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Introduction

These guidelines describe the design expectations for new duplex developments within Hamilton. They are aimed at encouraging good quality urban design outcomes to help ensure new units are compatible with their setting and that they make a positive contribution to the streetscape.

The purpose is to assist professionals and developers in preparing resource consent applications. This is particularly important where new units are proposed for the general residential zone.

Acknowledging that each site is unique, designers are encouraged to consider how each proposal addresses the following 6 design elements:

1. Responding to the context
2. Site layout
3. Addressing the street
4. Designing for the vehicle
5. Landscape design
6. Building design

Note - this is not intended as a comprehensive or exhaustive list and given the nature of the guide there is some degree of overlap between elements.

The guidelines are non-statutory, but should be read in conjunction with the provisions of the Hamilton District Plan - in particular Assessment Criteria B and C (Appendix 1.3.3) and the Residential Design Guide (Appendix 1.4.2) in Volume 2.
What is a duplex?

A duplex is a form of infill development aimed at promoting a compact city and providing residents with greater choice and housing options. They are also commonly referred to as semi-detached units, where two buildings are attached together by a common wall and can be one or two storied.

As illustrated and generally within Hamilton, duplexes are developed in the following ways:

1. Side by side - usually located on sections with larger road frontages.
2. Front and rear - usually located on narrow, deep sections.

Design concerns with both these layouts include:

- The failure to address or front the street including the dominance of garages.
- The ‘mirroring’ or ‘flipping’ of elevations which does not achieve individual unit identity.
- The provision of access and a street address for the rear unit.
- The failure to ensure the front setback is appropriately designed and used.

The District Plan defines a duplex as:

“A residential building comprising two attached residential units. For the avoidance of doubt, residential units physically connected by one or more accessory buildings, such as garages, will also be deemed to be attached.”

Image from HCC District Plan. (Vol 2, Pg 1-12)
Other forms and layouts are also possible, for example where units are stacked horizontally. The duplex unit typology can offer a number of advantages:

- They are suitable for smaller sections.
- They provide for an efficient use of land.
- They provide a built form that is more appropriate for suburban areas than terraced or apartment housing.
- Units can be designed to front onto and engage with the street.
- They can be located behind or to the side of existing houses.
- They provide another housing option and greater choice.

There can also be disadvantages:

- They can lead to a gradual erosion of the character of an area.
- If units are not appropriately designed and spaced, the privacy of occupants can be affected.
- The designs are often standardised and can be perceived as bland and repetitive.
Hamilton District Plan standards and controls

The key District Plan controls for duplex units are:

<table>
<thead>
<tr>
<th></th>
<th>General Residential Zone</th>
<th>Large Lot Residential Zone</th>
<th>Residential Intensification Zone</th>
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<tbody>
<tr>
<td>Net Site Area (min per unit)</td>
<td>200m²</td>
<td>1250m²</td>
<td>150m² minimum 300m² maximum</td>
</tr>
<tr>
<td>Site Coverage (max)</td>
<td>40%</td>
<td>20%</td>
<td>50% 45% Hamilton East</td>
</tr>
<tr>
<td>Height (max)</td>
<td>10m</td>
<td>10m</td>
<td>12.5m</td>
</tr>
<tr>
<td>Setbacks (min)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local and collector corridors</td>
<td>3m</td>
<td>5m</td>
<td>3m</td>
</tr>
<tr>
<td>Arterial corridors</td>
<td>5m (8m for any garage or carport facing the transport corridor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any other boundary</td>
<td></td>
<td></td>
<td>1.5m</td>
</tr>
<tr>
<td>Outdoor Living Areas (min)</td>
<td>60m²</td>
<td>60m²</td>
<td>12m²</td>
</tr>
<tr>
<td>Parking Spaces (min)</td>
<td>2 per household or dwelling</td>
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For a complete set of provisions please refer to the relevant chapters within the District Plan, in particular Chapters 4 and 25 (Volume 1) and Appendix 15 (Volume 2).
Three examples of recently completed duplex developments
Responding to the context

Hamilton is a collection of neighbourhoods that reinforce a sense of local community and identity. However, new infill development has the potential to negatively alter the character of an area and it is important that this is minimized.

The guidelines are aimed at:
- Ensuring that new duplex units are not out of place and are accepted by the local community.
- Protecting the character of neighbourhoods and ensuring that any new proposal is consistent with that context.

