

Landscape Management

for Education
Queensland Schools



Queensland Government
Department of Education and the Arts

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Introduction

The National Environmental Education Statement for Australian Schools quotes the United Nations Decade of Education for Sustainable Development 2005–2014 as follows:

“There can be few more pressing and critical goals for the future of humankind than to ensure steady improvement in the quality of life for this and future generations, in a way that respects our common heritage—the planet we live on ... Education for sustainable development is a life wide, lifelong endeavour which challenges individuals, institutions and societies to view tomorrow as a day that belongs to all of us, or it will not belong to anyone.”

The Department of Education and the Arts, Queensland, with over \$6.5 billion in state school infrastructure, has commissioned the preparation of the Landscape Management publication for Education Queensland Schools because of increased environmental awareness, curriculum and teaching requirements and also due to the impact of the extensive drought on water supply.

In conjunction with this Landscape Management publication for schools, ***Landscape Design Requirements for Education Queensland School Grounds*** have also been developed for use by school facilities planners, landscape architects and design teams. These design requirements for all new school developments and existing school redevelopments have been provided to ensure consistency with high performance outcomes.

As part of the increasing focus on greater sustainability with school facilities and infrastructure, this Landscape Management publication has been designed to provide principals, students and school communities with guidance on how to plan, design, maintain and initiate landscape projects for their school grounds. Together, these documents provide the pathway for Education Queensland schools to take up the challenge of improving their landscape and outdoor learning environment.

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Section one

What is Landscape Management for Schools?

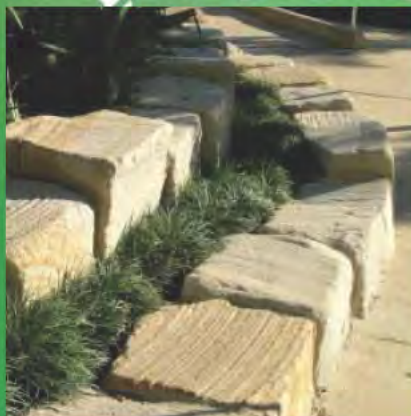
Background

Increased urban density and the requirement for a framework to educate on the environment has identified school grounds as an important community resource and place for learning about the natural environment.

The school ground is an integral part of school curriculum, teaching methods and scientific and social learning. Landscape designs that are engaging and responsive support the positive learning experiences for students.

“The concept of Learnscapes is well established in Australian schools. Learnscapes promotes and extends environmental awareness, knowledge and understanding within schools and their communities by emphasising conservation principles, biodiversity and ecologically sustainable development, sustainable management principles, and, the development of commitment to action and lifestyle change.”

(Learnscapes 2006)





Schools are required to manage their grounds within their allocated overall funding. As a prerequisite, schools are encouraged to prepare a **Landscape Management Plan** as a blueprint for the further development of school grounds.

A Landscape Management Plan is more than a mere beautification and landscape maintenance process. It involves planning and activities that directly link to the curriculum and the mechanism to introduce the principles adopted by Education Queensland for the design of school grounds.

The purpose of this Landscape Management publication is to:

- Convey the Department's vision, key objectives and guiding principles for the design of Education Queensland's school grounds.
- Outline the requirements for the preparation of the Landscape Management Plan.
- Suggest school projects which can significantly improve the presentation and use of school grounds.

The publication is intended to be used by principals, school staff and students, as well as by P&C Committees and other community support organisations, to ensure a holistic, yet practical, approach when considering improvements and maintenance of school grounds.

The guidance offered through this publication should not be considered as exclusive and should be considered in conjunction with the **Landscape Design Requirements for Education Queensland School Grounds**. Further, it is recommended that schools seek professional landscape advice relative to the complexity of a project and the landscaping issues at large.

Vision

The Department's vision for Education Queensland school grounds is:

... to provide an inclusive, creative landscape setting which fosters the students' intellectual and social interaction, and supports their physical development, whilst promoting sustainability of the environment.

Key objectives

The two key objectives for the design of Education Queensland school grounds are:

To provide a conducive environment which supports the intellectual, physical, artistic and social development of students, thus improving the learning outcomes for all key learning areas.

"Imagination is more important than knowledge.

For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution."

(Albert Einstein)

To provide a landscape setting which creates a 'Sense of Place', enhances the natural environment and instils a lifelong regard for nature.

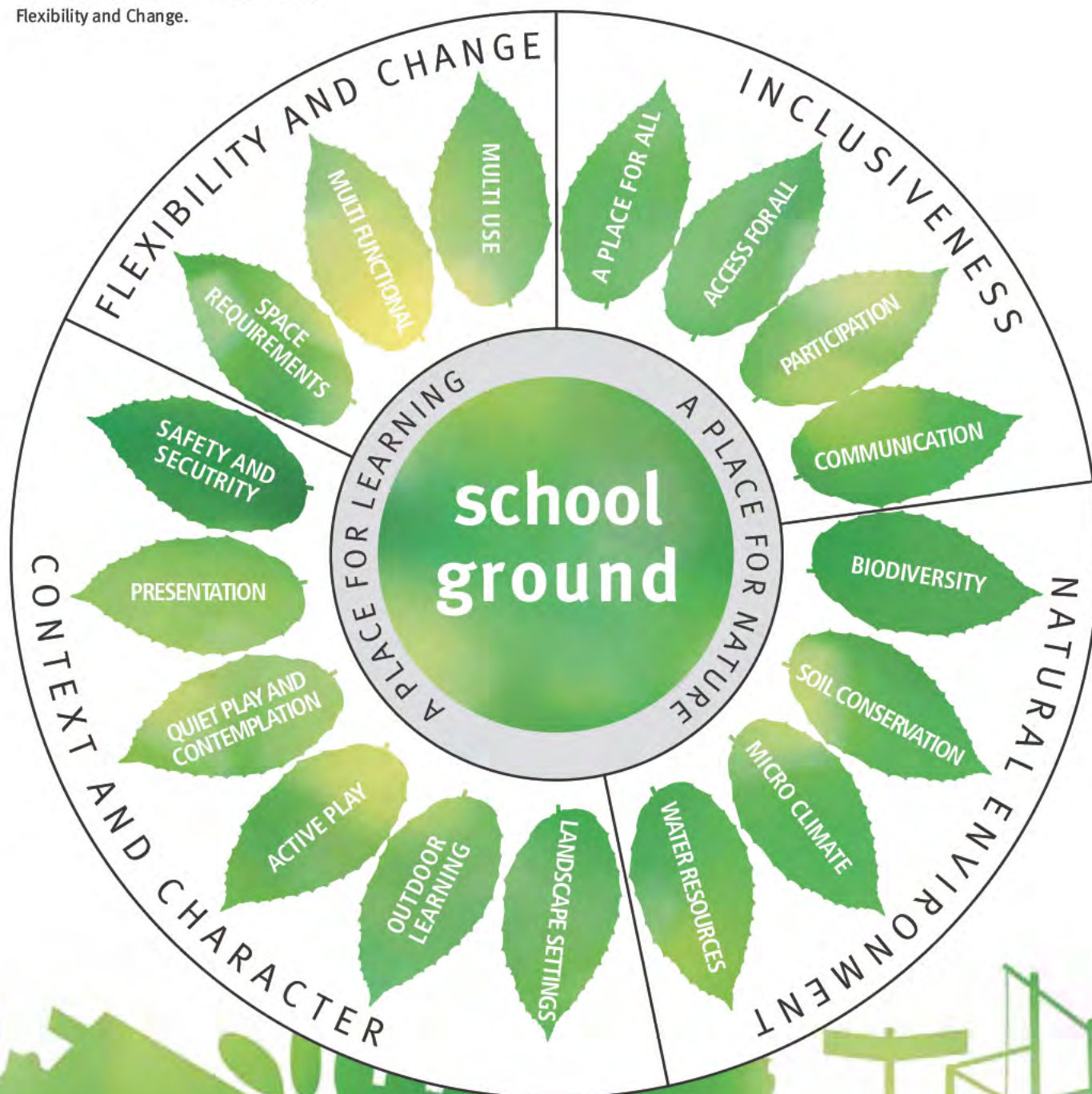
"When we are rooted to the place where we live, it is easier to see the whole, to see ourselves as part of the landscape. When we care enough about life to learn about our place, we understand more about our neighbours. We create the potential to nurture compassion for all beings."

