



creating **shade**

at public facilities

POLICY & GUIDELINES FOR LOCAL GOVERNMENT | EDITION 2



Queensland University of Technology



Queensland  
Government



Australian Institute of Environmental Health  
A.C.N. 604 011 890

The Shade Creation Policy and supportive information contained in this resource are intended to act as a mechanism to assist local government in the provision of sustainable, healthy and safer environments through the provision of shade.

## shade creation policy

## technical guidelines

This resource contains Technical Guidelines that provide “essential” and “preferred” quantities of shade at public facilities. These Technical Guidelines are intended to be used during the planning process for new public facilities and when upgrading existing public facilities. Further, the Technical Guidelines should be adapted with due discretion to meet local needs

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Please note: The terms 'local government' and 'Council' are used interchangeably.

## acknowledgements

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The original resource was the result of a collaborative, intersectoral consultation process.

Creating Shade at Public Facilities - Policy and Guidelines for Local Government (Second Edition) was revised and updated by a intersectoral team led by the School of Public Health, Queensland University of Technology and funded by Queensland Health.

This second edition includes extensive policy development material as well as revised tools and guidelines to assist in the provision of effective shade in local settings.

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### steering committee

A Steering Committee was formed to assist with the direction of the project. Representatives were from:

Australian Institute of Environmental Health (Queensland Division);	Maroochy Shire Council; Queensland Cancer Fund;
Local Government Association of Queensland;	Queensland Health, Statewide Health Promotion Unit;
Brisbane City Council;	Queensland University of Technology;
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## introduction to this resource

### aim of the resource

This document aims to contribute to skin cancer prevention strategies by increasing the provision of shade at public facilities. This will be achieved by providing local government Officers with a mechanism that will assist in the development of a policy to improve the sustainability of shade creation and contribute to the planning of public facilities.

### what is the problem?

It is been estimated that Australia has the highest incidence of skin cancer in any country in the world (AIHW 1998, Gies et al, 1998; Ring et al, 1989; Maclennan et al, 1992). One out of every two people will contract some form of skin cancer at some stage of their lives (ACS, 2000). The latest available data suggest that on an annual basis, at least 5 500 people will develop a melanoma and more than 270 000 will develop a non-melanocytic skin cancer (Staples et al, 1998, Commonwealth DHFS & AIHW 1998). Local government is well placed within the community to take a broad and proactive approach to this serious public health issue. The creation of safer and healthy environments will assist in reducing the community's exposure to ultraviolet radiation (UVR).

### how can local government help?

Local government can develop a shade creation policy by referring to the policy development framework within this resource. The information contained within the technical guidelines can be used to recommend the provision of effective shade when planning and approving public facilities. All information should be adapted, with due discretion, to meet local needs. This resource also includes a model restraint code that can be adopted into planning schemes. Another option is to expand local laws to include a clause that refers to shade. Some examples of common local laws that may be applicable include vegetation protection, swimming pools and childcare centres.

### how can this resource help?

A model policy has been devised that may be adopted by local government to ensure shade creation policies meet the needs of the community and conditions of the local environment. This resource also provides technical guidelines for shade at public facilities.

### how to use this resource

For ease of use this resource has been separated into sections. **Section 1** offers support to local government Officers who are developing shade creation policies for their Council.

The section is divided into a number of subsections commencing with:

- o Background information on skin cancer for use in reports or media articles.
- o Information on effective shade to assist with understanding the issue and includes a number of design suggestions to increase the quality of shade provided.

The remaining subsections relate specifically to the policy development process and include:

- o Information on healthy public policy developed using public participation, encouraging organisational change and involving intersectoral collaboration.
- o Reasons for the adoption of healthy public policy for shade creation.
- o A model shade creation policy for local governments to assist in the provision of shade at public facilities.
- o Common questions about policy development and some strategies to assist in resolving the issues raised within the questions.
- o A step by step guide to follow during the policy implementation process.

**Section 2** contains the technical guidelines and tools to assist with the provision of shade and the assessment of existing and future public facilities.

This section is divided into a number of subsections including:

- o An assessment tool to determine a priority ranking for the public facilities in your local government area. This ranking is based on usage, age of the users, times of park usage, level of clothing worn during the activities and community concern raised.
- o A visual shade audit tool for public facilities, this tool can be used as a record of the Council's action plan for each facility to assist with the provision of shade.
  - \* Appendix 1 contains an equipment ranking system that you may also wish to use to assist you to further prioritise the playground equipment and fixtures within each of the public facilities you are assessing.
- o Design considerations for effective shade including suggested design features, recommended materials and reflected UVR effects.
- o Technical Guidelines - the subsection contains the shade requirements for thirteen common public facilities that require shade. Within this section is an index that provides shade requirements for additional public facilities cross-referenced to the thirteen public facilities.

The recommendations for each public facility clearly identifies:

- o **The essential recommendation** outlining the least amount of shade that should be provided at the facility.
- o **The preferred outcome** outlining the ideal amount of shade to be provided at the facility.
- o **The location within the facility** where shade is likely to be most effective.
- o **The method of shade creation** useful for this area.
- o **Considerations** to be taken when planning shade at this facility.

**Section 3** includes Case Studies on three local governments that have successfully adopted and implemented shade creation policies.

**Appendix 2** contains a model code for use by local governments in their planning schemes.

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**It is recommended that community consultation be incorporated into the shade creation policy development process to ensure that community needs are met.**



section 1 |

POLICY  
DEVELOPMENT  
for SHADE  
CREATION

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## section 1 summary



One out of every two people will contract some form of skin cancer at some stage of their lives (ACS, 2000). Most of Australia is situated within close proximity to the equator and therefore receives a high concentration of UVR. Therefore it is beneficial to avoid the sun between the hours of 9am and 3pm, when UVR levels peak.

In 1997, 1237 deaths were attributed to skin cancer (ABS, 1999). This largely preventable disease causes expensive treatment costs, lost production time and potential compensation payments. In Australia skin cancer is estimated to cost over \$400 million annually (McCarthy & Shaw, 1989).

There are three main types of skin cancer:

Basal Cell Carcinoma (BCC) is the most common form of skin cancer and the most easily treated. It appears as a lump and / or red scaly patch. It is red, pale or pearly in colour and often has a raised edge. As it grows it will become ulcerated.

Squamous Cell Carcinoma (SCC) is a skin cancer that is a thickened red, scaly spot, which may bleed. It appears in sights often exposed to the sun such as the back of the hand. It will grow over a number of months.

Malignant Melanoma is the most dangerous type of skin cancer. It appears as a new spot or freckle, or an existing spot or freckle which appears to change shade or colour. If untreated, the cancer cells can spread rapidly to other parts of the body. If detected early enough, it is 95% curable.

## background information on skin cancer

Research indicates that if unprotected skin is exposed to UVR for more than 10 minutes, skin damage will occur (QCF, 1997). There is also evidence that the first eighteen years of life is when the skin is most vulnerable to damage (Rhodes et al., 1987; Kripke et al., 1994; Boyle et al., 1995). Therefore, protective shade is essential in areas popularly utilised by this age group.

The provision of natural and artificial shade within the local environment complement current programs that encourage personal sun safe protection methods. It is recommended that while utilising shade structures, people will continue to protect their skin and eyes from the sun by the use of:

- A hat with a close weave and a broad brim of 8-10 centimetres;
- Sunglasses which comply to the Australian Standard 1067, part 1 - Sunglasses and Fashion Spectacles (Safety Requirements) and Australian Standard 1067, part 2 - Sun Glasses and Fashion Spectacles (Performance Requirements) for UVR protection;
- A long sleeved, collared shirt of a darker colour with close weave fabric;
- 30+ broad spectrum, water resistant sunscreen applied every 2 hours to those areas which are not covered by clothing.

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By taking these simple steps, the Australian outdoors can be enjoyed, while minimising the risk of permanent damage from UVR.

The provision of natural and artificial shade within local settings compliments current programs that encourage personal sun safe protection methods. However, shade is not 100% effective at blocking UVR from the sun. Shade has been described as the level at which the UVR wavelengths between 100-400 nanometres are screened to avoid redness of skin or sunburn (AIEH, 1992; ARPNSA, unpublished). UVR consists of the following different wavelength ranges:

- UVA with wavelengths between 315 and 400nm
- UVB with wavelengths between 280 and 315nm
- UVC with wavelengths between 100 and 280nm

UVA transmits freely through the earth's atmosphere; UVB is the most biological damaging form in the UVR wavelengths, however only 15% reaches the earth surface due to adsorption by stratospheric ozone and UVC is completely adsorbed by the stratospheric ozone and other atmospheric gases (Groves, 1981).

Protective shade can be provided by natural means that is through trees, or through artificial means such as shade structures. It must be stated that shade only reduces the level of direct exposure to UVR, and does not offer 100% protection. Toomey (1995) states that while staying in the shade and out of direct sunlight is advisable, people may still be exposed to scattered UVR. Parsons et al. (1998) found that people sheltering under beach umbrellas, buildings or awnings were still exposed to considerable levels of UVR that are primarily reflected or scattered by molecules in all parts of the sky and expanse of visible sky.

## effective shade - what is it?



For shade to contribute to the prevention of skin cancer and improve health outcomes in the local community it is important to broaden current approaches to its provision.

Milio (1987) said that health is affected by our environments and involves social, individual, public and private, informal and organised ways of living. It can therefore be assumed that for shade to be effective it is necessary to increase shade protection in all the environments within the community setting including sporting, recreational and work areas to achieve better health outcomes.

Local government is the major player in the provision of shade for local communities and as a result need to consider comprehensive and sustainable approaches to its provision. Developing healthy public policies is one effective method to achieve this.

Healthy public policy is capable of improving the health of a community and does not lie exclusively within the health sector. Also, healthy public policy is intended to stimulate thinking about the determinants of health and to distinguish policy supportive of health from policy aimed at shaping or managing the medical care system. Further, healthy public policy has been defined as being characterised by an explicit concern for health and equity in all areas of policy and an accountability for health impact (WHO, 1988). Ultimately, healthy public policy aims to make the healthy choice the easy choice.

## what is healthy public policy?

It has been suggested that for healthy public policy to be successful it requires the following prerequisites to be met:

**Public Participation:** Aims to ensure accountability to the public interest, or to the general interests of the consumers affected by the programs. It has been stated that for healthy public policy to be "owned" and "responded to" by the community, the community or users of the policy need to be involved in the decision-making processes (Hancock, 1988; Harris, 1999).

**Advocacy:** In relation to shade creation, local government could be the advocate for shade creation by setting the example and lobbying community groups or other levels of government to provide shade at public venues.

**Intersectoral Collaboration:** Intersectoral collaboration could include identifying and involving partners in the policy development, adoption or implementation phases. Likely partners include the local Cancer Funds or Councils, the local Public Health Unit, community groups such as service clubs and representatives from the Chamber of Commerce.

Healthy public policy that integrates intersectoral collaboration, public participation and advocacy successfully into the development process is a useful tool to assist local government in the provision of sustainable, healthy and safer local communities. The healthy public policy approach has emphasis on negotiation and consultation and places issues such as shade creation, on the agenda of local government Officers. The following are some of the benefits to developing healthy public policy in favour of shade creation.

### 1: a decrease in the incidence of skin cancer

It is been estimated that Australia has the highest incidence of skin cancer of any country in the world (AIHW 1998, Gies et al, 1998; Ring et al, 1989; Maclennan et al, 1992). This is a serious public health issue that requires the cooperation of all levels of government and community organisations to take proactive steps to reduce this alarming incidence. Local government is well placed to encourage a broad approach to health and act as a catalyst in bringing together those who have impact upon public health, and those who can respond to concerns of the residents (Sickert, 1994).

- There is ample evidence to associate skin cancer with exposure to ultraviolet radiation (Green, 1984; IARC, 1992). The implementation of a shade creation policy within local government is a positive step towards reducing exposure to UVR, through the provision of adequate, effective shade for public facilities.

## why develop healthy public policy?

### 2: due diligence for public facilities

As the community becomes more aware of the hazards of UVR exposure, it is likely that local government will be looked upon to utilise its position and encourage adequate shade provision at public facilities.

- A proactive approach will also protect against potential liability. It has been identified that there will undoubtedly be more and more litigation in Australia based on skin cancer (Salter, 1994).

### 3: assists local government in providing safe and healthy community environments

Local government is well placed to take a holistic and proactive approach to public health. Each Department of local government to some degree impacts both positively and negatively on the outcomes for public health.

