

Early Childhood Education and Care Facilities – Design Standards

Part 2: Design Principles

- Master Planning, Architectural & Landscape



Government of South Australia
Department for Education

OFFICIAL



Part 2: Design Principles – Master Planning, Architectural & Landscape

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Introduction

Must be read in conjunction with the [Education Facilities Design Standards](#) for the full context of the department's education and care facilities design requirements.

This part outlines department requirements for the planning and design of early childhood education and care (ECEC) facilities for all new projects, major upgrades and refurbishment of existing facilities. It sets out the expectations and requirements for the delivery of ECEC facilities to ensure alignment to the department's 5 strategic asset management objectives that aim to deliver optimal whole-of-life value, see Figure 1.

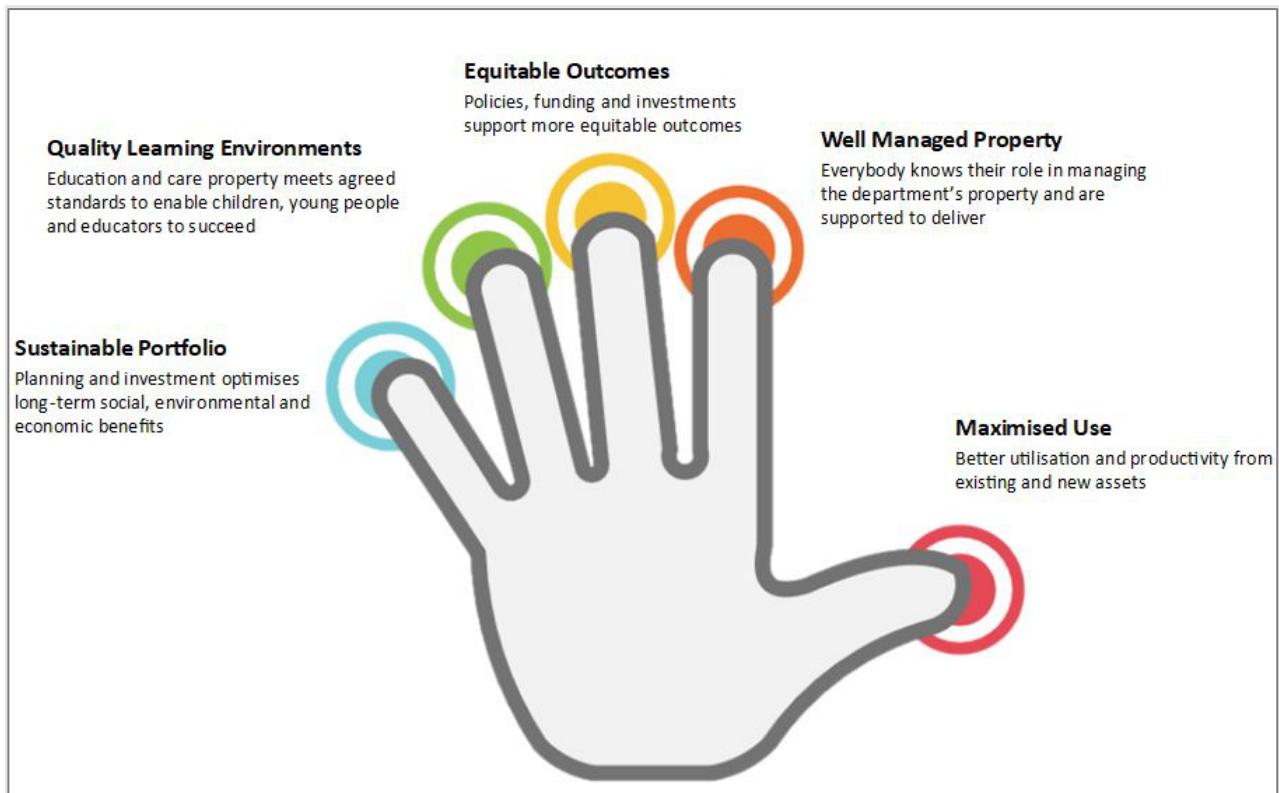


Figure 1: Asset Management Strategy - This diagram outlines the 5 key asset based strategic objectives that support the department's vision for public education.

Designs must reflect early childhood pedagogy principles ([Appendix A](#)) and capture what is valued for Aboriginal peoples, engagement with community, inclusion, sustainability and wellbeing. A design checklist is included in [Appendix B](#).

It is essential these principles are considered in master planning, architectural and landscape design to:

- create contemporary indoor and outdoor learning environments that **facilitate effective learning** and **support learner agency**
- design and fit-out indoor and outdoor facilities that **reflect and celebrate the cultural make-up** of the community
- **support a sense of community and belonging** both within the facility and the wider community
- design and fit-out equitable indoor and outdoor spaces that **allow all users to participate** in all experiences

- design and fit-out facilities that optimise long-term social, environmental and economic sustainability
- design facilities that are aesthetically pleasing, welcoming and **support the physical, emotional and social wellbeing** of the children, staff and community.

Departures from these require formal approval as outlined in the [ECEC Design Standards](#). A full [glossary of terms](#) is available in the ECEC Design Standards document.

Master planning and site planning

ECEC facilities should invite and welcome the local community through a well-positioned physical presence which considers the design and orientation of the building for accessibility.

Where facilities are co-located on a school site, the location and design of the ECEC should create a community precinct, encouraging linkages with the school and other community facilities to maximise ease of use and assist in managing the circulation between public and secure zones. They should also be positioned near the reception to year 2 learning communities to assist a seamless transition from preschool to school and provide developmentally appropriate opportunities to engage with their environment.

The building and outdoor areas should be welcoming, family friendly and culturally appropriate to encourage community use of facilities for a variety of purposes and programs. The design of indoor and outdoor environments should create spaces where all children, staff and families feel comfortable, safe, secure and included.

The site planning and building design of each project should consider provisions for future expansion to provide accommodation for additional enrolments/programs and support spaces including on-site car parking. These considerations must inform:

- relationships between modules and circulation through the planned facility
- location of the building and outdoor spaces on the site
- design of outdoor spaces and spaces between new and existing buildings
- pathways of underground services (water, sewer, stormwater, power, ICT)
- possible future site access points.

Future expansion must not detract from the design and functionality of the facility or the external urban interface and appearance.

For established sites, consideration should be given to any recent architectural planning that may have been undertaken, this may include a Learning Environment Opportunity Study (LEOS).

Site location

The site location for new ECEC facilities should consider:

- relationships between new and any existing facilities, including play and outdoor space
- integration of education and care, health, community and family services
- compatibility with nearby facilities and uses
- external traffic volume passing the facility at any time
- proximity to public transport, other community services and the general 'flow' of the community

- integration with the area's broader cycling and walking path networks, with safe and easy connection available to the main entry of the facility
- traffic flow to ensure safe vehicular access to the site and minimal disruption to surrounding traffic movement
- off-street access for vehicles for safe drop off and pick up of children, including taxi access and disability access spaces
- direct access to carparking for children and families and for the safety of staff who work after hours
- design to avoid conflict between pedestrian, cycle and vehicle paths
- undercover access to the building entrance from accessible parking spaces
- ability for a future covered drop-off area for approved department programs
- site and building access points for children, parents and community members considering safety and duty of care requirements
- limiting of any congestion at entrance and exit points to both the site location and building
- 'disability access for all' ensuring children, staff, families and community members of all abilities can participate in activities at the facility
- vehicular access to outdoor play space for emergency vehicles, deliveries and maintenance
- access to a natural environment and capacity to provide a variety of play experiences
- natural shade provisions to outdoor play areas
- privacy and security for children and neighbours (visual and auditory).

Site area

The site area for new ECEC facilities must meet, at least, the current building and outdoor learning area requirements briefed in the Area Schedule, and carparking in accordance with departmental policies and local planning authorities.

Unencumbered and encumbered spaces

Indoor learning and play spaces

The detailed Area Schedule provides the unencumbered indoor spaces for the briefed programs.

The unencumbered indoor space must be detailed in a schedule provided by the design team to calculate the maximum number of children that can be educated and cared for at the premises. This schedule is to be provided to the department for review with Preschools and Early Childhood Services (in the Schools and Preschools Division). Refer to the [Design Review Process](#) section in this document.

For existing facilities the area of a verandah may be included in calculating the area of indoor space with the written approval of the regulatory authority. A verandah that is included in calculating the area of outdoor space cannot be included in calculating the area of indoor space (refer to the [NQF website](#) for further guidance).

When calculating unencumbered indoor space, the following areas are excluded:

- passageways or thoroughfares (including door swings)

- kitchens
- toilet and hygiene facilities
- nappy-changing areas or areas for preparing bottles
- art sinks and water troughs
- areas permanently set aside for the storage of cots
- fixed storage and joinery
- sleep rooms
- areas or rooms for staff or administration
- other spaces that are not suitable for children, such as the laundry.

