

Studio B
Architects

Welcome to Studio B's fifth newsletter.

How can we act sustainably and responsibly with our Heritage Buildings? Environmentally Sustainable Design (ESD) is a wider understanding of our impact on the planet that has developed since most of our Heritage buildings were built. This subject was requested by the Baptist Union of Victoria and applies not just to churches. To start, we need to think outside the square...

Heritage & Sustainability

Start With Principles

To some their Heritage building is a joy; to others a burden. The sustainable principles will be:

- Keep the building - don't demolish. Adapt it if necessary to meet a wider range of needs. If your building is no longer used, allow someone else to redeploy it for their use.
- Fully use the buildings, Share them to avoid others having to build new facilities using precious resources.
- Avoid long unused periods. A building is more likely to "pay its way" if it is used often.
- Often traditional church buildings are built of heavy weight materials, which can become a huge resource for passive heating and cooling in the



Flexible seating and a flat floor allows [St Aldates Church](#) to be sustainably used for many different functions in the life of its members and for a limited range of uses by outside groups.



Melbourne climate. Air-conditioning can often be eliminated and people still remain comfortable if a coordinated, cost effective redesign approach is carried out.

Retain & Maintain:

Looking after your building is sustainable

- Carry out regular checks of gutters & downpipes to avoid decay in timbers. Rotting timber releases carbon and damages historic fabric
- Avoid energy loss in demolition, disposal of waste and energy in new building
- Use the embodied energy in the heritage construction

Optimise Performance:

Understand how your building works so that changes don't cause future problems.

- Identify fabric characteristics such as breathing, not sealed; eg. a combination of non-breathable paint on plaster walls and gas heaters without flues can lead to excessive moisture build-up. This can condense on cold surfaces or within walls and roofs resulting in decay
- Sealing up uncontrolled ventilation can markedly reduce running costs
- Consider enclosing heavyweight brickwork and stone inside a lightweight insulated envelope or double glass to improve passive heating and

cooling. This can become an additional useful space or sunspace gardens. Over the medium to long term these areas can have a positive payback in the energy costs saved.

- Consider any passive heating & cooling in the original that might need reinstating - reopening north facing windows for example
- Service and possibly upgrade original heating system
- Carry out an energy audit on the site to identify and eliminate inefficient equipment.

So, in essence, use the thermal mass, fix the equipment and control moisture

Reduce Energy & Water Consumption

A very useful checklist is available at items 6 to 8 in Heritage Victoria's Technical Leaflet at:

http://www.dpcd.vic.gov.au/_data/assets/pdf_file/0003/44859/Sustainability_Heritage_tech_leaflet.pdf

Maximise Energy & Water Efficiency In New Work

- Select best performance / efficiency
- Monitor Energy and Water use over time
- Insulate new work and create lobby entry
- Make it contribute passively to thermal comfort
- Consider usage patterns

Landscape Planning

- Deciduous trees on the north side will give shade in summer and allow passive solar through in winter.
- Install leaf guards in gutters to reduce blockage.

The following apply to any community building:

Be A Community Leader

- Start a Community Garden for home grown food
- Provide a local venue to avoid another organisation having to travel



This gutter & hopper head is on an unused heritage building. Out of sight and out of mind. It needs an overflow "pop" to show when it needs clearing to people below, before the timber backing rots away.

- Promote Recycling
- Inform your community of your ESD initiatives

Transport

- Advise visitors and attendees of public transport options and timetables
- Provide bike racks
- Run a pick-up bus
- Promote alternatives to private car use

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Next time: Getting Value - What does that mean for you?



The thermal mass of the existing brickwork warms-up from the low winter sun penetrating through the new glass at St Peter's Box Hill.

The roof overhang shades the floor and wall from the high summer sun, allowing the thermal mass to stay cool.