Urban design

Introduction

Urban design is concerned with the design of the buildings, places, spaces and networks that make up our towns and cities, and the way people use them. Quality urban design leads to improved economic, environmental, social and cultural outcomes. By its very nature, urban design crosses over boundaries, integrating land use and transport. Urban design should be considered in relation to all sections of this toolkit.

The predecessors of the NZTA (Transit New Zealand and Land Transport New Zealand) were both signatories to the New Zealand Urban Design Protocol. The protocol is a significant document that was signed by over 150 organisations and created to improve the quality of New Zealand towns and cities. As the design of our built environment dictates many of our decisions regarding transport, the New Zealand Urban Design Protocol is a key reference when considering travel demand management.

Quality urban design means that roads should fit in sensitively with the landform and the built, natural and community environments through which they pass. All systems of movement along and across the corridor should be integrated into the design of projects with good connections and access to communities. Quality urban public spaces should be created so the experience for the public and specifically road users is improved.

The New Zealand Urban Design Protocol identities seven essential qualities that create quality urban design, commonly referred to as the seven Cs:

- context
- character
- choice
- connections
- creativity
- custodianship
- collaboration.

Context

Project elements are not to be considered in isolation. All elements and spaces are part of a larger context. Good urban design considers the neighbourhood and wider city and:

- builds to local climate
- retains local character
- ensures cohesive development that recognises cultural identity and heritage.
Introduction continued

**Character**

The distinctive character and culture of an urban environment is recognised. New spaces are distinctive yet complementary and appropriate. Space:

- reflects the unique identity of the town or city
- protects local landforms
- creates locally appropriate architecture and spaces.

**Choice**

The opportunity to choose is integral to quality urban design. Choice includes building types, transport options and activities. By providing adaptable designs, new and unseen uses can be incorporated at future dates, providing robustness to the town or city.

- ensure the urban environment has opportunities for all, especially the disadvantaged
- provide transport mode options
- encourage mixed-use neighbourhoods.

**Connections**

Good connections improve social cohesion and can improve public safety and make spaces more liveable. Transport networks connect and support each other. By improving connections between walking and cycling routes, rail and streets, the entire network is improved. Facilities are carefully placed on the network to reduce travel times and improve navigation around the network.

Increase connectivity by providing:

- safe and attractive paths
- linked open spaces
- integrated transport modes.

**Creativity**

Quality urban design uses creative approaches and facilitates new ways of thinking. This helps make places both functional and memorable spaces that are adaptable to new technology.

Add creativity by:

- using imaginative solutions
- incorporating art into the design and using artists in the design phase
- using new technology.

**Custodianship**

Custodianship is a principle that recognises the life costs of building. A good custodian recognises the next generation and the environment. A sense of ownership and responsibility is instilled in all residents. A custodianship approach:

- protects the ecosystem
- considers ongoing care and maintenance of buildings and other structures
- improves environmental performance of infrastructure.
Introduction continued

Collaboration

Because most towns and cities are designed incrementally, good urban design requires communication and coordination. All decision makers and stakeholders (including residents) should be involved in the design process. Collaboration ensures:

- a common vision for the locality
- meaningful community involvement in decision making
- the use and recognition of examples of good practice.

Objective

The objective is to improve the towns and cities we live in through quality urban design. Appropriate urban design features will improve opportunities to use alternative transport methods and encourage community interaction through walking and cycling. Construction of new infrastructure is the ideal time to improve the quality of the urban design and incorporate features that have secondary and tertiary benefits to the local community.

Quality urban design changes behaviour by avoiding the problems associated with the uninspiring, segregated and poorly designed low-density subdivisions of the past. The new roads, lanes, signs or other infrastructure designed with the seven Cs will be more attractive to use and will improve identity and reduce isolation. Improving the urban design of roads and other aspects of the transportation network will significantly improve the characteristics of urban space and generate many benefits.

Pedestrian Bridge in Denver Colorado, USA
## Benefits

Quality urban design provides benefits to everybody, as we all use and benefit from the spaces, places and networks within our towns and cities.

<table>
<thead>
<tr>
<th>Successful places</th>
<th>Quality of infrastructure and quality of life are key factors in creating successful towns and cities. Urban design has a significant positive impact on both.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economy</td>
<td>Economic returns are increased by quality urban design and are evident through higher returns on investment, reduced operating costs, more productive working environments and greater prestige through enhanced image. A retail space that has better design will attract a greater number of shoppers. An industrial space with quality design will have uninhibited flows, reducing operating costs.</td>
</tr>
<tr>
<td>Cultural identity</td>
<td>The cultural identity and heritage of towns and cities are protected through quality urban design. New construction will provide interesting spaces that reflect and complement the historic character of the community. Heritage buildings will be retained and used appropriately. History and knowledge will be passed down the generations through signage, structures and memorials.</td>
</tr>
<tr>
<td>Social cohesion</td>
<td>A diverse community will work, live and play together through a greater choice of accommodation types, work opportunities and travel modes. Quality education, employment and entertainment opportunities are within easy access of the community. This leads to greater social cohesion and less community segregation.</td>
</tr>
<tr>
<td>Access</td>
<td>Access is improved through a range of public transport options and reduced distances to travel. Walking and cycling are viable options in areas with high-quality urban design. People with impaired mobility are provided access to public transport. Bus stops and walkways are obstacle free and provide shelter from local weather conditions.</td>
</tr>
<tr>
<td>Environment</td>
<td>Quality urban design considers the environmental impact of individual developments and the entire network. Improved public transport networks lead to reduced CO\textsubscript{2} emissions. Storm water runoff is reduced through curb-side planters, swale drains, etc.</td>
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<tr>
<td>Liveability</td>
<td>An area incorporating quality urban design has more features on the human scale. Liveability is improved through the increased choice and access. Cost of living is reduced through reduced travel distances and greater variety of housing type.</td>
</tr>
<tr>
<td>Health</td>
<td>The overall health of the community is improved when quality urban design has a focus on increased walking and cycling opportunities, quality outdoor space and positive environmental outcomes. A more cohesive community is naturally healthier through reduced isolation and increased interaction.</td>
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</tbody>
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Tools for urban design

