Transport
for NSW

Pedestrian underpass design guideline

Design guideline to improve the safety and appearance of underpasses in NSW

NSW GOVERNMENT

Urban Design Roads and Waterways

Front Cover — Kindilan Underpass, Beverley Hills. Artwork — 'Wolli' by Warren Langley from 'Canal to Creek' art program by Cultural Capital, Transurban and TfNSW.

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Foreword

It is 15 years since this guideline was first published to influence the design of underpasses on the Pacific Highway and other projects. It came as a result of research into existing underpasses and some of the issues relating to their use and maintenance.

Much has happened since then — the Beyond the Pavement Policy has been published and updated (2009, 2014 & 2020), Better Placed developed (2018), the Transport Reconciliation Action Plan published (2019). Importantly Transport is much more focussed on successful places and customer experience, which is a key issue with underpasses. So an update to this guideline is overdue.

Underpasses unfortunately conjure up the idea of unsafe, dark and depressing environments generated by some poor planning and design outcomes in the mid 20th century. There are also however many good examples to learn from, but whatever their design, underpasses can be problematic and while this document is about setting standards for them, it also includes discussion and ideas on how they can be avoided, or rather how the need for them can be avoided.

In some cases underpasses are necessary though. Rail corridors can not be crossed on the level, motorways likewise and sometimes bridges are impractical. In some situations, the transport corridor is so high above street level that an underpass is the only solution.

Ultimately good design can solve many problems with underpasses, but there must be a commitment to sufficient funds to make this possible in the generosity of the dimensions and the materials used.

To help guide design and secure the correct funds, Transport has gathered a lot of experience and lessons in underpass design that can inform projects and set down in this document. It is hoped that these can lead to safer more desirable crossings for communities and our customers.

1 Introduction

This guideline provides guidance on achieving positive outcomes and better customer experiences in the design of pedestrian and cyclist facilities to cross busy roads or rail corridors.

In many road or street situations an at-grade pedestrian crossing is the best outcome. This provides open, safe, ground level crossings without the need to walk or cycle up or down grade separated facilities. However, in very busy road or rail corridors (that can't be crossed at grade) or where it makes sense because the transport corridor is high up or in deep cutting, then an underpass or bridge is needed.

While bridges are perceived as generally open engaging spaces, underpasses have a stigma attached to them.

Despite the safety benefits from grade separating pedestrian/ cyclist and vehicles, underpasses by their nature restrict passive surveillance and can be uninviting due to their enclosed nature. The often poor level of lighting, evidence of graffiti and vandalism, maintenance and drainage problems, contribute to the poor patronage of underpasses and their lack of success.

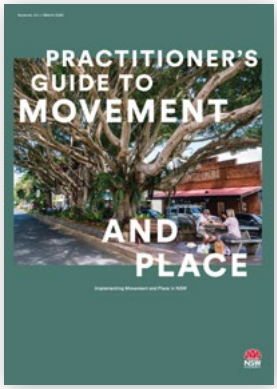
The typical underpass in popular culture.

The purpose of the guideline is to therefore encourage a planning and design process that:

a) Avoids the need for pedestrian and cyclist only underpasses, and;

b) Develops convenient, safe, attractive and successful design outcomes where underpasses are necessary.

The guideline draws upon the policy and guidance in the Movement & Place Practitioners Guide and Beyond the Pavement and examples of existing underpasses.



The Movement & Place approach can help avoid the need for underpasses in the planning of transport projects and their scoping. Better Placed sets the overarching quality of all publicly funded work in NSW. Beyond the Pavement and Around the Tracks translates that approach into road and rail transport infrastructure and is supported by guidelines on bridges, tunnels, heritage, art, landscape and this document.

This guideline is designed to complement the CPTED (Crime Prevention Through Environmental Design) principles developed by Police authorities. But it is not a technical document and as such must be read in conjunction with relevant Australian Standards and TfNSW technical advice regarding bridges, structures and safety standards.

The objectives, principles and examples will assist planners, project managers and design teams in considering and dealing with underpasses, when scoping projects and throughout the design process. However, their implementation requires design skills and expertise, and an urban design consultant must be involved in decisions regarding the location, alignment and design.

Good design, good materials and an appropriate budget can lead to good underpasses (Parramatta)

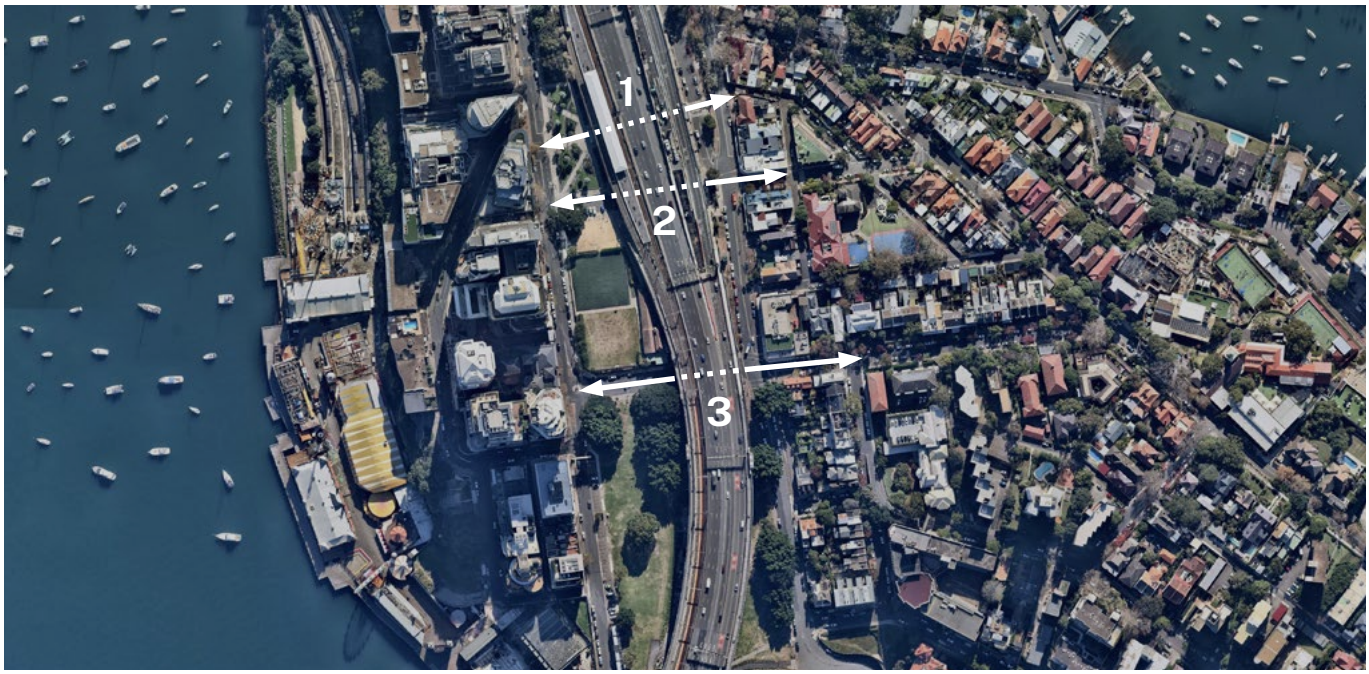
2 Urban design and its application to underpasses

In short, urban design is the process, and product, of directing or shaping urban growth, development and change. In Transport, urban design as it relates to projects, is expressed through two publications: Around the Tracks for rail and Beyond the Pavement for roads and waterways. They are similar in approach and mutually supportive.

The Beyond the Pavement urban design approach sets down four urban design objectives relating to: public domain design quality, context sensitivity, good connections and a vibrant economy. It also supports three performance themes relating to safety, cost effectiveness and sustainability. Nine principles focus on design outcomes relating to architecture, green infrastructure, landform, heritage, Country and other aspects.

Underpasses, as a device, add little to any of these objectives, themes and principles. Even the best ones are energy demanding, obscure views and natural light, are enclosed, preclude vegetation, require maintenance actions and are expensive.