(Thomashow 1996)



Key guiding principles

The four key guiding principles which underpin the landscape design and management for Education Queensland schools are Inclusiveness, Context and Character, Natural Environment, and Flexibility and Change.



INCLUSIVENESS

A Place for All

The school ground is a place for children/people of all ages and different social and cultural backgrounds.

Access for All

The school ground is a public/semi public space which may be used by everybody without restriction due to a disability.

Participation

The school ground is a learning place for cooperative and social interaction and the development of community spirit, pride and ownership.

Communication

The school ground is a place for meeting, inviting communication and interaction between students, teachers, parents and the local community.

CONTEXT AND CHARACTER

Landscape Setting

The landscape setting of the school ground is crucial to the contentment, wellbeing and imagination of both the children and adults who use it.

Outdoor Learning

The school ground is an integral part of school curriculum, teaching methods, and scientific, cultural and social learning.

Active Play

The school ground plays a very important role in the development of healthy children and must compensate for structured indoor learning and the need of children to move and be physically active.

Quiet Play and Contemplation

The school ground needs to contain outdoor areas for quiet play, relaxation and retreat.

Presentation

The school ground is an important area for presentation, expression and display of the school's image both internally and externally.

Safety and Security

The school ground provides a physical and social environment that reinforces positive behaviour.

NATURAL ENVIRONMENT

Biodiversity

The school ground can both demonstrate biodiversity through the planting of regionally endemic species and the creation of a place to learn about, experience and treasure the natural world.

Soil Conservation

The school ground provides a place to protect, conserve and showcase topsoil as a natural resource.

Microclimate

The school ground is a place to improve the microclimatic conditions of the built environment.

Water Resources

The school ground is a place to harvest water, improve water quality and showcase how to minimise the waste of water.

FLEXIBILITY AND CHANGE

Space Requirements

The school ground is a place that is large enough to accommodate all required functions and uses.

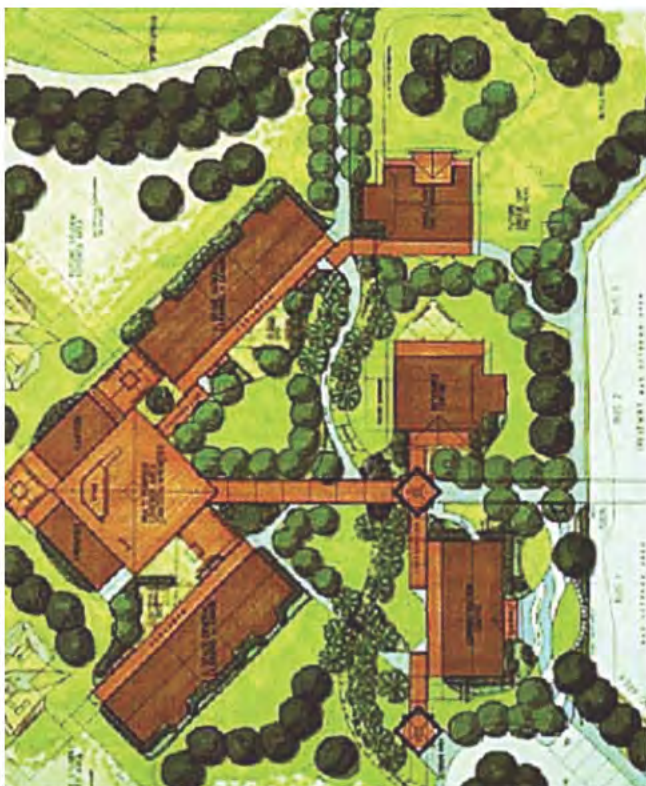
Multi-use

The school ground is a resource to be used by children and community members after school and on weekends.

Multifunctionality

The school ground is a place designed with multifunctional spaces which can be used in a flexible manner to accommodate the varying needs of the school community now and in the future.



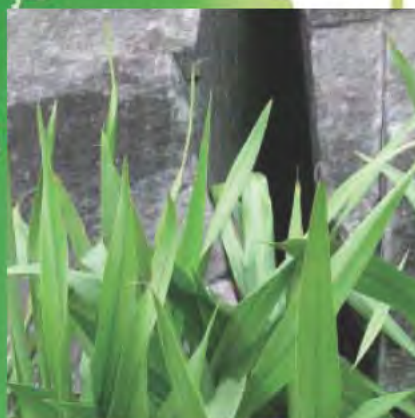
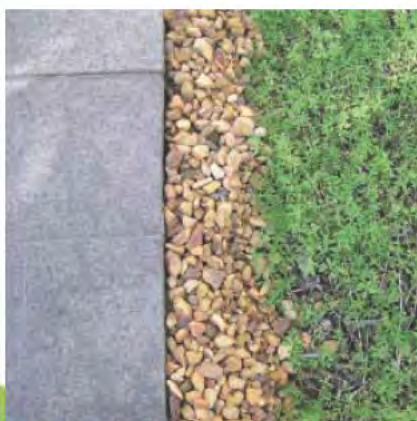


Landscape master plan

The Landscape Master Plan, as the overarching plan under which all other documents are to be derived, shows many layers of planning and design in one plan. It illustrates the overall concept and strategies for development and treatment of school grounds in relationship to surrounding buildings and environment, now and in the future. The Landscape Master Plan provides a framework, or a 'big picture', of the aimed, overall and continuing development of the school ground.

