

NSW Government - Design and Place State Environmental Planning Policy

The proposed Design and Place SEPP is the ideal vehicle by which the NSW Government can commit to the Principles of Universal Design.

The Disability Inclusion Action Plan Guidelines, developed under the NSW Disability Inclusion Act, 2014, were designed to assist Government Instrumentalities to plan for and deliver on the diverse needs of people with disabilities in their communities. Section 2.2 of the Guidelines explains that liveable communities are achieved through the application of the Principles of Universal Design.

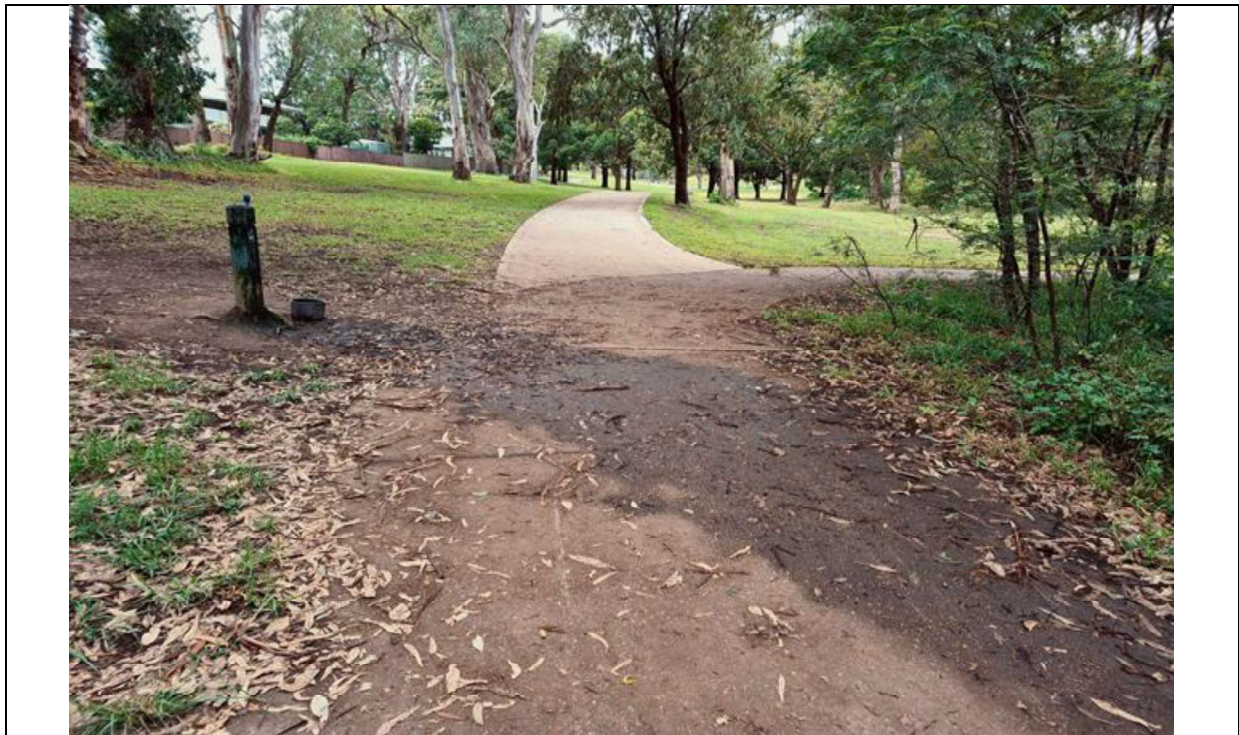
The NSW Government advises that the Design and Place SEPP will use a principle-based approach to guide design. It is considered that the best means to achieve the aims of the new SEPP would be to implement the seven Principles and eight Goals of Universal Design.

That is, to develop draft proposals using the seven Principles then, by reviewing the draft against the eight Goals, determine if the best outcome for the community can be achieved.

Application of the eight Goals of Universal Design

An example of how a good outcome would have been achieved if the eight Goals of Universal Design had been applied to the proposal to install the water fountain shown in the photograph.

The water fountain is located adjacent to a popular shared pedestrian/cycleway in a Reserve north-west of Sydney. If the 8 Goals of Universal Design had been applied to its proposed installation it would not have been of this design, or in this location.