However, underpasses are needed. Towns and cities are complex, historic systems, criss-crossing transport modes are inevitable and at grade pedestrian/ cyclist movement and heavy rail or high speed/ volume roads are not complementary. Urban design is therefore a powerful tool for optimising their value.



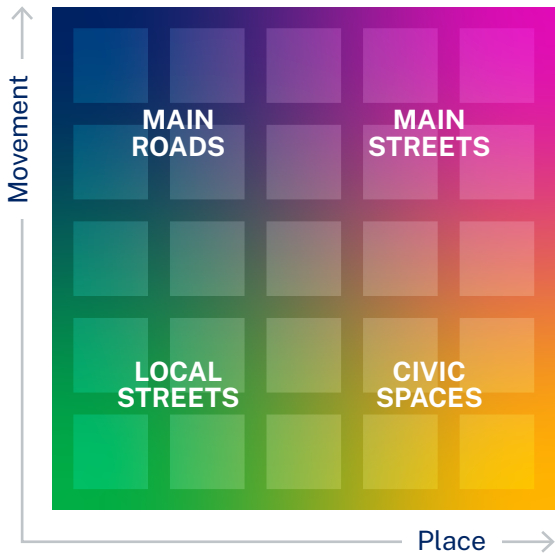
Milsons Point and Kirribilli are old parts of Sydney's built fabric, the Sydney Harbour Bridge was designed over a century ago. Movement across the rail and road corridor is vital and by necessity through the elevated bridge approaches, thereby creating three underpasses.

2.1 Avoiding the need for underpasses & exploring alternatives

It is a paradox, but the first point of an urban design guideline dealing with underpasses is to stress the need for them to be avoided if possible. This is best achieved by considering cyclist and pedestrian connectivity early in the planning of networks, corridors, and projects associated with new growth areas, in the planning of towns and communities. The Movement & Place Practitioners Guide helps with this, in terms of roads, as it guides teams to the sort of transport solution needed for an area.

For example, a street environment with low-speed roads, lower volume traffic, lesser heavy vehicles and multiple fine grained land uses is unlikely to need an underpass, except perhaps for access to a Metro. These types of roads and streets are categorised as Civic Spaces, Local Streets and Main Streets in 'Movement & Place'.

Ground level motorways (as opposed to tunnels) and multi-lane major arterials, categorised as main roads in 'Movement & Place', are more likely to need underpasses. Motorways must have grade separated crossings and multi-lane arterials will need them when a level pedestrian crossing is unable to be combined with intersections and would be unsafe as an isolated object in an otherwise high-speed road.



Considering the interaction of communities and these categories of road types will help ensure underpasses are minimised and used in the right place.

In terms of the project development process, ie when the 'Movement & Place' solution is decided, connectivity should be a criterion in the option selection process and options considered which minimise, as far as possible, the impact of main roads and rail lines on local roads, streets and paths.

As the preferred concept design is developed, if crossings are unavoidable the design process should consider alternative crossing types. In general, and subject to context, the following crossing types should be considered as a better alternative to pedestrian and cyclist only underpasses.

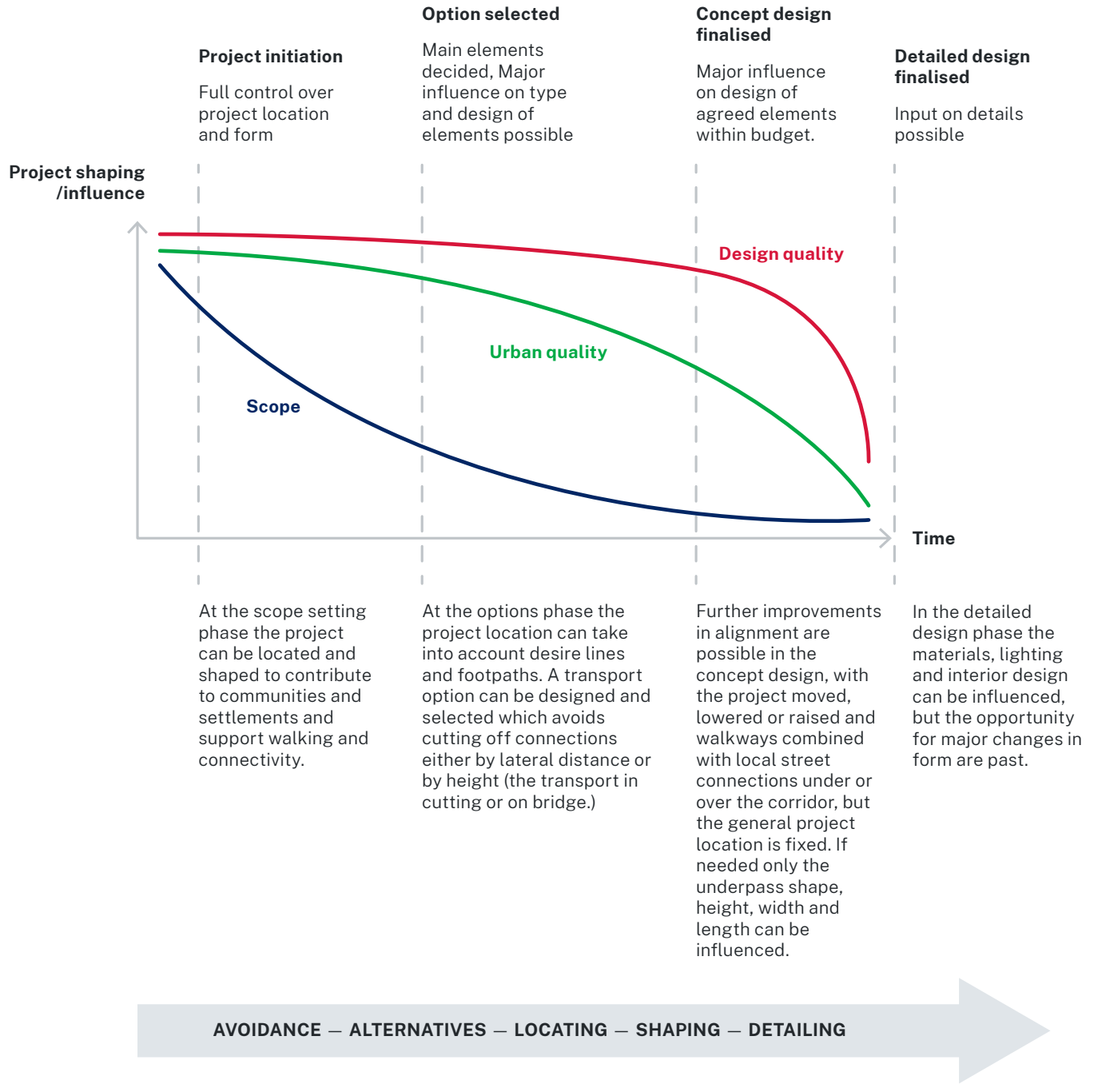
- At grade crossings, provided they meet traffic and safety requirements, provide a cost effective, direct and highly visible road crossing.
- Viaducts create a permeable open environment with good light levels.
- Roads and rail in cuttings allow ground level bridges or land-bridges with minimal level change.
- Road underpasses combined with pedestrian and cyclist routes offer improved passive surveillance and provide a wider, higher and lighter environment.
- If the height to climb is acceptable, pedestrian and cyclist bridges are a good solution and provide a better degree of passive surveillance than underpasses.

Pedestrian bridge utilising the falling grade of the road to provide a relatively flat grade crossing with views and good passive surveillance (Northern Beaches Hospital road upgrade)

Burton Street underpass at Milsons Point. The Sydney Harbour Bridge approach road and rail corridor is elevated and Burton Lane passes underneath in a large arched tunnel. Used by vehicles, pedestrians and also weekend markets.

Eastern Distributor shortly after opening in 1999, illustrating the road alignment lowered and street level bridges connecting the local roads and footways to the adjacent park.