Kitchens must be protected by a door or gate with childproof latches to prevent unsupervised access by children.

Passageways or thoroughfares including door swings are excluded from play space calculations as they are unable to be used for learning and play activities. Where present, 1m² for each single door opening, and 2m² for double doors must be deducted from the total space as these are counted as unencumbered space. For sliding doors, calculate 1m x width of sliding door opening.

This applies to all thoroughfares into and between learning and play areas regardless of where the thoroughfare is located or how doors are configured. Where the thoroughfare is between children’s learning and play areas, 1m² is deducted from both areas because the single door impedes use of both areas. If the door is a double door, 2m² is deducted from both areas. See Figure 2 for an example.

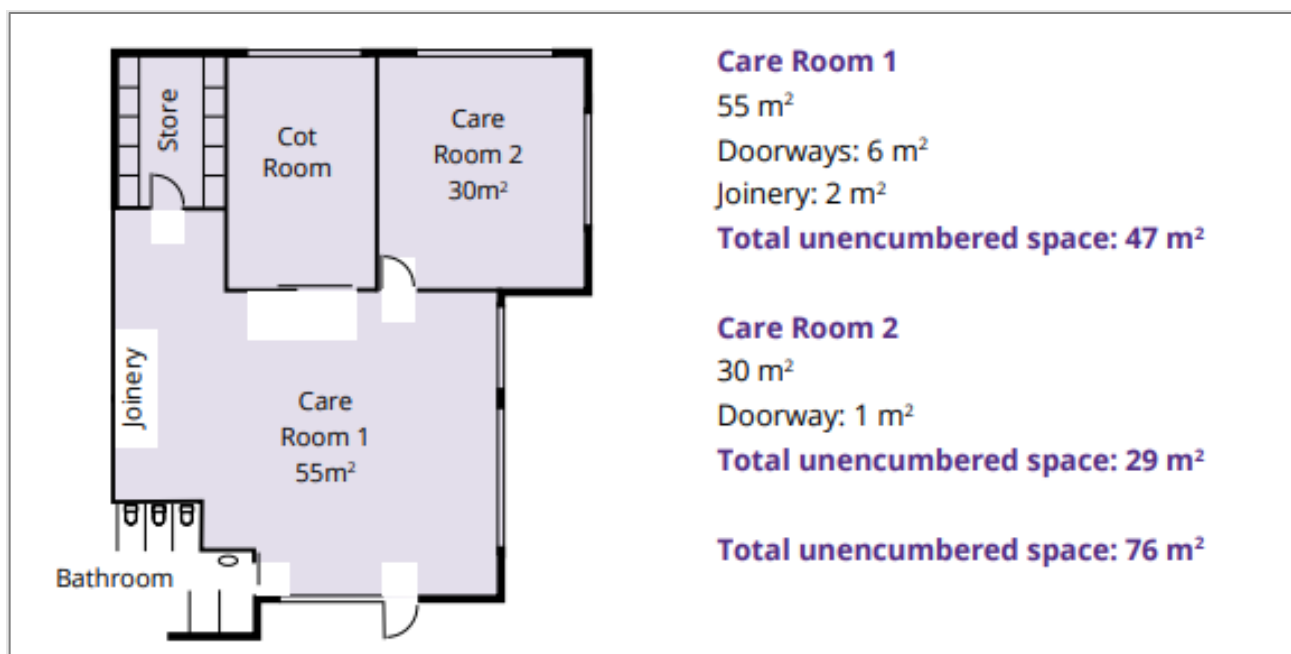


Figure 2: Unencumbered space (indoor) – This diagram from the [ESB Creating Safe Facilities booklet](#) shows an example of the calculation process for unencumbered space in indoor spaces.

Outdoor learning and play spaces

A minimum 7m² of unencumbered accessible and secure outdoor play space per child must be provided.

For existing sites where any verandah area is included in calculating the area of indoor space, it cannot be included in calculating the area of outdoor space (refer to the [NQF website](#) for further guidance).

Encumbrances include:

- fixed structures (excluding play equipment)
- storage sheds
- door circulation
- fencing
- carparking
- ramps and stairs
- building services plant and enclosures
- fixed joinery
- dense hedging and planting
- any other fixture that does not provide play opportunities for children
- any other space not suitable for children.

When calculating encumbrances in outdoor space for doors and gates, deduct 1m^2 for each single door or gate opening and 2m^2 for double doors/gates from the total space that can be counted as unencumbered space. For sliding doors or gates, calculate $1\text{m} \times$ width of sliding door opening.

This applies to all thoroughfares into and between outdoor play areas regardless of where the thoroughfare is located or how doors/gates are configured. Where the thoroughfare is between children's outdoor learning and play areas, 1m^2 is deducted from both areas because the single door/gate impedes use of both areas. If the door is a double door/gate, 2m^2 is deducted from both areas. See Figure 3 for an example.

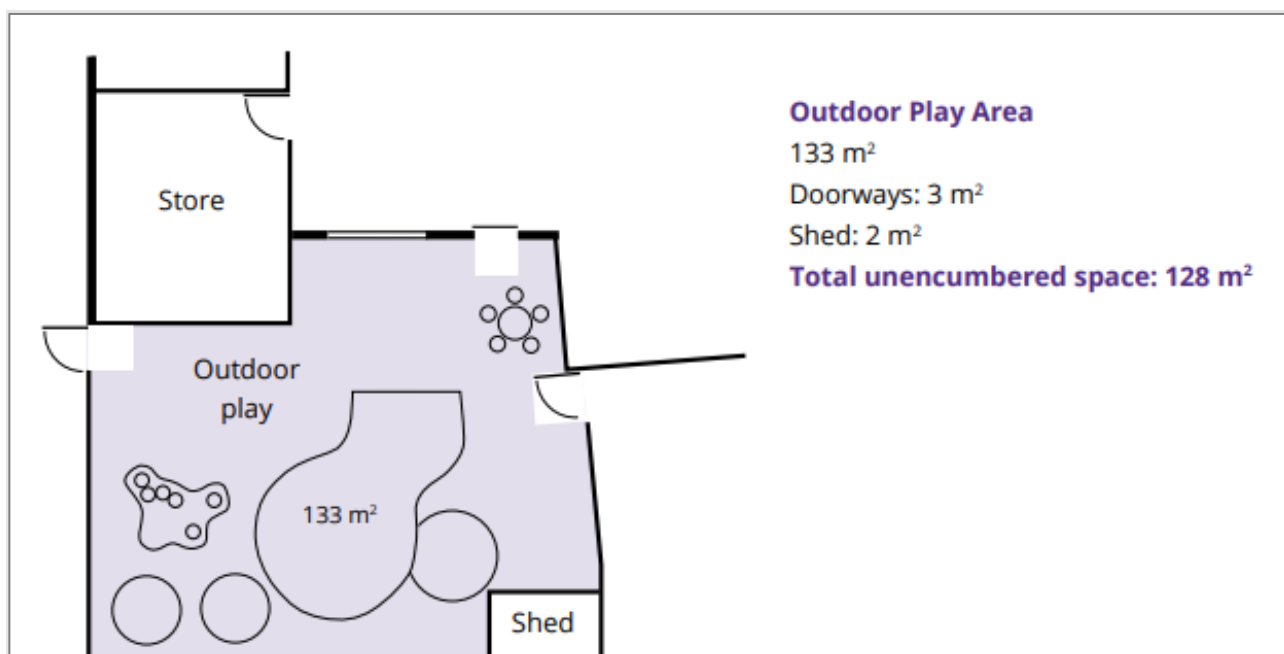


Figure 3: Unencumbered space (outdoor) - This diagram from the [ESB Creating Safe Facilities booklet](#) shows an example of the calculation process for unencumbered space in outdoor areas.

Site analysis

All projects which involve the construction of new facilities or redevelopments must undertake a site analysis to determine the feasibility of the project and identify any major cost considerations including:

- cultural and heritage
 - Indigenous heritage and native title
 - heritage buildings
 - European heritage sites of local and state heritage significance
- disability access and the learning and participation needs of community, staff and children with disability
- infrastructure services – water supply, power supply, sewerage, telecommunications, stormwater, security and stormwater treatment
- power supply – large projects may require an infrastructure upgrade of the sites transformer or main switch board which can increase costs significantly
- environmental
 - bushfire protection areas and relevant building requirements
 - current climate conditions and projections for a [changing climate](#)
 - native flora and fauna including significant trees
 - Phytophthora – a plant damaging pathogen impacting a wide range of plants, including native flora - Proteaceae (Proteas) and Xanthorrhoea sp. (grass trees)
 - short-term and long-term impacts on air quality
 - [water sensitive urban design \(WSUD\)](#) and biodiversity sensitive urban design
 - watercourses within or adjacent the project area
 - 100 year flood levels, minimum building floor levels and flood abatement measures
 - soil
 - type and the presence of rock, deep uncontrolled fill or other problematic conditions in the soil which may affect building footings and structure
 - contamination which may require management, containment and clean-up as per the *Environment Protection Act 1993*
 - acid sulphate soils
 - site assessment for contamination including a site history analysis and testing where earthworks volume >100t and/or site history assessment identifies a contamination risk
- noise and vibration impacts to any historical structures, existing buildings, neighbouring properties and any nearby operations that would be adversely affected by noise and vibration
- removal and decommissioning of existing underground oil storage tanks
- site hazardous materials register
- site access and traffic management (to be negotiated with the local council).

