Boffa Miskell

# Memorandum


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| Attention: | Aaron Hakkaart, Mackenzie District Council |
| Cc: | Louise Taylor / Liz White, Consultant Planners |
| Reference: | Medium Density Residential Zone Rule Memo |
| From: | Tim Church / Stephanie Griffiths, Urban Designers |
| Date: | 9th August 2022 |
| Project No: | BM220319 |

## Introduction

Mackenzie District Council is progressing a review of its Operative District Plan and this work relates to Stage 2 - Enabling the Spatial Plans, which applies to all relevant urban zones.

The Mackenzie Spatial Plans were adopted in September 2021 and provide a blueprint for the growth and future development of the District's townships. This includes the identification of areas of medium density residential developments. These represent more intensive development than is anticipated under the Operative District Plan or established in these areas. There is a risk that if not designed and managed well, these more intensive and complex developments can lead to poor amenity outcomes.

Boffa Miskell have been engaged by Mackenzie District Council (MDC) to 'road test' the draft medium density built form standards to demonstrate the typical on-the-ground outcomes that would be delivered by any proposed standards, and providing recommendations for alternate standards where they are considered to deliver a more appropriate outcome.

A similar memorandum will be prepared for the mixed-use town centre zone.

## Methodology

To recommend a draft set of rules for Mackenzie's medium density zones, we undertook an iterative three-step process, as follows.

Step 1: Pulling together a range of medium density rules that apply to other similar zones, including NPS-UD Medium Density Residential Standards (that apply to all Tier 1 councils), the medium density rules of Central Otago District Council (draft), Queenstown Lakes District Council and Christchurch City Council as well as the existing rules within the R2 zones.

Step 2: Creating a 3d model of a 'typical' superlot in Takapō | Tekapo, Twizel and Fairlie in City Engine GIS software. Within this model, we ran a range of scenarios, testing the maximum building envelope that would result from recession plane angles, height from boundaries, setbacks, building height and site coverage. Testing these rules along an entire street allows us to visualise the individual and cumulative impacts of the maximum building envelopes. We methodically tested each set of rules that were identified during Step 1 and developed a recommended set of rules.

Step 3: Taking a 'typical' individual lot in Takapō | Tekapo, Twizel and Fairlie, and testing whether we could design a high level, 'best practice' medium density development within the recommended rules identified within Step 2. This manual process tested minimum lot size, building height, setbacks, site coverage, minimum landscaped area, outdoor living space and minimum outlook space. We took an iterative approach and, based on the findings of Step 3, some rules were retested in Step 2.

Below is a summary of the rules we tested, recommended rules and associated rationale. An illustrative overview of the recommended rules sniped from City Engine are provided in Appendix 1. Please note that we can provide more documentation of rules, if required.

