

NEV Stage 2 Building Standards Draft Recommendations v1.3 Workshop

John Shiel, Michael Berney,

Joanne Hunt, Andrew Dobson, Malay Dave

**Help of – Grant Rickey, Jon Ellis, Graham Hunt, Andy
Marlow**

Retired: Tania Ferfolja; Pip Atkins; Mike Crawley; Grant Rickey

Please write questions into the chat

Slides will be available after

We will be recording this session – pls turn off video, and use chat if you wish



Purpose of this Workshop

John Shiel

- To introduce Stage 2 members to the recommended Building Standards
 - Zoom workshop – Sat 5/2/22
 - Present recent version – now in text form in pdf document at:
 - https://wiki.nararaecovillage.com/download/attachments/58460651/NEV_Building_Standards_Stage%20Draft%20v1.3.pdf
- Next Steps
 - Member meeting previews – changes (Feb, Mar)
 - First Member Building Meeting – Sat 26/2/22 1-3:30pm (Dan & Deb Mohr House – very low cooling energy – heatwave-proof home)
 - 2nd Workshop in March
 - Date TBD - see despatch, NEV Slack, Friends of NEV Slack
 - Obtain CA approval
 - Once finalised - implement
 - Update the scoresheet formulae, forms - wiki
 - Train SDAs and BRP in new standards

Workshop Agenda

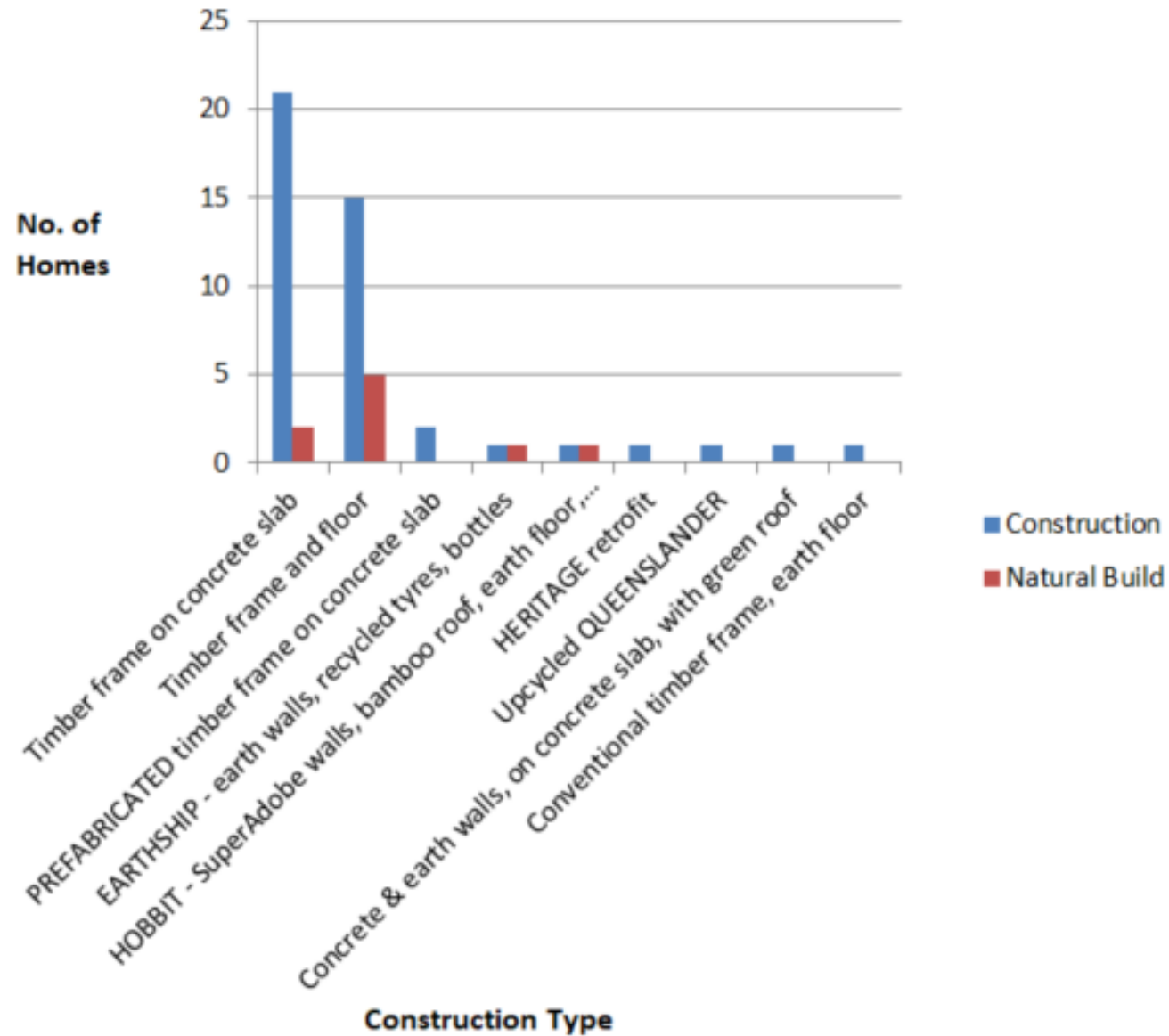
- A. Why update the Standards – Jon Ellis – 5 mins
- B. Stage 2 update – Grant Rickey – 10 mins
- C. Stage 2 – Andy Marlow – 5 mins
- D. Building standards – Working Group – 30-40 mins**
- E. Lowering NatHERS cooling energy – Graham Hunt – 10 mins
- F. Passive House Standard – Andy Marlow – 5 mins
- G. Short Q&A – Joanne Hunt as MC – 10 mins
- Bio-break – 10 mins**
- H. Breakout rooms with leaders – Eilean Watson – 30 mins
- I. Panel (All) Q&A – Joanne Hunt as MC
- J. Closing Round

