

Medium and High Density Housing in Christchurch
Urban Design Review 2020

Prepared by Christchurch City Council Urban Design Team
June 2020

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1 Introduction

This document is a technical review of the quality of recent medium density housing developments in Christchurch. Its purpose is to provide a summary of the effectiveness of Christchurch District Plan policy and provisions in delivering high quality residential medium density development within Christchurch, in respect to urban design outcomes.

The quality and supply of housing is an essential part of making Christchurch a liveable city. The importance of this to the Christchurch community is expressed through both the Community Outcomes for the city and the Christchurch District Plan:

Community Outcomes - Liveable City:

- Vibrant and thriving central city, suburban and rural centres
- A well-connected and accessible city
- Sufficient supply of, and access to, a range of housing
- 21st century garden city we are proud to live in

District Plan Objective 14.2.4 – High Quality Residential Environments

High quality, sustainable, residential neighbourhoods which are well-designed, have a high level of amenity, enhance local character and reflect the Ngai Tahu heritage of Ōtautahi

The District Plan residential medium density provisions have been operative since 2016. A review of the effectiveness of these provisions in respect to urban design matters began in March 2019 and was completed in March 2020 and forms the basis for the information presented in this report.

2 Summary and Recommendations

2.1 Summary of Findings

This report provides the findings from a review of the design quality of new residential medium density housing in Christchurch, developed under the provisions of the Christchurch District Plan made operative in 2016.

There is a clear statement of expectation in the District Plan objectives and policies for “high quality” outcomes. This review has found that whilst the standard of developments was in most cases close to a basic satisfactory quality overall, there was a significant proportion of developments which were poor quality. Neither would be achieving the high quality outcomes set out in the District Plan.

The majority of the issues arising are related to poor site layout which impacts on many aspects of the site and building design, including the street interface. The root causes are:

- More consideration needs to be given to the arrangement of buildings on the site so that buildings and private spaces are designed to function appropriately, without privacy conflicts or the need for prominent fencing;
- There has been insufficient space allocated to front gardens and accessway planting and the resulting environment is not as safe or as pleasant as anticipated.

Other recurring issues related to Crime Prevention Through Environmental Design (CPTED) and were caused by privacy conflicts that discouraged passive surveillance, and a lack of a sense of ownership, transition and territorial definition. A clear hierarchy of space is needed from private to public space.

Some positive trends were evident. These particularly related to the standard of private amenity on the site, such as good outdoor living space for occupants and good solar access. Developments achieving a basic satisfactory were often a mix of these high quality outcomes together with some aspects delivered poorly.

A tension was also identified between the existing character and the anticipated form of development, with smaller sites tending to better complement the existing character.

An issue unique to the central city was the scale of buildings, these tended to be one of two types. The first was suburban housing typologies, built at a higher density than in the inner suburbs. These higher density examples often had issues such as privacy conflicts. The second type was an apartment block, which were often monolithic in appearance. The first issue results from a reluctance to build a more intense typology (eg a three storey house or apartment) whilst the second is a matter of the design of higher densities.

Within the different District Plan Zones, the Residential Medium Density (RMD) zone produced more consistent outcomes than other zones and had a lower proportion of developments achieving a poor standard of design. The Residential Suburban Density Transition Zone (RSDT) most frequently produced outcomes that were unsatisfactory.

When compared to a previous survey carried out in 2009 (in the former L3 and L4 zones, equivalent to RMD and RCC), it is notable that density has increased over the period, particularly in the RMD zone. With regard to quality indicators, two trends are evident: improved outcomes in the RMD zone and a deterioration of quality in the Residential Central City (RCC) zone. In the

latter case, which performed well in 2009, this seems to be related to a change in typology from bespoke apartments towards townhouses.

2.2 District Plan

A detailed assessment was undertaken as to whether District Plan policy was an effective framework for urban design, against which the residential medium density developments were reviewed.

The design outcomes within the RMD zone are generally of a better quality than those in the remainder of the zones. RSDT zoning led to consistently poorer outcomes than RMD zoning, despite the lower density, and central city developments were also less satisfactory on average. It appears that:

- Less thorough RCC assessment matters have led to inconsistent outcomes in the RCC zone in relation to the street, site and aspects of the built form, in conjunction with higher densities;
- The absence of design controls in the RSDT zone (for less than 5 units) has resulted in consistently poor outcomes in relation to the street and site.

The Central City Mixed Use (CCMU) zone is not included in the above due to the small sample.

There is good coverage of urban design outcomes across the District Plan provisions but often not the ability to translate this into outcomes through the application process. The policy framework is relatively wide-ranging, however there are gaps in the assessment matters and the built form standards do not always support good design.

The built form standards can set a baseline for what can be accommodated on the site, however if they exclude aspects of design (such as privacy, or the landscaping of accessways) it can lead to those being neglected. More rounded built form standards would help to promote these as fundamental design issues. They can ensure space is set aside to manage the amenity and street scene issues identified.

Some matters are well covered in the District Plan (in particular CPTED) but are still not fully achieved. Changes to design and consenting under the existing plan provisions could potentially produce better outcomes.

The Plan does not include an overarching consideration of site layout. Instead, issues are often addressed one by one and this can result in an attempt to trade-off outcomes such as privacy verses street-interaction. In order to solve the issues, there is often a need to revisit the site layout and make different choices (rather than mitigating issues). This reflects the iterative nature of the design process.

The District Plan contains policy relating to sustainability and innovation, but no methods. There was very little achievement in this area. The purpose of the policy is to promote these aims (and it may be this allows them to be included in the balance of an assessment), but achievement has been limited.

3 Review Methodology

3.1 Sample Developments

This survey was limited to developments consented and constructed post 2016, when the District Plan was made operative. A selection of 46 developments were identified across 4 medium density residential zones. These zones are shown below. The intention was to obtain a meaningful sample of developments undertaken since the introduction of the district plan, which was identified as being 25% of developments in each zone.

However, given the number of developments completed as at April 2019 when the study began, the sample is 100% of new medium density development in all zones except RMD. The small sample size and level of development that has occurred means that the study may not comprehensively identify all issues likely to arise into the future. One of the recommendations is therefore that more work is undertaken to confirm the results, in particular within the central city. This is due to the greater variety of buildings and outcomes expected in the two central city zones as well as the small sample size.

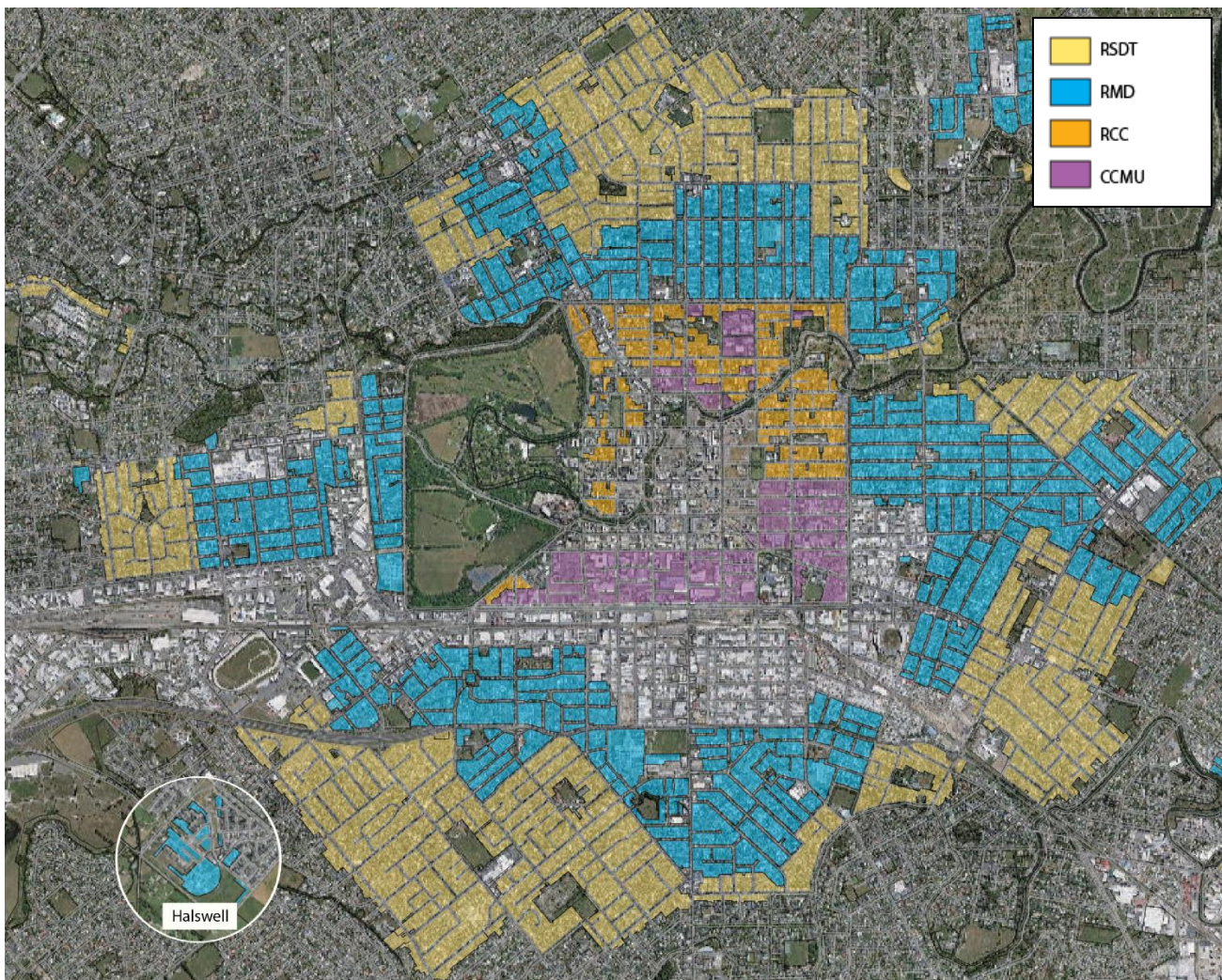


Figure 1: Residential zones and across the city

List of Assessments by zone:

Central City Mixed Use zone (CCMU - 3 sites, out of 3 completed in the zone)

Residential Central City Zone (RCC - 12 sites, out of 12)

Residential Medium Density Zone (RMD - 20 sites, out of 46)

Residential Suburban Density Transition Zone (RSDT - 11 sites out of 11)

Two studies were carried out to collect data. The information for this report is drawn primarily from the data gathered in those studies, and informed by the initial reporting carried out on that data (CCC 2020 i and ii).

3.1.1 Density

The District Plan includes policies relating to minimum density requirements for the redevelopment of sites in the zone. The target density and average density for each zone is as set out below. For the sake of this analysis, the net density is assumed to be the site density multiplied by 0.66. The net density is a larger area including a proportion of local roads and parks as well as the site area. Development in all zones on average exceeds the minimum density requirements:

| Zone | Target Net Density (Households/ha) | Site Density (Households/ha) | Net Density (Households/ha) |
|-------------|---|-------------------------------------|------------------------------------|
| RSDT | N/A | 43 | 28 |
| RMD | 30 | 56 | 37 |
| RCC | 50 | 117 | 77 |
| CCMU | N/A | 139 | 91 |

3.2 Assessment Matrix and Criteria

For the purposes of this review, an assessment matrix for development was created by Boffa Miskell, adapting work they previously undertook for the Council in 2009 and the Ministry for the Environment in 2012.

Figure 2 shows the assessment matrix which allows each development to be scored on a five-point scale according to various urban design criteria. These were organised into four urban scales.

| BEST PRACTICE ASSESSMENT | | | | | | |
|---------------------------------|-------------|--|---|---|---|---|
| Urban Scales | Outcome | 1 | 2 | 3 | 4 | 5 |
| A. Neighbourhood | A.1 | Integration into the existing and or planned site and local context. | | | | |
| | A.2 | Meeting residents’ needs and is designed to reflect its location and access to social infrastructure | | | | |
| | A.3 | Contributes positively to the wider neighbourhood and community | | | | |
| B. Street | B.1 | Creating an appropriate sense of enclosure along the street | | | | |
| | B.2 | Fostering a sense of ownership of the street. | | | | |
| | B.3 | Activation and articulation of the street façade through openings | | | | |
| | B.4 | Property boundaries are well defined and enable views of the street. | | | | |
| | B.5 | Building layout and form appropriately responds to the urban context | | | | |
| C. Site | C.1 | An integrated and comprehensive approach to the layout of buildings and spaces | | | | |
| | C.2 | Provides for housing choice | | | | |
| | C.3 | Respectful and responsive design of neighbouring interfaces and activities | | | | |
| | C.4 | Comprehensive approach taken to the design and quality of paving, landscaped areas and open space. | | | | |
| | C.5 | Reduce opportunities for crime by ensuring an effective layout and provision of other features to maximise safety (including the perception of safety) | | | | |
| | C.6 | Appropriate provision and location of private outdoor living spaces | | | | |
| | C.7 | Appropriate provision, location and design of communal open space | | | | |
| | C.8 | Provide for the safe and efficient movement of pedestrians, cyclists and vehicles | | | | |
| | C.9 | A sound car parking strategy is utilised and the visual impact car parking where provided is minimised. | | | | |
| | C.10 | Efficient and effective provision of services and storage areas | | | | |
| | C.11 | Incorporation and promotion of sustainability across the site | | | | |
| D. Building | D.1 | A visually interesting and cohesive approach to the overall building form | | | | |
| | D.2 | Variation and steps in the building line | | | | |
| | D.3 | Sufficient breaks in the roofline | | | | |
| | D.4 | Designing to a domestic scale | | | | |
| | D.5 | Coordinated use of appropriate materials | | | | |
| | D.6 | Coordinated internal/ external relationship | | | | |
| | D.7 | Provision of adequate storage | | | | |
| | D.8 | Logical and efficient layout | | | | |
| | D.9 | Protecting privacy and minimising overlooking | | | | |
| | D.10 | Enabling of natural ventilation, solar gain and daylight penetration | | | | |
| | D.11 | Promotes energy efficiency and incorporates sustainability features | | | | |
| | D.12 | Demonstrates innovation and creativity in build design, form and function | | | | |

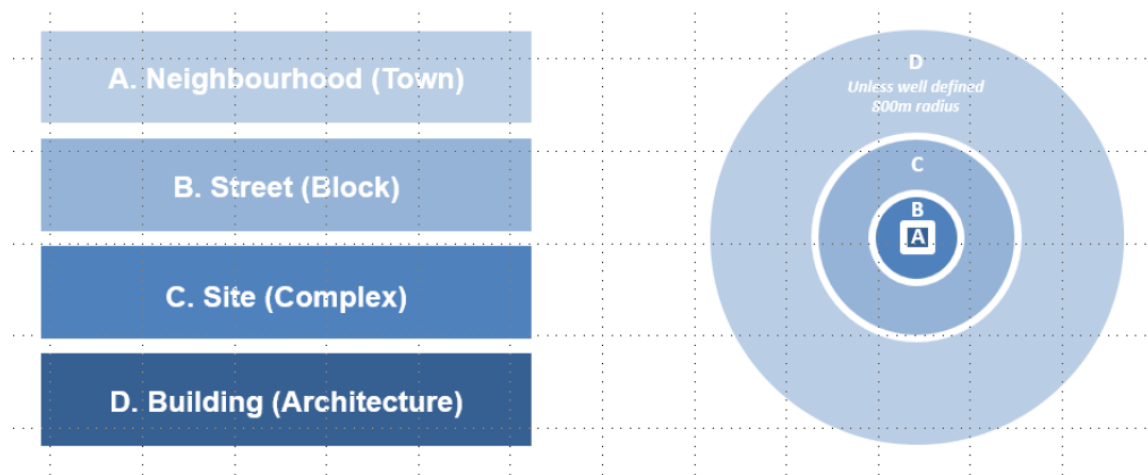
Figure 2: Assessment Matrix

3.3 Urban Scales

The Matrix includes four Urban Scales: (i) Neighbourhood, (ii) Street, (iii) Site and (iv) Building.

