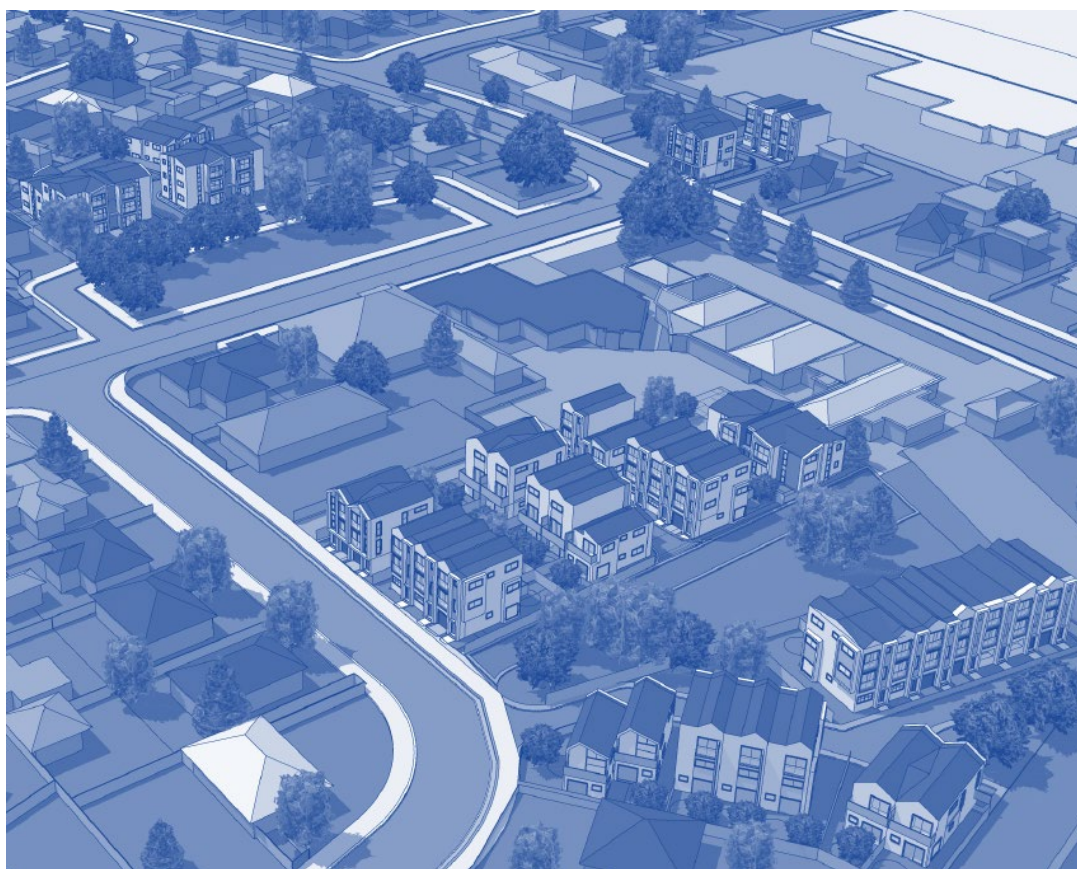


PNCC MRZ Standards Report



For Palmerston North City Council

Contents

	Introduction	3
1	Issue discussion	4
	1.1 RMA issues to be addressed	4
	1.2 Enabling multi-unit housing	5
2	Performance Standards for the MRZ	
	2.1 Maximum building height	7
	2.2 Height in relation to boundary (HIRB)	8
	2.3 Boundary separation distance ('yards')	16
	2.4 Minimum site area	20
	2.5 Building coverage	21
	2.6 Outlook space	24
	2.7 Outdoor living space	26
	2.8 Sunlight to the dwelling	29
	2.9 Front façade glazing percentages	31
	2.10 Front door orientation and shelter	33
	2.11 Relationship of garages to the street frontage	34
	2.12 Carparking at the street frontage	35
	2.13 Fencing at and close to street boundaries	36
	2.14 Location and visibility of building services	38

INTRODUCTION

Scope

This report discusses key issues for the design of medium density housing and development in Medium Density Residential Zones (MRZ) and recommends potential District Plan standards to address these. It is anticipated that these standards will apply to all development in the MRZ. It responds to multi-unit residential development¹ standards existing in the operative Palmerston North District Plan, Medium Density Residential Standards in Schedule 3A of the Resource Management Act 1991 and other standards proposed by Palmerston North City Council (PNCC) at the inception of Proposed Plan Change I: Medium Density Residential Zone, which would introduce a MRZ in parts of Palmerston North. This analysis does not address non-residential activities in the MRZ.

Approach

This is informed by in addition to district plan advice for a number of Councils including PNCC and Porirua City Council; our work testing, verifying and rationalising the residential zone standards in the Auckland Council's Unitary Plan; our submission to the Select Committee on Schedule 3A standards; and our subsequent presentation to the Resource Management Law Association of New Zealand (RMLA). It references the Schedule 3A standards in the Resource Management Act 1991 (RMA) and the Auckland Unitary Plan Mixed Housing Urban Zone (MHU) which is the apparent base of those standards.

The report also references the assessment criteria in the operative Palmerston North District Plan, which may be replaced² by objectives and policies and proposed performance standards. This reference is to allow understanding of how issues that are raised in assessment criteria are covered by recommended standards.

This report does not attempt to refine the text of the standards. It instead focuses on approach, content and rationale.

The recommended standards have been verified by various means described in this report. These means include:

- Diagrammatic analysis of standards in plan and section;
- Integrated analysis of the package of proposed standards analysis;
- Testing proposed district plan standards with potential development of actual sites in Palmerston North;
- Analysis by and discussion with PNCC regulatory planners;
- Field study; and
- Reference to work previously carried out in this regard for Porirua City and Auckland Councils.

¹ Multi-unit residential development is defined in the operative Palmerston North District Plan as: “three or more self-contained dwelling units that are located on one site. A multi-unit residential development includes but is not limited to apartment buildings, and terrace housing.”

² Replacement will occur only for development within the MRZ. Assessment criteria will continue to apply to Aokautere, Roxburgh Crescent, the Hokowhitu Lagoon residential area and Matangi.

1 ISSUE DISCUSSION

1.1 RMA Issues to be addressed

Intentions

- To enable greater density and enhance housing supply and choice to give effect to the National Policy Statement on Urban Development 2020
- In doing so to achieve a well-functioning urban environment at both neighbourhood and site-specific scales, including through an appropriately high degree of liveability for residents.
- Maintain consistency with the RMA Schedule 3A standards unless there is a strong, evidence-based reason to depart from these.
- To provide certainty to housing design quality outcomes through specification of building design standards for District Plan users.

Relation to the Medium Density Residential Standards

While Palmerston North is not a 'Tier 1' city, for the sake of consistency there is merit in retaining the Medium Density Residential Standards (MDRS) where their application is appropriate, and where they deliver both the intensification and the qualities of a 'well-functioning urban environment' that are considered desirable in Palmerston North.

Given that PNCC as a Tier 2 city is not required to apply the MDRS, they may be departed from where an alternative gives a better outcome. PNCC is able to take a more aspirational and nuanced approach to standards to achieve higher quality outcomes that better achieve a well-functioning urban environment and at the same time enable intensification.

It is possible to refine the MDRS to enable the intended intensification while better managing the adverse effects of this. That is to avoid what we consider to be unnecessary compromises to liveability which are permitted by the MDRS and better provide for both intensive residential development and a 'well-functioning urban environment'. Evidence will be provided in these instances.

Delivering a well-functioning urban environment³

When considering areas that primarily provide for residential activity, such as the MRZ, the attributes of a well-functioning environment can be considered at both the neighbourhood and site scales.

At the neighbourhood scale, a well-functioning environment includes:

- accessibility allied with density and diversity of activity;
- conveniently located local services and facilities such as schools and shops, and support for work-from home activity;
- pedestrian and cycle-friendly streets and routes that are highly interconnected, attractive and safe;
- integrated stormwater and services infrastructure;
- close proximity and easy access to public green open spaces and elements of nature;
- a high quality public realm; and
- convenient access to public transport;

Insofar as these matters can be and are addressed by the District Plan, they relate primarily to the zoning of land, and in particular location of the MRZ in relation to services and facilities.

³ This is informed by our work on researching Indicators of Health and Wellbeing in the Built Environment, carried out in 2020 for Porirua City Council.

Considering development on any site, the attributes of a well-functioning environment become more localised. These include:

- Sunlight access to dwellings and private open spaces;
- Suitable outlook from dwellings;
- Privacy for residents;
- Access to private open space of a type and extent commensurate with the type and size of development and proximity to significant public open space;
- Design that is visually in keeping, avoids visual dominance and provides suitable visual interest;
- Development that contributes to rather than compromises safety in the public realm; and
- Suitable provision for storage and servicing.

Buildings within a well-functioning environment will also be warm, dry and safe. They will have sufficient space for the intended use and users and, particularly in higher density situations, be designed to provide a suitable acoustic environment. These matters are typically addressed by detailed building design and construction and the New Zealand Building Code. However, design decisions at the time of resource consent will establish conditions that either facilitate or hinder achieving good outcomes in this regard.

1.2 Enabling medium density housing

The recommended standards apply to the proposed MRZ, the boundaries of which have been set to enable medium density housing in appropriate areas. These boundaries ensure areas of intensification are appropriately located to allow reasonable access to amenities, services and infrastructure for residents, and minimise potential vehicle dependence, as is consistent with a well-functioning urban environment.

Rationale for enablement

In Palmerston North to date, development of three or more residential units is classified as multi-unit development and subject to a restricted discretionary or discretionary resource consent depending on the location of the development. This has led to multiple resource consent applications.

Council Resource Consent officers advised that when consent has been triggered in these applications, the matters that arise beyond the effects of visual bulk and form, often remain relatively insignificant. In these applications it is therefore questioned whether the complication of a consent application is justified. Therefore, simplifying the process for such applications, as long as the effects of bulk and form which may emerge as a development gets bigger are addressed, would assist efficiency for both Council and developers. If this were to be achievable, it would also help to further enable good quality housing in Palmerston North.

To enable more permitted development, the restricted discretionary activity (RDA) threshold could be lifted subject to addressing the effects of building bulk and form that arise with large scale development with application of new standards.

Activity status thresholds

The permitted activity threshold for multi-unit development is currently three or more. However, recognising that three residential units are a permitted activity on all residential lots in 'Tier 1' cities (subject to a limited range of standards), then for Palmerston North to be consistent with the approach across New Zealand, the threshold for RDA should increase from

the Operative 3+ units to 4+ units. Such an adjustment of the threshold would further prioritise enablement.

Design Control Scenarios

Assuming developments of up to and including three units will be permitted subject to compliance with permitted activity standards, two design control scenarios are considered and investigated. These are described below.

- ***RD application with 4 or more units.***

Restricted discretionary consent application for developments with four or more units is a variation of the Operative District Plan status quo. The Operative Plan sets the threshold of resource consent and design review at three or more units in any development. However, for consistency with the MDRS, the threshold should be increased to four.

This process of design review for developments of four and more units has the benefit of being a known and proven system. With reference to assessment criteria, it allows flexibility in design, but does introduce some process cost and complexity. Nevertheless, in our opinion, it is leading to good quality design outcomes.

2 PERFORMANCE STANDARDS FOR THE MRZ

Application of standards

It is anticipated that the recommended performance standards would, unless specified otherwise, apply to all types and scales of residential development in the MRZ.

Consistency of standards across the city

The recommended performance standards would apply to MRZ within Kākātangiata (a future urban growth area) and have been largely integrated into the multi-unit residential housing area in the Aokautere. Two proposed plan changes with site-specific controls – Roxburgh Residential Area and Matangi Residential Area – are consistent with most of these standards. However, these areas are subject to comprehensive design, and that customisation to site is reflected in the standards used as well as the structure plans.