Light Rail viaduct Annandale — The multiple openings of the viaduct create a permeable structure for movement and views, good surveillance and no impediment to a good ground level space. In fact, interest is added to the spaces and views, if designed well. While this viaduct is old and a piece of important heritage, a similar effect can be achieved with more modern bridge viaducts.

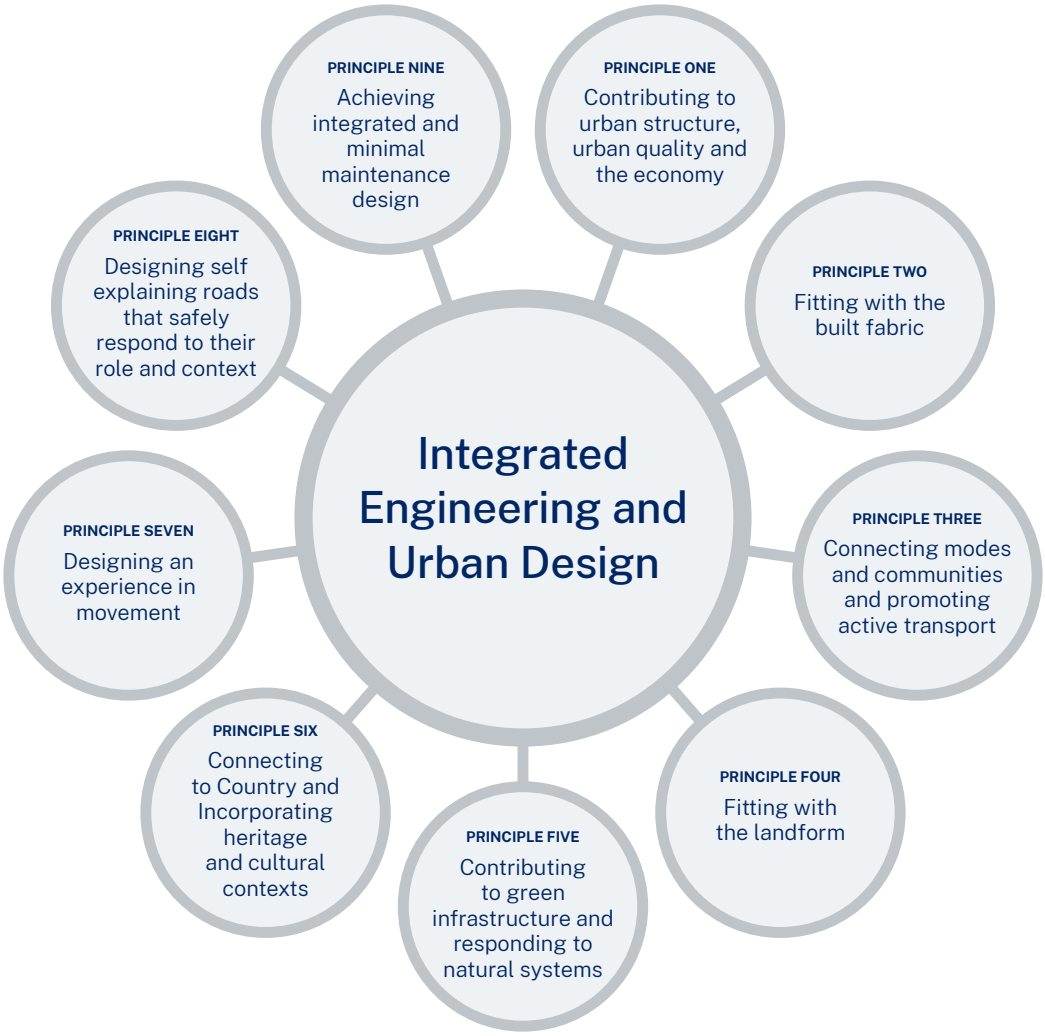


The influence on the quality of a project outcome changes in scale and nature over time. This diagram illustrates how urban design is a tool for avoiding underpasses in the options stage, but also influencing their form if they are needed.

2.2 An urban design approach to designing underpasses

Assuming that underpasses are needed, Beyond the Pavement has nine design principles that combined with the objectives and performance themes, can optimise underpass design. They all require multidisciplinary collaborative design teams to lead to good outcomes.

- **Principle 1** has more relevance in the planning stages and the avoidance of underpasses but also drives the transport alignment and the possibility of better connectivity.
- **Principle 2** in terms of underpasses, relates to the architecture and how the underpass fits into the surrounding built fabric.
- **Principle 3** connecting modes and communities, again relates to the avoidance of severance in the first place but also influences the width and quality of the connection and where it is located.
- **Principle 4** fitting with the landform, has a relevance in terms of the underpasses interface with the natural ground or the landform of the embankments.
- **Principle 5** relates to the presence of vegetation and trees which can make the portals of the underpass more pleasant and shady and desirable.
- **Principle 6** relates to the integration of art, heritage contexts and providing a connection to Country.
- **Principle 7** relates to the experience of moving through the underpass, particularly relevant where the journey is informative regarding history and geology (see case study 1).
- **Principle 8** relates to the use of the underpass whether for traffic and walking but also with regard to pedestrian and cyclist behaviour and wayfinding.
- **Principle 9** is about the design quality, the shape, the form, the materials, the lighting, signage, the design refinement and the maintenance issues.



3 The lessons from existing underpasses

Referring to these Beyond the Pavement principles, existing underpasses can be looked at objectively.

In general, the main issue with them is their subterranean nature. This leads to darkness and seclusion that encourages vandalism, creates a feeling of insecurity and provides an opportunity for crime. This is obviously worse for underpasses that go below natural ground level as opposed to underpasses that penetrate embankments or walls.

These qualities make underpasses undesirable and unused at best. It also poses an ongoing maintenance issue, an ongoing lighting and energy issue and a flooding problem to be overcome.

Coolongolook — This underpass is approximately 35 metres long and 2.4 metres wide. Having sunken approaches with no visibility through to street level it does not offer good passive surveillance nor a direct route.

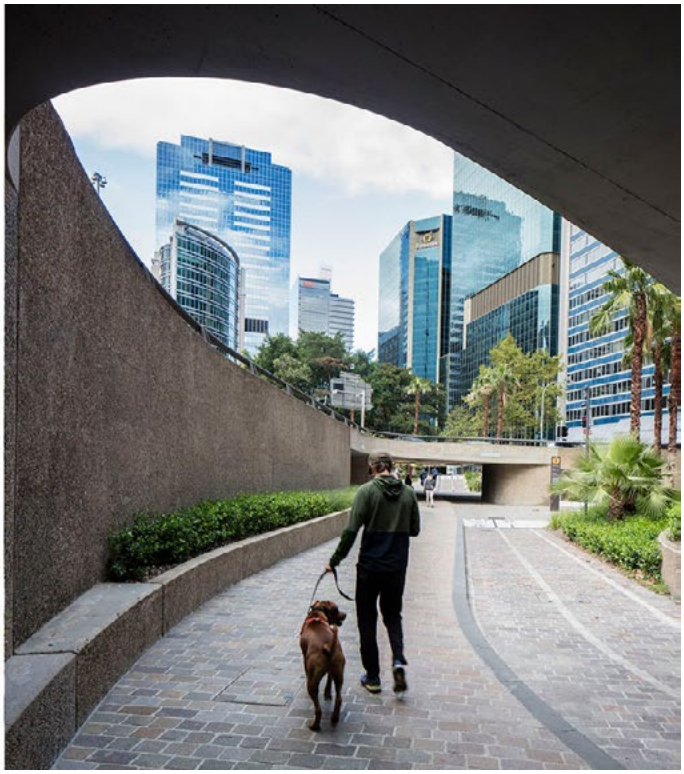
M2/Vimiera Road, Marsfield — The approach to this underpass is surrounded by dense vegetation, lacks a sense of space due to the fencing and portal design, and does not afford good surveillance from the surrounding area.

