

# Environmental Initiatives in K-Block

The Royal Hobart Hospital's (RHH) new inpatient precinct, known as K-Block, will provide improved patient comfort and wellbeing. It will also ensure more efficient water and power use and minimise carbon emissions.

## Indoor environment quality

Access to natural light, external views, reduced noise and indoor pollutants are important to patient wellbeing. The K-Block design has made patient amenity the priority with exceptional indoor environment quality.



*Outdoor bed bay area where intensive care patients can experience natural light and air constructed under phase 1 of the RHH Redevelopment project.*

The K-Block maximises access to natural light. Lighting control will recognise the amount of available natural light, it will use occupancy sensors and provide user control.

Air conditioning that uses 100 per cent fresh air has been selected because it aids patient recovery.

To improve the energy efficiency, a heat recovery system that takes heat from exhausted air and uses it to pre-heat fresh air will be used.

The design for pediatrics, adolescent and mental health wards includes secure, outdoor areas with access to natural air and light.

The acoustic design of K-Block minimises noise in patient areas.

Public art is also part of the K-Block design and will enrich the experience of the hospital for patients and staff. It will make the space comforting and attractive by providing an avenue for patients and visitors to step out of the psychological pressures often associated with a hospital.

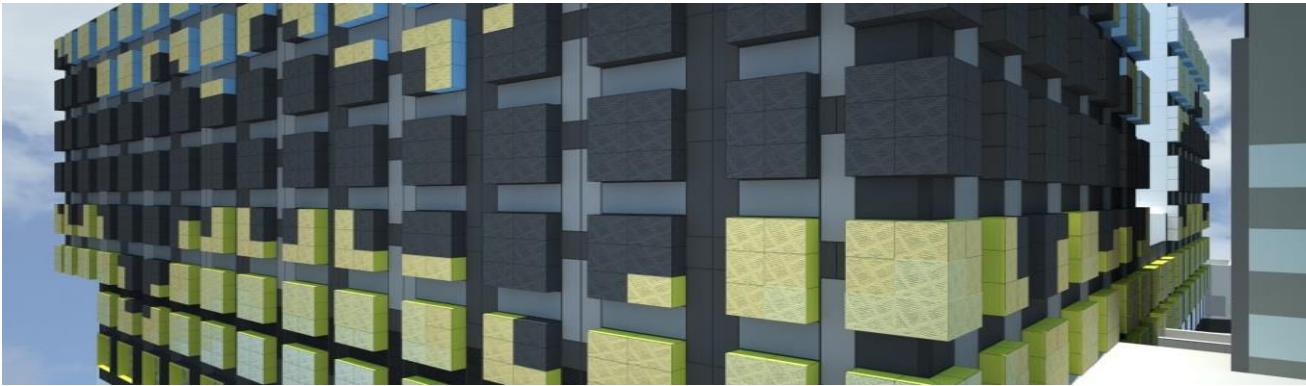
## Energy efficiency and viability

Energy efficiency initiatives include:

- high performing building façade that optimises natural light and reduces energy use
- double glazing of external windows
- extensive sub-metering allowing for monitoring and management of energy use
- high efficiency chillers
- natural gas boilers and
- zoning of mechanical and electrical systems so they can be operated and controlled independently and isolated when not in use.

The RHH is a tertiary hospital providing specialty services statewide. It requires the highest level of servicing and redundancy and this will be achieved by the power plant installed as part of the project.

The RHH Redevelopment will increase the resilience of infrastructure services with the introduction of ring-main systems.



The facade is proposed as a two layered system, the first being a waterproof line consisting of a glass and spandrel framed system embedded into a precast skin, the second a series of modular three dimensional panels which form the sun shading/ glare control components of the new building. These visible components of the facade are proposed as lightweight aluminium framed system and clad in aluminium to achieve the colour and patterning of the design.

This means if there is an infrastructure service failure at a point in the system, the break can be bypassed by changing the direction of the service.

New infrastructure will increase the hospital's capacity, provide backup for all services and future-proof the site for further development. For example, chillers have alternative electrical feeder and standby generators.

Boilers have dual fuel burners, using natural gas in the first instance and diesel for back up.

Cogeneration power is part of the revitalisation of the RHH campus and is considered in the RHH's masterplan.

Cogeneration power is energy efficient because it recovers energy from waste heat that would otherwise be released into the environment.

A cogeneration power plant needs substantial physical space to install and is not able to be included in the constrained K-Block site.

K Block will lay the ground work for a future cogeneration system however.

#### Water conservation

High efficiency water saving fittings will be used throughout K-Block.

The constrained K-Block site does not have sufficient space to capture rainwater so that it can be used effectively.



K-Block's adolescent and children's wards on level 6 which includes outdoor spaces where patients can also experience fresh air and natural light.