3.
Being a good neighbour through contextual design:

3.1 Contribute to a positive, attractive streetscape

Overview

Housing addresses and overlooks all streets and open spaces to assist with a positive streetscape interface as well as provide benefits of 'eyes on the street'.

Existing policy in the planning scheme

Unless located in a Neighbourhood Character Overlay area, the existing planning scheme does not provide opportunity for assessment of many new dwellings, limiting the outcomes. Where dwellings are under assessment, the RAL Code expects development creates a high quality streetscape and that dwellings should be designed to a high aesthetic standard and respect the built form character of the locality. However, the application of this provision is likely limited in greenfields developments.

Guidelines

Eyes on the street
– This term refers to techniques used to enable passive surveillance of public spaces such as streets and parks. It involves ensuring buildings and habitable places do not "turn their back" on public spaces.
– By designing for eyes on the street, developments can enhance security and the comfort for people in public spaces.

Welcoming frontages
– Dwellings incorporate substantial windows where the dwelling overlooks streets and open spaces to enable 'eyes on the street'.
– Front doors and main entry-ways to dwellings are visible and accessible from the primary street.
– Buildings on corners positively address both street frontages through facade and window/balcony/door design. This helps the building interact with the streets as well as provides visual interest in the streetscape.

Buildings front onto parks
– Dwellings abutting or adjacent parks should be oriented to present their main dwelling facades towards the park. This can be done for side boundaries, or in instances where dwellings are on the opposite side of the street from a park (see Diagram 1).
– Community titled developments are well suited to this arrangement.

Fencing
– Front fencing should be low and open. This allows the dwelling to interact with the street as well as provide passive surveillance of the dwelling.

Houses address major connector streets
– Connector streets and their surrounding neighbourhoods benefit from the presence of houses which front onto them. This reinforces the area's residential nature as well as improves security and the streetscape amenity of the area.
– Where dwellings address streets with higher traffic demand, landscaping and large front setbacks are utilised to afford the dwelling with privacy and acoustic protection.
– Unsightly acoustic and side fencing is to be avoided.
– Vehicle access to sites is afforded in a safe manner through appropriate driveway design including wider driveways, shared driveways and the use of side streets and rear lanes for providing access to dwellings which front onto connector streets.

Evidence

The need for this was observed in the process of studying six recent greenfield residential developments around Toowoomba and Highfields as part of the TRUFF synoptic survey. This study identified that the more successful streets and developments had dwellings which were designed to have a relationship to the street and adjacent public spaces.

Feedback from stakeholders identified the desire for more welcoming types of dwellings which do not 'turn their back' on the street.

Learn more about this topic
– *Next Generation Planning handbook, Council of Mayors SEQ, 2011*
– *Neighbourhood planning and design, PDA guideline no. 05, 2015*

3.1.1 # Housing overlooks all streets and open spaces

Diagram 1
Dwelling presentation over parks and streets provides passive surveillance to the parks and streets as well as amenity for the dwellings and surrounding area.
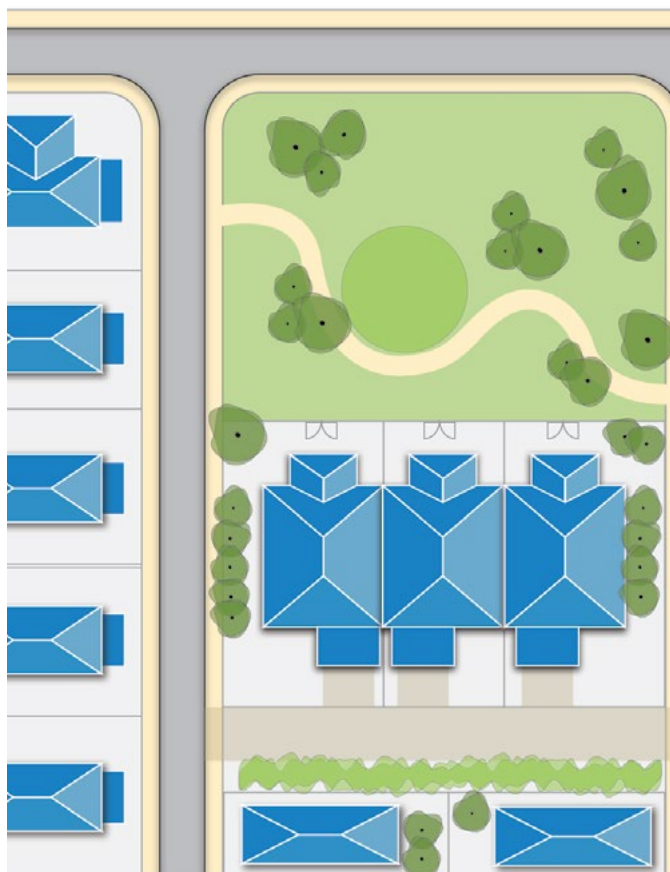
Housing faces parks

Dwellings overlooking public spaces make the most of the surrounding views while helping the public spaces feel safer.

Photo: Jensen PLUS

Housing fronts higher order streets
Cronin Road in Highfields is an example of the positive role street-fronting housing can play in creating a positive street interface even for connector (collector) streets.

Photo: Jensen PLUS

Overview

Corner buildings are highly visible and can make a strong positive contribution to the streetscape by addressing both street frontages and allowing for the development of larger, landmark buildings.

Existing policy in the planning scheme

There is little information that talks about specific desired outcomes for residential corner blocks.

Guidelines

Building design for corner sites
_ Locate larger buildings including two storey buildings on corner sites, forming local landmarks to aid legibility and neighbourhood character.

_ Buildings should reinforce corners through changes in setback, articulation, materials colour and massing.

_ Upper storeys should be designed to be visually appealing and present to both streets.

_ The primary street frontage should be designed to satisfy front facade standards as described in 3.1.4, including a clearly defined and visible entry.

_ The secondary facade does not have to include a visible entry, but should still address the street by incorporating large windows that help to increase visual permeability and improve passive surveillance.

_ Additionally, secondary façades should include a minimum combination of two or more of the following elements: window awnings, a deep porch (continuation of a front porch or separate), upper story balconies, variations in materiality, and changes in setback.

Fence treatments on secondary frontages
_ Construct more decorative fence designs on corner blocks to enhance visual appearance. Tall, plain fences on secondary frontages should be avoided.

_ Decorative fence designs might include, for example, expressed posts or top rails, permeable or open sections, mix of materials, articulation of the fence position, potentially with garden beds in front of the fence, coloured and painted treatments.

_ Contemporary fence designs should reference traditional forms without replicating them.

Vehicle access on secondary frontages
_ Vehicle access should be located on secondary streets.

_ Vehicle access should not exceed 30% of the secondary frontage width.

_ Garages should not sit in front of the building line of the house or of neighbouring property. In cases where it is unavoidable, garages are designed to be visually unobtrusive and of high quality materials.

_ Garages should be designed as to not visually dominate the street or neighbouring properties.

Evidence

Examples of corner allotment buildings that did not address both street frontages, or utilised high and poorly designed fences to one frontage, were observed during site visits.

Street Interface
Articulation, variations in materiality and form, permeability and greening help to create desirable street interface.

(Photo: Jensen PLUS)

Overview

Visible and clearly defined entries to homes help to create streetscapes that feel welcoming and neighbourly, giving a sense of interaction between private and public space and increasing the sense of passive surveillance. A visible entry is also a functional requirement to allow access by visitors and deliveries.

Traditional models of housing in Toowoomba can be characterised by front entrances that are often centrally positioned and include porches, central stairs and accoutrements. This is particularly evident in the Neighbourhood Character Overlay areas.

Existing policy in the planning scheme

The planning policy talks addresses the desire for building entries to front onto the main street, however there is room for further policy to improve front entries.

Guidelines

There are a number of elements that can help to create and reinforce visible entrances to homes:

A clearly defined and visible entrance
_ Front door should be visible from the street and incorporate design features to promote its location, such as front windows and a verandah.

A centered entrance
_ Centered main entrances are a common theme in traditional Toowoomba homes. Houses should include a centralised front door with well-proportioned, street facing windows used to frame the front door and help give the house symmetry and a welcoming front.

Permeability
_ Where symmetry is not possible, the front of the building should still include large, street-facing windows and a deep entry verandah/porch to indicate the location of the front door.

A welcoming front porch
_ Porches can help add life to the building, and create the perception of visual permeability even in the absence of large windows (therefore retaining an element of privacy). They also act as a quasi-private transition space between the public street and private dwellings.

_ Porches can also offer protection from the weather and can improve passive design outcomes.

_ When large enough for occupying, they also promote passive surveillance.

Street interface / front fences
_ Front fences should be kept relatively low to maintain visual permeability between the street and the house entry.

Front gardens
_ Front gardens should be designed to frame the front of the house, indicate the location of the front door, positively add to the streetscape amenity and enable visibility to the house from the street.

Evidence

Analysis of both greenfield developments, and development in character areas, showed that newer developments tend to have much less prominent front entries than older developments. More recent development trends focus on increased use of frontages for vehicle access, while the use of high fences or screening has also increased.

Visible entry from street
New dwelling, East Toowoomba

Visible entry from street
Older dwelling, Cambooya

Overview

Traditional Toowoomba homes have a distinct character, a large part of which is expressed in the design of the front facade. Facades are often designed to be symmetrical, with visible entries located centrally, a raised porch with central stairs and articulation in the form of cornices, balconies, balustrades, arches and gates. Traditionally, vehicle storage does not make up a significant amount of a front facade, might be set back considerably or not be present at all. These design features help to create a strong street presence that includes visual interest, permeability and human-scale design outcomes that can strengthen feelings of community and welcomeness on a street.

Existing policy in the planning scheme

_ Facade related policy in the Planning Scheme focuses on setbacks, height and garage size. This could be strengthened by providing more guidance on design elements and articulation.

Guidelines

Symmetry
_ Symmetry is an important characteristic of traditional Toowoomba homes and should be an important consideration in future homes. For detached homes, visible front entries should be centrally located, with street facing windows either side and vehicle access situated to appear separate to the main facade.

Front door visibility
_ Front door should be visible from the street, positioned centrally, and framed with street facing windows and a porch.

Responsive to context/climate
_ Depending on orientation, windows should be shaded with eaves or awnings or porches or similar shading structures.

_ Façades should use lighter colours and avoid black as it can exacerbate the urban heat island affect. It is also not a great contributor to the street scape.

Visual Permeability
_ Façades should avoid large areas of blank wall. Elements including windows, indents and ornamentation/accoutrements should be used at regular intervals to help create visual interest.

_ Front windows should be an integral element in any facade to help give the house a street presence and help provide eyes on the street / passive surveillance and security.

_ The inclusion of front windows are also important to provide cross ventilation to help cool the house.

_ Longer façades should be broken up to reduce the overall appearance of massing and unnecessary bulk.

_ The inclusion of a generous porch or verandah helps to create a relationship with the street.

Carports
_ Car storage (carports) should take up no more than 30% of frontage

_ To reduce appearance, car storage should be set back from the dwelling's main facade by a minimum of 1m

_ Carport roofs should be not be incorporated into the main roof form. Ideally, they should be a lower height in order to be distinguishable from the rest of the facade.

_ Materiality should be light-weight in appearance, and include texture or permeations to break up any large or bulky visual elements like the garage door.

Evidence

Analysis of new developments showed that housing stock was overly standardised, with colours, styles and materials that are unsympathetic to the local context, incorporate a mismatch of colours and materials, and include poor detailing with little architectural merit.

Large amounts of front facades were also given over to garages, while the prominent entries so noticeable in Toowoomba's Neighbourhood Character Areas, have not been carried through as a design feature.

Symmetrical facade design
New dwelling incorporating some traditional elements, Cambooya

Style/materiality

_ New developments should incorporate vernacular elements into their front facade design including weatherboard, and timber posts to verandahs.

_ Facades should be light, natural colours to reflect light and improve passive design outcomes.

_ Dwelling design should reference traditional forms and proportions in a respectful way without replication.

_ Contemporary interpretations of traditional proportions and styles should be favoured over poor quality replications of imitations.

Bin storage

_ The enclosure of bin storage areas is important for the allotment to contribute high levels of amenity and presentation.

_ Ideally, bin storage needs an allocated space to store bins behind the building's facade with an area of approximately 2 metres squared and an unobstructed path for collection.

_ In lieu of a dedicated storage space behind the facade, an enclosure or screens should screen storage areas from view to the street and be located behind the main face of the dwelling where possible.

_ Enclosure screening should be high quality and use materials which match in with the rest of the dwelling and the context of the area.

Well articulated garage
Newer home in Newton includes a garage with a separate, lower roof pitch helping to accentuate the main facade.

Well articulated front facade
House in Toowoomba with a porch, well pro-portioned windows, ornamentation and a small driveway to access a rear garage, helping to create a strong street presence.

Articulation and variation
Articulation and variances in detail help to create a visually interest and break up the street frontage.

Symmetrical facade
An older house in Toowoomba displaying traditional symmetry, ornamentation and use of a porch.

3.1.5 **Two storey building design guidelines**

Overview

In a street where the dominant building form and scale is single storey detached dwellings, the siting and design of two storey buildings should be carefully considered in the design process to ensure they don't negatively impact the streetscape.

Issues and Threats

The following undesirable characteristics should be mitigated or avoided:

_ High site coverage and impermeability.

_ Amenity impacts to adjoining residences.

_ Narrow setbacks to side and rear boundaries.

_ Built form and scale of two storey building unsympathetic to existing neighbourhood character.

Guidelines

Built Form

_ Built form transitions from 1 to 2 storey to be progressive and be carefully considered. Footprint of upper level to be not more than 50% of ground level.

_ Provide a high degree of façade articulation, achieved by varied setbacks to boundaries to reduce visual bulk of buildings.

_ Provide actual or implied breaks in building forms to break up mass, particularly towards the rear of sites.

_ Add architectural interest through multiple roof forms. Avoid singular pitched roofs over the majority footprint of the building.

_ Add generous eaves and verandas to create deep shaded recesses and shaded areas for outdoor living.

_ Locate windows to allow natural light but also ensure visual privacy.

Evidence

The synoptic survey and stakeholder workshop identified the need to establish better design guidance for 2 storey buildings.

This guide was developed through feedback from the TRC stakeholder workshops. Consultation with TCR through co-design workshops has identified desired outcomes for a future Toowoomba under the five areas of built form, setbacks, building elements, landscape and future proofing.

High site coverage and narrow setbacks to side boundaries
(source: Arkhefield)

Unsympathetic to adjacent neighbours
(source: Arkhefield)

Setbacks

_ Increase setback for second level footprint to reduce visual bulk of second storey built form.

_ For lots over 450m², provide a minimum 6m front, 3m side and 6m rear boundary setback to second level footprint to allow sufficient separation from adjoining neighbouring lot. This is to maintain adequate privacy and minimise over shadowing.

_ Stepping of the front of the upper level of two storey dwellings is encouraged to avoid dominating the steetscape.

Future Proof

_ Consider how the home might be adapted for different phases of life. Having a self-contained living area or sleeping space accessible from the street level provides flexibility for a family member with decreased mobility and different support needs.

_ Plan for suitable location where a domestic lift can be installed in future.

Building Elements

_ Windows, door and balcony on second level are sited correctly to minimise overlooking.

_ Offset openings from those of adjoining property so they are not directly opposite.

_ Provide operable or fixed screening and exterior blinds or louvres to improve privacy.

_ Use high level windows or obscured glass where a high degree of privacy is required.

Landscape

_ Retain existing significant trees on site.

_ 2 storey built form is complemented with significant landscaping to soften the building scale.

_ Encourage additional planting to side and rear boundary of the site.

Reduce visual bulk through appropriate setbacks
(source: Brisbane City Council)

Encourage landscaping to soften building
(source: The Avenues: Highfields)

Upper level footprint not more than 50% of ground level
(source: The Avenues: Highfields)

3.1.6 Driveway design for positive streetscapes

Overview

When driveways are designed well they can provide more space for quality landscaping, and on-street parking, a more positive presentation to the street, make walking easier and have an overall improvement on streetscape amenity.

Existing policy in the planning scheme

The policy in the Development Codes addresses driveway design including the application of permeable paving, recommended driveway width of between 3m-5m (depending on context), recommended restriction to the number and extent of driveways to improve streetscape amenity and recommendation for the design of landscaping associated with driveways (being a minimum width of .5m for the full length of a battle-axe / hatchet driveway which should not be long and unvaried in design).