2.1 Maximum building height

Existing standard	Recommended standard
<p>9 m in the Residential Zone and multi-unit housing areas (MUHA) excluding area H.</p> <p>In Area H, the Aokautere Residential Area, no building shall exceed 11m.</p>	<p>11 m + 1m provision for rooftop features as per MDRS. That is: Except that 50% of a building’s roof in elevation, measured vertically from the junction between wall and roof, may exceed this height by 1 metre, where the entire roof slopes 15° or more.</p> <p>Add a 2m allowance (that is 11m +2) for antennae, aerials and chimneys.</p>

Purpose of standard

- To achieve the planned urban built character of up to three storeys in the Medium Density Residential Zone;
- To minimise visual dominance effects;
- To maintain a reasonable standard of residential amenity for adjoining sites; and
- To provide suitably generous internal amenity in combination with allowing variety in roof forms.

Recommendation

Implement the proposed 11m permitted height in line with the MDRS with further allowance for antennae, aerials and chimneys.

Reason

- 11m, on the flat sites that are typical of most of Palmerston North readily permits three storey development. It allows generous floor to floor heights of 3.0m which allow for a 2.7m floor to ceiling height with the lowest floor 0.5m above ground and also 1.5m for roof construction. A floor to ceiling height of 2.4m and floor to floor of 2.7m would then allow 2.9m for elevation of the ground floor level and roof construction.
- The Operative District Plan allows for service elements such as chimneys to protrude above the building height limit. These service elements should continue to be permitted.

There has been a suggestion that a minimum two storey buildings might be required in this zone. We recommend that this approach of applying a minimum is not taken:

- The enabling effect of the package of standards, in particular the very permissive recession planes will, in combination with the limited availability and high value of land, encourage and eventually result in more efficient types such as 2 and 3 storey townhouses.
- This becomes problematic should part of a two or three storey building have a single storey component, such as a garage and for single storey housing for the elderly.

In addition, a large proportion of feedback received from the Palmerston North community on medium density housing included concerns around enabling three storey housing. Our observations on that approach are:

- Restricting permitted height to two storeys would maintain the current situation and in doing so not suitably address intentions of housing intensification supply and choice. Conversely, three storey development should be permitted if these intentions are to be facilitated.
- Our analysis demonstrates that an appropriate height in relation to boundary (HIRB) standard will manage potential shading and visual dominance effects across boundaries. The recommended deviation from the HIRB in the MDRS will allow two storey development reasonably close to the boundary, but ensure that the third storey is set back from the boundary. It also maintains the Operative HIRB standard at the rear of lots which ensures that the tallest parts of buildings in rear lot and mid-block locations are set back further from the boundary.
- Permitting three storey development will lead to change, but at the same time with appropriate HIRB standards will maintain reasonable amenity across the boundary.
- From a scale relation and character perspective, three storey development can generally sit comfortably next to two storey buildings.

2.2 Height in relation to boundary (HIRB)

Existing standard	Recommended standard
<p>2.8 m and 45° in the Residential Zone and at the exterior boundaries of development sites in all multi-unit housing areas (MUHA).</p> <p>In Area I of the MUHA (Aukoutere), a 45° plane commencing at 5m above ground level inclined inwards at right angles in plan for the front two thirds of the side boundary and 2.8m for the rear one-third of the side boundary. Unless it is located at the boundary of a Suburban Low Density allotment in which case the 2.8m and 45° recession plane applies.</p>	<p>5.0 m and 45° for the front two-thirds of the side boundary, except this applies to the greater of two-thirds of the side boundary length or that boundary length minus 15m.</p> <p>The side boundary will be a straight boundary line which connects to the street frontage.</p> <p>2.8 m and 45° for the rear of side boundaries, being the remainder of the side boundaries.</p> <p>2.8 m and 45° for all rear boundaries.</p> <p>For all rear sites, 2.8 m and 45° applies to all boundaries.</p> <p>No height in relation to boundary standard applies along common boundaries within a development.</p>

At residential zone interfaces apply the height recession plane of the lowest intensity residential area on both sides of the common boundary.

At interfaces with any non-residential zone, apply the MRZ recession plane on both sides of the common boundary.

Purpose of standard

- to manage the height and bulk of buildings at boundaries
- to maintain a reasonable level of sunlight access and minimise adverse visual dominance effects to immediate neighbours.
- to encourage the highest and bulkiest parts of buildings to be located towards the street frontage of the lot and away from the boundaries at the rear of the lot.

Discussion

2.8m + 45°

Retention of the Operative HIRB plane would unduly limit the potential for intensification and ability to readily increase in the range of unit types available. For that reason, it is not recommended to be retained as currently applied. That notwithstanding, our analysis shows that this HIRB from the Operative Plan remains appropriate for the rear of street facing lots, and rear lots in combination with a more permissive HIRB along the majority of the side boundaries of street-facing lots. This provides an appropriate balance between facilitating intensification and housing choice, and retaining residential amenity for existing and neighbouring dwellings, particularly in the sensitive mid-block locations.

Unsuitability of 4m + 60°

The MDRS 4.0m + 60° HIRB is enabling, with the trade-off being a reduction in amenity across the boundary.

However, because it allows three storey development close to the boundary it compromises sunlight access in winter, will lead to potential visual dominance and unnecessarily poor cross boundary outcomes.

- 4m + 60° prioritises the delivery of housing over the functioning of both the neighbourhoods in which housing occurs and the residential neighbours, including their well-being.
- The purpose of height in relation to boundary controls is to manage the height and bulk of buildings at boundaries to maintain a reasonable level of sunlight access and minimise adverse visual dominance effects to immediate neighbours.

The proposed standard will do neither in the existing general residential areas to which it is proposed to be applied.

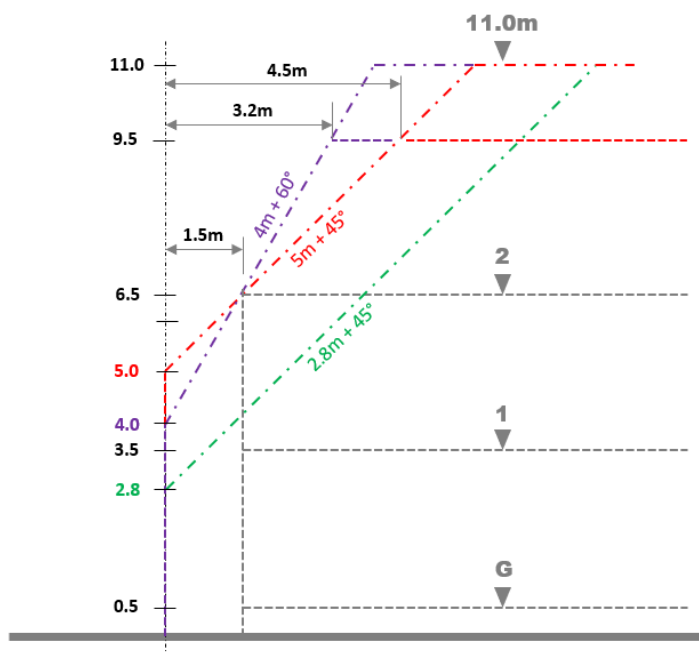
The difference between the recommended and MDRS HIRB and are described and analysed in detail below.

The general residential areas differ from identified areas such as Roxburgh Crescent and Matangi Residential Area for a number of reasons:

- both adjoin areas which are currently open space and will because of their zoning (Flood Protection and Rural zones) remain open;
- both are limited in area and currently have a limited number of or single landowner, and
- the plan changes for both of these areas have been informed by a detailed masterplanning exercise which included consideration of three-

dimensional form and maximising the intensity of development in particular parts of each site.

A 4m + 60° standard may be suitable in parts of Tier 1 cities and identified special cases subject to specific design. We consider that it is unsuitable for use as a blanket standard across the city in lower scale, less intensively developed residential areas. In such areas it would lead to unnecessary visual dominance, obstruction of sunlight, and privacy effects across side boundaries particularly when combined with the MDRS' restricted outlook space standard. Three storey development with the third storey close to side and/or rear boundaries may be enabled by the MDRS, but that comes at a cost of compromising potential to achieve a well-functioning urban environment and the well-being of people and communities. That compromise is not necessary as is demonstrated by the following analysis.



Height Recession Plane Analysis

Figure 2.2.1 Height in Relation to Boundary plane (HIRB) Analysis Implications of 5m + 45°

5m + 45 degrees would allow 2 storey development closer to the boundary than 4m + 60 degrees, but then ensures the uppermost storey is set back to address visual dominance. Depending on the sun angle and orientation of the boundary, this will also ensure better access to sunlight for neighbours. The potential to receive direct sunlight is an important aspect of residential amenity and residents' wellbeing. For this reason, when the altitude of the sun is 26.15° at midwinter in Palmerston North, 45° is a more appropriate recession plane angle than 60°. Development built to both of these planes will obscure mid-winter sun, however that effect will be less with a 45° plane. The difference in extent of shading over the boundary between buildings built to the MDRS volume and the recommended proposed HIRB is examined further below.

We have tested a range of height in relation to boundary standards in combination with the proposed outlook space standard that deviates from the MDRS⁴. We have found that 5m + 45° combination with a 6m + 3m + 1m

⁴ In order to test intensification potential, it is necessary to consider key related standards together. The reason for the proposed Outlook Space standard varying from the MDRS is addressed in detail below.

outlook space standard⁵ will allow the intended intensification in combination with good amenity outcomes on site and across the lot boundary. That is, while the recommended modified height in relation to boundary standard differs from the MDRS, it remains almost as enabling while materially reducing potential visual dominance and adverse effects on sun exposure and daylight.

Furthermore, Figure 2.2.1 above demonstrates that a 5m + 45° recession plane allows two storey development closer to the side boundary than the MDRS' 4m + 60°. Applying a permitted side yard of 1.0m, at this distance from the boundary building height may rise to 6.0m under a 5m + 45° envelope, and to approximately 5.7m with a 4m + 60° recession plane. Therefore, the proposed 5m + 45° better enables two storey development in that case.

Figure 2.2.1 also demonstrates that applying the typical floor to floor heights, the MDRS' HIRB of 4m + 60° allows three storey development to 3.2m from the boundary, whereas 5m + 45° will be set back 4.5m, a further 1.3m from the boundary. This has an appreciable difference on the extent of visual dominance and at some times of the day and year, on shading across the boundary, as has been demonstrated.

Considering development potential on typical lots:

- A typical medium sized lot 540m² in area, 18m wide by 30m deep allows three 3-storey houses. Each building footprint is 223m² and readily includes 5 bedrooms and one internal garage.⁶
- A typical small and narrow lot 360m² in area 12m wide by 30m deep allows three, 2-storey houses. Each is 120m² and including 2-3 bedrooms and no on site carparking.⁷ These may also have a 34m² third floor to give a further 1 or two bedrooms and a total floor area of 154m².

These are described in figure 1 below:

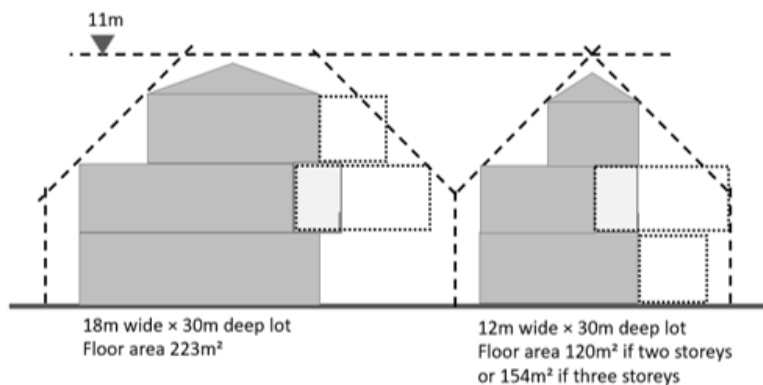


Figure 2.2.2 Cross-sections for three-storey, three unit development on typical 18m and 12m wide lots and a 5m + 45° height in relation to boundary standard.

