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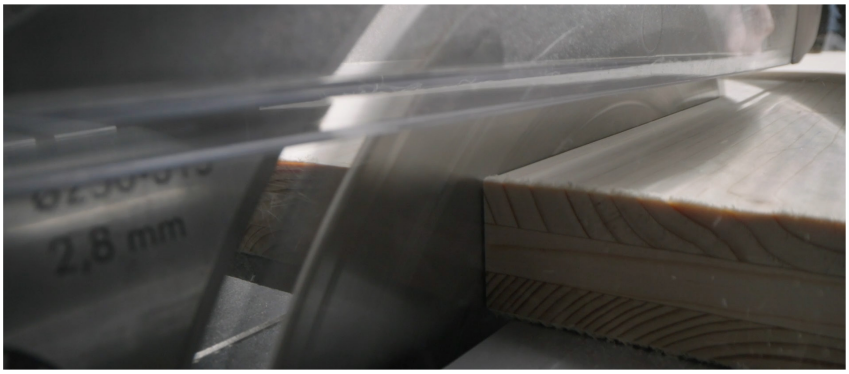
Unit 6, 8 Beaconsfield Street
Fyshwick ACT 2609

LAROS STRUCTURES

HIGH-PERFORMANCE

PRE-FAB CONSTRUCTION

INFORMATION PACK



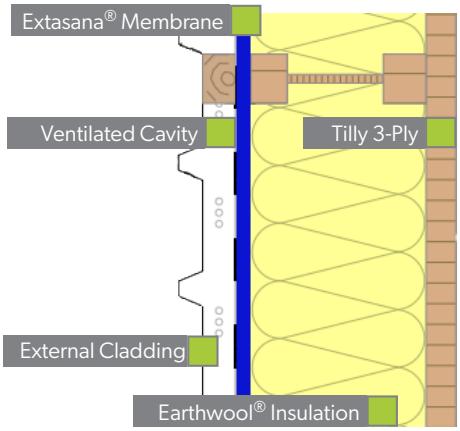
Our Vision

High-Performance, Energy Efficient
And Sustainable Homes

Why LAROS?

The LAROS Group have been working on high-performance, sustainable buildings for over a decade through LAROS Technologies. We provide world class building supplies that are vital in constructing the very best sustainable Passive Houses. LAROS Consulting are experts in building physics and ensure that LAROS Structures' buildings perform to the highest standards, and provide a healthy living space for their occupants year round. When building with LAROS Structures, you are also building with LAROS Group.

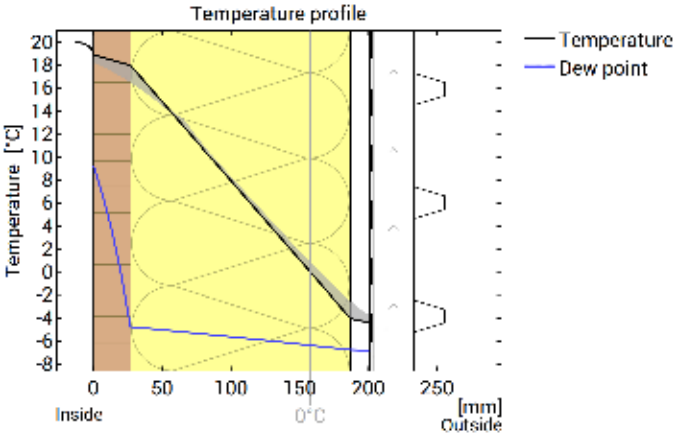
The Performance



The panel system has been designed to provide a high-performance and healthy building.

The Solid Timber Panel, Earthwool® and ProClima membranes combine to make a 230mm wall with an R-Value of 6.26 m^2K/W, providing excellent thermal protection and keeping you warm in winter and cool in summer. This is more than double typical performance of standard 90mm stud frames.

