



Inquiry into Environmental Design and Public Health



SunSmart • Cancer Council Victoria • June 2011



Introduction and context

Ultraviolet radiation (UV) is both the major cause of skin cancer and the best natural source of vitamin D. There are more than 40,000 new cases of skin cancer diagnosed in Victoria annually. In 2009, 401 Victorians (1,837 Australians) died from skin cancer – more than the state road toll.¹ The cost to the Australian health system is enormous – over \$300 million annually – the most costly burden on the health system of all cancers.² Tragically, skin cancer is one of the most preventable cancers in Victoria.

SunSmart's investment in prevention brings considerable human and economic benefits across Victoria. The 2010 Assessing Cost-Effectiveness of Prevention report, identified the SunSmart program as one of a handful of cost-effective interventions for the future that would have a large impact on Australia's health.³

Sunburn or overexposure to UV at any age, whether serious or mild, can cause permanent and irreversible skin damage and increase the risk of skin cancer.⁴ Sun exposure has been identified as the cause of 99% of non-melanoma skin cancers and 95% of melanoma in Australia.^{4,5}

Skin cancer prevention is unique when compared to other prevention priorities in that it is very clear what mix of interventions will bring about change to reduce UV over exposure amongst the Victorian population including paid advertising, public communication and education; and public policy and legislation for more protective environments.

It is with this context that the following addresses the *Terms of Reference for the Inquiry into Environmental Design and Public Health* (TOR) with regard to the contribution of the natural and built environment; specifically shade, to the promotion of health and wellbeing.

Environmental planning and design

The way we plan and design urban environments can have a profound effect on the long-term physical and mental health of the inhabitants.

In accordance with the proposed amendments to the objectives of the Planning and Environment Act (1987), SunSmart agrees that health and wellbeing should be a key theme for consideration through all levels of planning.

Australians have a high awareness of the risks that UV exposure poses to health but for a variety of reasons people will continue to be outside at times when UV levels are high. The easiest way for them to do so safely, in relation to skin cancer prevention is by the provision of well planned and designed spaces that provide access to UV protective shade.

Shade alone as a sun protection measure, can reduce overall exposure to UV by about 75%.⁶ There is strong evidence that if shade is made available people will use it.^{7,8}

A school shade-sail intervention was shown to increase students' use of newly shaded areas at schools.⁸ Given adolescents' resistance to hat wearing and other forms of sun protection, and that knowledge-based interventions have not been successful with this group, the provision of quality shade is a key strategy to minimise UV radiation exposure particularly for adolescents.

Despite shade being an effective sun protection intervention and the community seeing shade as important, there currently seems to be little mention of shade in planning guidelines at state or local level.

As a result, shade provision for new developments or facility upgrades is, more often than not, considered only in an ad hoc manner, resulting in greater costs and sometimes quality and safety problems. It is much more efficient to incorporate shade in the planning stages of new facilities than to retrofit it.

Recommendation in response to TOR:

(1) review the evidence of the contribution of the natural and built environments to the promotion of health and well being;

(2) identify and report on those elements of environmental planning and design which provide the most promising opportunities for improving health outcomes in Victoria;

SunSmart recommends that shade (both built and natural) be a mandatory consideration in the initial planning, budget and overall design of new public outdoor facilities especially those that cater to children and adolescents such as schools, sport and recreation facilities, parks, pools and playgrounds. Currently only South Australia's education department (Appendix 1) lists shade as a mandatory requirement for schools.

Economic benefit

The cost benefit of shade alone is unclear however skin cancer prevention interventions in general are extremely cost effective with a \$2.30 net saving for every dollar spent on prevention through the SunSmart program.⁹

The installation of permanent shade in public facilities is complementary to and has some advantages over educational and public awareness interventions, in that the benefits may be sustained over months and years, with small maintenance costs.