A. Why Update the Standards

Stage 1 & NEV Building Standards – BRP Feedback – (JE)

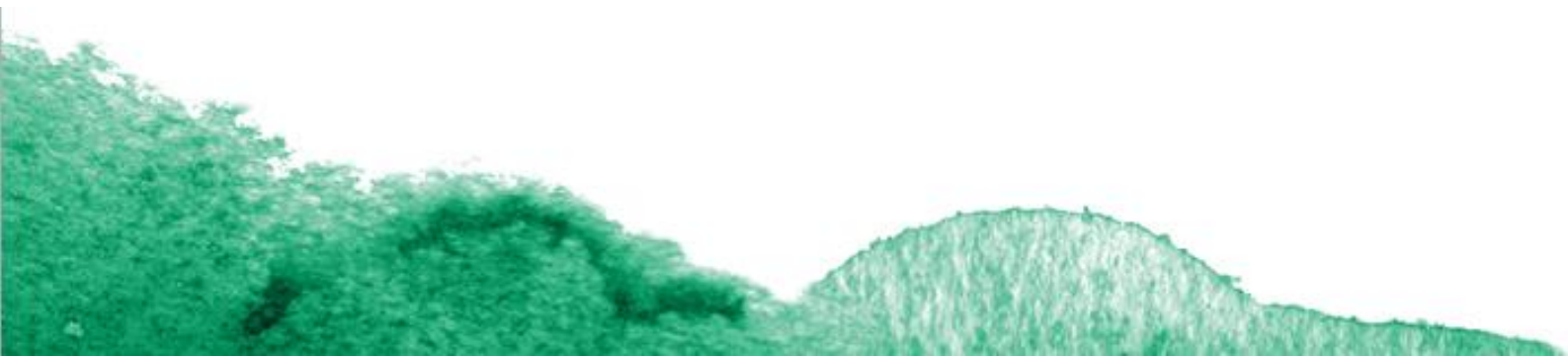
- Our building standards are key to delivering on our vision & mission
 - Our values include using energy efficiently (CMS) – better home, less air conditioning
 - We had an aim to reach 8 stars if possible
- NEV currently has a **7 star** NatHERS level
 - NSW and Australia has **6 stars now, soon to be 7 stars**
- 50 homes have achieved
 - **Average of 7.7 stars** NatHERS rating
 - Average of 82 points on the NEV sustainability scoresheet
 - Average of 6.2 kW of PV (Totaling <200 kW PV)
 - Floor area av. 129m²
 - 66% below 150m² preferred maximum

Flexible Building Standards



B. Stage 2 update – Grant Rickey

C. Stage 2 – Andy Marlow



D. Proposed Building Standards (JH)

Agenda

1. Definitions
2. Scope
3. Hill Thalys - Home size, setbacks for sunlight
4. Materials
5. Wood Fires
6. Thermal Performance - Star rating, Passive House
7. Scoresheet – design & as-built
8. Neighbour consultation

