

## WEV Sustainable Building Design Guidelines – Record of Amendments

### Changes to the Sustainable Building Design Guidelines – Update November 2023 (Revision C of Design Guidelines) from October 2023 (Revision B)

Section	Section Title	Items Changed	Reason
7.6	Non-Toxic Materials & Finished	<p>Deleted – Ensure installation of composite stone benchtops adhere to all safety standards for workers’ lung health.</p> <p>Addition – Use of composite stone benchtops is not permitted in the Ecovillage due to risk to workers of silicosis. See Table 11 prohibited VOC &amp; Other Materials.</p>	<p>Residents, builders &amp; designers informed of the change in November 2023.</p> <p>There has been recent investigation by Safe Work into the risk of silicosis to workers from composite stone benchtops, and the safety of continued use due to the risks in its manufacture and processing.</p> <p>Our Building Design Guidelines at section 7.6 already included the requirement to ensure installation of composite stone benchtops adhere to all safety standards for workers’ lung health. However, considering Work Safe is currently seeking a total ban, we will not be supporting its use in the Ecovillage until the Government sets standards that give everyone confidence that all involved with handling the products are safe, if that’s even possible.</p> <p>As such prohibition of use of composite stone benchtops in the Ecovillage is included in section 7.6 of the BDGs and listed in the associated checklist (Appendix J Building Design Guidelines Checklist) that requires to be submitted during formal design assessment.</p>

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### Changes to the Sustainable Building Design Guidelines – Update October 2023 (Revision B of Design Guidelines Document) from February 2023 Updates

Section	Section Title	Items Changed	Reason
3.3	Site works (Required)	<p>Addition – Site boundary retaining walls are allowed on the following lot types: Groupie, Cottage, and Short-Stay. The heights of these walls are limited to the difference between the lot’s minimum, FFL and the NGL along the relevant side boundary.</p> <p>Addition – Where allowed, any side boundary retaining walls must be fully within the owner’s lot boundaries (including footings), and may be subject to the provisions of Section 89 of the Building Act 2011. If retaining on the boundary, consider how boundary fencing will be integrated.</p> <p>Addition – On Family lots, retaining walls are not allowed within 1.5m of a side boundary (unless otherwise noted in the relevant Local Development Plan).</p>	<p>To accommodate homes on sloping lots and in some cases the required finished floor heights to protect from large flooding events, we are allowing some side boundary retaining. This is particularly relevant to smaller lots with small side setbacks. We highly recommend liaising with your neighbours to potentially avoid retaining by coordinating site levels at the shared side boundaries.</p>
3.9	Driveways and Crossovers (Guidance)	<p>Text moved from Required into Guidance section:</p> <p>Crossovers constructed of <i>in situ</i> concrete must include 30% min. supplementary cementitious materials (e.g. Boral fly ash)</p> <p>Crossovers constructed of <i>in situ</i> concrete and comply with the Shire of Augusta-Margaret River’s ‘Standard Crossing’ specifications and are eligible for a Shire subsidy.</p>	<p>No longer required therefore moved to guidance.</p>
3.10	Fencing and Retaining walls (Guidance)	<p>Amendment -</p> <p>Post and wire rural style fencing at 1.8m is recommended on side boundaries between lots. Using these structures for growing plants and vines is recommended for privacy. Sections can be filled in or blocked to create more privacy in desired locations.</p>	<p>Wording amended from <i>will be provided</i> to <i>is recommended</i>. This is due to the following change of circumstance, as already advised to residents in the Resident’s bulletin 21 October 2022.</p> <p>The deadline for installation of internal side fencing by the WEV fencing contractor lapsed in December 2022.</p> <p>However, if your home was not going to be completed within that time frame, you could opt to provide your own fence to the requirements of the Building Design Guidelines and apply to WEV for an internal Fencing Rebate (“Rebate”).</p> <p>The Rebate will be provided at the current contracted fencing rate of \$1400.00 per internal fence.</p>