Character is determined by the combination of both natural and man-made elements and differs from place to place. This includes the natural landform and topography, the street layout, front yard setbacks, amount of visible greenery, the scale (height and form) of buildings, the type of building materials used and the architectural style or theme.
In terms of unit density (expressed as dwelling units/ha) the District Plan provides an appropriate guideline for each zone. However, care should be taken to ensure that an increase in the overall unit density does not come at the expense of on site amenity and liveability for residents; in some cases a reduction in the number of units proposed should be considered.

To ensure a design responds appropriately to the context, the following is recommended:

- Undertake a neighbourhood and/or streetscape analysis to understand the existing form, character, scale and landscaping.
- Identify any significant local characteristics, natural landforms and landscape features.
- Identify important views and connections to and from the site, including views from the wider neighbourhood.
- Identify the location of any nearby parks and public open spaces.
- Consider existing streetscape elements including the height, form, materials, and landscaping of adjacent buildings and properties.
- Design the buildings to ‘fit’ with and respond to the local context and features and keep existing mature trees where possible.
- Consider the location and setback of neighbouring houses and position of windows including the location of private outdoor spaces.
- Consider the views and solar access of adjacent residents.

An example of new duplex units that are appropriately scaled.
Site layout

Any new dwelling should be positioned to make the most of the sun, to provide privacy and to use the available land efficiently. This includes ensuring neighbouring properties are not compromised in any way.

For duplex developments, where people are living closer to each other, it is imperative that the buildings are correctly positioned on site.

As far as possible (depending on the specifics of each site) new units should be located and designed to create quality living spaces. This includes private living areas that are clearly defined and separated from publicly accessible areas. There should also be convenient and safe access to each unit.

Site analysis

To assist in achieving the above and before any design work is started a comprehensive site analysis should be completed.

This will identify any key features and opportunities that will inform the design process, including:

- Sunlight and prevailing wind direction, to ensure the unit(s) are properly orientated and that outdoor areas are sheltered.
- Contouring and soil conditions which will assist in siting the units which in turn will inform decisions regarding vehicular access points, entrances, outdoor living areas etc.
- Existing trees and other natural features which could be retained.
Public vs private
As far as possible, units should be designed around the principle of creating ‘public fronts and private backs’.

Designers should strive to provide the following for each unit:
- A public front – where applicable, the front of the unit should face the street, with an entrance that is clearly visible and accessible.
- A private rear or backyard that is away from the street and is not overlooked by the neighbours. This area should be connected to the living or dining room and should be separated from the common driveway.
- Driveway access, or access to parking which does not impact on the quality of the street or the living spaces.
- Secure service areas that are screened from the public areas and not visible from the street.
Where appropriate, consider keeping front yard setbacks to a minimum, thereby helping maximise the amount of rear private open space. This would also provide greater flexibility in terms of the building footprint and layout. Each unit should be planned to maximise privacy and access to sunlight.
To minimise the impact on neighbouring properties, the following aspects need to be considered when locating the building(s) on site:

- The location of any neighbouring homes, and in particular, the location of windows and private outdoor living areas.
- The location and height of any existing and proposed retaining walls and structures. Where possible, the height of these should be minimised especially along a common boundary.
- The location of any existing trees and vegetation which may be valuable in terms of increasing the level of privacy achieved. Additional planting should be used to soften the effect of any fence or wall.

*Due to the location of the common driveway, the outdoor living areas are not private*
Addressing the street

The character of an area is impacted by the buildings fronting the road corridor and the level of interaction and openness that is created. In this respect, the design of the interface between the front of a dwelling and the sidewalk (the transition area from private to public space) is important.

This aspect has often been neglected, particularly in areas where medium density housing has occurred. The result is that many neighbourhoods look bland and do not provide for an adequate level of informal or passive surveillance in accordance with Crime Prevention through Environmental Design (CPTED) guidelines.

The desired outcome is to improve the overall design quality and enhance the character of the street including the creation of a safer and more attractive environment.

Design duplex units to provide informal or passive surveillance of the street
New dwellings should:
- Respond to the character of the street by taking the bulk and location of the surrounding buildings into account.
- Ensure the front unit is purposely designed to face the street (in other words a different design to the other units).
- Ensure that the area between the front unit and the street is designed to maximise the visual connection between the two, while maintaining privacy for occupants.
- Clearly define the edge or transition between public and private spaces. This could include semi-private areas as illustrated.