## Recommended Approaches for Medium Density Zone Rules

| RULE | RULES TESTED | RECOMMENDED RULE | RATIONALE |
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| **MINIMUM LOT SIZE** | • 180sqm<br>• 200sqm<br>• 250sqm (as per existing R2 rules)<br><br>**Please note these are gross lot sizes areas.* | 200sqm – Fairlie, Twizel and Takapō \| Tekapo | The existing 250sqm minimum lot sizes is too large to promote semi-detached or terraced housing options and would likely not achieve medium density outcomes.<br><br>180sqm - 200sqm provides for a range of medium density building typologies, while encouraging more compact semi-detached or terraced housing options.<br><br>The predominant medium density zone lot size in Fairlie is 1,000sqm (20sqm x 50sqm), which can readily be subdivided into 200sqm sections (refer to figure 4). The predominant medium density lot size in Twizel is smaller at 680sqm (17sqm x 40sqm), which also suits 200sqm sections (refer to figure 5). |
| **BUILDING HEIGHT** | • 8m (as per existing R2 rules)<br>• 8.5m<br>• 9m<br>• 10m<br>• 11m<br>• 11m + 1m | 7.5m + 1m gable roof allowance (2 storeys) – Takapō \| Tekapo<br><br>10m + 1m gable roof allowance (three storeys) – Fairlie and Twizel | In Fairlie and Twizel there are two options that should be considered in relation to maximum building height: allowing a maximum of either 2-storey or 3-storey buildings.<br><br>The pros of 3-storey buildings include:<br>• Enables a range of building typologies: including semi-attached, terraces, apartments (that do not require a lift);<br>• Efficient use of land;<br>• By building 'up' rather than 'out' there is more potential for on-site open space;<br>• Potential for an accessible unit at ground level; and<br>• Potential for more 'eyes on the street' and increased safety.<br><br>The cons of 3-storey buildings include:<br>• More visually apparent at street level;<br>• Potential loss of views/privacy from existing houses;<br>• Potential loss of sunlight to existing houses;<br>• More obvious change in character,<br><br>11m in Fairlie and Twizel allows for 3-storey units with good internal amenity (i.e. floor to ceiling heights of 2.7m). This sits between the minimum 2.4m and high-quality 2.7m floor to ceiling heights. This provides for good sunlight access and internal spaciousness for residents, while managing affordability of units. Given it is possible to achieve a 4-storey flat roofed dwelling within an 11m height limit (with minimum floor to ceiling heights of 2.4m), we recommend adding an additional provision specifying the maximum storey number of 3 storeys. The additional fourth storey would likely result in less acceptable visual dominance and privacy amenity outcomes. Note that 3-storey buildings |

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| | | | would not always fit on an average lot, and may require amalgamation.<br><br>An alternative way of providing up to three storeys is by having a maximum building height of 10m with a 1m gable roof exemption. This would achieve the same outcome.<br><br>For Takapō \| Tekapo there is greater potential that taller medium density buildings will block existing upper level views to the lake from neighbouring properties up-slope from the zone. To protect existing views, there are two potential options:<br><br>1. Enable buildings up to 11m (3 storeys), but increase side setbacks to create viewshafts between buildings (refer to figure 8); or<br>2. Limit buildings to 8.5m (2 storeys) to protect panoramic views above the buildings (refer to figure 9).<br><br>Our testing identified that the medium density lots do not have consistent lot boundaries extending through blocks and increasing the side setbacks is unlikely to create sufficient viewshafts. Given it is also possible to amalgamate lots into larger aggregated sites, a reliance on side setbacks could further reduce viewing opportunities. Therefore, the recommended maximum building height is 8.5m (2 storeys) in Takapō \| Tekapo, particuarly on sloping sites above six degrees.<br><br>Similarly, an alternative way of providing up to two storeys in Takapō \| Tekapo is by having a maximum building height of 7.5m with a 1m gable roof exemption. This would achieve the same outcome.<br><br>The current R2 rule for building height is 8m. Whilst this would allow for two-storeys, it is unlikely that this would enable high-quality 2.7m floor to ceiling heights and a gabled roof. 8.5m is slightly more enabling and would lead to better built form outcomes. |
| **HEIGHT IN RELATION TO BOUNDARY** | • 2.5m + angles set out in Schedule 1 (as per existing R2 rules)<br>• 3.5m + angles set out in Schedule 1<br>• 4m + 60 degrees | 3.5m + angles set out in Schedule 1<br><br>Not applicable to sloping sites | The variable recession plane angles applying to the different orientations is equivalent to the existing MDC R2 zone provisions and consistent with CCC, QLDC and CODC medium density zone provisions that are more restrictive than the MDRS. This is likely to provide an acceptable level of solar access to neighbouring sites and provide a greater sense of openness between sites, while allowing for 2-level, semi-detached street fronting units.<br><br>The existing 2.5m starting height provides for a 2-storey building between 4-8m from the boundary. This promotes buildings being located towards the middle of the site rather than fronting the street. With a 2.5m starting height, medium density developments are likely to only be able to achieve one unit fronting the street.<br><br>The 3.5m starting height provides for a 2-storey building between 2 and 3m from the boundary and a 3-storey building between 4.5-6.5m from the boundary. The recession planes comfortably provide for a 2-storey infill development and a more enabling, step-up to 3-storey units (if appropriate) |