1. Definitions

- **Building Sustainability Index – (BASIX)** - A compulsory NSW environmental scheme to reduce home greenhouse emissions and water consumption, used by Central Coast Council
- **Building Review Panel (BRP)** – if design meets standard, stamp drawing for council
- **Member Building Group** – members & experts helping member designs at regular **member building meetings**
- **Nationwide House Energy Rating Scheme (NatHERS)** – star rating system that measures a home's thermal comfort and energy efficiency
- **Passive House Standard** - measures a home's thermal comfort, energy efficiency, indoor humidity, air tightness and annual primary energy
- **Principal Certifying Authority (Certifier)** - Carries out mandatory inspections to ensure work is undertaken in accordance with the Council Development Consent conditions
- **Scoresheet/ Scorecard – Design** - A spreadsheet gives points for home design sustainability categories. As-built – gives points for sustainability categories after a home is built
- **Sustainable Design Appraisers (SDAs)** – help with design and scorecard

2. Scope

- When do new standards apply?
 - When accepted by members at a **General Meeting of Community Association**
- Expand scope to
 - **Full home lifecycle** – education (bonds, costs), NEV optional standard contract (extra documents, maybe SDA help), design, build, presentations (education days, Open Days) – As-Built scoresheet
 - Help with member designs at **meetings, member examples, Member Building Group**
 - **Infrastructure**
 - Green materials e.g. **concrete** – eg. ENVIROCRETE® 30%/40% etc **at similar price**
 - Low maintenance, climate resilient and **non-plastic paving (save our topsoil)**; locally sourced
 - **Tiny houses & existing homes**
 - Collaborative housing
 - Houses on larger lots, **Dual Occupancy** (may be allowed by council in new LEP)

Five Step Building Process (MB)

1. Consult neighbours with preliminary design
2. Complete home design - drawings, BASIX & NatHERS or Passive House Accreditation, Hill Thalys/Envirostructure, design Scoresheet
3. Get NEV BRP approval, lodge a Development Application
4. Appoint builder to build home, collect as-built documentation
5. Submit as-built Scoresheet, updated NatHERS or Passive House Certificate including Blower Door test.

Step 1 Site & Neighbourhood Analysis

Lot owner

- Engage an architect/designer
- Use your SDA for advice on NEV building standards
- Consult with your neighbourhood on your design

BRP

Provides you with

- Your assigned SDA who will assist you all the way through the building process.
- Your own Nextcloud Lot folder which contains your Lot survey
- Access to WAE drawings showing location of reticulation services,
- Geotechnical report, Bushfire assessment

Step 2 Design Development

Lot owner

Finish your DA documentation

- Design drawings
- NatHERS certificate
- Basix certificate
- Hill Thalys/Envirostructure design checklist
- NEV Scoresheet
- NEV Scoresheet supporting information
- Notify BRP you are ready for review

BRP

When finalised

- Get SDA to review
- File documents into your Next Cloud Lot folder

Step 3 Design Approval

Lot owner

Design endorsement

Once the BRP confirms endorsement, your design plans will be stamped as conforming to the NEV building standards. You are now ready to submit your plans to Central Coast Council for DA approval.

BRP

Provides you with

- A design review against the NEV Building standards
- The BRP will also contact all the lot owners in your neighbourhood, share your plans and check they have been consulted
- When ready the BRP will notify you that your plans are endorsed and will arrange to apply the NEV Building Standard's electronic stamp.

Step 4 Building Works

Lot owner

Once you have Development Consent from Council:

- File your DA approved plans into your Lot folder
- Appoint your builder
- Obtain a construction certificate from CCC or a private certifier
- Lodge a building bond with NEV CA
- Complete applications for NEV Power and NEV Water
- Build your house
- Collect as-built documentation during construction

Step 5 On Completion of Building Works

Lot owner

- Complete as-built scoresheet—gain NatHERS, or Passive House Certificates
- Apply to PCA for Occupancy Certificate
- File construction and occupancy certificates in lot folder
- Rectify any damage to CA property
- Buy efficient appliances as appropriate
- Apply to BRP to release bond
- Move in and enjoy being part of the village
- Monitor your energy usage and other commitments