- The provision of natural or artificial shade will eventually lead to the creation of a safer local environment, minimising exposure to hazardous UVR.



#### 4: international, national and state policies provide direction for community health action

The National Goals, Targets and Strategies for Better Health Outcomes into the Next Century (CDHSH, 1994) indicated that local governments controlling outdoor areas regularly used by the public should be encouraged to increase the amount of natural and structural shade available.

- Australia has adopted the Ottawa Charter for Health Promotion. This focuses on the creation of an environment that is supportive to health and enabling of communities through the strengthening of community action and the development of personal skills and advocacy for health.
- The Healthy Cities and Shires program that is being implemented in Australia as part of a worldwide movement, will be complemented by the development of shade creation policies.
- Queensland has developed a Skin Cancer Prevention Strategic Plan that recognises and supports the important role that shade plays in the prevention of skin cancer.

#### 5: encourage an interdepartmental and intradepartmental approach throughout the local government

For any organisation to work efficiently, a collaborative approach is usually the most effective.

- Skin cancer prevention is not exclusive to the health sector. A 'joined up' approach to implementing a Shade Creation Policy will encourage a collaborative approach amongst the Departments of Health, Building, Planning, Engineering, Parks and Recreation. This would ensure that local needs are met.

#### 6: encourage the community to participate in shade creation

Local governments should utilise the different sectors of the community that have an interest in shade creation to assist with the development and implementation shade creation policies.

- Skin cancer prevention may be on the agenda of Public Health Units, Anti-cancer Organisations, Sporting Clubs, Service Clubs and Parent Associations. All attempts should be made to include as many of these organisations in the policy process as possible.
- Developers can be encouraged to contribute to shade creation for public facilities when preparing development applications.

The development, adoption, implementation and evaluation of shade creation policies, procedures and practices will require cooperation between all relevant departments within a local government.

The following is a model policy that local government can build upon to advocate the provision of adequate shade during the planning stage of public facilities. This policy should apply to private developers and public facilities provided by each local government. Also, this policy should be flexible and reflect the processes undertaken throughout all departments when planning and assessing public facilities.

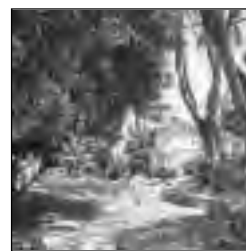
This resource also includes a model constraint code. This code can be adopted to assist with the implementation of a shade creation policy within Council's planning scheme. (refer to Appendix 2)

Factors unique to each local government should be considered both prior to and during the application of this policy. Each recommendation in the Technical Guidelines may be adapted with due discretion to meet the needs of the local government and its community.

#### further reading

The Queensland Cancer Funds publication Working Towards a SunSmart Queensland: A Policy Guide for Organisations.

## model shade creation policy for local government



The following is a model policy, delete those statements that are not applicable and insert additional statements as required.

## shade creation policy

Council's Name Council is committed to improving the protection of the local community from exposure to ultraviolet radiation.

- It is Council's Name policy to implement the Shade Creation at Public Facilities - Policy and Guidelines for Local Government (Second Edition) when planning and approving public facilities where exposure to ultraviolet radiation is an issue.
- Local government professionals will work collaboratively to adopt the Technical Guidelines as outlined in the Shade Creation at Public Facilities - Policy and Guidelines for Local Government (Second Edition) and implement them appropriately for the local environment and particular local needs.
- Developers will be informed of the Shade Creation at Public Facilities - Policy and Guidelines for Local Government (Second Edition) and encouraged to conform to the requirements for shade provision identified by Council's Name.
- A shade audit will be conducted within the local government area to identify the need for shade at public facilities, and assess the suitability of existing shade provision.
- Where possible and practical, existing natural and built shade will be utilised.
- Where possible and practical, maximum protection of shade trees will occur, especially in new developments.
- Council's Name will take advantage of existing campaigns and strategies to promote sun safe behaviours to the community and will endeavour to initiate further strategies that will address local needs and circumstances.
- Effective shade structures that are introduced will aim to be aesthetically pleasing and cost effective.
- Aspects of community safety will be considered when planning built and natural shade.
- Portable shade structures will be erected at special events.

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Executive Officer

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Date

This policy will be reviewed every 12 months from the date of signing.

## common questions on the policy adoption process

This section includes common questions that local government Officers have encountered. Included are solutions and case study examples that have been successful in resolving policy issues.

### question one

How can we ensure that local government has a comprehensive approach to shade creation activities including shade on development applications, conducting health promotion programs and creating shade at public facilities?

#### Potential Solutions:

- Develop a policy with input from key stakeholders that share responsibility across Departments to provide a holistic approach to shade creation.
- Standardise shade creation activity across development applications for public facilities and local government managed facilities.

#### Comments:

- This will avoid a disjointed approach, and ensure a whole of government approach to shade creation.
- A multi-disciplinary approach is important to develop 'ownership' and understanding within local government.

#### Case Study:

- A local government developed a "Community Sun Protection Strategy" that included sections on providing shade in public facilities providing complimentary sun safe health promotion programs, and ensuring sun safe practices for local government workers.

#### Case Study:

- A working party was established by a local government to review the development of shade creation policy including Planning, Parks, Health, Cancer Fund, Works and the Sports and Recreation Officer. Each Department/Organisation was given the opportunity to input into the wording of the policy to ensure it was relevant to their business.

### question two

How do we ensure shade creation remains on the local government agenda?

#### Potential Solutions:

- Integrate or link the policy to the Corporate, Operational or Community Health Plan.
- Integrate shade creation into the Planning Scheme.
- Include a community awareness strategy.

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The case study section describes how local government have dealt with some of these issues in detail.

Case Studies:

- A local government included shade creation within the Environmental Health Operational Plan.
- A shade creation program was included by a local government within their Operational Plan.
- A local government identified shade creation as a community need through the Community Health Planning Process and developed an implementation strategy.

### question three

How do we generate political support for the policy?

- Potential Solutions:  
Involve Councillors in the policy development process from the outset and encourage their input.
- Case Studies:  
A local government had a Councillor as the chairperson for the policy development team.  
Some local governments utilised Councillors as the media spokesperson.
- Councillors who had experienced skin cancer or who were parents of young children were co-opted to support the policy.

### question four

Now Council has a shade creation policy, how do we ensure it doesn't sit on the shelf?

Potential Solutions:

- Ensure Officers who will need to use or refer to the policy, are included in the development process.
- Nominate a lead Department/Officer to oversee implementation.
- Offer training to all relevant Officers on how they can implement the policy.
- Outline the benefits of implementing the policy.
- Regularly review the policy for effectiveness and relevance.

Case Studies:

- A local government offered training on how to implement the policy to all Council Officers and each Department was given a lead role in implementation of the policy action items that were relevant to their business.
- A bound hard copy of relevant policy sections was given to each Department in conjunction with the training workshops.  
One key Officer in one local government championed the policy and ensured a collaborative approach to implementation.

### question five

How do we fund this shade creation policy?

Potential Solutions:

- Seek avenues for external funding of shade structures.

- Shift costs of erecting shade from the local government to private developers as a condition of approval.
- Apply for specific funding for the erection of shade through Council. Seek assistance from external agencies (eg Public Health Unit, Service Clubs) including volunteer support & technical assistance.

Comments:

- There are many Councils who are already creating shade, so budgets often exist.
- A policy will create equity between all Departments and standardise requirements across Council. Shade does not have to be expensive - shade can be either manufactured or natural.

Case Studies:

- After adopting the policy, a local government was offered \$10 000 to implement the policy by the local Public Health Unit.
- A local government initiated a quarantined budget item purely for shade creation. In conjunction with a community based service club, a local government installed shade at a public park. The service club purchased the structure and the Council erected it. The local government provided further support by planting trees.
- A local government worked with the local Anti Cancer Organisation to implement a community based sun safe program.

## question six

### How do we avoid litigation?

Potential Solutions:

- Gain a legal opinion on Council's position should a future skin cancer claim be brought against the Council.
- Ensure the policy is implemented to it's fullest potential to meet due diligence requirements.
- Ensure any shade erected is effective and of good quality based on the best knowledge available.
- Erect signage at public facilities to encourage people to SLIP, SLOP, SLAP even when in shade.
- Risk assessment can be undertaken by Council to help determine the order of priority for projects.

Comments:

- Future incidence of skin cancer for users of local government facilities may be grounds for liability.
- Liability may be an issue if a person falls from a shade structure and injures themselves.
- If a policy exists but is not implemented, the local government is liable.

Case Studies:

- A local government included information about their policy within all lease arrangements with sporting clubs for use of the facilities.
- Some local governments have Installed "rat caps" to prevent people from climbing shade structures.
- Many local governments offer free sunscreen to patrons at swimming pools. A local government has erected "SLIP! SLOP! SLAP!" signs on all major beaches.



## question seven

How do we minimise the effects of vandalism?

### Potential Solutions:

- Involve the community in the selection and erection of shade structures to increase community ownership.
- Promote an "adopt a shade structure" project.
- Encourage community use of structures.
- Plant advanced trees wherever possible.
- Facilitate a competition amongst young people to design shade structures suitable for the facilities used predominantly by that age group.  
Ensure adequate planning is undertaken to minimise vandalism
- (eg. maintain site visibility & appropriate height of structures).  
Designs are functional yet aesthetically pleasing & appealing.
- Utilise design innovations (eg. rat traps, more durable materials).
- Increase the inspection regime and undertake timely repairs of any damage identified.

### Case Studies:

- A local government worked with the local school community to erect shade over a "shared" playground. The playground was located on Council land but was used by the school during school days. This reduced vandalism by school aged children.
- Another facilitated an "adopt the botanical gardens" program which included shade creation activities and increased ownership.
- A local government planted advanced trees in all street-scaping projects to avoid uprooting of smaller trees.
- A local government tracked all maintenance and vandalism costs of shade structures to ascertain the "real" cost of vandalism. Consecutive budgets then catered for these costs.
- A local government dye marked plants to avoid resale at markets.

## question eight

How do we involve the community in the policy?

### Potential Solutions:

- Ensure the community is aware that a shade creation policy is being developed and offer them opportunities to input into the process.
- Utilise community advice to assist with planning of future shade creation activities.

### Case Studies:

- A local government established a planning agenda for a local park in conjunction with a local community group.
- One community was involved in shade creation activities through their community health planning process by a local government.
- A local government instigated a school-based tree-planting program, where the schools took responsibility for planting trees supplied by the Council, at a public facility of their choice.

This section will assist local government Officers to use this resource and to incorporate the information into the current practices within Council. Implementation of the policy and guidelines within each local government will be different. The following are a number of implementation steps and each local government should select the essential steps to suit their specific needs. These steps are a general guide.

## 1: establish a collaborative working party

The shade creation policy should engage all the key stakeholders within Council.

- A working party could be established including Officers such as Environmental Health Officers, Planners, Engineers, Parks, Community Development Officers, Asset Managers, Recreation Officers and Councillors.

The working party should undertake a review of existing opportunities to integrate shade into current local government processes and should consider the following:

- Review existing planning procedures for public facilities owned and/or managed by Council and the assessment process for plans for public facilities submitted to Council. Identify where a shade creation policy could be integrated into these processes. Consider the model code in Appendix 2 for inclusion in the planning scheme.
- Review existing Local Laws relating to public facilities such as 'Swimming Pools' or 'Open Public Areas' and determine the feasibility of incorporating a shade clause within each.

# taking steps to implement the policy and guidelines

## 2: adaption of the model policy

Review the model policy in this resource and adapt it as necessary to suit the local government area and needs. Consider the following during this process:

- Undertake a review of the shade 'essential' and 'preferred' quantities of shade and the suggested methods of shade creation for the public facilities detailed in the technical guidelines within this resource. This is to ensure that the working party is satisfied that Council will be able to meet the requirements indicated.
- Identify the contributing factors (eg. should the policy to be retrospective, funding implications, etc) that may affect or be affected within the policy implementation process. It may be useful to hold a public meeting or open forum to ensure all relevant stakeholders are considered and consulted.

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Acknowledgement is offered to Melissa Stoneham (1995) for much of this information.

### 3: level of existing shade

Identify the level of existing shade at local government managed and/or owned public facilities and prioritise the higher risk facilities. The following steps may be useful in this process:

- Survey the local area. If the local government is a large area such as a capital city, regions within the area may be surveyed separately.
- Utilise the priority ranking system process as outlined on page 32 and prioritise the public facilities that need shade.
- Consult with the community and determine where they would like to see more shade and gather ideas on how this can be done in the most practicable way for the local area.
- Develop an action plan for those public facilities identified as high risk due to the lack of shade currently available.