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| | | | on an aggregated site or comprehensive development. With a 3.5m starting height, medium density developments are likely to be able to achieve two units fronting the street.<br><br>Sloping sites above six degrees, exclusively in Takapō \| Tekapo, are recommended to be exempt from height in relation to boundary rules. This is due to their likely orientation towards the lake view (in this case largely north facing) and are unlikely to have living spaces placed on their side boundaries. This may also help offset potential capacity limitations from a reduced height standard. |
| **SETBACKS** | Front:<br>• 1.5m<br>• 2m (as per existing R2 rules)<br>• 2.5m<br><br>Internal Boundary Setback:<br>• 2m (as per existing R2 rules) | Front – 2m<br>Internal – 2m<br><br>*No Change* | A front setback of 2m enables a built form that addresses the street, while allowing enough space for a functional front yard (e.g. access way, bin storage), while providing for low fencing or planting strips. It also encourages private outdoor living spaces to be positioned to the side or year, minimising public / private interface issues (CPTED related).<br><br>North facing lots on sloping sites in Takapō \| Tekapo may need greater front setbacks to manage the slope. This rule will have to work in tandem with the character provisions.<br><br>2m setback along side and rear boundaries is achievable within recession planes, and will likely contribute to a greater sense of openness between sites. |
| **BUILDING COVERAGE** | • 40%<br>• 45%<br>• 50%<br>• 65% (including hard surfaces) | 40% (buildings only, excluding hard surfaces) | This provides for a more open and spacious feel within the Mackenzie context.<br><br>Our testing of the 45-50% building coverage provided for potentially large and continuous built forms that would be likely be too urban.<br>A 65% building coverage including hard surfaces is not appropriate as it could enable sites achieving between 45-50% building coverage.<br><br>The 40% building coverage is not dissimilar to the existing rule of 65% building coverage including hard surfaces, as together with the minimum landscaped area, the maximum building coverage including hard surfaces equates to 70%. However, it ensures that the built form itself is limited and will still ensure an open and spacious feel. |
| **MINIMUM LANDSCAPED AREA** | • 20%<br>• 25%<br>• 30% | 30% | This provides for adequate coverage of both buffer and screen planting between buildings, fencelines, car parking and access ways with opportunities for more substantial landscape areas to support larger tree planting. |
| **OUTDOOR LIVING SPACE** | • 16sqm (min 4m dimension)<br>• 20sqm (min 3m dimension)<br>• 25sqm (min dimension 3m) (as per existing R2 rules) | 25sqm with a minimum dimension of 3m<br><br>Above ground floor – 12sqm balcony, with min dimension of 2m<br><br>*No Change* | This provides for more usable outdoor living spaces, enabling provision for a mix of paved and soft landscape areas (e.g. outlook and screening) and utility and storage spaces for larger recreation or household equipment. This also provides a greater sense of openness in a Mackenzie context, while potentially managing the location of built form on the site.<br><br>Outdoor living areas on sloping sites in Takapō \| Tekapo could potentially be reduced and/or reallocated to balconies, as living areas tend to be |

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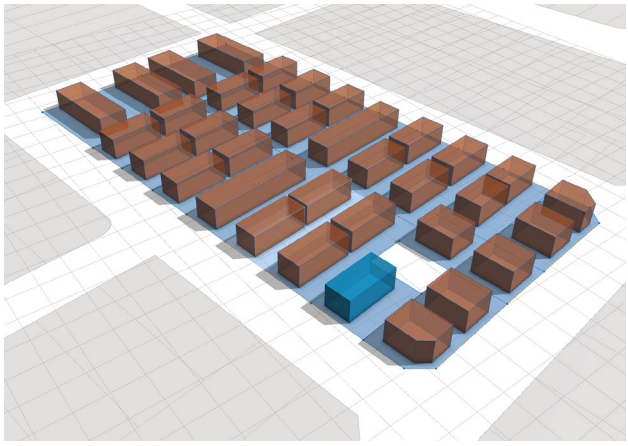
| | • 30sqm (min 4m dimension) | | on upper levels to maximise views and larger, flat platforms create more earthworks. |
| **MINIMUM OUTLOOK SPACE** | Principal Living Room – 6m x 4m, 4m x 4m<br>Principal Bedroom – 3m x 3m<br>All Habitable Rooms – 1m x 1m | Principal Living Room – 4m x 4m<br>Principal Bedroom – 3m x 3m<br>All Habitable Rooms – 1m x 1m | Outlook spaces are intended to provide for:<br>• Visual privacy and outlook between habitable rooms of different buildings on the same or neighbouring sites, encouraging reorientation or offsetting of direct facing windows<br>• Managing visual dominance<br>• Ensuring a sense of space for residents |
| **VISUALLY PERMEABLE FENCING** | | 1.2m solid fence within road boundary setback. Between 1.2-1.8m needs to be visually permeable. | It is likely that lots on the northern side of blocks will result in front yards being the primary private open spaces for residents (ensuring they have sunlight access). It is therefore important that a front fence rule is put in place to balance privacy and security for residents with maintaining the open feel of the Mackenzie area and a positive streetscape experience (e.g. addressing passive surveillance, activation, etc). |