BRP

- Bond returned

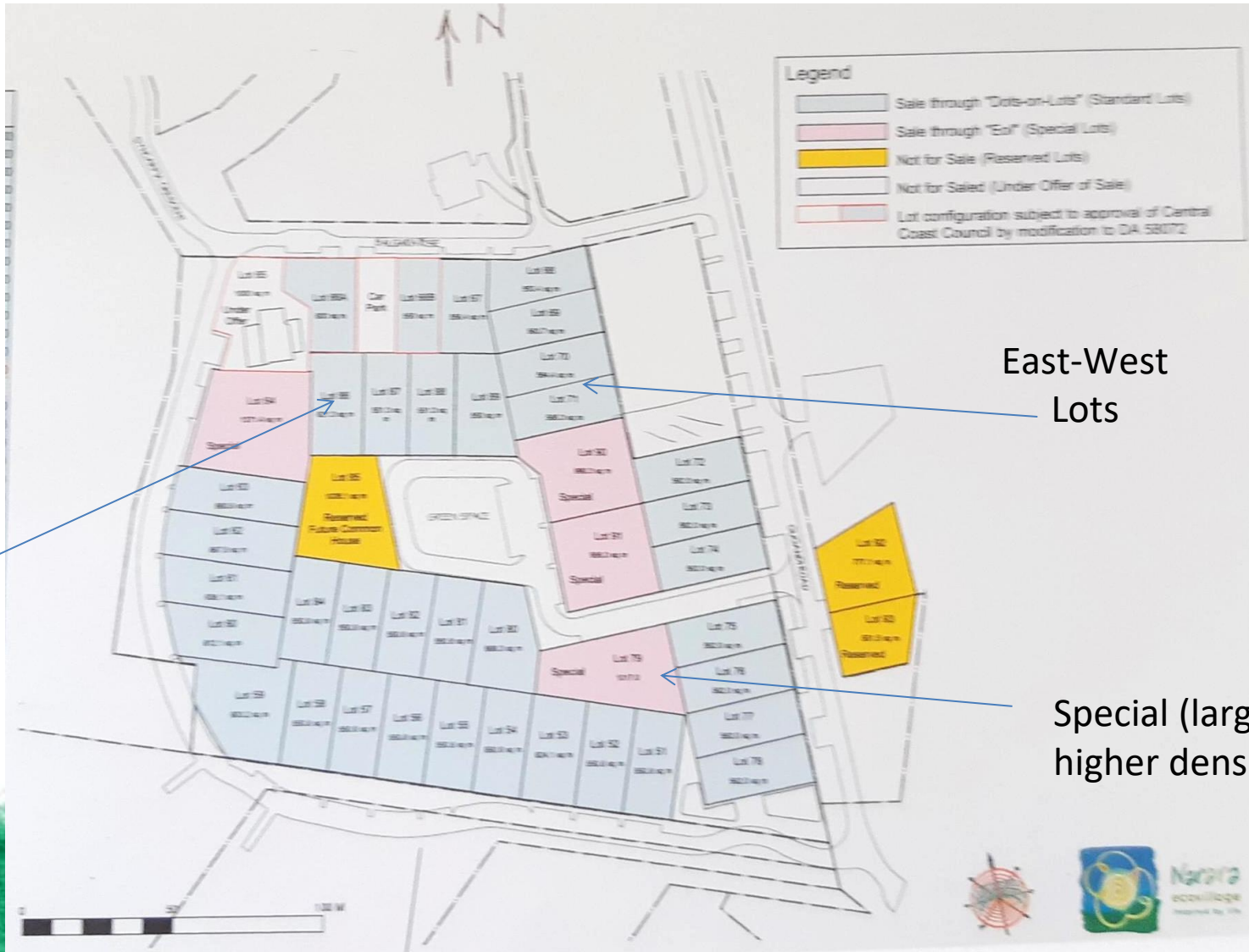
3. Hill Thalys/Envirostructure

Definitions & Stage 2 Proposals

- Dual Occupancy - when a Lot has 2 Principal dwellings (attached or detached)
- Setbacks
 - The distance from boundary to the building
- Site coverage - all above and below ground structures, and impermeable landscaping, with exclusions around:
 - Uncovered pervious outdoor living areas, e.g. decks and paving
 - Eaves and awnings
 - Water tanks
- Principal Dwelling
 - Main dwelling on a Single Occupancy lot
- Secondary Dwelling
 - Smaller dwelling (e.g. granny flat) on a Single Occupancy lot
- Street frontage
 - If over 10 m needs articulation (a bend in wall)