Examples of duplex units that do not address the street
In conjunction with the principles described under element 2 (site layout), the following design considerations are recommended:

- Units fronting the street should provide direct pedestrian access from the footpath and where possible, a clearly visible front door.
- Garages should be integrated into the design and should not dominate the front façade or elevation.
- The length of any blank solid walls (particularly those facing the street) should be limited.
- Landscaping, changes in level, terracing and low fencing should be used to soften the street edge. Changes in level can also be used as an opportunity to provide passive surveillance and an increase in visual privacy for residents.
- Where applicable, a visual connection between the new units and any public space or park should be considered.
- Where appropriate, units should be designed to overlook communal spaces such as lanes and walkways or any through-site links.
Fences and walls
Fences and walls are an important part of the streetscape and their design can have a noticeable impact on the appeal of a neighbourhood. Well-designed fences and walls will help maintain a level of privacy while adding to the value of the development as a whole. Both the height and materials need to be carefully considered particularly with regard to the objective of creating a pleasant and safe street environment.

The following guidelines are recommended:
• Along the front boundary, fence height should be kept to a minimum (preferably 1.2 or 1.5m) to maintain the visual connection to the street.
• Where fencing is provided, visually permeable materials and treatments such as treated timber or aluminum slats are encouraged as opposed to solid timber fencing.
• Walls and fences should be used in conjunction with planting to soften the overall look and impact.
• Materials, finishes and colour should complement the design of the units and ensure ongoing maintenance is cost effective.
Designing for vehicles

Designing for vehicles is an important consideration for all new infill development, including duplexes. However, this aspect often dictates a number of other outcomes. For example, the location and design of access points, driveways and parking areas can result in large paved areas which can have a negative impact on the street and the overall quality of the development.

Access, parking, garaging and paving should be considered early on in the design process in order to deliver a development that is functional, attractive and safe. Garages and car parking should not visually dominate any development.

The objective can be summarised as follows:
“The integration of vehicles and pedestrians should be carefully considered with priority given to pedestrians. Access and circulation for cars and service vehicles needs to be clear and efficient, without dominating other users. Dedicated vehicle routes should avoid potential conflicts with pedestrians and cyclists. Consolidating vehicle crossings, identifying pedestrian paths and locating service entries away from pedestrian areas helps minimise the impact of vehicles” (VISTA, pg. 25).
Driveways
One of the key aspects that should inform any decision is the existing character of the neighbourhood and street. For example, are single or double width driveways common? Could the parking needs of the building be met with a single width driveway? How would changing the driveway width affect the front yard interface including the amount of landscaping that can be provided?

In order to create an attractive streetscape it is important to consider how the driveway will be designed and where it will be located. The following guidelines are suggested:
• Where duplexes are designed in a ‘front and rear’ format, the driveway should be located away from any private living area and should preferably be on the southern side of the section.
• To minimise the amount of hard surfacing, widths should be kept to a minimum (particularly closer to the street) and a landscaping strip should be introduced along the entire length.
• As far as possible, the amount of front yard paving should be reduced.
• Where widths need to be widened, consider screening these areas with landscaping.
• Where garages are adjacent (side-by-side format) consider providing a shared driveway access from the street.
• Locate driveways to retain as much on-street parking and as many street trees as possible.
• To soften the overall appearance, consider additional landscaping including the use of a variety of paving materials and finishes including materials that would allow water to be absorbed into the soil.
• Service areas should be screened in a way that is consistent with neighbouring properties and the overall design and character of the streetscape.

Use landscaping and changes in materials to soften hard surfacing
Garages
The character of a street is improved when garages do not dominate; reducing their impact should be an important consideration from the outset.

Good design practice suggests that the dwelling area and not the garage should be the most prominent part of the building design. As far as possible, garages should be integrated and set back to minimise their prominence especially in relation to any front or street elevation.

The following design guidelines are suggested:
- Any garage facing the road should be recessed and integrated into the front elevation.
- If the site allows, use or create rear access lanes to remove the need for garages at the front.
- Break up the bulk and massing of double garages. This can be done in a number of ways such as:
  1. Recessing doors behind the front building line.
  2. Separating or providing two single garage doors.
  3. Locating doors at a 90 degree angle to the street. However, care should be taken to not create a blank, featureless elevation.
  4. Consider using single width garages with stacked parking.
  5. Consider using a range of materials, finishes and treatments to reduce overall blandness.
  6. Consider loft or living areas over the garage to reduce their prominence.
Apart from the vehicle, it is also important that pedestrians and cyclists are considered, including:

- Common driveways and accessways should be designed as slow-speed, pedestrian-friendly environments.
- Prioritising pedestrian safety and movement through clearly marked paths and routes and using variations in paving materials and colour.
- Ensuring footpaths are continuous and are not broken by vehicle crossings.
- Reducing the width of vehicle crossings to a minimum.
- Providing convenient and secure spaces for cycle parking and storage.
- Ensuring drive and accessways are safe and incorporate lighting.
Landscape design

The provision of appropriate landscaping can play an important role in ensuring new duplex units are integrated into the streetscape, thereby lessening the impact on surrounding properties.