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			<p>As per the Dividing Fences Act, adjoining lots share the cost of adequate fencing between them, so the Rebate (and any additional fencing cost) would be shared by both lots.</p> <p>To receive the Rebate, the fence must be installed by a qualified contractor and the Rebate applied for before the original completion date specified by your contract (36 months after settlement).</p>
6.3	Walls (required)	<p>Amended to –</p> <p>Wall framing to be constructed from timber or recyclable light-gauge steel.</p>	Amended to allow the use of light-gauge steel, providing greater flexibility in use of acceptable materials.
7.1	Exterior Wall Finish (Required)	<p>Addition –</p> <p>Axon Oblique 200 added to approved fibre cement cladding options</p>	Provision of an additional approved material to allow greater flexibility in wall cladding options.
7.6	Non-Toxic materials and Finishes (Required)	<p>Deleted –</p> <p>All materials chosen in the construction and finishing of your home must be below the CETEC VOC emission benchmark (0.5mg/m<sup>2</sup>/hour over 24 hours or 7 days, depending on the material).</p>	To allow greater flexibility of products available whilst also ensuring low VOC alternatives are used.
		<p>All internal glues must be low-VOC, and paints and stains must emit zero VOCs.</p> <p>Amended to -</p> <p>All internal glues, paints and stains must be low VOC (max 1g/litre)</p>	
	Table 11	<p>Under Paint, Suggested Alternative – the word ‘Nil’ replaced with ‘Low’.</p> <p>Text now reads –</p> <p>Low VOC alternatives are readily available.</p>	
8.1	Energy (Required)	<p>Amendment to include the word <i>allocated</i> –</p> <p>Each lot must meet minimum 6.0kW PV and comply with all relevant Australian Standards. Allocated maximum inverter size varies by lot type and cluster as per Appendix D, Witchcliffe Ecovillage Residential Energy Supply Handbook.</p>	Updated to accord with revision to the Witchcliffe Ecovillage Residential Energy Supply Handbook (Updated June 2023).
8.2	Water (Guidance)	Table inserted – Rainwater Tank / Roof Sizing Table	Additional table for further clarification of standards.

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8.3	Wastewater (Required)	<p>Addition –</p> <p>All grey water systems need to be able to be diverted to the WEV sewer. This is necessary for winter months, to avoid overwatering gardens, to enable flushing of the sewer during the wet months, and should it be required from time to time during summer months.</p>	Reason described in wording.
8.4	Internet (Objective)	<p>Addition –</p> <p>The provision of the best available fibre-to-the-home NBN connection is a key feature of the Ecovillage, and was included at significant cost to the project to provide Ecovillagers with every opportunity to work from home, transfer their city jobs to country life, run home businesses, study online, etc. In addition to this, the NBN connection provides the connectivity and speeds required for the metering and monitoring of our private microgrids, which will allow peer to peer energy trading, equitable sharing of the battery, sale of energy to EV's, etc.</p> <p>The trenching of the conduit from the roadside NBN pit to houses should be covered in house building contracts. As part of the NBN's "New Connection Charge" (approx. \$300) an NBN contractor will pull through the NBN fibre and set up the home with NBN. Households will then be able to either transfer their current service or choose from a range of providers to provide internet service and the connectivity needed for microgrid control and metering.</p>	Updated to accord with revision to the Witchcliffe Ecovillage Residential Energy Supply Handbook (Updated June 2023).
	Internet (Required)	<p>Deleted –</p> <p>NBN connection is required to every home to enable energy monitoring and metering networks.</p> <p>Replaced with –</p> <p>NBN, or similar microgrid compliant internet connection*, is required to every home to enable microgrid control, energy monitoring and metering networks.</p> <p>*Stage 1-3 minimum connection requirement is 4G wireless modem (not dongle) with data plan and 2 free ethernet port, but may be subject to change in stage 4 and 5.</p>	Updated to accord with revision to the Witchcliffe Ecovillage Residential Energy Supply Handbook (Updated June 2023).
8.5	Hot Water Systems (Required)	Addition –	Further information to confirm lowest acceptable standards.

