

Shade planning in public spaces:

How to design and implement shade in your project

The advice provided in this short summary is based on the [Cancer Council NSW Guidelines to Shade](#). Refer to these Guidelines to Shade for more context regarding why shade is so important and for broader shade considerations. Also refer to the [Co-benefits of shade](#) two-pager developed by Cancer Council NSW and Cancer Institute NSW.

Who is this summary useful for?

Asset owners and planners. This resource will help with planning, designing and budgeting for your shade project.

Community members. This resource can support advocacy efforts for more shade in your community. Also refer to the Cancer Council NSW [Shade Advocacy Toolkit](#).

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Aboriginal Respect Symbol. Designed by
Marcus Lee Design for Cancer Council NSW.

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more information**



1. Context and planning considerations

Why is shade important in outdoor spaces?

- Australia is the skin cancer capital of the world, and ultraviolet (UV) radiation from the sun causes most skin cancers in Australia.
- Shade is one of the easiest ways to protect against UV radiation, and good quality shade can reduce UV exposure by up to 75%.
- Well designed and positioned shade will ensure that the outdoor spaces and the community are protected from UV radiation and are comfortable year-round.
- Shade can be natural; trees with a dense canopy and close to the ground, or built; stand-alone, portable or add-on structures.
- Quality shade also benefits our physical, mental and social health, and the environment.

This document is designed to assist you in planning for quality shade in your local area:

- Use the **Shade Priority Checklist** to identify, prioritise and select sites for shade development. Go to [page 3](#).
- Undertake a Shade Audit to outline the shade needs for your site, including the **Simple Site Plan**. Go to [page 4](#).

What factors should I consider as part of shade planning?

The following considerations are recommended:

User needs:

- Consider where, how and when people use the outdoor spaces. For example, is the site used for different activities and do they have special requirements (e.g. goal posts)?

The existing area:

- Is there a budget available or will funding need to be generated (e.g. via community grants)?
- What are the future needs of the site?
- Are there any special site requirements (e.g. lighting for night activities, equipment clearances)?

Shade structures:

- What existing natural or built shade structures are available that can be optimised?
- Is portable shade an option for events?
- Will any new shade structures offer adequate protection from UV radiation while also keeping people comfortable in seasonal conditions?
- Who and how will any new shade be maintained, and how long will it last?
- Ensure new shade does not create any new safety hazards (e.g. users climbing the structures)

Policy

- Are there any local council policies and regulations that might affect shade provision?



2. Shade priority checklist

- If you have multiple sites to prioritise, develop a list of sites where shade is important.
 - This includes all sites where any outdoor activity takes place (e.g. swimming pools, parks, playgrounds, pedestrian paths). Prioritise and select your sites based on greatest need for shade.
 - **Note:** if you only have one site, go straight to [page 4](#).
- After you have identified all potential sites, assess each site individually against the factors identified in Table 1 below, then add up the total for each site and compare the final scores. Sites with the highest scores have a higher priority for shade.
 - Shade is still an important issue at sites with a lower score but can wait until you deal with the high priority sites.

Table 1: Summary of key factors influencing how shade is prioritised

Factor	No/ Never	Sometimes	Yes/ Always	Overall score
1. Time of use				
Activity at the site is likely to occur between 10am and 3pm	1	2	3	
The site is used over summer	1	2	3	
The site is used over spring and autumn	1	2	3	
2. Duration of use				
Activity at the site occurs for 15 minutes or more at a time	1	2	3	
3. Level of use				
The site is well used on weekends	1	2	3	
The site is well used on weekdays	1	2	3	
4. Nature of the site and the activity				
Users of the site are exposed to high levels of indirect radiation (e.g. reflective surfaces)	1	2	3	
Activity at the site is likely to occur in minimal clothing (e.g. beaches, swimming pools)	1	2	3	
Grand Total				

3. Shade audit

Once you have decided that a site is a high priority, study it in detail to ensure shade is placed where it will have the most benefit.