Use of these scales allows consideration of the outcome of the development and its impact on the surroundings at a range of levels. It avoids concentrating on individual known issues and instead allows the focus to be on the impact of the development on the wider area or site. It takes into account that what may be advantageous at one level (for instance a sunny and private garden) may be detrimental at a different level (such as the impact of fencing on the street scene).

When considering the urban design outcomes of residential developments, whether it is for a small lot intensification or a larger more complex multi-unit development, it is important to consider and be informed by matters across all of the four scales. It is also important to note that the policies and objectives for each of the respective zones also seek outcomes beyond individual sites. Consideration of the four scales will ensure a thorough analysis and best represent the overall impact of each development.



3.4 Five Point Scoring

The five-point scoring system is as follows:

1. **Poor** - A development with little consideration of urban design principles.
2. **Inadequate** - A predominantly functional development with some simplistic design features that inadequately address urban design principles.
3. **Basic Satisfactory** - A development that satisfactorily addresses basic urban design principles
4. **Well-considered** - A well-considered development that successfully addresses urban design principles.
5. **Best Practice** - Most representative of urban design best practice.

In broad terms, an average score of 3 indicated a satisfactory urban design response that addressed urban design considerations to at least a basic extent.

The District Plan policies seek a “high quality” development as distinct from “satisfactory” or “well-considered”. The term “high quality” is not well defined in the plan and how it aligns to the scoring system is a matter for interpretation.

In a city of successful development with satisfactory design, it may be expected that basic satisfactory would be the minimum achieved. It would then be expected that the average would be higher than this. Whilst some developments would outperform due to higher quality design choices, none should under-perform.

For a city with high quality design, it would be expected that the minimum score for each development would be 4, and that the average would be between 4 and 5.

It is worth noting that the mid-point score is 3, with a range of 1-5 (with no 0). The expectation is that developments record a basic satisfactory score across the board to reach a threshold of 3. A score falling significantly below 3 has not reached the threshold. For this reason, a score of 2.8 is seen as “inadequate” – it has not reached the threshold in all categories, or there are no particularly good points to offset the areas of poor performance. When averaged over 46 developments, significant areas of performance under 3 indicate a possible systemic issue.

Notwithstanding the above, scoring involves an element of interpretation and is not an exact science. Therefore, developments close to 3 (e.g. scoring 2.9) are often interpreted as being satisfactory within the analysis and limited weight is given to individual property category scores or small samples, which may be affected by a small number of marginal scoring decisions.

4 Summary of Assessments

This section includes a description of the scores for each of the urban scales, narrative around the urban design outcomes, and a summary of key observations with respect to urban design best practice.

It contains analysis of results by zone, while noting the sample size for each zone, and the potential complexity and variation in development types. This is most notable in the RCC zone.



Apartment and townhouse typologies in the RCC zone

4.1 Overall Scoring

The table below shows the average scores for the urban scales for the 46 sites:

| Urban Scale | Range (1-5) | Average | Median |
|---------------|-------------|---------|--------|
| Neighbourhood | 1.7 – 5 | 3.5 | 3.5 |
| Street | 1.2 - 4.6 | 2.8 | 2.8 |
| Site | 1.6 - 4.2 | 2.7 | 2.8 |
| Building | 1.9 - 4.3 | 3.0 | 2.9 |
| Overall | 1.6 - 4.5 | 3.0 | 2.9 |

The average score is close to 3 throughout, but below this level for “street” and “site”.

On an overall basis, it appears that the average development is basic satisfactory. However, this conceals two significant variations:

- The performance on the different scales (some aspects of developments are better than others).
- The performance of individual developments (some developments are above average and some are below).

When these issues are considered, a more complex picture emerges where a significant proportion of development is inadequate or poor.

4.2 Performance by Site

The performance of individual developments was variable, with some good examples that scored highly, and a larger group of developments that were rated in the inadequate category.

The range of development scores by site is shown below:

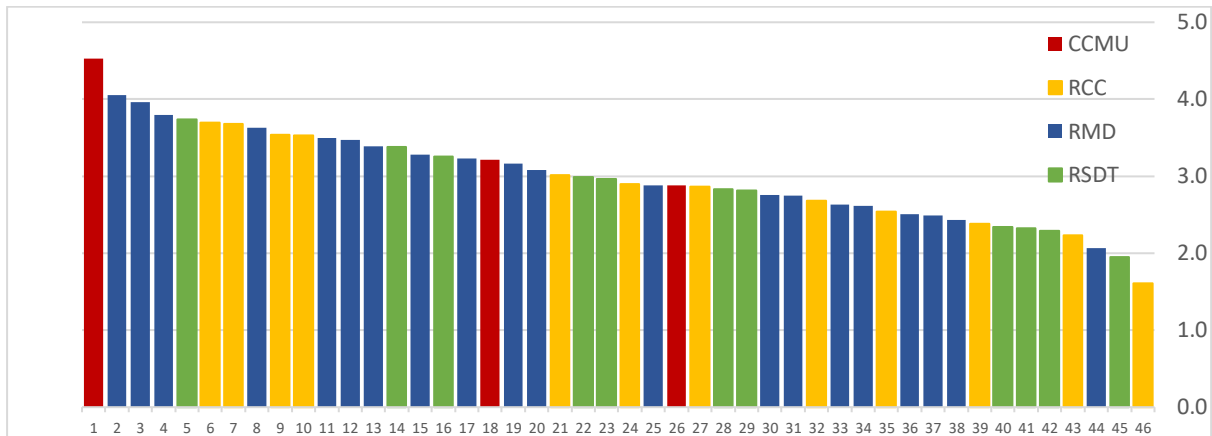


Figure 2: Overall Scores by development site

This chart illustrates that exactly half the developments achieve at least a basic satisfactory score and half do not achieve this level.

Of the underperforming group, some almost make the satisfactory level. Of greatest significance is a group comprising around a third of developments that fall well below this level. These developments are likely to be significantly unsatisfactory in some respects.

Of the best performing developments, there is a group which are higher performing. The top few would be “well considered” and they would meet the criteria for “high quality”. A further nine score at least 3.5.

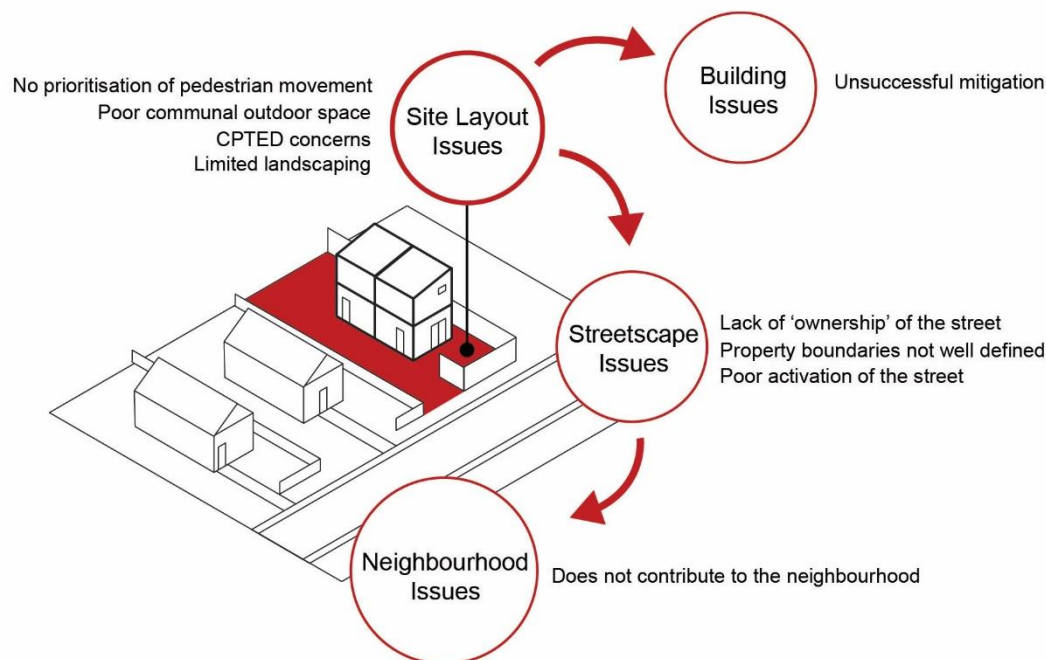
This shows that although the average score is close to a basic satisfactory grade, there are a high proportion of developments that do not reach this standard.

4.3 Performance by Scale

Performance across the scales was variable. Overall results were good at the neighbourhood scale and generally satisfactory at the building scale. However, performance at the site and street scale was below the basic satisfactory threshold.

These issues often have their root cause in the site scale. Outcomes were often unsatisfactory for the site scale and in particular the outcome in relation to Crime Prevention Through Environmental Design was poor.

Unsatisfactory outcomes relating to the street are often caused by site layout decisions (for example the location of outdoor living space at the front boundary leads to tall fencing on the street front). This is then reflected in the neighbourhood scale because the development does not contribute positively to the character. Some of the issues at the building scale are also an attempt to remedy site layout decisions, or are ultimately caused by the building envelope created by site layout choices.



Above: Site layout issues reverberate through the urban scales

Ultimately, this attempt to manage the effects of unsatisfactory site layout through mitigation has been moderately successful in many RMD developments, but has not succeeded in other zones.

In the Central City, this is likely to be due to the higher density development in the creating more challenges, such as privacy conflicts or a lack of building modulation. It may also be due to the more relaxed zoning provisions. For instance, there is no upper floor setback for bedroom windows in the RCC zone (but there is in the RMD zone).

4.3.1 Neighbourhood Scale

Key Points

- Overall development outcomes are mostly basic satisfactory or good for this urban scale.
- RMD developments are consistently positive, but RSDT and Central City sites are more variable and do not always make a positive contribution to the wider area.
- There has been limited development of apartments in the Central City. Instead, a more intense type of town house complex is the usual form of development. These complexes sometimes had issues like privacy conflicts that resulted from their close distance and a lack of space on the ground – the limits of the typology have been reached. However, where apartments were built, they were often monolithic in appearance.
- There is a tension between the existing character and the anticipated form of development. Smaller sites tend to complement the existing character.

Overview – Neighbourhood Scale

The neighbourhood scale is principally focused on location, integration, access to services and amenities, as well as the contribution that the development makes to the broader neighbourhood.

The average scoring for the scale is 3.5, with basic satisfactory average scores across the outcomes. Furthermore, the group of developments falling significantly below the basic satisfactory level is relatively small and a third of the sample displayed a well-considered outcome. The overall outcomes for this scale appear consistently satisfactory.

This picture does hide some variability and in particular, the central city developments perform less well and often do not contribute positively to the wider area (A3). By contrast, RMD developments were consistently good in this respect.

| Ref | Outcome | Scoring Range | Average | Median |
|-----|--|---------------|---------|--------|
| A1 | Integration into the existing and or planned site and local context. | 1 - 5 | 3.3 | 3 |
| A2 | Meeting residents' needs and is designed to reflect its location and access to social infrastructure | 3 - 5 | 4.1 | 4 |
| A3 | Contributes positively to the wider neighbourhood and community | 1 - 5 | 3.1 | 3 |
| | Overall Score | 2 - 5 | 3.5 | 3.5 |

Table 1: Neighbourhood Scores by category

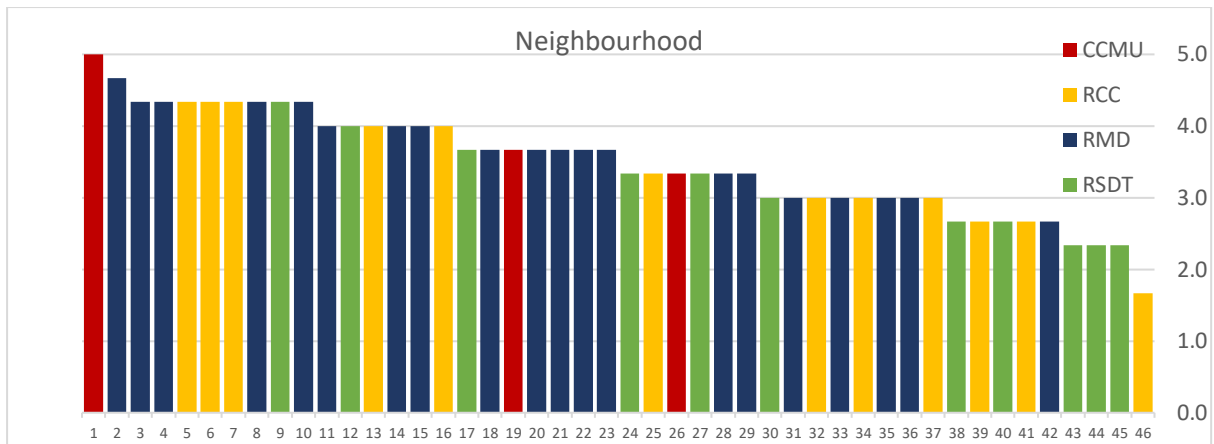


Figure 3: Neighbourhood Scale Scores by Development Site

Analysis by Category

All categories displayed an average outcome that was at least basic satisfactory.