Disaster resilience

Floods and storm surges

To mitigate the impact of floods and storm surges:

- buildings should be in areas of the site not affected by inundation or overland flows
- building platform levels must be 300 mm or greater above the ground level for a 1% Annual Exceedance Probability (AEP) event
- overland stormwater flow paths must be designed to ensure that water does not enter buildings, incorporate WSUD into stormwater flow design and operations
- pedestrian and vehicle access must be designed to allow suitable access and egress and the use of buildings following a 5% AEP event
- permeable surfaces, vegetation and WSUD should be used to improve water penetrating the soil profile and increase the soils water holding capacity
- building foundations must be protected by a 2 m or 1.2 m wide impermeable walkway around the building which will promote water flowing into an adjacent permeable, vegetated or WSUD area.

Architectural design

Good design supports the learning and care needs for every child and provides an operationally efficient workplace for staff. This is achieved through an effective translation of the educational vision, framework, rationale and specifications into ECEC facilities that optimise the engagement and participation of all users. It is required to align with the ODASA [principles of good design](#) in regard to context, inclusivity, durability, value, performance and sustainability (see Figure 4).

<p>Context Good design is contextual because it responds to the surrounding environment, and contributes to the existing quality and future character of a place.</p>	<p>Value Good design adds value by creating desirable places that promote community and local investment, as well as enhancing social and cultural value.</p>
<p>Inclusive Good design is inclusive and universal because it creates places for everyone to use and enjoy, by optimising social opportunity and equitable access.</p>	<p>Performance Good design performs well because it realises the project potential for the benefit of all users and the broader community.</p>
<p>Durable Good design is durable because it creates buildings and places that are fit-for-purpose, adaptable and long-lasting.</p>	<p>Sustainable Good design is sustainable because it is environmentally responsible and supports long-term economic productivity, health and wellbeing.</p>

Figure 4: The ODASA principles of good design.

Urban Design

South Australian Urban Design Charter

The design of ECEC facilities should align with the principles of the [South Australian Urban Design Charter](#) (the Charter). The Charter identifies the following as essential qualities for the functioning of good public environments and making places that are valued and significant for those who use them:

- searching out community aspirations
- nurturing cultural expression
- reinforcing local character
- integrating a diversity of interest and expertise
- formulating concepts and testing ideas
- investing in quality
- being environmentally responsible
- combining community interest, public property and private initiative.

Application of urban design principles

Good urban design integrates ECEC facilities with surrounding communities through careful consideration of site planning, building form and scale, location of access routes, relationship to surrounding infrastructure and related uses and activities. Through good urban design close links between an ECEC facility and its community can enhance children's learning, health and development, public safety and contribute to social, cultural, economic and environmental wellbeing of the local community.

The following must be considered in the design of new ECEC facilities and refurbishment projects:

- site context in terms of cultural and historic value, present condition and needs of the current community, and potential future development to meet the needs of future communities
- invite and welcome the local community through the orientation of the building, the presentation of the building to street frontages and through the creation of obvious points of entry
- the main entrance should make a positive statement, be welcoming and clearly identifiable through signage and high visibility from the main direction of access.

Urban context analysis

Analysis of the urban context of sites for new ECEC facilities must consider the natural, cultural and built characteristics of the locality, key considerations include:

- the nature of surroundings beyond the site and its place within the neighbourhood
- potential linkages with nearby community facilities
- strategic objectives of the local government area
- existing and future connections between the site and surroundings and patterns of movement of pedestrians, cyclists, people with a range of abilities and vehicles
- cultural links to the site (such as Aboriginal peoples, early settlers, migrant communities)

- existing patterns of built form on and around the site including heritage elements and characteristics that make it a unique place
- if a co-located facility; the characteristics of the school site, the school's place within the neighbourhood and established patterns of movement to, from and within the site
- natural assets of the site including topography, vegetation, local ecosystems and biodiversity.

Cultural and heritage considerations

The design, development and re-development of new and existing ECEC facilities must preserve South Australia's cultural heritage for the benefit of the community and future generations. All planning, consultation, design and works must comply with the:

- [Aboriginal Heritage Act 1998](#)
- [Heritage Places Act 1993](#)
- [The Burra Charter](#)

Planning and design must:

- preserve all unique and significant natural and cultural features
- respect the significance of a place through consideration of its siting, bulk, form, scale, character, colour, texture and material
- should acknowledge connection to country and the land on which the ECEC facility is located
- comply with any existing Conservation Management Plan
 - where planning and design is required to meet departmental goals and is contrary to the Conservation Management Plan, public consultation must be undertaken, and the plan updated accordingly
 - where planning and design requires a Conservation Management Plan and one does not exist, a plan must be developed and approved prior to planning and design being undertaken.

ECEC facilities proposed for co-location on school sites the following registers must be checked to confirm if any of the existing facilities are heritage listed:

- Australian Heritage Places Inventory
- SA Heritage Register
- Local Heritage Register

These registers can be accessed through the [Department for Environment and Water's SA Heritage Register and Surveys webpage](#).

Advice from a suitably qualified heritage advisor may be required where a heritage place is affected by works. Advice is also available from the [Department of Environment and Water, Heritage SA](#) on matters relating to conservation approach and development approvals for heritage places.

[Refer DIT Guidenote G103 – Development Proposals for Heritage Assets.](#)

Universal design

The design of ECEC facilities must address all principles of [Universal Design](#) to create more inclusive environments.

Universal design, or participation for all, recognises there is a wide spectrum of human abilities including physical, perceptual, social and cognitive. The design and fit-out of indoor and outdoor spaces must facilitate:

- safe and secure access that is equally available to all users
- effective navigation of space regardless of experience, knowledge, language skills and cognitive capacity
- community access to shared facilities
- culturally safe and secure environments for all staff, children and their families
- effective supervision of child occupied areas
- children moving easily between spaces, including outdoor spaces
- convenient access to toilets and handwashing facilities.

Refer also to [DIT Guidenote G119 Disability Access Checklist](#) for general government building requirements.

Environmentally sustainable design (ESD)

Sustainable design can be achieved through consideration of social, economic and environmental impacts throughout the lifecycle of an asset. By embedding these considerations into planning and design through to construction and operation of education and care facilities, the department aims to create learning environments that promote equity, excellence, and efficiency.

Well-designed sustainable learning environments:

- enhance the physical, social and emotional wellbeing of all users
- facilitate interconnections between built and natural environments
- support educators to deliver positive learning outcomes
- use resources efficiently and economically.

The design and construction of ECEC facilities must achieve outcomes that promote wellbeing and learning, manage climate risk (climate change adaptation), and reduce emissions (climate change mitigation) in support of [South Australian Government Climate Change Actions](#) and departmental sustainability policies.

Where alternative or additional ESD initiatives to those detailed in [Part 4: Technical Specifications](#) are proposed, they must be designed in accordance with recognised standards and benchmarks, including Green Star and other similar schemes.

Performance solutions must demonstrate equivalent or improved sustainability through industry recognised tools and standards or as prescribed in the NCC.

Promote wellbeing and learning

The quality of internal environments can be improved through well-designed connection with outdoor environments. Physical connection between spaces as well as access to natural views, lighting and ventilation can improve the quality of experience and support wellbeing for learning.

There must be a strong cohesion between indoor and outdoor learning and play areas to support:

- effective delivery of contemporary pedagogy for the early years
- ease of movement that allows for the free circulation of children between environments
- visual connection for supervision and duty of care
- ease of access to children's toilets.

This can be achieved when:

- access to outdoor learning areas from the main activity area is through fully opening double doors with extensive glazing for indoor/outdoor viewing and line of sight for supervision
- windows are positioned to maximise adult supervision between all areas (indoor and outdoor) as well as maximising line of sight to all children's areas.

Design must ensure the safety of non-mobile children (under 24 months of age) and mobile children in outdoor learning areas by non-intrusive physical barriers that provide visual connection between the play spaces. Any barriers used shall be fixed in such a way that they are not moveable by children or able to fall over.

Designs should:

- prioritise natural light and views to give a sense of connection between internal and external spaces
- prioritise elements that support indoor air quality, with natural ventilation as a preferred method to promote air circulation
- consider site configuration that prioritises pedestrian movement and encourages healthy habits, active travel, incidental activity, and opportunities to experience natural elements of the site
- provide covered areas for protection from sun, rain and wind
- ensure building orientation, layout and materials integrate passive design features that will support comfort of occupants while also supporting efficient operation.