Gardeners Road, Sydney — This utilitarian underpass is located in an out of the way location with very little passive surveillance. The approach path is not in line with the underpass itself and visibility through the underpass is poor. At 2.4m metres wide and 45 metres long, it is too narrow.

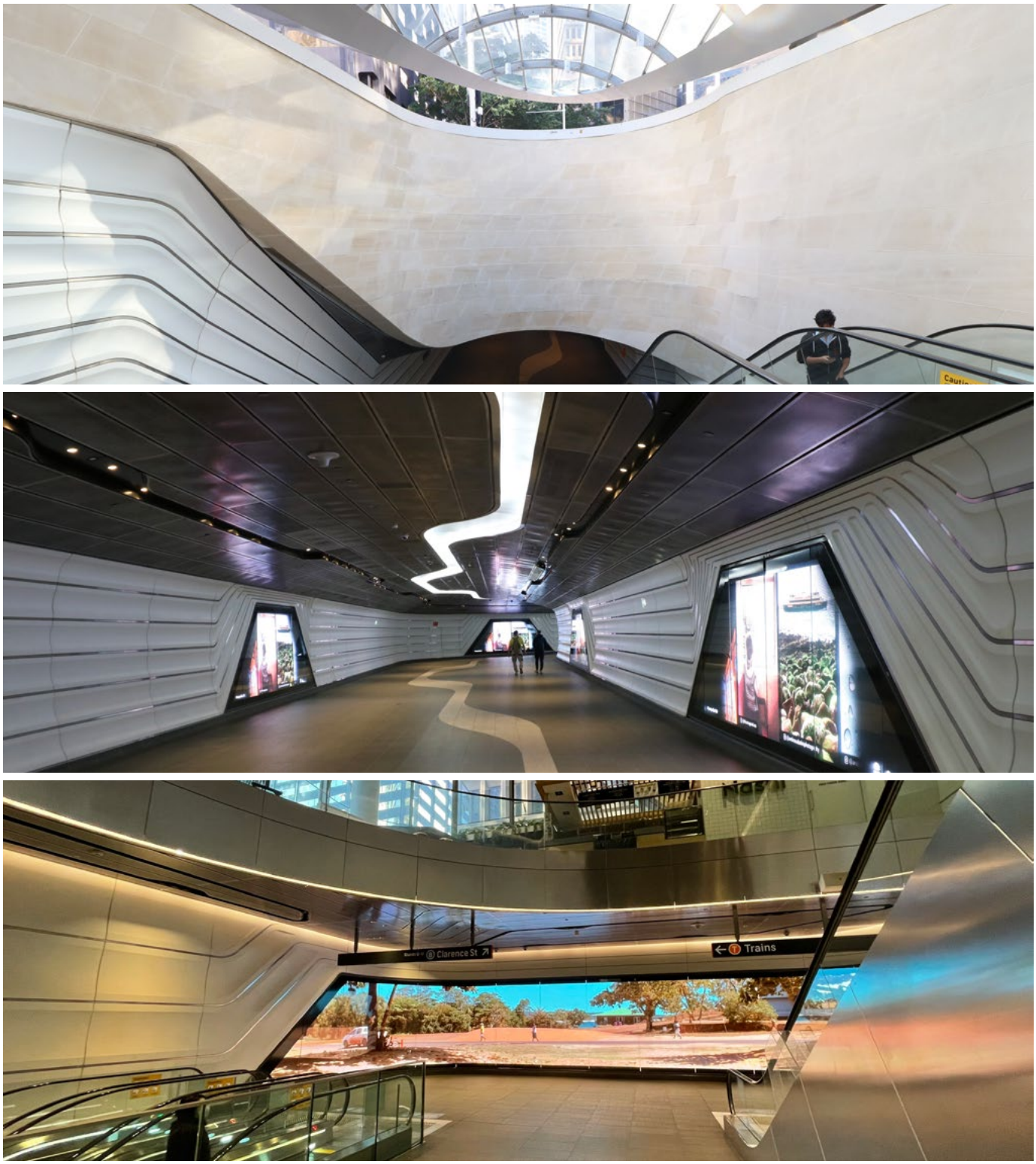
Graffiti litter and poorly maintained verges do not help what is already a very substandard underpass.

Victoria Road rail underpass, West Ryde (1990s) At 3m wide and 2.5m high and around 20m long this underpass is high enough but too narrow as a shared path in today's requirements. But importantly it feels too narrow dark and secluded not helped by its poor lighting. There is little alternative so it is used, but a better environment would encourage more use more active transport and a more pleasant customer experience.

There are many good examples however of underpasses that have stood the test of time or have been built recently. They have common aspects including generous space, good lighting and a creative not utilitarian design approach.



Kent Street Underpass, Sydney (1970s upgraded 2017) This is an older renovated underpass. It has been much improved, but had good original features. These include the separation of underpasses to create natural light wells and areas of planting; the good passive surveillance from offices and streets; the wide (at the time) passages of around 5m, which have enabled a separated cycle and walking facility; and the elegant form of the sweeping curved walls and girders, allowing good visibility. The improvements in planting, simplification of spaces, better visibility, new lighting and repaving has given the underpass a new lease of life. (Bottom pictures by JPW)



Wynyard Walk, Sydney (2018) completed to coincide with the Barangaroo development this subterranean underpass is one of the most challenging types, it required a high-quality scope and therefore considerable expense. The underpass is wide and high at around 9m by 3.5m and includes integrated lighting, imagery and art. Light coloured sculpted Glass Reinforced Concrete (GRC) panels unify and brighten the space. The underpass needed to turn halfway along its 180m length which can create hidden areas, however this was handled by the generous width of the passage and a wide radius turn allowing users to see ahead. The underpass was designed for peak conditions allowing many thousands of workers moving to and from the station and city centre each day. The design creates a good level of surveillance and safety, however during low peak periods can be used by just a few people on weekends and during pandemics when the generous spaces, safety and design features become of great value.

