

Under By-Law 41.8 of Nara Ecovillage Community Management Statement these building standards are Interim Building Standards until either adopted or amended and adopted by ordinary resolution at its first General Meeting of the Community Association.

## Schedule 1 Building Standards

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Appendix 1 – Building Approval Pathway

Appendix 2 – Solar Access

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## Schedule 1 Building Standards



- Our **Vision** is for an environmentally, socially and economically sustainable world.
- Our **Mission** is to create a sustainable ecovillage as a demonstration of this vision.
- Our **Aim** is to research, design and build a stylish, inter-generational, friendly demonstration ecovillage at Narara, blending the principles of ecological and social sustainability, good health, business, caring and other options that may evolve for our wellbeing.

### 1. Introduction

The Narara Ecovillage Building Standards (the Building Standards) have been developed in support of the community's vision, mission and aims.

The NEV Building Standards have been developed and implemented by the NEV Community to further our aims to research, design and build a thriving Ecovillage which demonstrates our commitment to ecological and social sustainability

The standards seek an outcome based on inclusive decision making, good design, good health and the wellbeing of all community members. They encourage small and inexpensive houses knowingly designed to provide thermal comfort, low water use and low energy consumption. The standards also seek innovation from community members in the design of their homes and the use of recycled and locally sourced materials wherever possible. We are all seeking homes with a significantly reduced impact on the environment when compared to the "average" house currently built in NSW and in Australia as a whole.

We aim for standards equal to the current best practice, and which incorporate higher sustainability and performance outcomes than those set by other commonly used rating tools. In addition, we seek cost-effective outcomes for all sustainability elements incorporated into the homes of community lot owners.

The Building Standards will be reviewed regularly by the Building Review Panel, who will report to the Community Association. The Building Review Panel is focused on improving the standards with reference to our community aims, affordability and building performance.

NEV's Building Standards are also located on the NEV Wiki at:

<https://wiki.nararaecovillage.com/pages/viewpage.action?pageId=16754578>

Please contact Grant Rickey ([glickey@gmail.com](mailto:glickey@gmail.com)) from the Building Standards Working Group if you have any question regarding these Standards.

### Background to the Building Standards

Our Building Standards are based on:

- i) Conserving potable water and managing stormwater, greywater & blackwater. (Greywater is waste water from showers and basins and blackwater is water from toilets.)
- ii) Reducing greenhouse gas emissions generated by a building's thermal performance and other energy use in a building.
- iii) Supporting increased use of renewable energy.
- iv) Managing peak power demand.
- v) Lowering the environmental impacts of building materials by reducing their embodied energy and toxicity.

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- vi) Minimising construction and domestic waste.
- vii) Managing the indoor environmental quality of building, including air quality, lighting, thermal conditions, pollutants and ergonomics, and the effects of these elements on building occupants.
- viii) Encouraging innovation.
- ix) Placing livability, adaptability and resilience at the core of good building design.

The Building Standards:

- i) Extend the sustainability targets for energy and water set by the Building Sustainability Index (BASIX), which is the sustainable planning measure implemented under the Environmental Planning and Assessment Act. BASIX applies to all residential dwellings and is part of the development application process in NSW. <https://www.basix.nsw.gov.au/>
- ii) Incorporate lessons learned from other assessment tools in common use, and from the building standards of other ecovillages, community associations and green developments including Lochiel Park, South Australia; Aldinga Arts Eco Village; The Bend Neighbourhood Association BEND; The Ecovillage at Currumbin; Green Star; BASIX; STEPS & BESS.
- iii) Have been independently reviewed by external reviewers, including experienced sustainability Architects and Builders

Like BASIX, the Building Standards establish mandatory minimums standards for some sustainability elements<sup>1</sup>

### Building Performance Targets

BASIX requires a 40% reduction of greenhouse gas emissions and town water usage for a standard NSW house. This standard was set in 2004, and NSW has fallen behind other states in energy efficiency standards that were adopted in 2011.

The Building Standards have benchmarked reductions like those used in the state of Victoria's Built Environment Sustainability Scorecard (BESS) and we have set an initial reduction level compared to the BASIX standard 2004 house, at:

- i) 70% for greenhouse gas emissions,
- ii) 70% for potable water usage, and
- iii) a similar reduction for other Categories.

## 2. Smart Grid Compatible Equipment

Narara Ecovillage infrastructure incorporates advanced smart grid technology which uses a variety of operational and energy measures including smart meters, smart appliances, and renewable energy resources to control the production and distribution of electricity within the NEV mini-grid

A schedule of smart grid compatible equipment, including smart meters and inverters is located on the wiki at:

<sup>1</sup> Refer [Table 1 - NEV Building Ratings Scheme Summary - The Initial Minimum Reduction Levels](#) for more information on mandatory elements.

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<https://wiki.nararaecovillage.com/display/BIMIT/Building+Standards+-+Smart+Grid+Technologies>

The page is maintained and updated by NEV so that Lot Owners can be informed on the correct equipment to choose for installation in their home to achieve the maximum benefit from the smart grid.

