Passive Home Starter Checklist

Use this practical checklist to plan a healthy, quiet, low-energy home or renovation in Australia. It's written for homeowners and designers and aligns with Passive House principles, the NCC (National Construction Code), and typical council requirements.

1. Vision, Comfort Goals & Budget

- ☐ List your top 5 must-haves (e.g., 3 bedrooms, home office, acoustic privacy, low allergens).
- ☐ Nominate comfort targets: ~20–22 °C in winter and ~23–25 °C in summer, including bedrooms.
- ☐ Decide certification pathway: Certified Passive House vs "passive-style" performance.
- ☐ Set a realistic total project budget (design, permits, construction, contingencies ~10–15%).
- ☐ Define success: energy bill target ($/year), indoor air quality, and noise reduction outcomes.

2. Site & Planning Fundamentals

- ☐ Order a feature & level survey and soil report (geotech).
- ☐ Confirm zoning and overlays (heritage, flood, bushfire BAL, special character).
- ☐ Check if a planning permit is required (many heritage overlays do).
- ☐ Record constraints: orientation, overshadowing, overlooking/privacy, easements, trees.
- ☐ Note transport noise sources (trams, arterials, rail, flight paths) for acoustic strategy.

3. Performance Targets (set these early)

- ☐ Airtightness target: up to ≤ 0.6 ACH50 for Certified Passive House; set a QA plan.
- ☐ Thermal bridge control: design junctions to avoid cold spots/condensation.
- ☐ Insulation: continuous to roof/walls/slab; specify R-values for your climate zone and build-up.
- ☐ Windows: high-performance frames (thermally broken), low-e double or triple glazing; specify U-value/SHGC.
- ☐ MVHR (mechanical ventilation with heat recovery): size for occupancy and noise criteria.

- [ ] Model NatHERS (min 7-Star for new builds) alongside PHPP/Passive-style modelling to cross-check.

4. Envelope & Detailing Checklist

- [ ] Continuous air control layer: draw the “red line” through plans/sections; detail penetrations.
- [ ] Membranes, tapes & gaskets: specify brand, location, surface prep, installers’ method.
- [ ] Service cavity to protect air barrier and simplify electrical/plumbing runs.
- [ ] Slab/footing edge insulation; thermal breaks at balconies/steel penetrations.
- [ ] Window install: shims/packers, perimeter tapes, insulated reveals, airtight internal returns.
- [ ] Condensation management: correct vapour control for your climate zone plus ventilation.
- [ ] On-site QA: sample corners/mock-ups; photographic evidence log.

5. All-Electric, Solar-Ready Services

- [ ] Space conditioning: high-efficiency reverse-cycle heat pumps (zoned); avoid oversizing.
- [ ] Hot water: heat-pump system with smart control.
- [ ] Cooking: induction; rangehood strategy (recirculating with quality filters or designed extract).
- [ ] Drying: heat-pump dryer (ventless) to avoid moisture/heat loss.
- [ ] Electrical: plan for solar PV and battery readiness; EV charger provision if practical.

6. Indoor Air Quality (IAQ)

- [ ] MVHR: balanced supply/exhaust with high heat-recovery efficiency and low specific fan power.
- [ ] Ducting: smooth/rigid where possible; short runs; acoustic attenuation to bedrooms.
- [ ] Filters: at least F7/ePM2.5 (~65%) on supply; define maintenance intervals.
- [ ] Low-tox materials and finishes (low-VOC paints, adhesives, composites).

7. Solar & Energy Strategy

- [ ] Reduce demand first (envelope, airtightness, MVHR).
- [ ] Right-size rooftop PV after modelling expected loads; consider battery once loads are low/stable.

- [ ] Review current state rebates/loans and any federal programs; verify eligibility and timing.
- [ ] Smart metering, load-shifting (timers), and real-time monitoring for continuous optimisation.

8. Drawings & Documentation to Prepare

- [ ] Concept drawings showing orientation/solar control; shading studies.
- [ ] Schedules/specs for windows, insulation, membranes, tapes, MVHR, and key services.
- [ ] PHPP (or equivalent) energy model; NatHERS report for NCC compliance (new homes).
- [ ] Detail set for junctions (sill/head/jamb; slab-to-wall; roof-to-wall; balcony/penetrations).
- [ ] QA plan: site test points, photographic log, responsibilities, pass/fail criteria.

9. Choosing a Builder & Contract Essentials

- [ ] Confirm experience with airtight construction, MVHR, blower-door testing, and detailing.
- [ ] Name products and installation methods in the contract (avoid vague “or equivalent”).
- [ ] Include airtightness target and testing milestones as contractual deliverables.
- [ ] Minimise provisional sums/PC items via clear documentation to protect budget.
- [ ] Set communication cadence: weekly site updates; variations approved in writing.

10. Construction Quality Assurance (QA)

- [ ] Pre-wrap inspection: substrates, penetrations, continuity of air barrier.
- [ ] Mid-build blower-door test (pre-linings) to find and fix leaks.
- [ ] Final blower-door test to AS/NZS ISO 9972 with report; thermal imaging as needed.
- [ ] Commissioning: MVHR balanced; filters documented; nighttime noise checks.
- [ ] Handover pack: manuals, warranties, as-builts, test results, maintenance plan.

11. Maintenance & Living

- [ ] Replace MVHR filters as scheduled; keep intakes/exhausts clear.
- [ ] Seasonal tweaks: shading devices and ventilation modes as designed.
- [ ] Monitor energy and IAQ (CO_2/PM2.5) in the first year; adjust set-points if needed.

12. Approvals & Compliance (Australia)

- ☐ NCC (current edition) adoption and 7-Star NatHERS minimum for new homes (check your state's commencement dates).
- ☐ Local planning rules: confirm heritage overlay triggers and required documentation.
- ☐ Bushfire (BAL), flood, and other overlays: obtain specialist reports as applicable.

13. Incentives (Victoria example — always verify what's current)

- ☐ Solar Victoria: PV rebate and optional interest-free loan for eligible owner-occupiers.
- ☐ Federal programs are updated periodically (e.g., battery or energy-efficiency support).
- ☐ Some councils offer sustainability rebates; check your local government website.

14. Your Project Timeline

- ☐ Discovery call & site meeting
- ☐ Surveys, geotech, and service checks
- ☐ Concept + performance targets agreed
- ☐ Planning path confirmed (heritage/overlays)
- ☐ Detailed docs + PHPP/NatHERS ready
- ☐ Fixed-price contract & programme
- ☐ Mid-build QA + blower-door
- ☐ Commissioning & handover
- ☐ 3-month tune-up and first filter change

15. Quick Glossary

- **ACH50:** Air changes per hour at 50 Pa (blower-door test result).
- **MVHR:** Mechanical Ventilation with Heat Recovery.
- **PHPP:** Passive House Planning Package (energy model).
- **NatHERS:** Nationwide House Energy Rating Scheme (Australia).
- **SHGC/U-value:** Window solar gain and insulation performance metrics.

References & Where to Check Current Rules (bookmark these)

- Australian Building Codes Board (ABCB) – NCC and energy efficiency requirements.

- NatHERS – 7-Star ratings and Whole-of-Home info.
- State programs (e.g., **Solar Victoria**) – current PV/battery rebates and eligibility.
- Planning Victoria (or your state planning portal) – Heritage Overlays and permit triggers.
- Passive House Institute – core criteria (airtightness ≤ 0.6 ACH50, MVHR, thermal bridging).
- **AS/NZS ISO 9972** – airtightness (blower-door) testing standard.