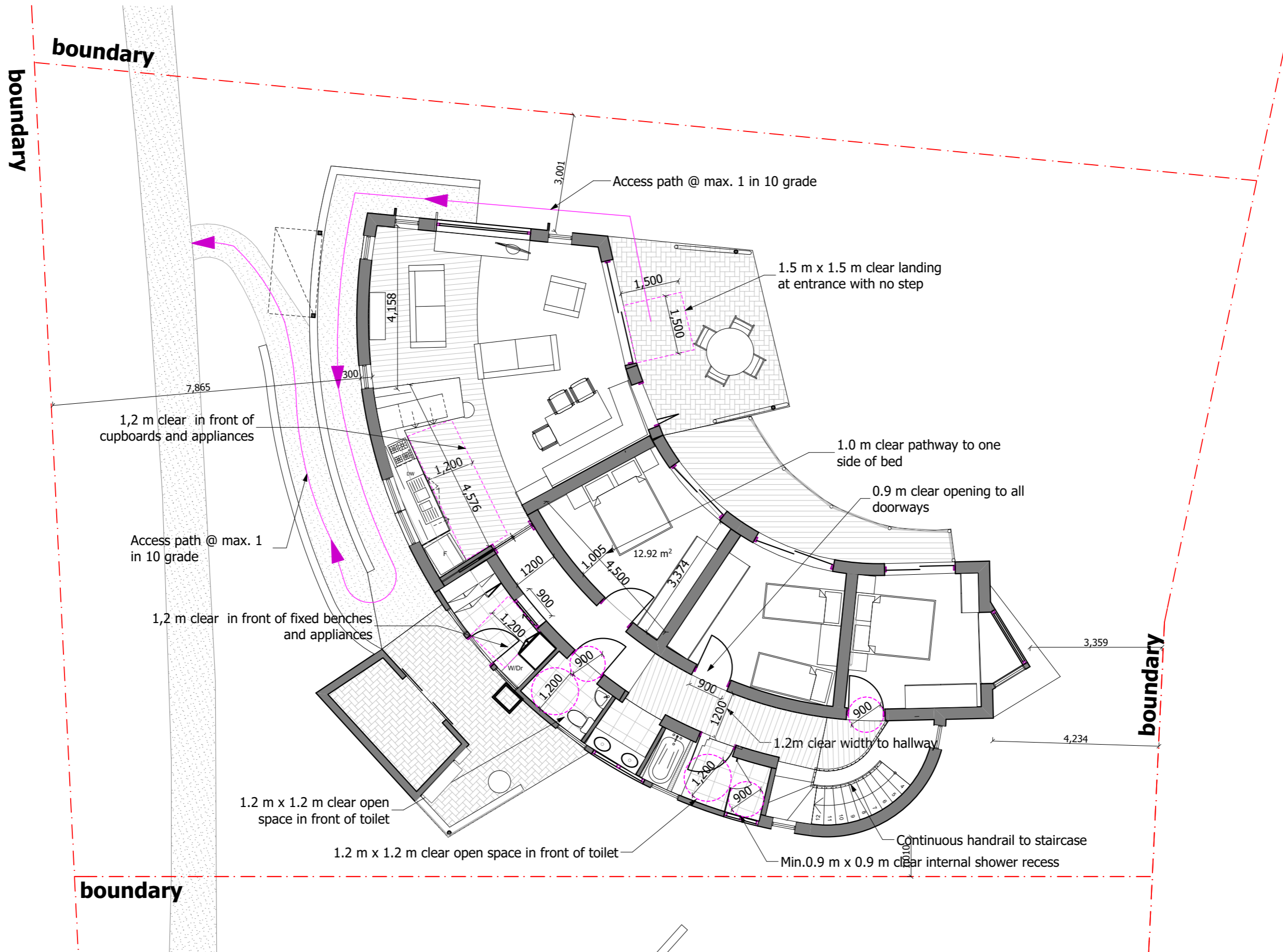
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DATE 26/05/2017

draft DA

**SD11**

**SPECIFICATION**



PROPOSED RESIDENCE  
AT NARARA ECOVILLAGE

REV	DATE	NOTES

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DATE 26/05/2017

SD12

ACCESS PLAN

draft DA