The outcome in relation to A2 (meeting residents’ needs) was particularly strong with all examples achieving a basic satisfactory score of 3 and having an average of 4.1. This reflects the considered approach to zoning which accounts for a range of location criteria such as access to services, amenities and public transit. This success is therefore at least partly due to good planning practice.

Outcomes in relation to A3 (Contributes positively to the wider neighbourhood and community) were more variable. The overall score of 3.1 was satisfactory, but there is a group of 13 developments scoring below 3. This was the weakest category overall and this is due to variable performances in different zones as described below.

Analysis by Zone

| Zone | Average Score |
|---|---------------|
| Residential Medium Density | 3.7 |
| Residential Suburban Density Transition | 3.1 |
| Central City Zones | 3.1 |

Whilst all zones recorded a satisfactory outcome, The RMD zone performed significantly better than others. Performance of RMD sites was very consistent across the three categories with very few examples of poor outcomes to any development. The impact of RMD developments on the surrounding neighbourhood scale is consistently satisfactory and often well-considered.

The same is not true for other zones: 8 of the bottom 10 sites are either RSDT or RCC.

The central city developments performed poorly in category A3 (contributes positively to the wider neighbourhood), and in particular more than half the Residential Central City sites failed to reach a “basic satisfactory” score: RCC developments are not always making a positive contribution to the neighbourhood. They are often inward looking and either lacking in appropriate scale for the location, or where they do have scale they can be monolithic in appearance. The analysis indicates that RCC provisions may be failing to compliment the character of the surroundings.

The same is true for the RSDT sample. Where developments fell short, this was due to an unsympathetic impact on local character (for example setbacks are used for parking or development is oriented with its back to the street). This was caused by the layout of buildings

and fencing on the site rather than inherent to the scale of development, which was found to fit in with the surroundings.

Observations

Zone outcomes and existing character: An incompatibility was identified in some cases between the anticipated outcomes of the zone and the established character, with limited value placed on the existing built form where these clashed. This was notable for the RMD and RCC zones especially, but not for RSDT where the lower density form was usually absorbed into the existing character more easily.

Standardised Typologies are unable to reflect the local context and setting, for example the nature of streets and the character of the area. This requires a specific design response. For example, a typology that works well in a regular mid-block site is different to that which is required at a corner which may need a bespoke design to allow units to address the street and allow for outlook and privacy.

Few distinctive design outcomes in the Central City: There are few differences in the approach to development in the Central City compared to lower density zones, with the majority of developments being individual two-storey townhouse units of a type similar to the suburbs, but built at a higher density, rather than apartments.

The partial exception is a new prevalence of car-free townhouse development in the central city, which is a more intensive form of the same typology.

This may reflect the state of market demand in Christchurch and a perception that a house is more desirable than an apartment. This presents challenges with character and capacity (sufficient density) as well as whether these typologies can successfully address the more active and public central city street environment.

Increased Housing Choice: A variety of house types and sizes was observed, although not usually within the same development. However, the variety of dwelling sizes, which included one, two and three bedroom houses is leading to an increase in housing choice in the city overall.

4.3.2 Street Scale

Key Points

- A majority of developments fall below the “basic satisfactory” threshold, many of them significantly so. Developments are not always contributing to an attractive street scene.
- Tall front fencing and a lack of transition space (such as front gardens or substantial landscaping) was identified as a cause of the poor results.
- Where there is outdoor living space in front of the house it usually results in fencing and screening of the street front
- Other issues were related to the design of front façades and arrangement of internal spaces.
- Where there are poor outcomes with the street scale, these are often caused by poor site layout.

Overview – Street Scale

The average and median scores for this scale both stand at 2.8, indicating that on average, a basic satisfactory score is not achieved and well over half the developments are unsatisfactory. The overall performance is not sufficient to create high quality environments.

| Ref | Outcome | Scoring Range | Average | Median |
|-----|--|---------------|---------|--------|
| B1 | Creating an appropriate sense of enclosure along the street | 1-5 | 3.0 | 3 |
| B2 | Fostering a sense of ownership of the street. | 1-5 | 2.5 | 3 |
| B3 | Activation and articulation of the street façade through openings | 1-5 | 2.8 | 3 |
| B4 | Property boundaries are well defined and enable views of the street. | 1-5 | 2.7 | 3 |
| B5 | Building layout and form appropriately responds to the urban context | 1-5 | 2.9 | 3 |
| | Overall Score | 1.0 - 4.6 | 2.8 | 2.8 |

More tellingly, more than a third (16) of the developments score 2.5 or below, indicating a substantial proportion of development with a street scene response in the “inadequate” category.

At the top end of the scale, there was a small group of 7 developments in or close to the “well-considered” category, with none making it into the top category.

The overall performance is variable, but inadequate in most cases. This indicates that developers who are capable can create projects with a high quality street interface, but conversely that those who are not capable or interested can build poor quality.

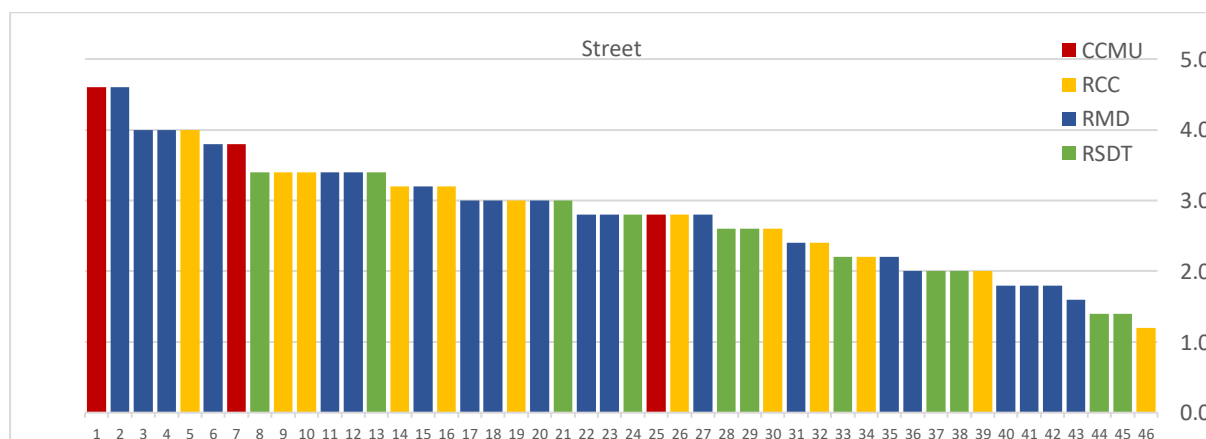


Figure 4: Neighbourhood Scale Scores by Development Site

Analysis by Category

The categories with the poorest outcomes were B2 (fostering a sense of ownership of the street) and B4 (property boundaries are well-defined and enable views of the street). The root cause of this was often an ill-considered transition between public and private areas and activities. In the RSDT zone tall perimeter fencing was identified as a particular cause of these problems and scores in this zone were significantly below those elsewhere.

The best performing categories were B1 (creating an appropriate sense of enclosure along the street) and B5 (building layout and form appropriately respond to the urban context). This is an

indication that building height and road setbacks are generally appropriate, although performance in these categories is satisfactory rather than strong.

Activation of the street frontage (B3) was provided to a basic satisfactory standard in 28 of the 46 developments (just under two thirds). There was highly variable performance in this category with 12 developments scoring a four or above. The best examples had well considered frontages well oriented to the street with doors and glazing, the poorest examples had almost no openings, for example only high level windows facing the street.

Analysis by Zone

| Zone | Average Score |
|---|---------------|
| Residential Medium Density | 2.9 |
| Residential Suburban Density Transition | 2.4 |
| Central City Zones | 3.0 |

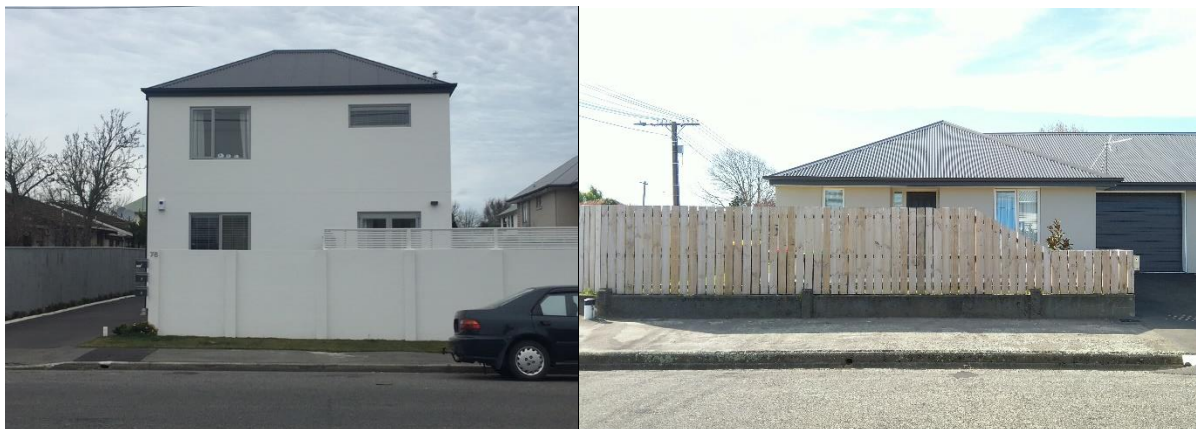
The street scale is particularly poorly resolved in the RSDT zone. Of the eleven developments, three met the basic satisfactory standard whilst the remaining 8 fell short, including two developments in the lowest category (“poor”). Reasons for this were identified as being tall fencing (often due to the location of outdoor living space) and prominent parking areas in the front setback.

RMD developments average 2.9 for the category and were highly variable in quality, including 4 that were well-resolved, and by contrast 7 that were inadequate. Strongest performances were in the B1 and B5 categories, and relatively good RMD performance will have driven the overall results here, noting that there are still a high proportion of unsatisfactory RMD developments.

Central City Zones scored 3 on average, although this was in part due to good performance of two CCMU properties (with the RCC zone scoring 2.8).

The relatively good performance of the RMD units in respect of street scene and building layout is an indication that the predominant two-storey typologies are more suitable for RMD than the inner city. This is reflected in the commentary around many of the central city developments and also reflects what is happening at the neighbourhood scale: the central city is being developed with suburban style housing, at higher densities.

RMD developments performed less well in relation to B2 (fostering a sense of ownership of the street) and the reasons for this are well documented above, relating to the prevalence of fencing, location of entrances and issues around transition space. Central city developments were also weak in this category and a common theme emerging is the lack of activity facing the street.



Examples of front fencing

Observations

A number of observations were made in relation to the street. There is a common theme, being that the space between public and private areas has not usually been well designed. This transition space is a fundamental design consideration that defines the appearance of the development and its relationship with the street. Whilst there are some good examples, in many cases, it appears to have been an afterthought. Increasing the importance of the street interface as a design consideration would substantially improve the quality of developments.

Public Interface with the Street – Failure to provide a satisfactory interface to the street, consisting of a front door and primary frontage facing the street, was common, with most developments facing either sideways to the accessway or internally to the site. This resulted in on-site and street space without sufficient passive surveillance and a limited sense of ownership.

Transition Between Publicly Accessible and Private Spaces – A transition space provides separation between houses and public areas, a space for planting and amenity and a sense of ownership and care towards the street. It provides for privacy, amenity and allows passive surveillance of the street and common property areas. A front garden would traditionally perform this role.

A consistent theme is that transitions are non-existent or not well resolved. Better performing properties often had a traditional interface with the street or driveway, consisting of front door and windows facing the street and associated with a front garden area.

There is a need to ensure that transition spaces are included in the development and well-located in respect to the street and areas such as accessways. These could include small front gardens next to the street or enlarged landscaped areas creating separation between the fronts of houses and common areas and potentially allowing for personalisation.



Above: Use of the front setback as a separate planted front garden area allows street engagement, surveillance, space for planting and personalisation and transition space. Outdoor living space is behind the building line.

Hierarchy of Space – Linked to the provision of transition space, many developments do not have a clear hierarchy of space (private space – semi-private space – common property – street) and an understanding of the role of the different types of space. Semi private space is clearly in the ownership (curtilage) of a house, but is publically visible.



Above: Hierarchy of Space from private - public

Outdoor Living Spaces - The placement of primary outdoor living space directly adjacent to the footpath creates a stark transition of ownership and results in the need for screening on the street boundary. This may be “permitted” (for instance 1.8m front fencing is permitted by RSDT built form standards) or unofficial (such as post-occupancy installed brushwood screening).

Contribution from the Street - The quality and nature of streets, including the amount of vehicle traffic, has an impact on the street environment separate to the standard of buildings. Improving the desirability and outlook of the street greatly improves neighbourhood quality.



Left: Bishop Street, St Albans (with street trees); Right: Packe Street, St Albans (without)

4.3.3 Site Scale

Key Points

- The majority of developments did not have basic satisfactory site layout.
- An unexpected result is the poor performance of sites in relation to CPTED criteria, related to fencing and inadequate transition space.
- Adequate outdoor living space was consistently provided and internal private amenity usually good.
- Privacy issues sometimes resulted from the location of bedrooms and living areas within houses, and from the location of outdoor living space next to the street or accessways.
- There was consistent poor performance relating to communal spaces such as accessways, with the exception of car free central city developments. Landscaping was consistently under-provided and not enough space was allocated to it.

Overview – Site Scale

The average score of 2.7 indicates that developments do not achieve a basic satisfactory outcome in relation to site layout on average. This shows that poor or unsatisfactory site layout was evident in the majority of medium density developments sampled.

The top third of development records a basic satisfactory performance and there was only one example of a well-considered site layout.

The remaining two-thirds of developments were at least some way short of satisfactory with the bottom third clearly in the “inadequate” category and three being rated “poor”.

