Adaptive Reuse Fact Sheets

Sustainability: Energy Efficiency

ARCHI
Adaptive Reuse
City Housing Initiative

Introduction

An energy efficient building is more comfortable to live in, cheaper to run and better for the environment. Depending on the nature of the adaptive reuse project, some energy efficiency upgrades may be required to achieve building code compliance.

Compliance

The National Construction Code (NCC) and Ministerial Building Standards (MBS) have specific provisions for energy efficiency.

When undertaking an adaptive reuse project, full compliance with the NCC and MBS may be challenging due to factors such as location, construction and internal configuration. The NCC and MBS allow for some flexibility in compliance, provided that it can be demonstrated that the necessary degree of compliance is achieved. Any new building elements would be required to comply with current standards.

How can we make existing buildings more energy efficient?

Redeveloping an existing building—or part of a building—provides a good opportunity to make improvements to its energy efficiency. This can include:

- Installation of insulation to walls, ceilings and roofs, helping to keep buildings cooler in summer and warmer in winter
- Replacement of gas appliances with energy efficient electrical appliances, allowing for renewable energy to be used for cooking and heating water.
- Upgrading of lights to LED fittings that are much more efficient and last longer than incandescent, fluorescent or halogen lights and are therefore cheaper to run
- Installation of ceiling fans as a cost effective and efficient way of increasing airflow in buildings and improving occupant comfort
- Upgrades to windows and glazing that reduces heat gain in summer and heat loss in winter reducing air-conditioning costs and improving acoustic performance
- Installation of appropriate external shading to windows that provides shading in summer and allows warming sunlight in winter
- Installation of good quality curtains and/or blinds to reduce heat loss in winter and heat gain in summer
- Upgrading air conditioning to more efficient modern systems that are cheaper to run and could incorporate heat pumps or heat exchangers for added efficiency
- Installation of solar panels to produce renewable energy on site and reduce costs associated with purchasing electricity from the grid. Combining with battery storage provides further efficiency and savings
- Sealing gaps by installing window and door seals, chimney dampers, self-closing fans, sealing up old wall vents.

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Checklist & Key Considerations

- [ ] Have you sought advice from a Sustainability Consultant or Building Surveyor regarding potential requirements for upgrades?
- [ ] Are proposed new residential areas electric only with efficient appliances, lighting and air conditioning?
- [ ] Can windows be upgraded with more energy efficient frames and glazing?
- [ ] Can insulation be added to external walls, roofs and ceilings?
- [ ] Is there the potential for installation of solar panels to the building?
- [ ] What is the orientation of the building? Can windows be shaded to optimise solar heat gain?

Getting the Right Advice

A Sustainability Consultant can provide detailed project specific advice on energy efficiency options. Upgrades to energy efficiency may be required as part of the Building Consent process. Early engagement with a licensed Building Surveyor will assist with determining these requirements.

Resources

Sustainability Incentives Scheme

Incentives

The Sustainability Incentives Scheme that is offered by the City of Adelaide can help cover costs of upgrades to make sustainable practices and technology more accessible and affordable. These can include:

- Appliance Electrification
- Energy Storage
- Solar PV
- Switchboard Upgrades
- Thermal Efficient Windows and Doors
- Shading Devices
- Insulation
- Greening and more.

ARCHI has been established by the City of Adelaide in partnership with the State Government of South Australia.

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