Inequality in shade provision

In many areas where outdoor activities occur, there is little or no access to quality shade. In addition to this there seems to be an inequality in the distribution of shade between Metropolitan and non-metropolitan areas. A 2007 population survey showed that residents in non-metropolitan areas found it harder to find shade at their local sports grounds compared with metropolitan sports grounds.¹⁰

Not all neighbourhoods have equivalent access to green spaces and amenities. A recent Melbourne study found that public open space in poorer neighbourhoods had fewer amenities to support physical activity in children.⁷ Compared with the lowest socioeconomic areas, public open space in the highest socioeconomic areas had more amenities (such as picnic tables and play equipment), and were more likely to have good lighting, signage, walking tracks and trees for shade.

Victoria's expanding outer suburbs and the development of new master planned communities provide an opportunity for this inequality to be rectified at a reduced cost to local governments by leveraging off Public Private Partnerships.

Recommendation in response to TOR:

(3) assess the extent to which these factors are currently taken into account in environmental planning and design in both the public and private sectors, and their effectiveness, with particular reference to new growth areas;

(4) determine opportunities to influence environmental planning and design for health, including consideration of the role of legislation, guidelines, and public-private partnerships, and the costs and benefits of various options;

SunSmart recommends that shade be a priority in the consideration of grant applications and allocation of funding for urban renewal projects and facility upgrades especially in non-metropolitan areas.

SunSmart recommends that developers of master planned communities be required to provide both built and natural shade for parks, playgrounds and sport and recreational facilities.

Municipal Public Health Plans

A 2009 SunSmart commissioned audit of MPHP's revealed that fewer than 20% of plans make mention of shade, sun protection or skin cancer. Twelve out of 62 plans had an action that involves explicit mention of shade, sun or skin cancer, usually mentioned in the background document rather than the strategic plan.

Healthy urban space (50 or 81%) and climate change (in 39 or 79% of Plans), was mentioned in a majority of the plans. Comprehensive mention of these two issues in the MPHP's reflects the Department of Health instruction that MPHP's be developed with reference to the Environments for Health framework.

Recommendation in response to TOR:

(5) provide recommendations for future planning and investment; and that the Committee will consider:

(a) the effectiveness of the Environments for Health Municipal Public Health Planning Framework;

SunSmart recommends that Local Governments be encouraged to incorporate UV protective shade in their open space planning, MPHP and/or develop a stand alone shade strategy.

Heat and UV

Environmental changes in temperature and UV will have many and diverse effects on health including heat related illness, increases in infectious disease, and a predicted increase in UV levels.

Research suggests temperature is a strong determinant of sunburn for adults and adolescents. Early data shows that for each 1°C increase there are estimated increases in the incidence of basal cell carcinoma and squamous cell carcinoma of 3% and 6%, respectively.¹¹ Next century global warming of 1.1– 6.4°C is predicted.¹² CSIRO predicts that it is very likely that the duration, intensity and frequency of heat waves will increase.

Shade can effectively reduce effects of climate change (temperature and UV exposure) on human health. In addition to protecting people from the sun's UV radiation, shade can create a safe, cool and comfortable environment for outdoor recreation by reducing heat.

Physical activity

Access to shade has been implicated in a number of studies as an enabler of physical activity. Research on the impact of the preschool environment upon children's physical activity and sun exposure showed that spacious preschool environments with trees, shrubbery, and broken ground triggers more physical activity and provides better sun protection in outdoor play.¹³

A survey of 1,803 healthy and working residents in a metropolitan area of Perth, Western Australia found that 28% of the sample had used a public open space for physical activity in the previous week. The researchers found that easy access to large open spaces with attractive attributes such as shade trees, water features and bird life was associated with higher levels of walking. Those using public open space were three times more likely to achieve recommended levels of physical activity than those who did not use these spaces.¹³

Recommendation in response to TOR:

2) identify and report on those elements of environmental planning and design which provide the most promising opportunities for improving health outcomes in Victoria;

(5) provide recommendations for future planning and investment; and that the Committee will consider:

(e) the role of public open space in promoting health;

SunSmart recommends that the planning of master planned communities should provide green space and tree planting to provide UV protective shade and safe, cool and comfortable outdoor environments; and to maximise air quality and reduce the heat island effect in new housing developments.