Guidelines

Driveway width
- Driveways and access points are located and designed to facilitate safe access while maximising land available for street tree planting, bin collection, landscaped street verges and on-street parking.
- Driveway width is minimised and should ideally be 'single-width' at the property boundary (approximately 3 metres wide).
- Dwellings predominantly only have one driveway.
- New driveways do not impact upon the health or structure of existing street trees. Australian Standards for tree protection should be applied when driveways are proposed in proximity to existing street trees.

Driveway design
- Driveways are separated by a minimum of 6 metres to enable on-street parking and planting of street trees.
- Minimise the number and width of driveways to reduce the visual dominance of driveways and create more space for street trees and footpaths
- Driveways should not "cross" the footpath. This means the paving material used for the footpath is continual and uninterrupted (the driveway crossover should still be trafficable).
- Well-designed driveways contribute to the safety of other road users, including pedestrians, cyclists and drivers.

Driveway design for subdivided lots
- Battle-axe or shared driveways incorporate landscaping and permeability to improve streetscape appearance and assist in stormwater management.
- Landscaping beds with a minimum dimension of 1m are provided on both sides of shared or battle-axe driveways.

Evidence

The need for this was observed in the process of studying six recent greenfield residential developments around Toowoomba and Highfields as part of the TRUFF synoptic survey. This study identified that the more successful streets were not punctuated by overly dominant or excessive driveways and driveways were a minor element to the dwellings and associated landscaping.

Despite there being guidance in the existing planning scheme, the application of the policy is not resulting in outcomes which positively contribute to the character of the area.

Greening softens
Driveways with quality landscaping look better in the street

Photo: Jensen PLUS

3.1.7 Vary side setbacks

Overview

Building setbacks provide visual and acoustic privacy for dwellings and enable vegetation to be incorporated on the site. Setbacks also maintain access to sunlight for the subject site and the adjoining neighbours as well as add visual interest to a streetscape.

Existing policy in the planning scheme

The Medium Density Residential Use Code identifies that buildings should be designed with appropriate side and rear building set-backs so the dwelling looks an appropriate scale in the area, complements the character as well as providing amenity benefits both on-site and for neighbouring properties including access to light for open space and habitable rooms and reducing overshadowing and over-looking impacts. This policy does not assist in greenfield developments where character is not established or in areas where development is compact.

Guidelines

Setbacks
– Dwellings should have side setbacks which respond to the contextual conditions of the locality. This helps the dwelling contribute positively to the character of development of the area and to provide adequate space on site for landscaping.
– Side setbacks are important to establish a pattern of space between buildings which contributes to character and allows plantings.

Varied side setbacks
Side setbacks are varied on allotments across a neighbourhood. Examples of this variation are:
– Asymmetrical setbacks (a narrow setback on one side and wider on the other) such as zero or 1 metre setback on one side and 3-5 metre setback on the other side.
 - symmetrical setbacks such as 2 metre setbacks on both sides.
– Side setbacks can be varied on the same side, adding visual interest and functionality to the allotment.

Building envelope design
Residential dwelling design utilises varied side setbacks in such a way that:

– maintains generous land for landscaping and retains important existing vegetation,
– that accommodates car parking spaces and vehicle access in a way which contributes to the desired streetscape character,
– that minimises the impact of overshadowing,
– on adjoining residential properties and dwellings,
– Respond to building height so that as the building increases in height, so too does its side and rear setbacks. This minimises visual impacts and loss of light to neighbouring residential properties.

Evidence

The study area visits to the six greenfield developments identified dwellings often had small side setbacks. This resulted in dwellings being located close to one another. It was observed that this not only resulted in substantial building massing and a solid "building wall" presenting to the street, but it also reduced the privacy offered to residents of the homes and substantially limited the area on the site for landscaping, resulting in neighbourhoods which are susceptible to the heat island effect.

Learn more about this topic

– Toowoomba Regional Urban Form Framework Scoping Study (2019)
– Where should all the trees go? https://www.greenerspacesbetterplaces.com.au/media/162996/wsattg_qld.pdf

Overview

The utilities of buildings and their servicing are essential. They should be carefully considered in the design process to ensure they don't negatively impact the streetscape. Different building typologies will have different levels of services and utilities requirements. Examples of utility areas include bins, fire services, water and electrical meters, transformers and air conditioning units.

(source: Arkhefield)

Guidelines

The following undesirable characteristics should be mitigated or avoided:

_ Poorly integrated and designed services cabinets;

_ Air-conditioning units visible from the street on the main frontage of the dwelling.

Incorporating utility design

_ Services and utilities requirements such as water meters and fire services should be co-located within the building or rotated adjacent to the driveway to reduce their dominance on the street frontage and thereby allowing greater landscaping opportunities.

_ Sleeve services cupboards with screens, landscaping and active uses that interface with the streetscape. They should be designed to integrate with the architecture and materiality of the building.

_ Pad mount transformers should be integrated with streetscape design through appropriate screening, landscaping and potentially act as a canvas for artwork. Energex has a program for artists to apply for the opportunity to paint assets such as pole, pillar or pad-mount transformers.

_ The requirement for on lot servicing areas for LRV's (moving trucks etc.) for low-medium multiple dwelling development should be confirmed early in the design process to ensure that adequate space can be provided without negatively impacting on the street frontage and design of the building.

Bin storage enclosures

_ The enclosure of bin storage areas is important for the allotment to contribute high levels of amenity and presentation to the street.

_ Enclosures and screens should screen storage areas to views from the street and be located behind the main face of the building where possible.

_ Enclosure screening should be high quality and use materials which match in with the rest of the building and the context of the area.

_ Dedicated waste and recyclable material storage areas should be located at least 3m from any habitable room window.

_ Waste and recycling storage needs are increasing over time as greater emphasis on recycling and source separation is adopted. Plan for adequate space to store bins behind the building's facade, with unobstructed paths for collection and resident access.

(source: Arkhefield)

Evidence

From the TRUFF synoptic survey and stakeholder workshops it is evident that utilities are often not integrated successfully into building frontages and therefore sometimes dominate the streetscape.

(source: Arkhefield)

(source: Arkhefield)

3.1.9 Design to the slope

Overview

Present day greenfield residential development tends to prioritise providing flat, earthworked allotments. While creating more straightforward and potentially lower cost builds, this is often at the expense of creating local character, as well as retention of existing trees and desirable environmental outcomes.

Existing policy in the planning scheme

_ Current policy within the planning scheme lists outcomes that outline development responding to natural topography and environmental constraints, as well as protecting and retaining significant environmental and topographic features.

_ Despite this, many new developments rely on earthworks and large retaining walls - some greater than 1m.

Guidelines

Best practice design for slope
_ Minimises earthworks. Use contemporary Toowoomba-Queenslander house designs with elevated construction to avoid or reduce cut and fill. Building with the slope also reduces impervious areas.

_ Retains trees and vegetation where good quality, providing environmental and landscape value. Slab on ground construction techniques rely on significant clearing of land at the expense of existing vegetation and local biodiversity.

_ Respect landform and drainage patterns. Cut and fill impacts drainage pathways leading to challenges managing stormwater, erosion and sediment control.

_ Minimise bulk and overshadowing of neighbours

Best practice design for slab construction
_ Where non slab constructions is not viable, follow these rules for cut and fill:

_ Utilise split slab construction to lessen retaining at site boundaries, including under-croft vehicle storage.

_ Avoid retaining >1m wherever possible.

_ If >1m, retaining walls should be stepped with landscaped terraces.

_ Consider zero side setbacks on sloping land to integrate retaining walls with the building.

_ Factor in whole of life retaining wall and replacement costs when assessing developments.

_ Consider driveway location and grades in sloping allotments aiming for maximum 1 in 6 driveway grade where possible.

Implementation
_ The current reliance on slab constructions and retaining walls to deal with sloping sites means that Council will have to work with developers and the building industry to increase understanding of alternate methods of construction. This is further detailed in 3.2.5.

Evidence

Examples of significant level changes and retaining walls between new dwellings were observed in greenfield developments, contributing to poor streetscape, environmental and liveability outcomes.

Contemporary split level house
A contemporary example of a house using a split level slab to respond to site constraints

Traditional Toowoomba house
A traditional Toowoomba house using a pier and beam construction technique

Overview

By maximising permeable surfaces as part of an integrated stormwater management approach, new developments can create positive environmental outcomes and reduce pollution.

Increased impervious surfaces in new housing developments can negatively impact the environment by:

_ Increasing stormwater runoff, flooding and erosion.

_ Increasing pollution of waterways from stormwater runoff which can contain fertilisers, oils, detergent and waste.

_ Increase stormwater infrastructure costs and ongoing maintenance requirements.

Guidelines

New housing developments can integrate permeable surfaces and materials in the following ways:

_ Building siting and setbacks are designed to avoid excessive driveway lengths and hard surface areas.

_ Reducing the width and length of driveways to maximise green infrastructure opportunities.

_ Where driveways are impervious, direct runoff to garden beds before being directed to stormwater drainage.

_ Integrating garden beds and landscaped areas around impervious areas to reduce stormwater runoff and pollution.

_ Replacing concrete and impervious surfaces with permeable pavers, materials and construction methods including:

  _ Using compacted gravel for pathways with permeable sub-base layers or membrane.

  _ Using permeable load bearing pavers for driveways.

  _ Sloping impervious finishes towards garden beds and landscaped areas to reduce runoff into the stormwater system.

  _ Increasing spacing between pavers to allow drainage to permeable surfaces.

  _ Using above ground decking with a permeable surface below.

Integrated approach
Permeable paving and surfaces should be planned in an integrated manner and in some circumstances incorporating impervious surfaces to connect to a stormwater management system with stormwater runoff and pollution prevention strategies should be consider.

Refer to Section 3.2 Planning Controls for Permeable / Impermeable Surface Percentage. Water Sensitive Urban Design (WSUD) is used to integrate landscaping and water treatment retention to reduce stormwater runoff and pollution. Includes bioretention, swales, tree pits, swales and green roofs.

Alternative solutions
Additional opportunities to reduce stormwater runoff and pollution include:

_ Onsite rainwater capture and reuse

_ Green roofs and walls

_ Reducing turfed areas and increasing plantings with pollution reduction capabilities and deeper roots.

Evidence

Feedback gained during stakeholder engagement and as part of the context analysis identified large areas of impervious areas and a need to provide more guidance on integrating permeable surfaces into new developments.

Impervious driveways and surfaces
Multi-unit development Toowoomba

Permeable gravel path and landscaping
Wakarara House Toowoomba

Overview

The Toowoomba Green Infrastructure Strategy and Green Infrastructure Planning Scheme Integration (GRISPI) project has identified that canopy targets are a key consideration for both existing and new developments as a key mechanism for increasing green infrastructure.

However, setting canopy targets can be problematic as they are not always suitable depending on the development and although relatively straightforward to integrate into new developments, existing higher density urbanised areas can be challenging to achieve the targets. In addition, Council owned land and street verges typically only account for a small percentage of area and therefore achieving the target is reliant on private land owners.

As per the Green Infrastructure Strategy, increasing green infrastructure and canopy cover can provide a range of benefits including reduced heat island effect, increased shade and protection from the elements, reducing stormwater runoff, improved air quality and it can enhance local character in line with the Toowoomba Garden City image.

Guidelines

To increase canopy cover across greenfield developments it is recommended that the Council consider:

_ Greenfield developments target a 40% mature canopy coverage which can also include raingardens, green roofs and green walls.

_ Greenfield housing developments are required to incorporate sufficient space/clearances (e.g. 10%) and provide deeper soil space (e.g. 4m x 4m) in front gardens to accommodate trees.

_ Planting specifications are reviewed to ensure trees are climate change resilient e.g. capable of withstanding higher temperatures and prolonged periods of drought. This will both increase the likelihood of maintaining healthy mature trees and reduce potential water consumption required during periods of drought.

_ A number of canopy targets are developed to prioritise areas of greatest benefit. For example, developing canopy targets based on land use, active transport routes, outdoor parks and recreation areas and connecting and aligning with Green Connectors and Green Spaces.

_ Main thoroughfares connecting developments, town centres and recreation areas are required to have increased canopy cover to provide shaded and protected pathways for pedestrians and cyclists. Priority areas are identified to provide high density canopy and vegetation (e.g. urban micro forests) to provide habitats and increase biodiversity in greenfield developments. Current outcomes appear to be on providing outdoor areas for residents which should still be a focus, however this can be coupled with biodiversity outcomes.

  _ Urban forests can also be aligned with community gardens and facilities to facilitate a sense of ownership.

_ The Council supports developments in identifying existing trees and vegetation that could be retained and integrated into development master plans, with guidance provided on maximising success and providing lessons learnt from previous projects.

_ Building setbacks and lots prioritise larger spacing to accommodate trees and vegetation in backyards.

_ Existing greenfield developments are incentivised to increase canopy cover with grants and incentives.

_ Existing private residences in greenfield developments are provided plantings for larger trees, supported with information and awareness sessions on the benefits of trees and how best to support and maintain trees.

_ The 40% target can be achieved through a combination of public and private infrastructure with trees planted on private land. It is recommended the Council consider supporting greenfield developments to increase the provision of trees on private land through grants/incentives or providing trees, as well as providing technical advice (e.g. best practice standards based on the Council's street trees).

Evidence

The Toowoomba garden city image is celebrated across the region and provides a number of benefits including more resilient and cooler streets and places, improved air quality and a sense of character. However newer developments are struggling to achieve these outcomes and canopy cover targets have been identified as one mechanism to support increased trees and local character.

Urban micro/tiny forest, Netherlands

City of Gold Coast
Urban Tree Canopy Study
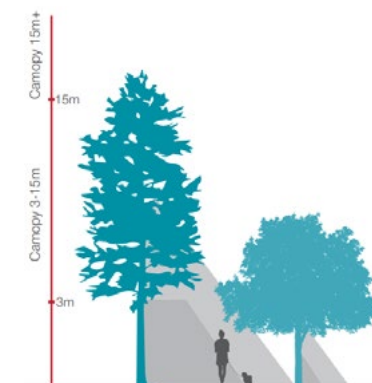
3.
Being a good neighbour through contextual design:

3.2 A new housing standard for Toowoomba

Overview

The next generation of Toowoomba house designs should build upon a fundamental set of design principles to strengthen neighbourhood character, and encourage locally-influenced and climate-responsive housing design which are resilient, comfortable and efficient.

Future housing should:

_ respond to Toowoomba region's unique context and warm temperate climate

_ improve outcomes of new buildings in the Neighbourhood Character Overlay Areas

_ improve greenfield developments by adapting successful design elements from the region's built traditions, into modern designs for contemporary living.

Guidelines

Key contemporary design elements with reference to Toowoomba-Queenslander vernacular designs

1. Contemporary reinterpretation of Toowoomba-Queenslander residential character with clean modern lines.

2. Replica / ornate details of traditional houses are not encouraged.

3. Transition spaces between home and garden / street such as verandahs and porches are encouraged, creating semi-private space for residents to use while enabling community and neighbour interaction, and to provide passive shading to windows and doors.

4. Pitched roof forms – pyramid, gable and hip preferred.

5. Building ground floor typically at ground level or low-set (rather than high-set), unless on sloping land.

6. Employ locally-influenced materials such as weatherboard, profiled steel sheeting and timber posts in design.

7. Deep eaves (450-900mm) and awnings to openings provide shading, rain protection. minimise summer heat gain and maximise opportunities to open up windows to passive ventilation.

8. Use light and natural colours in order to reflect light and reduce urban heat island effect.

Other design features - building siting

_ Orientate house to maximise solar access and privacy for you and your neighbour.

_ Front door should address the street and be easily accessibly from the street.

_ Habitable rooms should be setback to street, with verandahs and porches of a reduced setback of 1-3m.

_ Garage to be setback behind primary house frontage.

_ Two storey houses: Floor area of upper level to be no greater than 50% of ground level area. Second storey to be located to minimise impacts on adjacent dwellings and streetscape.

Other design features - Building form

_ Incorporate vernacular elements such as verandahs, porches and window hoods in a contemporary manner.

_ Skillion roof may be used where pitch is steep and where used as part of a varied and complex roof design. A flat single skillion roof over the entire house is not desirable.

_ Roof forms generally extends over house footprint to provide shade and articulation.

_ Facade are to be articulated with shadows, texture and depth.

_ Garage door design to be subservient to main dwelling and a maximum 40% width of street frontage facade.

(source: Tim Stewart Architects)

(source: Gordon Bourke Construction)

Landscaping

_ Front garden to incorporate trees and garden beds to improve streetscape presentation.

