Schools

Schools can play a significant role in the prevention of skin cancer. There are a number of reasons for this:

- part of the critical period for sustaining damaging levels of solar UVR exposure occurs during the school years
- students are at school up to five days per week, throughout most of the year and during the high UVR risk period of each day
- students often spend a significant amount of time outdoors while at school.

In addition, schools have a duty of care to provide a safe environment for students.

While the provision of sufficient UVR protective shade is an important element of a school's sun protection strategy, it will not guarantee total UVR protection. Shade should be one component of a comprehensive strategy which also includes encouraging the use of personal protection measures ie wearing sun protective clothing, hats, sunscreen and sunglasses, as well as implementing sun awareness education. Outdoor activities should be rescheduled (where possible) outside the hours of 11am to 3pm daylight saving time (10am to 2pm eastern standard time), when daily UVR levels are generally at their peak.

It should also be noted that in regard to school staff, employers are obliged under Occupational Health and Safety regulations to protect them from injury by the sun while at work. Under the regulations, employees must cooperate with the measures that their employer puts in place to protect them.

note

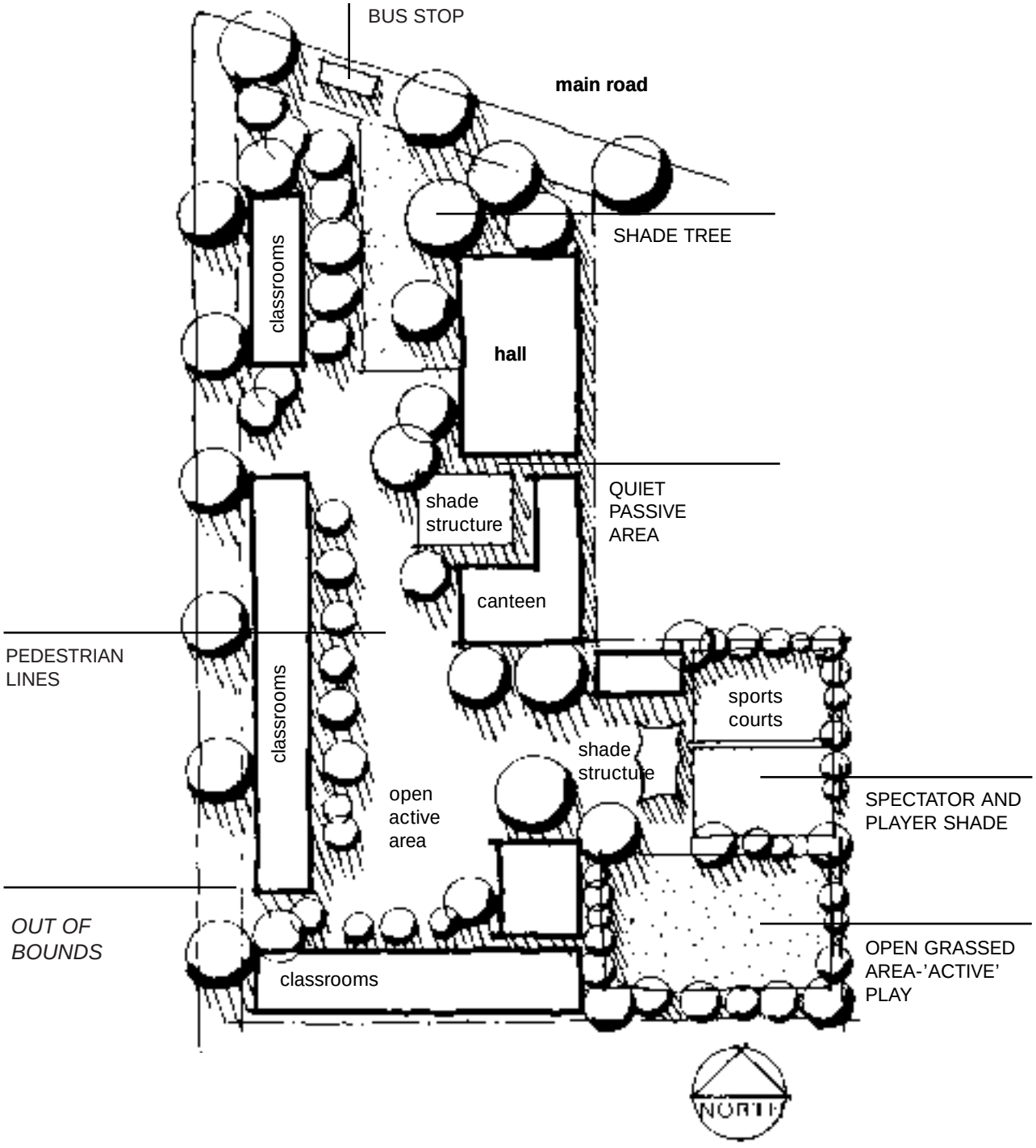
It is essential that an assessment of existing shade be made before the planning and design of additional shade commences.