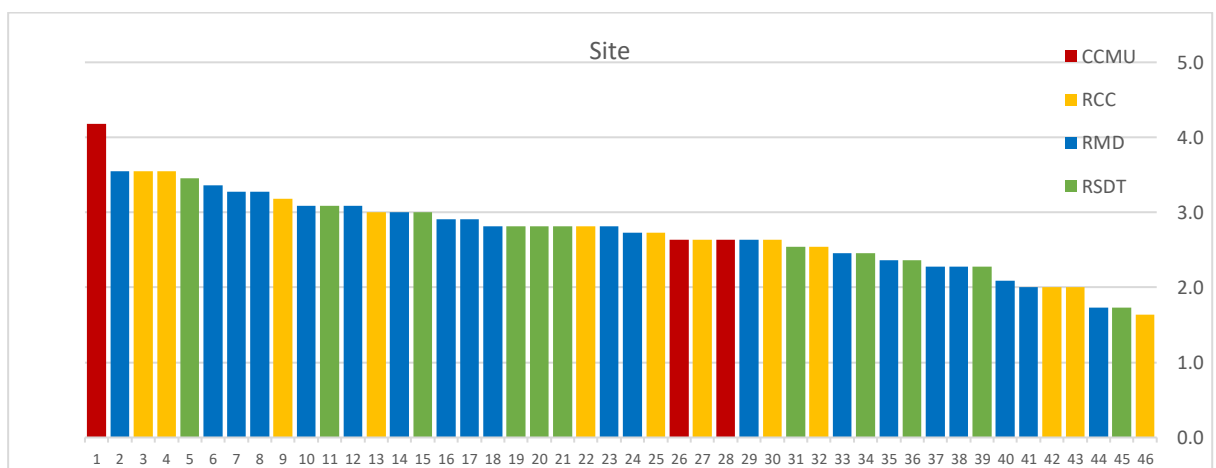


Figure 5: Site Scale Scores by Development Site

| Site | Outcome | Scoring Range | Average Score | Median |
|------|--|---------------|---------------|--------|
| C1 | An integrated and comprehensive approach to the layout of buildings and spaces | 1-4 | 2.7 | 3 |
| C2 | Provides for housing choice | 1-5 | 2.9 | 3 |
| C3 | Respectful and responsive design of interfaces and activities relating to neighbouring properties | 1-5 | 3.1 | 3 |
| C4 | Comprehensive approach taken to the design and quality of paving, landscaped areas and open space. | 1-5 | 2.3 | 2 |
| C5 | Reduce opportunities for crime by ensuring an effective layout and provision of other features to maximise safety (including the perception of safety) | 1-4 | 2.5 | 2.5 |
| C6 | Appropriate provision and location of private outdoor living spaces | 1-5 | 3.2 | 3 |
| C7 | Appropriate provision, location and design of communal open space | 1-4 | 2.5 | 2 |
| C8 | Provide for the safe and efficient movement of pedestrians, cyclists and vehicles | 1-5 | 3.1 | 3 |
| C9 | A sound car parking strategy is utilised, and the visual impact car parking where provided is minimised. | 1-4 | 2.8 | 3 |
| C10 | Efficient and effective provision of services and storage areas | 1-5 | 3.1 | 3 |
| C11 | Incorporation and promotion of sustainability across the site | 1-4 | 1.8 | 2 |
| | Overall | 1.6-4.2 | 2.7 | 2.8 |

Analysis by Outcome Category

Across the outcomes, there were two areas which were in the inadequate category, with scores of around 2. These were C4 (Comprehensive approach taken to the design and quality of paving, landscaped areas and open space) and C11 (Incorporation and promotion of sustainability). A third area of weakness is C5 (Reduce opportunities for crime) which recorded 2.5.

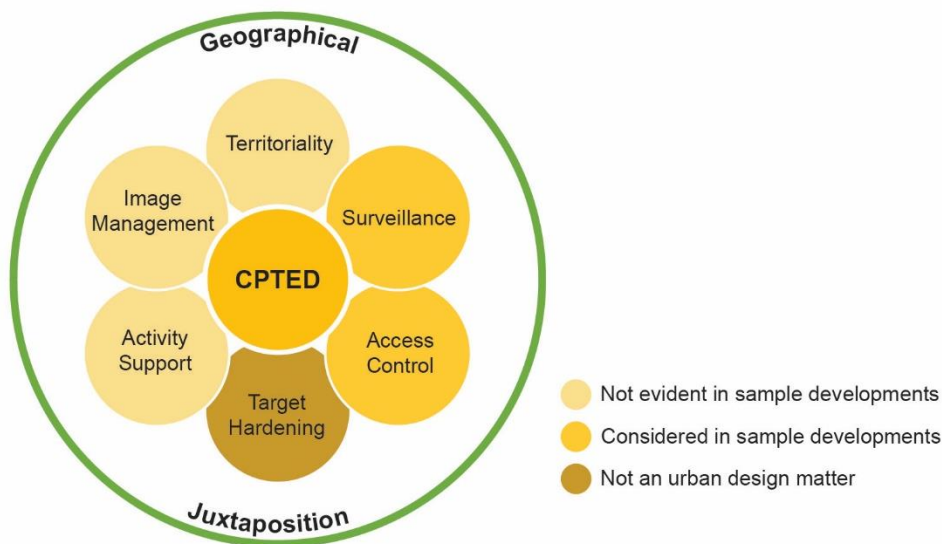
Another observation is the good performance of C6 (outdoor living space) as opposed to the poor performance of C7 (communal outdoor space, which included common areas such as accessways). This poor performance of the communal space is also reflected in the more variable performance of sites against the criteria in C8-10. This indicates an under-allocation of space and resources to communal areas.

Finally, the proposals recorded a basic satisfactory score against C1 (increasing housing choice). Developments were often of a single typology, but did increase the choice of housing in the wider area.

The poor performance in C4 is in spite of relatively well-rounded provisions in the District Plan. In most cases the landscaping, particularly within communal or publicly accessible spaces was poorly considered and very limited. Generally very little space was given to landscape beyond that of the hardstand that formed the vehicle access. What was included had minimal impact, low visual amenity and little ecological value. There were only a few good examples.

With regard to C11, in the absence of comprehensive sustainability provisions within the District Plan, it was expected that this would be an area of weakness. Developments that performed well usually did so through the incorporation of stormwater management, landscape treatment, technological additions or food growing within communal areas. There were, however, very few examples of this and the majority of developments rated inadequate or below.

A particularly significant and unexpected finding is the poor overall score for C5 (Reduce opportunities for crime), which has some focus in the District Plan. This reasons for poor performance are often associated with fencing, and the interface between public and private areas either not providing opportunities for passive surveillance or not providing for privacy (so that people close their curtains). There is also a notable lack of transition space and front garden areas which support the principles of territoriality and image management (that a space has a legitimate use and is cared for). There appears to have been a narrow focus on surveillance and access control rather than the full spectrum of CPTED principles.



Above: CPTED strategies (Adapted from Cozens et al, 2005)

Scores relating to the appropriate provision of private open space stood out as a positive (C6). Gardens were generally well-proportioned and located and were usable and accessible. They worked well from a user perspective, but it is noted that they did often create issues with respect to the street interface when private space is located next to the street, instead of transition space.

This was in contrast to the score for C7 (Appropriate provision, location and design of communal open space). This includes the design of common space including accessways and recorded an inadequate outcome in the majority of cases. Limited amenity environments which were frequently car dominated were prevalent, with little effort made to create a quality accessway. This reflects the situation described under C4.

Scores for C8, C9 and C10 were generally satisfactory overall. These related to functional aspects of the development included car parking and servicing. The overall scores do hide some variability. For instance, the car-free developments in the central city tended to provided safe and high amenity access whilst some of the other accessways were found to be car dominated,

including with additional cars parking in common areas (eg in front of garages). Bin storage was sometimes poorly screened or reduced the usable garden areas.

A basic satisfactory score was recorded in relation to C3, the interface with neighbours, which was generally satisfactory, although the performance was variable with some good and some bad examples. Overlooking of private areas was identified as a problem in a minority of cases along with some issues of visual dominance. This may be an issue which some developers are aware of and considerate of, but it may not be being adequately managed where they are not.

Analysis by Zone

| Zone | Average Score |
|---|---------------|
| Residential Medium Density | 2.7 |
| Residential Suburban Density Transition | 2.7 |
| Central City Zones | 2.8 |

The scores for the different zones were very consistent, and did not meet the basic satisfactory threshold.

RMD properties averaged 2.7, in line with the overall score. They followed the general trends in the scale outlined above, with satisfactory private space and lower quality communal space.

RSMT properties also scored 2.7. They performed better than average in respect of C3 (interface with neighbours), likely because of a lower intensity and a higher proportion of single storey units. They performed worse with regard to housing choice (C2) because they often provided a similar outcome to the established dwellings in the area. They also under-performed with regard to C7 and C8 which relate to communal space and accessways, which were often unlandscaped.

The central city sites likewise tended to follow the general trends with certain exceptions. They averaged a respectable 3.5 for C8 (Provide for the safe and efficient movement of pedestrians, cyclists and vehicles), largely due to the influence of the car free developments, illustrating the adverse impact that cars have on developments if not well managed. They scored lower than other areas for storage and for the interface with neighbours. There were particular issues with privacy for some developments, and a lack of suitable space for servicing. This reflects the pressure on space: that the same houses are being fitted in closer together. This density creates more challenges and potential conflicts (such as smaller gardens or reduced privacy) which could be resolved with a different form. Developers may have reached the limit of what can be achieved with high density two-storey houses, but there were few good examples of the next level of density (3-4 storey houses and apartments).

Observations

Site planning is largely piecemeal and appears to be focussed on vehicle access, unit orientation and maximising yield, with little attention paid to creating high quality environments. This resulted in communal areas that were low quality, provided a poor sense of arrival and limited outlook for residents. The spaces functioned as service areas rather than a positive shared amenity. To a large extent this is due to a lack of space being provided as opposed to other design choices.

Over-reliance on off-site amenity – Many of the neighbourhoods lack smaller, more localised, offsite spaces to offset the intensity of development, and streets were often limited in amenity (for example no street trees). The developments (and rules) rely on a higher quality of public environment than is usually present.

Accessway design – There needs to be a greater focus on the overall design and amenity of accessways. These usually provide the principle access to each unit by foot and car but often lack a comprehensive landscape design, appropriate separation between the accessway and units or a clear pedestrian access. In some cases the driveway was used in ways that were not intended, but were foreseeable. Examples include bins stored on accesses where individual storage areas were inconvenient, and cars parked in manoeuvring spaces (in front of garages), sometimes blocking access to front doors.

Crime Prevention Through Environmental Design (CPTED) principles were not well implemented in the proposals. The developments usually provided windows overlooking streets and accessways but this did not always translate to oversight of public areas due to fencing obstructing views and a lack of separation meaning that privacy was compromised – occupiers responded to their environments by closing curtains. This tension between oversight and privacy is a key issue to resolve through site planning rather than mitigation which is often unsatisfactory. Other issues identified are a lack of a sense of ownership for the semi-private areas and not enough custodianship of the landscaped areas (which may lead to a lack of long-term maintenance). Most seriously, a number of developments contained entrapment spaces which can create risks for concealment and physical assault.

4.3.4 Building Scale

Key Points

- The RMD and RSDT sites scored much more highly in the visual appearance related outcomes than the central city sites. The Central City is not achieving a basic satisfactory score in these matters.
- The functional outcomes were consistently basic satisfactory or better.
- The outcomes relating to innovation and sustainability were almost never achieved.
- Detailed architectural design appears to be being used to attempt to mitigate problems caused by poor site layout.

Overview – Building Scale

The building scale covers a variety of outcomes, from functional aspects through to visual qualities. While some are based on aesthetics, they have been measured based on performance with respect to urban design outcomes rather than architectural merit or taste.

This category is made up of three distinct sets of outcomes: Appearance related matters (D1-D5), Functional outcomes (D6-D10) and Sustainability and Innovation (D11 and D12). There is a breadth of subject matter and it is not surprising that there is significant variation in the average scores and scoring ranges.

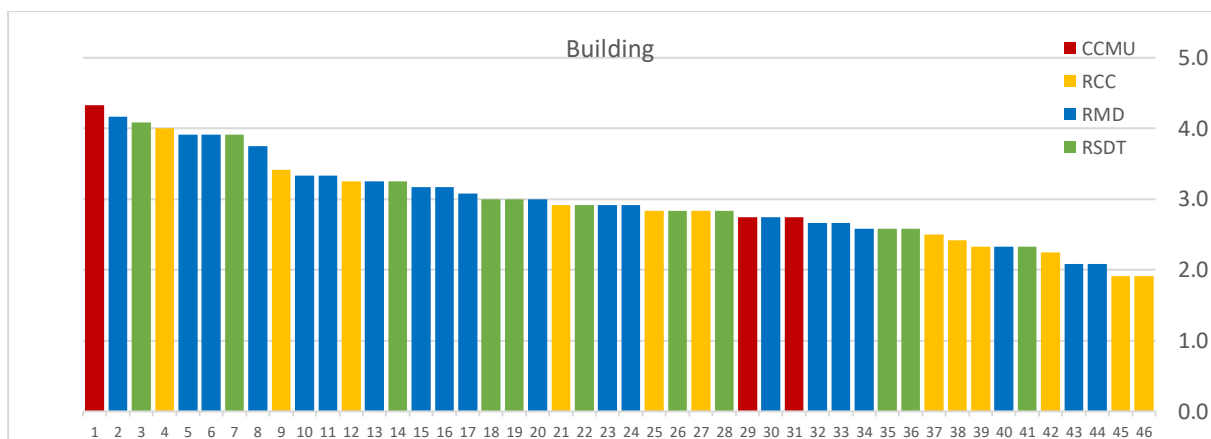


Figure 6: Site Scale Scores by Development Site

Both the average and the median were close to 3 in this category overall. The performance is quite variable with consistent good performance in some categories and under-performance in others.

Whilst performance is satisfactory on average, there is variation across the sites and zones. The most striking finding is the difference in the appearance related matters in the central city compared to the better performing RMD and RSDT zones. These outcomes are not being achieved in the central city, which may reflect the more intensive development or the relatively relaxed zoning provisions.

| Sub - Category | Building | Outcome | Scoring Range | Average Score | Median |
|-------------------------------|----------|---|---------------|---------------|--------|
| Appearance Related | D1 | A visually interesting and cohesive approach to the building form | 1-5 | 2.9 | 3 |
| | D2 | Variation and steps in the building line | 1-5 | 3.2 | 3 |
| | D3 | Sufficient breaks in the roofline | 1-5 | 3.2 | 3 |
| | D4 | Designing to a domestic scale | 1-5 | 3.0 | 3 |
| | D5 | Use high quality materials | 1-5 | 3.1 | 3 |
| Functional | D6 | Coordinated internal/ external relationship | 2-5 | 3.3 | 3 |
| | D7 | Provision of adequate storage | 2-5 | 3.6 | 4 |
| | D8 | Logical and efficient layout | 2-5 | 3.6 | 4 |
| | D9 | Protecting privacy and minimising overlooking | 1-5 | 3.0 | 3 |
| | D10 | Enabling of natural ventilation, solar gain and daylight penetration | 1-5 | 3.7 | 4 |
| Innovation and Sustainability | D11 | Promotes energy efficiency and incorporates sustainability features | 1-4 | 1.8 | 2 |
| | D12 | Demonstrates innovation and creativity in build design, form and function | 1-4 | 1.3 | 1 |
| | | Overall | 1.9 - 4.3 | 3.0 | 2.9 |

Meanwhile, the functional outcomes are met quite consistently and those for sustainability and innovation are almost never met.