Every school ground is unique with different settings, size, access points and configuration of buildings. Despite the differences between each school, the implementation of a Landscape Master Plan should be based on the Department's vision, objectives and guiding principles for school grounds, to ensure a comparable standard for all Education Queensland schools.

Landscape Master Plans should have the ability to endure over time, allowing the school to evolve over many years until it reaches its goals. All proposed school improvements, including capital works projects, sporting facilities, new playgrounds, additional parking and classroom developments, should be considered within the context of the Landscape Master Plan and any associated School Site Master Plan.

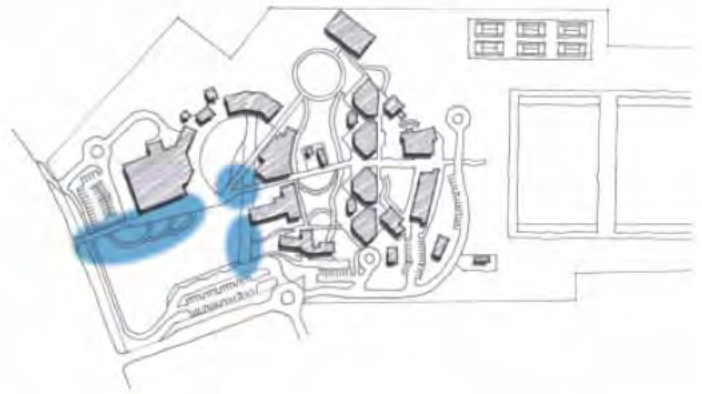


SCHOOL ZONES

Generic to all school grounds are areas that have certain functions and uses. These areas can be best described as zones. It is useful to identify and describe these zones as part of the site planning to minimise conflict and inform the design process about access, space, facilities and infrastructure requirements. Particulars about these zones inform the detailed design by ensuring that all uses and facilities have been accounted for and are in the appropriate vicinity within the school ground.

The detailed design of each zone will be finalised as the design concept develops. Each zone should not be assessed on its own but within the context of the overall Master Plan. Generally the school ground can be divided into following planning zones:

- Entry Zones
- Road Frontage Zones
- Active Zones
- Quiet/Study Zones
- Natural Zones.



Entry Zones

The main and secondary school entries are important areas for presentation, expression and display of the school's image internally and externally. For example, a friendly, well maintained and welcoming school entry conveys openness and can encourage visitors and interaction. Green edges can convey an environmentally conscientious school community.

Function and Use:

- Identification and hierarchy of school access points
- Presentation of school's image
- Welcome for students, staff and visitors
- Meeting and waiting areas.

Character:

- Friendly and inviting
- Clearly structured and well maintained.

Learning opportunities for Students:

- Considering way-finding
- Improving presentation.

Elements:

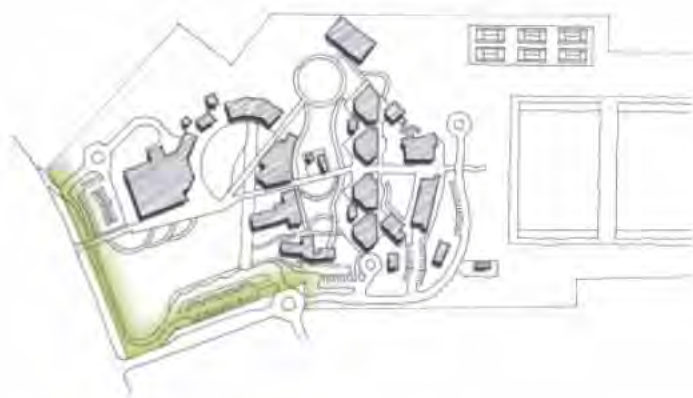
- Entry space with sufficiently wide entry paths
- Feature and shade planting
- Seating, notice board and signage
- Lighting
- Roofed shelter
- Art work.

Design Authority—Project Services



Design Authority—Project Services





Road Frontage Zones

Presentation to the wider community occurs along all school boundaries. The school ground should be recognisable to all as a place for learning and should be marked by a well defined edge that allows visual interaction between the school and local community. Road safety and traffic calming are important considerations.

Function and Use:

- Identification of school ground boundaries
- Visual connection between school and local community
- Presentation of school's image
- Interface between public and semi-public space
- Direction to school entries.

Character:

- Defined shady edges
- Visually open and inviting
- Functional planting
- Reinforcement/Reflection of local character
- Well maintained.

Learning opportunities for Students:

- Considering road safety and way-finding
- Improving presentation.

Elements:

- School boundary treatment (fence, planting, wall)
- Shade planting
- Pick-up/drop-off areas with roofed shelters
- Signage and seating
- Lighting.



Active Zones

Obesity in children and adolescents can be a serious health issue. The school ground plays an important role in the development of healthy children. Active zones need to provide adequately for the physical development of boys and girls and need to provide the opportunity for controlled risk taking.

Function and Use:

- Development of physical skills
- Formal and informal physical education
- Physical play and games
- School and community events
- Multifunctional—after hour use by local community
- Flexibility and multi-use i.e. multipurpose courts
- Opportunities for risk taking.

Character:

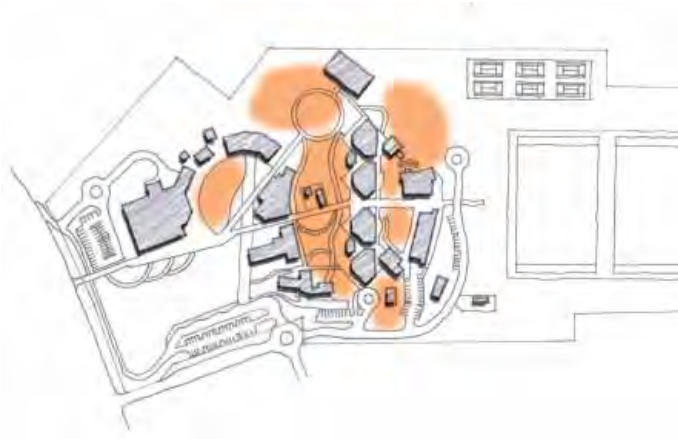
- Challenging and innovative
- Functional and sport oriented
- Shady edges
- Good visibility and sight lines
- Obvious way finding
- Multifunctional and multi-use.