Underpasses on the M5 East, Bexley (opened 2001, improved 2020) The project location was relatively inflexible, continuing the exiting motorway program, but its vertical alignment was able to be influenced, and through the Bexley area was high enough to create the possibility for crossings to be at ground level. These joined up former streets with wide 7–10m wide underpasses on a straight alignment and clear views to either side. The underpasses intersected with the M5 East Linear Park and in time the landscape and paths have improved with public art and fitness pods. A busier pedestrian environment has helped with the passive surveillance that brings. The overall pedestrian environment is acceptable and conducive to outdoor recreation and active transport take up.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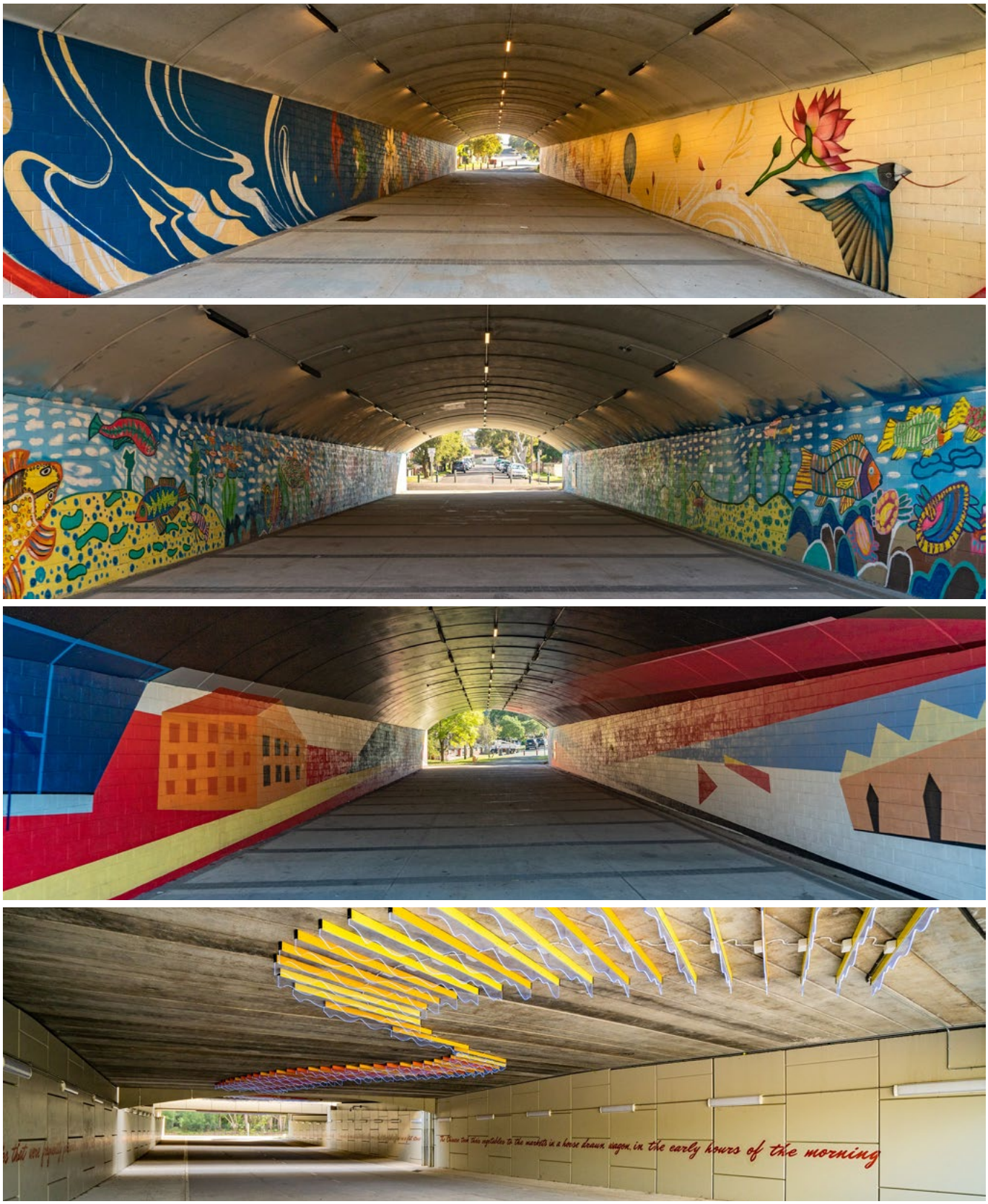


M5 East underpass and art collection, from top — Fantastic Worlds by Christina Huynh (Styna), Oysters Eating Rainbows by Emily Crockford, Time Tunnel by Mistery and Mikey Freedom and Wolli by Warren Langley.

4 Underpass design objectives

In accordance with *Beyond the Pavement* and lessons learned from built examples, the following design objectives can be distilled and should inform the design of underpasses. Proposals should use urban designers working in accordance with *Beyond the Pavement* or *Around the Tracks* (subject to underpass type).

4.1 Maximise passive surveillance

The underpass should if possible, be sited at a visible location, near activity centres and along streets. This will ensure patronage and activation, connectivity is maximised, and provide passive surveillance from surrounding areas for improved safety and security.

4.2 Be generously proportioned, safe & secure

The underpass should feel safe and secure to use. It should be at grade with the surrounding land where possible, have no hidden spaces, provide good visibility through and beyond the underpass and be well illuminated. It should be wide enough for users to pass without invading each other's personal space and inducing discomfort.

4.3 Provide high quality, context sensitive, attractive design

The underpass should be as attractive and inviting a space as possible. Its form and approaches should be unified and fit well into its surroundings and landscape. The tunnel effect should be minimised by good proportions and simple, (not utilitarian) design with a human scale and character, creative input and vegetation.

4.4 Provide direct connections

The underpass should be as direct as possible, minimising detours by providing a simple, straight connection or if kinks are necessary providing a wide radius and wider dimensions to allow users to be able to look ahead.

4.5 Minimise maintenance

The underpass must be designed so that it is robust, durable and relies as little as possible on ongoing maintenance to be successful. A simple elegant design with as few different surfaces and ledges as possible and lighting integrated into the structure is the best approach.

The site context will dictate the balance of importance between these principles.

5 Underpass design principles

The following design principles will help achieve the preceding objectives. They are benchmarks and the minimum standard to help achieve a good outcome. Experienced designers and engineers should be engaged to implement these principles and strive to ensure more than compliance, if an optimum, attractive, well used outcome is to be created.

5.1 Maximise passive surveillance

5.1.1 Where possible, underpasses should be located in busy areas rather than secluded locations, to maximise the available passive surveillance from surrounding areas of activity, buildings and public areas. The underpass will be better patronised, easier to maintain and contribute to improved public safety and personal security. Using a road or street underpass as also a pedestrian and cyclist underpass can assist in providing passive surveillance.

5.1.2 Underpasses should be sited as close as possible to the desire line. For example, if the underpass is being provided instead of an existing at grade road crossing, it should be located such that connectivity is maintained and that there would be only a minimal net increase in travel time by using the underpass. Assuming a secure well designed underpass, 95–100% of pedestrians will use it if there is no time difference between travel via the underpass and equivalent at grade crossing.

5.1.3 In busy city centre areas, creating space for musicians or other forms of entertainment can help provide a more frequented underpass.

Devonshire Street, Sydney (1906 upgraded in the 1990s) This underpass is in constant use as a means to access Central Railway Station and a direct connection from Railway Square. It is brightly lit, busy and vibrant, however only viable in high population areas. It is now over 100 years old and a testament to the vision of the planners and designers of the day who were working to more generous proportions than today's guidelines. Nevertheless, it is too narrow for its current use when busy and particularly when buskers are playing.

5.2 Be generously proportioned, safe & secure

5.2.1 The desirable minimum clear width of a two-way cycle only path is 3 metres and for a shared use path 3.5m (Austroads Part 6A), but in an enclosed underpass with potentially a 100 year design life this feels narrow and insufficient future proofing. Separated cycle and walking path desirable minimum is 4.5m clear width (2.5m bike path and 2m footpath) width. Considering the long design lives of underpasses and bridge structures and the expense in providing them and making sure they are useful, it would be sensible to ensure a minimum desirable width of 4.5m for underpasses, which if initially only for pedestrians allows future programming for walking and cycling. This width is generous and feels safer and comfortable, it is also commensurate with paths on modern bridge structures.

5.2.2 Wider cross sections and widths should be considered where possible, particularly if sight lines through and beyond the underpass are unsatisfactory. In general underpasses should be as wide as feasible to allow good visibility and give a generous amount of room for people to pass without invading each other's personal space. The width should be consistent throughout and not narrowed at either end.

5.2.3 A minimum height of 2.4 metres is acceptable for pedestrian only underpasses and the minimum vertical clearance for bicycle paths is 2.7 metres. A minimum height of 3 metres for underpasses is preferred and helps provide a more open, less tunnel-like effect with flexibility for future changes in use.

5.2.4 For underpasses longer than 50 metres and up to 100m, it is desirable that a 1:10 width to length ratio should act as a guide in setting the width required. For example a 60 metre long underpass should be 6 metres wide. In general, the longer the underpass, the more tunnel-like in effect, hence the need for a wider aperture to help mitigate this.

5.2.5 Where there is likely to be pedestrian and cyclist conflicts, additional width together with physical separation may be required. This is particularly important in areas of high usage and where the underpass forms a squeeze point on a shared path.

5.2.6 Lighting should be provided within and on approach to all underpasses. Lighting should mimic day time lighting conditions as much as possible and comply with relevant Australian standards. Sufficient room should be provided for lighting fixtures and other utilities if present.

Iron Cove Bridge, a 4.5m width path on the Iron Cove Bridge in Rozelle futureproofs the structure for walking and cycling.

5.2.7 When the underpass length to height ratio exceeds 10:1 (eg more than 30m long at a 3m height) daytime artificial lighting should be considered to minimise the black-hole effect. It also allows users to adapt to the contrast in light levels on entering / exiting the underpass. Lighting should be uniform throughout the underpass with minimal spotting or glare.