Manage climate risk

Facilities that are resilient and capable of adapting to changing climate conditions help to manage climate change related risks. Effective design can mitigate catastrophic weather-related risks such as bushfires or 1 in 100 year flood events, as well as more day-to-day challenges that can be expected from rising global average temperatures. Urban heat effects can increase the risk of heat-related illness in vulnerable populations, increase wear on built assets, stress vegetation and biodiversity, and drive increased electricity consumption.

ECEC facility designs must support resilience to a climate that is changing to ensure the health and wellbeing of all children, staff, families and communities.

The following documents provide information to support the creation of cooler, greener, wilder and climate-resilient sites:

- [Green Adelaide – A new approach to managing our urban environment](#)
- [Water sensitive urban design – Creating more liveable and water sensitive cities in South Australia](#)
- [Creating Greener Places for Healthy and Sustainable Communities – Ideas for quality green public space in South Australia](#)

Additional resources on planting, wildlife, coastal and native design are available from [Green Adelaide](#) and

local [Landscape Boards](#).

Solutions include:

- designing buildings according to the climate zone where it will be located (refer to the [Your Home – Design for Climate webpage](#) for more information)
- integrating passive design with consideration of existing vegetation and site topography
- taking a lifecycle assessment approach that considers both capital and operating costs, as well as wider public benefits over the projected life of the asset
- considering the thermal performance of materials, intended use of spaces, and landscaping to modify the external microclimate reducing heat island impacts and maximising the amenity of outdoor areas
- designing landscapes that support efficient water use, local ecosystems and biodiversity
- improving water efficiency through the appropriate selection and programming of equipment and fixtures.

Passive design

Passive design solutions to be incorporated include:

- aligning buildings with their longer axis set out in an east/west direction, maximising north facing facades and minimising east and west facing facades, to take advantage of thermal gains during winter, minimise thermal gains during summer and reduce the reliance on artificial lighting
- minimising areas of east and west facing glass and providing external shading to exclude direct sun light from spaces during warmer months and glare at all times
- maximising thermal insulation to improve internal comfort conditions
- maximising natural air flow from predominant wind direction and reducing reliance on mechanical systems through building orientation, window and door openings.

Adaptive water use

Adaptive water use strategies include:

- planning for the landscape to function to enhance amenity, reduce heat island effects and support optimal building performance (this can be achieved through incorporating permeable surfaces, high density plantings and WSUD)
- use of alternative water supplies for irrigation to reduce pressure on drinking water supplies while supporting vegetation management to reduce urban heat effects (where a mains water supply is present, plumbing works are to allow for the mains water supply to be used as a backup supply in the event the alternative water supply is not available)
- connecting to recycled water schemes where available for irrigation of turf and non-edible gardens (refer to the department's [recycled water connections procedure](#))
- planning for the installation of infrastructure to harvest rainwater to supply water for irrigation of turf and non-edible gardens
- incorporating permeable surfaces into designs to allow natural infiltration of water into the soil and reduce radiant heat from paved surfaces.

Ecological resilience

Building ecological resilience includes:

- prioritising BSUD in the planning and design of landscaping
- maximising the retention of existing vegetation on site and prioritising native Australian species suitable to the climate zone for new landscaping
- integrating additional vegetation into the project, including high density plantings (local [landscape boards](#) can provide guidance on suitable native plant species)
- minimising, as much as possible, earthworks and working within existing topography
- planning to connect with any surrounding greenspaces in the community and creating or linking to green corridors.

Reduce emissions

Reducing greenhouse gas emissions from government operations will be necessary to achieve the State Government's net zero emissions ambitions. Reducing emissions now will reduce climate change related risks in the future.

To reduce emissions from ECEC facilities construction and operations, designs must consider use of low carbon materials in construction and fit-out, prioritise low emissions building energy, and seek opportunities to support a circular economy.

Building energy

To reduce emissions from building energy consumption prioritising the following is recommended:

Energy source

- planning should consider all-electric buildings to utilise South Australia's low emissions electricity supply and support the Government's sustainable buildings requirements.

Building envelope

- optimising building envelope performance is foundational to energy efficiency
- consider opportunities for the building envelope to be airtight, use of high R-value insulation in roofs and external walls, and double-glazed windows
- to reduce heat load and the need for artificial cooling, consider inclusion of vegetation that provides shade, materials that reduce heat transfer across the building envelope, light coloured roofs, and minimising impermeable surfaces.

Efficient plant and equipment

- plan for integration of high efficiency mechanical/electrical systems (lighting, HVAC, and other building systems) with passive design features to optimise building performance and minimise ongoing operating costs
- maximise energy efficiency through the appropriate selection and programming of equipment and fittings for the space and planned use of the site
- consider installation of building management systems capable of automated electricity demand management to manage peak electricity demand.

Renewable energy

- consider options to allow for roof orientation, pitch and roof mounted building plant that would facilitate installation of solar photovoltaic (PV) panels, and areas sheltered from weather that could be suitable to install battery energy storage systems, either as part of the works project or in future retrofits
- where building envelope, plant and equipment supports efficient operation, consider installation of renewable energy systems (solar PV and batteries)
- recommend sizing solar PV systems to be capable of reducing peak electricity demand by 30% compared to a reference building, with a 20% improvement targeted as a minimum
- where a solar PV system is capable of generating 50% or more of expected annual consumption, consider installation of a battery energy storage system to reduce electricity export to the grid and allow for discharge of stored electricity to further reduce peak electricity demand.

Embodied carbon

Embodied carbon is the greenhouse gas emissions released during the lifecycle of materials, including extraction, manufacturing, transport, construction, and disposal.

Design should:

- consider retrofitting existing built environments, where viable, rather than demolition and replacement
- prioritise low-carbon and post-consumer materials in construction and fit-out
- undertake lifecycle assessment of key building materials (such as concrete, steel, building reuse, structural timber) to understand the environmental impact reduction potential of low carbon material options
- seek to limit landfill waste from construction and demolition
- where possible use recyclable materials.

Driving a circular economy

Strategies include:

- ensuring waste management infrastructure is sufficient to support multi-stream waste separation and that sites included in the scope of the department's [waste management contract](#) will have suitable facilities for service under the contract
- designing waste service provision areas to be accessible to staff and cleaners
- prioritising materials with South Australian content for construction and fit-out
- planning for materials removed from the site to be sorted and routed to appropriate waste streams.

ECEC facilities - architectural design principles

The planning and design of new ECEC facilities must provide a family friendly environment, support for an integrated approach to program provisions and a high-quality facility, considering the specific needs of infants, toddlers and children prior to school age.

The following general design principles should be considered:

- design facilities and landscapes of which children, educators, parents and community can be proud, and which also enhances neighbourhood amenity and urban structure
- design an inclusive built environment through universal design principles (design for all) to enable users of all abilities – children, staff, and visitors - to participate and fully engage in all experiences and activities
- beyond function, architecture should excite and educate the imagination and create spaces that are engaging, diverse and inclusive, culturally rich and enjoyable places to be
- ensure form, scale, mass, volume, appearance and sustainable design principles work together (the scale of buildings should be appropriate to the age and size of the children)
- the facilities must deliver and sustain physical environments and user comfort conditions that are conducive to learning, including the layout of spaces, materials selections, indoor air quality, daylight provision and control, thermal comfort, and acoustic engineering amongst others
- provide inviting physical and natural environments that are culturally appropriate and support the integration of health, education and care and family services
- provide a welcoming entrance, with clear signage, which provides a safe location and access for parents to deliver and collect children
- create inspiring spaces for learning and play to create a positive environment for children of all learning needs (the design is to demonstrate a co-ordinated selection of natural colours, finishes and materials)
- provide family friendly spaces for parents to gather and meet and involve families in the life of the facility ensuring they feel comfortable, happy, valued, safe and secure
- provide separate, shared and multi-use spaces for children, families and service providers including being able to meet the needs of changes to services for the community
- support effective visual supervision of all children’s areas from any location (supervision of all children at all times is essential and is to be achieved while still giving children the opportunity to “feel” secluded)
- separation of child learning and play spaces from the entry for security reasons and program integrity
- maximise natural light and access to views to the outdoor play areas and external environment
- flexible spaces to cater for changing use patterns and needs during the day, week and year, changing age group numbers, program requirements and different local needs over time, including the capacity to subdivide areas for small group activities and smaller spaces that provide flexibility for quiet activities, sleep and rest
- support free flow between indoor and outdoor learning and care environment (minimise traffic corridors through child activity areas and ensure that pathways are clear and unobstructed)
- artificial lighting must enhance the overall ambience, avoid an institutional feel and provide a secure environment (a balance of direct and indirect lighting should be used to minimise glare and allow for the prominent display of children’s artwork on walls, support the adaptability and flexibility of learning settings and highlight key functions).