This analysis and figure 1 above show:

- the upper-level balconies relating to living rooms and the 6m + 3m outlook spaces that we recommend are readily accommodated on lots of these sizes;
- a balance of providing for housing, reasonable amenity within the housing and reasonable amenity across the boundary, while allowing three reasonably large sized units per lot can readily be achieved with a 5m + 45° plane;

⁵ Rather than the 4m + 1m outlook space in the MDRS.

⁶ Units are 7.83m wide, and ground and first floors are 10.5m deep. Site coverage is 45.7%.

⁷ Units are 8.57m wide, and ground and first floors are 7.0m deep. Site coverage is 50%.

- c. depending on lot width houses can be at least two and up to three storeys high; and
- d. even on narrow (12m wide) lots, a 5m + 45° plane allows for two storey buildings 1m from the side boundary. This is a characteristic of much of the ‘character housing’ that defines the older central parts of cities, and which is both valued by many in the community and has stood the test of time.

Comparative test of development potential for street facing lots

Development potential has been tested with typical lots on a 60m deep by 150m long urban block for the MDRS HIRB recession planes of 4m+60° and the recommended standard of 5m+45° along the front two thirds of the site, and 2.8m+45° along the remainder of the site boundaries.

The following parameters have been used.

- lot dimensions: 15m × 30m
- lot area:450m²
- front yard 1.5m
- side yard 1.0 m
- rear yard 1.0m
- site coverage 50%

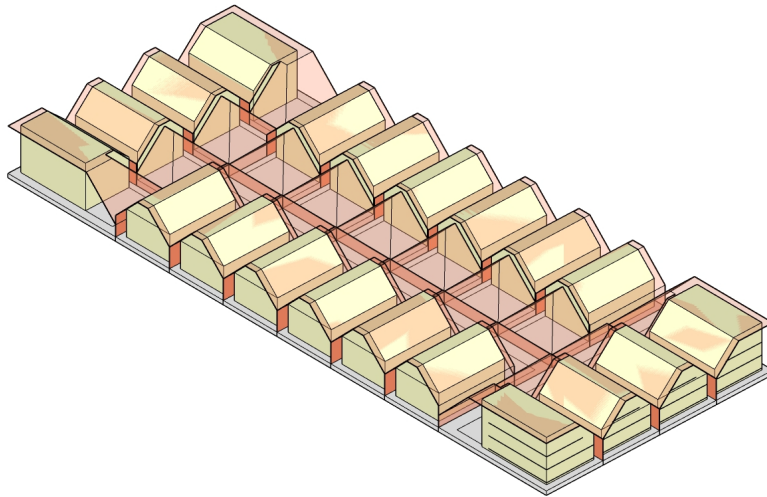


Figure 2.2.3 3D model for 5m+45°/2.8m+45° HIRB test

This test found that with these parameters the following gross floor areas (GFAs) were achieved:

	HIRB 4m+60°	HIRB 5m+45° and 2.8m+45°
Street corner lot	641.1m²	622.8m²
Mid-block street fronting lot	611.2m²	574.2m²

This demonstrates that the development potential when applying the PNCC’s proposed HIRB to sites of this size is 2.8% less for a street corner lot than would be permitted under the MDRS, and 6.1% less on a mid-block, street fronting lot. This degree of reduction of potential GFA is inconsequential given that 5m+45° recession plane allows a GFA of 574m² or 622m² depending on lot location.

A recession plane of 4m+60° therefore allows 2.9% more GFA on a corner lot and 6.4% more GFA on other lots than 5m+45°. However, the minor and inconsequential increase in development potential arising from applying 4m+60° is at the cost of appreciable increased potential shading and visual dominance across the boundary. In the ‘worst case’ described in this test, the

GFA of 574m² that is possible remains high. Should three units be built on the lot each could have a theoretical area of 190m². This retains suitably generous, given that typical terraced units will rarely approach that size.

Comparative test of development potential for rear lots

Some typical rear lots have also been tested with the proposed 2.8m + 45° HIRB. Small, medium and large rear lots have been identified and the gross floor area (GFA) achievable for each examined. This modelling also considers the proposed maximum site coverage and yard requirements.

This analysis shows that the proposed 2.8m + 45° HIRB to these sample rear lots places additional limits on where three storey buildings may be located on the site. It imposes area constraints particularly on smaller rear lots but not necessarily on large lots. However, the unit size achievable even on the small lots allows viable, generously sized units.

- For small lots (26m x 17m and 442m²) the proposed HIRB is likely to limit development to two storeys.
- For medium Lots (26m x 22.8m and 593m²) the GFA possible reduces by 37.5%, but potential for three units of 185m² remains.
- Large lots (26m x 34m and 884m²) allow for three three-storey units each of 357m².

That application of the more restrictive HIRB impacts on development potential and siting on small lots is not surprising. However reasonable development potential remains on these lots which are the 'worst case'. The proposed more restrictive HIRB is also effective in addressing shading and visual dominance at the centre of blocks, thereby contributing to a well-functioning urban environment.

Varying HIRB planes

Absence of a recession plane at the street edge in combination with 5m + 45° here will assist in maximising development at and close to the street edges where it benefits from no recession plane and outlook over the street and restricting potential to building three storey development close to the boundaries at the rear of the site or in rear lots.

Openness and amenity at the rear of sites (and centre of the block) is particularly important where conspicuously high new development at the rear would be close to and look out over private open spaces at the rear of houses.

Therefore, it is recommended a less permissive HIRB plane should be applied, and retention of the Operative Plan's 2.8m + 45° would be appropriate. Using the existing HIRB plane maintains district plan continuity; is consistent with the HIRB plane recommended for boundaries with sites in the Residential Zone; and may receive a greater level of support from the Palmerston North community than a blanket more permissive recession plane

The substantive benefits of a 2.8m + 45° plane at the rear of sites and on rear lots are to:

- assist privacy across the boundary;
- avoid visual dominance;
- maintain greater openness and amenity at the centre of the block;
- contribute diversity of skyline and urban form for visual interest and integration with existing neighbourhoods, and
- contribute to achieving greenness at the centre of the block and the multiple benefits that are derived from that.

If there are recession planes at varying heights, maintaining the same angle for both (and in this case we recommend 45°) is most likely to lead to unified and visually coherent roof forms in any development.

The practice of integrating variable recession planes is already in the district plan given no plane applies at street frontages. Extending variation between front and rear of the site was integrated into the operative Auckland Unitary Plan in 2015 for the same reasons that it is recommended here.

In order to protect the well-being of residents and following the precedent of the operative district plan, the recession planes applying to MRZ should be applied on both sides of the common boundary where these adjoin a non-residential zone. For the same reason, where the MRZ adjoins the Residential Zone, the recession plane applying to the Residential Zone should be applied both sides of the common boundary – that is the lesser 2.8m + 45° shall apply.

Test of potential shading and visual dominance

A comparative study testing the proposed HIRB relative to the MDRS and Op District Plan has been undertaken. In addition to development yield referred to above, assuming a typical lot, this tested shading impacts and visual effects. This study demonstrates that:

- the shading effects of the recommended height in relation to boundary planes are moderately less than those from the MDRS; and
- the visual dominance effects are considerably reduced by the recommended HIRB planes.

Below are sample illustrations from our comparative studies testing the potential shading and visual dominance effects of the MDRS, Op District Plan and PNCC’s proposed HIRB.

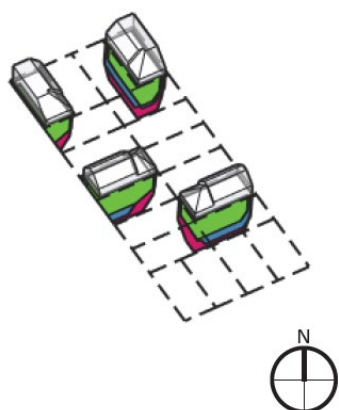


Figure 2.2.4 Shading
Sample of shading comparison from recommended standard (blue), MDRS (red) and Op. DP (green) envelopes. This example is at 12 noon at mid-winter.

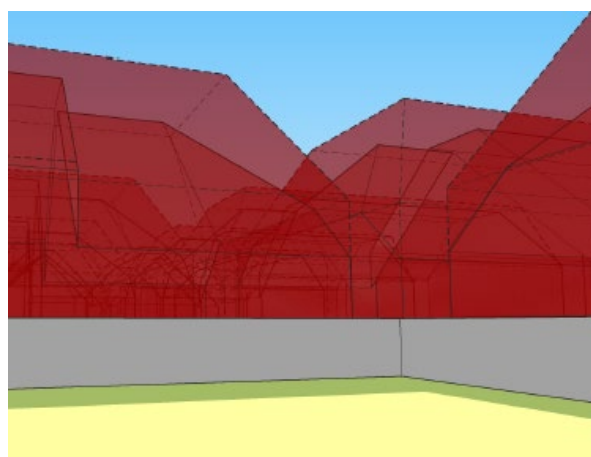


Figure 2.2.5 Visual effect
Sample of comparison of envelopes at the rear of the lot. The semi-opaque volumes are the extent to which the MDRS envelope extends above the recommended envelope.

Quantification of shading effects

The shading analysis described above has been measured in relation to 12 noon at mid-winter (21 June) the spring equinox (21 September) and mid-summer (21 December). In this theoretical assessment, boundary fences have not been taken into account. The amount of shade calculated is the shade caused by the theoretical development envelope taking into account HIRB and setback controls. This has been modelled for MDRS, Op. DP and MRZ standards and tested over 4 lots as shown in figure 2.2.4 above. The reduction in the area of shade cast by the proposed standards relative to the MDRS is recorded.

- 21 June Reduction in shading extent, average 22%
- 21 September Reduction in shading extent, average 24%
- 21 December Reduction in shading extent, average 18%

Quantification of visual effects

The reduction of extent of the visual field in the frame of view (as described in an example of figure 2.2.5 above) of an envelope to the proposed HIRB relative to the MDRS envelope is recorded below. Only the extent of the visual field above a 1.8m boundary fence is measured.

- Front of lot Reduction in visual presence 15%
- Middle of lot Reduction in visual presence 20%
- Rear of lot Reduction in visual presence 26%

The above are a sample at representative times for shading effects and representative locations for visual effects. They demonstrate that the beneficial visual amenity effects of the proposed 5m+45°/2.8m+45° relative to the MDRS 4m+60° effects are appreciable at an average of 19% reduction of visual presence in the visual frames analysed.

The recommended HIRB has been further tested by its application in combination with the full suite of recommended standards to potential development for a range of actual Palmerston North sites. These studies for sites in Highbury illustrate the beneficial effect of the variation in HIRB in contributing to a well-functioning urban environment being variation in height for visual interest in addition to the reduction of shading and visual dominance effects discussed above. A sample illustration from that development test is below, on a large site under single ownership and therefore considered suitable for comprehensive development.



Figure 2.2.6 Testing of development complying with proposed standards including HIRB on Palmerston North sites. Extracted from development studies

Recommendation

- Application of 5m + 45° and 2.8m + 45° as described above.
- At residential zone interfaces apply the HIRB plane of the lowest intensity residential area on both sides of the common boundary.
- Apply the 2.8m + 45° HIRB plane to all boundaries of rear lots.
- At interfaces with any non-residential zone, apply the MRZ HIRB plane on both sides of the common boundary.

Reasons

- Refer discussion above for rationale on recession planes.
- The recommended approach enables more intensive development while at the same time maintaining the well-being of residents:

- 5m + 45° facilitates two storey development close to the side boundary at the front parts of the site and three storey development set back further from the side boundary; and
- 2.8m + 45° maintains existing controls at the more sensitive areas at the rear of any site and on rear sites with multiple benefits as identified above.
- Variable recession planes along the side boundary will have a secondary benefit of contributing towards height and building form variation on many sites. This will assist in contributing to visual interest and addressing the effects of bulky buildings.
- Applying the 2.8m + 45° HIRB plane to rear lots is recommended because:
 - all boundaries of a rear lot are by definition 'rear boundaries';
 - this is necessary to maintain consistency with the HIRB approach across the boundary on adjoining lots which have a street frontage; and
 - in terms of contributing to a well-functioning environment, this maintains reasonable amenity for all areas at the middle of the lot.
- Applying the MRZ recession plane to any non-residential boundary such as a commercial zone means that residential amenity within the MRZ is maintained. This is also a continuation of the Operative District Plan approach.