### 3. Landscape Standards

NEV's Landscape Standards are also located on the NEV Wiki at:

<https://wiki.nararaecovillage.com/display/BIMIT/Schedule+2+-+Landscape+Standards>

This document and should be read in conjunction with these Building Standards.

### 4. Design Assessment Scoresheet

The home designs of Lot Owners are assessed against the Building Standards using the Design Assessment Scoresheet.

The Scoresheet is located on the wiki at:

<https://wiki.nararaecovillage.com/display/BIMIT/Building+Standards+-+Design+Assessment+Scoresheet>

The Scoresheet measures the resources that a NEV dwelling uses, and considers the house energy emissions and water consumption in a similar manner to the 2004 BASIX benchmark, but seeks an initial reduction of estimated consumption that is less than 70% of the BASIX 2004 benchmark for both. Goals for each category in the Scoresheet are provided in the following table.

Scoresheets may be filled out by either the lot owners, the lot owner's design consultants. The Lot Owner is responsible for any cost incurred in completing the NEV Scoresheet.

**Table 1 – NEV Building Ratings Scheme Summary - Initial Minimum Reduction Levels**

CATEGORY	SUB-CATEGORY	GOAL	MEASUREMENT CRITERIA	INITIAL VILLAGE MINIMUM*
Water	Potable Water Usage	Conserve drinking water from NEV dam	Water efficient devices; Water effective landscaping & gardens; Use of recycled water in house; Strategies for high water demand features e.g. irrigation	70% reduction
	Stormwater Greywater & Black-Water Management	Conserve drinking water; reduce stormwater, greywater, blackwater; consume recyclable surplus	Water Sensitive Urban Design (WSUD); how stormwater is harvested; ponds; rain gardens; infiltration systems; buffers incl. water tanks; swales; waterless toilets	70% reduction
Energy	Thermal Performance	Decrease Energy usage	Passive solar house design considering orientation, windows, insulation, thermal mass, shading and ventilation	7 stars' minimum**

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CATEGORY	SUB-CATEGORY	GOAL	MEASUREMENT CRITERIA	INITIAL VILLAGE MINIMUM*
Energy	Other Energy Usage	Decrease Other Energy usage	Heating & cooling methods; Hot water units; Appliances; Lighting (type, flexibility & optimizing); Standby power usage; Clothes drying	70% reduction
	Renewable Energy	To at least meet annual demand	Photovoltaic panels	At least meet annual demand
	Peak Power Demand	Reduce summer and winter peak loading	Standby switches/ power boards; Energy monitoring system; Basic control system e.g. timer; Remote control system (app?); Separate circuits for non-essential appliances; load shifting by Electricity Provider; have PV plus battery system; surplus renewable energy above that required to meet the energy demand over the year	(Points are awarded for these items)
Materials	Materials	Lower the health & environmental impact of materials for sourcing, production and disposal	Having a minimum amount of materials; being durable; designing for ease of deconstruction at end of building life; low embodied energy; high recycled content; natural and renewable resource materials; low human health impact materials; locally sourced materials	(Points are awarded for these items)
Waste	Waste	Domestic and construction	Recycle waste streams; reuse and recycling of construction wastes; design to minimise offcuts & waste with prefabrication, using standard sizes etc.	(Points are awarded for these items)
Indoor	Indoor Environmental Quality (IEQ)	Optimum ventilation & acoustics; low pollutant level	Daylighting; type of walling, flooring and design for the acoustic consideration of neighbours; low emission materials, control of mould and condensation	(Points are awarded for these items)
Innovation	Innovation	Foster new ideas	Owners to demonstrate how elements exceed Category minimums NB: Any innovative proposals need preliminary assessment from the BRP at the early design stage.	(Points can be awarded if the requirements of other Categories are exceeded)
Other	Other	Adaptability; Resilience; Noise; Livability	The ease of adapting house for future uses; ability to withstand severe external forces including fires; noise control measures e.g. pump locations (including heat pumps); Ability to improve access for occupants over time	Meet bushfire requirements; design for low noise

Notes

\* Initial Minimum reduction in the BASIX benchmark of average NSW household usage per person (in 2004).

\*\* Owners should aim to have their dwellings achieve more than 7 stars where costs are not prohibitive. This will help to provide a higher average Narara Ecovillage Standard across all Categories.

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## 5. Average Standard

Narara Ecovillage will also calculate the average score of all dwellings in the community by using the scores provided for individual lots by Lot Owners.

The Ecovillage may also be assessed against additional criteria; including::

- i) Food (where the ecovillage will grow some of its food) and
- ii) Transport (e.g. sharing vehicles).

## 6. Building Design and Approval

### A 5-Steps Approval

- a) The Narara Ecovillage Building Approval Process is shown in Figure 1 below and is also included in Annexure 01 on of this document.

- b) Step 1 – Site & Neighbourhood Analysis:

A significant test in building sustainable communities is how Lot Owners deal with their neighbours when placing and sizing their homes. The approval pathway sets down a requirement for Lot Owners to participate in a neighbourhood exchange at early stage of their home design and we recommend the exchange is facilitated by a design professional.