In addition to this, the structure will have an airtightness of 0.6 ≤ $m^3/m^2/hr$ @ 50 PA. This keeps your conditioned air inside and ensures that the insulation is performing at its best. The airtightness and inclusion of the vapour permeable membrane also result in a controlled diffusion gradient through the walls and roof. The result is a self-drying structure with zero risk of condensation or rot forming in the wall or roof under any conditions. This is not just healthy for the building, but for the occupants as well.



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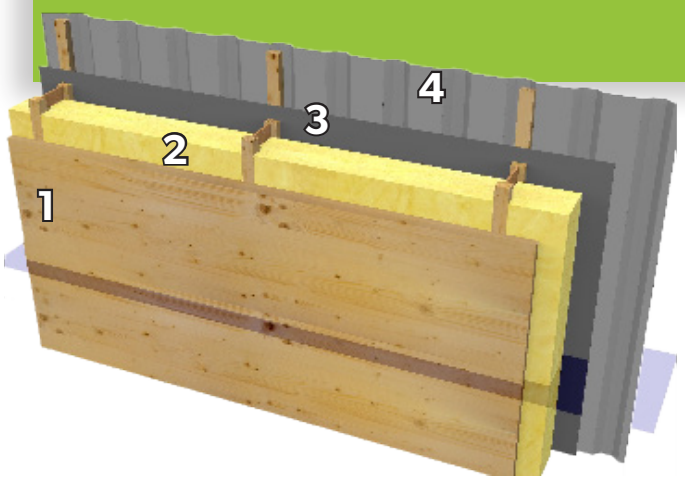
The Structure

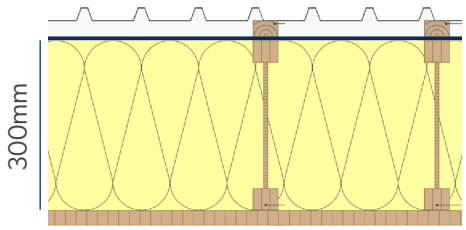


1. Tilly 3-Ply Solid Timber Panel
2. Earthwool® Insultation
3. ProClima Solitex Extasana®
4. External Cladding

We have chosen only the best materials for each component within the structure.

Tilly Solid Timber Panel

The Solid Timber Panel forms the heart of the structure, so we've ensured that it is made from the best material available. Timber is one of the oldest building materials for a reason. It is both structurally strong, as well as very environmentally friendly, with minimal carbon footprint. Mass timber is a strong carbon sink, locking away CO2 for the life of the building and all of Tilly's timber is PEFC certified, from sustainable Austrian forests. Their Solid Timber Panel is especially strong, made from several cross laminated layers of timber, glued together with alternating grain directions. This provides it with similar strength to concrete, without the weight. This results in a high load bearing and sustainable material. Further, the timber will provide a high-quality finished surface internally. No need for plasterboard and painting.



The roof and floor structures are built to the same high-performance standards.

Earthwool® Insulation

Earthwool® Insulation provides the perfect balance of comfort, cost, performance, sustainability, and health. Earthwool® is made from up to 80% recycled glass and bound together using a biobased technology. It makes for a healthier and safer home, as it is non-combustible, rot-proof, odourless, non-hygroscopic (will not absorb atmospheric moisture), does not sustain vermin and will not encourage the growth of fungi, mould or bacteria. All while providing excellent thermal performance and insulation for your home.

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ProClima External Wraps

The ProClima wraps on both the walls and roof provide excellent airtightness and weathertightness. This allows the insulation to perform at its best and stops any air leakage in or out of the structure. Further, these membranes are vapour permeable, allowing for the outward drying of any moisture within the structure.

External Cladding

Due to the care in which the wall structure is made, the external cladding only acts as a rain shield. Therefore, there is no compromise to the thermal performance no matter what external finish is applied, giving you endless options.

Standard Sizes

Walls

All wall panels are standard at 262mm thick from the inside of the wall lining to the outside of the vertical batten.

Single storey wall panels are standard at 2.5m high but can be up to 3.3m high with excess road transport costs. These panels are standard at up to 7.0m wide but can be up to 11.0m wide with longer lead times for manufacturing. Narrower panels are possible but will result in increased cost per sq m due to the increased design effort and materials used for connections.