2.3 Boundary separation distance ('yards')

Existing standard	Recommended standard
<p>3 m from boundary with a road. 6 m for garage fronting to a road. 1.5 m from any other boundary.</p> <p>Accessory buildings 3 m from road unless garage and 1 m from all other.</p> <p>That is: Any dwelling on a lot with frontage to a public road shall be located a minimum of:</p> <p>(a) 3 metres from the boundary with any road, unless it contains a garage or carport facing the road and having direct access from the road;</p> <p>(b) 1.5 metres from any other boundary.</p> <p>Accessory buildings shall be located a minimum of: 3 metres from road boundary unless it is a garage or carport with direct access from the road in which case it must be 6 metres back and 1 metre from any other boundary.</p> <p>In Area H: Aokautere Residential Area of the MUHA, 1.5m from the road boundary, 1m from any side yard boundary and 3m from any rear yard boundary.</p> <p>For multi-unit residential development in all other MUHA areas, no internal setback standards, but at the exterior boundaries of the development site, 3m from boundary with a road and 1.5m from other boundaries applies.</p>	<p>1.5 m from front boundary with a road.</p> <p>1 m from side and rear boundaries, except for garages (detached or integrated) which may be built to the side or rear boundary over a distance of not more than 7m.</p> <p>No separation distance is required along shared boundaries where the units of a comprehensively designed multi-unit development are conjoined.</p> <p>For a garage fronting the road, the garage door setback is:</p> <ul style="list-style-type: none"> ● not less than 0.5m behind the frontage of the residential unit served; and ● 2.5m from the front boundary, or ● 5.5m or more from the front boundary. <p>Side entry garages are permitted 1.5m from the street frontage of a multi-unit housing development. These may be subsumed within the ground level of a two or three storey residential unit or alternatively they may be part of or relate to a single detached dwelling. The recommended street frontage glazing standards apply.</p>

Purpose of standard

- to create an urban streetscape character and provide sufficient space for landscaping within the front yard;
- to ensure frontages are not dominated by garages;.
- to facilitate intensification on a site
- to maintain a reasonable standard of residential amenity for adjoining sites; and
- to provide for buildings and services on the site to be adequately maintained.

Recommendation

- Implement standards as modified, including providing for side-entry garages
- Remove existing rule for side entry garages for single detached houses in the MRZ (including setback and landscape at the frontage in relation to these).

Reasons

- Reducing minimum side and front yard depth to match the MDRS is consistent with enabling intensification within the MRZ.

Front yard depth

- Allowing shallower front yards encourages development to be built to the frontage thereby allowing for a larger private rear yard.
- Reducing the required setback for a side-entry garage from the operative 3.0m in the GRZ to 1.5m in the MRZ is recommended to allow garages under terraced housing with end walls to the street, and to ensure that side entry garages serving detached houses and located close to the street edge are treated consistently.
- This reduction in front yard depth may lead to a change in the character of the areas in which this development occurs. If there are identified areas where character is a priority, then a greater frontage setback should apply, with the precise depth based on the characteristic setbacks in any such areas.
- The 1.5m setback retained for side entry garages continues to allow for planting at the street frontage which will, in combination with the required minimum glazing area, ensure that monotony is avoided.

Side and rear yard depth

- The 1.0m yard depth allows for fire separation, and for better use of the land as a 1.5m strip at the boundary is unlikely to have any particular utility. A reduction of the minimum yard to 1.0m will however lead to reduced planting at side boundaries in situations where the unit faces the street. In other cases, for example terraced dwellings where units back or front onto side boundaries, the setbacks required for outdoor living space, outlook space and any vehicle circulation will necessitate greater setbacks and in some of these areas planting can be expected to be possible.
- The privacy impacts of reducing side and rear yard separation distances are minimal.
 - Reduced distance between the side walls of buildings will provide for greater visual privacy when the windows on opposing walls are offset.
 - The 1.0m setback is consistent with the MDRS standard and proposed 1.0m outlook space standard.
- Providing for garages within the side yard over a limited distance allows for better use of the site while maintaining privacy over the boundary. Given that the site coverage standard applies, this provides for greater site planning flexibility without allowing over-development of the site.

Test of alternative 3.0m rear yard depth

Deep yards are of most value at the rear of the property where they help to provide amenity at the centre of the urban block, allowing for trees that contribute to visual amenity and visual privacy between dwellings. With increased coverage, height and more enabling recession planes, the character of areas will become considerably more urban and residential amenity compromised in a number of minor ways. Therefore, this minor adjustment to the rear yard rule was tested to seek to allow that intensification while continuing to provide for some of the quality that makes the residential Palmerston North neighbourhoods pleasant to live in.

Therefore, a 3.0m rear yard has been tested as potentially offering benefits but discounted for reasons identified below

- as we were looking at lots with complex shapes and multiple alignments the rear yard would be very difficult (impossible) to apply; and
- in rear lots, the 3.0 m rear yard would need to apply to all lot boundaries, which would be both unnecessary and contrary to the zone intent; and
- our testing of development applying other standards including the outlook space, outdoor living space, site coverage and HIRB shows that these standards determine the depth of space at the rear of buildings and inherently will often lead to deeper rear yards without the need to specify any such depth.

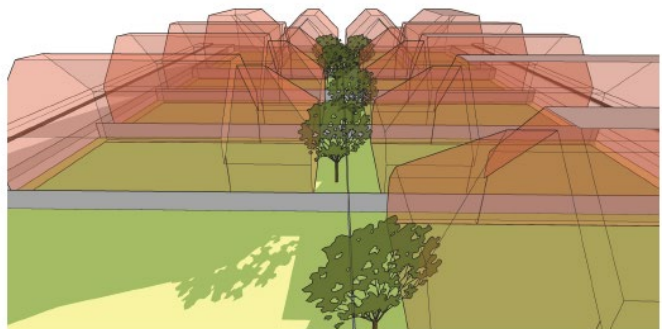
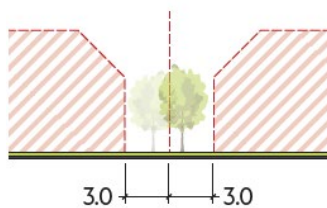


Figure 2.3.1 Examination of 3.0m rear yard on a typical lot

Garages at the frontage

- Allowing garages to be closer to site frontage enables terraced / duplex types with integrated/internal garages to be close to frontage for efficiency of site use and acceptable townscape outcomes subject to setback of the garage doors from front facades which ensures the doors are not visually dominant.
- Side entry garages for single storey detached houses close to the boundary risk being blank and monotonous and the Operative District Plan requires a 3.0m setback to allow for planting and to reduce potential visual dominance. In the MRZ multi-storey multi-unit development is anticipated, so the less than ideal option of a single storey side entry garage at the street edge will become less common. If it does, the glazing standard applies and 1.5m is enough to allow for some screening and visual amenity planting.
- Requiring the garage to be setback not less than 500mm from the front façade of the dwelling ensure that in this situation (and in combination with garage width standard) garages will not dominate the street frontage and lead to visual monotony. This avoids undermining the quality of the streetscape and the quality of experience for all street users.
- In order to facilitate intensification, it is recommended that where there is parking at the frontage, the minimum garage door setback is reduced

from 6.0m to 5.5m. That length allows parking on site without the need for the vehicle to protrude over the footpath, and is consistent with reduced dimensions used in some other cities. It will also contribute in a minor way to facilitating better use of land and slightly less restrictive site planning.

- Allowing a garage door to be 2.5m from the front boundary supports a street-facing garage setback far enough from the boundary to ensure there is sufficient visibility for the driver of a car exiting to view the footpath. A 2.5m setback is insufficient to allow a car to be parked in the space. This optional 2.5m setback in turn supports intensive forms of development such as street-facing terraced housing.
- The outcome will be acceptable if a single garage standard applies to all garages facing the street, whether integrated into the dwelling or detached and then technically an accessory building. However, in this case the 10% glazing standard needs to apply.
- There may be situations where side entry garages for units at the frontage are necessary. These include:
 - lines of terraced dwellings that have garages entered from a common driveway – see image below. This is likely to be a common condition.
 - Side entry garages associated with single detached dwellings. Given the provision for intensification in the MRZ, this represents underdevelopment of a site, and is therefore likely to not be particularly common but may still occur.

In this case the 1.5m front yard setback would be used, which continues to allow for planting in the space between such a garage and the street edge.



Figure 2.3.2 Street elevation of with side entry garage (this indicative example with 11m height and 5m+45° recession plane for front 2/3 of site and 2.8m+45° plane for rear 1/3)

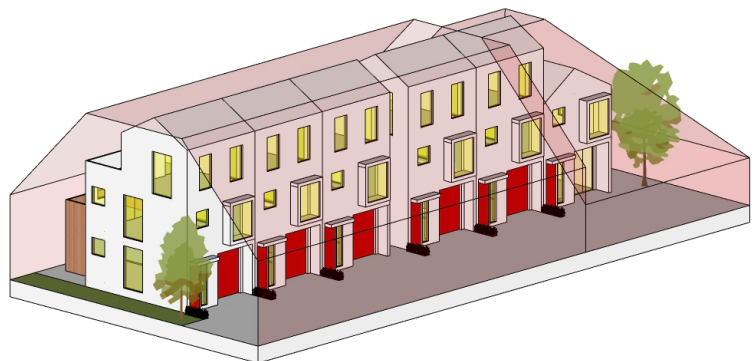


Figure 2.3.3 Perspective view from the street, with side entry to garages at the ground floor of a range of terraces.

Description of example above:

- Lot size and dimensions: 780m², 19.5m×40m
- Total building footprint 375m²
- Site coverage achieved 48%
- Front yard setback 2.0m
- Side yard building setback 1.0m
- Six three storey units achieved each 5.5m wide, and 132m² excluding decks.
- Private outdoor living space achieved with decks on two levels, totalling 33m² for each of the front four units.
- No at ground private outdoor living area except for rear unit

This demonstrates significant development potential is possible on a large rectangular infill lot compliant with the recommended package of development standards.

2.4 Minimum site area

Existing standard	Recommended standard
Nil or 150m ² for each dwelling unit in multi-unit housing areas (MUHA) depending on which MUHA the dwelling is located in.	No minimum site area standard.
Residential Zone 350m ² for each dwelling unit.	

Purpose of the standard

- To facilitate good quality medium density housing while managing intensity and in combination with permeable surface standards, stormwater.

Recommendation

Delete a minimum site area standard. We consider that a minimum site area standard is not relevant, as the other standards are the determinants of density and form.

Development studies show that 150m² allows a generous 2 storey end terrace on a narrow 150m² lot, but that the mid terrace dwellings can be three storeys, very large and with 50% site coverage on a 115m² lot. For walk-up apartments the site area per unit can become even smaller – 75m² and 50m² for the examples below. Therefore, even 150m² precludes many quite acceptable forms of housing in the MRZ.

Reasons

- Removal of any minimum site area is necessary to facilitate the types of medium density development intended in the MRZ including two and three storey terraced housing, and walk up apartments within both terraces and detached houses.
- Studies show that other standards including building coverage, HIRB planes, separation distances and outdoor living space are the factors that determine the form and functionality of a development, not site size.
- The GRZ's 350m² is not compatible with two storey multi-unit terraced development which might be 6-8m wide by 12m deep. If 8m by 12m unit is 192m² (i.e large) and if a 350m² site, the site is 43.75m long. So, if there is a minimum, it needs to be much smaller. 200m² might be reasonable, but even smaller than that is feasible. Typical multi-unit site widths of 6.5-8.0m with sensible lot depths of 20-25m results in site areas of 150-200m². PNCC also receives a lot of applications with site areas of 170-200m². There will be situations where a smaller site area may be appropriate and is readily achieved as described below.