The aim of the exchange is to optimise the location of houses on lots to achieve equity across the neighbourhood in respect of solar access and overshadowing, and to consolidate at an early stage of the design consideration of both Hill Thalys and Central Coast Councils building setbacks and building envelopes and incorporation of common garden and services easements.

The Building Review Panel's recommendation with respect of access to sunlight is set out in Appendix 2 – Solar Access of these Building Standards. While the criteria set are guidelines only and not mandatory they should inform each neighbourhood exchange.

Which lots are included in a specific neighbourhood exchange will be agreed between the Building Review Panel and Lot Owners, and decided with reference to a lot's potential impact on an adjacent property. Lots impacting each other constitute a neighbourhood for the Facilitated Exchange. As an example, Lots 2 – 6 and Lots 7 – 9 in Stage 1 suggest themselves as natural neighbourhoods.

Outcomes from the Facilitated Exchange are to be documented in a Neighbourhood Agreement, which states the placement and size of Lot Owners' homes and associated structures across the entire neighbourhood.

A Lot Owner's detailed design can now be developed with confidence.

- c) Step 2 – Design Development & Assessment.

The objective of this step is to prepare all documents needed for the Lot Owner to tender their building works and to gain NEV's building approval and Council's development consent.

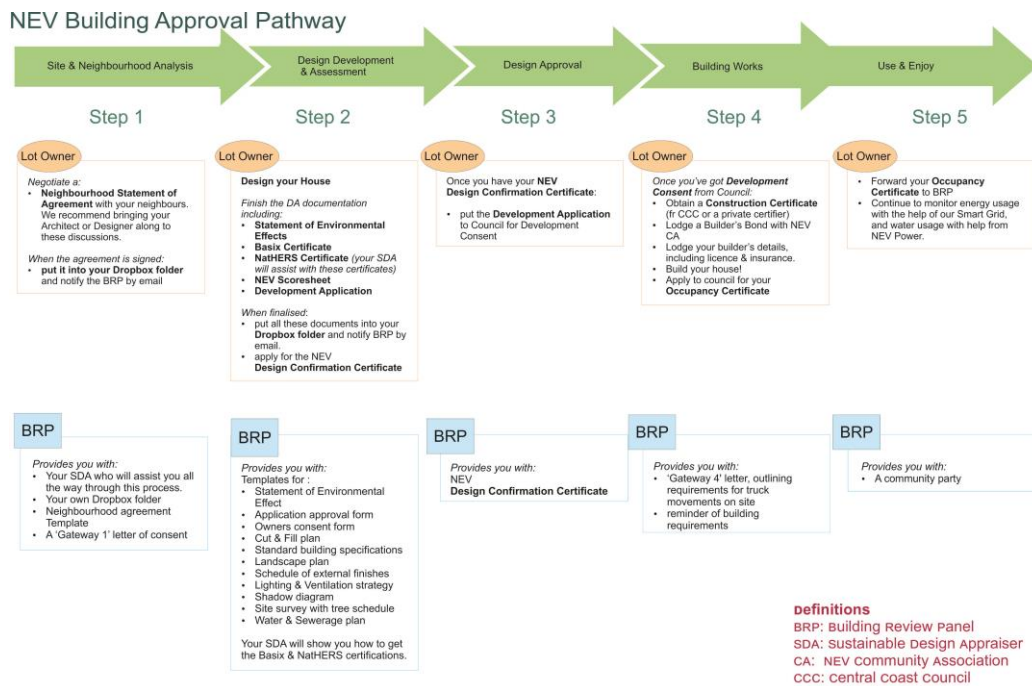
NaTHERS and BASIX certificates are to be obtained by the Lot Owner at their cost as part of their design development.

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Lot Owners also complete the Design Assessment Scoresheet and provide any documentation needed to support the information provided in the scoresheet.

At the end of Stage 2, the Sustainable Design Appraiser assigned to a Lot Owner will review and endorse the Lot Owner's scoresheet. If the requisite score is achieved, the design will automatically be accepted by the Building Review Panel, and a Design Confirmation Certificate issued.



d) Step 3 - Design Approval:

Once NEV's Design Confirmation Certificate is issued, the Lot Owner can proceed to lodge their plans with Council.

e) Step 4 - Building Works:

The Lot Owner proceeds with their building works.

f) Step 5 – On Completion of Building Works:

Once the building works are completed and an Occupancy Certificate is issued, the Lot Owner's home can be occupied and enjoyed.

Energy use will be monitored by NEV Power. In a situation where energy use significantly varies from design expectations, the Community Association may review energy consumption with the Lot Owner to determine where the variance from design occurs, and to establish strategies for reducing the demand for power.

Differential charges for power may also be applied, with higher rates charged when consumption is more than an agreed limit.