## Appendix 1: Maximum Theoretical Building Forms

Infill Development:



Mix of Infill and Aggregated Development:

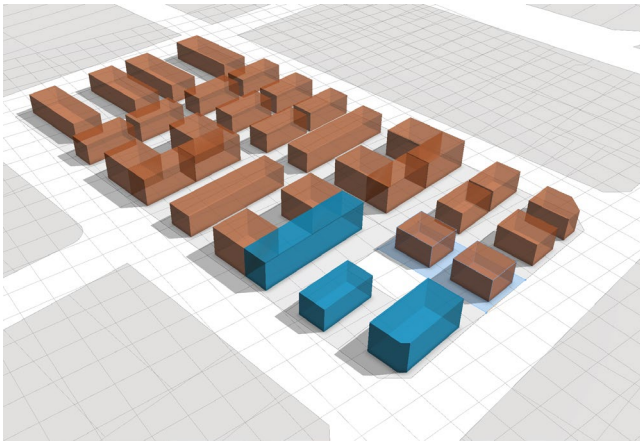
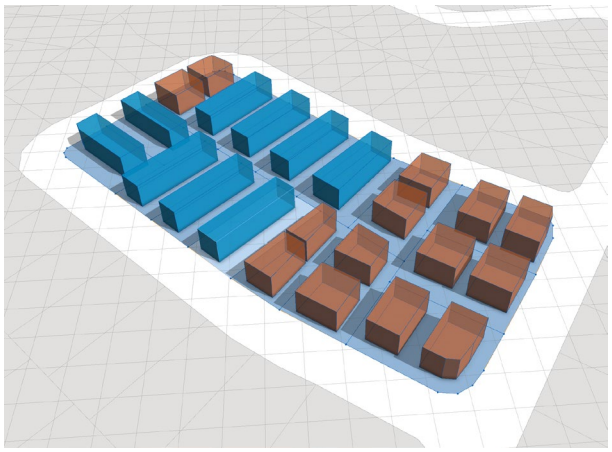


Figure 1: Maximum theoretical building form on a representative urban block in Fairlie that results from recommended rules. Infill development is shown at 2 storeys and mix of infill and aggregated development shows a range of 2 and 3 storey developments.

Infill Development:



Mix of Infill and Aggregated Development:

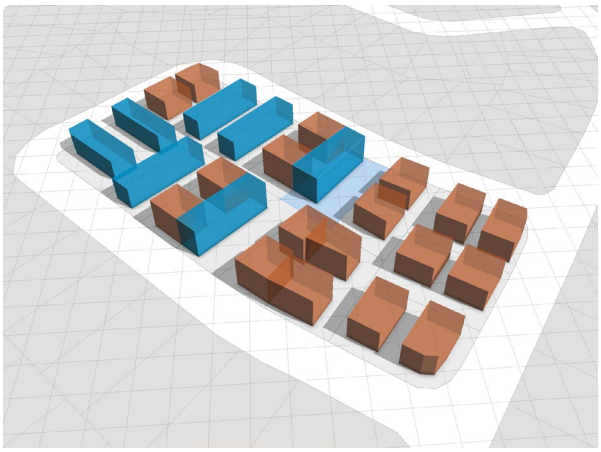


Figure 2: Maximum theoretical building form on a representative urban block in Twizel that results from recommended rules. Infill development is shown at 2 storeys and mix of infill and aggregated development shows a range of 2 and 3 storey developments.