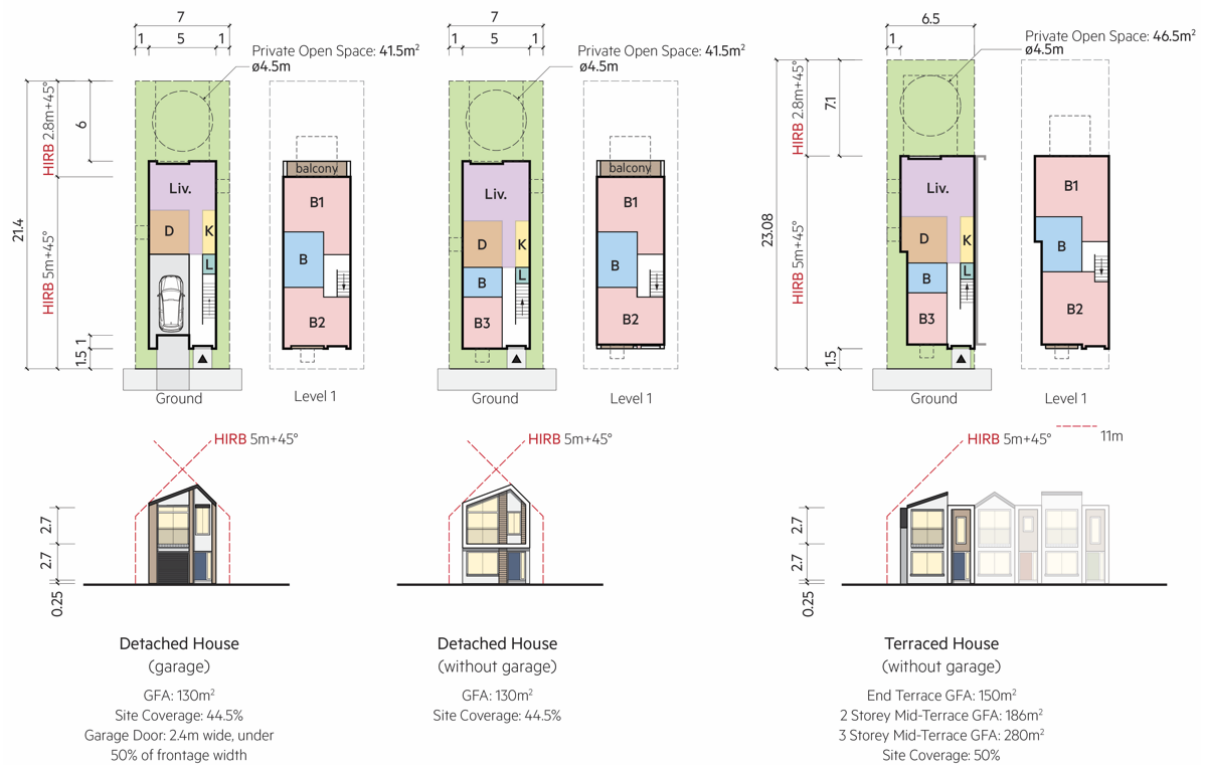


Figure 2.4.1 Test of a selection of small lots and development types

Testing of 150m² lots (above) demonstrates these readily allow for a two storey detached house that complies with all other performance standards and may have a GFA of 130m². The terraced house analysis shows that mid-terrace lots could be 5.0m wide and if 23m long, could be on a 115m² lot.

That would allow GFA similar to those for the end terrace at left and complying outdoor living space.

These studies demonstrate that building coverage, separation distances and outdoor living space are the factors that determine suitable lot size.

Furthermore, a 150m² minimum lot size would preclude small walk-up apartments within a small detached house or a terraced house. For example, the 130m² detached house above would provide for two high quality one bedroom units, each with a net area of approximately 60m². The three storey mid terrace would provide three one bedroom apartments each of around 85m². The theoretical lot sizes 75m² and 50m² respectively. So, these otherwise acceptable dwelling types which could contribute positively to housing choice, diversity and affordability in Palmerston North’s MRZ are precluded by a 150m² minimum site area.

For these reasons we recommend that there is no minimum site area.

2.5 Building coverage

Existing standard	Recommended standard
40% in MUHA unless in Area H (Aokautere Residential Area) where a maximum site coverage of 45% applies.	50%
In the Residential Zone: <ul style="list-style-type: none"> 35% on sites over 572m² and 40% on sites less than 500m². 30% for sites within the Napier Road Residential Extension Area 	In combination with a 30% minimum site permeability standard

- 200m² for sites between 500 and 572 m².

Purpose of the standard

- To manage the extent of buildings on a site to achieve the planned urban character of buildings surrounded by open space in the MRZ.
- To contribute to stormwater management on site.

Discussion

50% building coverage is recommended in order to be consistent with the MDRS and facilitate residential intensification.

However, relative to development built to the lower maximum site coverage in the existing urban areas, 50% building coverage will over time lead towards a highly urban, building-dominant outcome with limited or no substantial planting. This tendency is an unavoidable implication of intensification but will be suitably mitigated in part by trees and areas of planting that in many instances will remain. Furthermore, when 50% coverage is permitted, previous detailed analysis and modelling of site variants indicates if vehicle access to and a garage or carpark is provided for each residential unit in a multi-unit development, then building coverage in excess of 40% will be difficult to achieve. In this case the permitted 50% coverage would usually not be able to be utilised. This practical limitation of most existing lots will have the effect of retaining a lesser degree of building coverage and more space around buildings in most instances, including opportunity for planting. At the same time, it allows the benefit of an opportunity for increased coverage up to 50% in the circumstances where that might be practicable.

The transect diagram (Figure 2.5.1 below) shows the impact of various building coverages on two typical lots and illustrates the simple principle of change in character with different coverages.

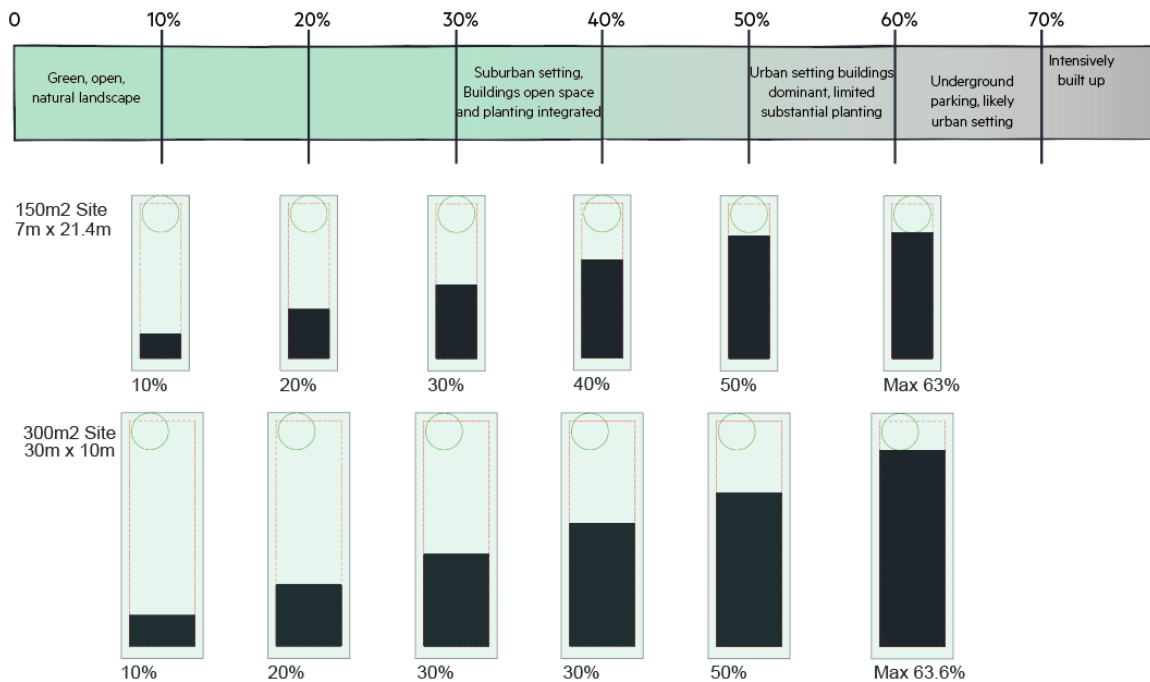


Figure 2.5.1 Indicative transect showing relationship between building coverage and character.

30% site permeability standard

Council’s proposed 30% minimum site permeability standard has been tested and is reasonable.

Potential permeable surface area with the examples tested in relation to minimum lot size above show:

- Detached house with garage allows for 33.7% permeable green area after allowing for the identified 4.5m diameter circle (or an equivalent 4m × 5m patio area) to be paved. Potential permeable area excluding that paving is 47%.
- Detached house without garage described in the testing will, after allowing for an impermeable paved patio area allow for over 34% permeable area.
- The end terraced house without garage will achieve 35% permeable area after allowing for a 20m² paved area in the private open space.

This analysis can be extended to a hypothetical mid-terraced house, which is not drawn. A 5.5m wide, 12m deep mid-terrace house with 50% site coverage would have a 71.5m² footprint and a 143m² lot size. Assuming a 1.5m deep front yard and paving for a garage and front door access into that, and a 20m² hard paved patio in the rear yard, the remaining potential for green open permeable area is 45.5m². That equates to 31.8% of the site.

In any special circumstances where the 30% standard cannot be readily achieved with soft green planted space, permeable paving is available. For example, Auckland Council's 'Permeable Pavement Construction Guide' describes permeable pavements that are suitable for low traffic areas such as carparks, driveways and footpaths, and how to construct them. These pavements include:

1. Open cell grid of concrete or plastic with sand or grass cover
2. Solid interlocking blocks with drainage gaps
3. Porous interlocking blocks
4. Porous concrete
5. Open Grade Porous Asphalt

(Refer <https://www.aucklandcouncil.govt.nz/environment/looking-after-aucklands-water/stormwater/docsconstructionguides/permeable-pavement-construction-guide.pdf>)

Recommendation

- Adopt proposed building coverage of 50% for consistency with RMA Schedule 3A.
- Adopt proposed 30% minimum site permeability standard.

Reasons

- 50% gives consistency with RMA Schedule 3A and is enabling of all types of residential intensification. This recommendation is with the recognition that in applying the full range of standards that 50% is unlikely to be achieved with multi-unit development, particularly if there is on-site parking and vehicle manoeuvring.
- It will be possible to achieve 50% site coverage with terraced housing on a site subject to no vehicle manoeuvring on site beyond potentially parking in a garage directly accessed off the street frontage. For this reason, 50% permitted building coverage is recommended. The terraced house example illustrated in figure 2.4.1 shows that 50% building coverage can be achieved with an end-terrace house with a 1m side yard, therefore 50% will also readily be achievable for mid-terrace dwellings in the same development.
- 45% is a more realistic maximum coverage for multi-unit housing developments on any site which provides for on-site vehicle manoeuvring. Testing of building coverage in combination with a range of other standards similar to those proposed in Porirua and Palmerston North has revealed that it is very difficult to achieve even 40-45% site coverage. In this context. Furthermore, as development gets higher, in order to maintain residential amenity within the residential units, they

tend to have more space around them. 45% also allows for the open space and tree planting that contributes amenity, should that be required through landscaping performance standards.

- A 30% minimum site permeability standard is readily achieved with typical development.

2.6 Outlook space

Existing standard	Recommended standard
None.	<u>6m × 4m for a principal living room;</u> <u>3m × 3m for a principal bedroom; and</u> <u>1m × 1m for all other habitable rooms.</u>
The matter is covered by site planning assessment criterion 2(a) and 2(d) in R10.6.3.3: “buildings and related open spaces and landscaping are planned and designed together to deliver high levels of amenity within dwellings and well-located, good quality open spaces” “new buildings retain reasonable visual privacy and daylighting for all adjacent residential units and properties.”	<i>Note the remainder of parameters as developed for the Auckland Unitary Plan and in Schedule 3A of the RMA also need to be introduced. These ensure that outlook spaces from a single dwelling or between two dwellings can overlap if the windows from which they are derived are at different levels, and will give additional flexibility.)</i> Deck balustrades, pergolas, verandas, porches and other building overhangs should all be permitted in the outlook space.