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## 7. The Construction Stage

Lot Owners are to lodge a refundable bond of \$500 with the Community Association. This is to manage potential damage to Community Association and Co-operative owned property within the ecovillage site caused by a Lot Owner's building works.

Where damage to Common property or Co-operative Property has occurred because of building activity, the Lot Owner shall ensure such damage is rectified in full before the bond is refunded.

Lot Owners may also wish to engage a building inspector to independently check that their work proceeds in accordance with approved construction drawings and specifications, and with the Construction Management Plan.

## 8. Supporting Documentation

- a) The Lot Owner is to arrange for supporting documents required for the building approval to be made available to the Building Review Panel in electronic pdf format. Documents can be either:
  - i) transferred by the Lot Owner to a dedicated Drop Box folder created for each lot by Community Association, or by
  - ii) providing to the SDA assigned to the lot a memory stick with the required documentation saved to it.
- b) Documents may be provided together or progressively in accordance with the NEV approval process

### Step 1: Site & Neighbourhood Analysis

- iii) The Neighbourhood Agreement

### Step 2: Design Development & Assessment

- iv) Supporting document requirements by Council for either a:
  - Development Application, or
  - Complying Development Application.
  - As applicable - Refer Annexure B
- v) Basix Certificate
- vi) NatHERs Certificate
- vii) Design Statement addressing:
  - Energy Demand Assessment
  - Smart Grid Equipment Selections
  - Stormwater & Water Management Strategy
  - Building Materials Selection
  - Light and Ventilation Strategy
- viii) Construction Management Plan
- ix) NEV Scoresheet endorsed by your Sustainable Design Appraiser.

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- x) Supporting documents if relied on in NEV Scoresheet. Including:
  - Liveable Housing Certificate
  - Innovation Strategy statement

**Step 3: Design Approval**

- xi) A statutory approval certificate:
  - Council's Development Consent, or
  - A statutory certifier's statement of a Complying Development
- xii) NEV's Design Confirmation Certificate

**Step 4: Building Works**

- xiii) Their Construction Certificate
- xiv) Builders details, or in the case of Owner Builder's their subcontractor details, including:
  - Contact details:
    - ✓ Company name,
    - ✓ Primary contacts name,
    - ✓ mobile number,
    - ✓ email address.
  - Statement of Currency for insurance including: Public & Product Liability; Vehicle insurance; Workers Compensation.
- xv) The construction management plan signed in agreement by the Lot Owner's Builder.
- xvi) Bond lodgment to address damage to the Community Property.

**Step 5: Finished Building**

- xvii) An occupancy certificate.

**9. Roles and Responsibilities**

NEV's Community Management Statement establishes several roles to oversee the design approval process within the ecovillage and assigns to those roles some key responsibilities. A summary of those roles and responsibilities follow..

**Building Review Panel**

The Building Review Panel (the Panel) is appointed by the Community Association at its 1st Annual General Meeting. When constituted, the Panel comprises between 3 and 5 members and is empowered by the Community Association to review Lot Owners' designs prior to submission of those designs to Council for development consent. The Panel's approval or disapproval of designs is made solely on the matters set out in the Community Association's By-laws, its Rules and Building and Landscape Standards referenced in the Community Management Statement

A Lot Owner can make a submission to the Panel concerning their design for the Panel's consideration.

The Panel must provide its decision in writing to the Lot Owner within 40 days of receiving all documentation required in support of an approval application.

Designs are deemed approved unless the Panel provides a written disapproval or requests additional information for the Lot Owner.

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The Panel can impose conditions on its approval.

### Sustainable Design Appraiser

The Building Review Panel maintains a list of accredited Sustainable Design Appraisers (SDAs) who represent the Building Review Panel in the review of Lot Owners designs described above.

### Building Appeals Committee

The Building Appeals Committee is also appointed by the Community Association at its 1st Annual General Meeting and also comprises of between 3 and 5 members.

The Committee hears Lot Owners appeals against decisions made by the Building Review Panel.

An appeal application fee of \$300 applies to any appeal raised by a Lot Owner, of which 50% is refundable if the appeal is successful.

On determining an appeal, the Committee will notify the Lot Owner, the Building Review Panel and the Executive Committee of the outcome, and in regards to the appeal may make recommendation to the Community Association regarding exemptions from or changes to the Building Standards.

### Community Association

A Lot Owner may make application to the Building Review Panel or Building Appeals Committee requesting changes to the Building Standards applying to the standards generally or to their own lot. On receiving such a request, the Building Review Panel must refer the request to the Executive Committee for determination by the members in a General Meeting by Special Resolution.

## 10. Sustainable Design Appraiser & NEV Building Approvals

In practical terms, Sustainable Design Appraisers are at the forefront of the Ecovillage's building approval process.

They are to assess the wide variety of building techniques it is hoped Lot Owners will present for approval, and they are asked by the Building Review Panel to welcome innovation in building design and to assist with its implementation. They are required to understand the background to a Lot Owner's design approach, and to support the reasonable requirements of a Lot Owner.