Approximately half of the developments met the basic satisfactory threshold or were close to it, and satisfactorily addressed basic urban design principles, with a fifth being in the well-considered range. However, a third of developments fell significantly short of the threshold.

Analysis by Outcome Category

Appearance Related Outcomes (D1-D5)

Outcomes D1-D5 are focussed on the visual aspects of the building and are consistently close to the basic satisfactory threshold. The best performing are D2 and D3 which relate to steps in the building line and the roofline respectively. These matters that shape the building envelope were usually met satisfactorily, although there was variability across the zones. Performance in relation to D4 and D5 was somewhat lower overall. These matters relate to the more detailed resolution of the design.

The lowest score of these five outcomes was D1 “A visually interesting and cohesive approach to the building form”. Scores in this category were much more variable, with a small number of “best-practise” scores balanced by some poor outcomes. Sites that scored poorly in D1 usually also recorded lower scores in some of the other categories. A common theme in the poorest performing sites is the use of tack-on features like variations in cladding to mitigate poor site layout or monolithic buildings, notably within the central city.

The relationship of D1, which is concerned with overall appearance, to the other appearance – related scores suggests that the individual rules and requirements are understood, but that the bigger-picture goal of cohesive design has not been so consistently met. Developers may be using the individual elements to mitigate more deep-lying issues (e.g. creating interest with steps) rather than dealing with the root cause.



Example of visual interest in a medium density development

Functional Outcomes (D6-D10)

Outcomes D6-D10 are focussed on functional aspects of the design. The developments performed relatively well, particularly with respect to the arrangement and proportions of living spaces, connection to outdoor living space and storage. This is a positive result given that space can be quite constrained on medium density sites, especially at the ground floor. These are all matters that directly benefit the internal private amenity of the occupants.

Sustainability and Innovation (D11-12)

Within the scale, two outcomes stand out with notably low scores. As within the Site category there is a shortcoming related to sustainability (D11), with an average of below 2 likely to be linked to the limited measures within the district plan.

The poorest performing outcome across the assessment was D12, the demonstration of innovation and creativity. Only one site recorded a basic satisfactory score in relation to this outcome, with the remainder of sites taking a more standardised and formulaic approach.

Analysis by Zone

| Zone | Average Score | D1-D5 | D6-D10 |
|---|---------------|-------|--------|
| Residential Medium Density | 3.1 | 3.3 | 3.5 |
| Residential Suburban Density Transition | 3.0 | 3.2 | 3.4 |
| Central City Zones | 2.8 | 2.7 | 3.4 |

There is a disparity evident in the visual appearance outcomes, between the performance of the RMD and RSDT sites which each averaged comfortably over 3, and the central city sites, which averaged 2.7.

This was particularly evident for D2 and D3, which indicates central city designs may be quite monolithic; and the low scores occur through both townhouse types and apartment blocks. The cause may be an increase in intensity compared to RMD sites, or the more relaxed zoning. These lower scores are reflected in a lower score for D1 visual coherence and the conclusion is that central city developments are unsatisfactory for the visual appearance criteria.

By contrast, RMD developments are comfortably in the satisfactory range, averaging 3.3 and the highest performing zone overall. For all zones the best performing outcome was D10 enabling natural ventilation, solar gain and daylight penetration. With the exception of D11 and D12, RMD sites scored 3.4, which is comfortably within the satisfactory range overall. This good overall performance does disguise some variability and some individual developments (around a quarter) which were significantly below the basic satisfactory threshold.

RSDT also scored well overall. RSDT typologies are often formed using standard group housing type plans joined together, which generally have more complex rooflines and feature steps in the walls. The lowest scores were from more standard medium density typologies which were often quite boxy (lacking variation in form) and appeared out of place when surrounded by low and moderate densities. These were a small part of the sample but this is a typology that is permissible and could become more prevalent depending on market trends.

Lower scoring RSDT categories were D4 and D5, designing to a domestic scale and use of high quality materials. For D4, there was very variable quality, with some developments including a good proportion of glazing and some providing very little. There was often the use of a single material with little in the way of detailing or visual interest or variation in colour. Developments that scored higher overall had a notably better use of materials.

Observations

Building architecture – There is an over-reliance on architectural detailing to act as mitigation for more fundamental site layout and building form issues. This is a predominant issue in matters relating to visual dominance and engagement with the street. For example, where a development has not appropriately addressed the street with its primary frontage and main entrance, this has been mitigated through incorporation of a secondary entrance towards the street and inclusion of additional articulation, such as changes in cladding, to break up the

façade. This however does not address the more fundamental issues of passive surveillance, activation and sense of ownership of the street.

The lower scores in the central city zones reflect higher densities where architecture is being used to mitigate issues with site layout. The higher densities make this a less effective approach than in other zones.

Standardised typologies – Standardised typologies may not take into account the context and result in a range of poor outcomes. Whilst standardised typologies are often appropriate, there will be sites that require a more bespoke approach. For example, typologies suitable for mid-block locations may not be suited to corner sites, or suburban typologies delivered on more space constrained sites may result in a car dominated environment. An observation from the RSDT zone is that bespoke designs performed significantly better than standard types.

Mix of typologies – With a few exceptions, most developments have only a single typology on the site, with potentially some changes to articulation and layout. There may be some interest in the form, but on larger sites the uniformity of the architecture can create a bland outcome.

Creativity and innovation – Given the constrained nature of sites, there is a need and opportunity for creativity to craft individual solutions to suit the site. This was limited in the sample, although the potential was illustrated by one development with a bespoke typology that made best use of a rear section by using multi-functional spaces.

5 Design Issues

From the consideration of urban design outcomes presented in the previous section, a number of overarching design issues have been identified. These are as follows:

- There is a tension between the existing character and the anticipated form of development. Smaller sites tend to complement the existing character due to the scale and form of development.
- Despite the more enabling zoning, there has been limited development of apartments and higher density in the Central City. More intense town house complexes are most common. Where more intense apartment development was built, it was often monolithic in appearance.
- RSDT zoning led to consistently poorer outcomes than RMD zoning, despite the lower density. This is particularly in regard to the street interface and communal areas.
- Developments do not always contribute positively to the street scene. High front fencing and a lack of front gardens and front doors facing the street were identified as issues, along with outdoor living space located adjacent to the street.
- House layouts often had bedrooms adjacent to accessways and the street rather than kitchens or living rooms. This creates privacy conflicts and does not achieve passive surveillance.
- CPTED outcomes are not being achieved and there is a focus on surveillance (which was not always successful) and access management rather than a broad based CPTED approach.
- There was consistent poor performance relating to communal spaces such as accessways. Landscaping was consistently under-provided and the sense of arrival was undermined by dominance of car parking and service areas. There was no clear hierarchy of space and the purpose of space was not always clear.
- The majority of developments did not have basic satisfactory site layout. This was the root cause of issues including CPTED, the poor street interface and the poor amenity of communal areas. A lack of a clear hierarchy of space was a particular problem.
- Building scale outcomes were mostly met. However, Central city developments were often monolithic and RSDT developments sometimes lacked detail and human scale.
- The outcomes relating to innovation and sustainability were almost never achieved.

The majority of these issues are related to poor site layout and a particular theme is the street interface (and that with accessways). There has been insufficient space allocated to front gardens or communal space and the resulting environment is not as safe or as pleasant as anticipated. Developers also need to consider how the internal layout relates to public areas, to avoid privacy issues and ensure that good surveillance is achieved.

These issues are presented by zone in the table below:

| SCALE | ISSUE (Problem) | RSDT | RMD | CC |
|---------------|---|-------------|------------|-----------|
| Neighbourhood | Lack of suitable high density typologies | No | No | Yes |
| | Tension between existing and anticipated character | No | Yes | Yes |
| | Scale of development is not well matched to location (services/trans) | No | No | No |
| | Limited increase in housing choice | Some | No | No |
| Street | Tall fencing or screening | Yes | Some | Yes |
| | Prominent car parking | Yes | No | No |
| | Location of entranceways (developments without front door(s) facing the street) | Yes | Yes | Yes |
| | Insufficient landscaped threshold / transition | Yes | Yes | Yes |
| | Insufficiently engaging front facade | Yes | No | Yes |
| Site | Poor quality accessways | Yes | Yes | Yes |
| | No space for servicing | Yes | No | No |
| | Poor CPTED outcomes | Yes | Yes | Yes |
| | Poor indoor / outdoor private space | No | No | No |
| | Indoor privacy issues | Yes | Yes | Yes |
| | No clear hierachy (and purpose) of space | Yes | Yes | Yes |
| | Outdoor living space location (privacy issues / fencing issues) | Yes | Yes | Yes |
| Building | Poor visual appearance (form) | No | No | Yes |
| | Poor visual appearance (articulation) | Yes | No | No |
| | Poor functional outcomes | No | No | No |
| | Innovation / sustainability outcomes not met | Yes | Yes | Yes |

6 Comparison with Previous Studies

6.1 Overview

A previous study was carried out in 2009, using a similar methodology, and was the basis for amendments to the District Plan at that time, which were implemented in 2011 and operative until 2016 (when they were replaced by the current District Plan).

Whilst a direct comparison is not possible, there are some clear insights to be gained from comparing the studies.

The criteria used for the original study were geared towards amenity, with a focus on street scene and appearance. Whilst these matters are part of the new assessment, the current study is more comprehensive and better reflects what is now considered to be best practice.

Comparing the raw results is not meaningful but what is possible is a consideration of the narrative in the two studies and a conversion of the newer data into an approximation of the 2009 methodology – the earlier criteria generally have an equivalent in the new set.

Two diverging trends are evident: An improvement in outcomes in the RMD zone and a deterioration in the RCC zone.

The original study did not include consideration of the Living 2 zone (equivalent to RSDT), so any comments are restricted to Living 3 (RMD) and Living 4 (RCC).

Some observations in development trends between the two samples were:

Site layout – An increase in the use of standardised typologies was observed. These can be harder to integrate into smaller sites than bespoke designs.

Density – An increase in density between the two surveys:

For the L3 zone in 2009, 70% of sites were below 50 household/hectare (site density), with the most frequently occurring density being between 40 and 50hh/ha. In 2019, the equivalent for the RMD zone was 40% below 50 hh/ha with density being concentrated between 48 and 65 hh/ha.

For the L4 zone, the majority of 2009 developments (54%) were higher than 70 hh/ha. In the RCC the equivalent was 75%.

In 2009 it was observed that higher density was correlated with lower scores, however it is not possible to discern this trend in the recent data. This may be due to a more limited sample size.

Building form – Although there is an expectation in the current District Plan framework that the bulk of building is managed, outcomes have not necessarily improved. This may be related to the increase in density and a greater need to maximise the building envelope.

Street scene – New developments usually have a greater emphasis on frontages addressing the street and an improved approach to the street boundary, and the street interface has improved since 2009, in the RMD zone at least.

6.1 Comparison by Zone

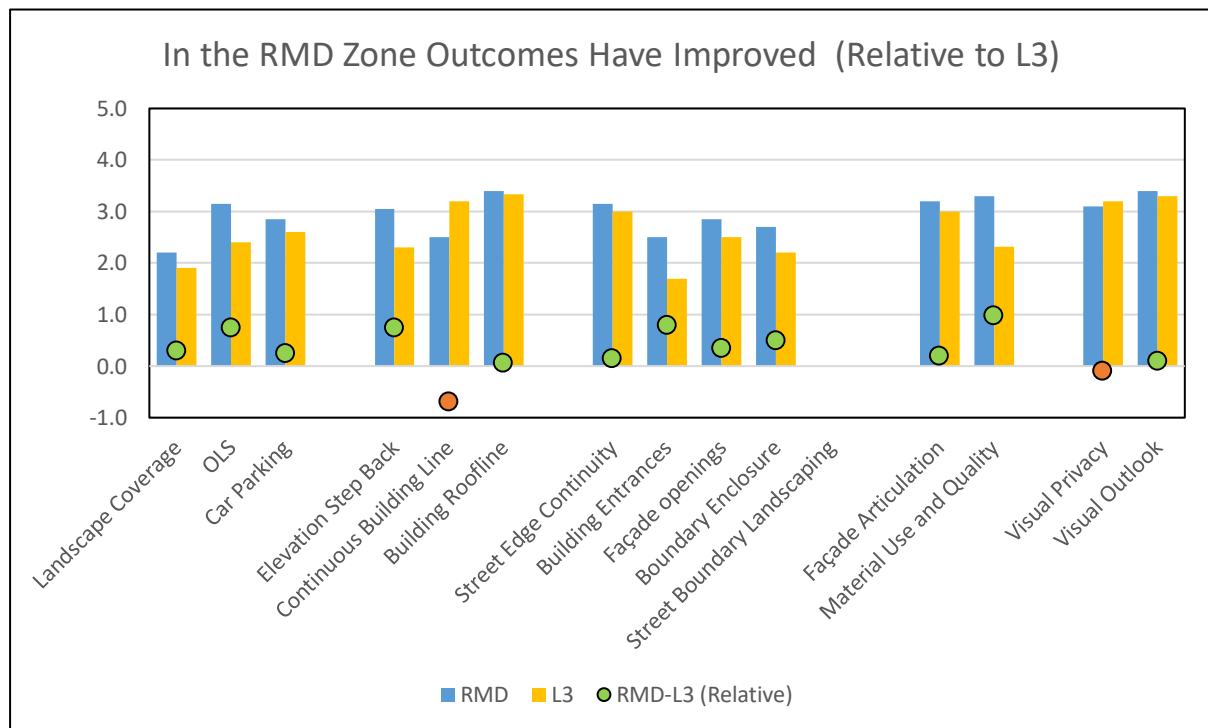
6.1.1 Residential Medium Density Zone

Results in the RMD zone are significantly improved overall, with improvements in most categories.

In particular, all street scene criteria show at least some improvement as does *Material use and Quality* and *Elevation Setback* (although this is mapped to D1: A Visually interesting and coherent approach to the built form).

Of note is the improvement in Outdoor Living Space, a direct comparison and a focus of the previous study which noted particular problems in the L3 zone.

