

Aged Care:

The *Greening* of Aged Care

an Insight by Tieran Kimber
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Can environmentally sustainable design be incorporated, in an industry that already requires buildings with a high capital cost and a financial base that is fixed to a certain degree?

The ESD mantra is being repeated throughout the construction industry but how does it relate to the Aged Care industry? Can Environmentally Sustainable Design be incorporated, in an industry that already requires buildings with a high capital cost and a financial base that is fixed to a certain degree?

Across the country, energy rating systems are being applied to residential buildings. The latest update of the Building Code of Australia has brought a number of new energy initiatives to commercial buildings. There are also various voluntary energy rating systems that commercial developments are adhering to in a bid to create a market point of difference. Is it worth it, or indeed possible, to pursue a more sustainable building for the aged care industry, over and above the basic regulatory requirements?

It is firstly worth noting that it is unlikely from a purely financial position that it will be viable for any aged care facility to carry the costs of acquiring something like a Green Star Rating. The process of achieving the rating in the first place is

a costly one, and maintaining it adds further costs. There would also be no obvious marketing advantage to be obtained by carrying a Green Star Rating. Quality of care, living facilities and community environment issues are of paramount importance in the selection of an aged care bed.

What, then, could be the key drivers for pursuing a sustainable aged care building? I suggest that the following points are important to consider.

1. Community responsibility

We all have a responsibility to minimise our impact on the world's resources. This may be a starting point for any discussions on ESD principles being incorporated into Aged Care Facilities.

2. A commitment by the management or ownership to environmental principles

A policy directive by the board of management or facility owner provides a firm base for incorporating ESD into an aged care building.

3. Economic incentives

If the capital costs deliver future recurrent cost savings, there is an obvious choice to incorporate ESD principles that may achieve this.

If a decision to engage with an environmental agenda has been made for an aged care building, establishing the limits and challenges posed by the building's brief is the key to defining what constitutes achievable



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sustainability directives. Some of the key challenges to ESD principles in aged care come from the following areas:

1. Hygiene and infection control - Regulations and OH & S requirements may limit ESD in these areas.
2. The play off between staffing efficiency and economy of scale.
3. The effective orientation of buildings that aim to also achieve internal management efficiencies, as well as reasonable travel distances for ambulatory residents.
4. The priorities of the budget in capital investment.
5. Establishing the ESD priorities as a key component of the brief, not as an afterthought.

If we look at the issue from the other side, what environmental objectives can be achieved within the budget of an average aged care facility?

1. Better consideration of energy efficiency

Key considerations here include the thermal design of the building and the lighting design. These areas are now more strictly covered in the 2006 BCA, however the ESD envelope can be pushed much further in terms of natural ventilation design and the thermal performance of the building. The consulting engineers should be able to contribute to the energy outcomes. A specialist ESD consultant may be able to push things even further.

2. Material selection

A detailed assessment of the materials used can deliver ESD outcomes. Many tools and accumulated knowledge are available for architects to make educated selections of materials for construction, from bricks and timber through to paints and carpets. A full analysis of this is a separate exercise in itself.

3. Water use and reuse

Systems for water collection and reuse are improving constantly and can be a simple way of initiating ESD benefits in a building. The return on

investment is also much shorter than for other ESD initiatives. There are also a number of government rebates available from state and federal sources.

4. Solar hot water systems

The technology for these is now well established and there are also government rebates available for installing them.

5. Passive or active heating and cooling systems

These involve more detailed design with appropriately qualified engineers. The cell-like layout of an aged care facility, along with the acoustic separation requirements, make these harder to incorporate than for other building types.

6. Internal management objectives

Part of attaining sustainability objectives also involves the activities of the occupants. Strategies for waste management, office protocols, use of electricity, selection of equipment and furniture can all be guided by ESD goals.

7. Laundry systems

There are now some innovative washing machines that have energy and water saving technology built in that can contribute to the overall sustainability of the building.

8. Electricity supply

While the payback period may make it less attractive, the installation of solar voltaic cells is a possible consideration to supplement the electricity requirements of the building. Again there are government rebates available for these.

9. Indoor Air Quality (IAQ)

This in part relates to material selection and involves the selection of paints and internal finishes to minimise the off-gassing of VOC's and other toxins.

Aged Care: The Greening of Aged Care | Tieran Kimber**10. Lighting Systems**

While this is now more tightly controlled by the BCA, the use of energy efficient lighting and sensor controlled lighting is able to be incorporated with the assistance of an electrical engineer.

The following are some examples of ESD principles that have already been incorporated into some existing facilities.

1. Manningham Centre Nursing Home

This project incorporated a number of ESD features partly driven by the local council's (a stakeholder) own priorities. It included an additional 30 beds and 30 refurbished beds. Features included a gas boosted solar hot water system, storm water reuse in the WC cisterns, storm water retention to minimise overland flow, sun-shading and use of solar glass, the use of plantation timbers throughout, including the Ecoply cladding and the use of compact fluorescent lighting throughout.

2. Legana Village Aged Care facility

This 45 bed aged care building in Launceston used geothermal heat (obtained by drilling down into a rock heat sink 40 metres below the ground), for heating water for use in the hydronic heating system.

In summary, there is much scope for increasing the ESD credibility of Aged Care facilities without adding too much to the capital costs of a building program. Given the current social and political climate it may well become an imperative, so to pre-empt possible changes is a worthy consideration. It may well be that managing an inefficient building will be far more costly in the future, so some extra work to get it right now is well worth the investment in time, thought and money.

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Tieran Kimber is a Director of ThomsonAdsett, with a depth of knowledge of the current and future directions of accommodation for Australia's aged.