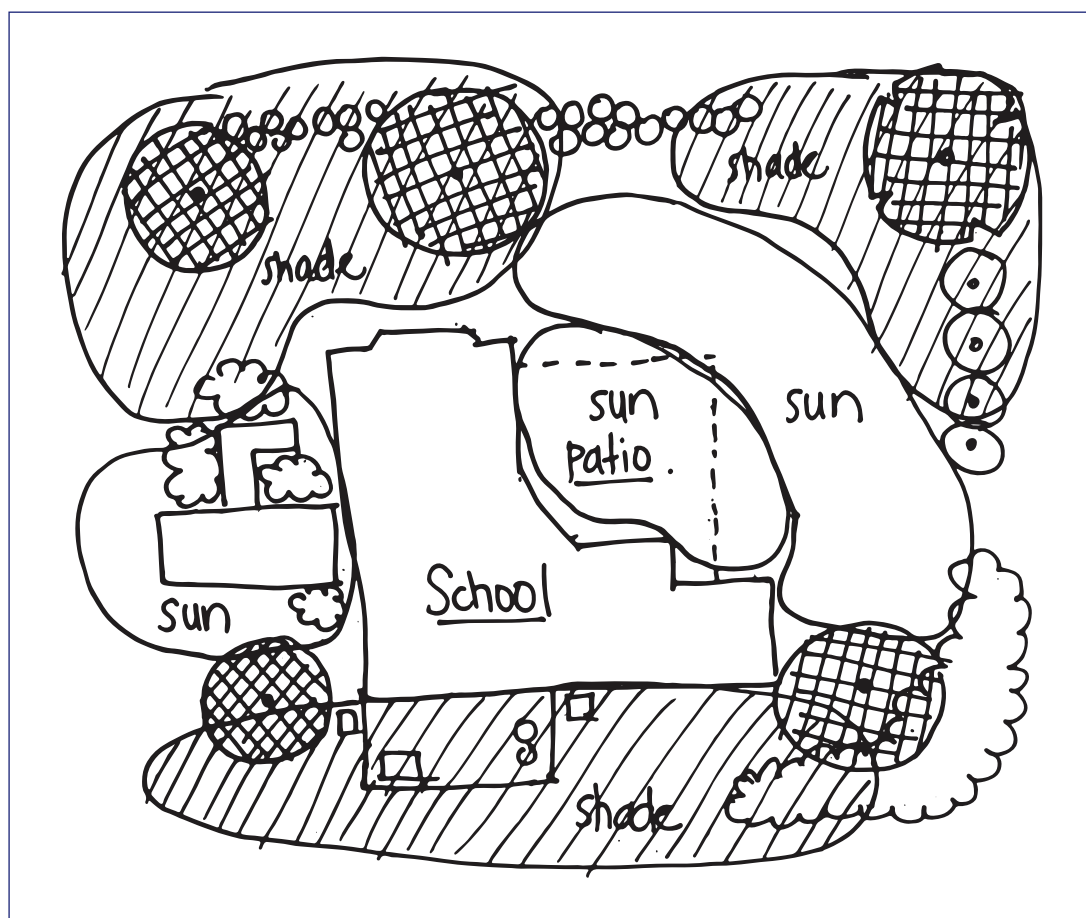
How to conduct a Shade Audit

- Make a simple site plan
- Determine usage patterns
- Determine amount and usability of existing shade
- Consider effects of reflected UV radiation
- Assess the need for improved shade
- Outline how shade can be improved
- Summarise your findings

Make a simple site plan

The site plan should include the site's perimeter, outline of buildings, location of any features that affect useability of the site such as gardens, fences, carpark.

See the figure to the right as an example and use the site plan grid on [page 9](#) as a guide to drafting your plan.



Example of a Site Plan.
Image sourced from Cancer Institute NSW.