Purpose of the standard

- To ensure a reasonable standard of visual privacy between habitable rooms of different buildings, on the same or adjacent sites; and
- in combination with the building coverage and outdoor living space standards, manage visual dominance effects and provide a sense of space and access to daylight and sunlight.

Discussion

This deviates from the Outlook Space standards in Schedule 3A of the RMA which permit:

- The main living room window of one unit to face squarely into the main living room window of another unit 8m away;
- The main living room window to face squarely into the principal bedroom window of another unit 5m away;
- The principal bedroom window of one unit to face squarely into the principal bedroom window of another unit 2m away.

In all of these cases, visual privacy will be, without use of indoor blinds, non-existent. This is because a reasonable minimum is 12m, 9m and 6m respectively for these situations. These compromised dimensions which follow Schedule 3A of the RMA permit a very poor design outcome with extremely low amenity for residents, and critically, do not achieve the intent of the standard. This is not consistent with achieving a well-functioning urban environment both on site and across the boundary.

The Auckland Council’s Operative Unitary Plan Outlook Space mechanism has been modified by Government to become the Schedule 3A outlook space standard. We were responsible for testing and verifying the Outlook Space requirements for Auckland Council with reference to real-life examples. Subsequently we have been involved in professional design review on projects where Auckland Council’s Outlook Space standard is applied, and it is both workable and achieving sound outcomes. Examples viewed in field

study in Auckland in our opinion demonstrate that the recommended PNCC controls will achieve reasonable minimum degrees of separation.

The MDRS has a 4m x 4m outlook space for the principal living room and a 1m x 1m outlook space for all other rooms. In our opinion the MDRS' compressed outlook spaces will lead to poor outcomes that would in our opinion compromise the well-being of residents and their neighbours in significant ways, including with insufficient sun exposure, unacceptably poor privacy and visual dominance.

In order to achieve privacy with this limited separation residents are likely to close blinds on their living room windows during general day to day living thereby cutting visual connection with the outdoors and daylight into the dwelling. As well as compromising the liveability of dwelling and the sense of well-being for residents, this will necessitate a high reliance on artificial light.

Our research in this area has found a causal link between availability of natural light and human health and well-being. Closure is actively harmful. A further effect of the degree of closure that is facilitated by inadequate outlook space dimensions is compromise to sun exposure. This will reduce and in many cases eliminate scope for passive solar design and will increase energy use for heating which will in turn compromise any move towards low-carbon cities.

The proposed outlook space standard has been tested on typical sites and is workable with 1m side yard separation distances. It encourages principal living rooms and the main bedroom to have outlook over the private rear of the property or towards the street, however analysis shows that outlook spaces may be possible with other orientations on typical infill sites.

Recommendation

Replace these standards with the tested and proven outlook space provisions in the Operative Auckland Unitary Plan (2015) with outlook spaces of 6m x 4m for at least one window of a principal living room, 3m x 3m for at least one window of a principal bedroom and 1m x 1m for all other windows to these and other habitable rooms.

The principal bedroom is the only bedroom in a one-bedroom unit, and either the largest bedroom in a unit with two or more bedrooms, or if all bedrooms are the same size, one of these nominated as the principal bedroom.

This standard would apply, like all other permitted standards, to all residential development within the zone.

Reasons

- The RMA Schedule 3A outlook space standard, will not deliver sufficient outlook or daylight in many cases, will compromise sunlight access and will permit very poor privacy outcomes.
- The recommended dimensions are those applied in the Auckland Unitary Plan's Mixed Housing Urban zone and have been tested and found to be both practicable, and deliver a reasonable minimum level of amenity.
- Applying a 3m x 3m outlook space to the principal bedroom allows for a suitable minimum separation for outlook and privacy between the principal bedroom of one unit and that of a second, or more pertinently, between a principal bedroom of one unit and the main living area of a second. This contributes also to the separation between units necessary to achieve a well-functioning environment.

- A 1m x 1m outlook space is recommended for other habitable rooms to ensuring that the main living area and at least one bedroom has broad and generous outlook, while ensuring that windows are possible facing a side boundary without the need for a 3.0m setback. A 3m x 3m outlook space may in certain situations be achievable for a window to all habitable rooms. However, this would be unnecessary for amenity and would unduly compromise site planning and development if applied to all secondary habitable rooms, particularly if these are located at the side boundary.

2.7 Outdoor living space

2.7(a) At ground outdoor living space

Existing standard	Recommended standard
<p>36 m² area, with 4.5m diameter circle, direct contact with main living area⁸, in east west or north in Residential Zone.</p> <p>For development in the MUHA, R10.6.3.3 iv. On-site Amenity requires: :</p> <p>“a) Each unit shall be provided with a private outdoor amenity area within the notional site which can meet the following requirements:</p> <ul style="list-style-type: none"> • A minimum open area of 30m² free of driveways, parking spaces, buildings and manoeuvring area. • Is able to accommodate a circle of 4 metres in diameter. • Has direct contact with a main living area for a length of not less than 2 metres. <p>Is orientated to the east, west or north of the unit.”</p> <p>Also, the matter is addressed for multi-unit residential developments in open space design assessment criterion (a), (b) and (c) in R10.6.3.3 as follows:</p> <p>“main outdoor spaces are associated with a living area within the dwelling, are reasonably private and of a useable size and are orientated to the sun.”</p> <p>“usable, well-orientated balconies are provided to above ground units and where quality at-grade private open space is not reasonably achievable.”</p> <p>“good quality shared private open space is provided as a complement to smaller private open spaces or balconies allocated to individual units.”</p>	<p>Every residential unit of two or more bedrooms must be provided with an Outdoor Living Space of at least 30m² which can accommodate a 4.5m diameter circle.</p> <p>Every dwelling of fewer than two bedrooms must be provided with an Outdoor Living Space of at least 20m² which can accommodate a 4.0m diameter circle.</p> <p>The Outdoor Living Space for a single dwelling must:</p> <ul style="list-style-type: none"> • Be located to the north, east or west of the dwelling. • Have direct contact with a main living and/or dining area for a length of not less than 2 metres. • Have a gradient no greater than 1 in 20; <p>The above-ground outdoor living space applies:</p> <ul style="list-style-type: none"> • In the circumstances where the main living room is at any upper floor level, then the above-ground outdoor living space applies; and • To the ground floor units of apartment developments.

Purpose of standard

To provide dwellings with outdoor living space that is of a functional size and dimension, has access to sunlight, and is conveniently accessible from the dwelling.

⁸ Main living area is defined in the District Plan as follows ‘means a living room, dining room or family room.’

Recommendations

- Implement performance standard with revised dimensions for the MRZ.
- Add a standard for a reduced area of at-ground outdoor living space for one bedroom units and for the ground floor of apartment developments.

Reasons

- To maintain some consistency with the Palmerston North district plan standards for multi-unit areas and the Residential Zone.
- A two-bedroom unit can be expected to possibly have one or more children in residence. In this case retaining the 30m² area with a 4.5m diameter circle is desirable, which provides for limited active play, is important.
- 20m² is arguably applicable to intensification close to the centres of metro cities and for very small units, that is one bedroom units. One bedroom units may but most likely will not be serving families, in which case minimum 20m² is acceptable. This also allows the extent of open space provided to be in proportion to the scale of the dwelling.
- Living and dining connection is important for ensuring convenient accessibility and therefore useability of such a space.
- The recommended area and the required minimum dimension are both larger than the MDRS but both ensure that the amount and proportions of space are useable for the residents served.
- Reducing the requirement for the minimum outdoor living area of ground floor apartment units allows for consistency with the apartment units above. At the same time, outlook space and sunlight access requirements will ensure a suitable sense of spaciousness, irrespective of whether that space beyond a smaller outdoor living space at ground is allocated to the unit or not. This also allows for street facing apartments to be set closer to the street edge.

Permitting above ground private outdoor living space

- There are many situations where the particularities of the site and location of access means that vehicle access to a building may need to be on the north side of a line of terraced dwellings. In such cases any garage would occupy some or all of the north-facing ground floor frontage and living areas would be at first floor level. In that situation providing an upper level balcony private outdoor living area would offer planning and design flexibility and at the same time achieve an acceptable outdoor living outcome.
- Permitting this solution does not reduce the amount of open space at ground, as the 50% building coverage standard applies.
- Being required to be at the same level as and directly accessible from the main living area or dining room of the unit served this space is ideally located.

Relation to the MDRS

This recommendation departs from the Schedule 3A Density Standard 15 – Outdoor living space. Our observations on this is that the density standard will be ineffective.

- A minimum dimension of 3m for space at ground floor level is insufficient to ensure reasonable use or amenity, particularly in combination with 11m height and very permissive HIRB planes.
- The MDRS standard does not address sun to the 'outdoor living space and connection to a living or dining area.
- The potential for grouping space means that it is likely that many residential units will not have direct access to private open space, as a grouped communal area is by definition not private. It is also not required to receive sun, and while it must be accessible from the development it may be inconveniently distant.

Furthermore, as described in the MDRS the area required for a ‘unit at ground floor level’ is unclear and ambiguous:

- If this area is a balcony, patio or roof terrace, is 20m² or is 8m² required?
- A patio (by definition a paved area adjoining a house) may be at ground. In this case is 20m² or is 8m² required?

Therefore, the recommended standard departs from the MDRS for the reasons discussed above and in the previous section.

2.7(b) Above ground outdoor living space

Existing standard	Recommended standard
<p>For multi-unit development in identified MUHA, performance standard iv. in R10.6.3.3 requires:</p> <p>“b) Each dwelling unit located on the first floor, which does not have connection at ground level, shall be provided with a private outdoor amenity area which can meet the following requirements:</p> <ul style="list-style-type: none"> • Is accessed directly off the living, dining or kitchen areas, and located at the same level, • A minimum of 8m² in area, unless a unit in the Aokautere Residential Area has less than two bedrooms in which case a minimum of 5m² applies., • Is orientated to the north, west or east.” <p>Also, for developments of 3 or more units in the MUHA and outside of the areas, open space design assessment criterion 4(b) in R10.6.3.3 is:</p> <p>“usable, well-orientated balconies are provided to above ground units and where quality at-grade private open space is not reasonably achievable.”</p>	<p>Each upper level residential unit located on the first or second floor, and/or any terraced dwelling which does not have a principal living room or dining room at ground level, and/or each apartment unit shall be provided with a private outdoor living space which can meet the following requirements:</p> <ul style="list-style-type: none"> • Is accessed directly off the living and/or dining area, and located at the same level; • <u>For units with fewer than two bedrooms, a minimum of 5m² in area or a Juliet balcony;</u> • A minimum of 8m² in area for units with two or more bedrooms; • Is orientated to the north, west or east; • Is not less than 1.5m wide; and • Receives a minimum of 3 hours continuous sunshine over at least 50% of the area of the deck and on 100% of the opening of any Juliet balcony on the shortest day of the year.

Purpose of standard

To provide dwellings with outdoor living space that is of a functional size and dimension, has access to sunlight, and is conveniently accessible from the dwelling.

Recommendations

- Apply the R10.6.3.3 onsite amenity performance standard (iv. b) with calibration to unit size.
- Add potential for outdoor living area to be at an upper level.

Reasons

- This allows for the common situation where there is a garage and parking at ground on the north, east or west façade of the dwellings. In that case the outdoor living space is also ideally to the north-east or west and should be at the same level as the main living area of the dwelling. Thus, provision for this to be a balcony is helpful. At the same time any upper-level living room would benefit from co-location with a balcony.
- This allows for walk-up apartments, the upper units of which must have their private outdoor living space above ground and in the form of a balcony or terrace.

- There should be no requirement for a shared outdoor living area in the circumstance units are provided with upper-level balconies off their living and/or dining room. See text below.
- Potential for a smaller minimum area or the option of a Juliet balcony for small units recognises the need for a lesser area with smaller households. This also offers construction cost savings, assisting affordability while at the same time providing for reasonable residential amenity.