Chapter 5 contains a step-by-step approach to conducting a Shade Audit, as well as advice on managing a shade project.

note

According to each school's facilities, site-specific considerations in the sections Swimming Pools, Sports Grounds and Facilities, and Parks and Reserves may also be useful.

an example of shade at a school



planning and design issues

Many of the following considerations refer to concepts discussed in more detail in other parts of this publication. For this reason it is recommended that readers familiarise themselves with the contents of Chapters 1 to 5 as well as Appendix C, before considering the specific issues for schools

project team

Ideally representatives from school executive, teaching staff and parent groups as well as relevant professionals, eg architects, landscape architects, should be involved. This will help to ensure that the need for shade is considered within the context of other issues, including long term development plans for the site.

If the school grounds are used by community groups on the weekends or during school holidays, it may be appropriate to liaise with them during the project, particularly if it will cause disruption to the areas they use.

student participation

Students should be consulted and involved throughout the shade project eg they could undertake certain tasks in the Shade Audit.

For ideas on how to work with students to conduct a shade audit, refer to the SunSmart folder in the Anti-Cancer Foundation's Cancer Prevention and Education Teachers' Resource Kit (in each Secondary School library)—activity 13.[1]

existing shade

Plans should be made to optimise the use of existing shade before additional shade is considered. For example, fixed seating could be re-located to a shaded area, low branches could be removed from trees to allow access, playground use could be reviewed to permit access to shaded out-of-bounds areas.

site usage patterns

It is important to take into account the usage patterns at the site, particularly the times of day different activities occur. Students' play and social patterns also need to be considered, eg primary school children are generally required to eat lunch in class groups while secondary students tend to gather in small discreet clusters.

The outdoor areas of schools usually comprise:

- active playground areas, eg for ball games and free play
- passive playground areas, eg for eating lunch and socialising
- canteen areas
- bus stop areas.

These areas are connected by pedestrian links. While each area has its own shade requirements, they should be considered within the context of the whole school site.

Some schools also have specialist facilities, for example swimming pools, tennis courts, sports fields or agricultural areas.

active vs passive use

Sufficient shade should be provided for students to undertake active outdoor activities such as free play, physical education classes and sport, particularly during summer.

Sufficient shade should also be provided for eating and socialising, 'lining up' (especially after recess and lunch) and assemblies, particularly during summer.

climatic conditions

It is important to take into account any local conditions, eg strong wind. When these are understood it is possible to use design strategies to modify adverse conditions.

[1] Anti-Cancer Foundation of SA *Be SunSmart Book 1* (Activity 13), Cancer Prevention and Education Teachers' Resource Kit (in each Secondary School library).

seasonal considerations

Although summer protection is a priority, provision for winter shade should also be made. Care needs to be taken to ensure that new shade initiatives do not intensify winter conditions at the site.

Summer shade provision should minimise UVR levels as well as reduce heat and light. Winter shade provision should minimise UVR levels, while allowing for transmission of sufficient levels of heat and light. The use of adjustable shade systems and/or deciduous vegetation may provide greater flexibility.

indirect UVR

Indirect UVR is an important factor to consider when designing built shade structures and selecting ground surfaces for playground areas. Coarse and/or soft surfaces eg brick pavers or grass, will reflect less UVR than hard and/or smooth surfaces, eg trowelled concrete. Existing surfaces can be modified if they reflect high levels of UVR.

aesthetics

Shade design should aim to be aesthetically pleasing as well as practical. Generally, an approach which combines both natural and built shade is preferable. Using a variety of tree and shrub species will also help to create a more interesting environment.

approval

Government Schools, preschools (and TAFE Institutes) must seek and gain planning approval for all building works from the Development Assessment Commission before any building works can commence. This is a requirement of the Development Act. Also required is certification by an approved and registered Certifier.

For non-government properties, local government may require development approval for built shade structures. Contact your local Council for more information.

natural shade

Natural shade should be a major element of shade provision within a school. Trees with dense foliage and wide spreading canopies provide the best protection.