- The water fountain is not located on a hard stand surface, so the soil surface becomes muddy in wet weather and by overflow from the fountain
- The design is not friendly for people of any age who have a mobility impairment or who use a wheelchair
- The location is on the high side of the path, so that overflow from the fountain spills across the path, making it slippery for both pedestrians and cyclists

The following two examples are provided to demonstrate how the application of the Seven Principles and Eight Goals of Universal Design can benefit everyone.

Example 1: Braille and Tactile Street Name Signs installed at every signal-controlled pedestrian crossing within its Local Government Area by Sydney City Council.

Sydney's Braille and Tactile Street Name Signs and the 7 Principles of Universal Design

Braille and Tactile Street Name Signs carry the name of the street which a pedestrian is facing, and property numbers. The first number read is that of the property immediately behind the reader and the second number is followed by the letter L or R, to indicate the location of the second number is to the left or right of the reader.

For example:

The sign on a traffic light pole at one end of this City block reads, “York St 26 – 14 R”, it means that the pedestrian is facing York Street and standing in front of property number 26, with property number 14 to the pedestrian’s right.

At the other end of the City block the sign reads, “York St 14 – 26 L ”, to indicate that the pedestrian is facing Bank Street and standing in front of number 14, and that number 26 is to the pedestrian’s left.



Principle 1: Equitable Use

The design is useful and marketable to people with diverse abilities.

1a: Provide the same means of use for all users: identical whenever possible, equivalent when not –

People with disability prefer to have features located in standardised locations. The signs are always located on traffic light poles. In Sydney, the audio-tactile pedestrian buttons on traffic light poles always face the footway, and the signs are always located on the right-hand side of the poles, as the reader faces the kerb, with their centre approximately 10one metre above the footway surface. The signs are read from top to bottom, just as they would be read from left to right when laid horizontally.

The signs provide the street name and property numbers in three forms of reading:

1. White raised lettering on a black background, so that they can be read by all pedestrians, including people who have low vision and who can read them at close range.
2. The raised lettering can be read by people with vision impairment who touch-read.
3. Grade One Braille, so that they can be read by visitors who are blind, no matter where they come from.

1 b: Avoid segregating or stigmatizing any user

The signs provide independence and privacy for people who have a speech or hearing impairment as they are not embarrassed if they are unable to successfully ask for directions, or hear the answer.

1 c: Provide privacy, security and safety equally for all users

The signs provide privacy to pedestrians who are unwilling to ask for directions for personal reasons. They also provide a source of reassurance (and therefore safety) for a person who has a mental health issue and who may become anxious or disoriented when unable to identify a location.

1 d: Make the design appealing to all users

The signs are attractive and unobtrusive; and white text on a black background is the preferred combination of colours for many people who have vision impairment. The darker background also means that the signs are easily readable in bright light.

Principle 2: Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

2 a: Provide choice in the method of use

The signs provide three methods of reading – raised lettering, Braille and visible text.

2 b: Accommodate right- or left-handed access and use

Signs are always read from top to bottom, whether a person reads with a left or right hand.

2 c: Facilitate the user's accuracy and precision

Grade 1 Braille is used, with only standard abbreviations, such as Rd for Road and St for Street. Raised lettering is sans serif, so as not to confuse a person who touch-reads.

2 d: Provide adaptability to the user's pace

Signs are always placed in the same location on a traffic signal pole where they can be read at a person's own pace

Principle 3: Simple and Intuitive Use

Use of the design is easily understood, regardless of the user's experience, knowledge, language skills, or current concentration level.

3 a: Eliminate any unnecessary complexities

The use of Grade 1 Braille and standard height lettering allows all users to understand the text when using their own abilities. The signs are simple and contain only information that is relevant to a particular location.

3 b: Be consistent with user's expectations and intuition

The signs only contain the information that is needed at a particular location – street name and property numbers, or an iconic location such as a major Park or Building.

3 c: Accommodate a wide range of literacy and language skills

The signs provide information for people who are blind, deaf blind or who have low vision, as well as sighted people. As Braille is an international form of reading visitors who read Braille and who come from other countries are able to find their way.

3 d: Arrange information consistent with its importance

The signs only provide information which is unique to a particular location.