_ Low front fencing encouraged with permeable / semi-transparent design.

_ Minimise cut and fill and work with typography of land.

_ Tall retaining structures are not encouraged.

Future Proof

_ Design home to be more accessible, allowing it to adapt to future needs of residents.

_ Locate openings to maximise cross ventilation.

_ Roof design should consider siting of solar panels and how it may influence orientation and complexity of roof forms.

_ Consider opportunities for rain water harvesting.

_ Consider opportunities to incorporate secondary dwellings for multi-generational homes . Refer also sections 4.1.2 and 4.1.4.
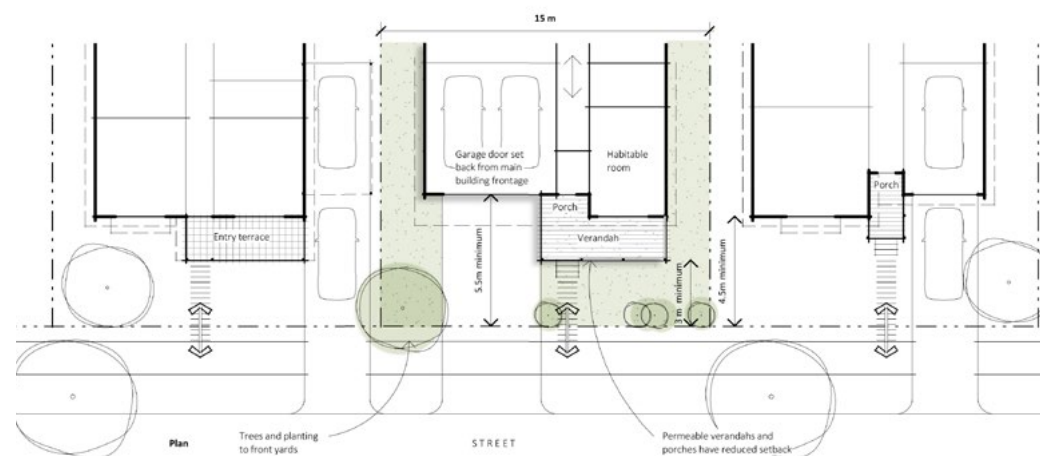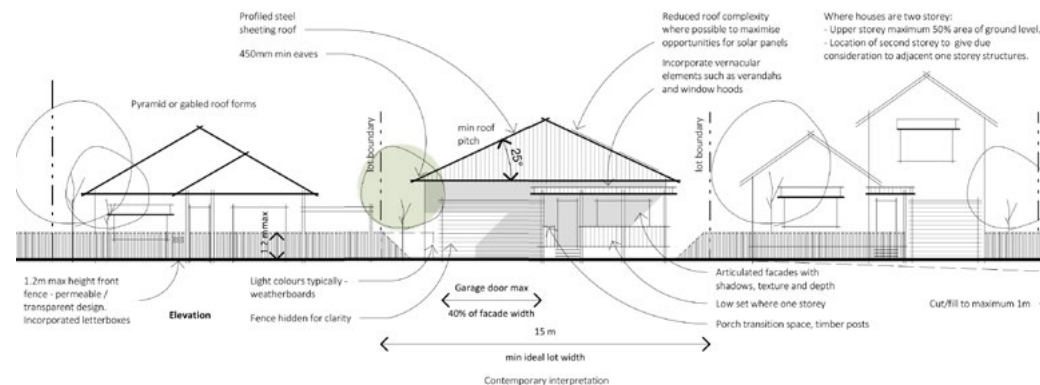
Next generation house design elements illustrated

Overview

The warm temperate climate in Toowoomba provides a number of opportunities to maximise the performance of residential developments and reduce the impacts of climate change.

Climate change in the Toowoomba region is projected to increase temperatures and the number and frequency of hot days, reduce annual rainfall while increasing rainfall intensity and associated flood risks and result in harsher fire weather.

Climate responsive housing design has the opportunity to provide resilient, comfortable and efficient homes that also improve the health and wellbeing of occupants.

Guidelines

Housing design
_ Finished floor levels are set above future flood levels which take into account climate change projections.

_ Orientations maximise northern exposure to living areas to increase passive design and solar gain opportunities.

_ Shading is provided to reduce direct sunlight during summer while maximising solar gains during winter. Options include deciduous trees or fixed vertical/horizontal shading, with verandas providing a strong connection to local character.

_ Screening such as vegetation or build elements are integrated into building designs and outdoor areas to protect from prevailing winds.

_ Reduced glazing and increased solid elements and thermal mass is integrated into eastern and western façades to protect from morning and afternoon sun in summer.

_ Increased thermal mass and heat absorbing surfaces (e.g. concrete and tiles) are integrated into areas with northern solar gain opportunities in winter.

_ Increased insulation above National Construction Code (NCC) 2019 requirements.

_ Cross ventilation is maximised by aligning doors and windows with the prevailing wind directions.

_ Southern facing windows and clerestory windows are used to maximise daylight to internal environments.

_ Ceiling fans are provided in all living areas and bedrooms to reduce air conditioning use.

_ Heat generating activities are located on ground floors to reduce heat build up on second levels.

_ Energy efficiency is maximised with LED lighting and high Energy Star rated appliances.

_ Solar photovoltaic (PV) systems are integrated to increase renewable energy penetration. Battery storage should also be provided to increase energy security.

_ Increased gutter and downpipe capacity is provided to take into account increased rainfall intensity.

_ Rainwater tanks should be provided to reduce water runoff and provide an alternative water supply for non-potable uses (irrigation and toilets).

Outdoor areas
_ Outdoor areas are located with good access to northern sun exposure to provide warmer outdoor areas in winter.

_ Shading to outdoor areas, such as deciduous trees or removable / adjustable shading, are provided to protect from the summer sun.

_ Permeable paving and materials are used to reduce impervious surfaces.

_ Permeable fencing is used to allow water egress, enable wind penetration for cooler outdoor areas and to facilitate cross flow ventilation.

Evidence

Climate change impacts are already impacting conditions in the Toowoomba region with increased temperatures and urban heat increasing air conditioning requirements, increased fire weather resulting in higher bushfire risk and likelihood of bushfire smoke inundation and increasing rainfall intensity increasing flood risks.

Learn more about these topics:

_ QUT Warm Temperate Climate Study and Design Guidelines

_ Australian Government - Your Home designs

_ Climate Change in Australia: Technical Report

_ Climate change in the Eastern Downs region

Wakarara House
Toowoomba

Overview

Climate-ready housing is often seen to be more expensive or challenging to achieve. To support a greater uptake of climate-ready designs and lead by example, grants, incentives, rewards, training and awareness programs can be run by the Council.

Guidelines

It is recommended the following climate-ready programs and initiatives are considered:

_ An Expression of Interest (EOI) for a flagship climate-ready development is created which pilots the Toowoomba Urban Form Framework (TRUFF), Green Infrastructure Planning Scheme Integration (GRISPI) and QUT Warm Temperate Climate Study and Design Guidelines and demonstrates the outcomes that can be achieved when these frameworks are holistically implemented.

_ A new sustainability grant program is developed by the Council to support climate-ready housing (e.g. improving passive design, energy and water efficiency and integrating renewable energy and battery storage) in new and existing homes and community facilities.

_ Climate-ready upgrades to the Council's facilities are implemented to demonstrate leadership and provide guidance to the community on passive design, energy and water efficiency, renewable energy and battery storage.

_ The annual Sustainable House Day is supported by the Council, including marketing, media and potentially sponsoring the event. This could also include running events and awareness programs to support the initiative.

_ The Get Ready Queensland council grants are investigated and an awareness program developed to support climate-ready housing.

Examples

The following provides examples of similar programs by State and local governments:

_ Lochiel Park is a South Australian Government initiative implemented in 2004 which redeveloped a previous TAFE site into a medium density "Green Village" with a recycled stormwater network supported by onsite wetlands, 7.5 Star NatHERS house ratings, an urban forest and Water Sensitive Urban Design integrated, as well as a flagship Zero Carbon House.

_ Grant programs run by councils include Brisbane City Council's Sustainability Grants, the City of Adelaide's Sustainability Incentives Scheme and the City of Sydney's Environmental Performance Innovation Grant.

_ Many Council's across Australia have implemented climate-ready upgrades as part of carbon neutral and climate adaptation plans which have been used to demonstrate leadership.

_ Sustainable House Day council sponsors include Banyule City Council, Boroondara City of Harmony, City of Monash, Randwick City Council and Wavelery Council.

_ The Get Ready Queensland council grants aim to increase resilience and are directly relevant to supporting climate-ready homes.

Lochiel Park
Adelaide

Zero carbon house
Adelaide

Impervious driveways and surfaces
Multi-unit development Toowoomba

Overview

A good design guideline covenant is a valuable instrument to lift the standard of housing design;

A development-scale housing design guidelines covenant typically defines provisions of expected standard of housing design for development on a property within the residential estate.

This helps maintain resident's expectations of what the immediate surrounding will look like and provide guidance on common issues concerning the interface between properties.

Strong housing design guidelines and covenants can provide some certainty as to the quality of the neighbourhood the home is situated in and therefore hopefully increase the resale value.

The level of standard described in each design guidelines covenants differs between each development and is set by the developer.

As the planning scheme currently does not define a detailed set of design guidelines for greenfield development, a good design guideline covenant is a valid instrument to lift the standard of housing design;

Issues arise when developers do not set a high standard for the design guideline covenant and if the desired outcomes of design guidelines or the covenant is not enforced.

Recommendations for Policy Review

_ Council should establish a clear character statement and design guide for greenfield developments and which all future greenfield developments must comply with as part of the development approval process;

_ This will raise the median design standard for all future greenfield development and provide better guidance for home owners and the development industry.

_ Council and developers could provide forms of incentives such as free native plant / trees program and encourage home owners to develop their new home according to the design guide and contribute to building a more enviable streetscape.

Dwellings minimal relationship with the street
(source: Arkhefield)

Engagement with the street
(source: The Avenues: Highfields)

Large retaining walls
(source: Arkhefield)

Considered narrow lots
(source: Realestate.com.au)

No/minimal street trees
(source: Arkhefield)

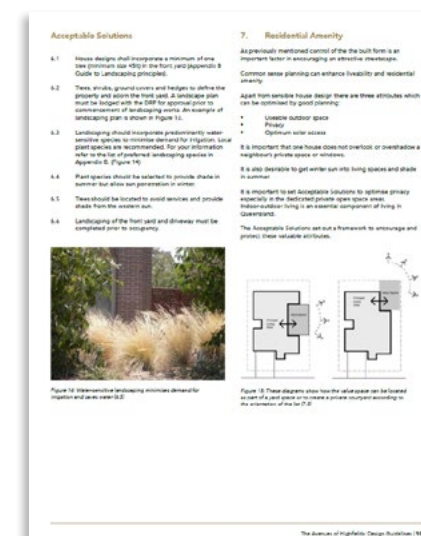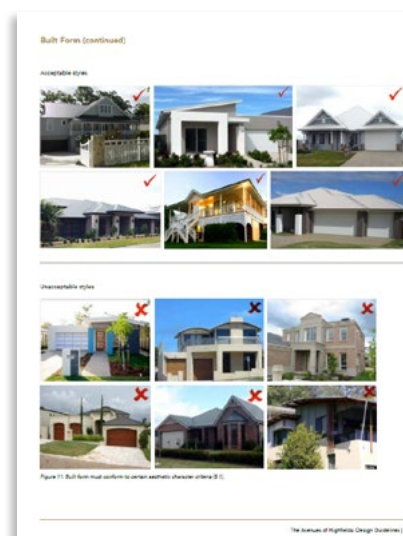Consistent lot and setbacks sizes within development
(source: Jensen PLUS)

Evidence

The Avenue of Highfields is a new residential community that has proven good design guidelines and covenants can play an important role in establishing a high-quality environment. The Avenue of Highfield Design Guidelines sets the following desired development outcome:

_ An attractive residential environment in which the houses express individuality and harmonious built form and compatible scale;

_ Interesting streetscapes with houses set in attractive landscaping not dominated by garages;

_ Housing which is liveable, comfortable and respects its sub-tropical highland location;

_ Housing which promotes public safety and a sense of community consistent with the overall concept of The Avenues of Highfields;

_ Promotion of environmentally sustainable design addressing energy efficiency, water conservation and waste minimisation;

_ Housing which achieves all these outcomes principally by good design through common sense and innovation rather than undue extra expense;

_ To maintain the standards set in the guideline the developer sets up a design review panel to manage the compliance process. As an incentive to complete the house construction in accordance with the design guidelines a cash rebate is paid to the owner upon satisfactory completion of the works.

Overview

Council should provide suitable support to the development industry to maintain best practice construction techniques through partnering with development industry peak organisations to provide a series of thought leadership workshops.

The purpose of these workshops would be to inform and educate on best practice industry approaches to respond to market conditions, meet consumer demands and deliver high-quality development.

Guidelines

Council can take an active role in leading and educating the development industry on best practice design and construction techniques which will provide the following benefits:

- Deliver better outcomes for the region by promoting and building on best practices.
- Obtain valuable insights from industry leaders and understand best practices from other Council areas.
- Identify and provide innovative and best-practice solutions on a diverse range of topics that Council identifies are issues or barriers (e.g. climatic responsive building design, improving streetscape amenity).

To implement the training, Council can seek partnerships with key industry organisations and advocacy associations, including:

- Planning Institute of Australia.
- Architecture Institute of Australia.
- Master Builders Association.
- Queensland Building and Construction Commission.
- The Urban Development Institute of Australia.
- Construction Skills Queensland (industry-founded body that provides training).
- Universities (Queensland University of Technology, University of Queensland, University of Southern Queensland).

The thought leadership and training series should work within a framework that identifies and addresses the following:

- Cross-industry barriers and issues impacting high-quality development outcomes.
- Quality control and regulatory compliance.
- Implementation of incentives to support desired development outcomes (i.e. ageing in place, see Guideline 4.1.3).
- Skill gaps and educational requirements.

Steps to establish and deliver an industry up-skill program, include:

1. Collaboration between Council and industry to gain knowledge and insights on training topics.
2. Work through priority knowledge and skill gaps, content development and cross-sector delivery options.
3. Partner with industry organisations and advocacy associations to develop content and delivery program.
4. Deliver workshop series. This can be an ongoing series that responds to local priorities.

Evidence

Feedback from key stakeholders identified that there is a need for Council to work with industry to upskill and educate.

The construction industry workshop organised by the NSW Office of Environment and Heritage and the South Australian Department of State Development is a successful example of government working with industry to upskill.
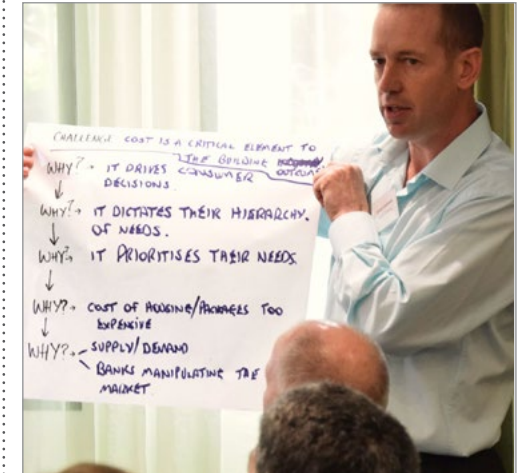
Learn more about this topic:

- Construction Industry Skills Workshop

Example

Images from Construction Industry Skills Works

Source: NSW Office of Environment and Heritage and the South Australian Department of State Development, 2016

3.
Being a good neighbour through contextual design:

3.3 Green and active streets, including in greenfield developments

Overview

'Movement and Place' (M+P) is a way of thinking about the roles and challenges facing our roads and streets now and into the future.

The M+P approach recognises that any street performs two functions: Movement of people and goods (a movement conduit), and serving as a Place (a destination in its own right).

This way of thinking implies that while we are planning for and developing our network, we need to consider the needs for movement and placemaking simultaneously.

M+P approach is used as a basis for street/road network planning and design, helping to create a holistic framework that considers the needs of all street users. Developed in Europe in the early 2000's (initially called 'Link and Place'), M+P is now part of the best practice approach to transport planning in Australia and internationally.

Existing policy in the planning scheme
Planning Scheme Schedule 6 contains current engineering standards for roads and drainage infrastructure, including road design and hierarchy. M+P is not referenced in the Planning Scheme. Appendix 3 references the Toowoomba road hierarchy that is available via Council's online mapping system.