Learning opportunities for Students:

- Improving motor skills and social competency
- Working in a team
- Achieving personal goals.

Elements:

- Sporting facilities including turfed ovals, running tracks, long jump, multipurpose courts, nets for cricket and softball practice, swimming pool
- Change rooms and storage facilities
- Water harvesting
- Play areas including play ground structures and hit-up walls
- Drinking fountains and taps
- Marshalling areas
- Shaded seating for large numbers.



Quiet/Study Zones

Quiet/study zones are the hub and centre of day-to-day outdoor school life. The landscape setting is crucial to the contentment, wellbeing and imagination of students and adults because it creates a 'Sense of Place' and ownership for the school community.

Function and Use:

- Passive play
- Eating
- Study
- Outdoor learning
- Socialising
- Relaxation, contemplation and retreat
- Meeting place for small and large groups.

Character:

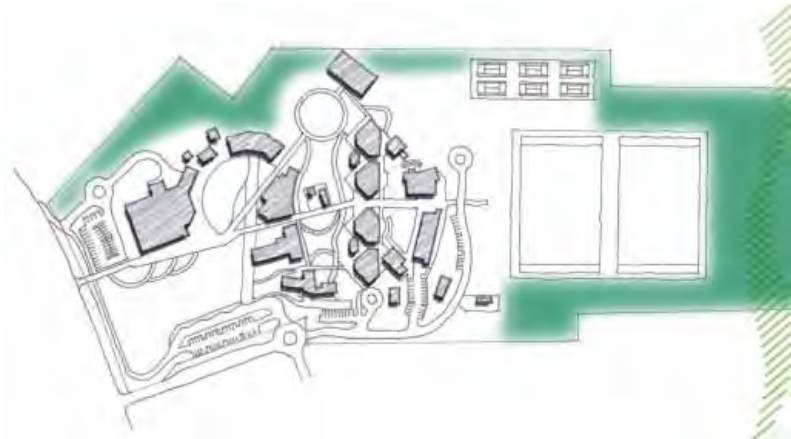
- Comfortable, protected, shady and green
- Interactive
- Sense of enclosure and remoteness
- Calming
- Quiet play
- Inspiring and creative
- Well maintained.

Learning opportunities for Students:

- Studying in groups
- Improving social competency
- Nature observation
- Contemplation and thinking
- Participation
- Sense of ownership and pride.

Elements:

- Outdoor learning areas
- Display of students' work
- Spaces and seating for individuals, small and large groups
- Variety of open and enclosed spaces
- Roofed shelter
- Water harvesting
- Shade tree planting
- Sensory planting
- A variety of creative seating
- Sufficiently wide pathways and adjacent paved areas
- Drinking fountains
- Artwork
- Performance areas.



Natural Zones

The development of natural zones within the school grounds is beneficial for students' learning, creates a 'Sense of Place', provides a balance between the built and natural environment and, above all, can lead to a lifelong regard for nature.

Function and Use:

- Place for nature and learning about ecosystems
- Interactive landscapes
- Artistic landscapes
- Areas for exploration.

Character:

- Stimulating, challenging and rewarding
- Quiet learning
- Close to nature
- Shady, green and teeming with wildlife
- Living and evolving
- Display of student's achievements
- Maintenance close to nature, not fussy.

Learning opportunities for Students:

- Learning about the past
- Working towards sustainability
- Applying survival skills
- Improved social competency
- Working studying as a team
- Observing and appreciating nature
- Achieving personal and team goals.

Elements:

- Local ecosystems and connection to external systems
- Local, native shade planting
- Cultural references
- Water harvesting
- Interpretation and signage
- Pathways and areas for seating of small and large groups
- Performance areas
- Project specific areas, e.g. bush tucker garden, sensory garden
- Shelters.

Design strategies

In addition to consideration of school ground zones, the following design strategies and facility provisions should be included in the Landscape Master Plan to aid the design process:

- Access and circulation
- Services and infrastructure
- Planting
- Paved areas
- Lighting
- Play areas
- Shade and natural cooling
- Outdoor furniture
- Outdoor teaching facilities
- Signage
- Sporting facilities
- Site drainage and water harvesting
- Artwork.

(Refer to overall Design Requirements for Education Queensland Schools for more guidance on facilities strategies and objectives)

Example site drainage and water harvesting strategy

This strategy

- Considers site drainage and water harvesting opportunities including the collection of roof and storm water for irrigation and cleaning, and, if appropriate, investigates bore water use.
- Aims to minimise the waste of water in the landscape by using waterwise plants which have proven drought tolerance and do not require irrigation after establishment. Where irrigation is required quality fittings, a moisture sensor, and drip irrigation could be used to minimise the waste of water. Regular maintenance inspections keep the irrigation system efficient.
- Maximises overland flow capture, makes collected water available to school ground vegetation and considers the use of Water Sensitive Urban Design Principles wherever possible. This includes the use of swales and buffer strips, bio-retention swales, on site infiltration, bio-retention basins, sand filters, aquifer storage and recovery, ponds and lakes. (Refer to BCC Final Draft Water Sensitive Urban Engineering Guidelines).

- Aims to improve water quality of storm water prior to discharge into creeks and rivers. Water improvement systems, such as planted or grassed swales, can produce 'mini' ecosystems which come to life when it rains. These swales can trap sediments and contaminants and significantly reduce pollutant discharge. These natural looking storm water drainage systems add to the biodiversity, visual amenity and recreation opportunities in the school ground.
- Celebrates water as part of the landscape. This might be achieved by creating rain gardens, sculpture and art, and, by minimising hard engineered structures. Link the celebration of water to local water festivals such as the Brisbane River Festival and 'Splash' festival on the Sunshine Coast.

(For full information on the Department's current water conservation strategies and school efficiency measures refer to the Strategic Facilities website: www.qed.qld.gov.au/facilities/strategic/guidelines/environmental/watermanagement-conservation.html)

Incorporation of design strategies in Landscape Master Plan

The merger of vision, zone planning and design strategies will result in the Landscape Master Plan. The Plan is the formalised preferred concept for the development of the school grounds and clearly illustrates the design intent and the spatial allocation of all functions and uses. This Plan is to be the basis for the detailed design.