Lot definitions

North-South, East-West, Special



Single Occupancy (AD)

with Principal Dwelling or Principal & Secondary Dwelling

Control (to boundary)		Min/Max/Av.	North-South Lots	East-West Lots	Special Lots (>900m ²)
Setbacks**	Front	Min.	3 - 4.5m*		
	Rear	Min.	3m		
	Side	Min.	1m***	-	1m***
	Side (North)	Av.	-	3m	3m
		Min.	-	0.9m***	0.9m***
	Side (South)	Min.	-	0.9m***	0.9m***
Site Coverage		Max.	45%		50%
Internal House Area	Principal Dwelling	Max.	150m ² preferred, 180m ² maximum		45% (to max 480m ²)
	Secondary Dwelling	Max.	60m ²		
Height		Max.	8m (minor encroachments up to 10m) No requirement for extra height to be concentrated towards the street		

* As per draft council rules

** Note that easements (e.g. common gardens) cannot be built over

*** If the height is less than 4.5m. For any part of the building with a height of more than 4.5m, setback is 0.9m plus one-quarter of the height of the building above 4.5m (draft council rules)

Dual Occupancy with two Principal dwellings

Control (to boundary)		Min/ Max/Av.	North- South Lots	East-West Lots	Special Lots (>900m ²)
Setbacks**	Front	Min.	3 - 4.5m*		
	Rear	Min.	4.5m*		
	Side	Min.	1m***	-	1m***
	Side (North)	Av.	-	3m	3m
		Min.	-	0.9m***	0.9m***
	Side (South)	Min.	-	0.9m***	0.9m***
Site Coverage		Max.	45%		50%
Internal House Area	Both**** Dwellings	Max.	45% (to max 300m ² , but a maximum of 180m ² for either)	45% (to max 480m ² , but a maximum of 240m ² for either)	
Height		Max.	8m (minor encroachments up to 10m) No requirement for extra height to be concentrated towards the street		

* As per draft council rules

** Note that easements (e.g. common gardens) cannot be built over

*** If the height is less than 4.5m. For any part of the building with a height of more than 4.5m, setback is 0.9m plus one-quarter of the height of the building above 4.5m (draft council rules)

**** Secondary Dwellings not permitted by Council.

4. Material Guidelines

Sustainable, non-toxic, low-carbon*

- Minimise the amount of embodied carbon per person
- Concrete – **low carbon** (see supplier list), reduce use, or use sustainable timber
- Steel – **reduce** use, or use sustainable timber
- Timber (sustainable)
 - E.g. certified by the **Forest Stewardship Council (FSC)**
 - **recycled** timber (supplier receipts, or photos of nail holes)
 - **minimise timber with copper-chrome-arsenate (CCA)**
 - manufactured wood products shall have **low formaldehyde emissions**

*Mullum Creek Pty Ltd. (2016). *Mullum Creek | Mullum Creek Design Guidelines*. Mullum Creek Residential Community. <https://mullumcreek.com.au/design-guidelines/mullum-creek-design-guidelines/>



5. Wood Fires

- Discourage Wood Fires (urban area)
- If installed
 - Ensure in as-built Scorecard they are installed and operating correctly
 - Consider filter fabrics on chimneys to lower the small cancerous particulate emissions
- NB: CA can limit operation of Wood Fires
 - during weather inversions notified by BoM, or
 - on complaints of any **member health issues**

6. Thermal Performance – New Homes (MD)

BASIX - NatHERS, but now has a Passive House pathway

- CMS (clause 57.1) has the value to use energy efficiently – including minimising greenhouse gas. So we should prefer good house design over air conditioning.
- Our houses should remain safe and healthy during any extended heatwave and possible blackouts, with high overnight temperatures.
- Minimum Pathways – **New Homes**
- **NatHERS** - Keep aspirational target of 8 stars as per Stage 1
 - 7.5 stars
 - With **50% reduction** in BASIX maximum cooling cap – for heatwave protection
 - 7.5 stars
 - With **30% reduction** in cooling load – if justified by difficulties e.g. block orientation, shape
- **Certified Passive House** – new pathway now in BASIX – Certified designer
 - If fails blower door test, conduct NatHERS certificate

Thermal Performance – other Homes

- For **existing** homes and buildings (for National Construction Code Class 1 and 2)
 - > \$50,000 renovations **pass BASIX & 6 stars** (NSW reqmt – soon to be 7 stars)
- For **Tiny** homes
 - There is no NatHERS or Passive House performance requirement
 - Subject to **NSW regulations** where for continuous occupation, the Tiny House:
 - Needs to be on land occupied by that in connection with the owner's house
 - Should be registered
 - Occupier should be related to the household
 - The **BRP** has provided these current Tiny Houses **guidelines** which include:
 - Having neighbourhood consultations
 - Installing at least 2 kWh of Solar panels
 - Managing services such as water, electricity and any sewer
 - In addition to this, the **Stage 2 recommendations** are that the Tiny House should:
 - Meet some of the Scoresheet provisions (TBD eg. materials etc. embodied carbon/person, recycling)
 - The Tiny House area and associated hard surfaces shall be included in Hill Thalys/Envirostructure site coverage area of the Lot
 - Minimise the use of any natural gas as per CMS clauses:
 - 43. Poisonous Substances, in particular 43.1,
 - 57. Energy and Emissions Goals and Principles, in particular clauses 57.1 b), c) and d).