### 4: develop a strategic plan

Develop a strategic plan for local government that will identify when each policy priority area will be introduced.

### 5: evaluation

Evaluation of implemented policies should progressively occur.

### 6: education and awareness building

Education and awareness of the community is essential when any local government is developing a new policy that is facilitating improved health for the residents.

- Simple measures such as a flyer with rates notices or media releases in the local newspaper will assist in increasing the awareness of the community of the importance of sun safety and making use of available shade.

### 7: recommended structures and vegetation for shade creation

Develop a list of recommended structures and vegetation for use in shade creation by the local government that could be recommended to private developers of public facilities. Consider the following within this process:

- Establish contacts with manufacturers of shade structures to ascertain the materials to construct the most effective shade structures for use.
- Ensure that these manufacturers have had the product tested for UVR transmittance and obtain these results.
- Vandalism, damage from weather and the construction process for built shade will have impacts on the effectiveness of the structure and the sun protection that is provided.
- Contacts with local nurseries or environmental associations will assist with natural shade creation and ensure the species have dense foliage with a wide canopy to provide maximum shade.

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By following these simple steps, this will ensure that shade creation and practices are implemented within the local government area in the most practical and effective manner.

A thin black L-shaped line graphic consisting of a vertical line on the left and a horizontal line on the bottom, meeting at a right angle. The text 'section 2' is positioned to the right of the vertical line and above the horizontal line.

## section 2

TOOLS and  
TECHNICAL  
GUIDELINES

Section 2 contains the tools and technical guidelines to assist with the provision of shade and the assessment of existing and future public facilities.

## section 2 summary



This section is divided into a number of subsections including:

- An assessment tool to determine a priority ranking for the public facilities in your local government area. This ranking is based on usage, age of the users, times of park usage, level of clothing worn during the activities and community concern raised.
- A visual shade audit tool for public facilities - this tool can be used as a record of the Council's action plan for each facility to assist with the provision of shade.
- Design considerations for effective shade including suggested design features, recommended materials and reflected UVR effects.
- Technical Guidelines - the subsection contains the shade requirements for thirteen common public facilities that require shade. Within this section is an index that provides shade requirements for additional public facilities cross-referenced to the thirteen public facilities. The technical guidelines are tabbed for ease of use. The recommendations for each public facility clearly identifies:
  - The essential recommendation outlining the least amount of shade that should be provided at the facility.
  - The preferred outcome outlining the ideal amount of shade to be provided at a facility.
  - The location within the facility where shade is likely to be most effective.
  - The method of shade creation useful for this area
  - Considerations to be taken when planning shade at the facility.

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Appendix 1 contains an equipment rating system that you may also wish to use to assist you to further prioritise the playground equipment and fixtures within each of the public facilities you are assessing.

Appendix 2 contains a model constraint code for use by local governments in their planning schemes.

## ranking public facilities for shade

As resources are scarce in local government, there often is a need to rank public facilities in order of priority for the provision of shade.

The following is a step by step procedure for determining where action for shade is required. To assess the public facilities that are more in need of shade, answer each question and assign the corresponding numerical value. Total them at the end. The facilities with the highest rank are considered to be a priority for shade.

It is preferred that the ranking criteria be used in conjunction with shade audits due to the subjective nature of the ranking system. However, if this is not feasible, these ranking criteria will give an indication of the priority for shade at a particular public facility.

### how to use this ranking criteria

- 1 ) If you answer "no" to Q1 then continue through all the questions. If you answer "yes" to Q1 and have an intention to move from the "essential" to a "preferred" amount of shade for the public facility, then continue through all the questions however you are required to deduct 5 points from the end total. (As the facility has met the essential requirements for shade it therefore should not be considered a higher priority than other facilities that have not met the essential requirements so 5 points should be deducted from the total.)
- 2 ) For each question, assign an answer and allot the corresponding numerical value.
- 3 ) Total all numerical values upon completion of the questions.
- 4 ) The need for shade increases proportionally with the increase in numerical value.

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Use of the public facility needs to be considered for both weekdays and weekends.



## shade creation: priority ranking criteria

Name and Location of the Public Facility:

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Q1 ) Has the public facility met the essential requirements for shade as outlined in the Technical Guidelines within this resource?

- Yes: (deduct 5 points off end total)  
 No: (5 points)

If the public facility fails to meet the "essential" guidelines for shade, there is a need to consider future planning requirements for the facility as well as budget requirements. It also indicates that "responsible practice" has not been met.

Q2 ) Estimate the level of use this facility gets from persons under the age of 18 years?

- High use (5 points)  
 Medium use (3 points)  
 Low use (1 point)

UVR exposure in the first 18 years of life has been associated with the development of skin cancer in later life (Rhodes et al., 1987; Kriple et al., 1994; Boyle et al., 1995). Children spend more time outdoors than adults (Hurwitz, 1988), and it has been estimated that more than half of the lifetime exposure to sunlight occurs before the age of 18 years (UBC, 1998).

Q3 ) Is it likely that the majority of activity at this public facility would occur during peak UVR times (ie. between the hours of 9am - 3pm, including weekends.)

- Yes (3 points)  
 No (1 point)

There is ample evidence to associate skin cancer with exposure to ultraviolet radiation (Green, 1984; IARC, 1992). Hoffman (1986) states that exposure to UVR accounts for approximately 70% of all skin cancers, while the IARC (2000) state that 80-90% of skin cancers are due to exposure to sunlight. The peak UVR exposure times are between 9am and 3pm. During these times the sun is more directly overhead, meaning that the UVR has shorter distance to travel through the atmosphere (ie. undergoes less filtration) before it reaches the earth's surface.

## shade creation: priority ranking criteria

Q4 ) Does the public facility have the potential to host activities that occur outdoors for more than 10 minutes at any one time?

- Yes (3 points)  
 No (1 point)

Research indicates that if unprotected skin is exposed to UVR for more than 10 minutes, skin damage will occur (QCF, 1997).

Q5 ) Is the public facility used on a regular basis?

- Yes (3 points)  
 No (2 points)

Intermittent exposure to the sun has usually been equated with recreational exposure. Most studies show convincing trends towards increased risks of melanoma with increasing recreational exposure to the sun (Armstrong & English, 1996).

Q6 ) Does the public facility host activities that will result in users wearing minimal clothing?

- Yes (3 points)  
 No (2 points)

Clothing is a physical barrier to UVR, therefore the less clothing that is worn and the higher the risk of exposure to UVR.

Q7 ) Has the public facility been the subject of advice from any member of the community identifying the need for increased shade at this public facility?

- Yes (3 points)  
 No (0 points)

Healthy public policy requires informed public participation in priority setting, strategic planning and decision making. Public participation aims to ensure accountability to the public interest, or to the general interests of the consumers affected by the programs. The LGAQ (1997) state that there is a growing need to understand and take into account residents' concerns about the impact of Council's decisions on quality of life, local economic development and the quality of the local government.

## shade creation: priority ranking criteria

Questions in the Ranking Criteria	Points Allocated for each question
Q1	
Q2	
Q3	
Q4	
Q5	
Q6	
Q7	
Total Points Allocated for the Public Facility	
Deduct 5 points from the total if the answer to Q1 is "Yes".	

The purpose of the visual shade audit is simply to determine:

- Approximately how much UVR will be reflected from existing surfaces within a site,
- How much shade exists at a site, and
- What action may be taken to improve the shade at the site.

Outlined in this resource is one method of conducting this procedure. The VISUAL SHADE AUDIT, is a simple, visual exercise which provides a general guide to the effectiveness of existing shade within an area and can help in determining action to improve the shade.

It is recognised that not all works can be undertaken immediately however it is recommended that all the shade needs for the facility be documented. To assist in the upgrading process for each facility, it would be useful to identify a priority ranking of equipment for works to be undertaken and include the specific timelines.

If you require assistance with the priority ranking of the equipment and recommended timelines there is a risk-based system in Appendix 1 for your use.

## visual shade audit procedures

To assist with completing the Visual Shade Audit the following table is an example of action for a facility (ranking & time lines taken from APPENDIX 1).

Modular play equipment	Replace light coloured sand as soft fall, constructed shade over equipment	Account for the movement of the sun in the design	1, up to 12 months
Supervisor seating (adjacent to play equipment)	Plant advanced tree adjacent	Ensure 2.4 m clearance between	2, up to 12 months
BBQ area	Solid roof construction	Account for the movement of the sun	3, up to 12 months
Table & seating	Solid roof construction	Account for the movement of the sun	3, up to 12 months

It is useful if all calculations are made during the middle of the day (12 noon is a good time), when the sun is close to directly overhead. The shade protection is important during the hours of 9am and 3pm and this to be considered when undertaking this process.

## visual shade audit tool

1 ) Name and Location of the facility:

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2 ) Time of day:

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3 ) Identify the expected UVR reflection:

Using the table on the right, estimate the amount of UVR which will potentially be reflected from existing surfaces onto the areas for human activity

Surface	% Reflected UVR*

Material	Reflection (% of UVR)
Grasslands	0.8-1.6
Lawn Grass	2.0-5.0
Soil-Clay/Humus	4.0-6.0
Open Water	3.3-8.0
Bitumen Road	4.1-8.9
Beach Sand - Wet	7.1
Light Coloured Concrete	8.2-12
Beach Sand - Dry	15-18
House Paint - White	22

Note - Highly reflective surfaces identified in the table above need to be addressed in Section 5 of this audit.

4 ) Identify the effectiveness of existing shade:

a. How much natural and built shade is on the site?

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b. Estimate the average number of people using the site per day:

Week Day \_\_\_\_\_ Weekend \_\_\_\_\_

c. Document the daily and seasonal impacts of the sun on the shade provided at the facility.

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d. Are there any negative impacts that are limiting the effectiveness of the shade currently provided at the facility?

Examples of impacts include:

Concave or scalloped edges of the shade structure; gaps between structures or trees; the size of the structure; height above the equipment being shaded, or lack of overhang or any other issues.

Please identify and comment:

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5. To identify the action required to improve shade at the site:

a. Identify an action plan for the upgrade of shade for the facility

Equipment or Area within the facility requiring action	Shade or action to be considered for each item or area (refer to the technical guidelines if required).	Suggested Special Conditions	Priority Ranking & Timelines

6. Attach a diagram or photo/s of the public facility.

## design consideration for effective shade provision

### reflected UVR

This section can assist the VISUAL SHADE AUDIT TOOL process by providing some background to reflective surfaces.

UVR is subject to reflection and scattering by nearby objects. This process can change the direction of the sun's rays and cause it to be reflected from surfaces such as light coloured concrete. This diffused radiation may come from many directions. Therefore it is important to identify surrounding surfaces that have the potential to reflect UVR when designing effective shade for a public facility.

Table 2 has some examples of common materials and the reflection these products can generate.

table 2: materials & UVR reflection

Material	Reflection (% of)
Grasslands	0.8-1.6
Lawn Grass	2.0-5.0
Soil-Clay/Humus	4.0-6.0
Open Water	3.3-8.0
Bitumen Road	4.1-8.9
Beach Sand - Wet	7.1
Light Coloured Concrete (Footpath)	8.2-12
Beach Sand - Dry	15-18
House Paint - White	22

(Gies et al, 1994)

A shade audit will identify potential areas for reflected radiation. The angle and design of shade structures must be considered to account for potential UVR reflection.

### recommended materials for protection against UVR

The following is a general guide to the amount of protection various materials will provide against UVR. A simple rule that can determine the effectiveness of a shade material is to hold it to the light. The amount of light that is visible through the material indicates the amount of UVR that will penetrate. Similarly, the density of shade thrown from a material can indicate the same. In general, the higher the protection the better, but often it is also important to consider other factors such as ventilation, warmth and comfort in the design of any structures (ARL, unpublished).