Improved urban design

Urban design incorporates physical elements and principles. Physical elements such as high-quality infrastructure, built form landscaping and public art reflect the underlying principles of urban design that lead to successful towns and cities. When a new project is being planned, consideration for the place of the project within the larger community will start to bring in elements of urban design, such as:

- signage – clear and designed in context to the environment
- artwork – incorporated into signage, buildings and public spaces
- open space – formal and informal meeting spaces designed to be areas of interest and natural gathering
- active edges – increase human activity around the ground-level borders of buildings, e.g. cafés with sidewalk tables
- lighting – designed to have low energy use, increase security, provide interest in space and be of interesting design
- bus shelters – provide safe, accessible and comfortable areas to wait; real-time information displays can be incorporated
- facades, rooflines and scale of new buildings – keep the character of the local area
- paved walkways connecting key land uses and public open space
- local streets with pedestrian, public transport and cycle priority
- integrated public transport stops linking various modes of travel
- creative and performing art spaces integrated into commercial buildings.

Where to apply these tools

Urban design should permeate all projects. New developments and infrastructure projects should look for opportunities to incorporate good urban design. High-value and high-visibility projects should incorporate urban design from the initial planning stages to ensure quality urban design results. Reconfiguration and expansion projects should be ideal times to improve on urban design.

<table>
<thead>
<tr>
<th>Improved urban design</th>
<th>Centre</th>
<th>Urban</th>
<th>Suburban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved urban design</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
<td>★★★</td>
</tr>
</tbody>
</table>

Improved urban design principles are appropriate in all locations.
Case study – Coastal Walkway, New Plymouth

The Coastal Walkway is a 7km long path stretching along the New Plymouth city waterfront. The New Plymouth District Council encourages walking, running, skating and cycling along this walkway. A 4km northern extension including a shared pedestrian and cycle bridge has recently been completed. The Coastal Walkway links into the existing road cycle network and provides an option for cycle commuters.

Quality urban design is demonstrated in this walkway through the design that reflects the character of the west coast location by using robust and simple materials. An adjacent curved seawall provides erosion protection and some shelter for walkway users. The walkway is a popular recreation and commuting path that improves connectivity in New Plymouth.
Case study – Addison, Takanini, Auckland

Addison is a medium-density greenfield residential development just north of the Papakura town centre. The development is innovative in the types of houses, road network and use of park space.

The development will eventually accommodate 1500 houses with elements of high-quality urban design throughout. The adjacent 56 hectare Bruce Pullman Park is incorporated into the development through a landscape concept that opens private residential property onto the large open spaces of the public park. Addison has a range of road sizes to describe hierarchy and to control movement. There is also a network of footpaths that link the public spaces. The Addison development is constructed adjacent to the rail corridor and is located approximately 1km walk from the Takanini Station. There is future potential for a new train station to be built on the edge of the Addison development.
Case study – Otanerua Eco-viaduct Northern Gateway, Orewa, Hibiscus Coast

The Otanerua Eco-viaduct is a portion of the Northern Gateway toll road north of Auckland. The Northern Gateway is a 7.5km portion of a larger motorway project and includes the Otanerua Eco-viaduct over the Otanerua Stream, which incorporates several features of high-quality urban design. The construction of the viaduct was designed to retain sufficient connected habitat to allow the passage of wildlife under the viaduct.

The ecological corridor under the viaduct will help retain the environment and allow the viaduct not to totally dominate as the main feature in the local area. The Northern Gateway project is also important for the town of Orewa, which was previously severed by State Highway 1. The new route for State Highway 1 will help alleviate traffic congestion in the town centre and allow connections between the town and beach to be restored.
Case study – Eleanor Schonell Bridge, Brisbane, Australia

The Eleanor Schonell Bridge is a 390m long cable stayed pedestrian, cycle and bus bridge, linking the University of Queensland St Lucia Campus with the South Brisbane suburb of Dutton Park. The new bridge provides a link that reduces road distance for pedestrians, cyclists and buses by up to 12km. The bridge links the Rivercat ferry stop and the Brisbane River cycleway.

The Eleanor Schonell Bridge showcases quality urban design through providing a distinct structure that fits into the environment, links communities, encourages alternative forms of transport and considers the environment. Environmentally sensitive design on the bridge includes solar panels to meet the electricity needs on the bridge, water runoff collection and the significant reduction in carbon footprint by providing a direct pedestrian, cycle and bus link between South Brisbane and St Lucia.
Case study – Hammarby Sjöstad, Stockholm, Sweden

Hammarby Sjöstad is a new district in Stockholm that extends the urban inner city area. The district is built on former industrial land and incorporates a mix of housing types with quality public spaces.

The new district had a quality urban design focus from the outset and includes tram stops and new bus stops to link in with the existing public transport network. A mix of medium- to high-density housing is provided, including canal homes and commercial units. High-quality public spaces are provided along the waterfront, as well as smaller public parks between the residential buildings. Local public amenities include a library, ski slope, football field, water access and many art fixtures.

Complementary measures

- Land-use planning
- Walking
- Cycling
- Accessibility planning
- Public transport
- Travel planning

What other policies may this address

Urban design is about making a place that functions well. This means there will be a positive effect on health, improved social networks, a reduced need for travel, better lifestyle for local residents and a more efficient local economy.

Further information