3 e: Provide effective prompting and feedback during and after task completion

The reader knows that the street named on the sign is that which they are facing; that the first number read is that of the property immediately behind the reader. The numbers are followed by the letters L or R to indicate that the second number read is to the person's left or right.

Principle 4: Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

The Braille and raised lettering allow the signs to be read under any lighting conditions. White lettering on a black background provided readability for a sighted person in any level of lighting.

4 a: Use different modes (pictorial, verbal, tactile) for essential information

The signs provide visual and tactile information and are designed to successfully provide such information, regardless of conditions.

4 b: Provide adequate contrast between essential information and its surroundings

Contrast is provided by the tactile elements of Braille and raised lettering, and by colour.

4 c: Maximize ‘legibility’ of essential information

Legibility is provided by using only Grade 1 Braille with minimum contractions; by using standardised raised lettering and location; and by placing the information in the public domain where it can be thoroughly scrutinized for accuracy.

4 d: Differentiate elements in ways that can be described

Grade 1 Braille has its own unique features; raised lettering can only be described in one way; and black and white colours provide their own distinct description.

4 e: Provide compatibility with a variety of techniques or devices used by people with sensory limitations

The signs are designed for the specific techniques or touch-reading in Braille and raised lettering; and for visual reading by the use of contrasting colours.

Principle 5: Tolerance for Error

The design minimises hazards and adverse consequences of unintended actions.

5 a: Arrange elements to minimise hazards and errors; most used elements, most accessible’ hazardous elements eliminated, isolated or shielded

Signs are located in a safe and standardised location, i.e. on the footway side of the traffic signal pole. Standardisation of the reading techniques and the inclusion of unique information guards against the receipt of incorrect messages.

5 b: Provide warnings of hazards and errors

Signs are placed with their mid-point at the same height as the audio-tactile buttons which provide the cue to the location of the signs. Standardisation of design, height and location, and the provision of audio/tactile buttons remove the potential for error.

5 c: Provide fail safe features

Some iconic locations do not have property numbers, e.g. a large park, so the signs carry the street name and name of the park.

5 d: Discourage unconscious action in tasks that require vigilance

Unconscious actions are minimised because the signs and their locations are standardised

Principle 6: Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

6 a: It allows the user to maintain a neutral body position

The signs are located waist-to-chest height for most people, so they are read while the reader maintains a normal standing posture. For people of short stature and for people who use a wheelchair, the signs are at a height where they are easily reached.

6 b: It uses reasonable operating forces

No force is required to read the signs.

6 c: It minimises repetitive actions

There is no repetitive action required as every sign is unique.

6 d: It minimises sustained physical effort

Reading of the signs requires no physical effort.

Principle 7: Size and space for Approach and Use

Appropriate size and space is provided for approach, reach, manipulation and use, regardless of the user's body size, posture or mobility.

7 a: Provide a clear line of sight to important elements for any seated or standing person

Signs are easily located because they are placed adjacent to the audio-tactile buttons on traffic signal poles, and always on the footway side of the pole.

7 b: Make reach to all components comfortable for any seated or standing person

The centre of the sign is located 1000 to 1100 mm above the footway surface, within easy reach range for any seated or standing person

7 c: Accommodate variations in hand and grip size

Not an issue

7 d: Provide adequate space for the use of assistive devices or personal assistance

As audio-tactile buttons in Sydney face the footway there is always adequate circulation space in which to manoeuvre a wheelchair, walking frame, or stroller.

Braille and Tactile Street Name Signs and the 8 Goals of Universal Design

Goal 1 – Body Fit

The signs are always located between 1000 mm and 1100 mm above the footway surface, so that they are in easy reach by a person who is either standing or sitting in a wheelchair.

Goal 2 – Comfort

There is always adequate circulation space around a traffic light pole, on the footway.

Goal 3 – Awareness

The City of Sydney Council has placed a sign on every traffic light pole throughout its area, where there is an associated pedestrian crossing.

Goal 4 – Understanding

Minimum advice is required for a person to find and understand the signs.

Goal 5 – Wellness

The signs provide independence and privacy for the reader, and are located where they can be read in comfort at a person's own pace.

Goal 6 - Social Integration

The signs can be read by every pedestrian, whether a person has a disability or not.

Goal 7 – Personalisation

The signs allow a pedestrian to identify a location without having to ask for directions.

