Adapting the Nowra CBD for cooling and amenity

COUNCIL NAME
Shoalhaven City Council

WEB ADDRESS
shoalhaven.nsw.gov.au

SIZE
4,893 square kilometres

POPULATION
23,751

Overview

Having previously identified that vulnerable and elderly residents were exposed to hot days in the Nowra Central Business District (CBD), Shoalhaven City Council took advantage of an urban revitalisation project at Egan's Lane Park to introduce an evaporative cooling solution and other infrastructure to alleviate heat stress on high temperature days, while also providing better civic space, shade, water and seating to meet articulated community needs.

Background

Currently, the Shoalhaven experiences an average of fewer than 10 hot days (>35^{0}C) each year. It is projected that Nowra will experience an additional 1–5 hot days per year in the near future and 5–10 extra hot days per year by 2070 (OEH, 2014). An increase in heat related illness and deaths is predicted as a result of prolonged exposure to hot days – particularly among vulnerable population groups such as people who are older, have a pre-existing medical condition or who have a disability (OEH, 2014). Census data shows that the Shoalhaven has a higher than average number of older people and the number of age cohorts above 55 years is growing.

Within the Nowra CBD there is currently nowhere to escape the heat. There are no suitable publicly owned air-conditioned buildings, and pavements and car parks are heat absorbing concrete and bitumen. A lack of shade, water and seating in the CBD has been identified by the community services sector to be a serious issue for vulnerable and elderly residents on hot days. The impact of increasing heat and hot days on council services and operations had been identified in the Council's climate change risk assessment, and also through the South East Integrated Regional Vulnerability Assessment project (OEH 2011).

Implementation

With support through a Building Resilience to Climate Change grant, Shoalhaven City Council was able to ensure that a planned urban revitalisation project captured adaptive responses, through the inclusion of a large scale public evaporative cooling structure. The brief required the design of an aesthetically pleasing sculpture that would also encourage fun and play, whilst enhancing amenity in the civic space. Finding the right contractor was challenging as most companies were more familiar with evaporative cooling systems installed in outdoor dining areas which focus on being unobtrusive and are often installed on existing structures such as awnings. Due to the uniqueness, size and complexity of this project, Council played a more active role in the design, planning and delivery of works than anticipated.

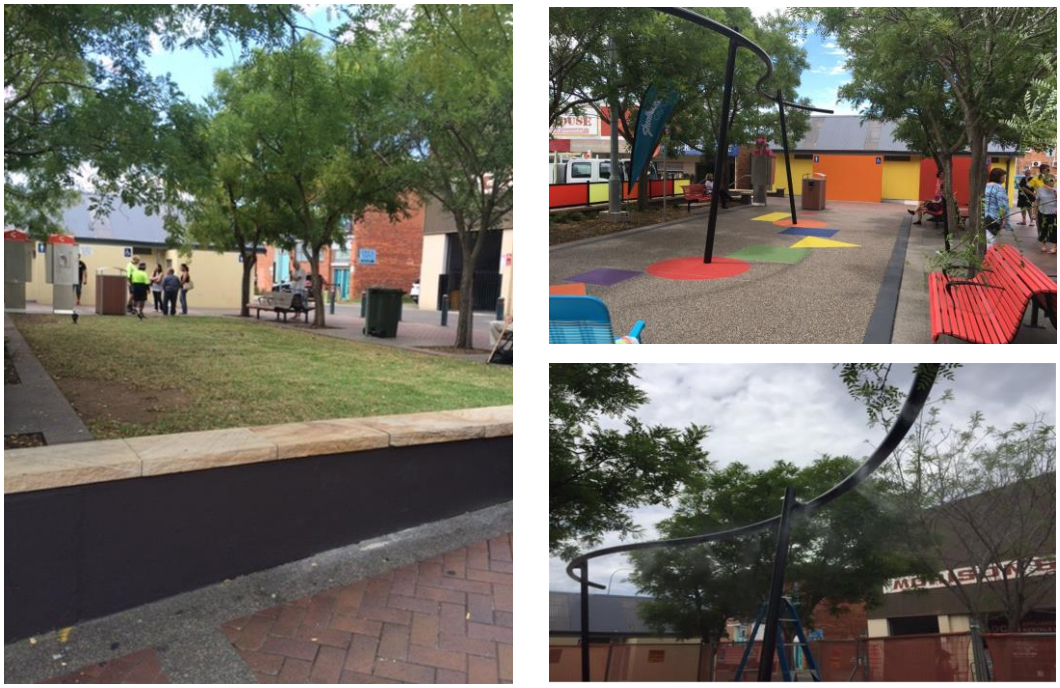
The project incorporated the installation of a misting device within a designed park sculpture that could release a very fine water droplet. This provides a cooling effect rather than wetting. The misting device incorporated the following features to maximise water efficiency:

- An on-demand (push button) water misting option.

- An automatic override function to allow the system to operate at set times (for example, at peak visitation periods in summer) or cease operating in the event of the on-demand button malfunctioning.

The sculpture was installed in Egan's Lane Park, renamed 'Jelly Bean Park', together with the following additional revitalisation measures:

- Brightly coloured infrastructure, painted amenity block and park seats in primary colours;
- Non-slip, light coloured pavement to reduce heat absorption;
- Pruning of existing shade trees to encourage bushier canopy regrowth;
- Additional plantings of established deciduous trees consistent with other trees on the site;
- Landscaping to provide a shady, more natural and wind protected environment;
- Water refill stations to enable public access to fresh, un-bottled water; and
- Additional seating close to water refill area to encourage use and re-use of personal water bottles.



Egan's Lane Park before and after.

Outcomes

There is a noticeable evaporative cooling effect when the misting structure is operating. This actively reduces the urban heat island effect in an area which is predominantly concrete. The new landscape vegetation, and light coloured materials, will also contribute to the reduction in the heat. The integration of bright primary colours will encourage water play and use of the structure.

The increase in public traffic and people using the area has increased markedly making it unsuitable for people drinking alcohol and drug taking. This has positively contributed to a decrease in antisocial behaviour in the CBD. No slipping hazards have been identified, as the

misting does not make the area overly wet. Council anticipates annual maintenance costs will be approximately $2000 which has been factored into the Assets and Works program.

By revitalising Egan's Lane Park into 'Jelly Bean Park,' Council has created an attractive space for people to come and spend time during the summer months to cool off. Random checks through summer demonstrated that there was rarely a time of day when the area wasn't being used. Surrounding shop owners have noticed an increase in school children walking home via this area on hot days to cool off. During summer, families were increasingly using the Park and letting their children play under the misting device.

Key Learnings

As Council had already identified the heat risks in this location, it was relatively easy to incorporate this new adaptive response, and the community's amenity requests, into the tender process.

The in-depth involvement of Council in the procurement and specifications of the evaporative cooling system has provided detailed insights and experience into key issues such as the height, droplet size, flow and nozzle size and safety considerations of the cooling structure and its interaction with wind on the site. As the trees are a living system within the park, it is anticipated they will provide better wind protection for the misting effect as they grow.

The increased urban vegetation, and tailored place making, is delivering environmental and social outcomes. The increased use of the site is also minimising onsite antisocial behaviour and providing reported economic benefits to local businesses and Council's maintenance budget.

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REFERENCES

NSW Office of Environment and Heritage (2014) Illawarra Climate Change Snapshot

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