Determine usage patterns

Usage patterns can be obtained by observing site users over the course of the day¹, including the *critical protection time* (see box for more information), and by asking users of the site in person /with surveys.

a. What time do users usually arrive to the site?

b. How long do users usually stay?

c. How often do users visit the site?

d. What areas do users mostly use?

e. Do users avoid any shaded areas? If yes, why?

f. What are the main outdoor activities performed at the site?

g. What time of year is the site used most?

h. Do users think there is enough shade?

i. Do users have suggestions on how could the shade be increased or improved?

Critical protection time:

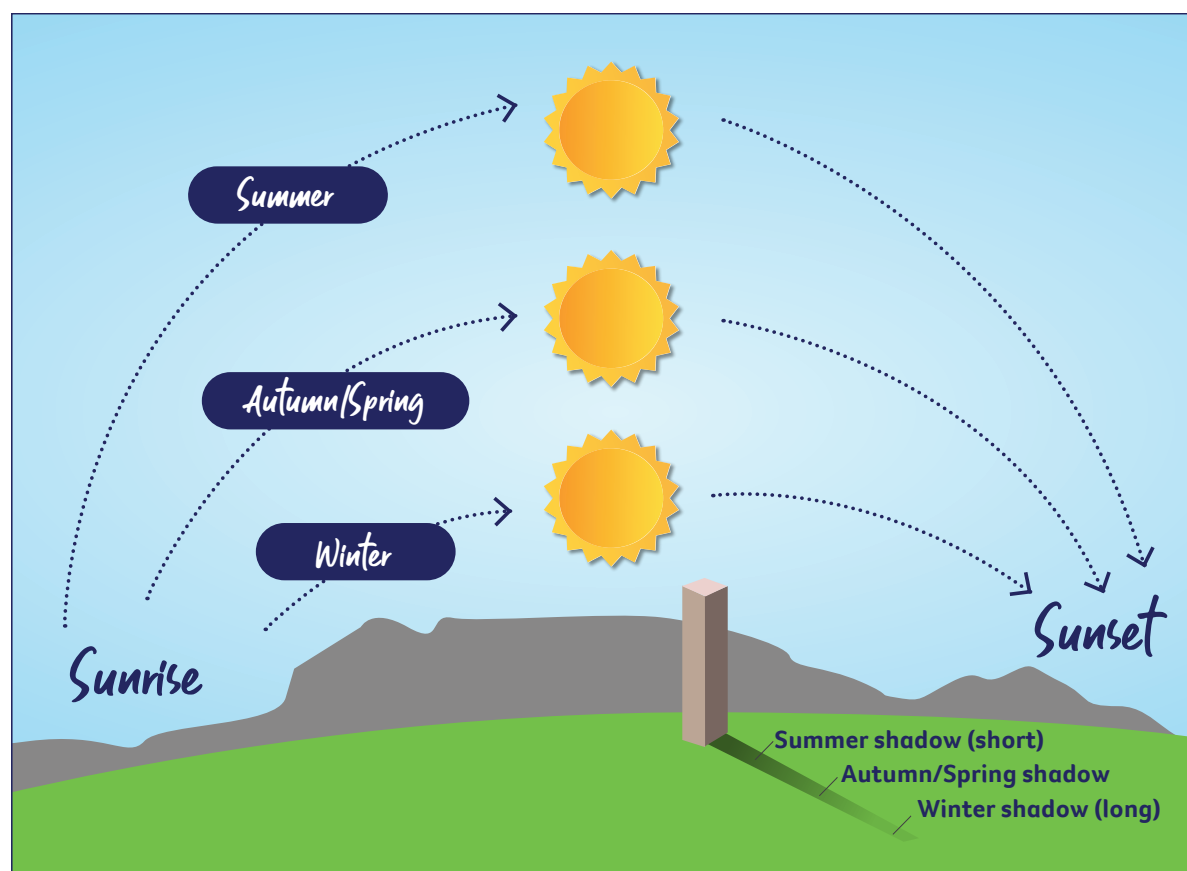
- The critical protection time is the time of day and year when sun protection is most important at the site.
- UV radiation levels are highest when the sun is closest to being directly overhead between 10am–2pm or 11am–3pm during daylight savings time.
- It is important to make your assessment of shade at the site during the critical protection time.
- Also consider how needs will change between summer and winter.