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		Heat pump systems must demonstrate that refrigerant used has low greenhouse warming potential. Systems that use R32 refrigerant are the lowest acceptable standard (R134A or lower units are not acceptable).	
8.6	Heating and Cooling (Required)	<p>Addition –</p> <p>Underfloor hydronic system must specify low GWP heat pump system (R32 or better)</p>	Further information to confirm lowest acceptable standards.
		<p>Addition –</p> <p>Wood burning stoves are no longer supported in the Witchcliffe Ecovillage and are prohibited in Stages 3, 4 &amp; 5 of the development. Please consider alternatives such as pellet heaters or reverse cycle air conditioning for space heating/cooling, if required.</p>	
9.2	Thermal Assessment and Life Cycle Assessment	<p>Amendment –</p> <p>We anticipate that most Ecovillage houses will easily achieve the energy efficiency requirements of the NCC. Therefore, the Design Guidelines specifies a higher minimum standard, requiring a NatHERS star rating of <b>7.5 stars</b> for Stages 3-5 (7 stars for earlier stages) in order to achieve our sustainability outcomes.</p>	The minimum standard has been amended from 8 stars to 7.5 stars for stages 3-5 and 7 stars for Stages 1 & 2. We received advice that there are significant cost savings available when constructing a home to 7.5* standard compared to 8*, with only a small sacrifice in thermal efficiency. We therefore reduced the standard to assist with building costs.
9.3	WEV Design Review process	<p>Amended to –</p> <p>To ensure that new homes in the Ecovillage are designed in accordance with our sustainability objectives, you (and/or your designer/builder) must participate in a <u>two-step iterative design review process</u> with the Witchcliffe Ecovillage (WEV) Design Team, comprising Concept Design Review and Formal Assessment. Please ensure that you have thoroughly read these Design Guidelines and LDPs before starting the design process.</p> <p>Please note that one full design review (concept and formal approvals) is included in the price of your lot for 36 months (3 years) from the date of registration of your relevant strata scheme. This provision is specified in 'Governance Bylaw 16'. WEV can provide design review support beyond this date, however, a charge of \$300 per full review is applicable.</p> <p>If you require an additional design review because you have significantly changed your concept design, this will be separately charged at \$300 per review to help cover staff costs. The design will then be reassessed by the WEV Design Team before a further Concept Approval can be issued. No additional fee will apply for formal assessment if the design has not significantly changed from the approved concept (fees will be reviewed annually).</p>	<p>Text amendment to further clarify requirements and process.</p> <p>The Resident's Bulletin of Dec 2022 already notified that additional concept design reviews will garner a \$300 fee to cover staff costs.</p>

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		<p>Further guidance on this process is provided in the Appendix G ‘Guidance Document - WEV Design Review Process and Approvals’.</p> <p><b><u>Step 1 - Concept Design Review</u></b></p> <p>This is step-one in the design review process and can be undertaken via email review. This is to establish that the proposed design is generally consistent with the key principles of the Design Guidelines and LDPs prior to you documenting the proposal in detail. Once submitted to the WEV Design Team, if the concept design is significantly non-compliant, we will note the issue briefly and ask that you resubmit with a complying design. If your design is largely compliant with the requirements, we will respond via email providing you with Concept Approval. Along with this approval, we may also respond with a couple of minor changes or suggestions and as that you incorporate them in the drawings submitted at step-two – the Formal Assessment.</p> <p>It is important to note that Concept Approval only establishes that the design is generally moving towards compliance and consistency with key principles. It is not a full detailed assessment, nor is it a final sign off or pre-approval of all elements of the design. Receipt of Concept Approval is a first mechanism that allows you to proceed to the Formal Assessment stage for more detailed assessment. Whilst the WEV Design team will flag items of major concern or non-compliance that would impede the design proceeding to Formal Assessment it is not in our remit to highlight all design requirements to you. This is why we encourage you to thoroughly review the Design Guidelines and LDP with your designer/builder at the outset and throughout the design review process.</p> <p>After Concept Approval is issued, the onus is on the owner/designer/builder to further refine the design against all requirements of the Design Guidelines and LDP prior to submission for Formal Assessment.</p> <p>This is a checklist assessment process – a completed Concept Design Assessment Checklist (refer to Appendix H) must be submitted along with all required documentation (noted below) for the WEV design Team to commence concept design review.</p> <p>Concept Design submission requirements include:</p> <ul style="list-style-type: none"> <li>• Concept design drawings of dimensioned site plan, floor plan, elevations, 3D massing</li> <li>• Basic materials specification: cladding, structure, roofing, windows</li> </ul>	
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		<ul style="list-style-type: none"> <li>○ rainwater tanks, downpipes, overflow pathway, greywater system &amp; builder’s kit;</li> <li>○ energy and water ratings for all fixtures and appliances; and</li> <li>○ monitoring devices.</li> <li>● Fencing concept design for front and rear fences</li> <li>● Thermal Assessment Report identifying natHERS energy efficiency star rating</li> <li>● Life Cycle Analysis (Rapid LCA eTool report), including GWP Summary indicating percentage of GWP savings achieved.</li> <li>● Energy and Water Budget, including energy rating and WELS star rating information for all major appliances, demonstrating that estimated average daily energy and water consumption will be supplied (Energy and Water Budget templates).</li> <li>● NMI Meter proof of purchase.</li> <li>● Bushfire certification.</li> <li>● Construction Agreement and Bond payment (see Section 10.1, Standards During Construction.)</li> <li>● Construction Waste Management Plan (see Section 10.2, Construction Waste).</li> </ul> <p>All checklists, templates and documentation guidelines can be downloaded from the Witchcliffe Ecovillage website.</p> <p><a href="https://www.ecovillage.net.au/library/document-library/">https://www.ecovillage.net.au/library/document-library/.</a></p> <p><b><u>Letter of Design Compliance</u></b></p> <p>Once you have satisfactorily completed the Formal Assessment process, WEV will provide you with a Letter of Design Compliance that you should submit to the Shire alongside your Building Permit documentation. Please note that if the design complies with the Local Development Plan and the Residential Design Codes (RCodes), you can submit to Building Permit approval at the Shire. However, if you are seeking variations to provisions in either of those documents you will first need to go through Shire Planning Approval.</p> <p><b><u>Design Review Timeframes</u></b></p>	
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		<p>The WEV Design Team is small and tasked with oversight of a large and complex project to deliver. As such, our ability to respond varies depending on workload and staff availability. In normal circumstances, we estimate a timescale of:</p> <ul style="list-style-type: none"> <li>• 2 weeks to complete Concept Review; and</li> <li>• 2 weeks for Formal Assessment.</li> </ul> <p>These timescales are based on designers/builders/owners having thoroughly reviewed the Design Guidelines and LDP so that when we receive a proposed concept or formal design it is largely compliant with our requirements and allows timely turn-around of the review.</p> <p>We will not assess incomplete applications, please ensure all information required at each stage is included and you have completed relevant documents/checklists.</p> <p>The WEV Design Team will do their best to meet these timescales, but at times and for various reasons, some applications take longer.</p>	
9.4	Construction Agreement & Bond	<p>New section added regarding existing Construction Agreement and Bond payment requirements. Amended text as follows –</p> <p>A Construction Agreement must be signed and bond paid prior to the owner receiving Formal Approval from us for the house design. The Construction Agreement is co-signed by the Director of Sustainable Settlements, as the representative of the Strata.</p> <p>This will acknowledge that the purchaser and builder are aware of the requirements for building in the Ecovillage, and that the builder and all trades will comply in an orderly and courteous way. It states that the lot owner will be responsible for any damage to the common property or the adjacent public road verge caused by any contractor engaged by the owner.</p> <p>Owners of lots must also commit to making every effort to ensure minimum damage to roads, paths, landscaping on verges and in community gardens during construction. Owners will be liable for replacement and repair costs of any damage (enforced via each cluster’s strata bylaws).</p> <p>The owner must pay a \$1,000 bond which is kept in escrow in the Strata bank account and held against the lot purchaser (not the builder). Once construction of the home is completed, the owner can request a Bond Inspection and if no damage is identified, the bond is returned. If damage is identified, the cost of rectification is then taken out of the bond and the balance returned to the owner.</p>	Section included to further clarify the existing requirements and process for completion.