Renewable Energy

Minimum Solar Panels

- Stay with Houses to be net carbon neutral
 - 2 kW for first bedroom
 - 1 kW for each other bedroom

7. Scoresheet – (JS)

- Design Scoresheet – to pass the NEV standards
- BASIX – Water Minimum
 - Can't use Narara postcode water treatment concession anymore
 - Include all BASIX water section in Scoresheet
- Different weights for each category, not as easy to score points
 - Add a Management category
- Minimise natural gas in line with CMS clauses 57.1 b), c) and d).
 - Methane leakage has a worse impact over 20 years than coal-fired electricity
- Air Conditioners – Star rating - range has now changed

As-built Scoresheet

Recommended to check the build quality in Stage 2

- Main result for house
- Get points for sharing house results (at meetings, Open Days)
 - Receipts/ photos of waste disposal, & critical elements e.g. insulation type and location, windows, air-tightness
 - Blower Door test
 - Required for Passive House
 - Updated NatHERS rating
 - Small effort if few changes; requires updated drawings and specifications

8. Recommended Neighbour Consultation

BRP Feedback

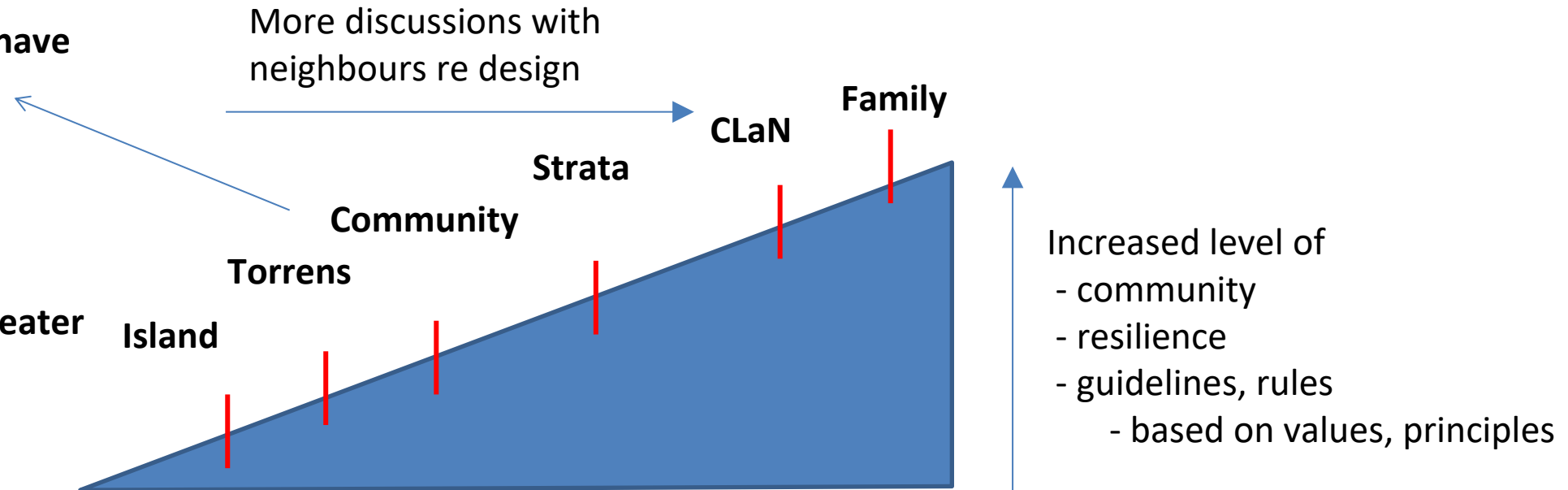
- Owners **design at different speeds** and
- There has been some **turnover in lot owners**
- BRP not setup to mediate issues
- The purpose is to **promote our capacity** to be the **best neighbours possible**.
 - to strengthen good neighbour **relationships**
- The consultation process is compulsory
 - If the process is not successful, then BRP application fails