Guidelines

Road network classification
_ Adopt Movement and Place classification system suggested below. Each cell in a matrix below represents a street type with a different combination of Movement and Place needs.

_ Numbers 1 to 5 relate to the hierarchy status level for Movement and Place, with status '1' relating to most strategic and status '5' – to local. For example, status 1 relates to City-significant Movement links and Place destinations, with visitors from City-wide catchments that are also accessed by tourists.

Movement and Place classification matrix

Source: Adapted from 'Link and Place: A Guide to Street Planning and Design' (Jones, Boujenko and Marshall, 2007)

_ Map existing functional hierarchy of roads onto the vertical Movement axis of the matrix to ensure M+P system integrates with existing engineering practices (SC6.2.2 in the current planning scheme).

_ Ensure M+P classification system is also used in Toowoomba Region Sustainable Transport Strategy.

_ Require that M+P classification is used to guide and agree the strategic role of a street within a street network, recognising the scope of Place dimension.

Movement and Place framework
_ There is scope for developing a Movement and Place framework, to underpin the region's transport strategy, street design guides and policy.

_ The M+P framework is a set of more detailed messages, principles and application guidance. At a minimum, it should cover how Movement and Place classification should be applied.

_ The M+P framework can describe the different street types and provide some guidance on outcomes that are appropriate for the different street types. For example, it can provide guidance on appropriate speed limits, where separated bike facilities are most needed, when shared street design is appropriate, etc.

_ Undertake M+P analysis of city streets, comparing how classification and street types align with the desired outcomes. This will enable identification of future redesign needs.

_ In new developments, Movement and Place framework can guide the need for changes to street design, helping to balance variation in function and design requirements. (See 3.3.2 Greener local residential streets.)

Evidence

Analysis of city centre, urban and greenfield developments demonstrate a legacy of street design, hierarchy and Council technical standards reflective of more traditional transport planning thinking. Recent city street examples such as Ruthven and Margaret Streets demonstrate the stepped change into a M+P based project approach being led by Council.

The Toowoomba Region Sustainable Transport Strategy 2014 does not reference M+P. There is an emerging body of work from other Councils in Australia and internationally integrating M+P into its strategic thinking and more detailed project delivery. Examples include Auckland City Council.

Learn more about this topic
_ *Link and Place: A guide to street planning and design (2007)*

_ *Streets for People: A compendium for South Australian practice (2021)*
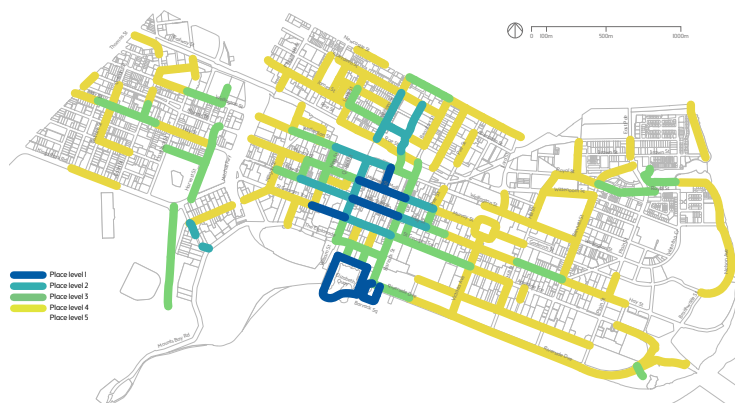
M+P classification in the City of Perth

Classification of Perth's city centre using M+P approach was used to identify strategic network weaknesses and opportunities as well as suggest the types of projects that best align with the vision for the city.

From 'Perth 2017: Movement and Place assessment' (Intermethod, and Phillip Boyle & Associates)

Movement classification

Movement level 1
Movement level 2
Movement level 3
Movement level 4
Movement level 5

Place classification

Place level 1
Place level 2
Place level 3
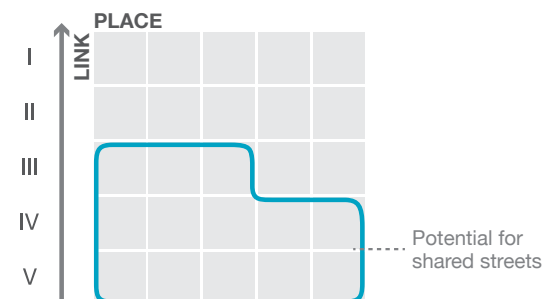Place level 4
Place level 5
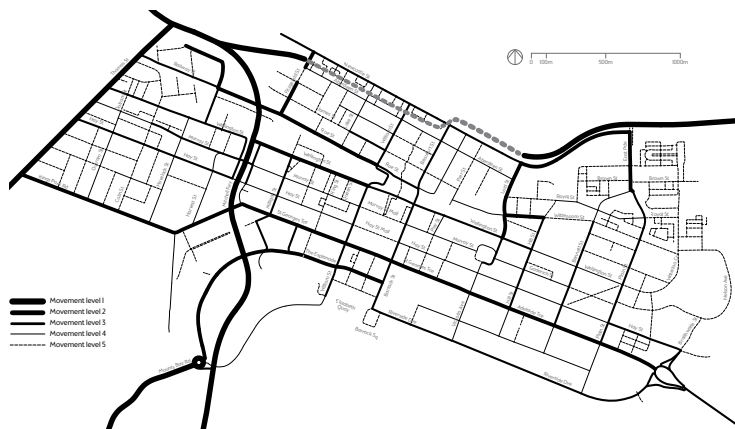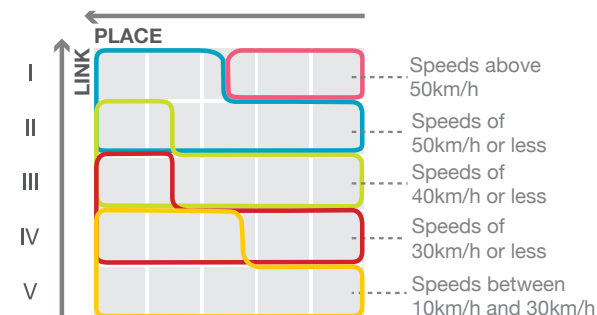
M+P framework guiding principles

Streets for People Compendium describes some of the desired outcomes for the street types defined by the M+P classification matrix and provides many examples to illustrate how they operate in practice.

From 'Streets for People: Compendium for South Australian Practice (SA Active Living Coalition, 2012)

Street types which potentially can be designed as shared street environments

Potential for shared streets

Desirable street network speeds for the Movement and Place matrix

Speeds above 50km/h
Speeds of 50km/h or less
Speeds of 40km/h or less
Speeds of 30km/h or less
Speeds between 10km/h and 30km/h

Indicative street typologies for mixing and segregating on–road cyclists with general traffic
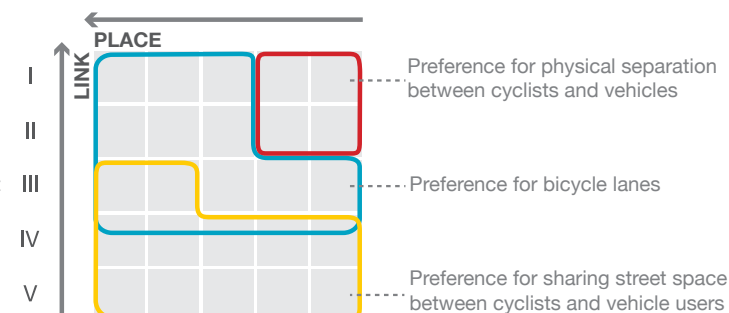
Preference for physical separation between cyclists and vehicles

Preference for bicycle lanes

Preference for sharing street space between cyclists and vehicle users

Examples of street types in Toowoomba

Ruthven St
City Centre
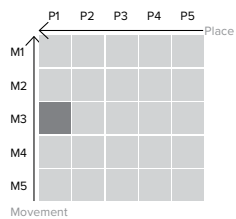
Cronin St
The Avenues, Highfields
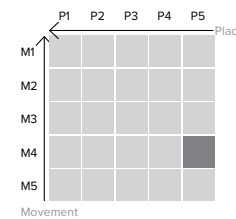
James St
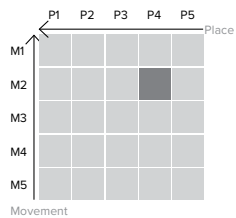
Alves Tce
The Avenues
(Adjacent Sandy Brennan Park)
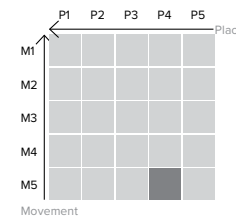
Taylor St
(Adjacent Newton Park)
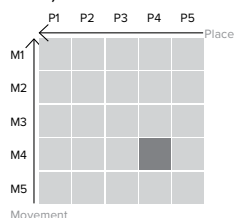
McAulay Ave
The Avenues, Highfields

Overview

Approach to local residential street design has been undergoing a gradual transformation over the last 20 years aiming to breakaway from standardised and prescriptive engineering rules to instead create conditions that welcome people back to the streets, inviting children's play and social interaction.

Numerous studies confirm that people prefer to live in the neighbourhoods that put people first, rather than create conditions that prioritise efficiency of car movement. This shift in thinking translates to designs that create slower speed, leafy neighbourhoods, often referred to as 'streets for people'.
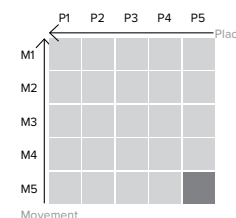
Healthy lifestyles and wellbeing are also the primary focus of current national health policy, advocating for active travel and prioritising pedestrian and cycling needs in street design.

Importantly research and engagement informing the TRUFF suggests a strong desire to create new forms of residential streets that better reflect both the climate of the region, and the character of Toowoomba's more established streets. **Designing greener streets with space for large canopy trees is central to this objective.**

Guidelines

Principles below provide a general overview of desired outcomes for local residential streets:

_ Green, biodiverse and shady streets with large canopy trees and ground-level vegetation.

_ Achieve appropriate desired vehicle speeds that enable safe mixing of all modes of transport, as well as make social interaction and children's play possible.

_ Ensure footpaths are available on both sides of the street, separated from cars by green verges.

_ Create opportunities for community involvement in greening, for example, community verge and small park programs.

_ Reinforce local distinctiveness and invite personalisation, for example, planting on verges or local artistic expression.

_ Maximise opportunities for local greening and landscaping, incorporating Water Sensitive Urban Design (WSUD).

_ Prevent crime through environmental design.

_ Ensure universal design, i.e. accessibility and suitable conditions for all ages and all levels of ability.

_ Use comfortable and durable high quality street furniture (where appropriate).

_ Provide seating at regular intervals that can be used as resting points, and drinking fountains (especially at recreational destinations).

_ Include wayfinding to recreational and commercial destinations.

Evidence

Recently constructed local street, Toowoomba

A typical cross-section for local streets in Toowoomba's new developments is included below. Some of the issues associated with this design include: long wide straight road alignment invites speeding, footpath missing on one side of the street, limited tree planting, landscaping or shade/shelter, parking of vehicles across public land, little invitation for social interaction, no local distinctiveness.
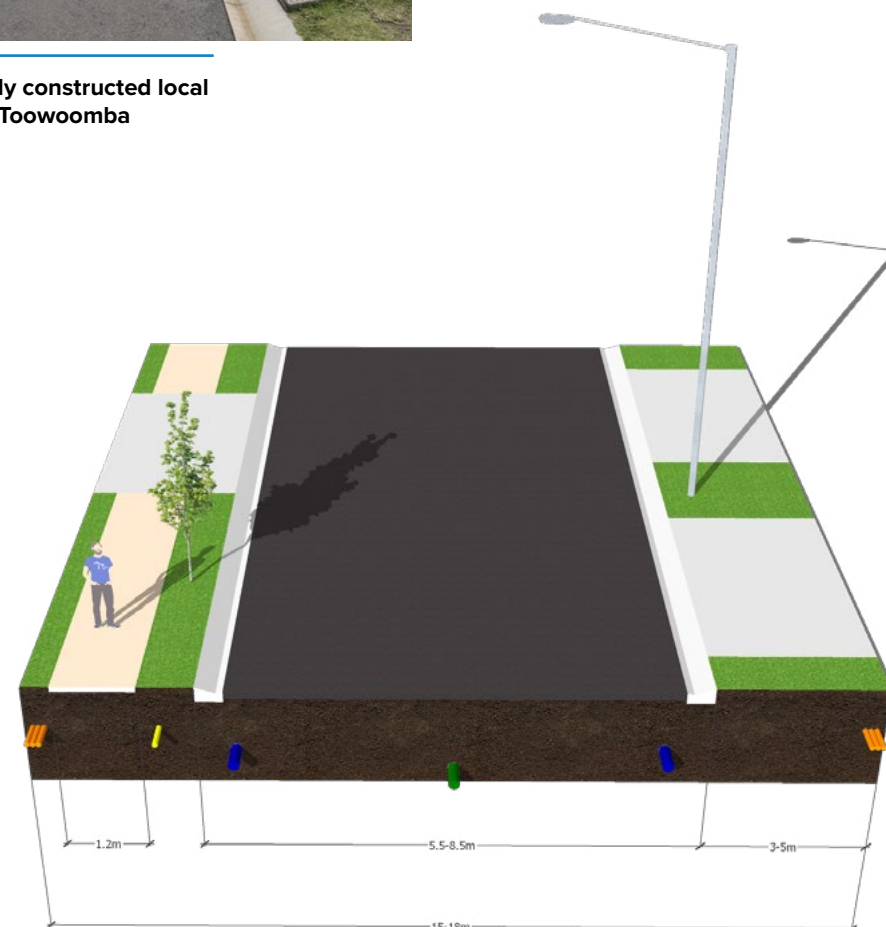
Cronin Street High-

fields
Connecting street into
and beyond develop-
ment, with residential
frontage ahead on left

Photo: Jensen PLUS

**Lochiel Park, Ade-
laide (left, below)**
Tree buildouts into car
parking spaces create
additional opportuni-
ties for greening, as
well as visually reduce
traffic dominance on
the street

Photo: Jensen PLUS

Tree-sensitive

design
This street is also lined
with mature street
trees. The outside
road (parking) space
has been resurfaced
with permeable pav-
ing, allowing stormwa-
ter to infiltrate into the
ground and support
tree health

Photo: Jensen PLUS

Greener local residential street A

Key design outcomes

_ A rhythm of regular build outs (approx 3m wide) into the road space with large canopy tree species to create additional shade and create traffic calming and visual interest, and also biodiversity plantings.

_ Two rows of small to medium size avenue trees within 2m wide planting zones (for good growing space away from infrastructure) on either side of the street, creating a shaded environment.

_ Achieve suitable vehicle design speeds with 20-30 km/h as desirable travel speeds and 30 km/h as a maximum posted speed limit.

_ Street cross section width of approximately 14m and the road width of no greater than 6m.

_ Prevent vehicles parking across verges or footpaths (through upright kerbs or plantings).

_ A footpath on each side, minimum of 1.5m in width. Footpath over driveways to signify pedestrian priority.

_ Infrastructure zones for underground services.

_ Cyclists mix with traffic in a calm speed environment (with sharrows, BAZ symbols, or similar, on the road surface).

Movement + Place

_ Local residential streets typically span cells M5P5 and M5P4. Streets with M5P4 status typically have small parks, playgrounds or natural features (e.g. creeks) that act as local destinations.

	P1	P2	P3	P4	P5
M1					
M2					
M3					
M4					
M5					

Place →

Movement

Biodiversity build-out

In low traffic residential street.

Min 2m — 5.5-6m — Min 2m

14m

Greener local residential street B

Key design outcomes

_ Street cross section widened than typical reserve to approximately 18m, with a standard road width of no greater than 6m.

_ This is done to allow for wider 3m wide planting zones to accommodate two rows of large canopy trees in an avenue formation, similar to many of Toowoomba's established, character streets.

_ Achieve suitable vehicle design speeds with 20-30 km/h as desirable travel speeds and 30 km/h as a maximum posted speed limit.

_ Options for occasional indented parking bays if required.

_ Prevent vehicles parking across verges or footpaths (through upright kerbs or plantings).

_ A footpath on each side, minimum of 1.5m in width. Footpath over driveways to signify pedestrian priority.

_ Infrastructure zones for underground services.

_ Cyclists mix with traffic in a calm speed environment (with sharrows, BAZ symbols, or similar, on the road surface).

3m min — 5.5-6m — 3m min
18m

Movement + Place

_ Local residential streets typically span cells M5P5 and M5P4. Streets with M5P4 status typically have small parks, playgrounds or natural features (e.g. creeks) that act as local destinations.