5.2.8 Where possible and appropriate, a natural light well should be provided in long underpasses to allow sunlight access. A large zone of openness is preferable but a window effect can work if designed well. The design of such a light well should consider safety, littering from above and the attractiveness of the 'window'. It should be generous in size and protect underpass users from detritus fall.

5.2.9 The approach to the underpasses should be open, free from dense vegetation and concealed spaces or objects that would obscure sight lines and distances on entering or exiting the underpass.

5.2.10 Suitable traffic noise mitigation should be considered in the design of the underpass structure to reduce the impact of road noise and vibration resonating inside the underpass. This can generate a sense of fear for some users

The light wells in the Lennox Bridge underpass are attractive features in their own right and help decorate the underpass as well as light it up. (Photo by Hill Thallis)

5.3 Provide high quality, context sensitive, attractive design

5.3.1 All elements of the underpass including, portals, ceilings, walls and pavements, both inside and outside the underpass, should be designed as a refined and unified piece of design.

5.3.2 Landscape should be safely integrated into the design of the underpass curtilage to improve the character of the area, provide shade and cooler temperatures in summer and improve air quality next to the road or rail corridor, but care should be taken to not block visibility and sight lines.

5.3.3 A more detailed human scale to the design of the underpass is appropriate in creating a welcoming, attractive look. Interpretative information, textures and colour can add interest at a walking pace.

5.3.4 The entry should be well defined so that it can be easily identified and welcoming. It should also be designed so that it fits in well with the surrounding area incorporating landscape and trees where appropriate.

5.3.5 The use of splayed access portals and approaches and angled walls should be considered as the appearance is more attractive, open, and accessible. It also improves visibility and reduces the tunnel effect by maximising natural light access into the underpass from the portal.

5.3.6 The finishes and form of the walls, ceilings and pavements both inside and outside the underpass should look good and complement each other in a design sense.

5.3.7 Careful selection of colours and textures is important to help brighten the underpass and maximise the available light from lighting fixtures and the portal.

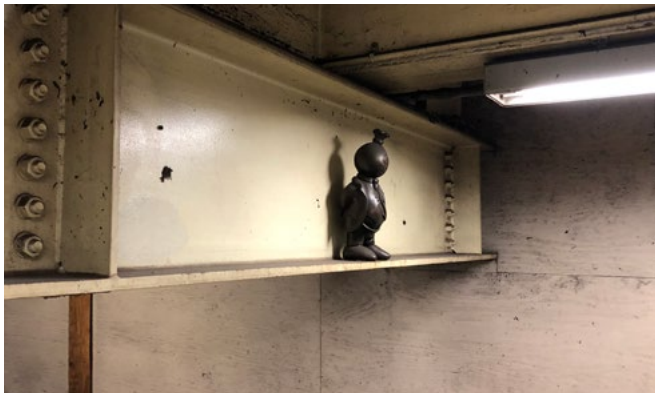
5.3.8 Integrating creative and artistic solutions such as bas relief, bespoke textures, wall paintings, lighting installations or sculptures, may be appropriate. They will help create a better used and more attractive space and are excellent at deterring graffiti vandalism.

5.3.9 Co-designing with local Aboriginal artists can help provide a Connection with Country through the form and finishes of the underpass and influencing all of the above.

Underpass on the M5 East, Bexley. The trees around the portals improve the outcome and visually reconnect the two sides of the passageway.

The walls of the Lennox Bridge underpass in Parramatta incorporate information about the people involved in the bridge and its adaptation. They add a fine grained interest and make the underpass more welcoming for pedestrians.

The entrance at Wynyard Walk is obvious, clearly identifying its location and use and light and welcoming. The outcome is appropriate for Sydney CBD and the numbers of people using it but generally unachievable. But the principles are common. (Photo Woods Bagot)

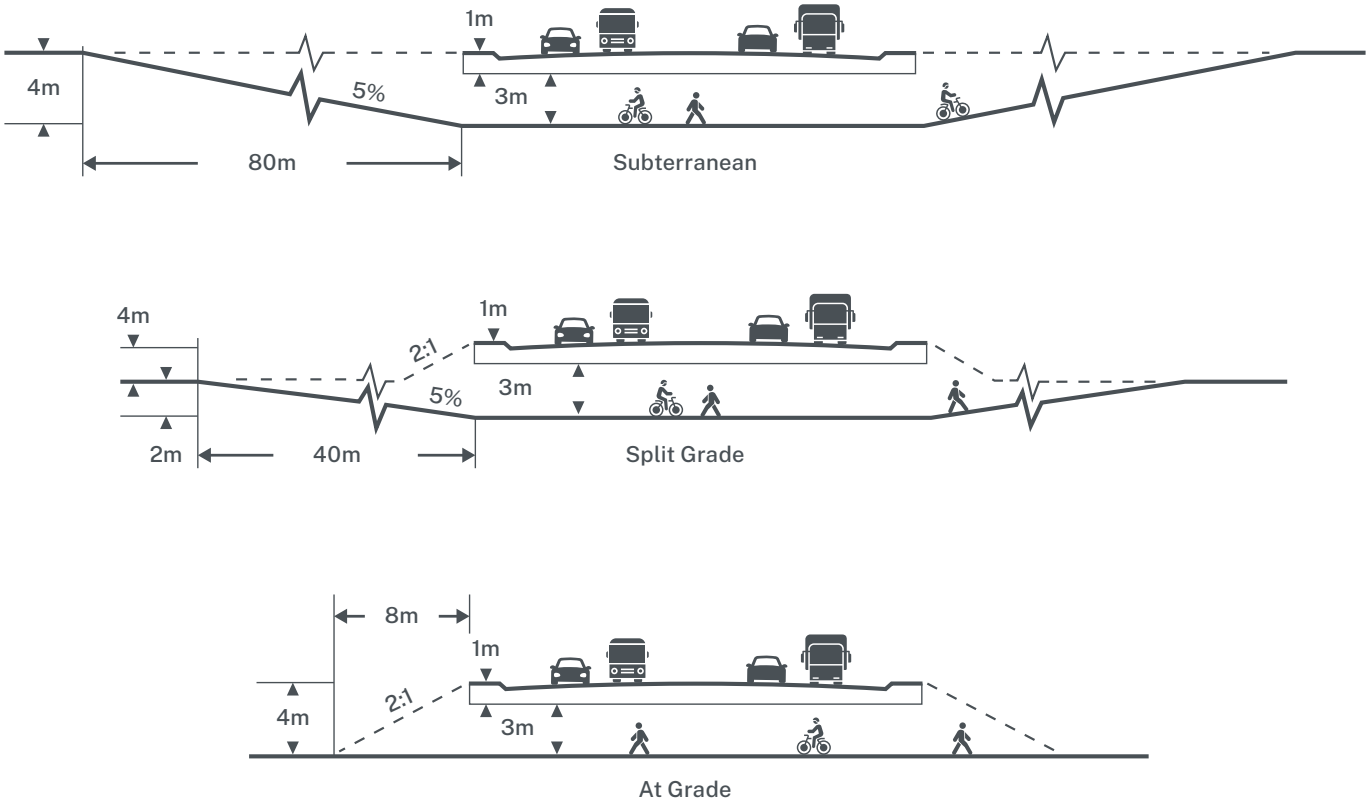


New York Subway 1998 Bronze sculptures by Tom Otterness add humour and joy to the New York subway. They are small and tucked out of the way so they don't impede movement, but they add great value to the subterranean environment.

5.4 Provide direct connections

5.4.1 Underpasses and their approaches should be at grade and straight in both vertical and horizontal alignments as much as possible, to allow for clear sight lines through and beyond the underpass for better passive surveillance.

5.4.2 If an at-grade underpass is not possible, a split grade design (see below) should be pursued. That is, the vertical alignment of the underpass is at least half of the total elevation change from the approaches, allowing pedestrians in the underpass to see the horizon at the end of the underpass. The subterranean approach is the least desirable vertical alignment.