Goal 8 – Cultural Appropriateness

The signs provide two forms of touch reading – raised lettering and Braille; and one form of visual reading, white letters on a black background. In most instances this is adequate for people who read English.

Example 2: The benefits of designing stair and ramp handrails in public locations, to comply with Australian Standard AS1428.1, and the provision of handrails on **both** sides of a fire isolated stairway. After all, a fire isolated stairway becomes a public stairway in an emergency.

Handrails and the 7 Principles of Universal Design

Handrails not only provide support for people as they ascend or descend stairs or ramps that are designed to Australian Standard AS1428.1, they also provide guidance for people who are blind or have vision impairment, and people who have some form of cognitive or intellectual impairment.

The National Construction Code (NCC 2019) and the Disability (Access to Premises – Buildings) Standards, 2010, require handrails on both sides of a public stairway or ramp, but NCC 2019 only requires ‘at least one handrail’ in a fire isolated stairway.

Fire isolated stairways are only to be used in an emergency, but it during an emergency when they become public stairways and when they should be providing for maximum safety, by having handrails on both sides.

A person who does not have the use of a right hand or arm (arthritis, amputation, etc.) has no support when ascending or descending a stair or ramp if the only handrail is on their right side.

Public stairways and ramps designed to AS1429.1, including fire isolated stairways and ramps in fire isolated corridors, are useful and equitable to people of all ages and abilities, and meet all 7 Principles and all 8 Goals of Universal Design.

Principle 1: Equitable Use

1a: They provide the same means of use for all users

1 b: They avoid segregating or stigmatizing any user who does not have the ability to use the stairs or ramp safely and with dignity if only one handrail is available.

1 c: They provide safety equally for all users

1 d: They make the design appealing to all users

Principle 2: Flexibility in Use

2 a: The design accommodates a range of individual preferences and abilities.

2 b: The design accommodates right- or left-handed access and use

2 c: The design facilitates the user's accuracy and precision

2 d: The design provides adaptability to the user's pace

Principle 3: Simple and Intuitive Use

3 a: The design eliminates any unnecessary complexities. The design is easily understood, regardless of the user's experience, knowledge, language skills, or current concentration level.

3 b: The design is consistent with a user's expectations and intuition

3 c: The design accommodates a wide range of literacy and language skills

3 d: The design provides information consistent with its importance

Principle 4: Perceptible Information

4 a: The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

4 b: The design provides adequate contrast between essential information and its surroundings

4 c: The design maximises 'legibility' of essential information

4 d: The design differentiates elements in ways that can be described

4 e: The design provides compatibility with a variety of techniques or devices used by people with sensory limitations

Principle 5: Tolerance for Error

5 a: The design minimises hazards and adverse consequences of unintended actions.

5 b: The design provides warnings of hazards and errors

5 c: The design provides fail safe features

5 d: The design discourages unconscious action in tasks that require vigilance

Principle 6: Low Physical Effort

6 a: The design can be used efficiently and comfortably and with a minimum of fatigue.

6 b: The design allows the user to maintain a neutral body position

6 c: The design minimises sustained physical effort

Principle 7: Size and space for Approach and Use

7 a: The design provides appropriate size and space for approach, reach, manipulation and use, regardless of the user's body size, posture or mobility.

7 b: The design makes reach to all components comfortable for any person seated on a mobility device when using a ramp, and comfortable for a person when using the stairs

7 c: The design accommodates variations in hand and grip size

7 d: The design provides adequate space for the use of assistive devices or personal assistance

Handrails and the 8 Goals of Universal Design

Handrails designed to meet Australian Standard AS1428.1 meet all 8 Goals

Goal 1 – Body Fit

Handrails are always located between 850 mm and 1000 mm above the tread of a stair or the surface of a ramp

Goal 2 – Comfort

There is always adequate space between the handrail and any adjacent surface

Goal 3 – Awareness

Handrails are always in the same height range and location

Goal 4 – Understanding

Minimum advice is required for a person to find and understand the handrails

Goal 5 – Wellness

The handrails can be used by people of all ages and abilities

Goal 6 - Social Integration

The handrails are non-discriminatory

Goal 7 – Personalisation

The handrails allow a pedestrian to identify their location without having to ask for directions

Goal 8 – Cultural Appropriateness

The handrails can be used by any person

