

DESIGN REVIEW AND ASSESSMENT PROCESS

WITCHCLIFFE ECOVILLAGE

CONCEPT DESIGN REVIEW

We encourage early contact with the WEV Design Team when starting to formulate your building concepts so we can provide feedback at an early stage and avoid redesign as much as possible. As such, please arrange for an in-person meeting with us (or if you are not local please email sketches) to start the review process. This is a relatively informal, iterative process, where we provide advice on interpreting the Local Development Plans, Design Guidelines, and the general principles of passive solar design.

Typical submission documents:

- Concept design drawings of dimensioned site plan, floor plan, elevations, 3D massing
- Basic materials specification: cladding, structure, roofing, windows
- Proposed roof area, water tank location and size, PV panels location and size

It often takes 2-3 feedback loops before the concept design is finalised and approved to progress to detailed documentation. This will be confirmed by us via email.

FORMAL ASSESSMENT

Once all of the detailed documentation for the building is completed, this needs to be submitted to the WEV Design Team for review and final approval. Please see the Formal Assessment Checklist which provides a concise list of the submission requirements. Once you have satisfactorily completed this process, WEV will provide you with a Letter of Design Compliance that you should submit to the Shire alongside your Building Permit documentation.

Below are the various submission requirements:

Building Permit Drawing Set

- Site Plan (min scale 1:200)
- Floor Plan (min scale 1:100)
- All Building Elevations (min scale 1:100)
- Electrical / Lighting Plan
- Door + Window Schedule
- Wet Area Detail Plans and Interior Elevations (showing wall reinforcing for grab rails)
- Building Cross Sections (min scale 1:100)
- Key Footing, Wall and Roof Details (min scale 1:50)

Structural Engineering Drawings

Structural drawings are required for Shire approval as well as for the builder. These assist in sizing footings and slabs, lintels, beams, rafter depth and spacing, and shear bracing. Once obtained, please submit them as part of your package to the WEV Design team. Drawing sets should include (at a minimum):

- Footings and slab details
- Structural beams, columns, lintels,
- Rafters, roof construction, bracing

Thermal Assessment

Contact one of the thermal assessors to undertake an energy assessment (see Preferred Suppliers on our website). It is recommended to start engaging with this consultant early and use this feedback to refine the design to optimise energy efficiency of your building. You need to achieve a minimum of 7 stars (out of 10) to comply, but this should be straightforward given the insulation and glazing requirements in the Sustainable Building Design Guidelines. When completed, please provide the NatHERS Certificate to the WEV Design Team.

Life Cycle Analysis (eTool LCD)

You need to undertake a lifecycle assessment of your proposed building, to ensure that it is meeting the carbon negative target we have set (you need to achieve -220kg CO2 per person per year, see Section 9.2 in the Sustainable Building Design Guidelines). This target translates into -105% of the OECD average for a house of your size. To undertake the assessment, this is the process you should follow:

- Learn more about lifecycle assessment and the required process by clicking on <https://support.etoollcd.com/index.php/knowledgebase/witchcliffe-ecovillage-lca-guidance/>
- When you are ready to start inputting your information, put [lifecycle.house](#) into your browser and this will open up the software
- Click on Buildings in the green bar at the bottom of the screen
- Click New Users Register in yellow bar, provide email and password, accept T+Cs, press Register button
- Click on the yellow plus sign
- Select the WEV Stage that applies to your lot
- Click on Find Your Lot + Add Build on the yellow bar
- Click on your Lot and Cluster
- Input all information about your building into the forms
- When completed (assuming you've met the target), "Submit" design
- Then "Share" design
- Click on "Compliance Checklist" report
- Email to yourself, then forward a copy to the WEV Design Team

Bushfire Certification

As the entire SW is considered a Bushfire Prone Area, all Building Permit applications need to be accompanied by a Bushfire Certification. For lots that are more than 100m from a specific bushfire risk area, self-certification may be an option (see below links).

