

Achieving Net Zero in the community

This is a goal that can be achieved for new subdivisions or housing estates or retirement villages or multi story buildings.

The things that affect the goal are all the factors referred to earlier.

Communities can generate electricity using tri-generation especially where Natural Gas distribution is available.

Communities can use Electric vehicles for commuting and some electric vehicles are available with 300KM capability.

Communities can charge their vehicles at work and run their homes at night using the battery in their car.

Or install stand alone PV storage for vehicles.

In Community power will be managed to provide best outcomes

Actions	In response to a Load event	In response to a Price event	In response to renewable Generation That has to be taken	In response to stored Renewable being available
1				
2				
3				
4				
5				
6				

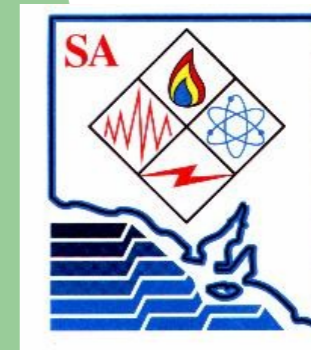
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Electrotechnology Water skills board

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NET
ZERO
2020

Training Instructor and fourth year apprentice discussion starters

Net Zero Buildings

Where possible orientate the building where land is available to optimise natural daylight lighting and winter heating.

Optimise lighting for lowest energy consumption.

Examine occupancy lighting systems that sense people's location. Design after hours lighting such as security lighting both internal and external. Provide specialised lighting for the cleaners as they move from area to area.

Design Solar PV to generate into the grid and if space exists small scale wind generation.

Use waterless toilets to reduce water consumption because Net Zero Water is a goal.

Recycle sprinkler water after each monthly testing and that means storage and filtering are part of new building design

Use a Building Management System.

Minimise heat gain in summer.

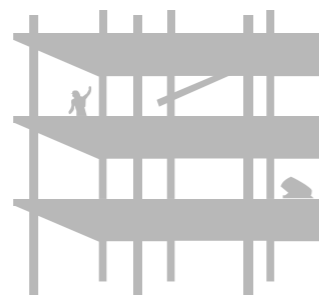
Air lock doors or air curtain doors and Verisol curtains to be considered.

Examine skylight to allow light but not heat in summer.

In the HVAC plan – zoning air-con relating to occupancy, and fit clever systems such as UFADS or Shaw method of A/C.

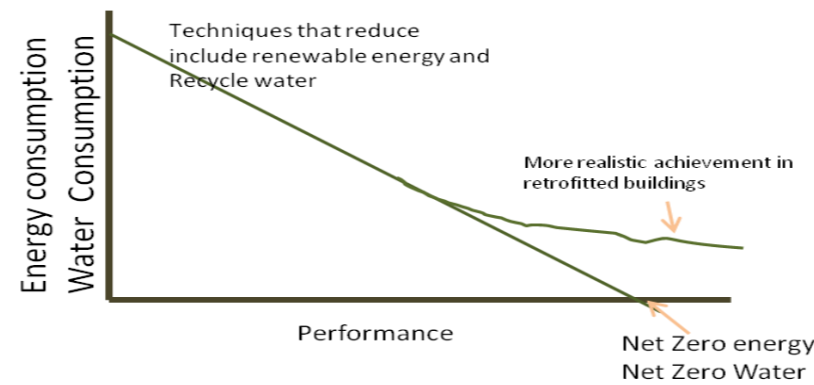
Use high efficiency water heaters

Examine fresh air make-up plans and relate to building occupancy.



Construction or retro fit
Both can aim for Net zero

Net Zero Buildings 2020



Net Zero Buildings

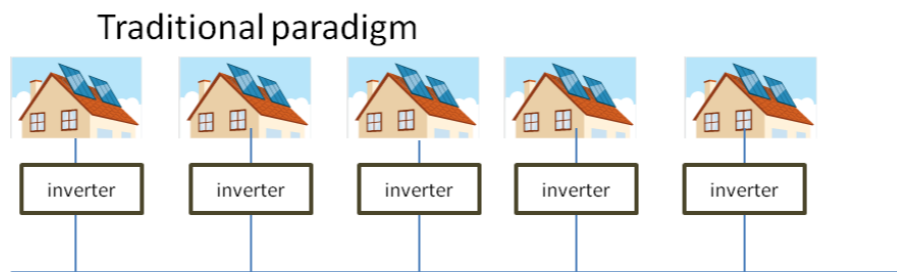
Use ground thermal mass to improve HVAC performance and geothermal techniques

Use of variable speed fans to moderate comfort settings

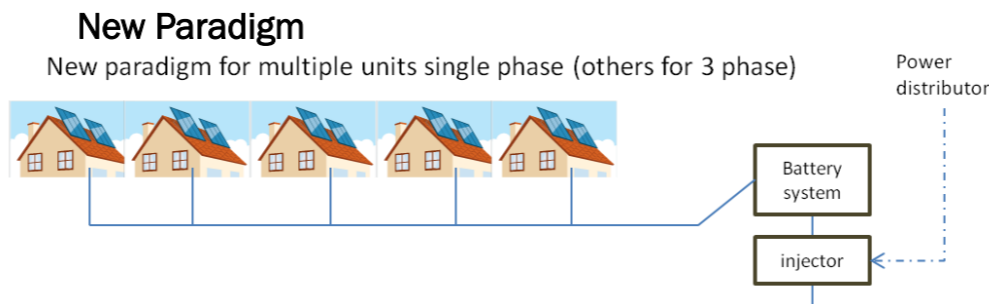
Train the people in how they can participate to reduce energy – walk up one floor and down two floors instead of using the lift.

Landscape wetlands to filter storm water and treat or use for garden or lawn surrounds. This is especially important on North facing aspect as lawn, grass and tree alignment can reduce reflected heat by 15 degrees decreasing the heat load on the north facing wall.

Old paradigm Solar, new paradigm Store and time its use



Single phase



The injector cleans the signal and is presented to the grid on command by the Distributor.

Net Zero Transport

The Use of solar PV on car park cover or Building roof cover to charge Electric Vehicles with Clean energy and use the Charge De Move plug otherwise known as the TEPCO plug to use surplus energy from PV in vehicles.

If the employees have redesigned their homes for NET Zero they can use their car for powering their home as is happening in Japan after the Nuclear disaster.

Use of Solar PV local storage systems will be affordable by 2013 and can be used as the source of charging electric vehicles.

All car parks should be examining roof space to see how renewable energy can be developed for such applications.

Funding the Lower carbon technology initiatives

PACE stands for Property Assessed Clean Energy. PACE programs help home and business owners pay for the upfront costs of clean technology initiatives. They are typically paid off over 10 years and funded by clean energy credits. So there is no outlay to the owner just an increase in gearing. One Adelaide local government is shortly to announce their PACE loans (which might have a different name) but essentially the gains in lower carbon translate to carbon credits which are used to fund the technology to reduce their carbon footprint. In the future Superannuation funds might consider these as a component of their portfolio.

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