The table below relates to the amount of effective UVR transmitted and absorbed and will be useful as a reference when discussing protection against UVR.

table 3: ultraviolet protection factors (UPF)

% UVR Transmitted	% UVR Absorbed	Ultraviolet Protection Factor	Protection Category
10	90	10	Moderate
5	95	20	High Protection
3.3	96.7	30	Very High Protection
2.5	97.5	40	Very High Protection
1	99	50+	Maximum Protection

To help understand the table above better - the amount of transmission depends on the shade factor. That is:

- If rated 50%, means it absorbs 50%  
(and transmits 50% and has a UPF of 2)
- If rated 80%, means it absorbs 80%  
(and transmits 20% and has a UPF of 5)
- If rated 90%, means it absorbs 90%  
(and transmits 10% and has a UPF of 10)

(ARL Unpublished)



## constructed shade

### awnings and outdoor roofing materials

Awnings and outdoor roofing materials are durable, solid roofs and require little maintenance. All weather protection is also provided. It is favoured, that solid roofs be used for UVR protection in areas of high use, for long periods of time and especially where the users are aged between 0-18 years.

### aluminium and tin

Aluminium and tin are opaque materials, which usually provide maximum protection from UVR. These materials are often durable and resistant to all forms of weathering and are thus a cost-effective method of providing total protection from UVR.

### polycarbonate and fibreglass

Polycarbonate and fibreglass sheeting are solid materials, which allow infra red (heat) rays and visible light to be transmitted. These materials are effective in locations where winter heating is desirable. Test results of UVR transmittance should be obtained from the manufacturer to ensure the highest protection is obtained. Fibreglass may be less durable than polycarbonate.

### umbrella materials and canopies

Umbrella materials and canopies provide different amounts of protection depending on the type of material. As with clothing, the denser the weave, the higher the UPF. Some materials are plastic coated and may therefore provide more protection since plastics generally absorb UVR strongly. As from November 1995, umbrellas have been required to carry a UVR rating.

### canvas

Canvas is often used for umbrellas. When first manufactured, canvas usually has a high protection factor. However, after exposure to weather, canvas is prone to deteriorate and therefore may be less effective protection from the sun.

### shadecloth

Shadecloth is the least effective roofing material for protection from UVR. It often gives a false sense of security, as a large degree of UVR still penetrates the material. If shadecloth is used it is strongly recommended that signage is incorporated within the area, warning people to still wear their sun protective clothing and sunscreen. Shadecloth acts as a physical barrier to incident solar UVR and transmits as much UVR as visible radiation, so the more you can see through it, the more UVR can also get through (Refer back to Table 3). Tightly woven shadecloth can absorb up to 90% of harmful UVR penetration. The effect of colour, washing and the application of stress, may alter the UV absorption property. If a shadecloth is tightly stretched to form a cover, the holes may expand and therefore allow more UVR to penetrate. Shadecloth with maximum protection against UVR is recommended (Pailthorpe et al., 1991).

## design features for effective shade

The following may assist with future design considerations for shade in public facilities:

### design features for built shade structures

- Consider the movement of the sun throughout the day, with particular emphasis between the highest risk hours of 9.00am to 3.00pm. This solar movement impacts on the effectiveness of shape and size of a shade structure. Generally east and west positions require wider overhangs to improve shade protection.
- Vertical sides should be considered as part of shade structures, wherever possible. (Example: On the back and sides of a bus shelter.)
- Wherever possible, the combination of natural and built shade should be considered as the most effective and sustainable outcomes for shade creation. This combination will allow the built structures to provide effective shade whilst the trees are growing, and/or to allow for a greater coverage of shaded area for the facility.
- Shade only reduces the level of direct exposure to UVR, and does not offer 100% protection. However to maximise the shade coverage choose materials with maximum UVR protection factor ratings. Some materials, such as low-grade shade cloth are less effective at screening out high levels of UVR and are not encouraged.

## design considerations for effective shade provision

- Shade is at a maximum in the middle of a structure because this where exposure to reflected UVR is at a minimum. It is important to locate the most popular play equipment in the centre of the shade structure.
- The design of shade structures with concave and scalloped edges should be avoided, as these reduce the effectiveness of the structure. Edge heights should be as low as possible to reduce the impacts of UVR being reflected from surrounding surfaces. Try to aim for at least a one metre overhang past the edge of the equipment you are aiming to shade. Avoid gaps between shade structures.
- Attempt to use solid roofing for shade to ensure as much protection as possible. Select shade cloth that provides at least 94% protection from direct UVR.

### design considerations using shade using trees

- Try to locate seats, tables, BBQs and play equipment under existing canopies wherever possible. Try to select the most appropriate shade trees for your geographical region.
- Trees that do not drop branches or lose leaves in winter are a good start!

- Try to select trees that have wide spreading, dense leaf canopies.
- Try to plant trees in clusters to provide interesting patterns in the parks, as well as providing the most effective shade cover.

Please Note: It is important not to create a public safety issue by having the canopies so low as to block the line of sight from adjoining properties, the street or supervisor seating.

#### general comments

- Consider the reflectivity of the surrounding surfaces including the material used under the equipment that is to be protected. For instance sand is a very reflective material but other materials such rubber based products used to prevent injuries have a lower reflectivity rate. A further common example is light coloured concrete that is often used for slabs for picnic tables and BBQs, this also reflects high levels of UVR. (See the following section on REFLECTED UVR for further details)
- Vandalism is an ongoing issue in relation to shade structures and tree planting. If you are increasing the height of the structure to limit access to the cover material, you may also be reducing the amount of effective shade being provided. If you are considering increasing height of structures, consider these points:
  - Increase the size of the structure or reduce the amount of equipment to be shaded.
  - Choose materials that are more durable such as roofing iron or canvas.
  - Consider other methods of other forms of deterrents such as "rat cap" discs, to prevent the climbing of support.
- Remember that shade only reduces the level of direct exposure to UVR, and does not offer 100% protection. It is recommended that Council erect signage and/or run campaigns that aim to reinforce the importance of using personal sun safe protective measures when accessing public facilities.

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Remember that there is concern for UVR both in winter and in summer.

Acknowledgment is offered to Queensland Health and the University of Queensland for some of the above information.

The technical guidelines specify the recommended quantities of shade to be provided at a number of public facilities. Two categories are identified.

- The preferred category describes the favoured quantity and type of shade to be provided.
- The essential category outlines the minimum quantity and type of shade that should be provided at the facility utilising the specified materials.

Also included within the technical guidelines are also recommendations for:

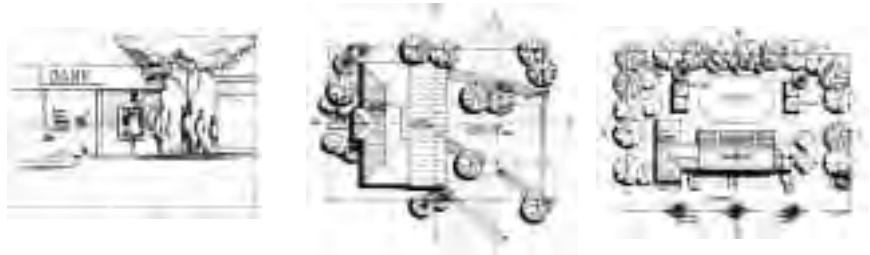
- Location describes the area within the facility where shade is likely to be most effective.
- Type outlines the shade options likely to be most effective at the facility.
- Considerations describe additional factors to be reviewed when planning shade for the facility.

#### further reading

The Queensland Health publications:

- Shade for Public Pools
- Shade for Sports Fields
- Shade for Young Children
- Shade Creation Training Program (CD Rom)

## technical guidelines for shade



#### please note

The guidelines have been designed to be copied and distributed to developers and other interested parties to assist with the planning of shade for public facilities.

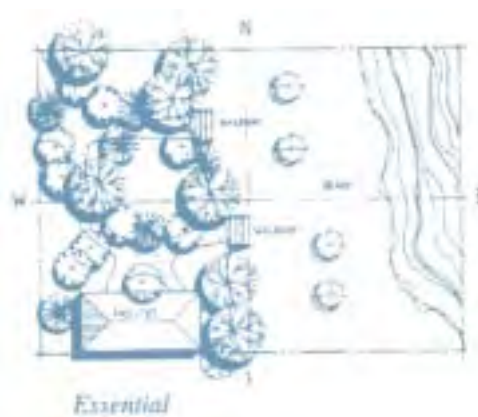
#### further

The information is presented in an ideal situation. Local governments should adapt this information with due discretion, to meet local needs.

Beaches prove to be popular places of recreation where the people are often exposed to excessive amounts of UVR in peak use times during the day. These activities are usually carried out in minimal clothing.

Surf clubs and neighbouring facilities such as shops can provide access to personal sun protection items.

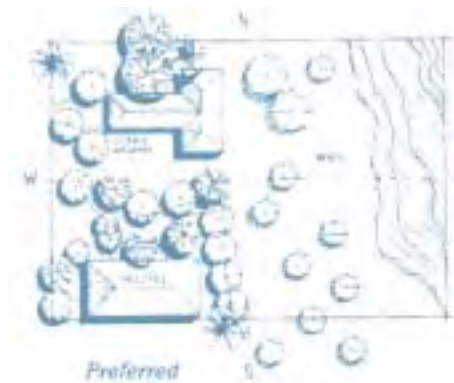
It is suggested that the hiring of umbrellas and portable shade structures also be available at these locations.



### further considerations

See **PARKS** if shade is needed for play equipment, BBQs and seating.

It is important to incorporate the recommendations from the 'Design Considerations for Effective Shade Provision' section when planning shade for this facility.



### development applications

Council will determine the compliance deadlines for the provision of shade at new public facilities during the development assessment process.

## beaches

Quantities	Location	Type	Consideration
Essential	Foreshore areas	Natural shade	The canopies from trees planted along the boundary can provide shade to a considerable area.
	Walkways to facilities (showers, toilets, etc.)	Natural shade	
Preferred	Foreshore areas	Natural shade	Portable shade items available for hire from Surf Clubs or nearby facilities such as shops or service stations.
	Walkways to facilities (showers, toilets, etc.)	Natural shade	
	The beach areas - portable shade structures for hire	Beach size umbrellas	During special events or peak use times such as school holidays, shade structures could be provided by a surf club, nearby shop or the Council, fixed in popular use areas such as the patrolled area.
		Marquees	
The beach areas - portable shade structures to be provided on the beach for special events and peak use times.	Large tents	Signs at beach entrances are useful if information can be changed daily and outline current UVR levels. It would be useful to involve surf club	
	Umbrellas		
	Marquees		

Beach entrance SIGNAGE Multi lingual signs warning of:

- o the dangers of sun exposure
- o avoid the sun between 9am & 3pm
- o to SLIP! SLOP! SLAP!
- o locations where shade is provided at this facility.

Bikeways are becoming popular routes of transport for work and leisure in both urban and regional locations.

When designing shade for bikeways it is important to retain the outdoor, open atmosphere, an aspect that makes them popular.

#### further considerations

If lookouts are situated along the bikeway and shade is needed see the **LOOKOUTS** section.

It is important to incorporate the recommendations from the '*Design Considerations for Effective Shade Provision*' section when planning shade for this facility.



#### development applications

Council will determine the compliance deadlines for the provision of shade at new public facilities during the development assessment process.

## bikeways

Quantities	Location	Type	Consideration
Essential	Every 15-20 metres 1-2 metres from the pathway	Natural shade	Ensure that shade from trees covers the pathway. 2.4 metre clearance from the ground to the canopy.
Preferred	Every 10-15 metres 1-2 metres from the pathway	Natural shade	Trees planted on opposite sides of the pathway at distances specified to provide a balanced effect.
	Drinking taps Rest stops	Constructed shade or natural shade	A 1 metre clearance between the pathway and the trunk of the shade tree should be allowed.

Large car parks often require people to walk a considerable distance before reaching their designated location.

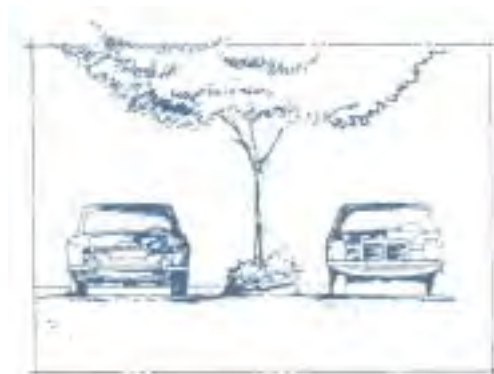
Everyday exposure to the sun can accumulate and cause damage to the skin that can lead to skin cancer.

### further considerations

It is important to incorporate the recommendations from the '*Design Considerations for Effective Shade Provision*' section when planning shade for this facility.

### development applications

Council will determine the compliance deadlines for the provision of shade at new public facilities during the development assessment process.