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		<p>To ensure no delays, the WEV Design Team will initiate the Construction Agreement process after Concept Approval. Our Admin Team manages these agreements and will be your main point of contact (admin@ecovillage.et.au). Please note that the invoicing process can take up to <u>4 weeks</u>.</p> <p>The WEV Admin Team will contact you to initiate the process. The Construction Agreement can either be emailed to you for hard copy signature or signed electronically via DocuSign.</p> <p>Proof of completion of the Construction Agreement and Bond payment to your strata bank account should be included in your documentation for Formal Assessment.</p>	
10.1	Standards During Construction	<p>Amended to –</p> <p>To ensure a quality build, an orderly construction process and to reduce impact on neighbours, the following requirements must be met during construction:</p> <ul style="list-style-type: none"> <li>● Construction works must comply with all Shire policies, regulations, and strata bylaws.</li> <li>● Ensure all trades and contractors are aware of sustainability infrastructure requirements, e.g., correct installation of insulation, correct location of rainwater tank inlet and overflow, correct placement of PV array, etc.</li> <li>● The site must be kept clean at all times during construction to minimise impact on neighbours. All rubbish must be disposed of off-site and skip bins appropriately covered to ensure contents are adequately secured.</li> <li>● The lot must be maintained prior and during construction, with grass cut, weeds, rubbish removed and surface drainage maintained.</li> <li>● Earthworks are to be managed carefully, and dust is to be controlled.</li> <li>● Storage of all plant and materials to be on the subject lot only (not on adjoining lots, open space or common property even if unoccupied). Locations of site sheds, toilets, skip bins and sea containers must not impede vehicle sight lines or pedestrian pathways.</li> <li>● Vehicle parking is not permitted on other lots, open space, median strips, footpaths or other landscaped areas. Footpaths are not designed for heavy vehicle access and appropriate protection shall be implemented by trades and contractors to protect existing paths.</li> <li>● Existing vegetation and installed Street Tree planting shall be protected with tree protection barriers.</li> </ul>	Learnt experience of issues that may come up during construction has required the addition of further requirements.