Place

Movement

Regent Gardens, Adelaide
Two rows of trees (one with indented car parking) created a continuous tree canopy.

Greener local residential street C

Key design outcomes

_ Standard street cross section of approximately 17m.

_ Wide (3m) median/islands with large canopy trees and potential for incorporation of WSUD elements.

_ Small trees, shrubs or ground covers can supplement landscaping on side verges if desired, but without avenue plantings the street retains adequate space at the sides for infrastructure zones.

_ Achieve suitable vehicle design speeds with 20-30 km/h as desirable travel speeds and 30 km/h as maximum posted speed limit.

_ Road carriageway incorporating 3m single row of large tree plantings and two traffic lanes, 3 metres wide.

_ A verge and footpath zone on each side, approximately 4 metres wide. Verges accommodating a grassed buffer strip with smaller trees planted in an alternating pattern (i.e. aligned between the larger trees in the roadway).

_ Prevent vehicles parking across verges or footpaths (through upright kerbs or plantings).

_ Footpath over driveways to signify pedestrian priority.

_ Cyclists mix with traffic in a calm speed environment (with sharrows, BAZ symbols, or similar, on the road surface).

Movement + Place

_ Local residential streets typically span cells M5P5 and M5P4. Streets with M5P4 status typically have small parks, playgrounds or natural features (e.g. creeks) that act as local destinations.
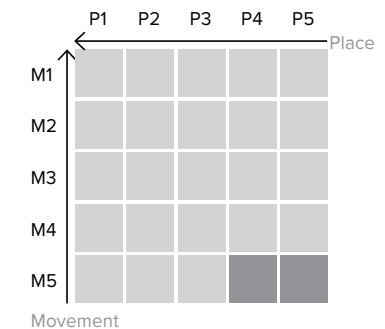
Island of green
Trees in road carriageways are not uncommon in Toowoomba's much-loved character areas.
Source: Streetview

Greener local residential street D

Key design outcomes

_ Achieve suitable vehicle design speeds with 20-30 km/h as desirable travel speeds and 30 km/h as a maximum posted speed limit

_ A narrower street reserve width of approximately 12m, suitable for quieter streets, and using less developable land.

_ Road carriageway width of no more than 6m, deviating in alignment with 2m planting build-outs into the road to slow cars and create an interesting street environment.

_ A footpath on one (or both) side, minimum of 1.5 metres in width.

_ A variation of this design could be a shared street design with no footpath, and a raised roadway for shared use.

_ Prevent vehicles parking across verges or footpaths (through upright kerbs or plantings).

_ Footpath over driveways to signify pedestrian priority.

_ Cyclists mix with traffic in a calm speed environment (with sharrows, BAZ symbols, or similar, on the road surface).

2m — 5.5-6m — 2m — 2m

12m
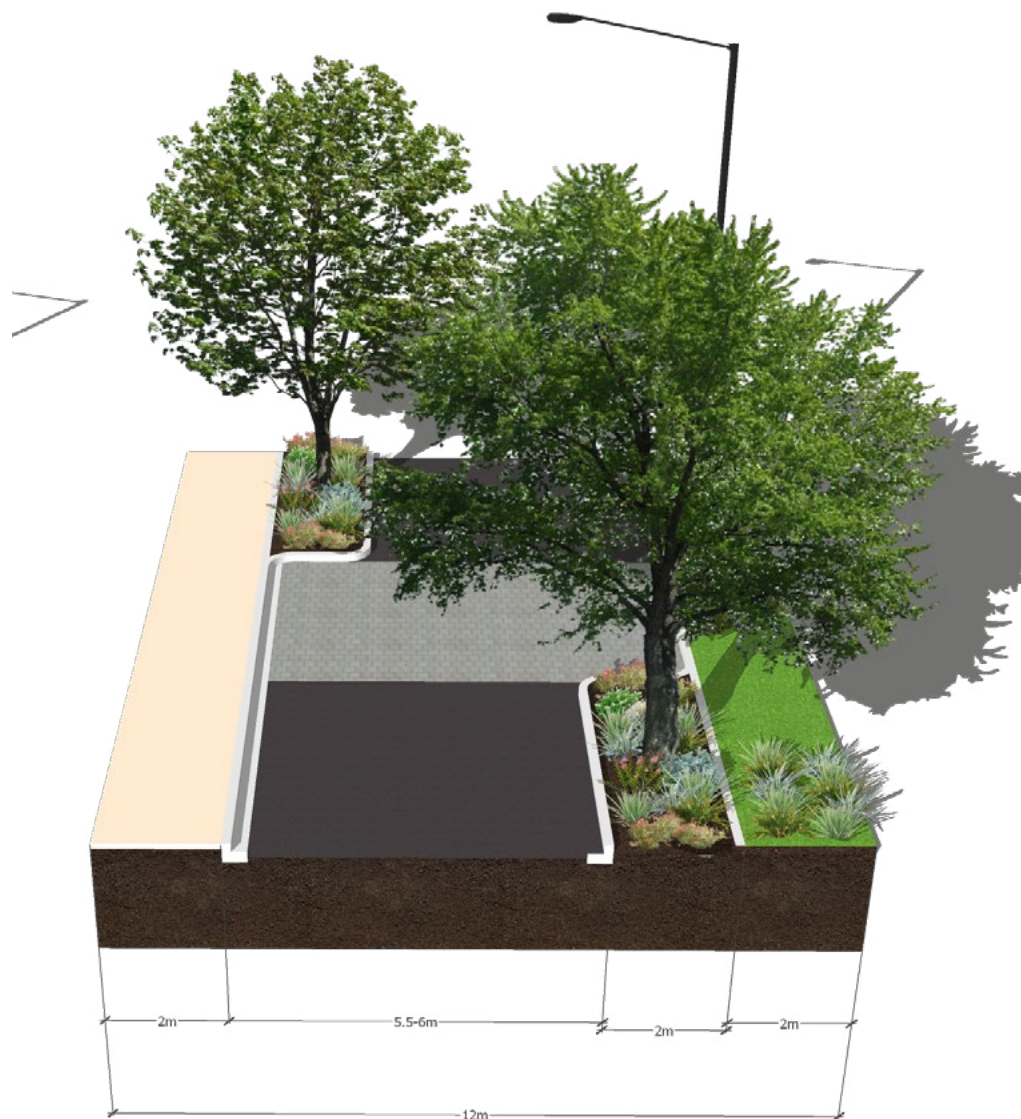
Movement + Place

_ Local residential streets typically span cells M5P5 and M5P4. Streets with M5P4 status typically have small parks, playgrounds or natural features (e.g. creeks) that act as local destinations.

Place

	P1	P2	P3	P4	P5
M1					
M2					
M3					
M4					
M5					

Movement

Mawson Lakes, Adelaide

Tree buildouts in a local residential street deviate the path of vehicles slowing them down

Greener Residential Laneway

Key design outcomes

_ Achieve suitable vehicle design speeds with 10-20 km/h as desirable travel speeds and 20 km/h as a maximum posted speed limit

_ Achieve a shared street environment with all modes of transport sharing the same space.

_ Street cross section width of approximately 7 to 8 metres.

_ Ensure a row of tree planting and landscaping, to reduce urban heat island.

City of Adelaide
Substantial landscaping in a laneway environment

1m — 3.5-5.5 — 1.5m

7-8m
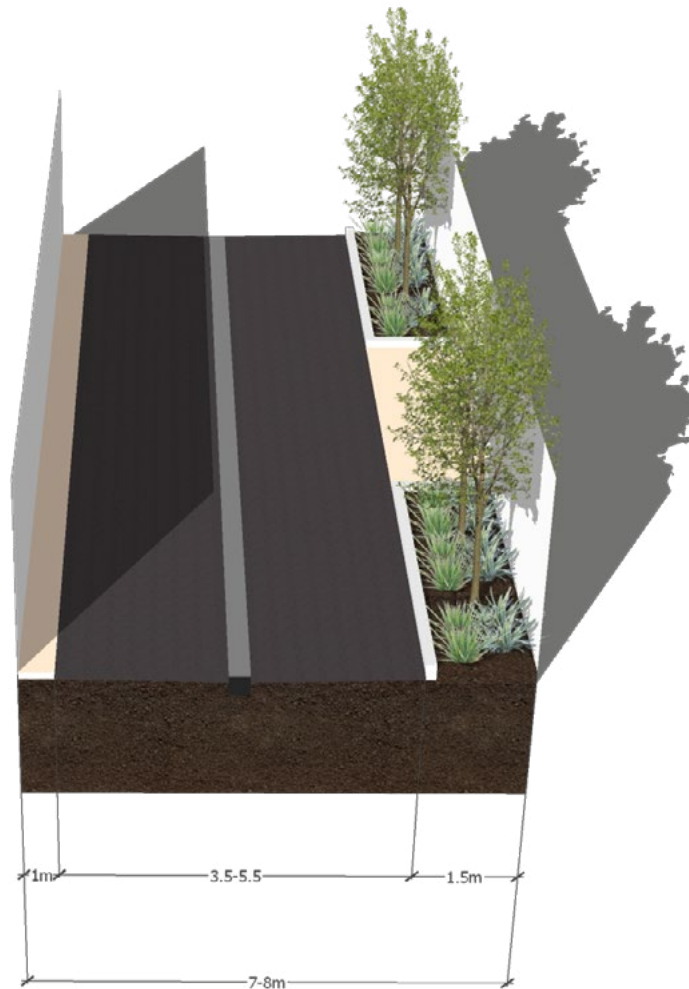
Movement + Place
_ Local laneways are a street type M5P5.

	P1	P2	P3	P4	P5
M1					
M2					
M3					
M4					
M5					

Place

Movement

Sculptors Lane, Highfields
Basic laneway enabling rear garage access, with some space for plantings.
Source Jensen PLUS

Greener residential connector street A

Key design outcomes

_ Higher order street connecting local streets to local and major destinations.

_ Optional bus route, and also functions as a residential street (but with limited driveways).

_ Achieve suitable vehicle design speeds with 30-40 km/h as desirable travel speeds and 40 km/h as a maximum posted speed limit.

_ Street cross section width of approximately 25m.

_ Road carriageway incorporating two 3m rows of large canopy tree plantings.

_ Two traffic lanes (3 to 3.6 metres wide) and two car parking lanes (3 metres wide including a buffer strip to cycle lane).

_ Planting build-outs into the car parking lanes.

_ Infrastructure zones for underground services.

_ On street cycle lanes for commuter / confident cyclists

_ Footpaths / shared paths both sides for pedestrians and vulnerable cyclists

_ At entrances to schools and other busy destinations, consider providing footpath extensions (instead of planting build-outs) and pedestrian priority crossings.

Movement + Place

_ Connector roads are street types M4P4 and M4P5 (if commercial, recreational or educational destinations are present).

3.3.2

Greener residential connector street B

Key design outcomes

_ Higher order street connecting local streets to local and major destinations.

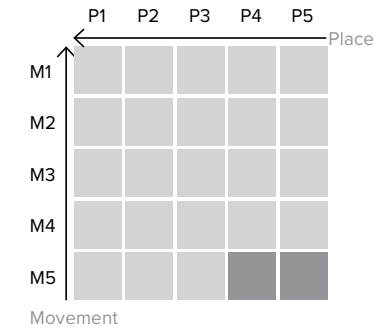_ Optional bus route, and also functions as a residential street (but with limited driveways).

_ Achieve suitable vehicle design speeds with 30-40 km/h as desirable travel speeds and 40 km/h as a maximum posted speed limit.

_ Street cross section width of approximately 25m.

_ Road carriageway incorporating two 3m rows of large canopy tree plantings and a 2m landscaped median.

_ Two traffic lanes (3 to 3.6 metres wide) and two car parking lanes (3 metres wide including a buffer strip to cycle lane).

_ Planting build-outs into the car parking lanes.

_ Infrastructure zones for underground services.

_ On street cycle lanes for commuter / confident cyclists.

_ Footpaths / shared paths both sides for pedestrians and vulnerable cyclists.

_ At entrances to schools and other busy destinations, consider providing footpath extensions (instead of planting build-outs) and pedestrian priority crossings.

Movement + Place

_ Connector roads are street types M4P4 and M4P5 (if commercial, recreational or educational destinations are present).

3.3.2

Contemporary Rural Residential Street

Key design outcomes

_ Lower cost, less formal street for lower density rural residential areas.

_ Smaller carriageway with no kerb and channel allowing for focus on greening for a lower cost.

_ Not affordable to provide the full suite of urban services, including stormwater. Instead, a grass swale in the verge captures stormwater with drain culverts under driveways where necessary.

_ Could include single footpath or gravel trail on one side to encourage walking for short trips.

_ Greater opportunity for informal landscaping through swale, tree plantings and landscaped verges, improves biodiversity outcomes.

_ Lighting should be included to ensure a safe environment at night. Where it is limited due to costs, other CPTED measures should be utilised. Alternatively, consider exploring lower cost lighting options such as off-grid solar lights.

Movement + Place
_ Rural residential streets in low density areas will typically be M5P5.

Overview

Local main streets are at the centre of local communities, offering important opportunities for local exchange, provision of local services and facilities, local economies, local employment and recreational opportunities. Main streets are instrumental in forging local character and defining or reflecting identity or surrounding communities.

Enabling main streets to evolve and thrive is important to the health and wellbeing of local residents, reducing the need to travel longer distances to services and encouraging walking and cycling to these important destinations. Main streets positively contribute to the safety of neighbourhoods, creating opportunities for passive surveillance. Social exchange and community-mindedness that are often exhibited in main street environments are also an important factor to general wellbeing.

Guidelines

Street types
_ Main streets can evolve along neighbourhood collector roads (M4) or along urban (M3 and M2) and suburban (M3) arterials.

_ Some main streets are known to and frequented by residents of surrounding neighbourhoods (P3), others can become important destinations to residents of nearby suburbs (P2), while select few can become important city destinations (P1) well known and loved by people from a much wider catchment and tourists coming from other cities.

_ As a result, main streets can span across at least nine street types shown on the matrix below. All of these types have high Place status of P3, P2 or P1. Those with Movement status of M3 and M2 imply higher level of conflict between people moving through the street and people enjoying destinations in the street itself.

Position of main streets in the Movement and Place classification matrix

Key design outcomes

_ Achieve suitable vehicle design speeds with 30-40 km/h as desirable travel speeds and 40 km/h as a maximum posted speed limit.

_ Road carriageway width will vary incorporating two traffic lanes or four lanes, depending on traffic volume and Movement status.

_ In streets with four lanes (mainly M2 street types), incorporate a planted median with frequent pedestrian refuge crossing points.

_ Ensure that traffic lanes do not exceed 3 metres in width.

_ Ensure footpaths are wide enough to accommodate a clear footpath width of at least 2.5 metres, in addition to a street furniture zone that acts as a buffer to traffic and a separate zone for on-street activities such as outdoor dining.

_ Incorporate cycling lanes of 2+ metre desirable widths (in a two traffic lane environment with low traffic speeds, it may be possible to mix cyclists with traffic).

_ Provide cycle stands aligned with busy destinations and public transport areas.

_ Maximise opportunities for local greening and landscaping, incorporating Water Sensitive Urban Design (WSUD).

_ Seek to integrate street furniture and landscaping to provide shaded and attractive seating opportunities.

_ Provide footpath extensions along the main street at junctions with side streets to minimise crossing distances and improve pedestrian safety and priority.

_ Provide pedestrian priority crossings with footpath extensions on pedestrian crossing desire lines for safe and efficient crossing opportunities.

_ Reinforce local distinctiveness, incorporating public art and local stories into the design and invite personalisation in facade and street presentation from local businesses.

_ Ensure universal design, i.e. accessibility and suitable conditions for all ages and all levels of ability.

_ Prevent crime through environmental design.

_ Identify and clearly mark opportunities for car parking.

_ Provide wayfinding to local destinations.

_ Provide drinking water.

Lake Street, Cairns
Local history is brought to life on street furniture that also incorporated sound art works throughout the street. Landscaping and tree plantings provide a comfortable shaded environment.

Bullock Street, Caloundra
Raised pedestrian zebra crossings create a convenient priority crossing point for pedestrians. Bespoke street furniture is integrated with landscaping to create an inviting proposition to stay longer on the street.

Hastings Street, Noosa
Footpath build-outs into the road shorten pedestrian crossing distances. 'Shared street' signage at crossing points creates a slow and mindful street environment. Tree planting and landscaping create a conducive microclimate to on-street dining and shopping activities.