## car parks

Quantities	Location	Type	Consideration
Essential	Every 10 <sup>th</sup> car bay	Natural shade	Shade tree canopy not to block driver or pedestrian view.
Preferred	Every 5 <sup>th</sup> car bay	Natural shade	2.4 metre clearance from the ground to the tree canopy.
	Walkways to the facility	Solid roof	Wide shade tree canopy over main pedestrian route(s).  Use of solid roof will prevent the walkways being used for car parking bays.  Ensure adequate space around planting to avoid damage to the pavement by roots.

The minimum requirements for shade provision in child care centres are outlined by legislation.

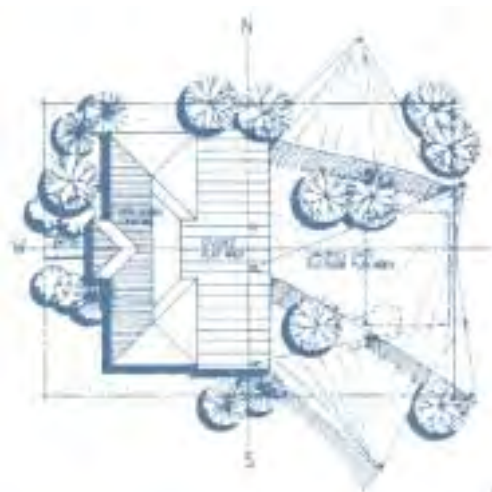
It is in the first eighteen years of life when the skin is most vulnerable to sun damage. This damage is permanent, cumulative and contributes to the development of skin cancer in later life. Thus the provision of shade at locations where this age group spends long periods of the day is essential.

#### further considerations

It is important to incorporate the recommendations from the 'Design Considerations for Effective Shade Provision' section when planning shade for this facility.

#### development applications

Council will determine the compliance deadlines for the provision of shade at new public facilities during the development assessment process.



## child care centres

Quantities	Location	Type	Consideration
Essential	2m <sup>2</sup> per child of open space area (licensed child care services)	50% is required to be solid roof and the remaining 50% can be natural shade or constructed shade	The recommendations for shade at child care facilities should always comply with current legislative requirements. Note: New legislation will be introduced on 1 September 2003.
	1m <sup>2</sup> per child of open space area (limited hours child care services)		Shade creates a comfortable and safer environment for active play.  Reflective soft fall surfaces such as sand in sandpits can impact on

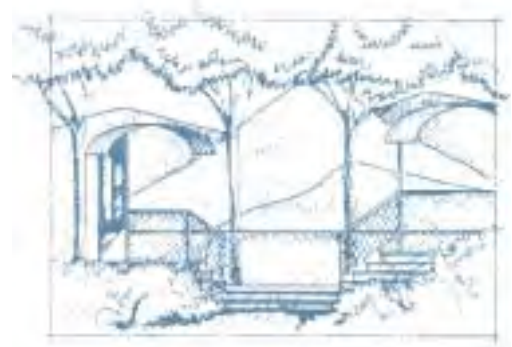


Lookouts are popular gathering points for tourists and residents. People may be exposed to UVR for long periods of time when visiting these facilities.

further considerations

See PARKS if shade is needed for tables, BBQs and adjoining parklands.

It is important to incorporate the recommendations from the 'Design Considerations for Effective Shade Provision' section when planning shade for this facility.



development applications

Council will determine the compliance deadlines for the provision of shade at new public facilities during the development assessment process.

lookouts

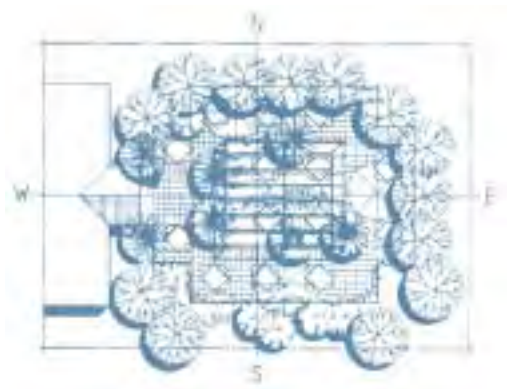
Quantities	Location	Type	Consideration
Essential	Information signs	Natural shade	Shade should not impinge on the view.
	Viewing area	Natural shade	
Preferred	Information signs	Natural shade	
	Viewing area	Solid roof and natural shade	

Outdoor dining is popular in Australia. Throughout the day, especially on weekends, people enjoy these locations particularly during the middle of the day in the peak UVR times.

The provision of shade at these venues is likely to increase patronage.

further considerations

It is important to incorporate the recommendations from the '*Design Considerations for Effective Shade Provision*' section when planning shade for this facility.



development applications

Council will determine the compliance deadlines for the provision of shade at new public facilities during the development assessment process.

outdoor dining

Quantities	Location	Type	Consideration
Essential	All seating	Integrated constructed shade (eg. umbrellas, marquees, awnings) and natural shade	Shade should not impinge on the view.
Preferred	All seating	Solid roof	
	Waiting areas for customer service	Constructed shade	
	Every 5 metres of other open space areas	Natural shade	

Parks attract people from a variety of age groups. Generally used for recreation, the time each person spends at a park varies considerably.

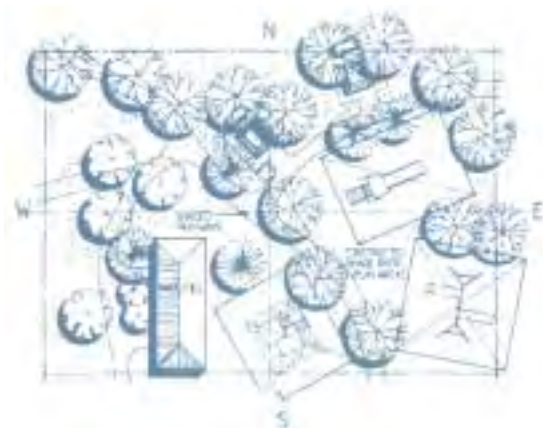
As well as providing a protective environment shade is important to achieve a comfortable atmosphere.

further considerations

See PUBLIC MALLS if shade is required for open-air stages provided within the park.

See BEACHES for specifications for signage.

It is important to incorporate the recommendations from the 'Design Considerations for Effective Shade Provision' section when planning shade for this facility.



development applications

Council will determine the compliance deadlines for the provision of shade at new public facilities during the development assessment process.

parks

Quantities	Location	Type	Consideration
Essential	All playground equipment	Natural shade or constructed shade	Increasing protective shade reduces potential UVR reflection from surrounding surfaces.
	Supervision area adjacent to playground equipment	Natural shade or constructed shade	
	All seating and tables	Natural shade or constructed shade	Natural shade near BBQs must not create potential fire hazards.
	All BBQs	Natural shade or constructed shade	
Preferred	All playground equipment	Constructed shade	
	Supervision area adjacent to playground equipment	Natural shade or constructed shade	
	All seating and tables	Natural shade or constructed shade	
	All BBQs	Natural shade or constructed shade	
	30% of the total ground cover	Natural shade	
	General area	Signage with sunsafe messages (see BEACHES)	

Public malls are popular in the central business districts of many cities and towns.

Several diverse activities occur in these locations. Protective shade should aim to be as aesthetic and practical as possible.

further considerations

See BIKEWAYS if natural shade is needed for footpath areas.

See OUTDOOR DINING if shade is required for dining areas.

See BEACHES for specifications for signage.

It is important to incorporate the recommendations from the 'Design Considerations for Effective Shade Provision' section when planning shade for this facility.



development applications

Council will determine the compliance deadlines for the provision of shade at new public facilities during the development assessment process.

public malls

Quantities	Location	Type	Consideration
Essential	All seating areas	Natural shade or constructed shade	Ensure sufficient space around garden beds to avoid damage to the pavement from roots.  In larger local governments, it may be feasible to adapt this approach throughout the CBD.
	Stage area	Constructed shade	
	50% of the viewing area surrounding the stage	Integrated natural shade and constructed shade	
Preferred	All seating areas	Constructed shade	
	Walkways	Integrated natural shade and constructed shade	
	Stage area	Constructed shade	
	50% of the viewing area surrounding the stage	Integrated natural shade and constructed shade	
	Shop front awnings as wide as allowable over footpaths	Constructed shade	
	General area	Signage with sunsafe messages (see BEACHES)	

Public utilities include ATMs, taxi ranks, ferry terminals and bus stops. These facilities are used all over Australia at various times of the day, by a variety of age groups.

At many of these locations, the waiting time can be considerable, especially during the peak UVR times.

Shade should be designated to protect as many of the people using each facility as possible.

further considerations

It is important to incorporate the recommendations from the 'Design Considerations for Effective Shade Provision' section when planning shade for this facility.

development applications

Council will determine the compliance deadlines for the provision of shade at new public facilities during the development assessment process.



public utilities

Quantities	Location	Type	Consideration
Essential	Areas where people congregate including all seating and designated waiting areas	Natural shade	Shade should not obstruct the view of oncoming traffic.
Preferred	Areas where people congregate including all seating and designated waiting areas	Constructed shade	Shade should also not obstruct pedestrian view.
	75% of adjacent waiting areas	Natural shade	
	VEHICLE FERRY TERMINALS	Designated waiting areas - constructed shade for the average size of the vehicle load	

Showgrounds are utilised for a variety of events from annual shows to sporting games. Each event however, usually results in patrons being exposed to UVR for long periods and therefore places them at risk of skin damage.

### further considerations

See BEACHES for specifications for signage.

See OUTDOOR DINING if shade is required for dining areas.

It is important to incorporate the recommendations from the “*Design Considerations for Effective Shade Provision*” section when planning shade for this facility.



### development applications

Council will determine the compliance deadlines for the provision of shade at new public facilities during the development assessment process.

## show grounds

Quantities	Location	Type	Consideration
Essential	50% of scattered seating	Natural shade	Shade should not hinder view.
	50% of all grandstand seating	Natural shade and/or constructed shade	Grandstands to face south if possible
	Walkways	Natural shade	Consider these design features to improve the shade protection for grandstands: <ul style="list-style-type: none"> <li>• Installation of adjustable screening hung vertically from the front of the grandstand roof.</li> <li>• Install side screening (particularly on the northern and western sides)</li> </ul>
	Official area - time keeping, scoring, etc.	Portable shade	
	Entry gates	Integration of natural shade and constructed shade	
Preferred	All scattered seating	Integrated natural shade and constructed shade	Awnings from market stalls and stands to create shaded walkways.
	All grandstand seating	Integrated natural shade and constructed shade	
	General areas	Signage with sunsafe messages (see BEACHES)	
	Official area - time keeping, scoring, etc.	Portable shade	
	Entry gates	Integration of natural shade and constructed shade	
	Walkways	Natural shade or constructed shade	
	Market stalls	Portable shade structures	



Skate Bowls are recreational activity areas popular with young people. Skate bowls usually cater for in-line skaters, skate board riders, BMX riders and people with scooters. Participation in these activities can take considerable amounts of time, so whether the facility is a large complex or a small half pipe, shade for both the participants and the spectators is essential.



further considerations

It is important to incorporate the recommendations from the “*Design Considerations for Effective Shade Provision*” section when planning shade for this facility.

development applications

Council will determine the compliance deadlines for the provision of shade at new public facilities during the development assessment process.

skate bowls

Quantities	Location	Type	Consideration
Essential	50% of available seating or general viewing area	Natural shade and/or constructed shade	Shade for non-participants off ramp waiting area may be portable.
	Official areas used during competitions	Portable shade	
	50% of rest or chill out areas	Natural shade	Grandstands to face south if possible
	Every 15-20 metres around the perimeter of the facility - with concentrations on the north and west sides to account for the sun's movement	Natural shade	Consider these design features to improve the shade protection for grandstands: <ul style="list-style-type: none"> <li>• Installation of adjustable screening hung vertically from the front of the grandstand roof.</li> <li>• Install side screening (particularly on the northern and western sides)</li> </ul>
	Official area - time keeping, scoring etc	Portable shade	
	50% of the queuing area near to the “take off” points	Natural shade and/or constructed shade	
	Separate supervision area	Natural shade or constructed shade	When planting shade trees, consideration must be given to the design of the facilities in order to maximise the shade protection.
Preferred	All spectator seating	Natural shade and/or constructed shade	
	All of the queuing area near to the “take off” points	Natural shade and/or constructed shade	
	Official area - time keeping, scoring etc	Portable shade	
	Separate supervision area	Natural shade or construction shade	
	100% of rest or chill out areas	Natural shade and/or constructed shade	
	Every 10-15 metres around the perimeter of the facility	Natural shade	

**NOTE:**  
**The safety of the participants must be a priority when planning and erecting shade structures on the ramp platforms.**

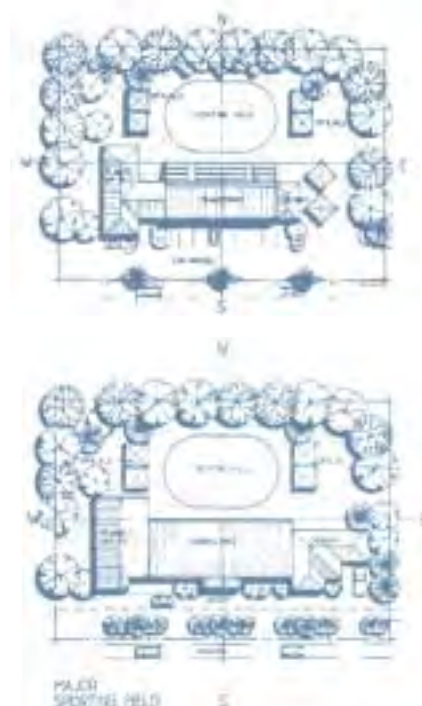
Sporting fields are traditionally wide open spaces with little or no consideration given to protective shade protection. While the facility is a large sponsored field or small suburban clubs, shade for players, officials and spectators is essential.