All related plans which affect the school ground, such as the School Environment Management Plan and associated Water Management Plan or Water Efficiency Management Plan, should be viewed within the context of the Landscape Master Plan. This will ensure the planned and sustainable development of the school ground.



Landscape architects, in coordination with design architects and engineers, can provide a balanced design for a Landscape Master Plan by maximising indoor/outdoor relationships, by optimising the provision of infrastructure and services, and, by providing a landscape setting which is conducive to the contentment, wellbeing and imagination of both children and adults.

The Landscape Master Plan is an important document because it shows existing and proposed facilities for the near and distant future. Once established, the Plan can be useful for future projects, whether capital or minor works funded or school based through grants and sponsorship applications.

The Landscape Master Plan concepts should be freely accessible to students and users of the school grounds and needs to be reviewed and updated regularly as the school and school ground develops.

Implementation plan

The Implementation Plan shows the proposed stages for the realisation of the broad Landscape Master Plan over say a 5 to 10 year time frame. Stages are implemented as capital or other funding sources become available.

Preliminary costing for each stage and regular cost adjustment, in accordance with the consumer price index and escalation of building costs, is recommended to ensure delivery of quality education landscape facilities for the future.

Schools are encouraged to investigate a range of project funding options, such as private and corporate sponsorship, P&C education community donations, minor works funding allocations and Federal Community Water Grants.

Landscape maintenance plan

The Landscape Maintenance Plan:

- Lists the landscape elements to be maintained. Besides soft landscape elements such as planting, trees and grass, the list should include facilities and structures, such as play structures, paving, lighting, drinking fountains, seating, walls and sports facilities;
- Details regular maintenance tasks, for example, weeding of planting areas and the inspection of playground equipment;
- Stipulates the quality and frequency of landscape maintenance, for example grass cutting of ovals twice a week during main growing season or monthly inspection for playground equipment;
- Describes who carries out the maintenance (personnel versus contract); and,
- Includes a recurrent maintenance budget.

Regular maintenance tasks can include grass cutting, grass maintenance (coring, top dressing, fertilising) mulching of planting areas, trimming of hedges, fertilising, weeding, tree maintenance, replanting, irrigation inspection and maintenance, sweeping, rubbish removal, cleaning out of gutters and drainage pits, and, the regular inspection of playground structures and their required maintenance.

Regular maintenance saves time and resources, for example weeding out problem plants prior to flowering reduces future weed infestations and maintenance costs. The local government Weed Officers may assist in the identification of weeds in the school ground and their control.

School grounds can be maintained by trained school grounds staff or suitably qualified horticulturalists and landscape gardeners engaged by a school. Where significant, maintenance tasks may also be contracted to a landscape maintenance firm.



Section two



How to prepare a school ground project

In general, a school project, such as a vegetable or bush tucker garden, fits within the context of the Landscape Master Plan, has a defined scope, and is located within the school grounds. The project is implemented by a class or group of students under the guidance of a teacher. The content of the school project is often directly linked to the school curriculum and addresses specific learning outcomes.

Project details for a range of Learnsapes projects can be accessed through the Learnsapes Trust website, <http://www.learnsapes.org/>.

Larger capital works projects, such as a new play area or visual improvements to the school entry, should be the responsibility of a specially formed project team. This team is likely to be headed by the principal, key teachers and supported by the school's Parents and Citizens organisation, students and grounds person.

Before undertaking a project, schools should familiarise themselves with the *Landscape Design Requirements for Education Queensland School Grounds*, the Department's landscape vision, objectives and guiding principles. This is to include the planning and design process, associated costings and maintenance requirements. A Project Evaluation form is to be completed at the end of the project.

It is recommended school project teams, whether large or small, use the following steps as a project guide:

STEP 1—PREPARE A PROJECT PLAN

STEP 2—CARRY OUT LANDSCAPE AUDIT AND SITE ASSESSMENT

STEP 3—PREPARE LANDSCAPE DESIGN

STEP 4—OUTLINE ACTION PLAN AND IMPLEMENTATION

STEP 5—IDENTIFY MAINTENANCE REQUIREMENTS

STEP 6—WRAP UP PROJECT



Design Authority—Project Services

STEP 1—PREPARE A PROJECT PLAN

- Develop project vision and empower the whole school community to participate
- Identify and commit key personnel and volunteers, including those with special knowledge (landscape architects, project managers, engineers)
- Ensure that the project scope matches available people skills and approved financial resources
- Investigate funding sources (capital budget, P&C, sponsorship, special grants)
- Establish timeframe and budget
- Involve local community groups, such as the Aboriginal community or landcare groups, if appropriate
- State the vision, objectives and goals for the project
- List the educational learning opportunities and incorporate in the Project Plan
- Clearly define scope on an accurately scaled plan
- Identify key tasks
- Allocate responsibilities (ensure a person's skills matches their responsibilities)
- Describe the process (site survey, landscape audit, site assessment, draft landscape design, consultation and feedback, final landscape design, approval)
- Define consultation and student participation
- Identify external professional advice required
- Identify rules for operations and decision making
- Consider health and safety issues (insurance cover for volunteers, poisonous and irritant plants)
- List any further issues
- Sign off on the agreed Project Plan.

STEP 2—CARRY OUT LANDSCAPE AUDIT AND SITE ASSESSMENT

- Prepare an accurate site plan of the area, including levels
- Carry out a landscape audit and mark on accurately scaled plan. This is to include
 - » Existing vegetation (trees, planting, grass, weeds)
 - » Landscape features (landform, views, creek, rocks)
 - » Existing paving areas (pathways, courts, car parking, access road)
 - » Physical landscape features (stairs, walls, seats, signs)
 - » Existing facilities (buildings, sport, dental van, play areas, drinking fountains, taps, etc)
 - » Current use (circulation, buffer, grassed area, meeting place)
 - » Reuse of existing materials where feasible
 - » Problem areas
 - » Underground and above ground services including manholes and service pits
 - » User needs survey, desires and user patterns.
- Analyse information gathered in landscape audit in view of proposed project.

STEP 3—PREPARE LANDSCAPE DESIGN

- Consider project within the overall Landscape Master Plan for the school ground
- Consider shade and waterwise plants
- Develop a planting strategy to exclude weeds, harmful, irritant and poisonous plants, structurally unsound trees and materials that can cause allergic reactions e.g. peanut shell mulch
- Consider water resources (minimise waste, consider water harvesting and design for overland flow capture, and make collected water available to school ground vegetation)
- Show scope and extent of works on a scaled drawing
- List construction items and make a budget allocation
- Consult with the school community
- Incorporate feedback into the design
- Finalise and approve the landscape design.