While Lot Owners are expected to make all reasonable endeavours to achieve the outcomes of the Building Standards, if the situation denies them the ability to do so, they should discuss the issue with their SDA and the Building Review Panel as soon as possible, so that alternative arrangements can be discussed and wherever possible implemented.

A single SDA will assess and approve not more than 3 separate Lot Owners designs. A list of Sustainable Design Appraisers is maintained by the Building Review Panel. The Panel itself is a subset of [3] drawn from the SDA List. The list is displayed on the Building Review Panel's Wiki page located at [link required].

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The assignment of an SDA to a lot is decided by the Building Review Panel by drawing lot numbers from a hat and recording those lot numbers against SDA names listed on the Building Review Panel's Wiki page.

The SDA's role is a voluntary one.

Beyond the minimum requirements set out in the NEV's building approval pathway, the extent of engagement between Lot Owners and SDAs is solely at the discretion of lot owners. It is expected, however, that SDAs will assist each other in their dealings with Lot Owners. At the discretion of lot owners, several SDAs can engage with a lot owner when discussing Building Standard matters - accessing the wisdom of the many.

SDAs are recruited through an Expression of Interest process. For selection, a candidate demonstrates technical skill in the interpretation of domestic building plans and specification and a working understanding of NatHERS, BASIX and the statutory approval process in NSW for residential dwellings. Once recruited, the SDA is further trained through workshops and worked assessments commissioned by NEV to achieve a standardised approach to the assessment of building designs.

Once trained, the SDA demonstrate their ongoing competency through their knowledge of the NEV building approval process and their ability to engage with lot owners in an efficient and productive way, supporting lot owners throughout their project, from the time of the initial site assessment to the day of occupation.

The primary role of the SDA is to champion the NEV Building Standards within the NEV community by providing ongoing advice and guidance to lot owners on how the objectives of Building Standards can be achieved.

The core responsibility of the SDA is to demonstrate veracity in reviewing and endorsing completed NEV Scoresheets.

## 11. Building Approval Appeals

NEV's building standards and building approval processes are addressed in Part 4 of our Community Management Statement, the following by-laws being relevant:

- By-Law 41 - Building & Landscape Standards
- By-Law 42 - Building Review Panel
- By-Law 43 - Alterations to Building & Landscape Standards
- By-Law 44 - Current Copy of Building & Landscape Standards
- By-Law 45 - Building Appeals Committee
- By-Law 46 - Conflict Of Interest Committee

Informal and formal approval appeals mechanism are available to Lot Owners and the following key points are noted:

- xviii) Both Lot Owners and Sustainable Design Appraisers (SDAs) can seek the opinion of the Building Review Panel on any design and approval matter arising during the Lot Owner's engagement with SDAs throughout the entire design and construction of their project.
- xix) The Building Review Panel at its discretion can make Interim Arrangements with Lot Owner on design matter prior to the formal submission of a design subject to the Interim Arrangement:
  - Not contravening either the Building Standards nor the Landscape Standards; and

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- Being made available to the whole NEV Community via publication on the Building Review Panels wiki page.
- xx) A Lot Owner may also make application to the Building Review Panel requesting additions or alterations to the Building Standards or the Landscape Standards applying either generally or to Lot Owners design. In response the Building Review Panel will refer the application to the Executive Committee of the Community Association for determination by members in a General Meeting by Special Resolution.
- xxi) If the matter cannot be resolved by the Building Review Panel than the Lot Owner can make a written application to the Building Appeals Committee.

### 12. Conflict of interest

The Conflict of Interest provisions of the Community Management Statement apply to NEV building Approval pathways. Building Review Panel, Building Appeals Committee and SDA members must remove themselves from any approval process in which they have a material interest.

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## Appendix 1 – Building Approval Pathway

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Appendix 1 – Build Approval Pathway			

# NEV Building Approval Pathway



**Lot Owner**

*Negotiate a:*

- **Neighbourhood Statement of Agreement** with your neighbours. We recommend bringing your Architect or Designer along to these discussions.

*When the agreement is signed:*

- **put it into your Dropbox folder** and notify the BRP by email

**BRP**

*Provides you with:*

- Your SDA who will assist you all the way through this process.
- Your own Dropbox folder
- Neighbourhood agreement Template
- A 'Gateway 1' letter of consent

**Lot Owner**

**Design your House**

*Finish the DA documentation including:*

- **Statement of Environmental Effects**
- **Basix Certificate**
- **NatHERS Certificate** (your SDA will assist with these certificates)
- **NEV Scoresheet**
- **Development Application**

*When finalised:*

- put all these documents into your **Dropbox folder** and notify BRP by email.
- apply for the NEV **Design Confirmation Certificate**

**BRP**

*Provides you with:*

Templates for :

- Statement of Environmental Effect
- Application approval form
- Owners consent form
- Cut & Fill plan
- Standard building specifications
- Landscape plan
- Schedule of external finishes
- Lighting & Ventilation strategy
- Shadow diagram
- Site survey with tree schedule
- Water & Sewerage plan

Your SDA will show you how to get the Basix & NatHERS certifications.