¹On average over summer, UV radiation is high enough in NSW to damage unprotected skin from ~9am to ~5pm. See the SunSmart Global UV app for information about the UV levels in your local area.

Determine amount and usability of existing shade

This step involves determining what shade already exists at the site. Observe, measure and record how the existing shade changes during the day.

- Record any existing natural shade (e.g. trees) on the site plan.
- Note details of each tree or planted area (e.g. maturity, density of canopy, deciduous vs evergreen).
- Also record any existing built shade structures, fences or walls.
- Record the areas that receive shade, and when. Use the figure to the right as a guide.
- Can people easily access the existing shade



The sun rises in the east, sets in the west, and tracks higher in the sky during summer than winter.

Image sourced from Cancer Institute NSW.

Consider effects of reflected UV radiation

When identifying existing shade, consider the potential for adjacent areas to reflect UV radiation into a shaded area (e.g. reflective walls or flooring, water).

a. What are the ground surfaces (e.g. concrete, grass)?

b. What are the surfaces of adjacent objects and what direction do they face?

c. Can any surfaces or objects be modified to reduce reflection?

Assess the need for improved shade

It is now time to compare the amount and usability of existing shade to the usage patterns, while considering reflected UV radiation to determine if there is an additional need for shade.

a. Does the amount of existing shade during the critical protection time satisfy the site's shade needs?

b. Is the location of existing shade appropriate, given the usage patterns at the site?

c. What is the likely impact of future tree growth on the amount of shade at the site (you may need to provide interim shade until trees have matured)?

d. Are there any opportunities to better use or access existing shade?

e. Is additional shade required?

f. How can you reduce people's exposure to any reflected UV radiation?

Outline how shade can be improved

An increase in protective shade at sites can be achieved in several ways, including building permanent shade, using temporary shade, or planting trees for natural shade. There are different considerations for different settings when making decisions about shade design.

a. If you have decided to create new shaded areas, you will need to consider how much additional shade is needed, where is it needed, when is it needed, and what combination of natural and built shade should be used?

b. How can you make the most of existing shade?

c. What shade design could you use to minimise the effects of reflected UV radiation?

Summarise your findings

Summarise your findings into a description of the key elements of the site and planned changes.

Include the site's perimeter, outline of buildings, location of any features that affect useability of the site such as gardens, fences and carparks.

5. Next steps

Now that your audit is complete, you will have a comprehensive picture of the needs of the site. You are now ready to plan, deliver and review your shade project.

To learn more about how to do this please refer to [Cancer Council NSW Guidelines to Shade](#).

6. Other helpful resources

A list of other shade-related resources that may provide support are listed below.

- [Cancer Council NSW](#) and [Cancer Institute NSW](#) webpages on shade and sun protection
- [ShadeSmart](#) website: an online hub for training, research, resources and awards for those who design and build outdoor public spaces for the community
- [Co-benefits of shade factsheet](#)
- [Cancer Council NSW Guidelines](#)
- [Cancer Council Victoria shade comparison check](#): an online tool to support you in the completion of a shade audit
- [Cancer Council NSW Shade Advocacy Toolkit](#)
- [Cancer Institute NSW: How schools, councils, community groups and sporting organisations created shade](#): case study examples of successful shade design
- [Healthy Built Environment Checklist](#): practical tool to help deliver quality local environments needed for well-connected and liveable communities in NSW
- [Western Sydney Regional Organisation of Councils \(WSROC\)](#): Heat Smart Western Sydney. Learn about how higher temperatures can affect human health and wellbeing