- <https://www.dplh.wa.gov.au/getmedia/5a134896-9e77-4085-8501-ea1b13e86bc7/FS-BF-BAL-Assessment-Basic-Aug19>

- <https://www.amrshire.wa.gov.au/library/file/2Services/02%20Building/Building%20in%20a%20Bushfire%20Prone%20Area.pdf>
- https://www.dplh.wa.gov.au/getmedia/0d013a8f-d8d0-4ed2-a97f-e0076177a4b2/BF-BAL_Assessment_Report

For lots within 100m from a bushfire risk area (eastern edge of the Ecovillage), we have commissioned a Defined BAL Contour Plan to provide more certainty to designers about the requirements. This document can be downloaded from the WEV website in the Document Library. This also facilitates assessment and obtaining a Bushfire Certification if you go to the nominated consultant Bushfire Prone Planning. Also, for those who could self-assess but find it too difficult, this consultant can undertake the assessment for you. In both cases it should be quite quick and inexpensive.

Sustainable Building Design Guidelines (Oct 2020)

Please review your design in light of the October 2020 Sustainable Building Design Guidelines and confirm compliance with the various elements. This version incorporates some changes, which are identified in an Excel spreadsheet in the Document Library of the website. Please fill out the Sustainable Building Design Guidelines checklist and submit it to the WEV Design Team.

Local Development Plan + R Code Compliance

This checklist will be used by the Shire planner to confirm your compliance with the relevant Local Development Plans and the R Code Provisions.

- Choose the checklist that relates to your Lot Type
- This checklist identifies which elements of the R Codes are modified by the LDP and which still apply from the R Codes
- Your building designer or builder should go through this list and confirm that you are meeting the relevant standards (LDP, R Code, or N/A “grey box”)

Liveable Housing Design Guidelines checklist

All housing in the Ecovillage must meet the ‘Silver’ standard for accessibility in the Liveable Housing Design Guidelines. This document in pdf format can be downloaded free from: <http://www.livablehousingaustralia.org.au/95/downloads.aspx>. To confirm compliance with this standard, please fill out and submit the LHDG Checklist.

Detailed Materials and Finishes Specification

To allow us to properly assess compliance with certain aspects of the Sustainable Building Design Guidelines, we need to understand the intended materials with which the building will be constructed. Please provide this specification in the format supplied in the Specification Summary template, and list as much detail as you have available.

Infrastructure Plan

To assist in coordinating on-site infrastructure, we require you to create an overlay of your site plan that shows the key systems that power your house and where they sit on the block. Specifically, we’d like to see:

- Location utilities connections (sewer, microgrid, NBN) and proposed reticulation from the house / shed

- Location and sizing of PVs including location of inverter and GPO to allow for future electric vehicle charging
- Location and size of rainwater tanks, downpipes, underground connecting pipework, pump, overflow pathway / pipework to off-site swale (see Site Drainage drawings on Document Library)
- Greywater system diagram, overflow to sewer, irrigation reticulation, irrigation controller location
- Monitoring devices for water and power

Household Water

In order to confirm that you are allowing for sufficient potable water for your household, please fill out the Household Water Budget Template. This form requires you to nominate the occupancy of your household, your rate of water use, your roof area, and your nominated water storage.

Household Energy

Please complete the Household Energy Disclosure Template that lists your proposed solar panel size and placement, as well as the brands and energy efficiency of your major appliances. This will help us confirm compliance with the Sustainable Building Design Guidelines.

BUILDING PERMIT

Building Permits must be obtained prior to the commencement of any building work. To obtain a Building Permit, an application form (BA01 or BA02, see below) together with one copy of all plans, structural engineering, specifications, and our Letter of Design Compliance must be submitted to Augusta-Margaret River Shire Building Services.

Submission requirements can be found on the Department of Commerce website <http://www.commerce.wa.gov.au/building-commission/building-approval-forms-0>.

