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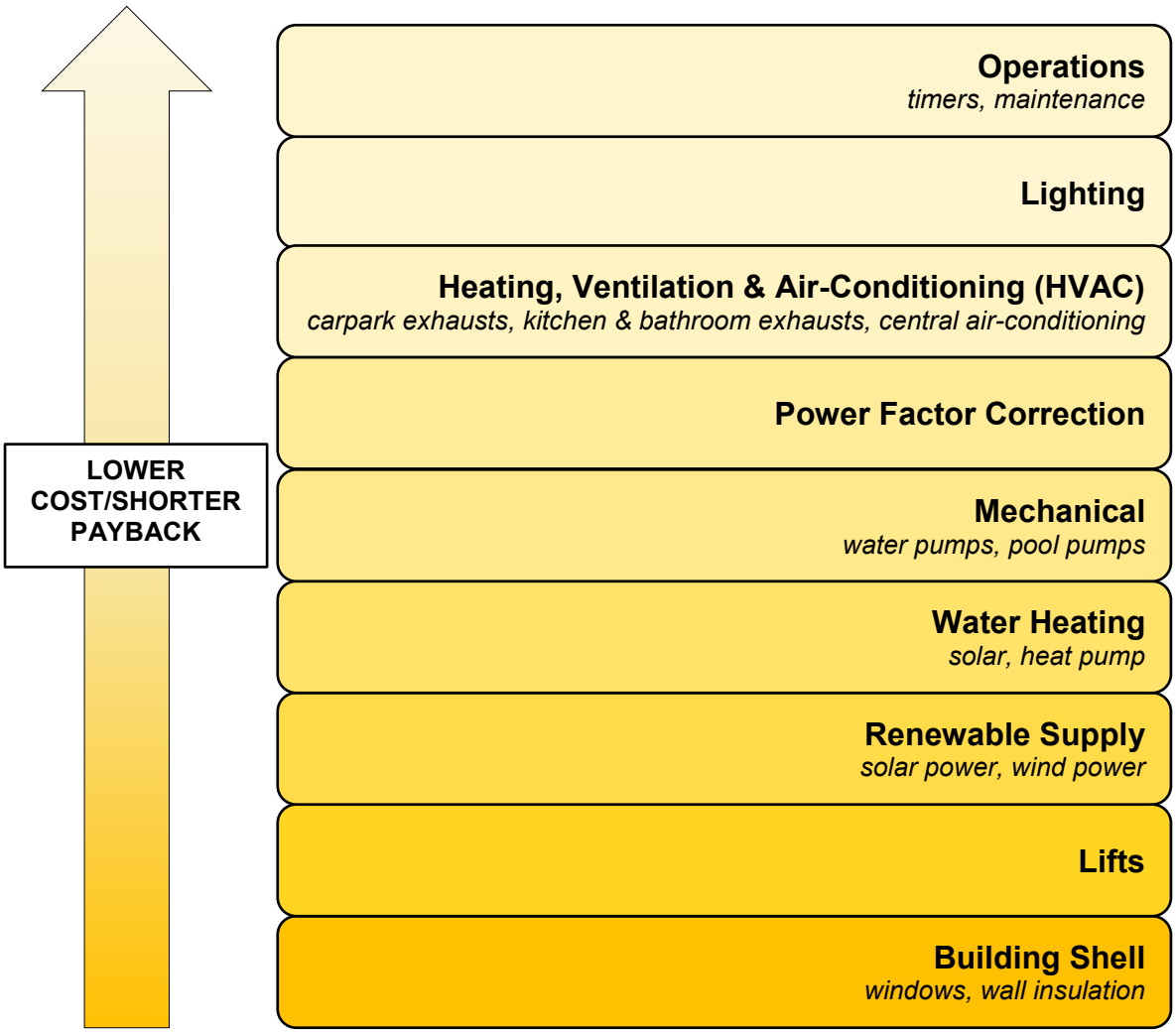
City Futures Research Centre

Energy Case Studies

The cost effectiveness of energy saving retrofits varies depending on the project. Larger projects may be less cost effective if they have a longer payback period and a higher upfront cost. The most cost-effective items with quick paybacks should be prioritised first (e.g. lighting). Below is an infographic of common energy saving retrofits in strata, based on their relative cost and payback period. Aim for energy saving retrofits before cost saving retrofits (e.g. solar power), as the cheapest energy is that which you don't use.



Source: Adapted from NSW Fair Trading sustainability factsheet

Common Retrofits for Reducing Energy Usage

Lighting	Upgrading the lighting system in a building can be a cost-effective way to save on energy consumption. Exchanging existing lights with LEDs saves energy and produces similar light output to traditional incandescent, fluorescent and halogen lamps. This can also include de-lamping in over-lit areas and putting in motion sensors in low-traffic common areas. **Case Studies:** – The Abode - Nexus – Botany Cope
Car Park Ventilation	Carpark ventilation systems can consume a lot of energy. Improving the efficiency of exhaust fans and introducing a carbon monoxide sensors and variable speed drives can reduce consumption. **Case Studies:** – Mondrian - Regatta Wharf
Pool Retrofits	There are a few ways to retrofit heated pools to save energy usage, such as: • Gas pool heating • Heat pumps • Upgrade pool pump • Solar pool heating • Automated swimming pool cover **Case Studies:** - Bayview Apartments - Parkridge Apartments
Power Factor Correction	Power Factor is a measure of how efficiently your plant and equipment converts the electricity you receive from the electricity network to useful output - such as heat, light or mechanical motion. In some cases, the amount of electricity you receive is more than you actually use. A power factor correction unit corrects this imbalance. **Case Studies:** – Nexus - Parkridge Apartments
Solar Power	Solar power utilises a renewable source of energy. Installation of solar panels is a consideration once energy consumption for the building has been reduced. Some solar retrofits can also track individual lot energy usage. **Case Studies:** - Botany Cope

Common Retrofits for Private Lots (also see Alternatives to Retrofits)

Researchers at RMIT University have this advice for retrofitting private lots:

1. *prioritise big-ticket items (such as thermal comfort) – what do you need most and what uses the most energy? – to plan and design around your climate zone and home needs*
2. *prevention is better than cure – focus on passive elements before turning to appliances*
3. *diversity is better than standardisation – don't aim for 21°C, aim for controllable comfort, openable windows and adjustable systems room by room. Design in easy adjustment through movable technologies such as fans, curtains, plants and shades.*

Lighting	Upgrading the lighting in you lot can be a cost-effective way to save on energy consumption. Exchanging existing lights with LEDs saves energy and produces similar light output to traditional incandescent, fluorescent and halogen lamps.
Insulation and Passive Design	You could choose to retrofit your current insulation or make modifications to your current space that create more effective passive heating and cooling. These measures might avoid the need for installing and using an air conditioner, which can increase your energy consumption. Depending on what you plan to do, this may require approval from the strata committee or owners corporation.
Solar Power	Solar power utilises a renewable source of energy. Installation of solar panels is a consideration once energy demand for the building has been reduced. Some solar retrofits can also track individual lot energy usage. In strata schemes, it can be challenging to get solar panels that service only a private lot, however in some cases it is possible when for example roof space is not otherwise being used. This will require approval from the owners corporation at a general meeting, and the passing of a common property rights by-law. **Case Studies:** – WallisView

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