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		<ul style="list-style-type: none"> <li>● Stormwater is to be appropriately managed (sediment to be controlled and managed so it does not impact downstream swales) and in accordance with the overland</li> <li>● Swales along road verges must be maintained and not obstructed or filled in, and cross-overs / culverts over swales must not be damaged.</li> <li>● Ensure all trades and contractors are aware of existing public and private infrastructure locations in both the public and private (community garden) lands. Please conduct a Dial Before You Dig and refer to the relevant 'As Constructed Drawings' (see Appendix M).</li> <li>● Site topsoil that may be removed for house pad construction is a valuable resource. It should be retained on the private lot for use in gardens and matching house pads into existing ground levels, or appropriate locations within Ecovillage Commons land can be provided by the WEV Office.</li> <li>● Allowance for supply of construction water for all trades and contractors should be considered. WEV accepts no responsibility for supply of water for construction purposes. The ECL water supplied to community garden and garden plots is not permitted to be used for construction purposes.</li> </ul>	
10.3	Post-Construction Inspection	<p>New section added –</p> <p>The correct installation of sustainability infrastructure is vital to its functional operation. To ensure the sustainability outcomes of the Ecovillage are being met the WEV Design Team will conduct a post-construction inspection to confirm all sustainability infrastructure is installed correctly and to the specification of the submitted Infrastructure Plan.</p>	<p>Ecovillage Residents were notified in the Dec 2022 Residents' Bulletin that the WEV office would no longer be undertaking mid-construction building inspections due to lack of staff resources and insufficient notice provided by builders to be on site at the appropriate time. The WEV Design Team will however continue to conduct post-construction inspections of infrastructure installed.</p>

## WEV Sustainable Building Design Guidelines – Record of Amendments

### Changes to the Sustainable Building Design Guidelines – Update February 2023 from September 2021 (Revision A of Design Guidelines Document)

Section No.	Section Title	Current Requirement	New Requirement	Reason for Change
3.3	Site Works	No cut and fill within 1.5m of any internal lot boundary, excepting planter beds not exceeding 0.5m height.	No cut and fill within 1.5m of any front or rear lot boundary, excepting planter beds not exceeding 0.5m height. Retaining wall requirements within 1.5m of a side boundary: max. rise - 0.5m. within a 3.0m run. Any side boundary retaining must be fully within the owner's lot boundaries (including footings). Consideration of integration of side boundary fencing with retaining is required, along with liaison with the impacted neighbour.	In order to accommodate homes on sloping lots and in some cases the required finished floor heights to protect from large flooding events, we are allowing some side boundary retaining. This is particularly relevant to smaller lots with small side setbacks. We highly recommend liaising with your neighbours to potentially avoid retaining by coordinating site levels at the shared side boundaries. Alternatively, consider avoiding retaining at the boundary by building up the house foundation instead.
3.10	Fencing and Retaining	Retaining walls to be constructed of granite or natural limestone stonework, recycled masonry or rammed earth using local clay, NOT reconstituted limestone blocks, concrete, or post and panel configurations.	Retaining walls to be constructed of granite or natural limestone stonework, recycled masonry or rammed earth using local clay, or reconstituted limestone blocks NOT insitu concrete, concrete blocks or post and panel configurations.	Due to supply constraints on a number of building materials and <b>affordability</b> considerations, we are now allowing reconstituted limestone blocks for retaining.
5.3	Roof Forms	Gable roofs must be min. 30° pitch (recommend 30° -- 45° for spans up to 8m wide, 30° for 9-12m wide) and generally symmetrical.	Generally, gable roofs must be min. 30° pitch, though this can be reduced to min. 25° on gable roofs wider than 8m. Gable roofs must be 'generally symmetrical' which means we will accept gable roofs with different wall plate heights but not gable roofs with different pitches.	Legislation around construction safety requires additional, costly measures to comply when constructing roofs steeper than 26 degrees. "Code of Practice: Managing the risk of falls in housing construction" (pp 59-61) <a href="https://www.commerce.wa.gov.au/sites/default/files/atoms/files/221179_cp_fallsconstruction.pdf">https://www.commerce.wa.gov.au/sites/default/files/atoms/files/221179_cp_fallsconstruction.pdf</a> . As such, we are reducing the gable pitch requirement on some homes to allow them to avoid the more costly safety requirements as an <b>affordability</b> measure.
6.7	Insulation	Add-on insulation materials must be installed correctly and inspected during construction, with attention to detail to ensure even distribution and no gaps.	Add-on insulation materials must be installed correctly, with attention to detail to ensure even distribution and no gaps.	WEV is no longer doing construction inspections on builds. However, we do strongly encourage owners to undertake their own inspections or hire a suitably qualified building surveyor to ensure appropriate installation of insulation.
6.7	Insulation	Table 7: Walls - min. R value 3.0	Table 7: Walls - min. R value 2.8	We have received further advice that the additional thermal benefit of the higher R value in walls (R3.0) is marginal and reducing the requirement slightly (R2.8) will improve the <b>affordability</b> of construction.