In general terms, landscaping proposals should form part of a comprehensively designed concept that links the design of the units with the existing landscape character of the neighbourhood.

As far as possible, existing mature vegetation (particularly trees) should be retained with the focus falling on any public area that is visible from or adjoining the street and any communal areas such as driveways and service areas.

Front yard landscaping is an important element that can help ‘soften’ the hard edges of a building such as a duplex.

An effective landscape design will help:
- Improve the overall streetscape.
- Improve the overall quality of the development.
- Reduce the bulk and scale of the built form.

Consider using landscaping to improve overall development quality
The planting (and fencing) should be designed to ensure views to and from public spaces are largely clear and visually permeable. In general, clear stemmed trees with lower level ground cover planting are preferred to denser bush or shrub vegetation that can obscure views.

The following guidelines should be considered:

- The landscaping and species chosen should relate to the existing neighbourhood and ecology of the area.
- Any design should incorporate front yard landscaping that softens the edges of the units including parking areas and driveways.
- Landscaping should be used to reinforce and distinguish one unit from another and help avoid the creation of a monotonous streetscape.
- Where possible, landscaping should be used to screen parking areas.
- Groupings of a variety of species and trees are preferred to the uniform planting of a single species.
- Landscaping should be used to reduce the paved area on the side of a unit and to provide a pleasant accessway to the rear units.
- As far as possible, the landscaping should complement and be consistent with the design of the units.
- Where appropriate, deciduous trees should be considered to provide summer shade and access to sunlight in winter.
- Apart from landscaping, other elements such as lighting and paving should be used to define the progression from public through to private space and to create a sense of entry.

An example of using landscaping to soften the impact of driveways and garaging
Building design

The following guidelines focus on the exterior or external design of the units (the architectural expression). They are not prescriptive but are aimed at encouraging innovative and creative solutions. While the standards and assessment criteria within the District Plan define the basic building envelope they do not dictate the form, materials or the architectural expression. From an urban design perspective, the principle of a ‘city of a thousand designers’ is promoted and encouraged in order to help ensure neighbourhoods are diverse and unique. Standard or repetitive designs should be avoided.

As stated in the Hamilton design guide, Vista, ‘Buildings and spaces should provide inspiration and delight for those who use them or pass by. Hamilton is positioning itself as a city that cares about good design, adding creativity to entice people to “fall in love” with the city. The city is a communication device that “introduces and explains itself, and talks to you of its history and aspirations for the future.” In practical terms it is often the quality of detail elements – craftsmanship, materiality, decoration – that contributes to a memorable experience which enhances the beauty, surprise and delight that characterise great urban places’. (VISTA p. 17)

It is important that the opportunities and qualities unique to each site are used to inform the design process, choice of materials and relationship with the street.
**Bulk and scale**

The scale and proportion of buildings and spaces should consider and recognise the ‘grain’ of the neighbourhood. As the city develops and intensifies, new development will often be of a different scale.

This aspect is particularly important when single detached dwellings are replaced by new duplex units.

While infill housing is needed to ensure the city can continue to meet its housing supply needs, it is important that the new dwellings do not dominate and overshadow neighbouring properties.

To address this and to ensure a level of interaction with the street, the following should be considered:

- In general, the scale, height and massing of a new development should not overpower nearby existing buildings.
- The form and architecture should reflect the intended use, providing an understanding of the building and how it fits into its immediate environment.
- Designers need to consider the relationship to existing surroundings, the visual connectivity and dialogue with existing forms.
- Each unit should be designed to be unique, have its own identity and be visually different from the adjoining unit(s).
- Ensure facades are legible and articulated by incorporating architectural detailing including changes in materials, colours, height and roofing lines.
- Elevations should be broken up with changes in height and depth, providing an interesting visual form.

*This example shows a repetitive design*
Building height
The height of a building is another important element that shapes the character of an area including the overall feel of the street.

The use of additional height (second storey) can ensure a site is developed efficiently while still providing a high level of onsite amenity. Building setback and height in relation to boundary controls within the District Plan are in place to ensure that adjacent buildings are not overshadowed.

Designers should consider:
- The height of surrounding dwellings and whether or not the design will be suitable for the context.
- Additional height (particularly on smaller sections) to ensure adequate outdoor space can be provided.
- Ensuring new units are adequately separated or stepped back to ensure each has access to sunlight/daylight.