**Lot Owner**

Once you have your **NEV Design Confirmation Certificate:**

- put the **Development Application** to Council for Development Consent

**BRP**

*Provides you with:*

NEV **Design Confirmation Certificate**

**Lot Owner**

Once you've got **Development Consent from Council:**

- Obtain a **Construction Certificate** (fr CCC or a private certifier)
- Lodge a Builder's Bond with NEV CA
- Lodge your builder's details, including licence & insurance.
- Build your house!
- Apply to council for your **Occupancy Certificate**

**BRP**

*Provides you with:*

- 'Gateway 4' letter, outlining requirements for truck movements on site
- reminder of building requirements

**Lot Owner**

- Forward your **Occupancy Certificate** to BRP
- Continue to monitor energy usage with the help of our Smart Grid, and water usage with help from NEV Power.

**BRP**

*Provides you with:*

- A community party

**definitions**  
 BRP: Building Review Panel  
 SDA: Sustainable Design Appraiser  
 CA: NEV community Association  
 CCC: central coast council



**Appendix 2 – Solar Access**

- a) Hill Thalys and Central Coast Council vary in reference to their definition solar access and both in turn vary from the Building Review Panel’s preferred definition.
- b) The Building Review Panel recommends that Lot’s Owners aim for the following solar access when considering the placement and orientation of their homes and also in the facilitated exchange with their neighbours leading to the preparation and signing of a Neighbourhood Agreement:
- i) At the winter solstice, glazing, irrespective of its size and location, should receive:
- When North facing, at least 5 hours of sunlight to 80% of the glazing.
  - When North East or North West facing, at least 3 hours of sunlight to 80% of the glazing.
  - When West or East facing, at least 2 hours of sunlight to 80% of the glazing.
- ii) North facing is defined as between 22.5° East of North and 22.5° West of North.
- iii) North East facing is defined as between 22.5° East of North and 67.5° East of North.
- iv) North West facing is defined as between 22.5° West of North and 67.5° West of North

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# Narara Ecovillage Building Standards

## Appendix 3 – Design Assessment Scoresheet

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Appendix 3– Design Assessment Scoresheet			