2.7(c) Shared outdoor living space

Existing standard	Recommended standard
<p>None.</p> <p>For developments of 3 or more units in the MUHA and outside of it, the matter is addressed in open space design assessment criterion 4(b) and 4(c) in R10.6.3.3 as follows:</p> <p>“usable, well-orientated balconies are provided to above ground units and where quality at-grade private open space is not reasonably achievable.”</p> <p>“good quality shared private open space is provided as a complement to smaller private open spaces or balconies allocated to individual units.”</p>	None

Recommendation

- As all dwellings are already required to have a complying private outdoor living space (either at ground or above) shared outdoor living space should be an option, not a requirement.

Reasons

- Requiring a shared outdoor living space would be inconsistent with intentions to intensify. Nor would it necessarily lead to better outcomes.
- The best used outdoor living space is that which is private and directly accessed from the main living area of the dwelling.
- Shared outdoor living spaces are not especially common in any residential development. The space provided would be better allocated as private open space to individual units.
- The 50% site coverage standard already ensures that each dwelling will most likely have access to its own area of at ground private outdoor space, even if that does not meet the qualification for the required ‘outdoor living space’. The 30% permeable surface standard will also ensure that much, and often the majority of space at ground will be soft and/or green.

2.8 Sunlight to the dwelling

Existing standard	Recommended standard
<p>None.</p> <p>For multi-unit residential developments both within the MUHA and outside of them, site planning assessment criterion 2 (c) in R10.6.3.3 deals with the matter as follows:</p>	<p>Locate the principal living or dining area to receive a minimum of 3.0 hours of direct sun at mid-winter.</p>

“habitable rooms are orientated towards the east, north or west for good sun, and habitable rooms that face south only are avoided.”

Building design assessment criterion 3 (d) in R10.6.3.3 also addresses the matter:

“the living areas of dwellings are located and oriented to optimise sun exposure, natural lighting and views, including to the street or adjacent public open spaces.”

Further, site planning assessment criterion 2 (g) in R10.6.3.3 is:

“the planning of the development allows views of the street and common spaces within the development to be maintained, including views of open carparking spaces from the dwelling served.”

Purpose of the standard

As restricted to internal amenity would be:

- To ensure the dwelling orientation, placement and internal configuration provides reasonable sunlight to the main habitable room of each dwelling.
- To ensure that that reasonable sunlight is maintained even if development is maximised on neighbouring sites.

Recommendation

- Implement with editorial change to apply to either living or dining room, and to specify hours of sun.

Reasons

- Specifying a minimum time period allows for design flexibility and for clear measurement of the intended quality using commonly available software that is used by architects and designers.
- Specifying the hours of sun received rather than orientation avoids the situation where in a comprehensive development a living or dining room may be to the east, west or north of the dwelling, but it is shaded at mid-winter by large existing (or proposed) buildings immediately to the north.
- Testing the effects of maximum development on adjoining sites ensures that the intended sunlight to dwellings in the development is maintained even should neighbouring sites be developed. That would ‘future-proof’ sunlight outcomes and ensure that the amenity of the development is maintained.

Discussion

- We have found that the majority of units in a development, can usually achieve such a sunlight standard and often significantly exceed it. However, due to the complications of sites and perhaps location of existing neighbouring development a small proportion of the units in some proposals receive some sun at mid-winter but not a full three hours. In many cases the shortfall of sun is often measured in minutes not hours, and either side of mid-winter and for the remainder of the year, three or more hours of sunlight may be achieved. That is, the minor compromise to amenity at mid-winter is limited in extent and duration and is also potentially limited to a small number of units in the development. This justifies recognition in the assessment criteria that would be applied for departure from the standard, and that might be with use of the phrase ‘reasonable sunlight’ as in the purpose of the standard above.

2.9 Front façade glazing percentages

Existing standard	Recommended standard
<p>None.</p> <p>For multi-unit residential development in the MUHA and outside of it, building design assessment criterion 3 (a) in R10.6.3.3 states: “dwelling fronts including entrances and windows to habitable rooms are orientated to the street edge, and views are maintained to and from the street.”</p>	<p>The front street-facing façade of any dwelling must have no less than 20% in glazing such as windows or doors, except at a corner site where a second façade may have 10% minimum glazing.</p> <p>For consistency, apply this standard to all dwelling types within the MRZ. This includes detached and semi-detached dwellings fronting the street.</p> <p>This should apply only to the street-facing façade of the unit on the site which is closest to the street. Beyond 15m from the street boundary this does not apply.</p> <p>Exceptions to this are as below:</p> <ul style="list-style-type: none"> • Where the frontage includes a garage door, the required minimum glazing percentage is 12.5%. • Where the end wall of line of terraced housing or apartments faces the street, the minimum glazing should be 10% of the end wall plane.



Figure 2.9.1 Diagram of 20% of street facing façade in glazing, for both narrow and wide sites

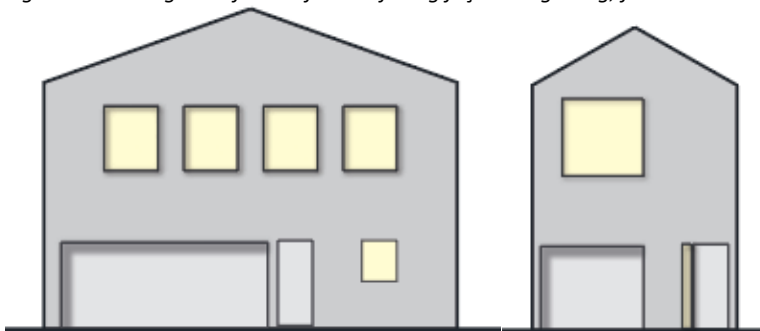


Diagram of 12.5% of street facing façade in glazing of frontage with a garage, for both narrow and wide sites

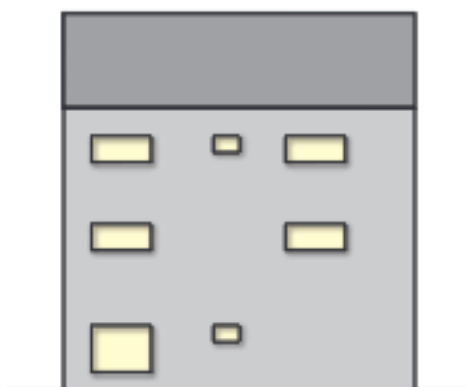


Diagram of 10% of street facing end façade of a terraced dwelling.

Purpose of the standard

- To enhance visual amenity at the frontages of all dwellings at the street edge and within the development.
- To contribute to informal surveillance over and safety within the development and on the street.

Recommendation

Adopt the MDRS standard with qualification on application to ensure it is not unnecessarily applied, and to allow a lower glazing percentage in identified situations.

Reasons

- 20% glazing is reasonable, not onerous to provide when there is no garage door within the frontage (see diagram above) or the unit is not the front unit in a conjoined row of units, and will contribute to good quality street edges.
- The standard is consistent with that in RMA Schedule 3A but amended to ensure it is applied only where appropriate.
- It should apply only to the street facing façade of the unit/s closest to the street and also within 15m of the street boundary. A qualifying distance of 15m is added as once a building is set back this distance or more from the street edge, it will have little impact on street amenity, is likely to be hidden by dwellings either side or by trees in such a deep front yard.
- For proper application, a frontage is required to be 'facing the street' as the front façade of the second and possibly third dwellings in a row of terraces with front façades at 90° to the street should not be controlled.
- For a unit on a street corner it is unreasonable to require 20% glazing on both street-facing facades as from our unit planning investigations that is difficult to achieve. Moreover, if the main façade has 20% glazing, a corner building with 10% glazing on the secondary façade will give a suitable frontage to the street.
- Furthermore, the street facing façade of a rear lot development of a unit at the rear of a site should not be addressed by the standard, as the purpose of the standard is to enhance street edge amenity.

Façade with garage door fronting the street

Where a façade includes a garage door, the 20% glazing requirement becomes too onerous, and may lead to perversely poor outcomes with overglazing, including of façades containing internal functions which would not benefit from extensive glazing. Given that this standard is in part to ensure articulation of the street facing façade, a garage door, with required 500mm setback from the façade will contribute to this. We have tested this and consider when a garage door is at the frontage, the minimum requirement for glazing should be 12.5%.

End walls of terraced housing, semi-detached housing or the end of a line of apartments facing to the street edge

The end walls of these types of dwellings may also front to the street. Again, we have tested with a sample development considered in plan and elevation and consider that a minimum requirement of 10% glazing should be required on such terrace end wall façades. This is because in testing with actual floor layouts we found it difficult to achieve as little as 11% glazing without interfering with internal planning and functionality.

Terraced units are likely to have large windows facing front and rear, so rooms that face to the front or rear risk becoming over-glazed if a higher percentage of glazing were also required on a terrace end wall. That would compromise internal furniture layouts and use, although smaller windows in terrace end walls will contribute substantially to internal amenity. Furthermore, it is likely that the central section of the plan of the terraced unit will comprise stairs

where large windows are not possible, and/or service rooms such as bathrooms or laundries where large amounts of glazing is not desirable.

We consider that a glazing percentage of 10% on street facing terrace end walls will deliver an acceptable streetscape outcome whilst addressing the potential issues set out above. Glazing of not less than 10% will also allow side entry garages at the base of a terraced dwelling to be accommodated.

2.10 Front door orientation and shelter

Existing standard	Recommended standard
<p>None.</p> <p>However, for multi-unit residential development in the MUHA and outside of it, building design assessment criteria 3 in R10.6.3.3 states:</p> <p>“The extent to which:</p> <p>(a) dwelling fronts including entrances and windows to habitable rooms are orientated to the street edge, and views are maintained to and from the street.</p> <p>(b) modelling of building form, and secondary forms and detail gives visual interest and a sense of human scale at the occupied and/or publicly visible edges of buildings.</p> <p>(g) individual units are expressed and entrances are signalled and readily visible from the street or entranceways.”</p>	<p>The façade of any residential unit at the street edge must be provided with a front door that either faces the street boundary or is located along the two-thirds of the side of the dwelling closest to the street boundary.</p> <p>The front door of all residential units must be provided with a cover of not less than 0.5m depth and not less than 1.0m width. The cover must comprise a projection from the façade; or a recess into it, or a combination of both.</p> <p>The soffit of the front door shelter should be not more than 1.0m above the door head.</p>

Purpose of the standard

- To provide shelter at the unit entry and contribute to the visual amenity of the street edge and legibility of entry to the unit.

Recommendation and reasons

- It is important that units at the street edge ‘front the street’. This is for reasons of:
 - Visual interest at the street edge
 - Contribution to informal surveillance and public safety
 - Complete.....
- This means that the front doors of all units at the street edge either face the street or are directly accessible from it. However, a requirement that units that are at the street edge must have the front door facing the street is not strictly necessary:
 - there will be instances where the dwelling can present a strong frontage to the street, but the entrance is just off to the side. That is a common pattern, particularly on narrower lots, in traditional urban neighbourhood development.
 - The proposed street facing façade glazing standard ensures that blank façades at the street edge are avoided.

The outcome of front door entry from the rear of the dwelling would be unacceptable, as it compromises wayfinding and risks ‘status conflicts’ where building backs face the street. That should be precluded.

- Front door cover is relevant to all units, at street edge or otherwise in order to provide shelter at the point of entry.

- This allows the occupants to shelter while opening their door, potentially while removing wet-weather gear, and for visitors to wait under cover. This contributes to the well-being of residents and their guests.
- Cover might be with some sort of projection immediately above or a recess, the minimum dimensions of which are defined.
- Such elements also contribute to the articulation of the façade and assist in breaking down the scale of large multi-unit developments.
- While the way to the front door will be obvious via the path or accessway that gives entry into the lot, the cover over the entry will further assist wayfinding for the visitor.