Double storey panels are standard at 6.0m high but can be up to 11.0m high with longer lead times for manufacturing. These panels are standard at 3.0m wide but can be up to 3.3m wide with excess road transport costs. Narrower panels are possible but will result in increased cost per sq m due to the increased design effort and materials used for connections.

Internal wall panels can be supplied, contact us for more information.

Floors and Roofs

Floor and roof panels are available in a range of depths depending on the selection of floor and ceiling finishes, spans and loadings. Most residential situations would require a panel thickness between 300-600mm.

Depending on loadings, spans up to 11.0m are possible, though the most efficient cost will be achieved at approximately 7.0m spans.

Panel widths are standard at 3.0m but can be up to 3.3m with excess road transport costs.

Minimum roofing slope angle of 5 degrees

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Inclusions and Exclusions

Standard Inclusions

- Structural Design
- Thermal Design
- Wall Studs/Roof Rafters/Floor Joists & Bearers
- Wall/Ceiling Lining (3-ply Panel in Spruce)
- Airtightness System - Including Penetrations
- Insulation
- Weatherproofing Membranes
- External Battens (Vertical)
- Connections, Fixings and Tie-Downs
- Factory Labour
- On-site Installation Advice
- Blowerdoor Test at Handover

Standard Exclusions

- Architectural Design
- Foundation Design
- Development Approval
- Building Approval
- Wall/Floor Coverings
- Cladding
- Foundations
- Services
- Fittings and Fixtures

Optional Extras

- Installation Costs (Labour, Craning etc)
- Windows/Doors
- External Battens (Horizontal)
- ERV Systems

