



SHADE IN PLAYSPACES

Australia has one of the highest rates of skin cancer in the world, with sun exposure in childhood and adolescence greatly increasing the chances of developing skin cancer later in life. Most skin cancer is caused by over exposure to ultraviolet (UV) radiation from the sun, with high UV levels throughout most of the year within Western Australia.

Importance of shade

Shade provides good protection from the sun and is the one form of sun protection that people cannot easily supply themselves.

Most forms of shade can reduce UV exposure by up to 75%.

Prioritising quality shade is an important component in designing comfortable and useable playspaces for both users of the play equipment and carers visiting the playspaces. By decreasing heat and glare, spaces increase in useability and can encourage children to be physically active in a healthy and safe environment.



Ultraviolet (UV) exposure

Quality shade ensures that people are protected from both direct and indirect UV radiation and that the space is comfortable for use in all seasons. UV can reach you on the ground directly from the sun, indirectly from the open sky or indirectly reflected from surfaces such as water, concrete and sand.

There are several design strategies that should be considered to reduce an areas exposure to both direct and indirect UV radiation:

- The shade structure is of an adequate size.
- The grouping of existing structures.
- Barriers for side as well as overhead protection.
- Extending overhead barriers past actual use areas.
- Avoiding highly reflective surfaces.
- Adapting existing surfaces to reflect less UV.
- Making allowances for external sources of UV from existing buildings and adjacent properties.

Often a combination of natural and built shade may be the best solution for a site to reduce UV exposure.

Natural Shade

Natural shade can be one of the most effective and aesthetically appealing ways of providing shade. The effectiveness of natural shade depends on the density of the foliage and the size of the canopy.

The use of vegetation for shade has several environmental benefits including:

- Less need to use non-renewable building resources.
- Energy saved in comparison with built shade systems, which often have high embodied energy.
- Fewer disposal problems, as plants generally act as nutrients during decomposition.
- Carefully chosen trees can reduce the air temperature in summer by up to 30%.
- Natural screen and protection from the wind.

It is important to consider which trees are local to the area and suitable for planting in Western Australia.



Built Shade

Built shade can be stand alone or built onto existing structures when natural shade is not available or is being established.

The advantages for built shade include:

- The shade they cast is more predictable.
- Protection from the rain is also provided.
- Some types can be erected quickly.
- Alternative uses such as collecting rainwater for irrigation.

Considering shade structures at the conception and design phase is often less expensive and ensures the shade is best suited to the space. Local council approval may be required prior to construction.



Different types of built shade include:

- Permanent structures: can be erected from a variety of materials. These need to be robust and well maintained.
- Demountable shade: suitable where only occasional shade is required.
- Adjustable shade systems such as louvered, cantilevered, or retractable umbrellas and canvas awnings to allow shade a flexible use option by modifying the shade throughout the day or season. This type of system may not be suitable for public playspaces.
- Tension membrane structures (TMS) or shade sails can be an attractive, cost-effective solution. The ultraviolet effectiveness (UVE) of the shade fabric, as well as size and height must be considered.

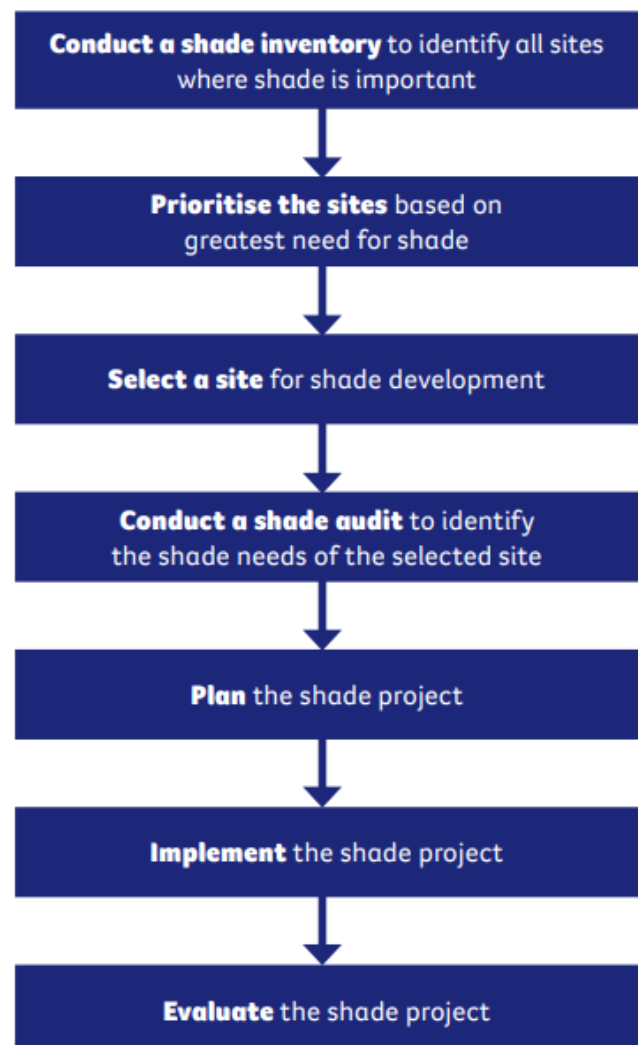
Designing and Implementing Shade

When designing and implementing shade, it is important to identify your needs and prioritise areas for shade development.

The following flow chart details the overall process on how to design, implement and evaluate your project.

For more information on designing and implementing shade refer to:

[Cancer Council WA, The shade handbook: A practical guide for shade development in Western Australia.](#)





Conducting a Shade Audit

A shade audit is an essential step to assess the site for shade development to ensure any shade created is placed where it will have the most benefit.

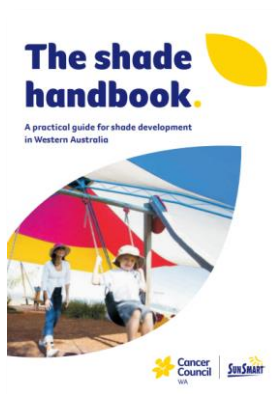
A shade audit has five steps including:

- Determine the usage patterns of the site.
- Determine the amount and useability of existing shade at the site.
- Consider the effects of reflected UV radiation.
- Assess the need for improved or increased shade at the site.
- Identify possible options to improve shade at the site.

A shade audit will help you to identify the shade needs of a site and will provide you with the basis of a detailed project brief which may be used to seek funds, to gain organisational endorsement or to engage a contractor.

For more information on conducting a shade audit refer to:

[Cancer Council WA, The shade handbook: A practical guide for shade development in Western Australia.](#)



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MUST DOs for successful shade outcomes:

- **DO** remember that the UV in Australia is high all year round, so protection is needed in all seasons, even in cooler weather.
- **DO** a shade audit to ensure the site has adequate, quality shade in the right location that matches the area's usage patterns.
- **DO** consider whether trees, a built structure, or a combination of both will give you the best result.
- **DO** make sure the shade will fall where and when you need it by mapping the shadow.
- **DO** consider using the shading material with the highest UVE ratings available, ideally with 95% protection.
- **DO** think of ways to reduce indirect UV radiation such as reducing reflectivity or increasing the shaded area.
- **DO** consider how comfortable your area will be in the cooler months and whether you need to consider 'warm' shade.
- **DO** locate playgrounds adjacent to the shade of canopy trees to help lower the temperature of the area.
- **DO** construct purpose-built shade structures or sails adjacent to equipment for users or carers to retreat from the sun.
- **DO** consider the movement of the sun and its effect of the creation of shade to maximise shade during the hottest part of the day.

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