There are two methods you can pursue: pre-certified and un-certified. You can engage a Building Surveyor to pre-certify that your plans comply with the National Construction Code (NCC) and then submit to the Shire (quicker but perhaps slightly more expensive). Or you can submit all your documentation to the Shire directly (un-certified) and they will assess the building code compliance of your plans.

- Certified applications - BA01 - approval timeframe 10 business days
- Uncertified applications – BA02 - approval timeframe 25 business days

PRIOR TO STARTING CONSTRUCTION

Construction Agreement

In order to ensure a quality build, an orderly construction process and to reduce impact on neighbours, the following requirements must be met during construction:

- Construction works must comply with all Shire policies, regulations, and strata bylaws.
- Ensure all trades and contractors are aware of sustainability infrastructure requirements, e.g., correct installation of insulation, correct location of rainwater tank inlet, correct placement of PV array, etc.
- The site must be kept clean at all times during construction to minimise impact on neighbours. All rubbish must be disposed of off-site.
- The lot must be maintained prior and during construction, with grass cut, weeds and rubbish removed.
- Earthworks are to be managed carefully, and dust is to be controlled.
- 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).
- Vehicle parking is not permitted on other lots, open space, median strips or other landscaped areas.
- Existing vegetation is to be protected with tree protection barriers.
- Stormwater is to be appropriately managed (sediment to be controlled and managed so it does not impact downstream swales).
- Swales along road verges must be maintained and not obstructed or filled in, and cross-overs / culverts over swales must not be damaged.

After receiving formal approval of building plans (Building Permit) from the Shire but before commencing construction, lot purchasers and their selected builders will be required to sign a Construction Agreement. 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.

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).

Construction Waste Management Plan

Avoiding and reducing waste directly benefits builders and owners in reducing costs and should be standard practice as part of every building project. Prior to commencement of construction, the owner and/or builder must submit a Waste Management Plan to the Design Team to demonstrate that sustainable waste management requirements are understood and fulfilled.

At the Ecovillage, best practice construction waste management will be achieved in the following ways:

- With the assistance of your designer and builder, apply the best practice principles of **AVOID, REDUCE, REUSE** and **RECYCLE** to the construction of your home.
- The Ecovillage encourages the reuse of materials in new buildings and supports property owners who wish to utilise recycled/repurposed materials provided they meet building code standards and do not compromise the performance of buildings.
- The Ecovillage will provide a temporary site for storage and recycling of surplus building materials such as off-cuts, over orders, and incorrect materials to increase the reuse of materials on site and to help increase the availability of reusable materials.
- To maximise the recycling of building waste that cannot be reused on site, builders will be required to separate materials into waste streams that can be best handled at the local waste management facility operated by the Shire on Davis Road:
 - Rubble, including broken bricks, concrete waste, broken tiles, small offcuts of plasterboard;
 - Metals; and
 - Timber offcuts and timber waste.

For more information, please see the *Master Builders' Association of WA Smart Waste Guide (2014)*: <https://www.mbawa.com/wp-content/uploads/2014/09/Smart-Waste-Guide-resized.pdf>

and the *WA Local Government Associations' Construction Waste Management Plan Guidelines*: [https://www.wastenet.net.au/Profiles/wastenet/Assets/ClientData/Document-Centre/WAL2708 Construction waste A4 v2 singles.pdf](https://www.wastenet.net.au/Profiles/wastenet/Assets/ClientData/Document-Centre/WAL2708%20Construction%20waste%20A4%20v2%20singles.pdf).

DURING CONSTRUCTION

Inspections

The correct installation of sustainability infrastructure is vital to its functional operation. In order to ensure the sustainability outcomes of the Ecovillage are being met the WEV Design Team will conduct the following inspections:

- a mid-construction inspection to confirm correct installation of insulation; and
- a post-construction inspection to confirm all sustainability infrastructure is installed correctly and to the specifications of the submitted Infrastructure Plan.