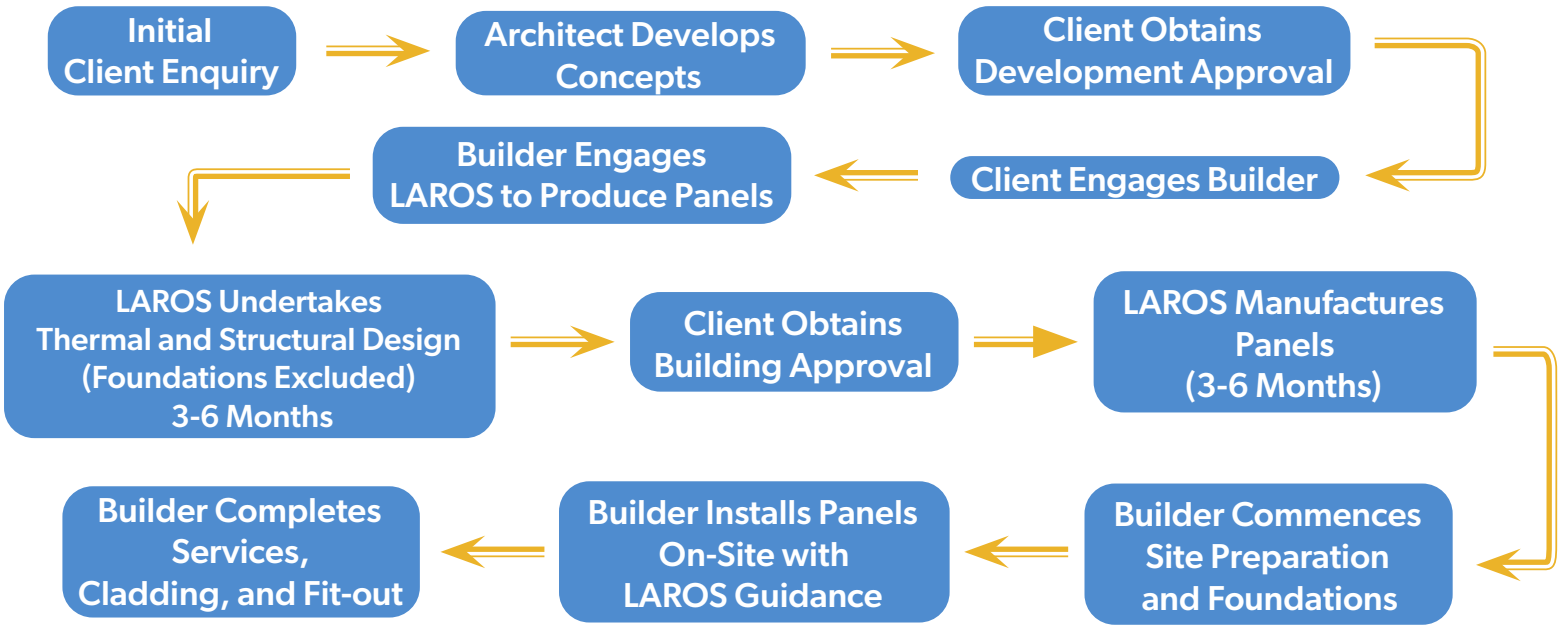
Wall and Ceiling Lining

Tilly 3-Ply Spruce 'CLT' sheets are the standard LAROS wall and ceiling linings. Wall and roof panels are always constructed with a 3-ply lining that can then be covered with the desired architectural finish. Floor panels can be fitted with commonly available structural floor and ceiling sheets on request.

Joins between panels that form the building envelope require careful attention to ensure airtightness across the joint.

There are a number of window and door reveal details possible, if there are specific architectural requirements for these reveals please contact LAROS.

The Process



**From initial enquiry, to delivery of panels on site, we expect this process to take 18 months*

LAROS Information Requirements

Prefabrication necessarily requires a more complete and detailed set of architectural drawings prior to commencement of manufacturing in order to achieve the cost and time benefits for the client.

For this reason it is essential that a complete 'For Construction' set of architectural drawings is provided to LAROS prior to contract execution

Minimum information requirements for indicative costing

- Site location
- Desired thermal performance standard
- Floor to ceiling height
- Number of Storeys
- Approximate floorplan/functional layout sketch
- Elevated or slab-on-ground

Minimum information requirements for detailed costing and contracting

- Detailed floorplans
- Occupancy information
- Window schedule
- If internal walls are included in scope then any particular thermal or acoustic criteria.
- Locations of all services including:
  - water
  - hot water
  - wastewater
  - lights
  - switches
  - GPOs
  - data points
  - HVAC/ERV – including ducting, power, refrigerant and drainage lines
- Wall to ceiling, wall to floor and wall to wall corner detailing – prefer shadow gap
- Wall, floor and ceiling finishes.
- Exterior finishes and any particular requirements for battens.

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Indicative Costs

The cost estimates provided below are indicative only and are not to be relied upon for project financing. Each project is different and a large number of variables contribute to the final cost of a project including:

- Architectural requirements
- Bespoke building performance requirements
- Construction market conditions
- Site conditions
- Structural complexity
- Builder's margins

Depending on your project's circumstances, your cost could be lower or higher.

For a standard build complexity in Canberra you can expect that LAROS panels will cost you approximately $500 per square metre of panel area. This surface area includes the roof, floor and wall surface areas.
If you are unsure of the surface area of your building, it is usual to assume for a single storey house that the surface area is approximately four times the floor area. Using this assumption you can expect panels for a standard build complexity in Canberra to cost you approximately $2000 per square metre of floor area.

Passive House Guarantee

The LAROS Group have been working on high-performance, sustainable Passive Houses for over a decade. With our experience, we have designed the panel system to meet the comprehensive standards of Passive House. With great attention to the airtightness and hygrothermal properties of the structure, we can guarantee that our panel system will meet the required Passive House standards. The completed panel structure will have an airtightness of 0.6 m3/m2/hr @ 50 PA, and a controlled diffusion gradient through the walls and roof. The result is a self-drying structure with zero risk of condensation or rot forming in the wall or roof under any conditions. This ensures a healthy home for the occupant and building alike. We also can alter the base panel design if necessary to meet your particular climate needs.

Interested?
Pay us a visit, email or call

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