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6.8	Window Frames and Glazing	House design plans must specify window frames / glazing type and must meet the following requirements: Uw maximum 3.0 for all windows, window frames are made from sustainably sourced timber, lead free uPVC, or aluminium	House design plans must specify window frames / glazing type and must meet the following requirements: U-value (max) of 3.4 for all windows (combined frame and glass) with the following exception: single glazing allowed (min SHGC of 0.45) on north side of homes with sufficient thermal mass, including reverse brick veneer, hempcrete and straw bail homes. This exception only applies to timber frame homes that include significant internal walls made of a thermally absorbent material (brick, rammed earth) in north facing rooms. All window frames are to be made from sustainably sourced timber, lead free uPVC, or aluminium.	Double glazing is a key element to achieving high thermal performance in a passive solar home. However, it is also a large cost item. Given the <b>affordability</b> challenges of the current building environment, we are offering some increased flexibility with the windows specifications. We've slightly raised the maximum U-value of windows in general, and allowed single glazing on north facing windows in specific cases. The advice we've received is that some homes with high thermal mass (beyond just a concrete slab) can still achieve excellent thermal results even with single glazing on the north facade.
6.10	Termit, Vermin and Wildlife Proofing	Sub-soil chemical termite treatment is not permitted; provide physical termite barriers placed under slab in accordance with AS3660.1- 2000.	Sub-soil chemical termite treatment is not permitted, including subsoil reticulated systems. Provide physical termite barriers placed under slab, on base plate and/or around slab penetrations in accordance with AS3660.1-2000. Other options include low-risk chemical barriers applied to or incorporated into the building slab or base plate as required by the building construction method.	Clarification that reticulated subsoil termite treatment systems are not allowed.
7.3	Application of Colour	Avoid larger areas of bright, stark, or incongruous colours that do not suit the overall naturalistic palette of the Ecovillage.	Painted exterior walls should be predominately light or mid-tone with some allowance for feature elements of brighter colour or darker tone. These contrasting colours are best applied to trim and other elements such as fascia boards, window frames, architraves, and balustrades. Dark timber finishes are allowed (e.g. Shou Sugi Ban) as well as untreated hardwood weatherboards. The below chart shows a standard array of colour tone from the graphics industry. We have set the darkest acceptable exterior paint tone at #4 (assuming it isn't timber cladding). Anything #3 or darker may be acceptable for trim or feature elements but not as a predominant colour for the house. This example is greyscale but the theory can be applied across other colour tones.	Providing clarification on previous language around exterior building colour and more specific direction about which tones are allowed and which are not. We are accepting of darker walls as long as they are real timber (no timber grained Hardie cladding), as this aesthetic has a strong linkage to the local Group Settlement homes of the area and buildings such as Druid's Hall, and will fade and weather over time, revealing the grain and integrity of the natural material.

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8.3	Wastewater	<p>All houses in Witchcliffe Ecovillage must install dual plumbing to allow for greywater separation for water recycling. Connections are required only from the bathroom(s). Connections to the laundry are optional and need to be carefully considered as water can become quite alkaline, which is inappropriate for some landscaping.</p>	<p>All houses on Cottage or Family Lots must install dual plumbing to allow for greywater separation for water recycling. Connections are required only from the bathroom(s). Connections to the laundry are optional and need to be carefully considered as water can become quite alkaline, which is inappropriate for some landscaping. A 'Builder's Kit' to facilitate future installation of greywater systems is recommended but no longer required.</p>	<p>This removes the requirement for Groupies Lots to install dual plumbing for greywater separation, as these lots tend to have very small gardens. It also removes the requirement for all lots to install a 'Builder's Kit' - though this is still recommended. Both of these changes are aimed at providing improved <b>affordability</b> in construction.</p>
9.2	Thermal and LCA Assessment	<p>Houses in Stages 3-5 must undergo a thermal assessment by an accredited NatHERS assessor and demonstrate a result higher than 8 stars.</p>	<p>Houses in Stages 3-5 must undergo a thermal assessment by an accredited NatHERS assessor and demonstrate a result higher than 7.5 stars.</p>	<p>We have received advice that there are significant cost savings available when constructing a home to 7.5 star standard compared to 8 stars, with only a small sacrifice in thermal efficiency. As such, we are reducing this standard to assist with increased build</p>