### further considerations

It is important to incorporate the recommendations from the “*Design Considerations for Effective Shade Provision*” section when planning shade for this facility.

### development applications

Council will determine the compliance deadlines for the provision of shade at new public facilities during the development assessment process.



## sporting fields

Quantities	Location	Type	Consideration
Essential	50% of spectator seating or general viewing area	Integration of natural shade and constructed shade	Shade should not hinder view. Grandstands to face south (if possible). Consider these design features to improve the shade protection for grandstands: <ul style="list-style-type: none"> <li>• installation of adjustable screening hung vertically from the front of the grandstand roof.</li> <li>• install side screening (particularly on the northern and western front)</li> </ul>
	** 100% of player marshalling area (eg. dugout)	Natural shade, portable shade or constructed shade	
	Official area - time keeping, scoring.	Portable shade	
	Entry gates	Integration of natural shade and constructed shade	
	15-20 metres around the perimeter of the ground	Natural shade	
	Outdoor eating areas	See the OUTDOOR DINING section	
Preferred	All spectator seating	Solid roof	** There is a requirement for 100% shade protection for players off-field as they are always present; however spectators often lack in numbers.
	** 100% of player marshalling area (eg. dugout)	Solid roof	
	All non-seating spectator area	Natural shade and/or constructed shade	
	Official area - time keeping, scoring	Portable shade	
	Entry gates	Integration of natural shade and constructed shade	
	General areas	Signage with sunsafe messages (see BEACHES)	
	Every 10-15 metres around the perimeter of the grounds	Natural shade	
Golf courses	100% spectator seating	Natural shade and portable shade structures for large events	



Swimming pools are situated in almost every Local Government area. Whether for sport or recreation, the users are exposed to UVR in minimal clothing.

further considerations

It is important to incorporate the recommendations from the “*Design Considerations for Effective Shade Provision*” section when planning shade for this facility.



development applications

Council will determine the compliance deadlines for the provision of shade at new public facilities during the development assessment process.

swimming pools

Quantities	Location	Type	Consideration
Essential	40% total area	Natural shade	Swimming lessons held in main pool area should have protective shade over area most utilised ie shallow end  Recommendations are based on three separate swimming areas - toddler lesson and general use pools. For pools where lessons and general use are the same, due discretion should be used to comprise protective shade.
	Canteen area	Solid roof	
	100% toddler pool and surrounding supervising area	Constructed shade	
	100% swimming lesson area and surrounding supervising area	Constructed shade	
Preferred	30% total general swimming pool area to be covered	Constructed shade	Portable structures for lesson times are possible  Solid roof materials which transmit light yet block UVR are effective at pool sites  Caution should be exercised when using natural shade in order to prevent increasing maintenance issues from leaves and branches falling in the water.
	75% total pool grounds	Integrated natural and constructed shade	
	100% Grand stands seating	Solid roof	
	Canteen area	Solid roof	
	100% toddler pool and surrounding supervising area	Constructed shade	
	100% swimming lesson area and surrounding supervising area	Constructed shade	
	30% total general swimming pool area to be covered	Constructed shade	
	Carnivals and events - officials and competitors	Portable shade	
	Pool staff to wear personal sun protective equipment	As outlined in appendix 2	
	Kiosk at pool to sell personal sun protective equipment	As outlined in appendix 2	
General area	Sun safety displays and signage		

## index for additional public facilities

This index cross-links other facilities to those listed in the Technical Guidelines.

PUBLIC FACILITIES	CROSS REFERENCE TO THE TECHNICAL GUIDELINES
AUTO TELLER MACHINES	Refer to PUBLIC UTILITIES
BUS STOPS	Refer to PUBLIC UTILITIES
EMPLOYEE MEETING AREAS	Refer to OUTDOOR DINING
FOOTPATHS	Refer to BIKEWAYS
FOOTPATH DINING	Refer to OUTDOOR DINING
FERRY STOPS	Refer to PUBLIC UTILITIES
OUTDOOR MEETING AREAS	Refer to OUTDOOR DINING
RETAIL AREAS	Refer to the 'Preferred' quantities of shade from PUBLIC MALLS
RACECOURSES	Refer to SPORTING FIELDS
SALEYARDS	Refer to SPORTING FIELDS
TOURIST SIGNS	Refer to LOOKOUTS
TAXI RANKS	Refer to PUBLIC UTILITIES
WATER PARKS	Refer to the SWIMMING POOLS and PARKS sections
WHARF FISHING AREAS	Refer to the BEACHES 'Essential' section

## section 3

### CASE STUDIES of ADOPTION and IMPLEMENTATION PROCESSES used by LOCAL GOVERNMENTS

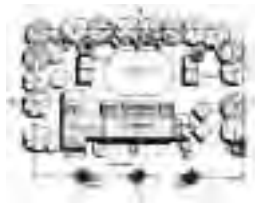
The following case studies are show casing the processes three local governments undertook to successfully adopt and implement healthy public policies (shade creation).

The Lismore City Council (LCC) Sun Protection Strategy is the key document that guides shade creation activities in the Lismore City Council. This is supported by the Environmental Health Activity Plan, which listed the implementation of the Sun Protection Strategy as a key line item with quarterly targets. The Sun Protection Strategy is a document that outlines three areas of priority action including:

1. Provision of shade in public facilities;
2. Development of complementary sun protection programs; and
3. Sun safe practices for Council workers.

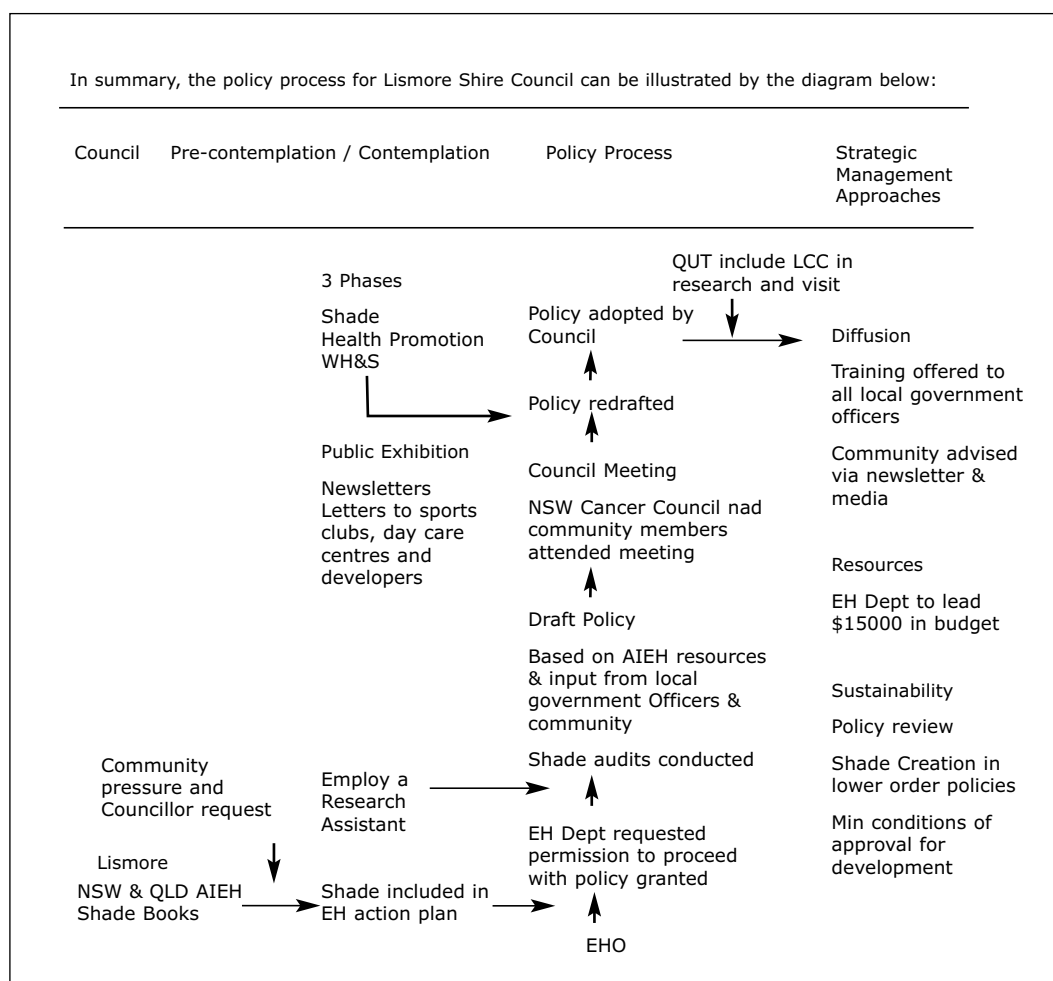
Other initiatives included a condition in the lease of Council facilities, for example sporting fields, that states "Lismore City Council who has the care, control and management of parks and public reserves encourages all organisations and sporting bodies to consider the harmful effects of ultraviolet radiation when scheduling games, outdoor events and festivals, particularly in the summer months. Where possible, outdoor games/events/festivals that are not under cover be scheduled to take place outside the hours of 9am and 3pm. Where this cannot be achieved, adequate shade and sun protection equipment should be made available to all participants where practical. For further information refer to Council's Community Sun Protection Strategy".

## case study 1 Lismore City Council



## a description of the policy process at LCC

In summary, the policy process for Lismore Shire Council can be illustrated by the diagram below:



Shade creation was considered to be a new initiative for LCC as 'previously nothing had been done about it'. However, the Environmental Health Department of the Lismore City Council recognised the importance of shade creation in 1994, when it was listed in the Department's Action Plan as a priority issue for 1995/96. A community petition of over 280 signatures requesting increased shade in the community was the major impetus for addressing the issue of shade creation.

Council employed a Project Officer to develop a draft shade creation policy. The policy was based on a document authored by the Australian Institute of Environmental Health, and was adapted to suit the local circumstances following consultation with other Council Officers and the community. The policy was comprehensive and covered shade creation, workplace health and safety issues and community health promotion activities.

On the 29th October 1996, the draft policy was submitted to Council for approval to proceed with placing the document on public display for a period of 28 days. Permission was granted. Additional dissemination activities included advertising the policy in the local paper, writing to all sporting clubs, child care centres and developers requesting feedback on the policy, and including information about the policy with rate notices. Four formal submissions were received from the community, however one submission was written on behalf of an entire community (Nimbin). All were positive and expressed support for the policy.

On the 28th January 1997, Council formally adopted the shade creation policy, and pledged financial support to implement it. A presentation by the NSW Cancer Society to the Council meeting supplemented the recommendation to adopt the policy.

Throughout the policy development phase, a number of additional staff members commented on technical content. The Officers most involved included the parks and Gardens Technical Officer, the Personnel Officer (WH&S issues), the Manager of Community Services and the Recreation Officer.

Once Council adopted the policy, a number of initiatives occurred that contributed to the successful implementation. These initiatives included:

- Offering training to Council Officers who would have a role in implementation;
- Ensuring the policy was a standing agenda item for monthly Senior Officers meetings;
- Dividing the policy into sections as relevant to specific Departments to enable ease of access and relevance;
- Conducting a series of shade audits to identify facilities at risk; and
- Creating a partnership between the local Public Health Unit and local Cancer Council Office to share resources.