Value of Creating “Community” – for resilience

Co-housing type	Name	Community Bonding
Spiritual Eco-village, small lots, large land	Findhorn , Scotland	Alternative lifestyles, fun and meditative working bees, communal eating
Sustainable Ecovillage, small lots, large land	Cloughjordan , Ireland	Working bees, employ farmer, Hostel, Baker, Building for activities, GFC hit hard, part of an established village
Sustainable Eco-village, small lots, large land	Narara Ecovillage	Many working bees, dinners, monthly mtgs, many sociocratic mtgs
Urban apartments	The Commons Melbourne	Little up front

CMS – value – all members have agreed to this

“1.2 The Narara Ecovillage Community aspires:
 ...b) to promote and foster
 ...a willingness to balance individual needs with the greater good of the community”



Neighbourhood Consult Process Diagram

→ time

Roles

BRP – Building Review Panel

Mediator Per CMS

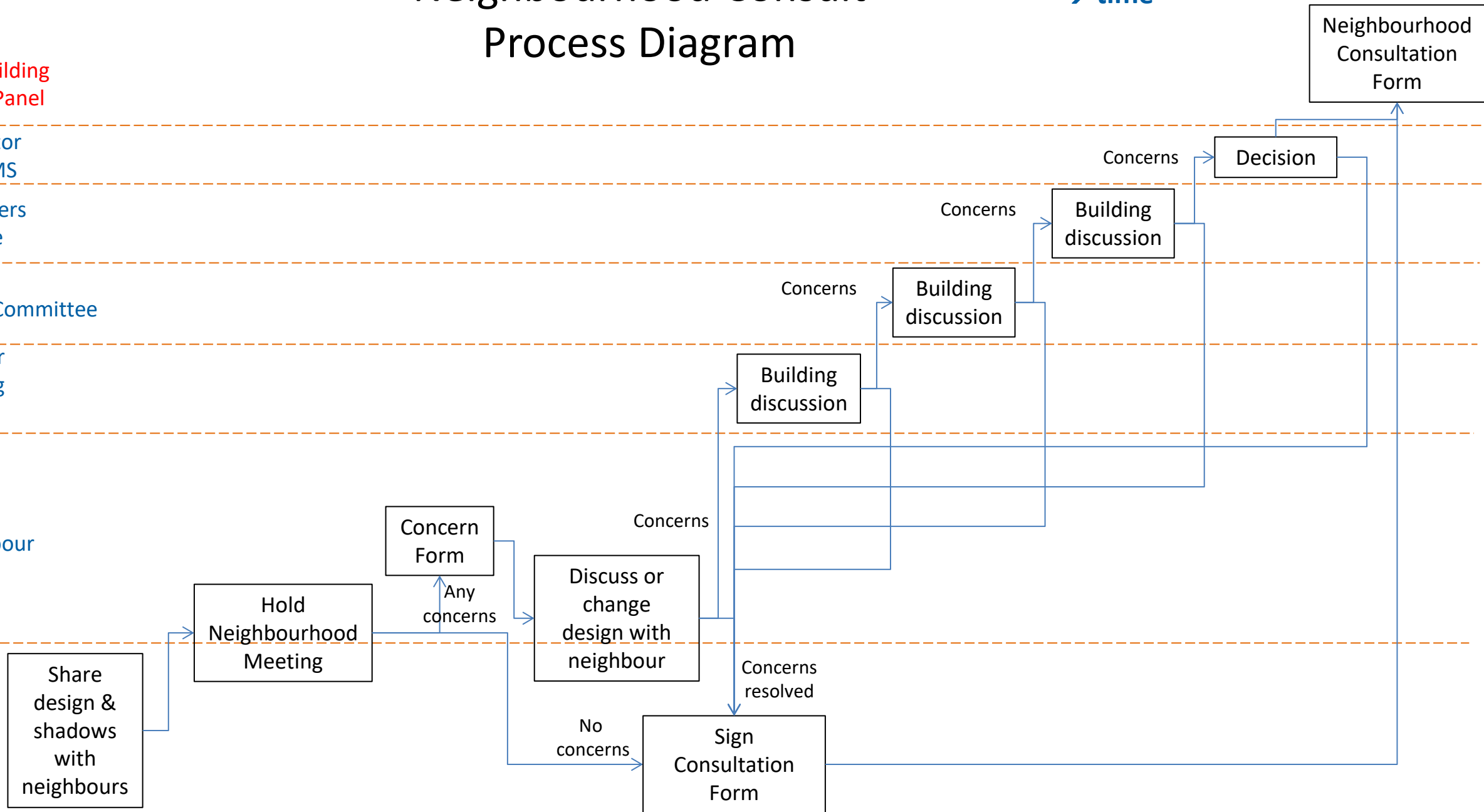
Supporters Circle

Building Appeal Committee

Member Building Group

Neighbour

Lot Owner



Neighbourhood Consultation Form (Draft)