Under the translated criteria, RMD outcomes have improved from 2.6 to 2.9. Whilst not representing best practice, there has been positive progress. It is also important to remember that this has taken place in the context of increasing density. This factor may explain the lack of improvement for continuous building line and building roofline. Newer developments use more of the building envelope, with less scope for variation in form. The same is likely to be true of privacy (which has declined slightly) – higher density units are often more intrusive.



6.1.2 Residential Central City Zone

In contrast to the RMD outcomes, Residential Central City Developments appear to be lower quality than those in the 2009 study. This trend is most pronounced for building form outcomes, and more mixed for street scene matters.

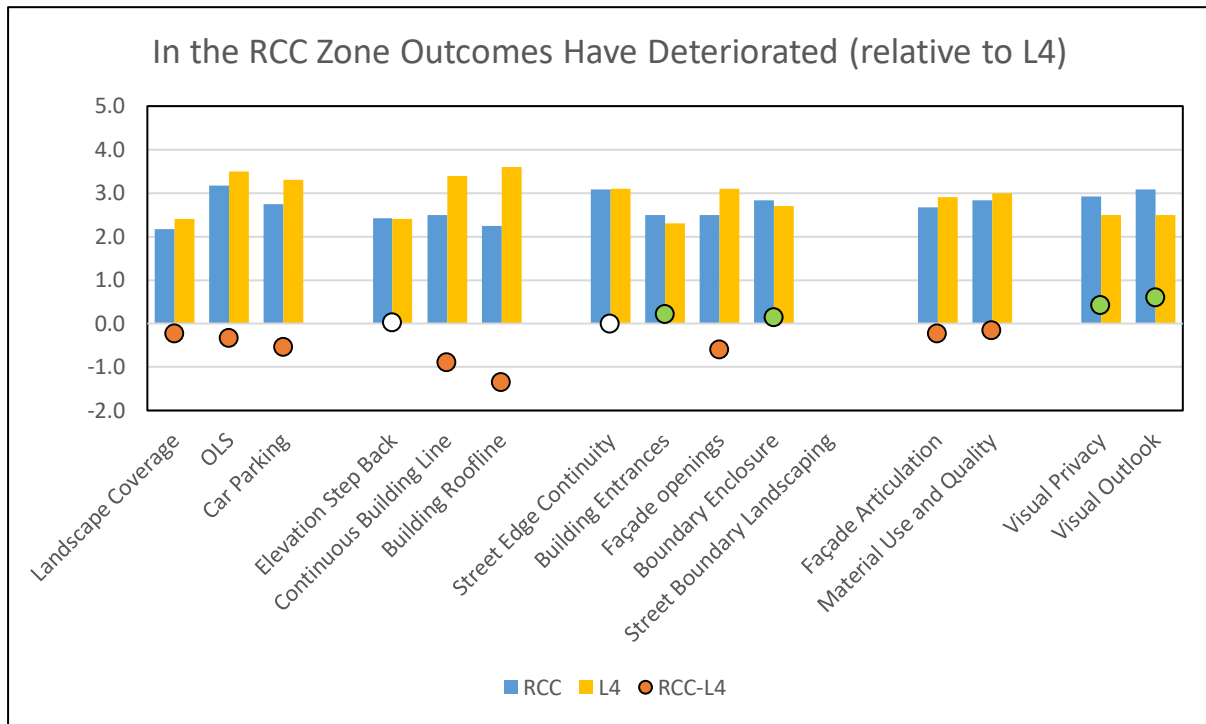
The previous study results differed from the new ones in that L4 outcomes were better than those in the L3 zone. This position has reversed in the new survey with RMD significantly outperforming RCC.

One observation is that there has been a move away from apartment typologies for lower density developments towards townhouses. In a central city context, there is an increased desire to

maximise the built form within the context of the typology and a terrace is often a less efficient use of the site. This may be the cause of the poorer outcomes in relation to site layout – the new typologies are less suitable for their context.

It is also the case that the bigger drops in performance have come in the categories where scores were highest in 2009. Aspects of relatively good performance have become areas of poor or middling design quality.

The sample size in the residential central city is quite small and these results require further investigation to confirm the veracity of these trends.



7 Assessment against the Christchurch District Plan

6.1 Objectives and Policies

6.1.1 Policy Framework

The relevant objectives and policies in the Christchurch District Plan are outlined below. The principle design related objective in the District Plan is 14.2.4:

14.2.4 Objective - High quality residential environments

High quality, sustainable, residential neighbourhoods which are well designed, have a high level of amenity, enhance local character and reflect the Ngāi Tahu heritage of Ōtautahi

In implementing this objective, the most relevant policy is 14.2.4.1:

14.2.4.1 Policy - Neighbourhood character, amenity and safety

Facilitate the contribution of individual developments to high quality residential environments in all residential areas (as characterised in Table 14.2.1.1a), through design:

- i. reflecting the context, character, and scale of building anticipated in the neighbourhood;*
- ii. contributing to a high quality street scene;*
- iii. providing a high level of on-site amenity;*
- iv. minimising noise effects from traffic, railway activity, and other sources where necessary to protect residential amenity;*
- v. providing safe, efficient, and easily accessible movement for pedestrians, cyclists, and vehicles; and*
- vi. incorporating principles of crime prevention through environmental design.*

This policy is implemented through a framework of rules and assessment matters that vary by zone, and are discussed in the next section. The success of otherwise of the policy framework is dependent on successful application of an appropriate set of rules.

Of the policies above, nos. i-iii and vi are the most significant contributors to good urban design outcomes and the summary focusses on these.

Also relevant is policy 14.2.4.2. Whilst this policy is primarily concerned with the approach to planning and processing applications rather than outcomes, item (v) has some relevance. It seeks some sustainability related outcomes, however it is notable that there are no rules that would implement this aspiration:

14.2.4.2 Policy - High quality, medium density residential development

- v. promoting incorporation of low impact urban design elements, energy and water efficiency, and life-stage inclusive and adaptive design;*

Policy 14.2.4.4 (ii) is concerned with the character of low and medium density areas, with item (ii) being concerned with medium density areas:

14.2.4.4 Policy - Character of low and medium density areas

- ii. *medium density areas are characterised by medium scale and density of buildings with predominantly two or three storeys, including semi-detached and terraced housing and low rise apartments, and landscaping in publicly visible areas, while accepting that access to sunlight and privacy may be limited by the anticipated density of development and that innovative approaches to comprehensively designed, high quality, medium density residential development are also encouraged in accordance with Policy 14.2.4.2.*

A detailed assessment of the response to policies is set out below, in which it is noted that the developments do not meet the policies because they do not consistently meet a “basic satisfactory” standard, let alone the “high quality” required by some of the policies.

A general observation is that the issues are related to site layout and that whilst there are policies which manage most of the aspects of development, there is no fundamental requirement for good site layout. This may encourage the use of mitigation measures to flawed designs, rather than an approach that unsuitable design should be tackled through changes to site layout.

Otherwise, the policies broadly describe good practice urban design, and the urban scales methodology provides a sound basis for assessing how effective their implementation has been.

There is clearly a balancing act to be achieved in ensuring good urban design outcomes and other matters that may be sought by the plan, that are beyond this report. However, in achieving this balance it is reasonable to assume that an overall “basic satisfactory” score is a reasonable minimum standard, and that in some cases, notably where “high quality” is required, a higher score, possibly in the “well-considered” range, is a more appropriate benchmark.

Given that the main Objective in the plan is for “High Quality Residential Environments” it would be expected that more than “basic satisfactory” outcomes would be obtained at least most of the time. With the average development sitting around this basic satisfactory level, and a substantial proportion being below it, it is clear that the policies are not being met.

Some amendments to the policy framework are suggested but in the main the failure to create consistent high quality is likely to be in the rules framework and its implementation, discussed in the next section.

Reflecting the context, character, and scale of building anticipated in the neighbourhood

This policy is generally equivalent to the neighbourhood scale.

The sample developments appear to broadly meet this policy to a large part due to their zoning. Developments in all four zones scored well with regard to neighbourhood level outcomes and in particular that the type and intensity of development was appropriate to the neighbourhood. This indicates that the approach taken in the Plan to zoning, which has matched density to the level of provision of facilities, has created appropriate outcomes.

There were some potential issues noted in respect of context and character:

- Whether the area is an established medium density area, or whether existing housing is of a more traditional stand-alone type, new medium density development is introducing a change in form. In the latter case it can look incongruous with a larger scale building with a greater visual impact and a different character. A similar issue was observed at the edge of neighbourhoods or zones, where new development fitted its underlying zone but could contrast with what had been built nearby.
- Conversely, in the central city, the scale of development was observed to be insufficient to fit the more intense urban environment because of the use of suburban typologies. In

these instances the developments may not have provided the scale of development anticipated but may have fitted the existing character better.



In an established medium density neighbourhood, new development fits the existing character

The above points highlight an obvious challenge with intensification where the anticipated character is different to the expected.

The policy appears to place little weight on the retention of any existing housing, regardless of its age and condition. The emphasis is on the type of building anticipated in the neighbourhood. This carries an implication that it should reflect the zone and rules rather than its surroundings.

There is a social and environmental value in retaining some existing housing stock (for example in terms of retaining a sense-of-place and also in the embedded resources used in its construction). This may conflict with the objective of increasing density but at present it does not appear to be given much weight at policy level. In effect this tension seems to have presently been resolved in favour of allowing new development without consideration of its impact on existing character. The impact on the ground is that new buildings can appear incongruous in their environments. However, it is not clear how easy it would be to resolve this tension in reality.

This issues were observed in the RMD and Central City zones, but was not so apparent in RSDT where new development was found to a more comfortable scale which sat well within its context.

Contributing to a high quality street scene

The quality of the street interface was identified as being unsatisfactory in a majority of developments throughout the sample and it is clear that development does not consistently contribute to a high quality street scene. It seems clear that this policy is not being met.

Creating a good street interface requires a well-considered approach to the whole development, not just the front façade. However, development is space-constrained and the use of space is contested. As noted in the RMD / RCC zone report (Boffa Miskell, 2020): “without an appropriate layout or proper consideration for access and order of space across the overall development, achieving a balanced outcome that delivers for both the street and the development is very difficult”. This identifies that the issue with street interface is often an issue with site layout.

The approach used in the sample appears to be about boundary treatment, placement of habitable spaces and building articulation. These each can make contributions to a high quality frontage, but they are being used to mitigate problematic site layout.

In particular, the presence of outdoor living space at the front of the site was identified as a cause of poor-quality street frontages.

In essence the policy appears to be sound, but is not being realised in practice. The policy seeks “high quality” which certainly means at least a basic satisfactory response from each development. Given the clarity of the policy, the cause of the underperformance must lie with the rules and implementation.

Providing a high level of on-site amenity

This policy maps in part onto the site scale, although is more restricted to amenity on the site, as opposed to how the site affects its surroundings. The majority of developments did not have basic satisfactory site layout.

Whilst space is constrained on medium density developments, this places a greater emphasis on design to generate adequate amenity. It is also noted that developments generally achieve a much higher density than expected and as such space should not necessarily be a problem. There is an unwillingness to set space aside to achieve amenity aims, rather than a physical shortage of space.

There was generally a good level of private amenity within the developments, but they did not score highly for the amenity of common areas such as accessways, which are often treated like service entrances rather than front accesses.

The policy is quite directive in seeking a “high level of on-site amenity” which implies a positive response is required. This is clearly not being achieved. However, it is not clear what exactly is meant by “a high level”. It is certainly likely to mean that every development should be at least basic satisfactory, but it is uncertain whether or not a higher standard is intended than what is a basic urban design response. Some clarification of this would be helpful.

Notwithstanding the above and as for the previous policy, the cause of the inconsistent performance in relation to this policy must lie with the rules and implementation.

Incorporating Principles of Crime Prevention Through Environmental Design

The urban scales assessment framework includes a matter directly related to CPTED (C5), which indicated an unsatisfactory response overall, with half the developments failing to rate as at least “basic satisfactory” on the assessment matrix. Given the existence of a specific policy for it, this was an unexpected finding.

Whilst CPTED matters appear to have been incorporated into designs, these measures often seem to be afterthoughts, to meet consenting requirements. This means that they often do not result in the best CPTED outcome. It also means that it compromises other outcomes such as privacy both within the house and of outdoor living spaces.

A typical example is when outdoor living space has been placed at the front of the site, and transparent fencing used to provide observation of the street. This creates a trade-off between privacy and street oversight when a high quality outcome requires both. In this case, the site layout is the cause of the problem and tenants often resolve it by retrofitting screening at the expense of CPTED outcomes. Another example is where bedroom windows are placed directly next to accessways to provide overlooking, but result in loss of internal privacy from people walking past. In this case, the result is often that curtains are drawn and CPTED outcomes again unrealised. In both cases, the site layout causes problems and the mitigation is unsuccessful.

The problem is identified by Boffa Miskell as a failure to undertake design in a comprehensive fashion and a need to have stronger District Plan provisions for site layout identified as a solution. In essence, without more thorough consideration of site layout, it is too late to get good CPTED outcomes.

The District Plan includes assessment matters in the RMD and RCC zones for CPTED, but not for other zones. Performance was poor in all zones, but marginally worse in RSDT where there is no management of the issue in the Plan.

The policy is not met, in this case by half the developments.

Promoting incorporation of low impact urban design elements, energy and water efficiency, and life-stage inclusive and adaptive design;

The policy is concerned with sustainability, but it has no methods associated with it that might achieve these aims in medium density environments. Scoring against these matters was consistently in the “poor” and “inadequate” categories. This policy is having little effect.

The way that the policy is worded (“promote”) does not require compliance and as a result there are no rules associated with it. The policy may encourage these desirable elements in a development, and allow them to be weighed as positives in an application process. However, if widespread adoption of these aims is sought, a more directive policy is required.

Character of low and medium density areas

The policy clause is as follows:

medium density areas are characterised by medium scale and density of buildings with predominantly two or three storeys, including semi-detached and terraced housing and low rise apartments, and landscaping in publicly visible areas, while accepting that access to sunlight and privacy may be limited by the anticipated density of development and that innovative approaches to comprehensively designed, high quality, medium density residential development are also encouraged in accordance with Policy 14.2.4.2.

This policy contains a few considerations.

The first is concerned with scale (being medium scale) and lists some development forms which are generally met. Most development in medium density areas is two stories. There were a few examples in the central city that were higher density and this policy aspect is met by the sample.

However the central city also caters for higher densities, which the council clearly supports in its wider policies and by virtue of matters such as height limits in some areas. In general there seems to be a disconnect between what is meant by medium density housing and what is desired in the central city. There is a very wide range of developments encompassed by the term medium density, essentially being anything over 30 households per hectare up to a likely practical maximum of around 250 in parts of the central city. There is also no policy for this high density housing, when it is obvious that such housing is intended as part of the central city. It may be that a better framework would emerge if the difference between the central city density and surrounding areas was more explicit.