Prospect Road, Adelaide
Sculptures that change colour depending on the weather are a distinct feature and point of interest in this mainstreet. In this narrow cross-section footpaths were widened as much as possible to create on-street opportunities for social exchange.

Overview

Toowoomba's residential streets should support a culture of cycling in particular as a viable option for short or medium trips within neighbourhoods. Local streets can be better designed to facilitate and encourage cycling which can lead to improved health, wellbeing and social connection outcomes.

Encouraging a greater proportion of people to cycle will need both infrastructure and street design improvements as well as education and related programs to achieve a step-change in travel decision making and people's confidence and ability to cycle.

Guidelines

Principles
_ Implement a network approach to establishing a cycling system, designing facilities that respond to the varying risk levels associated with network context and cycling needs.

_ Establish a design approach that integrates with the Movement and Place concepts and street types.

_ By considering cyclists, send a message that cyclists are as important as other road users.

_ Work with schools to deliver cycling training, and to identify and address local neighbourhood barriers to cycling.

_ Reduce conflicts between cyclists and high volume fast moving traffic.

_ Ensure that the cycling network is: coherent, direct, safe, attractive and comfortable.

_ Provide seamless connections to key destinations.

_ Ensure smooth riding surfaces.

_ Ensure that traffic calming devices such as speed humps do not protrude into bicycle riding spaces.

_ Create cut through options for cyclists between blocks and through open spaces to reduce travel distances to key destinations.

_ Create safe conditions for cyclists at intersections and roundabouts (safe roundabout design for cyclists is an evolving area with many European approaches now implemented in Australia)

_ In low trafficked streets, achieve low traffic speeds through design thus creating a low stress environment that will invite cyclists of all ages and abilities to mix with traffic.

_ On streets with higher traffic volumes and speeds above 30km/h (for example, local connector roads with volumes above 3,000) create visual separation between cyclists and cars, installing shared paths or cycle lanes to improve cyclist safety.

_ On arterial roads designated for use by cyclists, physical separation between cycling and traffic is more appropriate.

_ Ensure appropriate landscaping of cycling facilities that creates shade and comfort without overhanging or overgrowing cycling facilities.

_ Create recreation cycling opportunities that will encourage learning how to cycle, provide opportunities for families to ride together and for sport opportunities such as BMX.

Evidence

Some of the newly built residential developments in Toowoomba do not create conditions conducive for cyclists with some of the observed issues including:

_ Straight road alignment and wide carriageways that encourage traffic speeding and are thus dangerous for cyclists

_ Collector roads with higher traffic volumes that do not have cycling facilities

_ Lack on-road sharrows to mark local cycling routes

_ Lack of wayfinding and cycling parking.

Overview

The shared street design approach minimises separation between different street users and typically avoids conventional street design elements such as kerbs, line markings and formal traffic control devices.

Shared streets create informal environments, which work well in low trafficked streets, such as residential streets and main streets with low traffic volumes.

The concept of a 'shared street' (or 'shared space') came into prominence due to work by German traffic engineer Hans Moderman in the 1970s. Shared street design philosophy minimises physical separation between traffic and other street users, by eliminating kerbs, eliminating or minimising line marking, signs, bollards and other barriers. This creates uncertainty around the use of space and results in slower navigation and negotiation of the space by cars, making the streets safer.

Over the last 20 years, the UK and many other European countries have been successful in implementing 20 mile per hour shared street neighbourhoods (known as Home Zones), which proved to have safety and liveability benefits. This design philosophy, hinging on psychological traffic calming, was also implemented in residential and place rich streets in Australia and the USA.

Guidelines

_ Design and treat shared streets as slow speed environments, where the living environment is prioritised above efficiency of traffic movement.

_ Ensure signed entry and exst points on the entry to the shared street environment with an appropriate speed limit.

_ Avoid differences in vertical surface level using flush kerb or no kerbing.

_ Introduce design features that will slow down traffic, for example by:

» diverting the path of vehicular travel (lane shifts or chicanes)

» ensuring small turning radii

» changes in the colours, materials and textures to create visual variance

» introducing vertical features, such as trees, landscaping, seating area, to narrow or divert vehicular paths

» using on-street car parking areas in a variety of arrangements to slow down vehicles.

_ Create the feeling of a shared environment through design, for example, by:

» incorporating landscaping throughout the street, using geometry of landscaping as a speed calming device

» using drainage channels to break up the road space

» introducing variance in pavement textures

» incorporating public art

» creating opportunities for social interaction

» ensuring pedestrian scale lighting

» installing inviting seating opportunities

» installing appropriate play equipment in accordance with Australian Standards.

_ Incorporate flexibility into the design to promote various uses at different times.

_ Encourage the community to use the street as an extension of their home, bringing children's play and social interaction opportunities onto the street (for example, chess, table tennis and BBQ areas).

_ Create opportunities for personalisation, for example in planting and maintaining landscaping areas, designing pavement art or providing opportunities for community-led public art initiatives.

_ Involve local residents, residential associations and local community groups in street design.

Learn more about this topic

_ *Urban Street Design Guide, NACTO, 2016*

_ *Global Designing Cities Initiative: https:// globaldesigningcities.org/publication/ global-street-design-guide/streets/shared-streets/*

_ *'What is a Shared Space?', Project for Public Spaces, https://www.pps.org/article/ what-is-shared-space*

_ *'Design factors for a successful shared space street (SSS) design', Jayakody et al, 2015, https://www.researchgate.net/ publication/326388062_Design_factors_ for_a_successful_shared_space_street_ SSS_design*

Evidence

With the exception of the city laneways, streets in Towoomba typically follow conventional engineered approaches. Shared street design (or redesign) could be applied to new developments, to existing mainstreets or to city streets with place creation potential. If design speed of 30 km/h and less can be achieved, shared streets are an appropriate design response.

Annand Street, City Centre
Slow low trafficked environment and place creation potential makes streets such as Annand Street, Union Street and Jessie Street good candidates for a shared street redesign.

3.3.5 **Shared street designs in residential and mixed use areas**

Old Coach Road, Willunga (regional SA)
A shared street with interactive community designed public art, water sensitive landscaping and on-street social interaction opportunities.
Image source: Intermethod

Bowden development, Adelaide
Residential shared street featuring slow points created by landscape areas, centre drainage and variances in surface materials.
Image source: Intermethod

3.3.6 All abilities, all ages streets

Overview

Streets are public spaces that are used by everyone almost every day. They need to support a diverse range of activities important to enhancing social fabric, health, wellbeing and placemaking and should cater to people of all ages and all levels of physical ability.

To make streets more inclusive, there must be a shift in the way streets are designed, changing focus from car travel speeds and vehicular needs towards a more balanced approach to space, accessibility and usability for all modal types, ages and abilities. The application of Universal design principles should be one of the primary benchmarks for street design.

Existing policy in the planning scheme
Schedule 6 of the Planning Scheme (30/4/2021) outlines engineering standards for development within Toowoomba. This schedule provides detailed technical requirements for road and street design, street lighting, drainage and construction needs. There is network planning outcomes listed in Section 9.4.6.2 (Transport, Access and Parking Code) and Schedule 6 SC6.4 No.4 Master Planning.

Guidelines

_ The seven principles for universal design (developed by a working group in the USA led by Ron Mace) are: (1) equitable, (2) flexible, (3) simple and intuitive, (4) perceptible information, (5) tolerance for error, (6) low physical effort, (7) size and space for approach and use.

_ Residential streets should be **equitable and inclusive** and street design should put people first, catering to all ages, all levels of mobility and ability, i.e. street design should be universal.

_ Streets should be **green**, providing shaded footpaths and a buffer from traffic.

_ **Water Sensitive Urban Design (WSUD)** should be incorporated as much as possible to support health and growth of street vegetation.

_ Design for a **safe speed environment** that will prevent unsafe driving behaviour. In residential streets, traffic speeds should not exceed 40 km/h and lower design speeds (20-30 km/h) should be aimed for to encourage children's play. Use context-sensitive measures to encourage lower speeds, such as varying the palette of materials, narrowing street widths, curving the road, incorporating street medians, parklets, etc.

_ Design streets so that they are **easy to cross**, with appropriate street width, geometry, accessible crossing points, footpath extensions, islands and refuges.

_ Design for **multi-modal** residential streets comprising wide footpaths, cycle lanes (or priority streets), on-street parking and places for social interaction.

_ Meet the standards set by the Disability Discrimination Act (**DDA**), such as compliant pram ramps, perpendicular tactile paving, handrails and age friendly crossing points (where appropriate).

_ Provide for a safe, legible and continuous **cycling network.** While mixing cycling and traffic is appropriate in low speed environments, cycling infrastructure needs to be provided on busier collector roads.

_ Install **wayfinding** with distances and times to reach by foot or cycling to local destinations and other cycling routes.

_ **Reduce street clutter** and ensure barrier free movement and incorporate tactile, colour or audible cues of transition and crossing points.

_ Design for a minimum 1.5-1.8m **footpath** width with footpaths on both sides of the street. Provide continuous footpaths with non-slip, even and durable low maintenance surface.

_ Provide **places to rest** at regular intervals to encourage walking by people of all ages. Seating should be installed at regular intervals (100-200 metres), have vertical backs and arms and be well shaded.

_ Create **opportunities for congregation** and social interaction by providing landscaped seating areas outside the direct walking paths.

_ Incorporate **well lit and consistent lighting** along all streets at a pedestrian scale.

Evidence

The design of many residential streets in Toowoomba is based on older car centric technical standards and do not provide environments that can be enjoyed by all users. Lack of consistent footpaths, street clutter, unsafe crossing points, road width, street alignment and geometry, poor lighting and shading, lack of seating and socialisation opportunities are some of the street design elements with opportunities for improvement.

Recently constructed local street
Street design encourages speeding and falls short of accessibility standards
Image source: Intermethod

Learn more about this topic

_ *Global Street Design, NACTO, 2016*

_ *Cities for People, Jan Gehl, 2010*

_ *Centre for Universal Design Australia*
http://universaldesignaustralia.net.au/

_ http://universaldesign.ie/what-is-universal-design/the-7-principles/

_ https://www.asla.org/universalstreets.aspx

Overview

Tactical urbanism is a general term used to describe low cost, temporary changes to the built environment intended to temporarily improve local neighbourhoods and public spaces or to test out permanent changes before they are committed to. Tactical urbanism provides an excellent opportunity to re-imagine the streets and build consensus around the way forward.

Toowoomba streets and spaces enjoy excellent year round weather conditions and provide opportunities for low cost (permanent or temporary) activation projects.

Tactical urbanism is attributed as generating short term action that can lead to long term change.

Examples

Pop-up cycleways
_ Pop-up cycleways are created by taking out a traffic lane and instead creating dedicated cycle lanes.

_ Typically light weight barriers are used to separate bicycle riders from general traffic.

_ The COVID-19 pandemic led to greatly reduced volume of traffic on roads for long periods of time. In response to COVID-19, Transport for NSW installed a series of 'pop-up' cycleways. According to Transport for NSW, 700,000 trips were made on these cycleways covering over 590,000kms.

Priority bus lanes
_ Similar to pop-up cycleways, dedicated bus lanes can be trialled during events of lower traffic flow, in response to COVID-19, and then implemented permanently.

_ An example of this are new bus lanes being implemented in Columbus Avenue, Boston, with the aim to improve service reliability and reduce crowding.

Pop-up community plazas
_ Pop-up community plazas are created by extending footpath spaces into the carriageway (either parking lane or traffic lane).

_ New plaza areas are defined by temporary planters and painting of new lines, alongside introduction of new seating areas.

_ The Department of Transport in New York famously used this tactic to reduce car dominance in the city centre to create new public spaces in over 70 locations, as part of the Plaza Program. One of these included new public spaces in Times Square on Broadway. After temporary trials, permanent designs were implemented.

Parklets
_ Parklets are extensions into car parking lanes, with new activity contained within that space.

_ Parklets are typically extended out from footpaths at the level of a footpath. They therefore often involve a floor/platform and some form of a barrier at the edge alongside a traffic lane. The barrier may be in the form of seating, planters or other street furniture elements.

_ Many cities implement parklet programs as a one day event, encouraging creative and engaging opportunities for interactions. The initiative is called Park(ing) Day. Applicants are invited to design and implement their own parkets on a Park(ing) Day.

_ More commonly, parklets are used to create and trial new public seating areas or to provide extended on-street dining opportunities for adjacent cafes.

_ City authorities often use parklets to trial permanent footpath extensions. Parklet structures can be moved to different locations once the trial is completed.

Pavement art
_ Pavement art is often used to indicate community uses of the immediate area. Evaluation of impacts of pavement art on traffic speed show that in many instances traffic speeds are reduced and events of extreme speeding through the area can also be reduced.

_ Pavement art is often delivered as facilitated community painting projects. It involves engaging with the community to design and implement a design during a road closure street event.

_ Community groups (such as schools), local artists and local community members are typically involved in deciding on the location and design for a pavement art project.

Learn more about this topic
_ 'Sydney's new pop-up cycleways to help you ride to work' https://transportnsw. info/news/2020/sydneys-new-pop-up-cycleways-help-you-ride-to-work

_ NACTO, 'Streets for Pandemic Response and Recovery', https://nacto.org/ publication/streets-for-pandemic-response-recovery

_ 'Park(ing)Day', https://www.myparkingday. org/

_ 'People, Participation, and Pop-ups: Lessons in Tactical Urbanism in São Paulo, Brazil', Global Designing Cities Initiative', https://globaldesigningcities. org/2018/01/26/people-participation-and-pop-ups/

3.3.7 Tactical urbanism

Sydney's pop-up cycleway
One of six pop-up cycleways, created as part of the Covid-Safe Travel Plan by Transport for NSW in 2020.
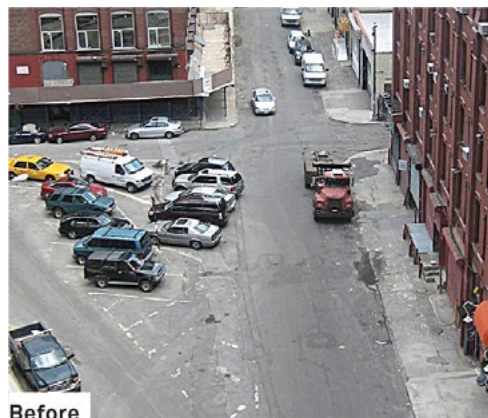Image source: Transport for New South Wales

Boston's new bus lanes
A rendering of the planned new bus lanes for Columbus Avenue
Image source: City of Boston

Pearl Street, New York Pop-up plaza
Plaza activated with seating and planting.
Image source: Global Designing Cities Initiative

Before

After

Bank Street, Adelaide
Parklets were used to trial road width reduction in Bank Street. After the two-year trial, the street was redesigned as a shared street.
Image source: Intermethod
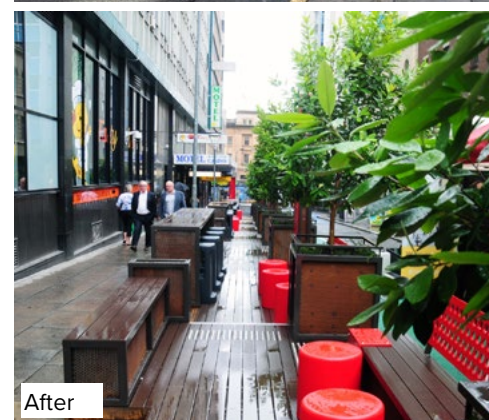
Before

After

Pavement art (road mural) in residential street
Kilkenny Primary School (Adelaide, SA) with support from the local community delivering a road mural project.
Image source: Intermethod

Pavement art (road mural) in Adelaide Hills
Heathfield High School delivering a road mural project.
Image source: Intermethod

Overview

Speed environments of around 30km/h are more appropriate for residential and city streets than higher speed limits. Slower speed environments save lives by reducing the number of crashes and their severity. They also encourage active mobility, social connectedness and placemaking.

Existing policy in the planning scheme
Schedule 6 of the Planning Scheme (30/4/2021) outlines engineering standards for development within Toowoomba. This schedule provides detailed technical requirements for road and street design, street lighting, drainage and construction needs, plus anticipated road speeds based on the Functional Hierarchy of Roads. Local access roads are listed as 40-50 km/h speed environments with cul-de-sacs between 10-40 km/h and 20 km/h or less for laneways.

The Council has published a Toowoomba Regional Council Road Strategy 2019-23. This document adopts the 'Safe System' approach to road safety. Specifically action 5 proposes to 'Review existing speed limits and investigate the feasibility of implementing lower speed limits'.