STEP 4—OUTLINE ACTION PLAN AND IMPLEMENTATION

- List tasks in order of sequence
- Identify construction components by landscape contractor
- Specify contribution and participation by school community
- Prepare a timeframe for construction
- Order materials and organise a working bee for school community
- Engage landscape contractor
- Locate all services prior to construction (for example ring Telstra and request location of underground cables to be marked above ground)
- Consider health and safety requirements during all stages of implementation.

STEP 5—IDENTIFY MAINTENANCE REQUIREMENTS

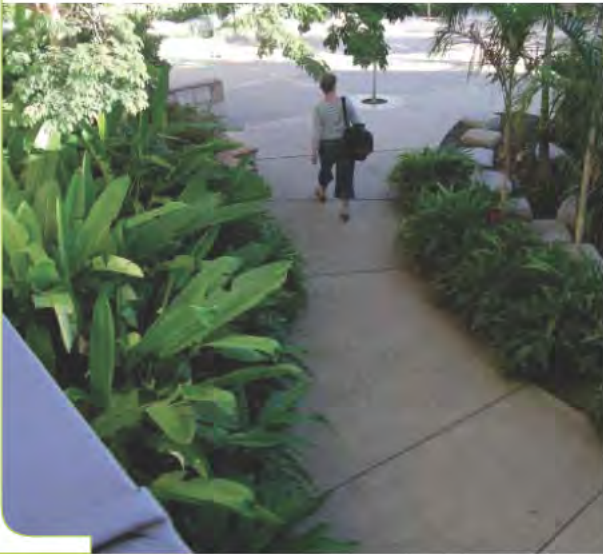
- Involve students and staff wherever possible
- Assign responsibility for maintenance
- List items and frequency of maintenance tasks
- Ensure budget allocation for the supply materials and fittings
- Record actual time taken to complete maintenance tasks and actual expenditure for materials and fittings.

STEP 6—WRAP UP PROJECT

- Complete Project Evaluation form
- Archive project information so it can be easily retrieved if required.

Section three

How to improve school grounds



By undertaking any of the following suggested school ground projects the school will be moving towards providing a conducive, learning environment in a landscape setting which creates a 'Sense of Place', enhances the natural environment, and instils a lifelong regard for nature.

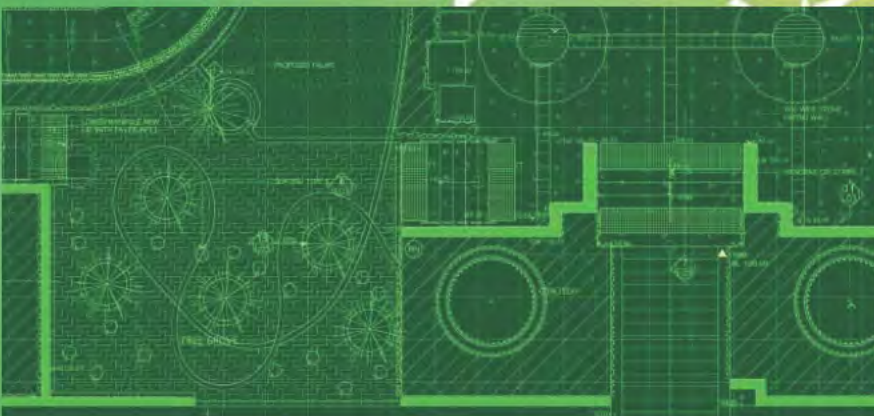
The school ground is a learning place for cooperative and social interaction and the development of community spirit, pride and ownership. Participation of students and staff in the design and implementation of school ground projects has been proven to be most beneficial for all concerned. Communication, collaboration, negotiation, organisation, motivation, observation, evaluation and social thinking are some of the skills learned in the process.

Below is a suite of possible projects that schools could embark on as first steps to developing Learnscapes in their school grounds. These school ground projects are intended to inspire the imagination of students, parents and teachers and make a significant difference in the visual presentation and usability of the school grounds. This list of potential school ground projects is no exclusive and can be extended or modified to suit the school's requirements.

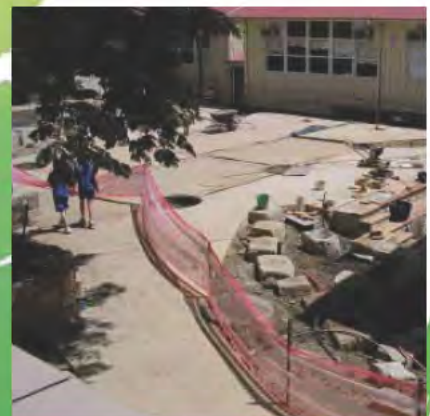
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Ironside State School quadrangle before (courtesy of Wilson Landscape Architects).



Ironside State School landscape drawing (courtesy of Wilson Landscape Architects).



Construction in progress (courtesy of Wilson Landscape Architects).

1. SEA CHANGE FOR QUADRANGLES

Quadrangles are the hub of the school outdoors and are used for assemblies, school breaks, special announcements and celebrations. Traditionally school quadrangles have been covered in hard paving, often bitumen, which results in a harsh, lifeless and hot environment.

Presently a 'sea change' for quadrangles is occurring in Australian schools. The bitumen is being ripped up and replaced with shade trees, planting, and a variety of seating, providing informal play opportunities during school breaks. Generally, these positive improvements are a proud display of the school's initiative and functioning community interest.

Benefits

- 'Sense of Place', pride, ownership and belonging
- Protection from the sun's ultraviolet rays
- Conducive learning environment
- Improved visual amenity
- Improved public image
- Improved access for all.

Learning Opportunities for Students

- An understanding of how environmental conditions can be improved for humans and nature
- Practising self-initiative
- Working in a team
- Applying principles of water conservation and harvesting
- Involvement in fund raising
- Recognising knowledge gaps and seeking professional help.

Elements

- Non-invasive shade trees
- Non-invasive planting
- Innovative paving
- Creative seating
- Walls and stepping stones
- Soakage and infiltration trenches
- Turf
- Drinking fountains and taps
- Artwork.



The completed quadrangle (courtesy of Wilson Landscape Architects).