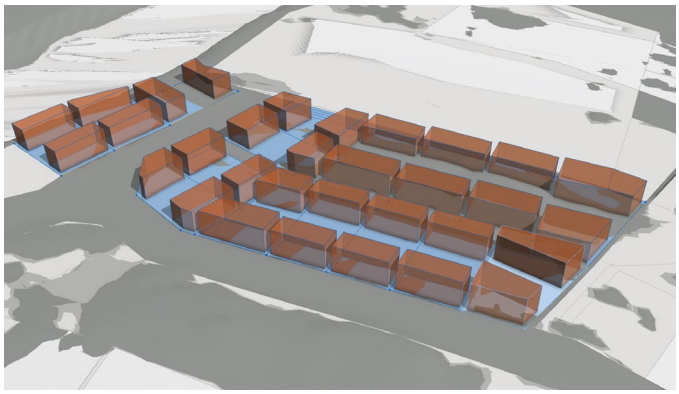


Figure 3: Maximum theoretical building form on a representative urban block in Takapō | Tekapo that results from recommended rules.

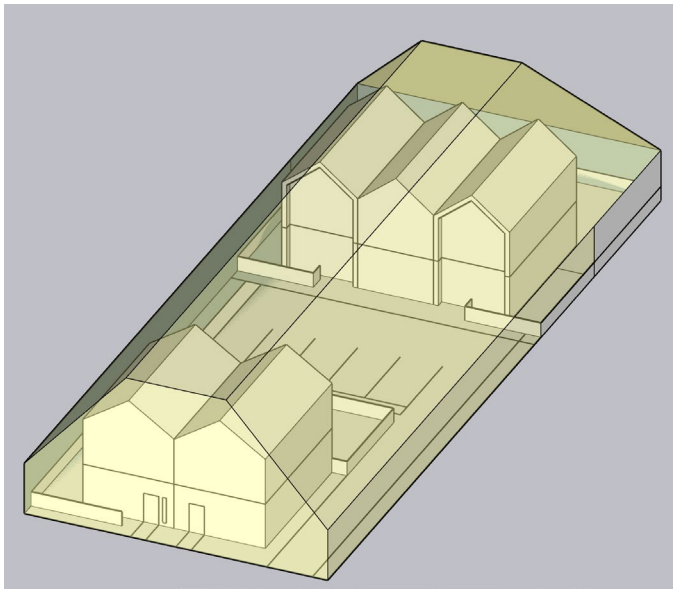


Figure 4. A 2-storey 5-unit development in Fairlie on a 1,000sqm site.

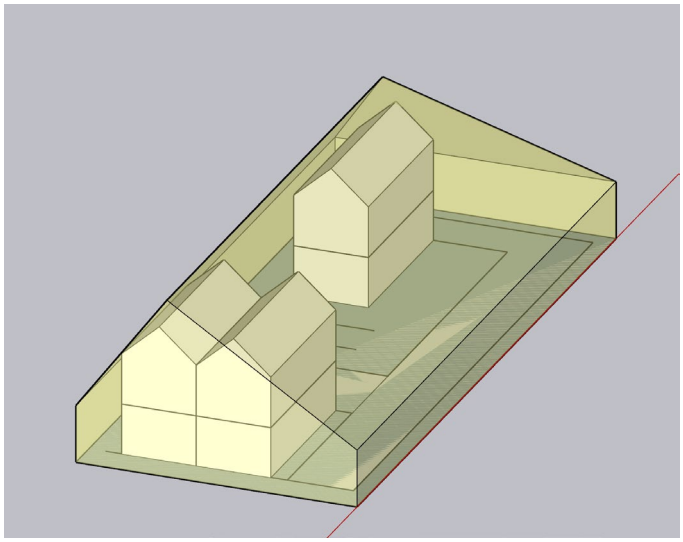


Figure 5. A 2-storey 3-unit development in Twizel on a 680sqm site.