SunSmart recommends that both built and natural shade be considered in long-term climate change and heat wave planning to mitigate the adverse effects of UV and heat on the health and wellbeing of Victorians.

SunSmart recommends that shade should be considered as a key amenity for creating a safe, comfortable and appealing environment for physical activity.

Summary of recommendations

SunSmart recommends that:

- Shade (both built and natural) be a mandatory consideration in the initial planning, budget and overall design of new public outdoor facilities especially those that cater to children and adolescents such as schools, sport and recreation facilities, parks, pools and playgrounds. Currently only South Australia's education department (Appendix 1) lists shade as a mandatory requirement for schools.
- Shade be a priority in the consideration of grant applications and allocation of funding for urban renewal projects and facility upgrades especially in non-metropolitan areas.
- Developers of master planned communities be required to provide both built and natural shade for parks, playgrounds and sport and recreational facilities.
- Local Governments be encouraged to incorporate UV protective shade in their open space planning, MPHP and/or develop a stand-alone shade strategy.
- The planning of master planned communities should provide green space and tree planting to provide UV protective shade and safe, cool and comfortable outdoor environments; and to maximise air quality and reduce the heat island effect in new housing developments.
- Both built and natural shade be considered in long-term climate change and heat wave planning to mitigate the adverse effects of UV and heat on the health and wellbeing of Victorians.
- Shade should be considered as a key amenity for creating a safe, comfortable and appealing environment for physical activity.

For further information:

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Appendix 1

STATE AND TERRITORY SHADE GUIDELINES / RECOMMENDATIONS / REGULATIONS FOR SCHOOLS			
STATE/ TERRITORY DEPARTMENT	REGULATION / DATE	SECTION/PAGE	REQUIREMENT
<p>SA Department of Education and Children's Services (DECS)</p> <p>This protocol provides standards and procedures regarding the provision of shade structures on DECS sites.</p> <p>Mandatory compliance</p>	<p>Planning Guidelines (P2) Facilities Design Standards and Guidelines for DETE Children's Services Centres and Schools (Jan 2002)</p>	<p>D1 Landscape & Planting (1999)</p>	<p>To fulfil a shade need it may be preferable to erect a shade structure such as a pergola or verandah.</p> <p>1.1.3 Plant Selection / Climate Modification - provide shade and protection against sun and wind.</p> <p>7.3.6. Shade Cover Note that any solid structure must be designed, constructed and certified to meet the requirements of the Australian Building Code. Natural shade from mature deciduous trees is preferred but other shade structures may be required while trees grow. (Deciduous trees give the desired shade in summer and let the light and warmth through during the winter months.)</p> <p>Structures using shade cloth are not recommended due to the high long-term maintenance costs, susceptibility to vandalism, and other risks.</p>
		<p>D7 Outdoor Learning Areas (2002)</p>	<p>7.7 Any permanent structure, including shade cover, is required to comply with the Building Code of Australia and plans must be certified by a licensed certifier prior to construction.</p> <p>Fabric covering material should provide at least 90% shade and 95% UV-B block-out and shall comply with Australian Standard AS4174-1994. If covering a playground, ensure adequate clearance above any play equipment (1.5metres), and posts at least 2.5metres away from play equipment.</p> <p>Shade sail structures comprising fabric sail material supported on tension wires provide the least effective shade (due to their general triangular shape), and the covering materials have been subject to regular damage and inappropriate use on sites.</p> <p>Shade sails have collapsed on DECS sites after hours and resulted in injury to children. Based on this evidence and potential liability issues the decision has been taken to phase out their use as and when they fall due for replacement for whatever reason (vandalism or age) from the 1 February 2007.</p> <p>Is the area shaded?</p>
	<p>Asset Policy & Capital Programs</p>	<p>Revision of the previous January 2000 edition (DETE Facilities Design Standards and Guidelines – S1-12 document)</p> <p>Protocol: SE006 Shade Structures (replacing D5 Shade Structures)</p>	

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