No.	Category	Sub-category	Goal	Criteria	Initial Target %*	WEIGHTING POINTS (%age)	Expectation Based on a 120 SqM design	Enter your value here	Units	YOUR SCORE	Instruction	Further help <small>(Links to appropriate section of user guide)</small>
		Please enter the gross floor area of your house		Sq M	Sq M	<b>Number of bedrooms =</b>					Please enter the floor area and then the number of bedrooms including studios	
		Enter the building material type here from the dropdown		See Table 1 for choice of building types				<a href="#">Table 1</a>			Enter the type of construction proposed selecting from the range that is table 1 in "Helps" using the link to the left. The area, type and bedrooms is transferred to Table 2 in "Helps" and is used to calculate the Embodied Carbon for line 9	<a href="#">EC Calculator</a>
<b>Your progressive score without bonuses is =</b>												
1	WATER	Basix Potable water use Alternative water items Stormwater & greywater management	Reduce drinking water use Blackwater/Greywater storage and usage. Water effective landscaping. Stormwater and sensitive urban design.	Water efficient devices Water effective landscaping		19	45	40	BASIX points		Create a BASIX file and enter the data progressively until you reach the "Alternative Water" tab . Complete your selection for "ALTERNATIVE WATER DETAILS" tab, calculate and then record the BASIX result into the Scoresheet at that point before proceeding to the next tab within BASIX. <b>A pass in Basix is a mandatory requirement for this scoresheet. It is essential to have a minimum of 40 Basix points to pass Basix.</b>	<a href="#">Alternative Water</a>
2		Water efficient appliances	Washing machines & dishwashers are not included in Basix			1	2	2			Enter:- * 1 point if using a <b>washing machine with WELS</b> rating of 4 stars or better * 1 point if using a dishwasher with WELS rating of 4 stars or better	
		<b>Sub-Total</b> All water items	Sub-total weighting points for lines 1 to 3 =			<b>20</b>			Your subtotal for water items	<b>20</b>		
3	ENERGY	Building Thermal Performance*	Decrease Energy consumption	Mandatory	70%	16	7	7	NATHERS Stars	16	<b>A minimum of 7-stars is a mandatory requirement for this scoresheet. Enter your ABSA assessors NatHERS star rating.</b>	<a href="#">Star Rating</a>
4		Energy Efficient devices	To increase energy efficiency	Hot Water systems		1	2	2	NEV points		Enter:- * 2 points if installing a solar or heat pump hot water heater , <b>Deduct:</b> * 2 points if using a gas or resistive electric storage hot water system	<a href="#">Line 4</a>
				Heating and cooling systems		2	4	2	NEV points		Enter:- * 2 points if using a reverse cycle air conditioning set of 3.5 stars or better , or 1 point if 2.5 stars or better. * 1 points if you will NOT be installing an active climate system, * 1 point if you will be installing ceiling fans in bedrooms and living rooms	
				Appliances		2	6	2	NEV points		Enter:- * 2 points if using a fridge/freezer of 3.5 stars or better, 1 point if 2.5 stars or better * 1 points if using a dishwasher of 4 stars or better or not having one at all, 0.5 point if 3.5 stars or better * 1 points if using a clothes washer of 4 stars or better or not having one at all, 0.5 point if 3.5 stars or better. * 2 points if using a clothes dryer of 4 stars or better or not having one at all, or 1 point if 2.5 stars or better or 1 point if not installing a clothes dryer and installing internal drying rack or line	
				Lighting		0	0	0	NEV points		<b>Deduct:</b> * 1 points if max. light power levels (illumination power density) exceed :- - 4 W/m2 for interior of houses - 3 W/m2 for verandah, balcony or deck of houses, - 2.5 W/m2 for outbuildings (sheds and garages).	
		<b>Sub-Total</b> All energy	Sub-total of weighting points for lines 4 to 5 =			<b>17</b>			Your subtotal for energy items	<b>16</b>		
5		Renewal Energy	Photovoltaic panels	<b>Mandatory</b> Provide at least 2 kW for the first bedroom and 1kW for each additional bedroom		5	3	3	Kw	5	A special case exists for 4 bedroom houses where 4.5 kWp is permissible otherwise a 3-phase electrical connection and inverter would apply. The expectation cell calculates the required power which is at least 2.0 Kw for the first bedroom and an additional 1.0 Kw for each additional bedroom.	<a href="#">Renewable Energy</a>
6				PV set larger than required		3	1	1	Kw		<b>Enter the surplus over and above the minimum requirement of the "2 plus 1" rule.</b> The yield is 1 point per additional Kw up to 3 Kw, thereafter it is only half a point.	<a href="#">Additional PV</a>
7		Peak Power Demand	Reduce summer and winter peak load	Fixed standby switches or timers. Energy monitoring system. Remote control system. Smart metering. SmartGrid switch-off on high demand. Battery storage system		7	10	3	NEV points		Enter:- * 1 point if smart meter installed has occupant interface or can connect to energy monitoring system * 1 point if having a Smart phone app to remotely control peak demand and can link to fixed appliances installed. * 1 point if permitting switch-off on high demand. * 1 point if fixed stand-by switches or timers on critical appliances are installed * 1 point if booster for hot water system is on timer* * 3 points if installing a battery system * 2 points if installing a battery system within 5 years of obtaining approval	<a href="#">Peak Energy</a>
		<b>Sub-Total</b> All energy	Sub-total for lines 6 to 8 =			<b>36</b>			Your subtotal for energy saving items	<b>39</b>		
8	MATERIALS	Materials	Lower the impact of materials on non-renewable resources, the natural environment and on human health	Materials with low embodied energy (see next 2 tabs as well).	Durable, renewables, low embodied energy, low-toxicity	10	24	36	Tonnes CO2 per bedroom	7	<b>Do not place an entry in line 9; this number is automatically calculated</b> from the the floor area, bedrooms and house material types you have entered in the first line. More points are given for a low EE value. Includes the Embodied Carbon of all PV proposed.	<a href="#">Materials</a>
Extra line needed to access hyperlink to Table 2											The link "Table 2" directs you to the matrix of building material versus floor area to indicate how the number is derived	<a href="#">Table 2</a>
9		Renewable or natural materials	To reduce the environmental impact of sourcing and producing construction materials	<a href="#">Renewable or natural materials</a> Such as Rammed Earth, Mud Bricks, Straw Bale, Hemp, Cob, Timber etc		3	3	3	Percentage points		If construction of the floors, walls and roof is substantially of renewable or natural materials such as:- Rammed Earth, Mud Bricks, Straw Bale, Hemp, Cob, Timber etc; enter :- * 1 point if proportion of such materials is 25% or more of volume of structure * 2 points if proportion of such materials is 50% or more of volume of structure * 3 points if proportion of such materials is 75% or more of volume of structure	<a href="#">Recycled Materials</a>