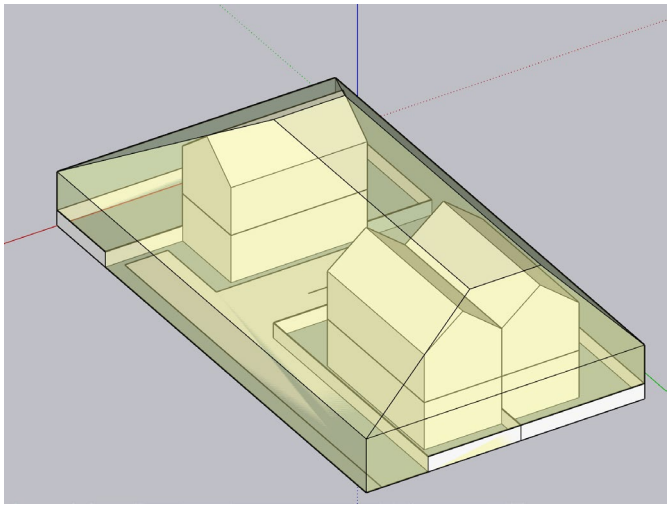


Figure 6. A 2-storey 3-unit development in Takapō | Tekapo on a 580sqm site.

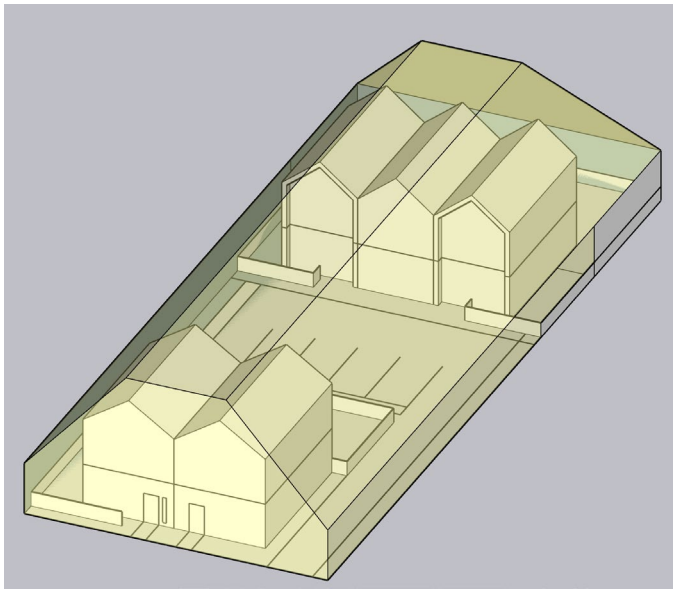


Figure 7. A 2-storey 5-unit development in Takapō | Tekapo on a 1,000sqm site.

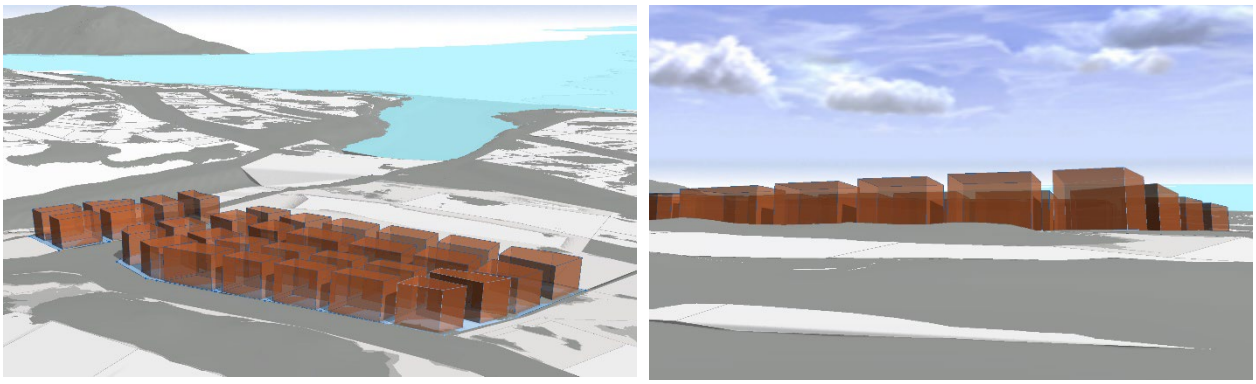


Figure 8. Maximum building envelope in Takapō | Tekapo that results from an 11m maximum building height with 2m side setbacks.