- We acknowledge that our meeting considered the following matters relating to and affecting each lot:
 - Site coverage, size, shape and height of built structures
 - Overshadowing
 - Visual privacy
 - Sharing views
 - Materials used on facades, decks and roofs
 - Management and design of common boundaries
 - Street frontage and lot access
 - Car parking
 - Access to Common Gardens
 - Noise and light spillage across properties
 - Storm water management, particularly “inter-site drainage” for retaining walls or other drainage near neighbours
 - Lot Access – construction
 - Other:

Name1: _____ Lot No: _____ Signed: _____ Dated: _____

Name2: _____ Lot No: _____ Signed: _____ Dated: _____

Name3: _____ Lot No: _____ Signed: _____ Dated: _____

Name4: _____ Lot No: _____ Signed: _____ Dated: _____

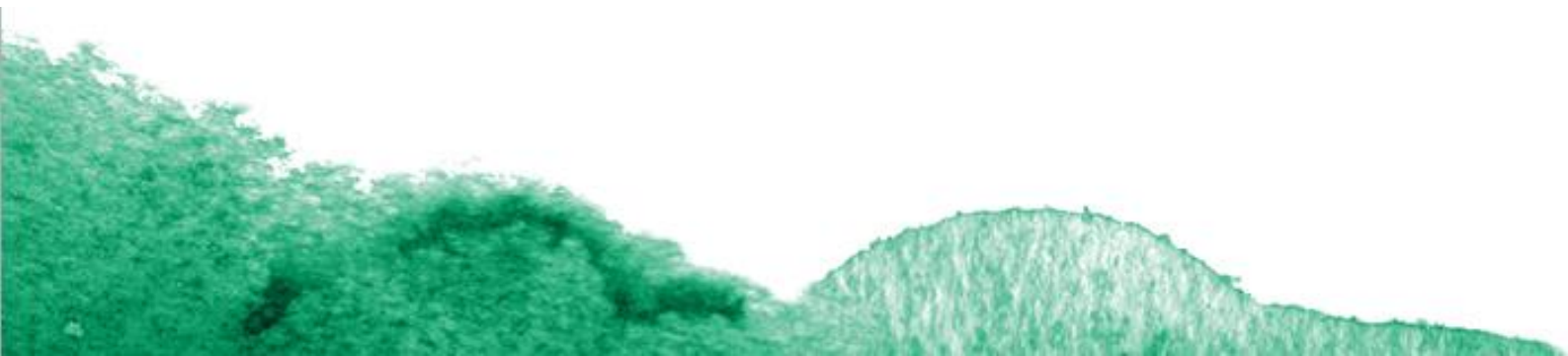


Neighbour Concern Form (Draft)

- **Neighbour Concern Form – to Lot Owner**

- I <Name>, of <Lot No>, am the neighbour of <Name> of <Lot No.>, and have discussed my neighbour's design with them. I have the following concern(s):
 - Concern 1: <concern summary name>
 - Details: <details>
 - What is the issue you think your neighbour is trying to solve with their design features:
 - <neighbour issue e.g. privacy, pet enclosure>
 - Alternative suggestions:
 - <what could assist to solve this concern e.g. smaller trees, wire fence with hedge>
 - Concern 2: <concern summary name> etc.
 - Signed: _____ Dated: _____

E. Lowering NatHERS cooling energy – Graham Hunt



F. Passive House Standard

Andy Marlow

G. Short Q&A – (JH)



Break – bio-break

- 10 mins – back now

H. Break-out Rooms

- 30 mins

I. Q&A Panel

Please put your questions in the chat

- MC – Joanne Hunt
- Bldg Stds – John Shiel, Michael Berney, Andrew Dobson
- Consultants – Graham Hunt, Andy Marlow
- Stage 2 – Grant Rickey

Feedback

- From CA mtg, member mtgs, workshops
 - We are developing a FAQ from these – see
 - <https://wiki.nararaecovillage.com/pages/viewpage.action?pageId=58460651>
 - Please add questions there or send to:
jafshiel@outlook.com or
michaelxberney@gmail.com

Closing Round

- Thanks for coming
- Un-mute yourselves, and say goodbye !