Guidelines

_ While there is mounting evidence on the benefits of lower speed limits in residential areas and city centres, there are still difficulties in implementing them.

Speed limit trials
In setting up speed limit trials, the following should be considered:

_ A suitable period for a trial needs to be selected and one year trials provide a more representative period for assessing results than trials running several months only.

_ Engage early with local community and stakeholders to generate a discussion on positive outcomes of speed reduction and to identify key concerns and issues.

_ Establish base line data, so that changes can later be evaluated. This should include:

» volumes of people in cars, riding bicycles and walking (public transport patronage is unlikely to change)

» crash statistics

» community attitude survey

» also desirable for city streets, number of people accessing businesses and numbers engaged in staying activities (sitting on public seats, cafe seats, etc).

_ As a caution, avoid trialling a lower speed limit in a small area or on a single street. This can lead to traffic displacement onto other roads, reducing passing trade and potentially leading to increased congestion.

_ Find ambassadors and generate a positive discussion in the media. This often helps to raise awareness and generate a call to action.

_ Once the trial is completed, repeat data collection on a comparable month.

_ Commission an independent party to carry out an impartial assessment of results.

Examples
_ The City of Charles Sturt (SA) have approximately 50% of streets within the council area set at a 40 km/h limit. These were established in 2016 and Council undertook a survey in 2020. It determined that actual traffic speeds had reduced from 48 km/h to 43.7 km/h.

_ The City of Vincent (WA) and the City of Norwood, Payneham and St Peters (SA) are undertaking trials and public engagement for 40 km/h streets in residential areas at present.

_ Importantly, both Councils recognise that while research shows clear benefits of lower speed limits this does not always translate to popular public opinion.

_ The City of Vincent has just completed a fifth round of data collection within its speed limit trial area and is likely to determine next steps shortly. It is understood that good community outreach plus the extended trial time is hoped to improve on the 57% community support achieved prior to commencement of the trial in 2019.

Evidence

The default speed limit in Toowoomba (as legislated by the State Government) is 50 km/h within built-up areas or townships. 40 km/h speed zones were implemented in the Toowoomba City Centre as part of the City Centre Master Plan. There was consideration for a 30 km/h speed limit in Russell Street as part of the ongoing Refresh Project but this was ultimately not approved by Council.

There is scope now to consider lower speed limits in residential streets and in the City Centre.

30km/h speed limits are widely promoted by the organisations such as WHO, providing ample evidence on safety and other benefits.

Learn more about this topic
_ *6th UN Global Road Safety Week*

_ *'Speed management: A road safety manual for decisions and practitioners', Global Road Safety Partnership, 2008*

_ *'Managing speed', WHO, 2017*

_ *'Yarra City Council pioneers 30km/h local streets', Bicycle Network*

4.
New housing choices to support community needs:

4.1 New housing choices including ageing in place

Overview

Ageing in place requires the creation of inclusive, age friendly communities, not just the provision of accommodation options for the ageing population.

Council needs to consider the development of new age-friendly communities in greenfield locations but also consider how infill development can contribute to adaptable neighbourhoods that support ageing in place.

Guidelines

To create inclusive and age-friendly communities, a range of housing should be provided that supports the following:

_ Easy access to shops, open space, public transport and services.

_ Well maintained and safe walkways and outdoor environments, including outdoor private space.

_ Design aspects relating to universal accessibility.

_ Places to meet and gather.

Key planning policy recommendations to support ageing in place includes the following:

_ Zoning – support for retirement villages in a wider range of zones. The planning scheme currently prescribes Retirement Facilities and Residential Care Facilities as code assessment in all residential and centre zones and accepted development in the Mixed Use Zone if involving the reuse of an existing building. A Residential Care Facility is also code assessable in the Community Facilities Zone.
Council could support retirement living in a wider range of zones. This could include reducing the level of assessment for Retirement Facilities and Residential Care Facilities within the Community Facilities Zone and / or centre zones to accepted development if involving an existing retirement facility premises or code assessable in other circumstances.
Other types of housing that support ageing in place have been discussed in Guideline 4.1 Beyond Ageing in Place.

_ Outcome focused planning provisions – less prescriptive design features to ensure developments are responsive to market needs. Council could include specific assessment benchmarks within the Medium Density Residential Code for Retirement Facilities and Residential Care Facilities or introduce a new development code for these uses that support high-quality designs, access to shops, public transport and services and access to public and private open space.
This could include reduced car parking rates where the site is within 400m walking distance of a public transport node.

_ Dwelling targets – set retirement living dwelling targets based on local demographics.
Dwelling targets could be based on the whole region or specific areas of growth.

Evidence

Feedback from key stakeholders recommended that an ageing in place overlay be introduced to support the ageing population.

Given the difficulty around spatially mapping a targeted demographic, alternative policy implementations have been considered to support ageing in place. These have been considered at the zone and development code levels in the planning scheme.

Learn more about this topic:

• Planning Institute Australia's Paper on Creating Age Friendly Communities

Example

Highfields Aged Care Community under construction

Source: Carinity, 2021

Example

Oaktree Retirement Living in Darling Heights, Toowoomba

Source: Oak Tree Retirement Villages, 2021

Overview

Today's modern family and how they live together is changing. Career, financial, health, and time pressures are bringing generations together under one roof. The need for multi-generational housing design is growing as we adapt to changing social demographics, rising cost of living and new lifestyle changes in a post pandemic environment.

Guidelines

Description

This is a form of affordable housing. The potential savings of share housing quickly become apparent as instead of paying rent or a mortgage on up to three properties, multi-generational households have one payment. There is also the potential to provide an additional income stream in rental to relatives and family.

A dwelling designed for multi-generational households should be flexible with separate entrances, multi-purpose rooms designed to open up to each other or closed off to allow flexibility and separate facilities giving people more privacy.

A multi-generational house should be an accessible home with flexibility for a family member with decreased mobility and different support needs to live together.

Flush thresholds for accessibility, wider circulation space, reinforcement in bathroom walls to add grab rails at later time and no steps throughout the house are desired features. The Liveable Housing Australia Design Guidelines set out some practical principles to ensure homes are easier to access, navigate and live in.

Secondary dwellings, dual occupancy dwellings (duplex) are common housing typology allowing family members at different stages of life to live together. The design guidance for Secondary Dwelling is outlined in section 4.1.4 and provides further details.

Adaptive dwellings
Newer homes that have flexibility to separate certain areas as secondary dwellings
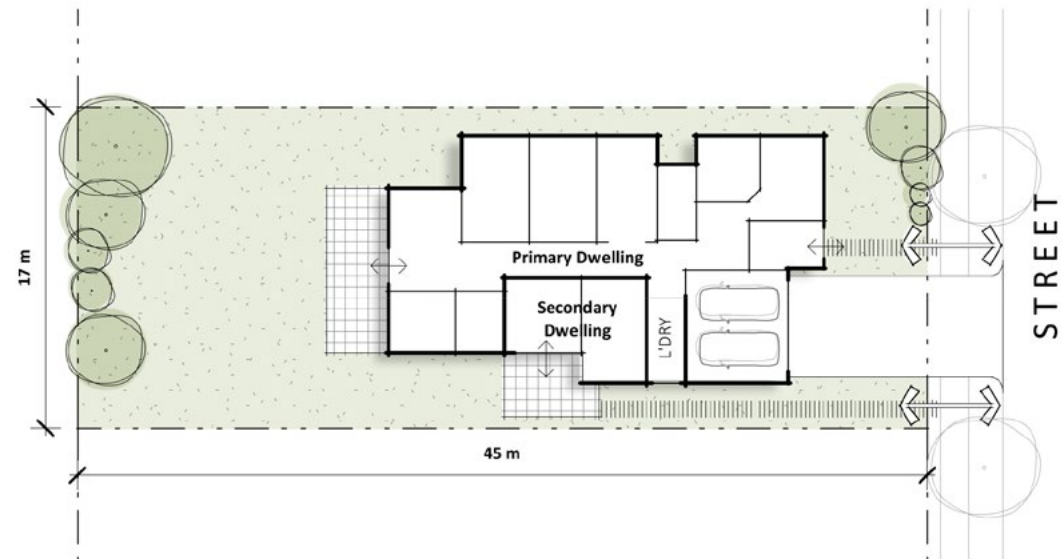
Overview

Co-housing arrangements aim to mix private and shared living spaces in a way that meets the need for both privacy and a sense of community and support.

Description

Owner occupied co-housing is a proven housing typology which is a social response to a lack of community spirit and housing affordability. Social coherence is afforded by sharing of common amenities and common spaces that link to private dwellings. Residents enjoy a healthy balance between private and social life, whilst providing opportunities for substantial savings through co-ownership.

Co-housing developments are owned and managed by the occupants. Ownership is typically via community or company title with its own constitution. This housing model tends to be of boutique scale with varying degrees of shared communal facilities for the self-contained units.

This is a viable model for ageing in place and can be designed for the needs of seniors seeking an independent living environment with the support of a small tight knit community.

Common characteristics of Co-housing:

_ Future residents are typically involved in the design process to ensure the housing meets their needs;

_ Design includes a mix of private dwellings and shared spaces and encourages community interaction.

_ Shared spaces may include community garden or laundry, or a large common kitchen, lounge and guest facilities

_ Residents are usually actively involved in the governance of the property.

Demonstration Project

Council could fund a co-housing project as a demonstration housing project to test the principles of this model and deliver a compact housing model suitable for ageing in place.

A demonstration project such as this allows engagement with community and industry stakeholders on how to deliver projects that offer best practice environmental performance and excellence in design quality.

Examples

The following pages show 2 examples of co-housing models of varying scales illustrating the key design principle.
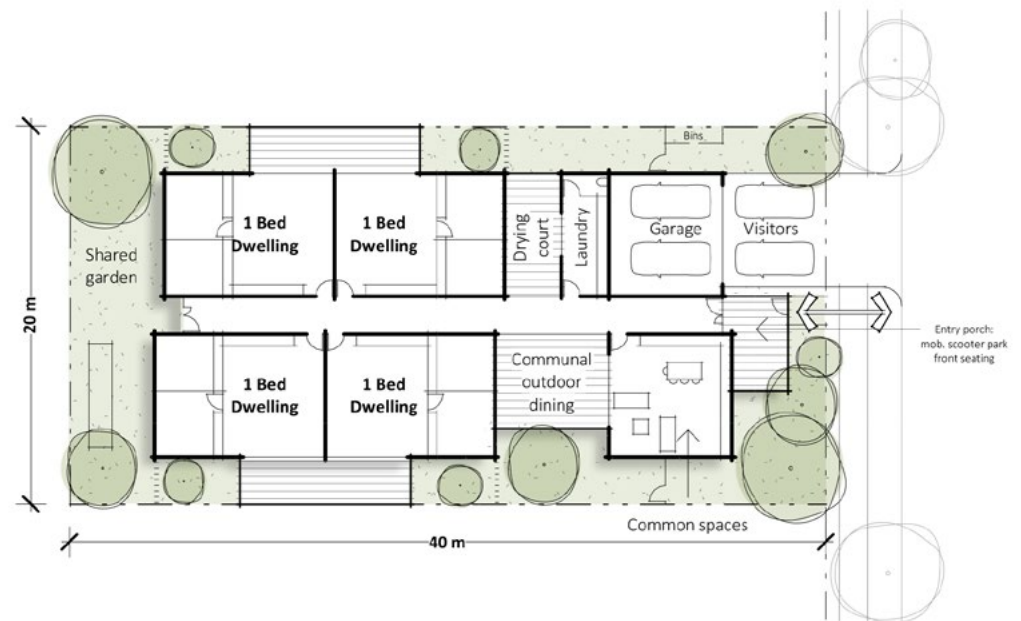
4.1.3 Co-Housing Models

Ageing-in-place: "Share house" model

_ Model allows for ageing in place and flexibility of occupation;

_ Presents to the street as one singular detached dwelling;

_ 2.5m side boundary setback and 4-5m rear boundary setback to maximise daylight access, privacy and landscaping opportunities;

_ Common entry from street;

_ Front porch has space for mobility scooter parking and bench seating;

_ Common room and shared amenities are located to the front of the house;

_ Each residence has its own private courtyard;

_ Shared garden is positioned to the rear of the site with opportunities for large shade trees due to generous rear setback;

_ All 4 one bedroom units are sized to be Liveable Housing Australia platinum level units;

_ 2 car spaces in garage for residences that require a car space. Driveway provides parking for carers. It is anticipated in a seniors living co-housing model, demand for car parking could be reduced.

Share house model
Presents to street as one singular detached dwelling

4.1.3 Co-Housing Models

Ageing-in-place: "Pavilions and courtyard"

_ Model allows for ageing in place and
flexibility of occupation;

_ 7 units centred around a shared courtyard;

_ 2.5m side boundary setback and 4-5m
rear boundary setback to maximise
daylight access, privacy and landscaping
opportunities;

_ Common entry from street and separate
from driveway;

_ Front porch has space for mobility scooter
parking and bench seating;

_ Common room and shared amenities are
located within the shared courtyard;

_ Each residence has its own private
courtyard;

_ Position of built form and courtyard to
maximise access to northern sunlight;

_ 8 car spaces provided to south of site along
a shared driveway.

**Pavilions and court-
yard model**
Units centred around
shared courtyard and
amenities

Overview

The Queensland Government Planning Regulations 2017 defines a Secondary Dwelling as a dwelling, whether attached or detached, that is used in conjunction with and subordinate to, a dwelling house on the same lot. Secondary dwellings are intended to be self-contained, compact in form and can be attached or detached from the dwelling house.

What are the benefits?

_ A positive way to add value and flexibility to a home;

_ A form of multi-generational and affordable housing;

_ Creates additional self-contained accommodation for elderly relatives, disable relatives or younger family members;

_ Provides additional income stream as rental to relatives and family;

_ Responds to a need for a growing number of people working from home and home businesses.

Design Options

_ Conversion: Part of the main dwelling house is converted into a secondary dwelling

_ Attached: Secondary dwelling is built as an extension or alternation to the main dwelling house

_ Detached: Secondary dwelling is built as a separate structure detached from the main dwelling house

Issues and Threats

The following undesirable characteristics are typical of secondary dwellings and should be mitigated or avoided:

_ Dominant new dwelling does not complement existing detached dwelling

_ High site coverage and impermeable surfaces

_ Street frontage dominated by garages or multiple crossovers

_ Poor orientation and dimension of private open space

_ Removal of significant vegetation to make way for secondary dwelling

_ Amenity impact to adjoining residences

_ Potential for greater volumes of on-street parking

Secondary dwelling subservient to main dwelling
(source: Arkhefield)

Main dwelling prominent on site
(source: Angus Martin)

Street frontage not dominated by car accommodation
(source: Valdal Projects)

Vehicular crossover minimised
(source: Christopher Frederick Jones)

Garage or carport set back from frontage
(source: Christopher Frederick Jones)

Generous space between dwellings
(source: Realestate.com.au)

Guidelines

Secondary dwelling designed in conjunction with and subordinate to main dwelling

_ A maximum floor area of 60m2 internal which is sufficient to accommodate a platinum level Liveable Housing Australia one bedroom unit.

_ The main dwelling house should still be the most visible and dominant form in the streetscape and the secondary dwelling should not dominate and be sympathetic to the main dwelling house.

_ Vehicular crossover (driveway) limited to one per lot, unless on a corner lot, a dual road lot or if a second crossover already exists.

_ Secondary dwelling to have separate entrance from the main dwelling house for greater flexibility.

_ Retain existing significant on-site vegetation where possible.

Site Planning

_ One secondary dwelling allowed per dwelling house.

_ The site area a secondary dwelling is to be built upon must be a minimum of 450m2.

_ Permitted with consent in both Low Density Residential Zone and Low-medium Density Residential Zone.

_ Complies with standard 'Dwelling house' requirements for site cover, boundary setbacks and height.

Streetscape Interface

_ Minimum permeable ground surface within front setback of 50% to encourage landscape and permeable paving.

_ Car port or garage structures setback behind frontage of the existing dwelling.

_ Minimum of one car parking space provision for a secondary dwelling and one car parking space for the main dwelling house.

Setbacks

_ Ensure adequate space between dwellings on adjacent allotments.

_ Ensure Secondary Dwelling is minimum 2m from common boundary to ensure adequate space for landscape and footpath.

_ Generous rear setbacks are encouraged to ensure adequate space for private open space and landscaping.