Council offered \$15 000 to assist with implementing the policy.

### barriers identified that hindered the policy implementation

A number of problems occurred during the policy implementation process. These included:

- Failure of the policy to be placed on Council's Policy Procedure Register (now rectified);
- Unrealistic targets were set for the amount of preferred shade to be provided in sporting venues;
- Stage 2 of the policy titled "Development of complementary sun protection programs" had not commenced;
- Further education was required for developers regarding shade criteria assessment to ensure a holistic understanding and increase in compliance; and
- Lack of resources to implement policy.

## critical adoption factors for LCC

Outcomes of the shade creation policy are clearly evident within both the bureaucracy at the Council and within the community. All six local government Officers interviewed considered the LCC policy to be "a good policy" and outcomes varied from "including shade and sun safe considerations on booking forms for parks" to "developing an awning policy as a lower order policy under the shade creation policy", and "increasing tree planting at public reserves."

The following critical success factors are considered to be determinants in the success of LCC's Community Sun Protection Policy:

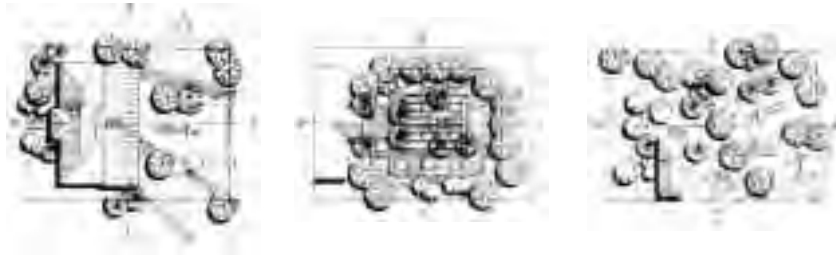
- A relevant and individualised policy that was developed in consultation with other staff;
- Political commitment to, and awareness of shade creation;
- Financial commitment to providing shade at public facilities;
- Driving force of one Department to ensure the policy became a reality;
- Council considered shade creation to be core business of local government;
- Training provided to all staff to ensure a high understanding of the policy;
- Community invited to provide feedback on draft policy;
- Including linkage groups to support the process of developing and adopting the policy;
- Community awareness and support for shade as a priority issue; and
- The timing was considered to be well suited to the current environment.

Nanango Shire Council (NSC) is located in the South Burnett Region, approximately 200 kilometres from Brisbane. The population is 9800, and the main industries include timber, grazing and dairy farming. The Tarong Power station has contributed to the local economy. Recently, many small acreage subdivisions have dominated the Nanango Shire.

NSC's Corporate Plan supports the development of a shade creation policy. NSC is striving to provide a safe, clean and healthy environment in which all people have equal rights and access to information and decision-making process is very positive. This together with the opportunity to participate in and share NSC's services and resources also supports the development and adoption of policies that create livable, healthy and safe environments.

NSC has an open space and recreation plan that identifies sporting facilities and supporting infrastructure. Shade has been identified as lacking in most sporting grounds.

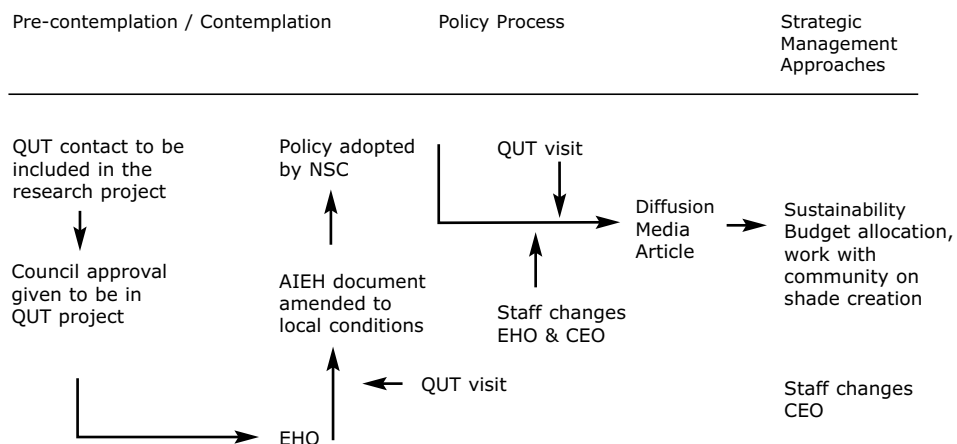
## case study 2 Nanango Shire Council





## a description of the policy process at NSC

In summary, the policy process for Nanango Shire Council can be illustrated by the diagram below:



A visit to NSC identified that Council did not have a shade creation policy. The EHO was identified as the Officer who would lead the policy development, and negotiations commenced about how to develop a policy that suited the Council. It was recommended that the NSC use the Australian Institute Environmental Health (AIEH) "Creating Shade at Public Facilities - Policy and Guidelines for Local Government" document as a basis for progressing the policy development process.

The EHO commenced work on drafting a policy and involved the Planner, Deputy Mayor and Parks and Gardens Technical Officer. There was some concern expressed by the EHO who stated that "the Councillors are sceptical of the policy and are not aware of its usefulness. You see shade creation is not a major election issue and it competes with many other priorities."

Yet, the process proceeded and existing community groups were contacted to provide input on local areas that required shade. One community group offered assistance through advocating for the adoption of the policy at the formal Council meeting, identifying areas in need of shade and providing advice on the most suitable type of shade. They suggested that shade creation was an important role for local government and recommended that parents and children be made more aware of the risks of shadecloth as an ineffective barrier to UVR.

The EHO recommended that Council adopts the policy and a written report outlining the benefits of the policy was also presented. On the 10th February 1999 the shade creation policy was adopted by Council.

Approximately one month later the EHO resigned. This position remained vacant for three months. Consequently, little action was taken on implementing the policy. One activity that was activated before his departure was a budgeting system that enabled playground equipment to be supplied at a facility during one financial year, with shade being provided at that same facility the following financial year. This dedicated Council to an ongoing financial commitment to provide shade at public facilities.

After the appointment of a new EHO, an appointment was made to discuss the implementation of the shade creation policy. These discussions were difficult, as the new appointee was reluctant to action such issues, citing shade creation as a low priority. This reinforced our hypothesis that one Officer can be critical in creating action within local government. Further consultation followed and the policy was elevated in importance, with implementation ensuing. A significant event at Nanango, was an on-site meeting with a community group who had adopted a park for the under 5s in the area. This facility was found to offer little shade to both users and supervisors. Negotiations resulted in Council matching dollar for dollar any funds raised by the group. Council also agreed to supply a manufactured shade structure over the most utilised piece of equipment, and trim a tree canopy and place a supervisory bench in the newly created shade. A number of other actions have since occurred under the policy including main street street-scaping and shade at the swimming pool. Diffusion of these "good news" stories occurred through the local newspapers. A number of additional diffusion sources were identified and included the staff newsletter, rates notice inserts, town noticeboard and through the library.

The policy will be reviewed every three years.

#### barriers identified that hindered the policy implementation

It is clear from the case study above that staff changes within this Council have had a significant impact on the implementation of the shade creation policy. Other concerns from the Council Officers included the lack of priority afforded to the issue and the level of resources required to effectively implement the policy. Simultaneously, a number of process barriers were identified by Council Officers and related to how best to apply the policy within the community. Some of these issues included:

- Selection of priority sites for shade and the development of criteria to resolve this issue;
- Cost of shade structures; and
- Lack of expertise in shade design and policy implementation strategies.

#### critical adoption factors for NSC

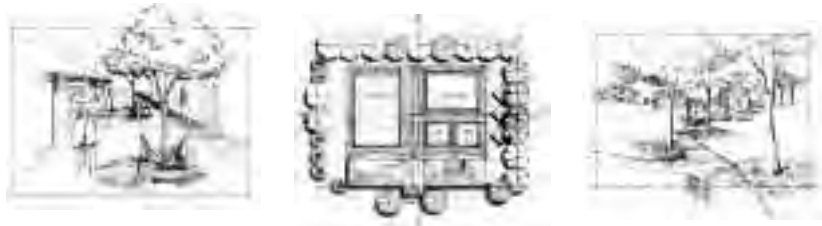
The following critical success factors were considered to be determinants in the success of Nanango Shire Council's Shade Creation Policy:

- Having one Department lead the policy development but incorporating input from other Officers who were identified as being involved in the implementation phase;
- Ensuring the Councillors see the policy as important in providing safe environments to reduce their liability and meet their duty of care; and
- Encouraging community support to enable shade to become a vote-winning issue.

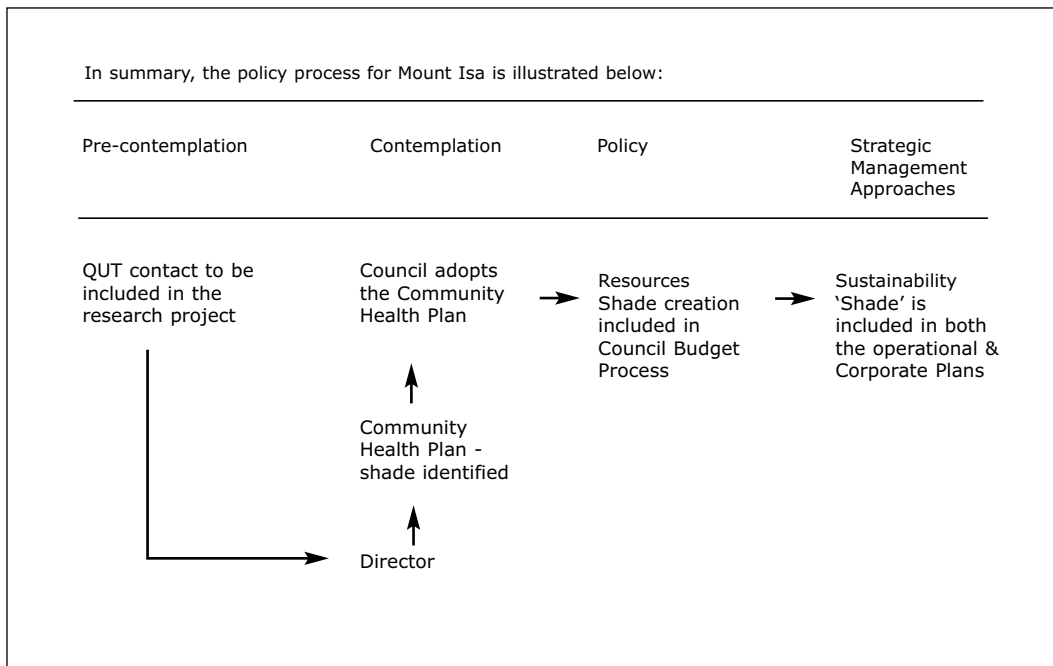
Mount Isa is the largest city in the vast inland region of Northwest Queensland and has a population of 22 500. The Isa is known as Australia's premier mining city and the mines employ many of the town's population. Tourism is a growing industry as Mount Isa is the gateway to outback areas such as Riversleigh and Lawn Hill.

Mount Isa City Council (MICC) originally identified themselves as not contemplating the adoption of a shade creation policy. However, an initial site visit revealed that although the Council had not officially adopted a shade creation policy, a number of parallel strategies were in place to sustain shade creation activities throughout the City.

### case study 3 Mount Isa City Council



## a description of the policy process at MICC



### council documents that support the development of a shade creation policy

Firstly, shade creation had been identified within the Council's Community Health Plan, which was adopted on the 16th February 2000. A considerable action plan on shade creation and increasing community awareness of sun safety issues was included within this Plan.

A further strategy to ensure sustained shade creation activity was the inclusion of shade strategies within the 1999/2000 Operational Plan. This commitment to creating shade was demonstrated by Council records that indicated an amount of \$32 000 had been spent on shade creation initiatives in the past 12 months. Additional evidence was presented in the form of a partnership between a local school and the Council, where a play station that was shared by the school and a local community park had a substantial shade structure erected.

Discussions with Council Officers involved how best to progress the issue of shade creation within the City, and whether a separate shade creation policy was required. This decision was left with the Council to resolve, but it was recommended that shade be considered as a minimum condition of approval for future planning development applications. The Director of Works and Property Services advised that the next step may be to draft a Code for shade to be integrated into the Planning Scheme.