The second statement refers to landscaping in publicly visible areas. This has been notably problematic and it is clear that this aspect of the policy is not being fulfilled. There are assessment matters in the RMD zone which require landscaping so it is surprising it is not delivered given the framework that exists and the explicitness of the policy.

The next clause notes that access to sunlight may be limited by the anticipated density of development. This sets up a tension between this policy and 14.2.4.1 (iii) providing a high level of on-site amenity. Whilst questioning whether a high level of on-site amenity is provided if sunlight access and privacy is limited, it is also worth noting that the anticipated density does not necessarily require this compromise as is shown by the majority of developments that achieved a

basic satisfactory score. This may be a matter that should be applied to a high density environment only.

The final matter concerns innovative approaches to comprehensively designed, high quality, medium density residential development. This (D12) was the worst performing category in the assessment and the reliance on standardised houses rather than site specific design has been identified as a cause of site layout issues. This aspect is not being achieved.

Overall, the anticipated scale is mostly being achieved, however the landscaping is not, the privacy is often compromised (but probably unnecessarily) and innovative approaches have not been forthcoming.

6.1.2 Rules and Assessment Matters

Each of the four zones has a different set of rules and refers to different assessment criteria for a breach of those rules. A full assessment of the rules framework is not within the scope of this report, but some general observations can be provided.

A key difference between the zones is the assessment category that proposals are assessed under. This affects whether they are permitted “as of right” development, or whether some sort of discretionary consent is required (which may allow Council to influence the form of development). It also affects some of the bottom lines that must be considered (for instance window setbacks on internal boundaries to manage privacy).

The activity status in the four zones is shown below:

| Zone | No of units above which RD consent required |
|-------------|--|
| RSDT | 4 |
| RMD | 2 |
| RCC | 2 |
| CCMU | N/A |

CCMU is clearly the most relaxed zoning in regard of when applications are required. However, RSDT developments are often of a single site and undertaken by a small developer so in practice the limit of 4 units is permissive. For instance, none of the 11 RSDT developments assessed would have required restricted discretionary (RD) assessment.

6.1.3 Built Form Standards

A comparison of urban design related built form standards is shown below:

| RULE | RSDT | RMD | RCC | CCMU |
|------------------------------|---------------------------------|---|---|----------------------------------|
| Landscaped Area | 20%, 1 tree / 250m ² | 20%, 1 tree / 250m ² | 20%, 1 tree / 250m ² | 2m front strip (5%) 1 tree / 10m |
| Height | 8m | 11m | Varies - usually 11-14m | Varies - 14-17m |
| Site Coverage | 40% | 50% (inc eaves) | | |
| OLS size | 30m ² / 4m dimension | 30m ² (16m ² private) / 16m ² (1 bed) / 4m dim | 24m ² (8m ² private) / 4m | 20m ² / 4m |
| Balconies | | 6m / 1.5m | 8m ² / 1.5m | 10m ² / 1.5m |
| Recession Planes | 2.3m, Diag B (30-55) | 2.3m, Diag C (35-55) | 2.3m, Diag C (35-55) | |
| Upper floor window setback | 4m | 4m | 4m | |
| Road Boundary Setback | 4.5m (2m for garages) | 2m (house - garage 1.2m behind) | 2m (house - garage 1.2m behind) | 0m or 2m |
| Setback from Accessways | 1m | 1m | 1m | |
| Front fences | 1.8m | 50% transparent | 1m, except where screening servicing or OLS | 50% transparent |
| Overhangs | | 0.8m | | |
| Ground floor habitable space | | 50% | 30% | |
| Service spaces | | Min dimensions | Min dimensions / screened | Behind principle building |
| Parking | 1 space / unit | 1 space / unit | | |

Some observations are:

- The 20% landscaping seems like a generous coverage but has not resulted in well-landscaped development. It is often placed in private areas and does not implement policy 14.2.2.4 which seeks landscaping in publically visible areas.
- Height rules between the zones are generally an extra storey for each up-zone (2 in RSDT, 5 in CCMU).
- RMD includes a reduced size Outdoor Living Space for 1 bedroom units not provided in RCC. This is not consistent with the direction of policy to increase density in the central city. Similarly, balcony dimensions increase with the increase in zone density. Furthermore, there is no difference in recession planes in the central city compared to RMD (except for some of the special high height areas). Recession planes often limit density especially for narrow sites.
- The restrictions in fencing types have not overcome the street interface issues associated with outdoor living space at the street front. This rule is not sufficient to enforce policy 14.2.4.1 (ii).
- A 1m separation is required with accessways is almost never provided. The assessment matters include reference to landscaping but not CPTED. This has been identified as an issue and seems to be a matter for implementation.
- For RSDT the approach has been to use “traditional” bulk and location type zoning methods as used for single houses and not to introduce new rules for small unit

complexes. This does not recognise that there are unique challenges created due to the greater intensity of development and that pressure on the site results from the need to accommodate car parking, servicing and outdoor living spaces as well as an increase in built form.

- The CCMU zone was intended as permissive and does not have design provisions.
- In terms of built form standards, the main difference between RMD and RCC is the lack of site coverage and car parking as well as height. The reduction in car parking is the driver of higher density in many developments. Where taller buildings are established, they often also have reduced car parking. It is worth considering whether there is enough difference between the zones if the intention is to encourage more density in the central city beyond the row houses that currently dominate.

6.1.4 Assessment Matters

There are two sets of assessment matters which are triggered as a restricted discretionary (RD) activity when the minimum number of residential units is exceeded. These are the primary means of implementing the policies.

The CCMU zone has no RD threshold and developments are always permitted unless a built form standard non-compliance is triggered. Given the permissive built form standards there is clearly the potential for poor quality development to be established: although the sample size is small, two of the three developments scored quite poorly.

For the RMD zone (and on occasion in the RSDT zone where the less restrictive threshold is met), the Residential Design Principles (rule 14.15.1 may apply). For the Residential Central City Zone, a different set of assessment matters are in use.

The Residential Design Principles are a reasonably comprehensive framework for assessment but require some amendments to achieve improved design outcomes and should be better supported by built form standards. Site layout is the root cause of many problems and may deserve recognition through its own additional principle. CPTED matters appear to be comprehensive and this issue may be able to be addressed in part through design and consenting although a good CPTED is mostly achieved through a good site layout. The principles do not recognise existing character and there is no way to effectively consider this at application stage.

The Central City principles are less comprehensive and similarly limited. Residential amenity is limited to the narrow matters of outlook and privacy and only pedestrian safety is mentioned as opposed to wider matters of on-site amenity. These matters are not irrelevant to the central city and the framework is lacking elements that are anticipated by the policy.

Residential Medium Density and Residential Suburban Density Transition

For RSDT and RMD, rule 14.15.1 is triggered as set out below:

c. *City context and character:*

- Whether the design of the development is in keeping with, or complements, the scale and character of development anticipated for the surrounding area and relevant significant natural, heritage and cultural features.*
- The relevant considerations are the extent to which the development:*

- a) *includes, where relevant, reference to the patterns of development in and/or anticipated for the surrounding area such as building dimensions, forms, setbacks and alignments, and secondarily materials, design features and tree plantings; and*
- b) *retains or adapts features of the site that contribute significantly to local neighbourhood character, potentially including existing heritage items, Sites of Ngāi Tahu Cultural Significance identified in Appendix 9.5.6, site contours and mature trees.*

It is of interest that this matter is framed around the anticipated character and scale and not the existing character. The secondary matters do include references to the characteristics of the area, but it is questionable how much weight can be given to these if not supported by the primary statement.

A strong application of a character principle could in theory help to address some of the character concerns in less developed medium density areas, but it would need to be clearer that this was the intention. This assessment matter does not appear to be managing the character of the areas and it is unclear what is intended from it.

d. Relationship to the street and public open spaces

- i. *Whether the development engages with and contributes to adjacent streets, and any other adjacent public open spaces to contribute to them being lively, safe and attractive.*
- ii. *The relevant considerations are the extent to which the development:*
 - a) *orientates building frontages including entrances and windows to habitable rooms toward the street and adjacent public open spaces;*
 - b) *designs buildings on corner sites to emphasise the corner; and*
 - c) *avoids street facades that are blank or dominated by garages.*

This assessment matter should ensure a high quality street scene, and that being reflected in consistent high quality in the RMD area. Whilst that zone out-performed the others, it did not meet the threshold for basic satisfactory quality on average.

This matter does expect that buildings are oriented to the front of the site, including front doors. However, it does not direct the location of gardens or the use of the setback. This means that the positive impact of good building orientation can be undermined by what occurs to the street front (such as fencing). This is reflected in the good scores for buildings even when site layout was poor.

The expectation of entrances towards the street has not always resulted in front doors being oriented to the street (sometimes ranchsliders are provided as part of a fenced outdoor living space that does not serve as point of entry from the street). The assessment matter on its own has not been effective in achieving this urban design outcome.

Improvements could be to:

- Include more specific reference to site frontage areas to reduce fencing in these areas as part of the requirement for engagement.
- Include specific reference to front doors (as opposed to garden access doors) being on the front, or to include a built form standard to achieve this.

e. Built form and appearance

- i. *Whether the development is designed to minimise the visual bulk of the buildings and provide visual interest.*

- ii. *The relevant considerations are the extent to which the development:*
 - a) *subdivides or otherwise separates unusually long or bulky building forms and limits the length of continuous rooflines;*
 - b) *utilises variety of building form and/or variation in the alignment and placement of buildings to avoid monotony;*
 - c) *avoids blank elevations and facades dominated by garage doors; and*
 - d) *achieves visual interest and a sense of human scale through the use of architectural detailing, glazing and variation of materials.*

This matter relates to the appearance related matters in D1-D5 which scored quite well in the assessment. The matter appears to be succeeding in getting buildings that are not monotonous. It appears to be clear and quite directive. It may contribute to the issue of buildings being overly “fussy”, potentially because the easiest way to comply is to add changes of cladding and variation in rooflines (and this is potentially a matter that adds cost). However, on the face of it this matter appears to be achieving what is intended. Some more education and information could be provided to advise developers to avoid “over-egging” their designs unnecessarily in the hope of providing what they think Council wants to see.

f. Residential amenity

- i. *In relation to the built form and residential amenity of the development on the site (i.e. the overall site prior to the development), whether the development provides a high level of internal and external residential amenity for occupants and neighbours.*
- ii. *The relevant considerations are the extent to which the development:*
 - a) *provides for outlook, sunlight and privacy through the site layout, and orientation and internal layout of residential units;*
 - b) *directly connects private outdoor spaces to the living spaces within the residential units;*
 - c) *ensures any communal private open spaces are accessible, usable and attractive for the residents of the residential units; and*
 - d) *includes tree and garden planting particularly relating to the street frontage, boundaries, access ways, and parking areas.*

The first two of these matters are concerned with the amenity of occupiers and it was found that this is consistently good. There were few communal private outdoor spaces in the sample.

This matter is related strongly to the key issue of communal amenity. Tree and garden planting is a particular weakness identified and so it cannot be said that clause d is being met effectively. The causes of this are varied and include:

- Planting is often in private areas. Even if it is next to the street it is not contributing any amenity.
- Planting strips are narrow and do not provide space for larger planting (ie trees) in communal areas.
- The planting areas do not have a purpose beyond contributing some greenery. For instance, they do not relate to entrances where they would create threshold and opportunity for personalisation. They are not wide enough to create effective separation which would contribute to privacy.
- It is not apparent how much planting is required in relation to the identified areas. The landscape requirement can be accommodated in the private outdoor areas and there is no equivalent standard that suggests an appropriate amount of publically visible landscaping, even though this is expected by policy.
- Trees are often undersize and it is not clear that compliance with appendix 6.11.6 is expected. Trees are not required to be planted in areas where they will grow and not cause a nuisance (eg shading of Outdoor Living Space). It may be better to have fewer

trees required but to ensure that they are well related to communal (especially parking) areas and have room to grow and spread.

g. Access, parking and servicing

- i. Whether the development provides for good access and integration of space for parking and servicing.*
- ii. The relevant considerations are the extent to which the development:*
 - a) integrates access in a way that is safe for all users, and offers convenient access for pedestrians to the street, any nearby parks or other public recreation spaces;*
 - b) provides for parking areas and garages in a way that does not dominate the development, particularly when viewed from the street or other public open spaces; and*
 - c) provides for suitable storage and service spaces which are conveniently accessible, safe and/or secure, and located and/or designed to minimise adverse effects on occupants, neighbours and public spaces.*

This matter also relates to the key issue of communal areas and outcomes C7-C10.

RMD sites generally do not have car parking that dominates the street but parking often dominated the shared accessways. The effect of this was increased by the poor level of planting.

Whilst pedestrian access was convenient, it was not prioritised over parking and vehicle access. Doors were not always prominent. Matter (a) does not aim very high if it is designed to achieve pedestrian comfort and amenity and improve driveways from being purely functional.

Bin storage and servicing was generally adequate but was sometimes observed to be impractical where there was not good access - and this led to bins being stored on the accessway or in front of the house. This is likely to be something that can be addressed through implementation.

h. Safety

- i. Whether the development incorporates Crime Prevention Through Environmental Design (CPTED) principles as required to achieve a safe, secure environment.*
- ii. The relevant considerations are the extent to which the development:*
 - a) provides for views over, and passive surveillance of, adjacent public and publicly accessible private open spaces;*
 - b) clearly demarcates boundaries of public and private space;*
 - c) makes pedestrian entrances and routes readily recognisable; and*
 - d) provides for good visibility with clear sightlines and effective lighting.*

This relates directly to outcome C5 where RMD developments scored an unsatisfactory 2.65. The primary statement is very clear so it is surprising that good outcomes have not been achieved. This would appear to be a matter of implementation.

However, the secondary statements are not a complete summary of CPTED principles. If Council officers or developers are directed by these statements they may miss aspects of CPTED that should be implemented. It may be preferable to refer to an appropriate list of CPTED strategies (eg Ministry of Justice, 2005 or as previously listed in this document), or to delete the list entirely.

A particular issue noted was about behaviour, that people will react to the environment they live in, particularly with regard to privacy. Open fencing was often screened and windows had closed curtains so that the expected observation was not present. This is the issue of retrofitting CPTED features onto a flawed layout.

Summary

The above matters apply in the RMD zone for most developments, and occasionally in the RSDT zone.