2.11 Relationship of garages to the street frontage

Existing standard	Recommended standard
None.	Any garage door facing the street and directly accessed from the street edge must occupy no more than half the width of a street frontage façade of the unit served.
For multi-unit residential development in the MUHA and outside of it, site planning assessment criterion 2 (e) in R10.6.3.3 states: “garages and parking are located and designed to avoid monotony and domination of any street frontage or spaces within the development.”	Multiple garages facing the street must not add up to more than half the width of a street frontage.
	Only garage doors that relate either to street front units or entry to a shared parking garage that serves multiple units, may be at the street front.

Discussion

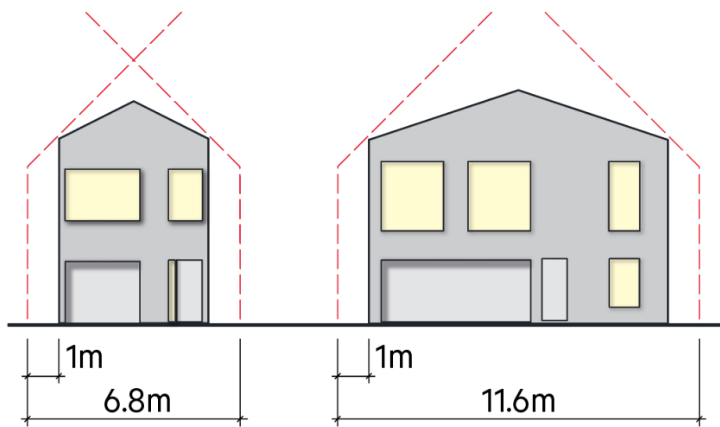


Figure 2.11.1 Diagrams of single and double garage doors comprising 50% of the street frontage width in combination with the recommended 12.5% minimum glazing in this situation.

The garage door width diagram above describes the implication of standard single and double garage door widths at frontages, both of which comprise 50% of the building frontage width. These achieve acceptable amenity outcomes and garage doors will not dominate the street edge. The diagrams assume a 1.0m side yard which means that the single garage door unit is 4.8m wide on a 6.8m wide lot, and the double width garage door unit is 9.6m wide on an 11.6m wide lot.

Purpose of the standard

- To avoid dominance of street frontages by blank garage doors.
- To contribute visual interest which will enhance the visual amenity of the street.
- To contribute to public safety by facilitating façade treatments that allow outlook over the street and informal surveillance.

Recommendation and reasons:

Implement the proposed width standard while also limiting the allocation/use of garage doors:

- Only garage doors that relate to street front units may be at the street front. Specifying the ‘ownership’ of garage doors precludes the situation where a bank of garage doors is provided at the street edge which serves units that are not at the frontage. A garage door to the frontage of a shared entry to basement parking should also be allowed for.
- This standard will be effective in addressing potential visual dominance by garage doors at the street edge at the same time as facilitating garages facing the street. This will particularly be the case when applied in combination with the proposed 12.5% minimum glazing standard for street -facing front facades that include a garage door.
- If garage doors are required to comprise not more than 50% of the street frontage width that allows a 2.4m wide single garage door in a narrow 4.8m wide terrace). The effect of reducing visual dominance of garage doors at the street edge is complemented by the standard to set them back at least 0.5m from the front façade of the dwelling.

2.12 Carparking at the street frontage

Existing standard	Recommended standard
<p>None.</p> <p>However, for multi-unit residential development in the MUHA and outside of it, site planning assessment criterion 2 (e) in R10.6.3.3 states: “garages and parking are located and designed to avoid monotony and domination of any street frontage or spaces within the development.”</p>	<p>Any carparking provided at the street frontage (within 6 metres of the street boundary) must:</p> <ul style="list-style-type: none"> • be located perpendicular to the street on the front yard of the unit served; • not comprise more than 50% of the width of the unit’s facade; • be a minimum of 5.5m deep; and • if the unit served has a street facing garage door, it must be located directly in front of that garage.

Purpose of the standard

- To provide for convenient on-site carparking that does not compromise the visual quality of the street edge; and
- To ensure that parked cars do not overhang the footpath or otherwise hinder pedestrian movement or safety.

Recommendation

- Implement this standard with suggested edits.

Reasons

- Text must ensure that any carparking relates only to the unit or units facing the street to avoid edges dominated by parked cars and footpaths compromised by very wide kerb crossings.
- The limitation on width maintains consistency with standards limiting the width of street facing garages and provides for landscaping in the front yard.
- Reference is made to the width of the parking which is to correlate with the proposed standard for maximum garage door width, which will ensure consistency in how garages and vehicle parking are treated in the plan.
- A parking area at the frontage which occupies at most 50% of the frontage allows for significant landscaping at the frontage.

2.13 Fencing at and close to street boundaries

Existing standard	Recommended standard
<p>None in the Residential Zone however for the Hokowhitu Lagoon Residential Area, Napier Road Residential Area and Napier Road Residential Extension Area, fencing standards apply.</p> <p>Extracted from R10.6.1.7 Dwellings within the Hokowhitu Lagoon Residential Area (and similar to the standard for Napier Road Residential Area and Napier Road Residential Extension Area) the standard is:</p> <p>“(i) The maximum height of fencing adjoining a public road or public open space is 1.8 metres except as provided below.</p> <p>(ii) Where a fence is erected along a property boundary directly adjoining public open space (reserve, walkway or park):</p> <ul style="list-style-type: none"> • The fence must not exceed 1.1 metres in height for more than half of the property boundary length; or • If the fence is of Open Construction, the fence must not exceed 1.8 metres in height. <p>(iii) Where a fence is erected along a property boundary directly adjoining a road frontage:</p> <ul style="list-style-type: none"> • A maximum height of 1.1 metres applies except that solid fencing may be erected to 1.8 metres over not more than 1/3 of the frontage width, and • No part of a solid fence above 1.1 metres in height shall be located within 1.8 metres of a driveway, except for gate posts relating to a fence of Open Construction. • If the fence is of Open Construction, the fence must not exceed 1.8 metres in height. <p>(iv) Where a side fence is within the front yard or next to a driveway, and within 3 metres of the street edge, a maximum height of 1.1 metres applies. Should a side fence connect to that part of any front fence on the same lot which is permitted by (b) above to rise to 1.8 metres, it may also rise to the same level.</p> <p>(v) Where a fence is erected on the road frontage of a corner site, the requirements of (i) – (iii) shall only apply to one road frontage.”</p> <p>In addition, for multi-unit residential development in the MUHA and outside of it, open space design assessment criterion 4(h) in R10.6.3.3 states:</p> <p style="padding-left: 40px;">“front yard boundary treatments are sufficiently low to provide for visual connection between the dwelling and the street and allow safe vehicle access across the footpath.”</p>	<p>Utilise the fencing standard as used at Hokowhitu Lagoon Residential Area, modified for relation to the 1.5m front yard recommended in the MRZ.</p> <p>That is:</p> <p>(iv) Where a side fence is within the front yard or next to a driveway, and within 1.5 metres of the street edge, a maximum height of 1.1 metres applies.</p>

Purpose of the standard

- To provide for front boundary definition and reasonable privacy while also maintaining a visual connection between the dwelling and the street for purposes of streetscape quality and public safety.
- To minimise visual dominance effects to immediate neighbours and the street or adjoining public place.
- To contribute to safety on the footpath at points of vehicle entry.
- To avoid tall and blank fences visually dominating road and public space boundaries.

Recommendation

- Utilise the fencing standard as used at Hokowhitu Lagoon Residential Area, modified for relation to the 1.5m front yard recommended for the MRZ.

Reasons

This performance standard allows for good boundary definition, visual connection to the street and/or adjacent public reserve, overlook for informal surveillance, and safety by driveways. This is while providing for flexibility in fence type and height, including the possibility of providing privacy to part of private open space at the street frontage or public open space boundary.

Conversely, allowing full width 1.8m high solid fences compromises the safety of the street and footpath, and compromises the streetscape by introducing visual monotony and cutting the dwelling off from the street.

The maximum height of low sections of fence should be as low as practicable to achieve the intended benefits. To allow for correlation with NZ Building Code safety from falling requirements if and where required, a 1.1 m maximum is recommended.

The Hokowhitu Lagoon Residential Area fence performance standard (or any variant of it that PNCC is using) is supported as it is complete and unambiguous, and already in the district plan. It also comprehensively addresses various situations including adjoining both streets and reserves and allowing for corner sites. The rationale for this approach is described in the explanation to the fencing standard for Hokowhitu Lagoon (Residential Zone/Section 10, page 29). This logic remains sound:

“Fencing plays an important role securing private property, however extensive high fencing can shut off private space from the public realm. Low front fences are one of the factors that contribute to greater safety of both public and private realms. Low front fencing in the front yard adjacent to driveways ensures that drivers exiting the lot are able to view the footpath, which minimises potential conflict with pedestrians. Fencing requirements ensure that the visual connection between private property and the public space is not completely lost, but allows for differing orientations of frontages, where for example the street is on the north side of the lot. In that circumstance, a resident might reasonably wish to achieve some private open space on the sunny side of the house, close to the street edge and that should be accommodated. The extent of high fencing (that is 1/3 of the whole street frontage, along a street) still allows informal surveillance of the street from dwellings and avoids monotony along the street edge.”

2.14 Location and visibility of building services

Existing standard	Recommended standard
<p>None.</p> <p>However, for multi-unit residential development in the MUHA and outside of it, open space design assessment criterion 4 (i) in R10.6.3.3 states: “suitably screened and located provision is made for rubbish storage and collection.”</p>	<p>Provide either shared bin storage and/or space for individual bin storage for units amalgamated into a single bin storage area which should have step-free accessibility to the street edge.</p> <ul style="list-style-type: none"> • The bin storage area should accommodate at least one 140 litre standard wheelie bin for each unit with two or fewer bedrooms, and at least one 240 litre bin for each unit with three or more bedrooms. • Any shared bin store within the common area of the development must be not closer than 5m to the front boundary of the site and must be screened. • Any private bin store associated with each dwelling within the development that is either within the front yard or in or facing the common circulation area within the development must be screened. • Bin store screening enclosures should be not less than 1.5m high and not more than 40% visually permeable. • Additional screening is not required where the private bin storage area is located in the rear or side yard of any unit and out of view from the street or common circulation areas within the development. <p>The soil pipe vents and all pipes that are associated with any toilets, laundries or bathrooms in that part of a dwelling at the street frontage and at dwelling frontages to the common public areas within the development must not be visible on the front façade. They may be located there but must be concealed by integration into the façade treatment.</p> <p>Airconditioning units and ‘push through’ water heaters must be screened from view if located at the street edge/facing the street and within 15m of the street edge.</p>

Purpose of the standard

- To provide for adequate, serviceable rubbish and recycling bin storage that is screened from public view at the street edge and from the common areas within the development.
- To ensure the public fronts of dwellings to the street and the dwelling frontages to the common public areas within the development are not visually dominated by service infrastructure and functions.

Rubbish and recycling recommendation

Provide for wheelie bin storage, and screen bin storage areas which are located at the street front or facing the common areas of the development.

Reasons

- There should be a choice of solutions for a function that is important for the livability and amenity of units.
- Space is provided for wheelie bins which are the most likely type of external rubbish and recycling storage.
- The standard focuses only on rubbish as that is most likely to be smelly and therefore would need to be outside the dwelling. Recycling may be

stored in the unit until the day of collection. Developers may provide additional external space for recycling bins should they choose to.

Building services recommendation

Allow service rooms at the frontage implemented in such a way that their service function and pipes/infrastructure is not obvious.

Reason

There is a 'status conflict' with the public realm and privacy compromise in locating for example bathrooms at the street edge, particularly if these are at ground and close to the entry. Therefore, in principle it would be desirable to preclude this. However, such a restriction may in some instances be problematic for rational unit design, and particularly for the planning of upper floors where it is conceivable that a bathroom could be on an external street facing wall. There will also be ways of integrating services, pipes and soil vents that are not visible on the frontage.

It is appropriate that service rooms can be located close to or behind the street façade as long as they are not overtly visible at the street edge. That is particularly the case with narrow 5.5m wide terraced frontages. In many cases the usual pipes and vents associated with these detracts from the quality of the frontage. Therefore, the standard should focus on those service elements, not on the location of the service rooms.

END