Notes

- Seek professional help where required
- Ensure participation by students and staff

2. WELCOMING SCHOOL ENTRY

The appearance of the school and the school ground conveys the attitude and openness of the school to the outside world. A welcoming school entry statement is essential in making the first step towards a welcoming school environment which encourages visitors and interaction between the school and the local community. The school entry is an important area for presentation, communication and expression of the school's image internally and externally. Clearly defined access points with entry gates, seating, shade, feature planting and signage will foster a positive public image.

Benefits

- Enhanced public image
- Improved students' behaviour and attitudes
- Encourages communication and interaction.

Learning Opportunities for Students

- Recognising the importance of presentation
- An understanding of how environmental conditions can be improved for humans and nature
- Increased social competence.

Elements

- Entry gates
- Non-invasive shade trees and feature planting
- Signage
- Lighting
- Formal and informal seating
- Artwork
- Safety/security measures
- Access for all
- Waiting areas/meeting places for small and large groups.



Notes

- Consider the importance and quality of the landscape setting
- Consider principles for Crime Prevention through Environmental Design (CPTED)
- Consider areas for display of students' work
- Plant well-established non-invasive trees with adequate protective barriers/supports. Tree grates are recommended for paved areas
- Enhance the 'Sense of Place' by using local, native plants.

3. SHADY EDGES

Easy orientation, natural shade and protection from ultraviolet radiation are some of the many benefits derived from shade tree planting. It is believed that Australia has the highest incidence of skin cancer of any country in the world.

Shady edges to school boundaries, sporting fields and assembly areas provide good protection from harmful UV rays, are an ideal vantage point for spectators, and serve as waiting areas for parents and students.

Today, shaded marshalling areas are essential and double as meeting places and educational settings. Shady edges provide both an attractive option to the user and create a visually appealing setting. Green shady edges convey an environmentally conscientious school community.

Benefits

- Respite from heat
- UV ray protection
- Improved microclimate
- Shade waiting/meeting areas
- Scale and spatial definition
- Way-finding
- Place for nature
- Enhanced biodiversity.

Learning Opportunities for Students

- Improved social competence
- Working as a team
- An understanding of how environmental conditions can be improved for humans and nature
- Enhanced sensory perception.

Elements

- Non-invasive shade trees
- Adequate tree protection
- Seating, utilise earth shaping to provide seating area
- Drinking fountains and taps
- Overland flow capture points/water harvesting.

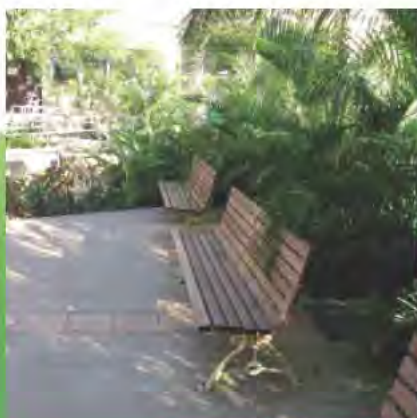
Notes

- Consider the density of shade, light requirements, sun angle and the ultimate size and characteristics of the shade tree
- Match tree characteristics to preferred shade protection
- Establish dry creek beds along the periphery of these spaces to filter the storm water runoff, supply additional water to shade trees and create a learning landscape
- Consider ultraviolet reflection from paving and other surfaces
- Ensure adequate sight lines under trees.

4. PLANTING FOR ECOLOGICAL SUSTAINABILITY

Biodiversity is the variety of life: the different plants, animals and micro-organisms, their genes and the ecosystems of which they are a part. Hosting a vast range of ecosystems, Australia is one of the most diverse countries on the planet. It is home to more than one million species of plants and animals, many of which are found nowhere else in the world. About 85 per cent of flowering plants, 84 per cent of mammals, more than 45 per cent of birds, and 89 per cent of inshore, freshwater fish are unique to Australia. Since European settlement, almost 70 per cent of all native vegetation has been removed or significantly modified, including the loss of about 40 per cent of total forest area and 75 per cent of rainforest.

(Australian Government, Department of the Environment, Sport and Territories 1996, 23)



Environmental awareness has increased significantly in the past decade. However, most of Australia's population lives in the cities. The ponds, forests, and creeks have become harder to find or reach. It is easier to surf the Net, play video games, or cruise the mall. It is easy to forget that we are biological beings. The best way to learn about the world around us is to experience it.

The school ground should provide a balance between the built environment and native flora and fauna habitats. Retention, enhancement and integration of existing ecosystems, such as a creek or bush land areas, should be encouraged into the design or redevelopment of the school ground. Ecosystems are costly to replace and are invaluable, not only for the environment and our future, but as a natural resource for teaching and experiencing.

School grounds are important hubs of activities for schools and their communities. There is an opportunity for Queensland schools to present landscaping for sustainability, including best practice weed management and non-invasive planting.

The opportunity for students to be in direct contact with nature increases awareness and can lead to a lifelong regard for nature. Existing trees provide shelter, scale and a window into the 'invisible' landscape (historic past). Mature trees take 20, 50 or 100 years to grow.

Benefits

- Enhanced biodiversity
- Improved microclimate
- Improved visual amenity
- Create place for learning.

Learning Opportunities for Students

- Enhanced sensory perception
- Appreciating nature
- Nurturing animals and plants
- Improved knowledge about weeds and harmful plants
- Improved social competence
- Working as a team and with local community groups
- An understanding of how environmental conditions can be improved for humans and nature
- Enhanced sensory perception.



Elements

- Plants native to the area
- Fauna habitat including breeding boxes
- Seating made from recycled material
- Earth shaping to provide spaces, interest and seating
- Overland flow capture points/water harvesting
- Areas for wildlife observation.

Notes

- Local landcare and bush care groups may help identify and supply suitable local plants.
- Consider sustainability principles such as weed management and the planting of locally native plants
- Build on existing landscape features, such as a creek or wetland
- Consider dry creek creation, arid landscapes, rainforest landscapes, butterfly gardens, worm farms, wildflowers, mini plant nursery, soil profile studies and sundials.

5. FOOD FOR THOUGHT

By growing food, children increase their appreciation and understanding of agriculture, nutrition and the way food is produced. Food production can focus on conventional vegetable and fruit crops or on specialised areas, such as Australian bush tucker. Conventional food crops can include root vegetable, herbs, edible flowers, stone and other locally grown fruit. Bush tucker can include a variety of herbs, spices, mushrooms, fruits, flowers, vegetables, animals, birds, reptiles and insects that are native to the area.

Bush tucker has become a popular food source which makes excellent jams, sauces, chutneys and desserts. Nuts are used in pies, sweets and breads. There are hundreds of different kinds of tasty fruits and berries in the bush. Many Indigenous groups have compiled lists of Indigenous foods that grow within their own areas and are a good source of information for schools considering bush tucker plants.