Species should be selected to suit local soil and climatic conditions as well as the character of the surrounding environment. Root barriers and subsoil drainage will help to ensure that pavements are not damaged by tree roots. Dense shrubs also have the potential to provide shade.

Avoid shrubs and trees that:

- are toxic
- have seed pods or stone-fruit
- attract bees
- have spikes or thorns
- are known to cause adverse health effects such as asthma or skin irritation.

Also note that some species of trees have a tendency to drop their branches.

If natural shade is the long term favoured option for areas within the site, ‘short life’ built structures, ie with a lifespan of 6 to 10 years, can be used until trees planted for shade purposes mature.

safety

It is important to ensure that shade structures do not create safety hazards. Support systems, eg upright posts, should be clearly visible and ideally have rounded edges and/or padding. They should be placed so as to minimise intrusion into play and circulation areas. Where possible guy ropes should be avoided, as they may be a trip hazard. In addition, vertical barriers at the sides of shade structures should be designed to prevent children using them for climbing.

Schools

demountable structures

Demountable shade structures should only be used to supplement more permanent forms of shade. Some demountable structures, eg umbrellas, offer limited protection. Umbrellas also provide limited group space underneath and may be unstable during windy conditions.

off-the-shelf structures

In the appropriate situation, off-the-shelf structures can provide a readily available, cost-effective shade solution. However, unless a Shade Audit has been conducted, it is difficult to tell if they will meet the site's shade requirements. If the decision is made to purchase an off-the-shelf structure, the issues outlined in Chapter 4 of this publication should be considered.

rain protection

Schools often lack sufficient wet weather shelter. Built structures that offer both UVR and rain protection can help overcome this issue.

vandalism

As school grounds are often accessible after hours, the risk of vandalism is an issue that needs to be considered.

emergency access

Shade structures and/or planting should not restrict emergency vehicle access to school buildings and grounds.

existing services

The location of shade structures and planting should take account of existing services, eg drainage, power lines, gas, water.

carnivals

Shade is an important consideration for sports and swimming carnivals and other school events, eg fetes. Demountable structures may be useful on these occasions.

recommendations and considerations

The recommendations below are minimum shade guidelines for schools. It is acknowledged that it may not be possible in the short term to implement all these recommendations due to funding constraints. However, medium term plans should include improvements to summer shade provision as a priority.

active playground	Partial shade is recommended for open playground areas, especially over grass which needs some sun for growth. Natural shade is the most appropriate option. Consider arranging planting in clusters so that groups of children can access shade. Deciduous trees will allow for penetration of warmth and light to the playground during winter. Shade throughout the year is recommended over play equipment and sandpits. Consider using a combination of built and natural shade. The need for winter warmth and light are issues.
passive playground	Shade throughout the year is recommended for areas of passive playground use, eg fixed seating, assembly areas. Moveable seats should be placed in the shade. Consider using a combination of natural and built shade. The need for winter warmth and light should be considered.

canteen areas	Shade throughout the year is recommended for queuing areas. Built shade, eg a broad awning, is the most appropriate option. Rain protection is recommended.
pedestrian links	Shade is recommended for thoroughfares linking buildings and facilities within a school. Consider using a combination of natural and built shade. Rain protection is recommended, particularly where students are moving from one building to another throughout the day.
school bus stops	Shade is recommended for waiting areas at school bus stops, particularly during summer. Consider using natural shade, although where possible built structures that offer both UVR and rain protection should be provided. Although school bus stops will usually be part of the general streetscape and therefore outside the school boundaries, it may be possible to shade the area by planting trees immediately within the boundary. Local councils and transport authorities could be lobbied to provide built shelters.

sports fields and facilities	Refer to the section on Sports Grounds and Facilities in this chapter.
swimming pools	Refer to the section on Public Swimming Pools in this chapter.
general	Experience over a range of schools indicates that a typical amount of shade to ensure adequate protection would be 2.5m2 per student.[1] However the adequacy of shade protection cannot be measured by area alone. Shade quality, shade location and site usage patterns are also critical factors.

further reading

- *Administrative Instructions and Guidelines*, Section 3; Student Matters, Point 88, Sun Protection, DETE 11/99 (they were DECs then)
- *SunSmart Policy Guidelines for Schools*, ACF, 1999
- The Asthma Foundation of SA. *The Low Allergen Garden* pamphlet.
- *Be SunSmart Book 1* (Activity 13), Anti-Cancer Foundation's Cancer Prevention and Education Teachers' Resource Kit (in each Secondary School library)

[1] Greenwood J (Shade Consultant and Architect). Advice to NSW Cancer Council (unpublished). 1998.