Differing vertical alignments for underpasses, the subterranean option produces the least desirable design. At grade crossings solutions are preferred and the split level allows partial visibility.

5.4.3 There should be no widened spaces, corners or areas within the underpass that could obscure sight lines and conceal other users.

5.4.4 The approaches should be direct and in line with the underpass to ensure good visibility within, through and beyond. This allows pedestrians to seek better surveillance of approaching users, including oncoming cyclists.

Kent Street underpass has clear direct connections either side of the under croft space. It also uses landscape to good effect improving the environment and providing shade and a cooler setting in summer.

5.5 Minimal maintenance

5.5.1 High quality durable and vandalism resistant materials should be used such as glazed tiles and bricks, stone work and textured concrete. Tiles are particularly useful, improving reflectivity and light levels while minimising graffiti vandalism and the difficulties of removal.

5.5.2 Lighting fixtures should be located out of reach from vandals, such as being recessed into the ceiling and designed with vandal resistant covers. If underpasses are being retrofitted with lighting, the fixtures should be durable and attractive elements in their own right.

Strip lighting designed into the Lennox Bridge underpass, vandal resistant, constant light source and an attractive element complementing the space. The use of tiles provides a lighter more vandalism proof finish.

Retrofitted lighting at Kent Street, integrated into the ceiling and wall made from stainless steel with thick acrylic diffusers.

5.5.3 As underpasses are often situated at the lowest point from the surrounding landform, a good well designed drainage system must be provided to allow for satisfactory disposal of runoff and prevent flooding or pooling on approach to or within the underpass. The grilles should be thought about and integrated into the paving or concealed.

5.5.4 The underpass should be well maintained and kept clear of litter, graffiti and unsightly stains. The design should facilitate low maintenance. Ledges or corners where webs or nests can gather or litter be trapped, should be minimised in the underpass design.

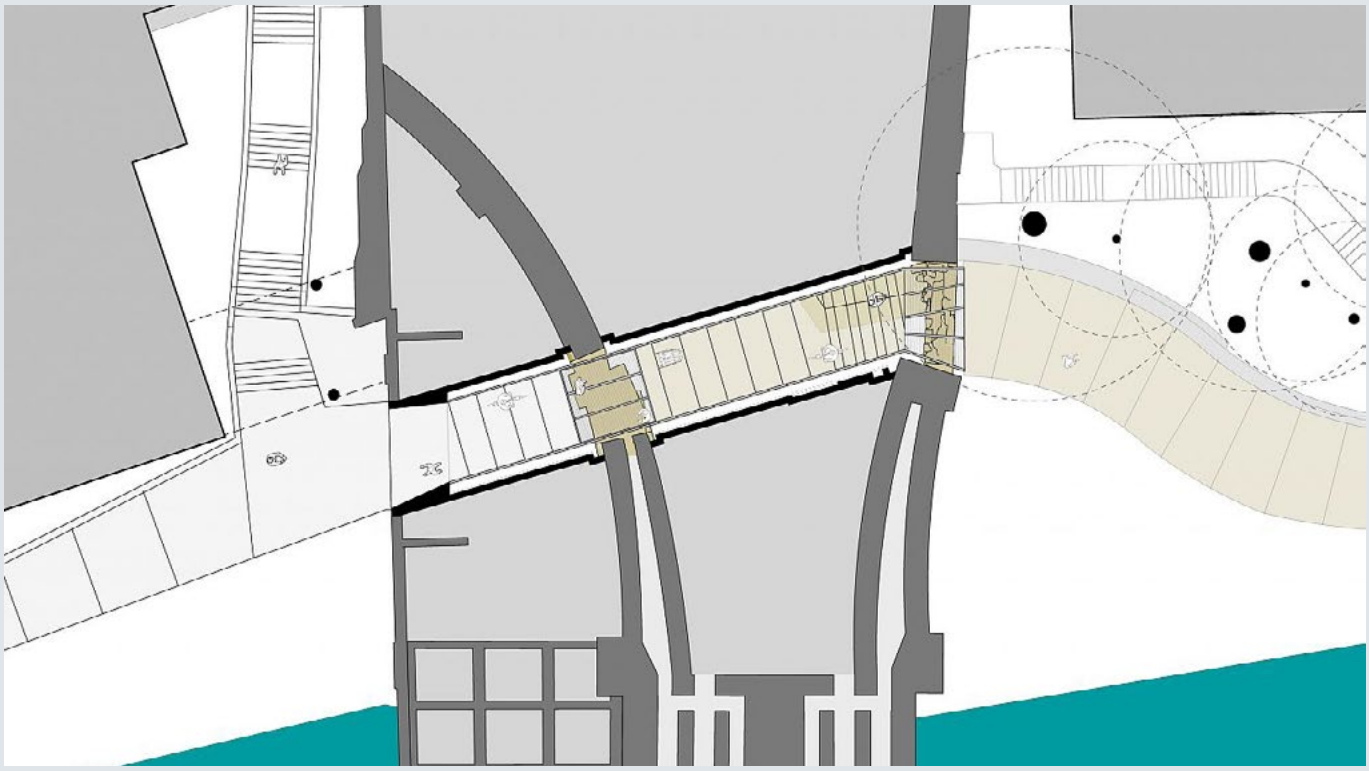
Clean lines refined durable surfaces and recessed lighting minimise the maintenance liability in the Bowen Crossing in Canberra in an attractive welcoming way.

6 Process of design for underpass projects

Beyond the Pavement describes a design process across the various stages of a project. The following is a simplification of this as applicable to underpass projects. However many underpasses are developed as part of larger projects, so this may not apply.

	Stage	Summary of key tasks (by TfNSW urban design or Registered Urban Design company)	Guidance Documents
0	Business Case	• Consider design quality required and help ensure context sensitive budget.	UDG
1	Options assessment	• Consider the merit of alternatives to the underpass. • Assess the connectivity issues and desire lines. • Maximise passive surveillance in the locating of the underpass. • Assess impacts on character and place.	BTP2020 Guideline for Landscape Character and Visual Impact Assessment (GLCVIA) Underpass Design Guideline (UDG)
2	REF/ concept	• Consider the customer experience. • Influence form dimensions and materials. • Work with artists and Aboriginal advisors from locality. • Assess visual impacts.	BTP2020 GLCVIA UDG
3	Delivery	• Develop detailed design, materials finishes, and lighting. • Consult with asset owners. • Monitor implementation.	BTP2020 UDG Landscape Design Guideline
4	Operation and maintenance	• Monitor success of project. Feedback to this guideline and asset owners.	UDG Landscape Guideline

Lennox Bridge Portals, Parramatta



Country: Land of the Burramatagal people of the Darug nation
Client: Parramatta City Council

Awards:

- 2016 NSW AIA Award Adaptive Reuse
- 2016 NSW AIA Award Urban Design
- 2016 National AIA Award Urban Design

Hill Thalis team

- Philip Thalis
- Laura Harding
- Brett Sperling
- Sarah Hill

Consultant team

- Design 5 — Heritage Construction Stage + balustrade restoration
- Archaeology and Heritage Pty Ltd — Anne Bickford and Franz Reidel field archaeologists
- Mott Macdonald (Structural and Civil Engineering)
- Lighting Art and Science (Lighting and Electrical Engineering)
- Jasper Swann (Stone advisor)
- DRP Stonemasonry (Stone masonry — site masons Jennaro and Tony)
- NBRS — Development Application (Heritage at DA stage)
- Parramatta City Council (Landscape Architecture)
- Thylacine (Interpretation)

Contractor

Abergeldie

Drawings + photography

© Drawings Hill Thalis Architects
© Photographs (Night/Dusk) Kylie Ardill
© Photographs Alexander Rink

Parramatta City Council's decision in 2010 to extend the foreshore pathways as portals through Lennox Bridge at Parramatta prompted controversy — echoing the situation at the bridge's conception in 1835, when the new bridge's geometry, height and character were fiercely contested.