An example of new duplex units that fit with surrounding context
Roof design

Roof design is a key aspect and should be carefully considered in multi-unit developments. In determining the shape and form, designers need to consider and respond to the local context, including having an understanding of the likely visual impact on adjoining properties and the street in general. Ultimately, how the roof is articulated contributes to the character of the building.

The final form and materials should take the following guidelines and principles into account:

- Ensure the design reflects the internal layout of the building and contributes to its architectural expression and performance.
- Ensure the design responds to the local environment and context.
- When relevant, ensure the design helps reduce the visual bulk of the building by breaking down the mass to minimise apparent bulk and to relate the structure to the context.
- Use a variety of different roofing styles, pitches and materials to help break the monotony often seen in suburban areas.
- Where appropriate include additional detailing (e.g. on gable ends) to add character.
- Consider including other elements (e.g. gable and dormer windows) to provide uniqueness and individuality.
- Consider lowering the eave line of a second storey roof to ensure the form is more compatible with any adjacent single storey dwellings.
- Where possible, the second storey should be set back into the main structure to help reduce the overall bulk and mass.

Varied roof designs can help reduce bulk and mass of a development
Elevations and exterior cladding
In combination with the height of a building, the external design or treatment of the elevations has a noticeable impact on adjacent properties and the neighbourhood as a whole. New units should be designed to ensure that they are not visually imposing.

As stated in VISTA (p. 17) “The expression of buildings and spaces should possess timeless qualities of proportion, harmony, scale and rhythm appropriate to the context. Quality architecture and design has traditionally been defined by basic qualities of proportion and rhythm. Design of both plan and elevations should provide a sense of order and unity to a streetscape, considering symmetry, balance, repetition, rhythm, grain and scale in the composition. It should also consider various viewpoints and distances, and the effect of light and shadow on the modelling of buildings and spaces”.

The following general guidelines should be considered:
- Designs should use good quality contemporary materials. Poor, indifferent, kitsch, ready-made and retrogressive designs should be discouraged.
- In areas where there is a strongly defined character, the cladding chosen should incorporate a similar palette of materials to the surrounding dwellings.
- Repetitive architectural styles should be softened by secondary design elements such as balconies, porches, canopies and variation in materials and colours.
- The use of high quality durable materials to minimise ongoing maintenance costs is encouraged.
- Design for visual privacy so that residents are not overlooked. Balance privacy with the desire for views and surveillance of public open spaces.
- Ensure that windows are positioned to enhance lighting and ventilation and use glazing to activate the street frontage, offering passive surveillance.
- Use upper level balconies and windows to overlook the street and/or areas of open space.
- Ensure front doors are sheltered from the wind and rain.
- Protect visual privacy by offsetting windows on adjacent facades.
Use a variety of quality cladding materials to create interest
Glossary

**Architectural Expression**  The outward appearance of a building or a group of buildings.

**Character**  The look and feel of an area. It is often based on the underlying topography, local ecology and notable landscape features and includes man-made features such as buildings, street trees and public open spaces.

**Context**  The setting of the area within which a development will take place. It includes the natural form and ecology, the buildings and spaces and the routes that cross it. It includes the people living in the area.

**Fronting**  Means facing onto or towards a road and normally applies to the principal elevation or that part of the unit that is seen by most people driving or walking past.

**Grain**  The combined pattern of blocks and streets including building height and size and how they all work together in an interrelated manner to create and enable movement.

**Interface**  An area between the public street and the private house.

**Liveability**  The sum of the factors that add up to a community’s quality of life and includes the built and natural environments, economic prosperity,
social stability and equity, educational opportunity and cultural and recreation possibilities.

**Materiality**
The materials used to construct and finish a building.

**Mirroring**
The image of a unit (or object, plan, person etc.) as it would appear if viewed in a mirror, with right and left reversed.

**Public Environment**
An area that is accessible to the general public without control or restriction – mainly public spaces, malls, arcades, streets, avenues, parks etc.

**Scale**
The massing and size of a building or a group of buildings and how that relates to the prevalent scale of other buildings in the immediate neighbourhood.

**Streetscape**
Visual elements of a street including the road, adjoining buildings, footpath, trees and open spaces, etc. that combine to form the street's character.

**Typology**
A study of the physical or other characteristics of the built environment where buildings are categorized into distinct types based on similarities in their form. For example, a duplex is a building that has a specific form where one unit is attached to another.
References


AUCKLAND COUNCIL. District Plan (Papakura Section), Section Three, Appendix 16C – Medium Density Housing, Design Assessment Criteria (Residential 8A zone).


Disclaimer

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