Building quality, materials and lifecycle

The design must have an emphasis on quality, robustness and sustainability through building detailing, material selection and installation that are:

- designed to achieve appropriate levels of service, buildability, and durability – they need to be fit for purpose
- selected on a whole-of-life basis and aimed at low on-going maintenance cost
- designed with consideration to the potential effects of climate change and variability on the building and building fabric which must mitigate any impacts
- installed for weather tightness and in accordance with all relevant building codes and standards
- free of areas capable of harbouring vermin and pests
- free from premature failure, cracking, decay, rust, fractures, splits, holes, delaminating, spalling, mould growth and hazardous materials
- where exposure to sunlight and UV rays presents a risk of degradation, there must be protection in the form of shelters, canopies, covers, or conduits as appropriate
- uniform and consistent in their respective colours and textures
- able to operate freely and smoothly with continued and anticipated use for which it is intended
- free of trip hazards and any other hazards such as sharp edges, corners or protrusions on surfaces, joinery, fixtures and fittings
- designed to consider the make and model of any existing fixtures and fittings to minimise maintenance costs and the duplication of parts and servicing contracts.

Design and selection of materials, fixtures and building detailing must also consider the needs of children to ensure:

- no finger, head or limb entrapment hazards in material and fixture detailing
- no hazards at children's eye and head height
- ease of use of fixtures and fittings that require child operation
- mounting heights are appropriate for child access or to prevent child access when required
- secure locks, latches and catches are mounted to prevent child reach and operation
- building services plant and equipment area located external to child accessible areas or, where permitted in these standards, within secure locked enclosures out of reach of children.

Acoustics

Good acoustic design is essential for both staff and children's engagement, health and wellbeing. An appropriate level of acoustic comfort relative to the function and use of spaces is to be provided. Open plan spaces must have a high level of acoustic absorption for the space to be functional for multiple users, increase speech intelligibility and provide learning benefits for children.

The following acoustic priorities are to be addressed in the design:

- control sound transfer between spaces

- control room reverberation (echoing) within spaces
- control ambient noise levels arising from mechanical plant, equipment or external noise (such as transportation or adjacent properties).

Acoustic design must consider the:

- construction of internal walls that divide rooms
- type, positioning and sealing of doors
- treatment of adjoining spaces that are linked with an operable wall
- surface treatments of walls, floors and ceilings within learning and care spaces as well as in areas adjoining learning and care spaces such that the design provides a cohesive and structured treatment
- visual and acoustic treatment and design of air ducts or other ventilation paths that connect spaces
- attenuation of noise intruding into learning and care, sleep and rest, administration and community spaces from mechanical services, other equipment, or external sources such as traffic, rail transport, aircraft, or rainfall onto the roof of a building.

Refer to [Part 4: Technical Specifications](#) for further information.

Colours and textures

Colours and textures of materials throughout indoor and outdoor learning and care environments need to support children to feel safe, relaxed and calm to support wellbeing for learning.

The considered use of surface treatments, colour and texture will enhance and define spatial structure and help support the function of spaces. Interior finishes and colours can assist children in wayfinding and give visual clues to the function and intended use of spaces.

Apply contemporary colour and sensory theory to design palettes with the following considerations:

- predominantly neutral and natural colour palette with small amounts of colour in items that can be readily changed such as upholstery and loose furniture
- incorporate natural materials to support wellbeing through connectivity to the natural environment
- material palette that supports the display of children's work
- colours that create positive emotional and physiological connections
- use materials and colours to create wayfinding and differentiate spaces and functions.

Indoor areas – National Regulations

National Regulations:

[84A](#) and [84D](#) Sleep and rest

[107](#) Space requirements: indoor space

[109](#) Toilet and hygiene facilities

[110](#) Ventilation and natural light

[111](#) Administrative space

[112](#) Nappy change facilities

[115](#) Premises designed to facilitate supervision

The quality of the internal environment has a profound influence on the engagement, confidence, wellbeing, health and safety of children. The design of ECEC facilities must be in line with the requirements of the National Regulations and support children to feel a sense of belonging, safety, and security; which promotes wellbeing for learning.

The design should allow children to move easily and freely between indoor and outdoor learning and play areas and have a strong sense of connectivity to enable efficient operation and maximise supervision and duty of care across the facility.

Internal environments must be designed to maximise daylight and views, with appropriate levels of sun and glare control. Daylight must be able to be modified to suit different modes of use and be provided to all rooms occupied by children during the day including all indoor learning and play areas, community spaces and sleep rooms. Natural ventilation and light with access to views that promote interconnection with natural outdoor spaces must be exploited in the design of internal spaces. Natural light must support the internal facilities, including the main entry areas, and be used as a medium for cognitive way finding.

Safety and security in design

The following principles are to be considered to maximise the safety and security of all users of the facility:

- implement Crime Prevention Through Environmental Design principles
- provide clear and logical street access to the main entry
- eliminate unwanted roof access; avoid external structures and works of less than 1800mm height (such as fences, balustrades, equipment cages including air conditioning units, screen walls, shade structures, retaining walls, covered walkways, and the like) that present climbing opportunities and access to roof areas
- incorporate separation of vehicular and pedestrian traffic
- promote good supervision of indoor and outdoor learning and play areas by staff
- provide safe egress for staff from consulting and meeting rooms
- provide clear and logical external signposting
- ensure safe and easy access to and from car parking areas including after hours
- provide adequate security lighting to building perimeters and external paths of access including compliant carpark lighting.

Signage and wayfinding design principles

Associated with the design of internal and external environments a complete signage design must be developed that:

- provides clear directions, instructions or advice for all users
- clearly identifies destinations, functions and key spaces
- is fully integrated into the design of the buildings and external environments.

The design of the built and natural environments should support the signage through pedestrian layout, use of colour and material referencing.

Signage must be installed that helps children engage with unfamiliar environments through clear and easy wayfinding. Maximise the use of graphics and pictograms to assist pre-literate learners.

Key issues to be considered include:

- clearly defining points of entry into the building and circulation through the building
- defining functions (learning and play areas, sleep, toilets) using materials selections, colour coding, graphics
- using sight lines to show destinations
- using signs (text, graphics, colour coding) at decision points.

Storage

The distribution of accessible, well designed and efficient storage through all learning and play areas must be considered. Resources must be available when and where needed, and securely stored away when not in use.

Storage designed to be accessed by children should promote independence, self-selection and ease of access to toys, activities and personal belongings.

Storage solutions may include dedicated storerooms, and fixed or mobile joinery that may be used to define learning and play spaces.

Storage must be provided both within and near outdoor learning and play environments to facilitate the transfer of learning resources, and to provide space for the storage of moveable equipment that will be used to activate outdoor areas (this could be through the use of sheds or external cupboards incorporated within the building structure).

Storage must be provided for spaces detailed in [Part 3: Generic Functional Briefs](#).

Landscape design principles

General principles

Outdoor learning and play landscapes are integral parts of the learning environment and need to deliver 'spatial experiences' within the external environments that support multiple learning and teaching modes. Design of the internal and external environments must be developed simultaneously to promote interconnection of these spaces.

Ensure outdoor spaces are activated and designed to enable learning and play as described in the education rationale and detailed functional requirements in [Part 1: Strategic Design](#) and [Part 3: Generic Functional Briefs](#).

Technical requirements for landscaped elements are set out in [Part 4: Technical Specifications](#).

The design of outdoor learning and play environments must:

- consider the visual amenity from internal learning and play environments and maximise visual access to nature
- plan to use the existing assets of the site including topography, natural vegetation (where appropriate), ecology, heritage and indigenous history
- support and express different cultural perspectives in the external environments
- ensure spaces are accessible and address the needs of children of all ages and abilities

- have a consistent design intent between architecture and landscape
- incorporate elements reflecting the cultural history of the area
- integrate interpretive and educational opportunities within the landscape to facilitate active and passive outdoor learning
- consider space for the integration of nature education and exploration (may include providing habitat for wildlife such as installing insect hotels, bird nesting boxes, kitchen gardens or vegetable patches)
- establish a clear planting structure (ensuring the main structure planting is introduced as early as possible to provide identity, enclosure and shade to outdoor spaces) avoiding plants with excessive water demands, invasive root systems or are short lived
- provide shelter from the prevailing winds and weather during the different seasons to extend the range of days during which the external spaces are comfortable
- consider the requirement for ongoing maintenance of outdoor areas and minimise seasonal impacts.

Consideration should be given to:

- the placement of buildings to minimise issues of overshadowing, including to key external spaces
- preserving access corridors for utilities services to ensure maintenance, upgrade, or future implementation of new services can be undertaken with minimal disturbance to built environments.

Biodiversity

The design of external environments must maintain and improve the natural environment with, where possible, the use of native and endemic plant species to support biodiversity and local fauna.