## barriers identified that hindered the policy implementation

Despite MICCs success in gaining political commitment to advance shade creation activities within their local community, a number of potential barriers were identified that may hinder this process. One Officer was concerned about the cost of shade structures and the related public expectation once shade has been provided, stating that "there is a public expectation that Council can afford to provide shade to all facilities and these growing expectations are outstripping our ability to meet the needs." An additional barrier was the survival of trees in such a harsh climate and "although natural shade is preferred, it is not always feasible to supply it." Vandalism was also acknowledged as a barrier "kids have been seen sliding down the sails" and sails had been torn.

## critical adoption factors for MICC

The following critical success factors were considered to be determinants in the success of MICC's Shade Creation Policy:

- The fact that Mount Isa has a progressive Council;
- Community need is an important element in planning for council facilities;
- Having shade incorporated into the Community Health Plan;
- Being able to link the costs with direct community benefits; and
- The hot climate facilitates the need for shade, making it a community priority.

This case study demonstrates that there are a number of avenues to ensure shade creation is considered core business for local government. Including shade creation in a number of Council plans, such as a Community Health Plan, the Planning Scheme or Operational Plans can be just as effective as a dedicated shade creation policy.

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Thanks are expressed to QUT for enabling access to this information.

An L-shaped line graphic consisting of a vertical line on the left and a horizontal line extending to the right, framing the text 'section 4' from the top and left.

## section 4

APPENDIX 1,2 &3

GLOSSARY

ABBREVIATIONS

REFERENCES

Please Note: This method provides a rough means of ranking the equipment based on risks to the community. The risk scores derived should be interpreted with caution, as the process by which they are obtained is subjective and judgemental.

## appendix 1: equipment ranking system

When auditing existing facilities (refer to the Visual Shade Audit Tool) it is possible to identify many pieces of equipment that do not meet the 'essential' requirements in the Technical Guidelines.

It is understood that Council cannot address all these issues at once. For reasons of cost, if nothing else, it will be necessary to plan and prioritise the actions required.

Therefore to assist with this planning process there is benefit in identifying and dealing with the higher risk areas as a matter of priority. Once the audit is completed, Section 5 of the Visual Audit Tool suggests that it is necessary to provide an order to the upgrade process within the facility.

The following is one method to determine priorities for shade requirements within the public facility.

### step 1

STEP 1: Table 1 will help to identify the usage rate for each piece of equipment. For this step include the usage by both children under 18 years and adults in the calculations. (Eg. BBQs - moderate usage by adults (2) & low use by children (3):  $3+2 = 5$ : therefore the usage rate is 5)

TABLE 1 - THE USAGE RATE of the EQUIPMENT within a PUBLIC FACILITY

←		→	
Rate	Children under 18	Adults	Rate
9	High number of children	High number of adults	3
6	Moderate number of children	Moderate number of adults	2
3	Low number of children	Low number of adults	1
0	Not used at all	Not used at all	0

### step 2

STEP 2: Table 1 does not consider the duration that the equipment is used as research indicates that if unprotected skin is exposed to UVR for more than 10 minutes, skin damage will occur (QCF, 1997). If you consider that time is important in determining the usage rating then add a further 2 units to the amount derived from Table 1.

Some examples:

Supervision seat near playground equipment - low number of adults (1) and not usually used by children (0) however, the adults may be there for on average an hour so add (2): total  $1+0+2=3$ : therefore the usage rate =3.

step 3

STEP 3: Once the usage rate for the equipment has been identified then use Table 2 to prioritise the equipment within the facility. Determine the percentage of shade currently provided for each piece of equipment using the audit tool.

How much shade is available for each piece of equipment?

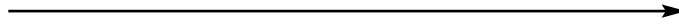


TABLE 2 - PRIORITY RANKING for the PROVISION OF SHADE within a PUBLIC FACILITY

Usage Rate	0%-25% Shade Protection	26%-50% Shade Protection	51%-75% Shade Protection	76%-100% Shade Protection
0-2	4	5	6	6
3-5	3	4	5	6
6-8	2	3	4	5
9+	1	2	3	4

The usage rate is determined by using Table 1

Some examples:

Supervisor seat, usage rate identified as 3 and 0% shade provided therefore the ranking = 3.

BBQ: usage rate = 4 and approximately 40% shade provided (identified during the facility audit) therefore the rank = 4.

step 4

STEP 4: From your calculations using Tables 1 and 2 you have determined a priority ranking for each piece of equipment. The following table (Table 3) will provide you a recommended timeline for the provision of shade appropriate for each priority ranking.

TABLE 3 - RANKING and CORRESPONDING SUGGESTED TIMELINES

Ranking	Suggested Timelines to provide shade for the individual pieces of equipment
1-3	Up to 12 months - these items of equipment are identified as high risk and should be shaded as soon as possible within that time.
4	12 - 18 months
5	18 - 24 months
6	24 - 30 months

Some examples:

\* Supervisor seat, usage rate identified as 3 and 0% shade provided therefore the ranking = 3: the recommended timeline for upgrading the shade is up to 12 months but could be addressed by relocating the seat under a shade tree near by.

\* BBQ: usage rate = 4 and approximately 40% shade provided (identified during the facility audit) therefore the rank becomes 4 and the recommended timeline for upgrading the shade is 12 - 18 months.

step 5

STEP 5: The ranking and suggested timeline to provide the shade are entered into the Visual Audit Tool and that can be used as an action plan for the upgrade of the facility.



## appendix 2 - model constraint code/design element for planning schemes

The following development requirements can be utilised by local government within their planning schemes by developing and adopting specific Codes for Shade Creation. This information may also be included into a Transitional Planning Policy or much broader Code (eg. Code for Climate Control, Shopping Centres) as a Design Element.

### design elements for a planning policy / broad constraint code

The information is to be used as a Design Element in a broader Code (eg. Code for Climate Control) or Transitional Planning Policy. Each Design Element commences with a concise Statement of Intent that outlines the aim. The following is an example of the wording that may be considered for a Statement of Intent for either a Planning Policy or a broader Code:

"To provide guidance to achieve a reasonable level of shade provision for public facilities to achieve desired environmental health outcomes."

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If you are developing a broader Code or Planning Policy, proceed directly to 'Draft Development Requirements' on page 92.

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### purpose statement for a specific code

The information is to be used as a specific Code. Each Code commences with a concise Purpose Statement that outlines the aim of each Code. The following is an example of the wording that may be considered for a Purpose Statement for a Code:

"The purpose of this Code is to support the achievement of a reasonable level of shade provision for public facilities to achieve desired environmental health outcomes."

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If you are developing a specific Code, continue through 'application', and then to 'performance criteria' and 'acceptable solutions' on the following page.

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### application

This Code applies to development that is any building work, operational work, reconfiguring of a lot or material change of use, indicated as Code Assessable or Self-Assessable. This information is found in the Table of Development containing the level of assessment in the Domain or Local Area Plans (use the appropriate term for your Council) in which the development is proposed to occur. The Application wording may vary from local government to local government. The following is an example of the wording that may be considered for a statement of Application:

"This Code applies to development indicated as Code Assessable in the Table of Development containing the level of assessment in the Local Area Plan in which the development is proposed to occur."

## performance criteria

Performance Criteria are the statements for achieving the either the Intent for a Design Element for a Planning Policy or Purpose Statement for a Code. See the Draft Development Requirements table for an example of the wording.

## acceptable solutions

The Acceptable Solutions illustrate ONE WAY of meeting the associated Performance Criteria. They should in no way preclude other solutions for meeting Performance Criteria. These are intended to provide designers and builders with the opportunity to develop a variety of design responses using the guidelines contained within the Creating Shade at Public Facilities - Policy and Guidelines for Local Government (2nd ed). See the Draft Development Requirements table below for an example of the wording.

### DRAFT DEVELOPMENT REQUIREMENTS:

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Development (being any building work, operational work, reconfiguration of a lot or material change of use)

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Shade Provision - built structures and natural shade

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Performance Criteria

Acceptable Solutions

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PC1: The provision of shade for public facilities must be able to provide a reasonable level of shade to:

\* improve the amenity and aesthetics of the facility; and

\* effectively filter or block UVR.

(Where not otherwise referred to in another applicable code.)

AS1.1: The quantities and the types of built and/or natural shade for public facilities is provided in accordance with the "essential" requirements in the TECHNICAL GUIDELINES FOR SHADE section contained within the Creating Shade at Public Facilities - Policy and Guidelines for Local Government (2nd ed) produced by QUT et al., 2001.

AS1.2: The design considerations for built and/or natural shade for public facilities complies with the DESIGN CONSIDERATIONS FOR EFFECTIVE SHADE PROVISION section contained within the Creating Shade at Public Facilities - Policy and Guidelines for Local Government (2nd ed) produced by QUT et al., 2001.

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The following disclaimer is recommended:

The above information is provided in good faith to the best of Council's knowledge. Applicants should satisfy themselves as to the applicability of other relevant matters.

It is recommended that a review of the 'essential' quantities of shade and suggested methods of shade creation for the public facilities detailed in the Technical Guidelines of the resource be undertaken. This is to ensure that Council will be able to meet the requirements indicated and that local needs are considered.

Further, it is suggested that the guidelines for each public facility from the resource be duplicated and made available to the designers and builders for their reference.

If further design details are required by designers, builders or local government officers, this information can be found within the Queensland Health publications:

- Shade for Public Pools
- Shade for Sports Fields
- Shade for Young Children
- Shade Creation Training Program (CD Rom)

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The information within this section has been compiled with the assistance of local government planning Officers and guidelines for the development for Codes and Planning Policies provided by the Dept. of Communication, Information Local Government and Planning.

## appendix 3: obtaining support from organisations

The following organisations may provide funding, resources and support for shade creation projects.

Australian Institute of Environmental Health

Australian Health Promotion Association

Commonwealth Departments for

- \* Health
- \* Environment

State Departments for

- \* Environment
- \* Housing,
- \* Local Government
- \* Planning
- \* Primary Industries
- \* Tourism
- \* Sport

Cancer Funds and Councils

Health Promotion Agencies

- \* Regional
- \* State
- \* National

Regional Health Authorities

OTHER ORGANISATIONS:

Service Clubs

Local Businesses

Schools

Universities

Sunscreen manufacturers

(be sure to choose Australian Owned and Made)

Shade structure manufacturers

(be sure to choose Australian Owned and Made)

Nurseries (Trees)

Surf Clubs

Terms used in this document have the following meaning:

### Basal Cell Carcinoma (BCC)

A skin cancer which appears as a lump or red, scaling area. It is red, pale or pearly in colour. As it grows, it does not heal and becomes ulcerated.

### Constructed Shade

Shade produced by means other than natural (Human - made).

### Diffuse Radiation

Reflected radiation from a surface.

### Melanin

A pigment of the skin which allows the skin to 'tan' or change colour. It acts as an absorber of UVR and is the skin's natural way of protecting itself from the sun. Dark skin people have more melanin than pale skinned people.

### Melanoma

The most dangerous form of skin cancer. If untreated, cells spread to other parts of the body. If detected early, it is 95% curable. It appears as a new spot, freckle or mole that changes colour, or becomes irregular in shape.

### Non-melanocytic Skin Cancer

Refers to cases of SCC and BCC, and is the most prevalent cancer in Australia.

### Solar Keratosis (Sun Spots)

Are not skin cancer, yet a warning sign of severe skin damage which may lead to skin cancer. It looks red and scaly and may sting. Appears on sun exposed skin.

### Solar Protection

Protection from exposure to the sun's Ultraviolet Radiation.

### Squamous Cell Carcinoma (SCC)

A skin cancer which is a thickened red, scaly spot which may bleed. Appears in sights often exposed to the sun. Grows over some months.

### Ultraviolet Radiation (UVR)

The sun emits three types of Ultraviolet Radiation, which are known as UVA, UVB and UVC. It is these rays which cause damage to the skin. UVR is not hot and does not affect the temperature.

## abbreviations

AIEH (Qld Div) - Australian Institute of Environmental Health (Queensland Division)

ARL - The Australian Radiation Laboratory

EHO - Environmental Health Officer

EST - Eastern Standard Time (Australia)

QCF - Queensland Cancer Fund

QUT - Queensland University of Technology

UPF - Ultraviolet Protection Factor

UVR - Ultraviolet Radiation

UVA - Ultraviolet band 'A'

UVB - Ultraviolet band 'B'

UVC - Ultraviolet band 'C'

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