## WEV Sustainable Building Design Guidelines – Record of Amendments

### Changes to the Sustainable Building Design Guidelines – Update September 2021 (Revision A of Design Guidelines Document) from October 2020 (original Design Guidelines document)

Section	Items Changed	Explanation
-	Document Control Table added	Table added to manage update references
1	Master Plan and Tables amended	Variations to subdivision layouts , lot numbers,
1.4	Added reference to AMRS Local Planning Policy 22	Updated to reflect all current AMRS policies
2.1	Insulation value for wall amended on graphic-now R 3.0	Amended to reflect revised performance requirement
3.3	Recommendation to set building finished floor levels 300mm above the adjacent road crown changed to a requirement to meet prescribed finished floor level as determined by Peritas Engineering	This prescription has been seen as necessary to remove doubt as to the interpretation of previous guidelines.
3.8	Rainwater tanks for fire fighting finalised as 3 x 328,000L	Amended to reflect final fire engineering designs
3.9	AMRS crossover changed from Required to Guidance	Amended to better reflect the practical application of the guideline
3.10	Boundary fences will now constructed from post and wire instead of recycled vineyard posts	Available stock of recycled vineyard posts have been deemed unsuitable for this application
3.10	Requirement to submit concept design for fences (not including side boundaries between lot)	Required to demonstrate an understanding of the requirements of the guidelines during the approval process
5.5	Carports required to have min. 300mm eaves overhangs for non-boundary walls	Requirement updated to ensure consistent interpretation of the character requirements for the Ecovillage
6.8	Delete reference to single glazed units	Single glazed units cannot achieve <Uvalue 3.0
6.8	First bullet point amended to overall Uw maximum 3.0 for all windows (frames plus glazing)	Amended to ensure clarity in interpretation of requirement
7.1	Amends requirement for metal sheet cladding to sheds/outbuildings only. Zinalume only is permitted. Metal cladding is not permitted on ancillary or main dwelling	Amended to clarify interpretation of the guidelines
7.1	Vacoa from Mortlock Timbers added to approved cladding table	Updated to reflect ongoing review of products which meet the Ecovillage standards
7.1	James Hardie cladding of the following profiles only: Linea Weatherboard Smooth 150mm or 180mm, Axon 133mm Smooth (vertical cladding). Simulated wood-grain profiles are not supported	Updated to reflect ongoing review of products which meet the Ecovillage standards
8.1	Uw maximum of 3.0 changed from east, west, south facing windows to all windows	Amended to clarify interpretation of the guidelines
8.3	Amended to read 'All houses in Witchcliffe Ecovillage must install dual plumbing to allow for greywater separation for water recycling and a "Builder's Kit" to facilitate connection of a future greywater system. Connections are required only from the bathroom(s). Connections to the laundry are optional and need to be carefully considered as water can become quite alkaline, which is inappropriate for some landscaping'	Retrofitting of 'Builder's Kit' is impractical. Amended to clarify interpretation of Section 8.3 of the Building Design Guidelines
8.5	Guidance amended to read: 'Heat pump hot water systems are highly efficient (up to 80% energy savings) and are more efficient in our colder climate than solar hot water systems, but can be variable	Amended to provide better clarity around acceptable refrigerants for heat pumps

## WEV Sustainable Building Design Guidelines – Record of Amendments

	in quality and carbon emission performance. Preferred heat pump hot water systems use low greenhouse warming potential (GWP) refrigerant gas (e.g., CO2 or R32 standard) and must be higher quality, leak free units. We have negotiated excellent discounts on Reclaim heat pumps, which are high quality units that meet this standard.'	
8.6	Guidance amended to prohibit the use of wood burning stoves in the Ecovillage	Wood burning stoves and heaters are not recommended for everyday use in built up areas, as they are inefficient converters of fuel to heat, contribute to carbon emissions, cause local air pollution to neighbours and residents with breathing difficulties, and are generally fuelled by unsustainably harvested forest hardwoods. They are not recommended in well-sealed houses, as they burn oxygen inside the home and require ventilation. In poorly sealed homes, they pull in cold air from outside. Based on this, we have decided to ban wood fuelled heaters in the Ecovillage. Outdoor fire pits are allowed
8.6	Bullet point 3 amended to read..'Any selected pellet stoves must not exceed 0.8 g/kg particulate emissions (Australian Certified). See list of eligible units on the Australian Home Heating Association website.	Amended to clarify interpretation of the guidelines
9.2	Minimum NatHERS rating amended to <b>8</b> stars	Updated to reflect performance outcomes being achieved in the Ecovillage and to ensure energy performance remains a key objective in the design and specification of homes in the Ecovillage
9.2	Table 13 amended to...'minimum requirements -105% Carbon Emissions compared to OECD Average	Amended to clarify interpretation of the guidelines
9.2	Etool weblink updated	New link to eTool Life Cycle Assessment tool
9.3	Formal Approval Checklist updated to include (a) minimum finished floor level, (b) provision of greywater Builder's Kit, (c) fencing concept designs	Amended to include updated requirements for WEV formal approval