The design of external landscapes and outdoor learning and play areas should:

- where possible, retain existing native and endemic tree and understorey plant species
- ensure new plantings are predominantly endemic and native (the plant palette is to be based on the species lists available from relevant [Landscape Boards](#)) and from areas within the same climatic zone that are drought tolerant to reduce irrigation requirements
- select new plantings to contain a variety of species and avoid monocultures
- enhance existing site biodiversity and replace any lost biodiversity caused by site construction work
- include native and exotic food production gardens in line with [Kid Safe SA guidance](#)
- consider incorporating composting of green waste and worm farming
- include gardens that promote Aboriginal culture and knowledge in caring for country
- plan to use biodegradable mulches to improve micro bacterial activity and reduce irrigation requirements (external areas should not have bare soil)
- plant trees to provide shade to building walls and external areas appropriate to the climate and seasonal changes.

Outdoor learning and play areas

National Regulations:

- [104](#) Fencing
- [108](#) Space requirements – outdoor space
- [113](#) Outdoor space: natural environment
- [114](#) Outdoor space - shade
- [115](#) Premises designed to facilitate supervision

Outdoor Learning Environments (OLEs) are important spaces in ECEC facilities and *‘are a feature of Australian learning environments. They offer a vast array of physical activity and learning experiences not available indoors and invite open-ended interactions, physically active play and games, spontaneity, risk-taking, exploration, discovery, sharing of cultural stories and ways of being and connection with nature’*¹.

A natural environment that provides challenge and exploration contributes to children’s overall physical health, emotional and cultural wellbeing, and accords with the broad objectives of the NQS, and the National Law and National Regulations.

Access to outdoor environments have health and wellbeing benefits for children including:

- exposure to outdoor levels of sunlight being a positive factor in eye development
- play on uneven and changing surfaces helps develop the internal sense of body awareness (interoception) that is the basis for many physical abilities that are taken for granted
- improved mental health and cognitive abilities.

OLEs should provide:

- balanced environments that instil a sense of wonder, generate curiosity and spark the imagination of children
- optimal learning opportunities that foster a connection to and inspire respect for the environment
- allow children to develop risk taking skills while improving their confidence, health and wellbeing
- appropriate learning opportunities for integration into curriculum including STEM, geography and environmental sustainability
- occasions for children to refine the following skills:
 - motor skills: walking, running, jumping, climbing, hopping, skipping, sliding and tri-cycling
 - manipulative skills: throwing, catching, kicking, striking and bouncing
 - stability skills: bending, stretching, swinging, twisting and balancing.
- opportunities to:
 - develop skills in negotiating the environment (including risks)
 - learn how to use equipment safely and for its designed purpose
 - develop co-ordination and orientation skills

¹ [Early Years Learning Framework – Belonging, Being & Becoming](#) (EYLF 2022 V2.0 pg 23)

- take acceptable risk
- learn about the consequences (positive and negative) of risk taking.

The design of outdoor learning and play areas must:

- ensure that children can be actively supervised at all times (children must not have free access to areas behind structures, such as storage sheds, cubby houses and water tanks)
- include adult friendly seating and shade that maintains line of sight for discreet supervision of children
- provide separate outdoor learning areas for children under 24 months of age and the Inclusive Preschool Program (while separate, designed to be integrated with adjoining areas through gates and to reflect the developmental, social and emotional needs of this age group)
- provide children with balanced environments which optimise learning and risk-taking skills and gross motor skills that are reasonable, appropriately identified, controlled or managed
- provide access to all outdoor learning and play zones for children of all abilities
- provide accessible paths and paving connecting the indoor learning and play space to storage, sandpit, water play, grassed area and other significant outdoor learning and play zones (paving is not to intrude on or go through the impact absorbing area, and should be provided in varying textures and natural tones)
- provide circular pathway route for bikes and ride on equipment that does not conflict with movement pathways within the play space
- consider the flow of play and avoid conflicts between active areas involving movement and moving equipment and areas for quieter activities
- include a variety of texture, materials, spatial characteristics and surfaces, slope and gradient to provide opportunities for physical movement and challenge, creative and sensory expression, cognitive and imaginative play and social interaction
- consider the access needs for delivery of sand and loose fill, and maintenance access to equipment, impact surfacing, areas of lawn, vegetation and other features
- take advantage of available sunshine while considering appropriate shading to provide sun protection (this can be achieved by locating OLEs on the northern side of the building)
- include built and natural shade areas and select semi-mature trees of appropriate species ([Kid Safe SA guidance](#))
- include a mixture of deciduous and evergreen planting (such as Mulberry and fruit trees) tree species (where possible, planting must take place before the facility is occupied to allow for plants to become established)
- provide well designed drainage to avoid any pooling of water
- eliminate environmental hazards such as sharp edges, poisonous plants or plants with spikes/thorns/sharp blades
- include sand play area(s) with adequate fixed shade structure(s), including an underground stormwater management system
- provide roll out instant lawn (not synthetic)

- provide a water play area including provision of water supply and drainage to preclude any pooling of water (refer [Interactive Water Feature](#) requirements)
- provide adequately sized impact absorbing area for gross motor activities, and as required, for play equipment and nature play climbing features in accordance with Australian Standards
- include a rainwater tank for landscape irrigation and sub surface irrigation to lawn and garden beds via a drip irrigation system with a moisture sensor override
- design for hazard prevention; consider trip hazards, fire risk, health hazards and falling limbs
- ensure vegetation and garden beds are a minimum of 1m away from buildings to avoid moisture damage to building infrastructure
- provide spaces for retreat and quiet or relaxation time, spaces for children to gather in small and large groups, as well as opportunities for physical activity.

Nature Play

Nature Play supports children’s identity and understanding of diversity, along with their connection and contribution to their world through developing an awareness of the impact of human activity on environments and the interdependence of living things. Unstructured free play in nature benefits children in many ways including promoting physical activity, connecting with nature and improving health and wellbeing.

Aboriginal languages, cultures and identity are strongly tied to the land. Sharing of histories, stories, languages and local knowledge of traditional land sustainability provides culturally safe and responsive learning for Aboriginal children, promotes a culturally welcoming environment for the Aboriginal community, and supports cultural understanding for non-Aboriginal children and families.

The Early Years Learning Framework examines the practice of early childhood pedagogy and the role natural learning environments play: *‘Play spaces in natural environments include plants, trees, edible gardens, sand, rocks, mud, water and other elements from nature. They foster an appreciation of the natural world and the interdependence between people, animals, plants, lands and waters providing opportunities for children to engage with all concepts of sustainability through environmental education’².*

Nature play should provide children with opportunities to:

- *‘develop specific skills and knowledge to be confident and capable operators in the outdoors*
- *explore human-nature relationships and steps to engage with nature and culture in a positive and meaningful way*
- *take action to live a more sustainable life and share messages of hope for the conservation of local flora and fauna*
- *identify ways they can influence their own health and wellbeing through nature connection and being active in the outdoors’³.*

² [Early Years Learning Framework – Belonging, Being & Becoming](#) (EYLF 2022 V2.0 pg 23)

³ Nature Play SA - <https://natureplaysa.org.au/educators/incursions-and-excursions/>

Nature play environment design:

- should optimise the use of the existing natural environment and consider designing in natural elements such as wet/dry creek beds, plantings to create semi hidden spaces with a variety of textures, scents, colours that match the soil and climate and are robust, and trees to climb or swing from
- should consider site specific environmental factors such as local habitat, drainage, weather conditions, bushfire zones and site access (emergency vehicle access) to ensure the area can be effectively managed and maintained
- must consider falls from heights, impact absorption and surfacing, fall protection, entrapment hazards, protrusions, damage, maintenance and contamination. Where the contents of AS 4685 do not apply directly to natural elements (such as barriers or handrails on natural logs or boulders), the play and development benefits of the design features must be reviewed with the facility to determine suitability (see Figure 5).



Figure 5: Ingle Farm Children's Centre nature play space.

The Nature Play SA [website](#) includes a range of resources and design principles which should be referred to including a guide Learning outdoors – benefits and risks and the Nature Play SA information sheets. The resources have been developed to increase understanding of how the risks and challenges that come with outdoor learning environments can be used to optimise learning opportunities through diverse and meaningful experiences.

Risks and benefits

Outdoor learning and play environments present an opportunity for children to develop risk taking skills that contribute to their physical learning and wellbeing. Risk taking is an essential feature of play provision and of all environments in which children spend time playing. Play provision aims to offer children the chance to encounter acceptable risks as part of a stimulating, challenging and well-managed learning environment.

Children need opportunities to:

- develop skills in negotiating the environment (including risks)
- learn how to use equipment safely and for its designed purpose
- develop co-ordination and orientation skills
- take acceptable risk

- learn about the consequences (positive and negative) of risk taking.

Outdoor learning and play provisions should aim at managing the balance between the need to offer risk and the need to keep children safe from serious harm. Managing risk in outdoor learning and play areas can include adequate supervision, teaching children the correct way to use equipment or play elements, implementing rules for use, better design or design changes, restricting or controlling access and eliminating a hazard.