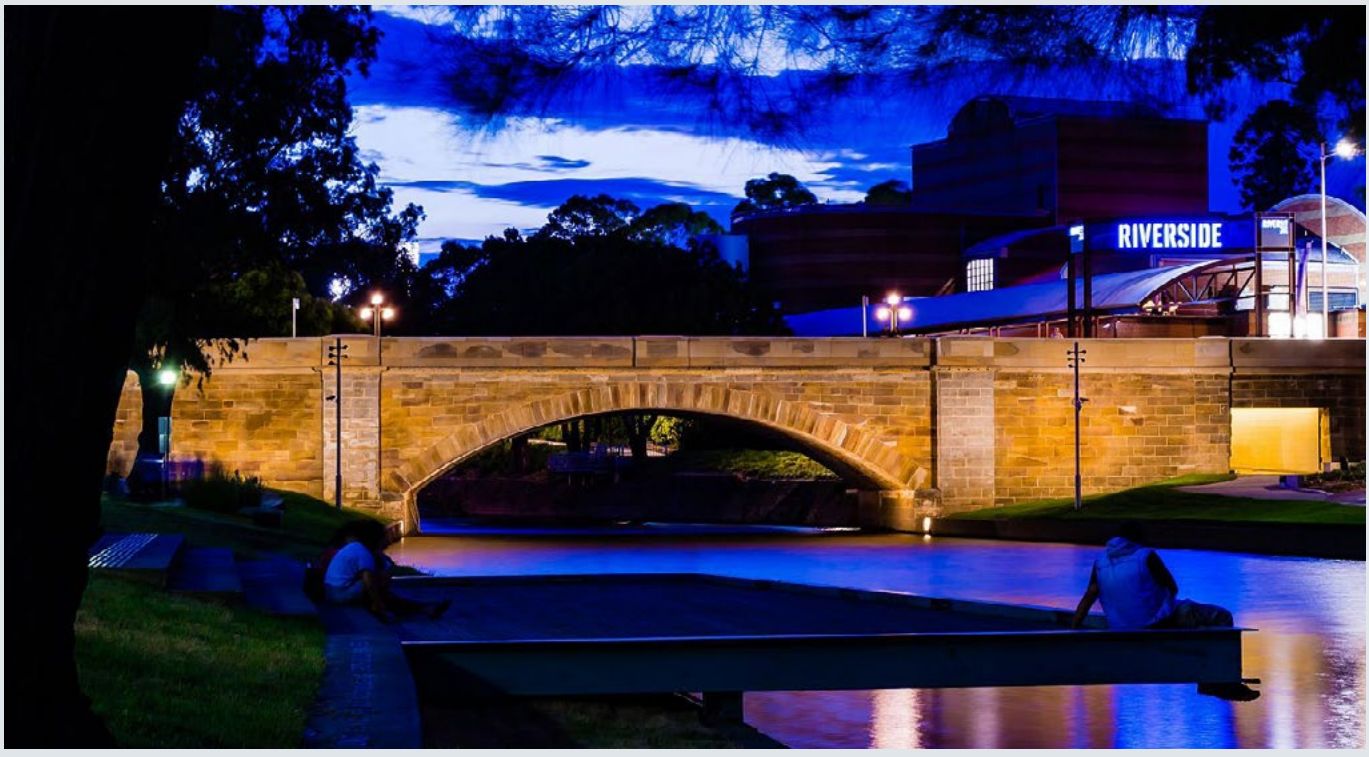
The public desire to understand Lennox bridge as an historically 'pure' entity and the design team's growing awareness, though research, of the bridge's more equivocal history led to an architectural strategy that fostered both continuity and distinction.

The eastern façade's stonework was cleaned and re-pointed and a historically consistent curved balustrade with projecting cornice was reinstated. New stone, profiled and cut with computer aided fabrication processes, was lowered into place by masons using Lewis pins — just as Lennox's masons did almost 180 years ago.

By contrast the portal openings are unapologetically contemporary — conceived as surgical excisions of the abutment fabric. Set out from an unbonded vertical joint, the portals expose the depth and convict-tooled surfaces of the structural pier. The opposite reveal is made by a smooth cut to the abutment stones which accentuates the stone's beautiful polychromy. The 25mm line of the stainless steel lintels is the only visible addition to Lennox's wall.

The experience of moving through the portals is like walking a cross section through time — explaining its layered history. A pier from the earlier 1804 Gaol Bridge was discovered during the archaeological dig and is recorded in the works. The sequential construction of the separate halves of Lennox's bridge and the interim retaining wall that divided them are also marked. People can now walk through Lennox's original western wall that has been buried beneath Church Street since 1939 when the DMR widened the bridge. The DMR works are articulated through skylights in the portals, which in their gridded form express the latticed concrete structure and allow sunlight to once again strike Lennox's western stonework.

The portals are the latest in a succession of projects that have seen this key river crossing evolve with the settlement, township and now City of Parramatta. The portals plot a complex trajectory through the shifting interpretations of history.



Bowen Place Crossing, Canberra

The Bowen Place Underpass, near Kings Avenue Bridge, took out a top award for infrastructure (ABC News: Mark Moore)

Country: Land of the Ngunnawal People, Ngunnawal Country
Client: National Capital Authority

Awards:

- 2016 Australian Institute of Architects ACT, 2016 Canberra Medallion
- 2016 Australian Institute of Architects ACT, Sir John Overall Award for Urban Design
- 2016 Australian Institute of Landscape Architects ACT, Award of Excellence for Design in Infrastructure
- 2016 Australian Institute of Landscape Architects, National Landscape Architecture Award – Excellence in Infrastructure
- 2016 Australian Urban Design Awards, Australia Award for Urban Design, Delivered Outcome – Small Scale
- 2016 National Architecture Award – Walter Burley Griffin Award for Urban Design,
- 2016 Planning Institute of Australia ACT, Great Place Award

Article: ABC News Fri 28 Oct 2016.

Award winning Canberra crossing challenges 'creepy underpass' stereotype by Ewan Gilbert

It has been open for just over a year, but a unique Canberra pedestrian crossing is continuing to turn heads, challenging the "creepy" stigma associated with similar underpasses.

The $10 million Bowen Place underpass, beside the National Gallery near Lake Burley Griffin, beat out competition from around the country to take out the top award for infrastructure at Thursday night's National Landscape Architecture Awards.

Elizabeth Mossop's firm Spackman Mossop and Michael's won the design competition to build the Commonwealth-funded project in 2013.

Ms Mossop said they set out to change the way people think about "often creepy" pedestrian underpasses.

"People generally don't like going underneath things, they don't like going where they can't see," Ms Mossop said.

"So there's been a lot of work in this project to really open the space up and also to light it in such a way so that it doesn't trigger all of those feelings of fear," she said.

Ms Mossop said governments and developers often failed to put much thought into designing basic infrastructure.

"Whether it's roads or underpasses or parking lots ... the landscape of infrastructure is where we spend our time," Ms Mossop said.

"They have to be as beautiful and as full of joy as... parks and squares".

Suzanne Moulis from the Australian Institute of Landscape Architects was on the judging panel for the awards and said it was wonderful to see a Canberra project do well.

"It was up against some very strong competition from Sydney, Melbourne, Perth, Queensland and I think what we're seeing here is the best of the best," Ms Moulis said.

"It's certainly not your typical engineered solution to a conflict between pedestrians and roads."

Ms Moulis agreed that as living in cities becomes more popular, a shift in thinking is required to make them more enjoyable.

"These types of high-quality public places will become ever more important to people. The people of Canberra and the people who visit it," she said.

Designers hope the underpass will make people think more about the space around them (ABC News: Mark Moore)

References

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Around the Tracks, Transport for NSW.

Movement & Place Practitioners Guide, Transport for NSW.

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Walking Space Guide, Transport for NSW.

For further enquiries
www.transport.nsw.gov.au
June 2023
TfNSW 23.068 ISBN 978-1-922875-75-4

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