10		Recycled material	To help minimise the amount of waste going to landfill	<a href="#">Recycled content</a>		2	30	8	Percentage points		Enter the percentage of recycled content by mass or by surface area. Full score is awarded at 30 percent recycled material	<a href="#">Renewable Materials</a>
11		Durability	To reduce the environmental impact over time of sourcing new materials to replace deteriorated materials	Durable materials - Longevity, warranty		3	5	4	Percentage points		Enter 1 point for each of warranties provided on:- * 10 year warranty on external walling and roofing * 20 year warranty on external walling and roofing * Non-wearing internal floor finishes * Non chemical termite barrier * Reasonable access for maintenance	<a href="#">Durable Materials</a>
12		Low toxic impact	To reduce the amount of pollutants and toxic materials incorporated into the building	Low human health impact materials - Eco-Specifier, develop our own list		2	4	3	NEV points		Enter:- * 1 point if avoiding PVC in construction materials * 1 point if using HDPE piping rather than PVC piping. * 1 point if avoiding CCA treated timber * 1 point if using paints and sealants made from natural products	<a href="#">Non-Toxic Materials</a>
13		Transport Energy	To reduce the amount of energy expended in transporting materials, equipment and people to the construction site	Locally sourced materials - Eg. Distance to source; Type of supply chain; Energy used in transport		1	4	1	NEV points		Enter:- * 1 point if no imported materials are used * 2 points if more than 80% of materials are sourced within 500 Km and * 3 points if more than 80% of materials are sourced within 100 Km * 1 point if all contractors and suppliers that come are local (i.e based within 50 km)	<a href="#">Locally Sourced</a>
14		End of Life/Adaptability		In the future or at building end of life, the reuse and recycling of dwelling materials, disassembly rather than demolition - connections		3	12	12	NEV points		Enter:- * 4 points if floor plan readily permits future changes in family and lifestyle * 2 points if 40 % of materials can be recycled and easily disassembled at end-of-life * 4 points if 80% of materials can be recycled and easily disassembled at end-of-life * 1 point if mechanical fixing is used rather than adhesives * 1 point if ease of access for replacement of service equipment	<a href="#">End of Life</a>
		<b>Sub-Total</b> All materials	Sub-total for lines 9 to 16 =			<b>24</b>			Your subtotal materials items	<b>17</b>		
15	WASTE	Domestic resource recovery	To reduce waste going to landfill	Domestic waste reuse and recycling - Sorting at source; Source of disposal; dismantling energy; Amount of waste to landfill	70%	5	5	5	NEV points		Enter:- * 2 points if having a worm farm,chooks or other animals that eat scraps. * 2 points if having a compost bin * 1 point if having built-in storage within kitchen/living space.	<a href="#">Domestic Waste</a>
16		Construction resource recovery	To reduce waste going to landfill	Construction waste reuse and recycling - Amount and types recycled; Amount of waste and destination; Design sizing & packaging minimisation	0.7	5	80	80	NEV points		Enter a percentage number as a number e.g "80", not a percentage. As will be verified from construction waste disposal receipts, enter the percentage of waste that is proposed to be recycled. Full details of the Construction Management Plan requirements can be found under that title "Annexe 1_Definitions". Currently page 45.	<a href="#">Construction Waste</a>
17	INDOOR	Indoor Environmental Quality (IEQ)	To optimise sustainability & health	Indoor air quality; natural light, acoustic comfort;		5	7	3	NEV points		Enter 1 point each for:- * sufficient internal daylight in all rooms * sufficient cross ventilation in each room * use of low VOC paints * use of low formaldehyde joinery and panel materials * avoidance of dust trapping materials such as carpets, fabrics, high shelves etc * noise abatement through the use of insulation (external as well as internal) * breathable wall materials such as hempcrete or strawbale, breathable paints or membranes in wall and roof construction or providing additional ventilation to roof spaces	<a href="#">Indoor</a>
18	OTHER	Other		Improve access for occupants over time; ease of adapting house for future uses; ability to withstand severe external forces	Meet live-ability guide-lines	5	4	2	NEV points		For the Liveability self assessment, enter:- * 1 point if comply with 70% of Liveable Housing Silver level design guidelines * 2 points if comply with Silver Certification of Liveable Housing design guidelines * 3 points if comply with Gold Certification of Liveable Housing design guidelines. * 4 points if comply with Platinum Certification of Liveable Housing design guidelines. Deduct one point from each of the last 3 items for self assessment of the Liveable Housing Design Guidelines. * 1 point for resilient design through use of durable materials, enhanced strategies for bush fire or storm damage control and avoiding easily damaged materials e.g. plasterboard	<a href="#">Other</a>
		<b>Individual House Total</b>		<b>Achieving a total of 70 points is mandatory</b>		<b>100</b>	<b>Your progressive score is =</b>				<b>Pass level = 70, plus mandatory PV and 7 stars (if fail, message indicates "does not meet Narara Ecovillage Bldg Stds")</b>	<a href="#">Total</a>
19	BONUS POINTS	Innovation Innovative house designs or materials	Foster new ideas such as:- Earth ships Pre-fabricated homes Bio Fuel / Bio Mass usage Phase Change Materials for Thermal Mass	Owners to demonstrate how elements exceed Category minimums	N/A				Bonus points		<b>This not capped but is issued at the discretion of the BRP.</b> Please seek advice from the BRP if your proposal would be eligible for bonus points. Awarded on a case by case basis by the BRP. Criteria and guidelines to be set by the BRP..	<a href="#">Bonus Points</a>
20		Food production				3	3				Enter:- * 1 point if 25% or more of landscaped area is food garden * 2 points if 50% or more of landscaped area is food garden * 3 points if 75% or more of landscaped area is food garden	
21		Open Design presentation				3	3				Enter 3 points if design has been presented to the membership for sociocratic feedback	
<b>Note that innovations are not capped, but the remaining bonuses are capped at a total of 5 points</b>						<b>105</b>	<b>Grand total =</b>					