Further operational information is available in the [Outdoor learning environments - installation, maintenance and inspections procedure](#) (under development).

Accessibility, learning and participation

The design of outdoor learning and play spaces must ensure accessibility, along with optimising the learning opportunities and participation for all children, including those with disability.

[Inclusive Play Guidelines](#) have been developed by the Department for Human Services. These guidelines are a tool for ECEC facilities, design professionals and others to assist in planning and developing play spaces that are inclusive of all children. See Figure 6.

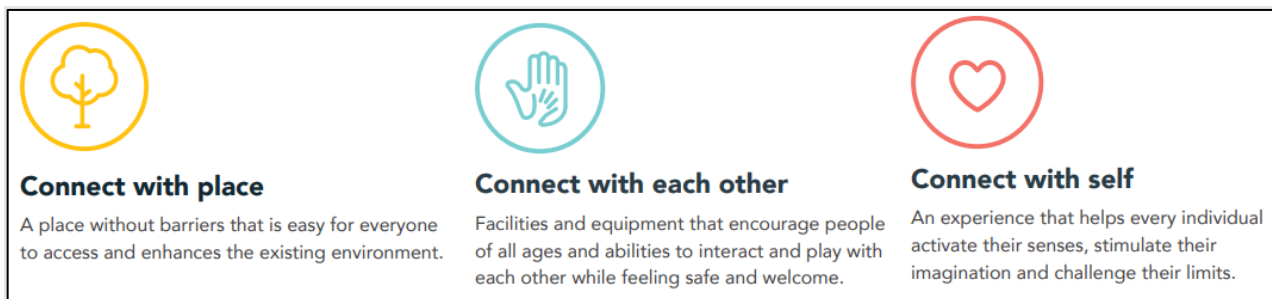


Figure 6: Design guidelines for creating Inclusive Play spaces.

When selecting items of play equipment, or play structures comprising multiple components, consider how play components can be incorporated to provide opportunities for all children. When selecting single purpose play equipment items, unable to be modified for universal access, ensure there are opportunities throughout the play space for children of all abilities to play together.

Ensure outdoor learning and play spaces provide adequate space for manoeuvring wheelchairs, including space for educators. The turning circle diameter range is 1500mm for children and 2200mm for adults.

Designs must consider access to tactile elements of the learning area. All children should be able to easily reach tactile learning areas such as water courses, garden beds, sensory gardens, horticultural areas and edible gardens.

Grass

The aesthetic value of an OLE can be enhanced by the provision of grass or turf. When an ECEC facility is located in an environment where traditional grass cannot be sustained then an alternative surface, in keeping with the local environment, is to be considered.

It should be noted that grass is not an appropriate impact absorbing material under play equipment or nature play structures that have a free height of fall height of 600mm or more above ground level or equipment causing a forced movement on the body of the user.

Should synthetic grass be installed, then adequate shade and suitable precautions regarding heat retention and cleaning must be provided.

Mounds

Mounds can be great play features that promote activities like tumbling, rolling, hiding, lying on and climbing, and can have a wide variety of play items added to or through them, this can include slides (resulting in reduced fall heights and costs of impact absorbing materials). The location of mounds and surface treatments need to be considered carefully. Positioning within flat grassed areas can limit the flexible use of space for large group gatherings, games and activities. Natural turf may be difficult to maintain due to overuse. The addition of a synthetic product at the top and bottom of a slide (such as wet pour rubber) is recommended to eliminate erosion. Timber decks may be used at the top of the slide for this purpose and a steadying post (with optional handle grips) is also recommended at the slide entrance to assist children upon entering (see Figure 7).

Mounds can be landscaped with plants suitable to your area including small trees for shade, shrubs and native grasses. Other items for mounds include timber stages, shopfronts, pergolas, telephones, dry creek beds, boulders, rock climbing activities and fragrant gardens using aromatic plants. Bridges can be installed between a series of mounds (if kept below 500mm above ground level will not require impact absorbing surfacing). Amphitheatres are perfect for mounds using sleepers set into the mound (approximate step height 375mm high and landing width 600mm deep) to allow for seating.



Figure 7: Mound incorporating slide and tunnel Moorak Children's Centre play space.

Irrigation

Provide irrigation to grassed areas, landscaped zones, and vegetable patches to ensure soft landscape can be maintained.

Rocks and boulders

Creative placement of rocks and boulders around a play space can provide children and adults with easy to challenging 'routes', testing balancing skills along boulder borders or using stepping stones. In addition to defining areas (sand areas or dry creek beds), rocks and boulders provide children of all ages with opportunities for exploration, challenging and interactive play, and add to the natural materials used in play spaces (see Figure 8). They also make good places to sit and rest, talk or watch. Children have a healthy respect for the solidity and hardness of rocks and boulders and develop their own sense of care, concern, and safety when they climb on them. Boulder sizes should vary with the age of the children using them.



Figure 8: Rocks and boulders Riverbanks College Children's Centre play space.

Sand environments

It is recommended that a sand area:

- is designed in such a way that the area creates a non-regular interesting shape to facilitate nooks and crannies that provide potential quiet areas and larger spaces for group interactions and if possible varying levels including an area for disability access
- should consider a lockable storage facility for equipment and loose parts as part of the design
- is bordered by boulders and plantings with ground level disability access to contain the sand without the level of the sand creating a trip hazard
- is not located near building entrances or any cemented or paved areas to limit dissipating sand coming indoors and the creation of slip hazards.

Refer to the Kidsafe SA information sheet – [Sand pits](#) and Figure 9.



Figure 9: Wandana Child Parent Centre – sand environment.

Shade areas

Built and natural shade areas are to be designed and installed in outdoor learning and play areas to suit the types of activities or play that are briefed to receive shade cover. Adequate shade must be provided in all children’s outdoor play areas through the use of shade structures and plantings, such as trees and large shrubs ([Regulation 114](#)).

Natural shade must be provided around high use/static play areas and must consider the direction of the sun and the time of day that the external play space will be used.

Trees selected for natural shade must establish quickly, be a mixture of evergreen and deciduous trees, have a high long-term survival rate, suit the local area’s soil type and climate, and not have spike branches or be prone to dropping limbs.

As a minimum, the following built shade areas are to be provided (with roof cover extending beyond the perimeter of areas to be shaded by 1m in all directions):

- verandah connected to the building preferably facing north and opening directly to a usable paved or grassed area with no step. A minimum area of 1m² per child and a minimum depth of 2.4m to enable setting up of tables and chairs for outdoor group activities.
- verandah connected to the building directly adjacent Inclusive Preschool Program indoor learning and play areas providing a minimum of 1m² per child and suitable area to provide weather protection for a removable outdoor swing apparatus fixed to a suspension point under the roof structure in accordance with fall zones for swings AS 4685 (Parts 1 to 6) and AS 4422(Int).
- a framed shade structure with roofing materials such as metal sheeting, clear sheeting or a combination of both, including gutters and underground stormwater disposal, must be constructed over sandpits and be designed to allow for the shade to fall over most of the sanded area during operating hours.

Vertical supports must be non-scalable, be clearly visible and have rounded edges and/or padding and placed to avoid children colliding with them. Locate vertical supports a minimum of 1.5m away from fences and adjacent structures to avoid scalability.

Columns for shade structures must limit hazards for children entering and leaving the sanded area. Ensure the base of columns are located external to sand play areas.

The placement and extent of sun shading must:

- consider the sun angles at different times of the day throughout the year
- reduce indirect UV radiation by managing reflected sun light
- not impact natural light levels, or block breezes to windows, in occupied spaces in adjacent buildings
- take into account the location of existing services such as drainage, power, data, gas, sewer and water.

Refer to the Kidsafe information sheet – [shade in outdoor learning environments](#), for further guidance.

Secure outdoor learning and play areas

Inclusive Preschool Programs (IPP) must have access to outdoor spaces that are physically separate and visually screened from property boundaries, perimeter gates and local roads.

The outdoor space is to be connected via secure gate to the general outdoor learning and play space. It is preferred that the secure boundary to the IPP outdoor area is formed by the building, outdoor structures or dense planting rather than fencing.

The secure outdoor learning and play area should:

- include a combination of soft and hard surfaces
- create opportunities for structured and unstructured play
- not include rocks, boulders and fixed balancing or stepping logs
- prioritise the inclusion of accessible play elements
- include suspension points under the verandah to allow the use of a range of swinging apparatus in all-weather situations:
 - suspension points are to be positioned in an area that is not a thoroughfare and an impact absorbing surface (such as certified rubber impact absorbent material or certified impact absorbing mats) must be provided under and around suspension points
 - impact attenuation must comply with free height of fall and fall zones for swings in accordance with AS 4685 (Parts 1 and 2) and AS 4422(Int) (refer [fall zones and impact absorbing materials](#)).

Sensory garden, kitchen gardens and vegetable patches

Sensory gardens, kitchen gardens and vegetable patches must provide access for all children to be engaged in experiences that stimulate the senses. Gardens must incorporate planting, shade, seating, circulation routes and design elements that give children the opportunity to interact and engage with the planting and setting.