## WEV Sustainable Building Design Guidelines – Record of Amendments

Changes to the Sustainable Building Design Guidelines – Update June 2022 from October 2020 (original Design Guidelines document)		
Section	Items Changed	Explanation
3.3	Requirement to set building finished floor levels 300mm above the adjacent road crown changed to a recommendation and adjusted to relate to the low edge of road pavement.	This recommendation holds for most flat lots; however, is impractical and unnecessary on some lots that fall away from the road along the eastern portion of the site.
3.8	Recommendation to construct homes to BAL 12.5 standards (general bushfire risk area)	General note of caution for people building outside of the identified BAL contours in the BMP
3.10	Delete requirement for rear boundary gate on Cottage and Family Lots to be limited to 1.2m	We want to allow for creative expression on gates.
3.10	Edit requirement relating to fencing at boundary of lot and EUA to include defining the boundary with landscaping as an option	The objective related to defining the spaces as distinct and some residents preferred to do this with landscaping instead of a fence.
5.5	Delete guidance that garages are not permitted on Cottage Lots due to size limitations and negative streetscape impacts	LDPs now allow garages on Cottage Lots subject to strict criteria that minimise negative impact on streetscapes.
5.5	Insert guidance that roof decks over carports may be possible subject to visual privacy setbacks	Clarifies a question that has been asked by lot purchasers
5.9	Insert maximum pitch on skillion roofs of 25 degrees, delete range	Steep skillion roofs are not compatible with the WEV intended character
6.1	Expand acceptable timber description to align with acceptable cladding options under 7.1	To maintain internal consistency in the document
6.3	Recommendation that timber framing should comprise studs, appropriate building paper / foil, battens, and then cladding	Incorporation of a batten ensures an air cavity behind the cladding, which reduces the risk of condensation inside the wall that can damage wall components
6.8	Minimum SHGC of 0.45 on north windows changed to recommendation	A high Solar Heat Gain Coefficient is still recommended on north facing glazing to maximise winter solar heat gain. However, in some cases this standard can lead to perverse outcomes in the case where the house is overheating, so this is no longer a strict requirement.
6.8	Uw maximum of 3.0 changed from east, west, south facing windows to all windows	Our research into window suppliers has satisfied us that this level of insulation is achievable even on windows with higher SHGCs.
7.1	Deleted requirement that fibre cement based cladding products are not permitted	We have now allowed some fibre cement products in specific circumstances.
7.1	Additional clarification on allowable cladding materials now provided including: solid timber, modified timber, and limited fibre cement profiles	This provides more clarity on the allowable cladding options, including applicable sustainability standards for solid timber, allowable modified timber products, and one allowable fibre cement profile.
7.6	Advice on standards for identifying low-formaldehyde products, suggest targeting EO.	Further clarification on how to target and understand the metrics of low- formaldehyde products.

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7.6	Fibre Cement board is allowed to be used internally in wet areas and as lining for eaves / outdoor ceilings	Clarification of one allowable use of fibre cement products
8.3	Greywater plumbing only required from the bathroom (not laundry due to lint and alkaline water)	Greywater from laundries can have a negative impact on some gardens because of the alkalinity depending on the plant species.
8.6	Pellet stoves are exempted from efficiency standards (note: emissions standards still apply)	Pellets mostly come from mill offcuts, which are materials that otherwise would go to landfill. Therefore, the only negative impact of a less efficient system will be a cost impact on the user (i.e. will not impact the environment).
9.2	LCA requirement changed from 'per bedroom' to 'per occupant' and the quantity adjusted accordingly	The 'per occupant' metric is linked to the average occupancy for certain house sizes (based on bedroom numbers) based on ABS figures. This way of measuring carbon emissions will allow for comparison with other projects.