Courtesy of Landscapes Planning and Design

Food growing should be linked to the curriculum and may include live stock, such as chickens or sheep. Community and parental involvement is encouraged.

Benefits

- Life skills
- Can eat and share the results
- Attachment and sense of ownership.

Learning Opportunities for Students

- Enhanced sensory perception
- Improved knowledge about horticulture and nutrition
- Improved social competence
- Working as a team
- Understanding food chains
- Nurturing plants
- Maintenance skills and roster management.

Elements

- Traditional vegetable and herb garden
- Bush tucker plants
- Meeting places
- Drinking fountains and taps
- Earth shaping to provide seating
- Overland flow capture points/water harvesting
- Chicken coops
- Orchards.

Notes

- Thoroughly research the suitability of food crops and whether it is feasible in the school's locality
- Research local Indigenous foods.



Courtesy of Learnscapes Planning & Design



Appendix



Pro forma for project registration and project evaluation

After the completion of major school ground projects please evaluate project outcomes and refer this completed pro forma capturing a brief project history to your Regional Office for information and referral where considered exemplar and repeatable for other schools.

EDUCATION QUEENSLAND EVALUATION FORM FOR SIGNIFICANT SCHOOL GROUND PROJECTS			
PROJECT			
SCHOOL			
PRINCIPAL			
CONTACT			
PROJECT DESCRIPTION (provide a brief summary of objective):			
Budget			
Sponsorship			
Time frame			
DESIGN PERFORMANCE CRITERIA (indicate compliance with relevant criteria by ticking):			
INCLUSIVENESS A place for All Access for All Participation Communication	CONTEXT AND CHARACTER Landscape Setting Outdoor Learning Active Play Quiet Play/Contemplation Presentation Safety and Security	NATURAL ENVIRONMENT Biodiversity Soil Conservation Microclimate Water Resources	FLEXIBILITY AND CHANGE Space Requirements Multi-use Multifunctional
PERFORMANCE OUTCOME (Summarise outcomes and include where available related school website information, awards and site plan):			
Signed		Name	
		Date	

References

The provided references are not exhaustive and are for general information only. Further investigations and professional help should be sought where required.

POSSIBLE FUNDING SOURCES

Following funding sources can be explored:

- Arts grants
- Corporate Sponsorship
- Greening Australia
- Minor Works Fund
- Local Council
- School sponsorship funding
- Queensland Government, Department of Natural Resources, Mines and Water, as a possible source of funding for sustainable landscaping.
<http://www.regionalnrm.qld.gov.au/funding/>
- SGAP
- Federal—Investing in Our Schools Program (IIOS)
- Federal—Community Water Grants
- EQ Smart School Subsidy Scheme (SSSS).

STANDARDS, REGULATIONS AND GUIDELINES

The following standards, regulations and design requirements are to be observed, depending on project nature.

- Australian Standards
- Building Code of Australia
- Best Practice in Landscape Architecture and the building industry.
- Local Planning Scheme (recommended planting list, preferred street tree planting etc)
- EQ (Site) Master Planning Requirements
- EQ Design Requirements for Education Queensland School Facilities—including design supplements:
- ESD Design Requirements for Education Queensland Schools
- Landscape Design Requirements for Education Queensland School Grounds

WEBSITES

The following websites are not exhaustive but are recommended as an information sources on various landscape, plant and water management topics:

Department of Education and the Arts, Strategic Facilities intranet website on Water Conservation and Management
<http://iwww.qed.qld.gov.au/facilities/strategic/guidelines/environmental/watermanagement-conservation.html>

ACT SunSmart Policy
<http://www.decs.act.gov.au/policies/pdf/sunpro.pdf>

Australian Institute of Landscape Architects, for a list of practicing landscape architects
<http://www.aila.org.au>

Commonwealth Department of Agriculture, Fisheries and Forestry,
<http://www.affa.gov.au/>

Crime Prevention Through Environmental Design, (CPTED). Also, Crime Prevention Through Environmental Design Policy, Adelaide City Council
http://www.canterbury.nsw.gov.au/council/comm_prot/cpted.htm
<http://www.decs.act.gov.au/policies/pdf/sunpro.pdf>.

Gould League ('The Gould League, Australia's leading environmental education organisation has been educating children, schools and the general community about conservation and the environment for over 90 years.')

<http://www.gould.edu.au>

Greening Australia
<http://www.greeningaustralia.org.au/GA/NAT/>

Invasive species in Australia—Refer the Commonwealth Department of Environment and Heritage website below. For regional information on non-invasive plantings—Contact either Local Government, the Department Natural Resources, Mines and Water, the Environmental Protection Agency/ Queensland Parks and Wildlife or the Society for Growing Australian Plants
<http://www.deh.gov.au/biodiversity/invasive/publications/species/index.html>

Landcare Australia
<http://www.landcareonline.com>



Queensland Government, Environmental Protection Agency/
Queensland Parks and Wildlife Service,. (See 'search' e.g.
Australian WaterWise plants, water, recycled water, etc.)
<http://www.epa.qld.gov.au>

Queensland Government, Department of Natural Resources, Mines
and Water, (see 'search' e.g. weeds, managing water, recycled
water, etc). Regionally your local DNRM &W Branch is a great place
to work out what's going on in your area
<http://www.nrm.qld.gov.au>
<http://www.regionalnrm.qld.gov.au>

For weeds see the fact sheets and information available from the 'A
to Z listing' of declared weeds of Queensland. The site can also be
used to aid in Pest Management Planning, for example, for foxes,
wild dogs and feral cats, and, non-invasive planting information
http://www.nrm.qld.gov.au/pests/weeds/a_z_listing.html

South East Queensland's Healthy Waterways
<http://www.healthywaterways.org>

Spark School Park Program
<http://www.sparkpark.org>

The School Learnscapes Trust
<http://www.learnscapes.org>

water forever: Our South East Queensland Water Saving Initiative
<http://www.waterforever.com.au>

Weed identification
<http://www.weeds.org.au/weedident.htm>
[http://www.nrm.qld.gov.au/pests/news_publications/
publications/weed_id.html](http://www.nrm.qld.gov.au/pests/news_publications/publications/weed_id.html)
<http://www.weedinfo.com.au>
and local government websites

RECOMMENDED FURTHER READING

The following list of books has been used as reference material
to support the text for the Management Guidelines and is
recommended as further reading.

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Notes

Handwriting practice lines consisting of 20 horizontal dotted lines.