The spaces, planting and designed elements should engage all senses including sight, hearing, touch, taste

and smell. This can be achieved through planting types and arrangements, materiality and the use of landscape elements specifically designed to use all the senses and include:

- an area large enough for small groups to work together
- raised plots and planter boxes to allow equitable access and participation
- winding paths, designed to give children the opportunity to interact with the planting and design elements as they move through the space
- appropriate planting, excluding any poisonous, irritating or otherwise problematic planting
- shaded seating areas
- a defined and safe space, free of extraneous noise and distractions (such as a courtyard).

The inclusion of Aboriginal design elements and bush foods can introduce local relationships with the land and help to embed cultural aspects into the space.

Traffic and pedestrian movement

General circulation and spatial organisation

The neighbourhood context must be thoroughly considered, with the locations of circulation routes in the public realm clearly informing the placement of access points into the ECEC facilities. Active transport facilities such as pedestrian links, bicycle paths and pathways/links to public transport must be considered and integrated into the urban design and site master plan.

The main pedestrian access to an ECEC facility must be prominent and easy to find, with the building located near to it and clearly visible from the road and easily accessible from the car-parking area.

Planning and design of the building and main entry interface must ensure that children and parents do not have direct access from the building into the carpark and vehicular movement areas to ensure child safety and supervision when entering and exiting the facility.

Protection from wind and inclement weather prior to entering the main door must be provided.

Pedestrian routes on the ECEC site must take priority over vehicular ones. Where routes intersect the priority for pedestrians must be emphasised. Footpaths must be designed with safe and direct access in mind. Where possible there must be clear separation between vehicular traffic and pedestrian movement. Where there is a conflict between pedestrians and vehicular movement, appropriate treatments must be provided to ensure the safety of pedestrians.

Other important issues that must be addressed in the planning of a site include:

- minimising pedestrian travel distances
- weather protection to pedestrian paths and at entrances
- functional and safe access for pedestrian and vehicular traffic
- provision of on-site parking for staff, visitors and short-term parking for drop off/pick-up in accordance with the department's current policy
- access for delivery, waste removal and service vehicles
- emergency access.

Access for all

All areas of the site must be designed to provide safe, dignified and equitable access for all users including people with disabilities whether child, staff, parent, community user or visitor.

Planning and design must comply with the requirements set out in AS1428, the *Disability Discrimination Act (DDA)*, *Disability (Access to Premises – Building) Standards 2010*, and Human Rights and Equal Opportunities Commission – [Access to Buildings and Services: Guidelines and Information](#).

Emergency exits

All emergency exits must be NCC compliant, clearly signposted and easily found. Emergency exit signage must comply with the requirements for fire safety certification.

If stairs are provided, to optimise the efficient use of floor area, they should have a dual function supporting day-to-day circulation as well as emergency circulation and egress.

Disability access must be considered in determining all emergency evacuation planning.

Pedestrian access and egress

Pedestrian movement must be well planned, safe and legible in both internal and external areas.

Both buildings and hard and soft landscapes must be designed to enhance and integrate with the external pedestrian experience, as well as enhance and focus the views for internal pedestrians. The efficient and safe movement of people from the car park and boundary entrances to the building is essential in delivering a user-friendly facility.

The design of pedestrian access and egress must:

- clearly define points of access and egress and allow pedestrians to move from site entrances to buildings, and from places such as parking areas, using where possible footpaths that avoid crossing vehicle circulation routes
- ensure all paths around the building receive spill lighting from external security lighting, and access paths that will be used before sunrise and after sunset (including paths connecting car park areas and points of pedestrian access to doors used out of hours) are provided with safe levels of illumination along the length of the path
- ensure paths are free of obstructions such as plant, equipment, furniture, fittings, projecting window sashes, or projections from external walls (the number of supporting columns to shelter structures over paths must be minimised)
- consider the careful management of changes in level, DDA compliant ramps are preferred to stairs (if stairs are provided, there must be an equitable ramp provided close to the stairs that leads to the same destination).

Vehicular access and parking

The design of vehicle access and parking must:

- ensure that children and parents do not have direct access from the building into the carpark
- provide adequate and compliant lighting, located to mitigate unnecessary light spill

- facilitate access for emergency vehicles (such as ambulances and fire trucks) to the front entry of the building and via vehicular access gates to the outdoor learning and play area (ensure landscaping, including trees, do not obstruct these access points)
- ensure that where on-site parking is provided, where possible all vehicles enter and exit the parking area in a one-way forward direction and not included dead-end aisles requiring vehicles to turn around
- consider the integration of electric vehicle charging points/infrastructure to assist in the transition to low carbon forms of transport
- include designated and signposted accessible parking spaces in accordance with AS/NZS 2890 Parking facilities – Off Street car parking
- provide parking spaces with dimensions in accordance with AS/NZS 2890 Parking facilities
- consider separation of parking from other on-site parking areas for co-located ECEC facilities, to mitigate traffic congestion at peak times and ensure parking close to the ECEC facility is prioritised for these families.

Consultation with the relevant local authority must be undertaken during master planning and detailed design to ensure the proposed designs are endorsed by the local authority.

On-site parking provisions

The following on-site parking spaces apply to new ECEC sites and may not apply to existing sites or redevelopments if site area restrictions exist. The department does not acquire additional land for carparking purposes.

Provide on-site carparking accommodating:

- 1 parking space for each FTE (full time equivalent) staff member
- a minimum of 1 accessible parking space with consideration of undercover access to the building entrance
- an additional 10% of the total for visitor parking.

Consider options for shared parking with other providers and negotiating street parking arrangements with the local government authority.

Bike Storage

Parking facilities for bicycles and scooters must be provided to promote and encourage the use of active transport by children, staff and visitors.

Bike parking facilities must be in an area where some level of passive surveillance is available and as close as practicable to the adjacent road frontage to allow direct access for users and avoid the need for shared pathways within the site.

Waste storage and disposal

A screened and contained waste disposal area must be provided for storage and collection of multi-stream waste materials ensuring adequate space to support the department's waste contract requirements.

Truck access to the waste disposal area must consider other vehicular and pedestrian movements in the vicinity and limit safety risks. Adequate circulation space (excluding the designated waste storage area) must

be provided to allow large waste disposal trucks to enter, manoeuvre and leave the site travelling in a forward direction within a designated area that is separated from pedestrians.

Pavement and road surfacing to the area used by waste disposal trucks must be suitable for the applied loads (such as heavy vehicles).

Design Review Process

Early Years Review

Site plans, floor plans and landscape plans must be reviewed by the department during Concept Design phase and prior to tender. The department's project manager will coordinate this review process with Preschools and Early Childhood Services (in the Schools and Preschools Division).

Provide the following information on the drawings to be reviewed:

- site plan:
 - location of all buildings (including entries and exits)
 - structures
 - outdoor play areas
 - shaded areas
 - boundary fencing and gates
 - bin enclosure
 - include a schedule of the unencumbered outdoor play space calculation with a list of encumbrances that have been factored into the calculation and space per child (*this should not be less than the amount allocated for in the Area Schedule*).
- floor plans:
 - all walls, doors, fixtures and fittings
 - acoustic engineer report for learning and play areas
 - toilet and handwashing facilities
 - nappy change bench and bath
 - food preparation areas and room names in line with the Planning Standards
 - include a schedule for the unencumbered indoor play space calculation with a list of encumbrances that have been factored into the calculation and space per child. Clearly identify the encumbrances to door openings and circulation (*this should not be less than the amount allocated for in the Area Schedule*)
 - a Schedule of Natural Light which identifies the amount of natural light provided to all rooms identified in [Part 3: Generic Functional Briefs](#) must be completed and provided to the department as part of the ESB approvals process, the schedule is to include:
 - room name
 - floor area (m²)
 - combined total of light transmitting area of windows and roof lights (m²)

- total light transmitting area as a percentage of floor area
 - calculations must be provided in accordance with [NCC Part F6D3](#)
- elevations:
 - site levels
 - access to entry and exit points
 - doors, windows and sill heights
 - materials
 - ramps, stairs, balustrades and barriers to prevent falls.
- landscape plans - detailed site plan of the outdoor learning environment including:
 - irrigation systems
 - sheds/storage
 - shade structures
 - play equipment
 - nature play elements
 - impact surfacing to play equipment
 - site contours and levels
 - extent of hard and soft landscaping.

For further information, please see the Design Checklist available in [Appendix B](#).

Revision record

Version: v1.1 (DE20/05086)

Edits: Minor update to introduction

Approved by: Senior Manager, Asset Planning, Standards and Sustainability

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Version: v1.0 (DE20/05086)

Edits: New document to replace the reviewed Early Childhood Facilities (birth to age 8) Design Standards and Guidelines.

Approved by: Executive Director, Infrastructure

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