Landscape

_ Provide generous landscaping to enhance the streetscape and one large canopy tree is to be accommodated within the front setback.

_ Vegetation should be drought tolerant and reflective of Toowoomba Region's landscape character.
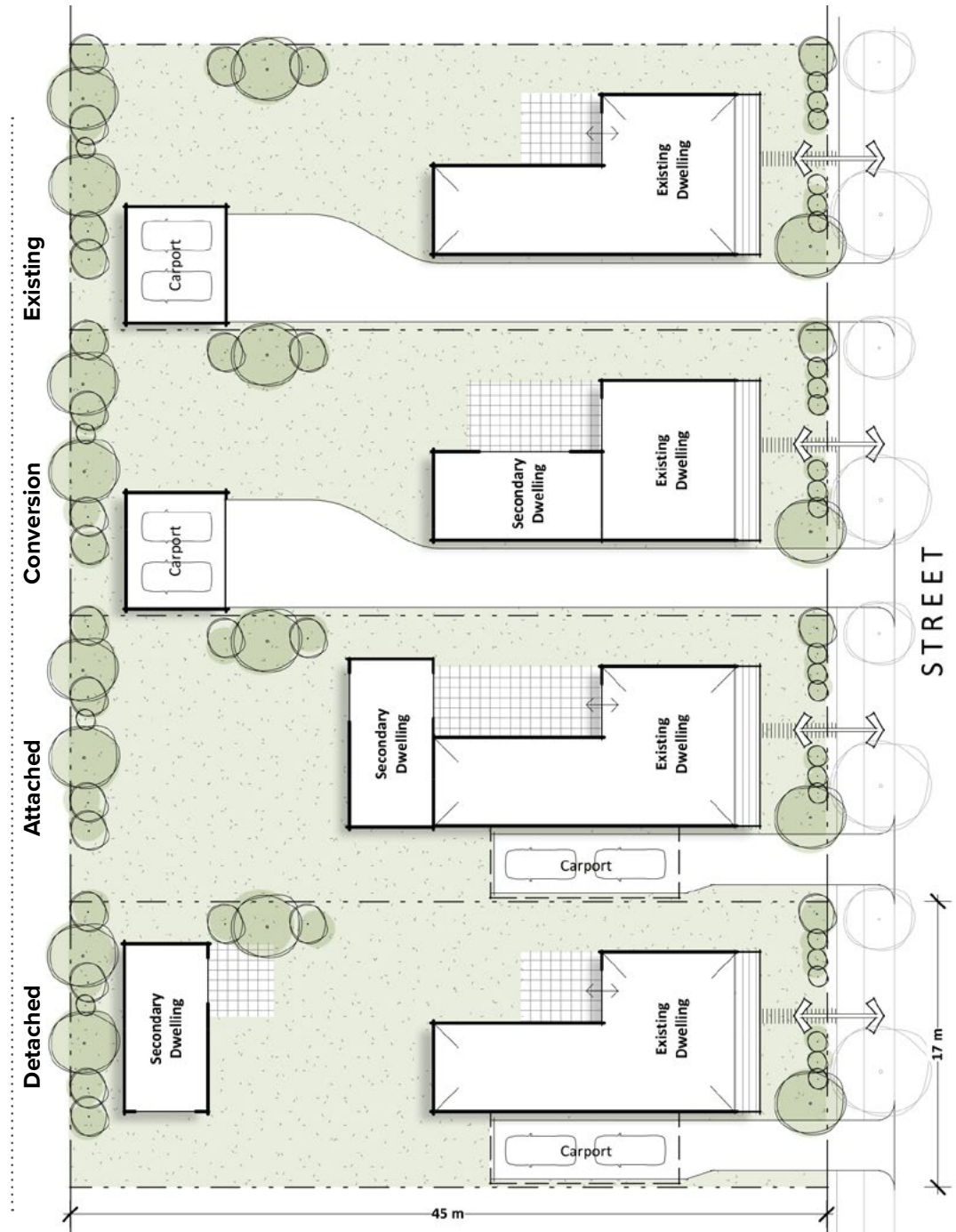
4.1.4 Secondary Dwelling Exemplars

Detached

Smaller secondary dwelling providing additional amenities and flexible living options for home business, working from home, and rental accommodation.

*Architect: Unknown
Photo: Domain*

Conversion

Secondary dwelling with separate entrance

*Architect: Unknown
Photo: Domain*

Attached

2 storey secondary dwelling is subservient to the main dwelling when viewed from the street.

*Builder: Valdal projects
Photo: realestate.com*

Overview

The planning scheme needs to be able to provide a streamlined framework for a diverse range of housing types to accommodate different household compositions and needs.

A range of housing options provides communities with choice and the ability to adapt as community structures evolve, and family and household types change. Appropriate housing is required to meet the diverse needs of communities that include:

_ single person or shared households

_ couples

_ families or extended families

_ people requiring assisted living

_ seniors

_ students

_ non-resident workers.

Existing policy in the planning scheme

Currently, the planning scheme defines a 'household' as 1 or more individuals who (a) live in a dwelling with the intent of living together on a long-term basis; and (b) make common provisions for food and other essentials for living.

The definition for certain residential land uses sets limitations on the number of households that reside in a dwelling (i.e. dwelling house is limited to a single household whereas dual occupancy is limited to two households).

Guidelines

Beyond ageing in place, a diverse and contemporary range of housing needs to be supported in line with community needs, whatever their age or personal circumstances.

The planning scheme needs to address the community's changing expectations and needs by providing for development to occur in appropriate places and in a suitable form.

Flexible planning parameters will need to be incorporated to avoid or minimise regulatory barriers or inefficiencies.

In plan making, a local government needs to:

_ demonstrate how the local planning instrument interfaces with aspects of building work regulated under the Building Act 197.

_ justify the need for the additional aspects of building work to be regulated in the local planning instrument.

Granny flats or secondary dwelling

Granny flats or 'secondary dwellings' is included as part of the Dwelling House definition in the planning scheme. It is a housing option that can meet the region's diverse and changing needs by providing flexible, independent living options.

The planning scheme currently prescribes a Material Change of Use for a Dwelling House in a Residential Zone as accepted development, except if the development does not comply with the relevant development code or an overlay makes the development assessable.

Currently Council does not include specific provisions to regulate the size of secondary dwellings, however, requires them to be subordinate to the primary dwelling.

In comparison, Brisbane City Council limits the size of granny flats to 80m², and Logan City Council limits the size to 70m². Council could consider including specific assessment benchmarks within the Medium Density Residential Code to provide greater clarity on the desired development footprint for secondary dwellings.

Currently, the planning scheme requires a secondary dwelling to be occupied by persons who form part of one household within the primary dwelling which could be reviewed to increase flexibility. The definition of 'secondary dwelling 'under Schedule 24 of the Planning Regulation 2017 states that it is a "dwelling, whether attached or detached, that is used in conjunction with, and subordinate to, a dwelling house on the same lot." The definition does not mention the need for the secondary dwelling to be occupied by people who form part of the household within the primary dwelling. The removal of this requirement from the planning scheme would broaden the benefits offered by secondary dwellings beyond family member to other members of the community (e.g. an ageing couple living in the neighbourhood that could move into the secondary dwelling allowing them to downsize and still remain in the local area). This amendment would make no impact to the form and function of the secondary dwelling.

Dual occupancy

In comparison to a secondary dwelling, a Dual occupancy supports two households and can be separately titled and sold separately.

This is also a housing option that can meet he region's diverse and changing needs by providing multiple households the opportunity to independently live on the same site.

A Material Change of Use for a Dual Occupancy is generally Accepted development (subject to requirements) in the urban residential zones, except where;

_ The site is within a Greenfield Area and is not a designated Dual Occupancy lot;

_ The site has an area less than 700m2;

_ The site is a hatchet lot; and

_ The building height exceeds 8.5m; or

_ An overlay makes the development Assessable.

Evidence

Feedback from key stakeholders is that a diverse range of housing types for all family and household types should be supported within the region.

Learn more about this topic:

- Dwelling Houses, Secondary Dwellings and Dual Occupancy Information Sheet
- State Planning Policy
- Queensland Housing Strategy

Overview

Our living environments are key to our quality of life. By encouraging well-connected, inviting and accessible retirement village developments, the ability for residents to maintain connection to their lives outside the retirement village is made easier. This helps to avoid social isolation and also aids in designing retirement villages which contribute positively to their surrounding community.

Existing policy in the planning scheme

The existing policy limits retirement villages to specific zones. Presently, there are few examples of village design guidance in the planning scheme which directly addresses needs in the community for dwellings for ageing people. Where policy exists for retirement villages, it recommends a transition of scale from the less dense surrounding area, to a more dense retirement village typology. Policy identifies the important role retirement villages play in providing dwelling diversity, however it focuses only on building scale and lacks guidance as to how to achieve retirement villages which are accessible, inviting and integrated into the wider community so they perform a broader role in the community than a gated housing enclave.

Guidelines

Village design for liveability
- Design retirement villages to be accessible and to make the most of environmental attributes, such as cooling winds, solar orientation, views and vegetation.
- Limit the size of retirement villages so they can be better integrated into existing communities and to encourage walkability to nearby destinations and internal parks etc.
- Community and commercial uses, and mixed use buildings, are incorporated into the design of the retirement village in such a way that the retirement village "local centre" can play a role in servicing the day-to-day needs of the village residents as well as the broader community.

Connection and accessibility
- Public access is enabled and encouraged.
- Retirement villages should be located close to local centres and public transport routes so day-to-day needs can be accessed easily and are close to the village so that their residents do not need to rely on a private car for mobility.
- Paths are provided for active travel within the retirement village and to nearby local centres or public spaces.
- Local public open spaces and parks are provided throughout the retirement village at different scales and with different embellishments so the public spaces can serve different purposes for different people and at all times of the day.

Relationship to surrounding areas
- Design retirement villages as an integrated element in the broader neighbourhood.
- Dwellings should address the surrounding public streets and parks.

- Retirement villages perform an important community function and therefore should offer diversity in their design and location. Villages should not feel isolated from the rest of the surrounding neighbourhood.
- Retirement village streets should seamlessly integrate with the existing surrounding street network and be inviting and designed for people as a priority.
- Retirement villages are provided with footpaths and high quality street landscaping which are established prior to occupation.
- Car and RV parking does not present directly to public streets

Greening village design
- Street trees are incorporated into road design. Mature trees are planted at the start of the construction phase and are provided with adequate protection during construction.
- Village residences are designed to include setbacks to the front to enable front gardens and all residences are provided with private open space which is landscaped.
- Deep soil zones are installed to enable trees to be planted in front and rear yards,
- The width of side setbacks responds to the orientation of the allotment to optimise solar access to the site and dwelling.
- Parks which are inviting and accessible are included into village design in keeping with Council parks strategy.

Accessible Village
Retirement villages should be integrated into the design of surrounding neighbourhoods and interface well with the surrounding streets.

Photo: Jensen PLUS

Evidence

Site visits identified connectivity and walk-ability issues across a number of retirement villages and that many of these communities are gated enclaves which do not integrate into the broader community due to their design and their location far from other destinations, centres and parks etc. Some retirement villages have encroached into industrial-zoned land.

Feedback from stakeholders identified an interest in the community for new types of retirement living options as well as support for different building forms and lifestyles from what is being developed so far for retirement living.

Learn more about this topic
- *Next Generation Planning handbook, Council of Mayors SEQ, 2011*

- *Best Practice Principles for Seniors Community Design, Property Council of Australia*

Overview

Council can consider a variety of incentives to encourage the development industry to pursue age-specific housing.

This will minimise regulatory and financial barriers to provide a diverse and contemporary range of affordable housing to support ageing in place.

Guidelines

Initiatives that Council could consider to support housing affordability and choice for ageing in place could include the following:

Infrastructure charges reduction

Council can reduce infrastructure charges for certain residential developments to help reduce development costs. This would support housing affordability and choice for residents to age within their local neighbourhood. Eligible residential developments could include dual occupancies and multiple dwellings.

In order to qualify for the infrastructure charges, Council could set a criteria to ensure development is established on suitable sites. For example, dual occupancies must be within 400m of a designated public transport node, centre and public open space.

Development application fee discounts

Council could offer discounts on development application fees for housing types that support ageing in place through housing affordability and choice. For example, a 25% discount could be provided for multiple dwellings within 400m of centres, or boarding houses that support low-cost group living.

This type of incentive could also be coupled with fast-tracked development assessment timeframes.

Rates discount

Council can offer financial assistance to low-income and ageing homeowners to remain in their home by providing rates discounts. This could assist homeowners, including pensioners, war veterans and widows, and people experiencing financial hardship. This initiative may help lower income residents maintain their local housing rather than transitioning to higher cost aged care. Similar practices have been adopted by Victoria's Hobsons Bay City Council's Affordable Housing Policy Statement (2016).

This type of initiative can be coupled with the provision of a range of support services, such as public transport, improved walkability, access to shops and health services.

Grants

Grants is an incentive method that could be offered for a variety of developments that support ageing in place, including developments that don't require Council approval.

For example, Council could offer grants to reduce the costs to develop granny flats within residential zones to support flexible independent housing.

Planning initiatives

There are many initiatives that could be encouraged to support affordable housing and ageing in place. These can include:

- Relaxed planning controls for design elements including car parking and open space.
- The Urban Land Development Authority has tested the use of inclusionary zoning in certain areas, such as Northshore Hamilton in Brisbane. This strategy requires a component of affordable housing to be included (e.g. 10%) where zoning has supported an uplift in development value (e.g. increased height or density).
- Mixed tenure development involving mixing market housing (bought, sold and leased in the open market) with subsidised housing of various types.

Evidence

Feedback from key stakeholders is that incentives should be considered to encourage housing affordability, choice and ageing in place.

Learn more about this topic:

- Hobsons Bay City Council's Affordable Housing Policy Statement 2016
- Mixed-tenure development
- Planning for affordable housing
- Brisbane City Council's Infrastructure Charges for Retirement and Aged Care Accommodation

Example

Kelvin Grove Urban Village, including affordable student accommodation

Source: Next Business and Property Sales, 2021

Example

Northshore Hamilton

Source: Tourism Queensland, 2021

Overview

Demonstration projects refer to best practices in new housing choices to support community needs. They showcase higher standard elements or innovative housing choices that are not achieved in standard development.

Guidelines

Good demonstration projects for new housing choices promote housing typologies and strategies that support social needs, including ageing in place.

Demonstration projects should demonstrate:

– Excellence in construction and design quality.

– Innovative planning and engagement approaches.

– Close partnership with industry bodies.

– Options for affordable and inclusive housing.

– Carbon neutral buildings.

– Equitable access and social diversity.

– Compatibility with neighbourhood character.

– Safe and legible access that adheres to CPTND principles (see Guideline 2.1.7 for details).

– Incentives for age-specific housing, such as mixed tenure (see Guideline 4.1.7 for details).

Examples Projects

Residential care designed for socialization

John Wesley Gardens by Fulton Trotter Architects

– Facility promotes wellbeing and social involvement for residents.

– Each residential unit has a varied floorplan and design that blends with the existing neighbourhood character.

– Circulation and wayfinding is organised to be legible and minimise travel distances.

– Sustainable design, in regard to waste, energy, materials and water efficiency.

Urban Land Development Authority / EDQ

Fitzgibbon Chase

– The Fitzgibbon Chase greenfield residential development provided low-cost townhouses designed to cater for a range of affordable housing tenants.

– The design responds to traditional Australian home typology with a design that engages with the street.

– An innovative interlocking plan negotiates the constraints of the site and optimises amenity.

– A laneway model successfully separates vehicles from pedestrians.

Demonstration Housing Project

ACT Government

– The Demonstration Housing Project aims to test and showcase innovative forms of housing to address emerging needs, such as co-housing and ageing in place.

– Offers a 'hands on' opportunity to test the effectiveness of different housing types by way of real examples and future review through post-occupancy modelling.

– Lessons learnt from the project will inform future government policy to support improved housing choice and quality in Canberra.

– The project is run in 2 streams:

1. Housing concept and site

2. Housing concept without a site (the ACT Government is assisting proponents to identify suitable Territory-owned land which can be sold to the proponent for market value).

– The process for successful projects involves these stages:

1. Proponents to present their project to the National Capital Design Review Panel.

2. Proponents to undertake community engagement.

3. Development Application and site specific Territory Plan Variation lodged and assessed in accordance with statutory processes.

4. Delivery of Demonstration Housing projects.

Evidence

Engagement with key stakeholders has identified the need for demonstration projects to better understand housing design that supports different living choices, including ageing in place.