The matters address some of the key issues quite well. In particular CPTED and Street Interface have clear statements but these have failed to yield good outcomes. Communal amenity is covered in part but site layout is unaddressed. As site layout has been identified as the root cause of most issues, an effective re-evaluation of the matters must include consideration of an explicit matter of assessment relating to it. It is likely that other matters can be addressed by amendments to the matters where relevant.

Some matters may require reinforcement with built form standards to provide and illustrate a bottom line. This would apply to:

- Tree and garden planting (for instance minimum areas for front gardens and widths for landscaping strips between the house and accessway).
- Fencing (not in front of the house)
- Front doors (on the front façade, outside of any fenced area and not providing any access to an outdoor living space). Within the development, facing the accessway or the front of the site.
- Trees to be provided within communal areas, including a planting area and an area for canopy spread.

Residential Central City

For the Residential Central City zone, the following applies listed under 14.15.33:

The extent to which the development, while bringing change to existing environments:

- i. engages with and contributes to adjacent streets, lanes and public open spaces.*
- ii. integrates access, parking areas and garages in a way that is safe for pedestrians and cyclists, and that does not dominate the development.*
- iii. has appropriate regard to:*
 - A. residential amenity for occupants, neighbours and the public, in respect of outlook, privacy, and incorporation of Crime Prevention Through Environmental Design principles; and*
 - B. neighbourhood context, existing design styles and established landscape features on the site or adjacent sites.*
- iv. provides for human scale and creates sufficient visual quality and interest.*

With regard to the key policy 14.2.4.1:

- Clause (i) (reflecting the context, character and scale of building anticipated in the area) is implemented by matter (iii) B.
- Clause (ii) (contribute to a high quality street scene) is implemented by Matter (i) and (iv)

- Clause (iii) (providing a high level of on-site amenity) is implemented by matter (iii) but in a limited way.
- Clause (vi) (incorporating CPTED) is implemented by (iii) A.

The main omission in implementing the policy framework is that residential amenity is restricted to outlook and privacy. Matter (ii) regarding access for pedestrians is also restricted to safety and would not cover the outcomes identified regarding communal space.

Considering the clauses against the outcomes:

Character

With regard to the issue of character, it is worth considering how much importance should be attached to this in the Central City environment where it needs to be balanced with the desire for higher density. The matter is restricted to styles and landscaping and is therefore very superficial, although “neighbourhood context” does open up a wider consideration of issues. Considering the comments made in the sample, the relationship with neighbours in terms of a juxtaposition of scale may be important.

Street Scene

The impact on street scene is implemented explicitly in matter (i) but the outcomes are not being realised, for similar reasons to the RMD zone. There is no context around expectations and there are no built form standards to ensure an expectation that land is reserved to manage the street interface (rather than absorbed into outdoor living spaces). Where RCC differs is that larger developments were found to be monolithic which may be because the provisions are not as directive.

Site Layout

The zone exhibits the same issues as RMD with regard to site layout. It is the driver of the design issues but is rarely addressed in consenting, with patchwork fixes applied instead. The assessment framework should include a matter addressing it explicitly.

CPTED

As for RMD, the matters include an explicit reference to CPTED but the outcomes are poor. This may be a matter for implementation at the design / consenting stage. It does appear that the issues cannot be addressed without more fundamental site layout changes that are hard to obtain at consent stage at present.

Communal Accessways

The assessment framework is weaker in RCC than RMD and the outcomes are less successful. There is little implementation of the policy for landscaping of publically visible areas.

Density and Form

There were few developments which departed from the suburban townhouse model in the RCC zone. Those that did were monolithic. These findings, though based on a small sample, suggest that the plan is not encouraging of higher density and that when it occurs it does not do a good job of managing it.

Summary

The assessment matters are not as comprehensive as those in the RMD zone and this is reflected in outcomes. The zoning does not appear to be a sound planning reason for the difference because the policy framework is the same.

A more relaxed building envelope may be more effective at encouraging density than the present provisions.

As for the RMD zone, it would be useful to support the assessment matters with more comprehensive built form standards.

7 Conclusion

The research considered the quality of built outcomes and commented on how these related to district plan provisions. The conclusions of these processes are listed below.

7.1 Outcomes

The research has identified that the existing District Plan and consenting process is not resulting in high quality outcomes, especially outside of the RMD zone. These issues are mostly relating to quality and are generally caused by site layout. Separately, issues of character were identified in some circumstances.

Although these conclusions inevitably focus on areas of weakness to address, there are also some aspects of development where outcomes are consistently satisfactory and these are also noted below.

7.1.1 Quality

These issues particularly relate to the street scene and CPTED, and are generally caused by poor site layout.

There is a clear statement of expectation in the District Plan objectives and policies for “high quality” outcomes however this is not being achieved, with a few exceptions. For the most part, developments are around the “basic satisfactory” threshold overall, however:

- There is a significant proportion of development which is inadequate or poor
- Site layout and street interface outcomes were consistently less than basic satisfactory

The majority of the issues are related to poor site layout and a particular theme is the street interface (and that with accessways). The root causes are:

- More consideration needs to be given to the arrangement of buildings on the site so that buildings and private spaces are designed to function appropriately, without privacy conflicts or the need for prominent fencing.
- There has not been sufficient space allocated to front gardens and accessway planting and the resulting environment is not as safe or as pleasant as anticipated.

The research indicates that whilst many developments had poor street interface, in the majority of cases, the cause was poor site layout and resolving the problems of street interface requires changes to the arrangement of buildings and internal spaces.

Other recurring issues related to CPTED and were caused by privacy conflicts that discouraged passive surveillance, and a lack of a sense of ownership, transition and territorial definition. A clear hierarchy of space is needed from private to public space.

The density of development is above the minimum requirements for each zone (as specified in the District Plan). As a result, there may be some scope for improving built outcomes even if it requires reductions in density. High density has not been identified as a cause of design issues in the sample per se, however, some of the identified issues may result in reductions in density because they require some space on the site.

7.1.2 Relationship to Established Character

A tension was identified between the existing character and the anticipated form of development. Smaller sites tend to complement the existing character, although larger ones were found to provide better outcomes overall.

An issue unique to the central city was the scale of buildings, that tended to be either insufficient for the central city character and density (buildings were a suburban scale), or monolithic in appearance (where taller buildings were established). A more appropriate central city typology would be desirable.

7.1.3 Areas of Good Performance

As well as the issues described above, there were some areas where consistent good performance was recorded. These were:

- that the scale of development was well matched to its location, indicating that the approach to zoning in the District Plan appears appropriate.
- that there has been an increase in housing choice.
- that developments have consistently achieved a good standard of internal and outdoor private space.

7.2 District Plan

There is good coverage of urban design outcomes across the District Plan provisions but there is not the ability to translate this into outcomes. The policy framework is relatively wide-ranging, but there are gaps in the assessment matters and the built form standards do not always support good design.

The design outcomes within the RMD zone are generally of a better quality than those in the remainder of the zones. RSdT zoning led to consistently poorer outcomes than RMD zoning, despite the lower density, and central city developments were also less satisfactory on average. It appears that:

- the more rounded assessment matters in the RMD zone have led to more consistent outcomes.
- The less thorough RCC assessment matters have led to inconsistent outcomes in the RCC zone in relation to the street, site and aspects of the built form.
- The absence of design controls in the RSdT zone has resulted in consistently poor outcomes in relation to the street and site.

The CCMU zone is not included in the above because of the small sample.

The built form standards do not always support the assessment matters. These can set a baseline for what can be accommodated on the site, but if they exclude some aspects of design (such as privacy, or the landscaping of accessways) it can lead to those aspects being neglected in design. More rounded built form standards would help to promote these as fundamental design issues. They can ensure space is set aside to manage the amenity and street scene issues identified.

Some matters are well covered in the District Plan (in particular CPTED) but are still not wholly realised in applications. Some changes to design and consenting under the existing plan provisions could potentially produce better outcomes.

The Plan does not include an overarching consideration of site layout as a cause of design issues. Instead, issues are often addressed one by one in the Plan. This can result in an attempt to trade-off outcomes such as privacy versus street-interaction, which means choosing which outcome to prioritise. In order to fix the issues, there is often a need to revisit the site layout and make different choices (rather than mitigating issues). This reflects the iterative nature of the design process.

The District Plan contains policy relating to sustainability and innovation, but no methods. There was very little achievement in this area. The purpose of the policy is to promote these aims (and it may be this allows them to be included in the balance of an assessment), but achievement has been limited.

8 Recommendations

A range of actions is recommended to address this report's findings. These include changes to the District Plan and its implementation as well as non-statutory guidance. Further research is also recommended in some areas.

1 Changes in Resource Consent Processing under the existing District Plan

Some incremental improvements in design could be achieved through changes to the interpretation of existing rules, where there is good coverage of the issue. This particularly relates to CPTED and planting of areas adjacent to streets and accessways.

2 Technical Guidance

Update technical guidance (eg design guides and notes) on plan interpretation and site layout.

3 Training

Provide urban design training and support for planning staff.

4 District Plan Changes

Changes to the District Plan could result in better outcomes, with an emphasis on improving site layout. Some possible changes are listed in Appendix 1. The broad intention of these is to:

- Allow for more density in the Residential Central City Zone
- Align the management of the RCC and RSDT zones with the RMD zone.
- To better manage issues identified in this report.

5 Financial Viability

Research implications of potential plan changes on financial viability.

6 Further Study

For some areas, the survey has identified trends in design but further research is recommended:

- A sample of higher density RMD developments.
- More central city examples (including a range of typologies and examples from the CCMU zone)
- More RSDT examples, including larger developments.

7 Character Studies

For each intensification area, investigate what contributes to the existing character and what measures could be taken to ensure development better fits the character.

8 Neighbourhood Planning

Neighbourhood planning for each higher density suburb in the city. Identify priority areas where development is most likely to occur and neighbourhood scale opportunities such as where there is a need for parks, new connections and improved streets.

9 Street Improvements

Target medium density areas in the capital works program and focus on improving the street appearance, particularly through tree planting. Investigate funding mechanisms for capital works, such as development contributions.

9 References

Boffa Miskell (2020): *Residential Medium Density Monitoring: Urban Design Technical Review*

Boffa Miskell (2009): *Urban Design Review of Recent Residential Development*

Christchurch City Council (2020): *Residential Suburban Density Transition Zone: Urban Design Technical Review*

Cozens et al (2005): *Think Crime: CPTED for Safer Cities* (Praxis Education)

Ministry for the Environment (2012): *Medium Density Housing Case Study Assessment Methodology*

Ministry of Justice (2005): *National Guidelines for Crime Prevention Through Environmental Design*

Appendix 1: Potential Plan Changes

The following are provisions that could potentially be included in the District Plan. These are suggested for further investigation on the basis of the findings in this report.

- Include a policy on high density housing in the central city, as distinct from medium density housing in other areas. Revise policy 14.2.4.2 to remove references limited privacy and sunlight access in medium density areas.
- Investigate recession plane requirements in the central city to facilitate development of taller buildings on narrow sites.
- Extend fencing and servicing provisions from RMD to RSDT zone.
- Extend restricted discretionary assessment in the RSDT zone to 3 or more units.
- Assess restricted discretionary central city developments against the Residential Design Principles (District Plan Rule 14.15.1).
- Include additional built form standards in all zones relating to:
 - front doors facing the street;
 - a landscaped area between built frontages and the street;
 - a landscaped area between unit facades and accessways;
 - reserved space for trees(s) onsite (as opposed to a simple number of trees);
 - outdoor living space not to be located between the building and the street.
- Amend the residential design principles with regard to: CPTED (to emphasise wider CPTED strategies); residential amenity (to emphasise internal privacy and layout); relationship to the street (to include a hierarchy of space and a front door); character (to consider existing character in less-well-developed areas).

Table A1: Response to Identified Issues (refer to Section 5: Design Issues)

| SCALE | ISSUE (Problem) | RSDT | RMD | CC | Options | |
|---------------|---|------|------|-----|---|--|
| Neighbourhood | Lack of suitable high density typologies | No | No | Yes | Encourage (incentivise) apartments and 3 storey townhouses in the central city. | District Plan Change to ensure rules do not unduly discourage Central City apartments - eg recession planes. |
| | Tension between existing and anticipated character | No | Yes | Yes | Specific management of development in certain (less intensified) areas? | Amend Assessment Matters and extend to RSDT (3+ units) |
| | Scale of development not matched to location (services/trans) | No | No | No | | |
| | Limited increase in housing choice | Some | No | No | | |
| Street | Tall fencing or screening | Yes | Some | Yes | Built Form standard to restrict front fencing>1m | Address causes of fencing – site layout issues |
| | Prominent car parking | Yes | No | No | Require an area of landscaping at site front | Extend Assessment Matters to RSDT (3+ units) |
| | Location of entranceways (developments without front door(s) facing the street) | Yes | Yes | Yes | Include a built form standard for a street facing front door for each unit with street frontage | Amend Assessment Matters and extend to RSDT |
| | Insufficient landscaped threshold / transition | Yes | Yes | Yes | Include a built form standard for amount of landscaping on accessways or beside street | Changes to Consent Processing under existing plan provisions. |
| | Insufficiently engaging front facade | Yes | No | Yes | Extend Assessment Matters to RSDT / Amend 14.15.33 | |
| Site | Poor quality accessways | Yes | Yes | Yes | Include Built Form standard for landscaping of accessways | Extend Assessment Matters to RSDT (3+ units) |
| | No space for servicing | Yes | No | No | Include a built form standard in RSDT | Extend Assessment Matters to RSDT (3+ units) |
| | Poor CPTED outcomes | Yes | Yes | Yes | Address with consent processing. Provide guidance. | Extend Assessment Matters to RSDT (3+ units) |
| | Poor indoor / outdoor private space | No | No | No | | |
| | Indoor privacy issues | Yes | Yes | Yes | Include built form standards (landscaping / separation) | Amend Assessment Matters and extend to RSDT |
| | No clear hierachy (and purpose) of space | Yes | Yes | Yes | Amend Assessment matters | |
| | Outdoor living space location (privacy issues / fencing issues) | Yes | Yes | Yes | Include Built Form standards | Amend Assessment Matters and extend to RSDT |
| Building | Poor visual appearance (form) | No | No | Yes | Amend 14.15.33 (RCC) or replace with 14.15.1) | |
| | Poor visual appearance (articulation) | Yes | No | No | Extend Assessment Matters to RSDT (3+ units) | |
| | Poor functional outcomes | No | No | No | | |
| | Innovation and sustainability outcomes not met | Yes | Yes | Yes | Do Nothing | Amend Assessment Matters and extend to RSDT |