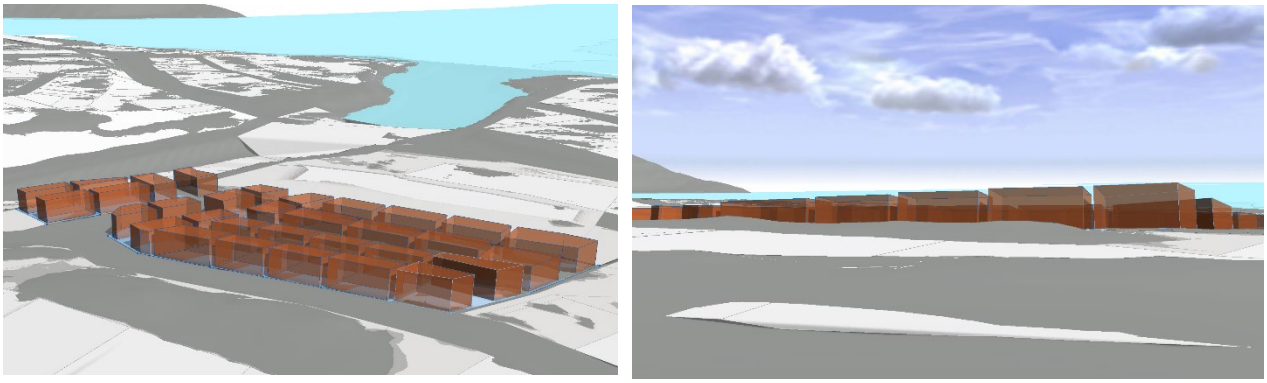


Figure 9. Maximum building envelope in Takapō | Tekapo that results from an 8.5m maximum building height with 1m side setbacks.

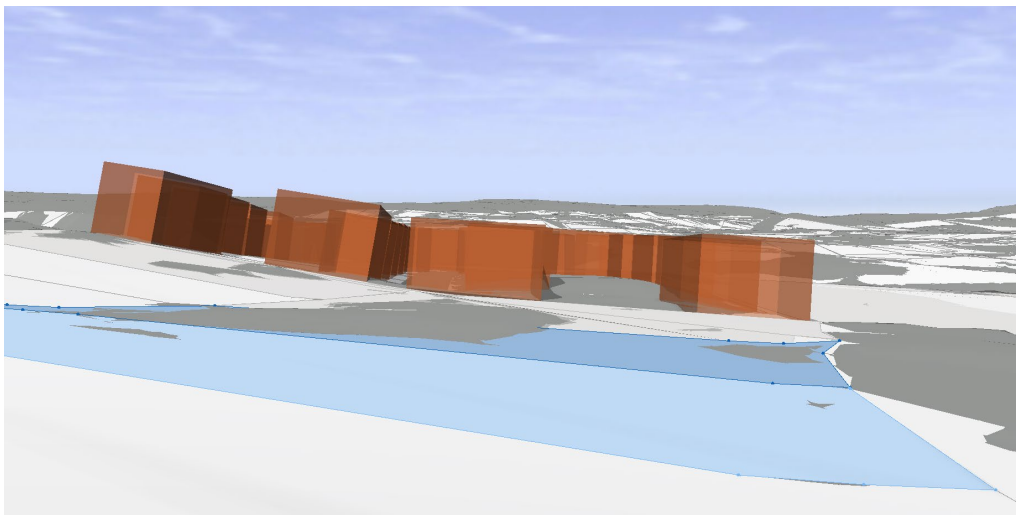


Figure 10. Sloping sites potentially provide rear properties within the zone views to Lake Tekapo.

## Schedule 1: Recession Plan Angles