

Information paper to business and land owners in Avarua

Re: Proposed new changes to building rules

INTRODUCTION

This paper identifies new specific issues and proposed solutions to improve the planning and development of the built environment within **building rules**.

After extensive consultation in 2019 and prior years, Cabinet approved drafting instructions for a new Building Bill and regulations. In 2023 after receiving complaints and realising other issues, new changes to building rules were identified. These new changes require Cabinet endorsement.

The Ministry of Infrastructure Cook Islands proposes to:

1. Introduce new, and amend existing Cook Islands Building Code 2019 provisions.
2. Produce building regulations that give the ability to an authority (Minister or Building Controller) to require compliance with new rules where and when appropriate.
3. Change the provision for the Building Board to be made up of members from the building and construction sector.

The timeframe for the building legislation and the new rules proposed in this paper are aimed to be completed and ready for Parliament by the end of quarter 1, 2024. The new Building Act will apply to the Pa Enua in a staggered approach.

The new solutions presented in this document are a way to implement changes to private properties that reduce the pressure on the environment and public infrastructure and provide social benefits. Other work within the public infrastructure sphere sit outside the Building Code.

SUMMARY OF THE PROPOSAL TO CABINET

1. Approve new provisions for the Building Code:
 - a. A premises frontage clearway of 1.8m where the building front will join, or be used as a public footpath.
 - b. A new section in the Building Code to provide a reference to size onsite stormwater management devices (capture and infiltrate Rainwater Harvesting and Storage page 122).
 - c. Require rainwater tanks and stormwater management device designs as part of building proposals by inserting a new planning requirement into A5 Planning Requirements.
 - d. A new section in the Building Code that sets the standard for building height in relation to boundaries and alternative building height in relation to boundary.
 - e. Require commercial and public new builds to include schematics of the facades and final sign design in their building proposals by inserting a new planning requirement into A5 Planning Requirements. This is to progress positive urban design.

- f. Require commercial accommodation developments to include staff accommodation as part of their development proposals by adding a provision for this to A5. Planning requirements.
2. Approve the following amendments to the Building Code 2019:
 - a. Refer to a standard for constructed vehicle crossings in section A5.3 Vehicle access provision, for select building classes (3 to 9) and list it in Table 1 Schedule of Referenced Documents.
 - b. Add a provision to allow for flexibility to the rule to account for the availability of public parking in section A5.4 Parking provision.
3. Approve the writing of regulations to require compliance with existing and new Building Code provisions:
 - a. The first area to target for compliance is proposed to be the Avarua town area, along the Ara Tapu with the following provisions:
 - i) Access to buildings (ND3 – Access for people with disabilities)
 - ii) Vehicle crossings (A5.3 Vehicle access)
 - iii) The proposed 1.8m wide minimum clearway for premises fronts
 - iv) The proposed water tank and onsite stormwater management requirement.
 - b. Approve for ICI to require premises where patron parking causes a road safety risk to comply with A5.4 Parking provision.
 - c. ICI will seek further guidance on how to go about setting a reasonable timeframe for compliance and revert back to Cabinet.
4. Approve for the membership of the Building Board to be made up of building sector representatives who will choose the chairperson.

Part of this work, which initially focused on premises fronts expanded to the much larger issue of the functioning, comfort, enjoyment and aesthetics of Avarua town and has led to the drafting of a Concept Note to produce an Avarua town improvement plan. The plan to be made in collaboration with business and land owners, Cook Islands Investment Corporation (CIIC), the utility companies, and other relevant Government agencies. The Concept Note will be submitted in this year's budget process.

These improvements are across the footpath network, removing or moving obstructions, improving other forms of transport facilities, and stormwater management. CIIC plan to build new pedestrian crossings in Avarua town. CIIC are repairing the footpath on the median and have a town plan however the focus of that town plan is a foreshore extension, the Punanga Nui and Panama footpath.

Sitting above this, ICI is working with other agencies¹ to improve urban planning including the appropriate standards to guide development to ensure that the ecological integrity of natural environments are protected, that human wellbeing is preserved and pressure on public infrastructure is managed. ICI initiated the wider framework to focus on reducing pressure on and damage to, public

¹ Police, Ministry of Transport, National Environment Service, the Cook Islands Investment Corporation, Ministry of Internal Affairs, Ministry of Cultural Development, Central Policy and Planning Office, Ministry of Justice, To Tatou Vai and Vodafone

infrastructure. The focus has expanded to include environmental protection and social benefits as intended by the Infrastructure Act, internationally accepted best planning practices and to fulfil the role of Government. Updates to building rules are a portion of this work.

DETAILED DESCRIPTION

The topic areas in this paper are:

Accessibility and walkability	Improve the comfort and safety of pedestrians and those who use mobility devices.
Housing	Reduce pressure on the long term rental market through the provision of worker housing.
Parking	Create flexibility where there is ample public car parking and require compliance with 2019 parking rules where there is a road safety risk.
Water sensitive design	Introduce stormwater design specifications and requirements into building rules.
Height in relation to boundary	Require building proposals to avoid shadowing on neighbouring dwellings.
Urban design	Require the inclusion of the design of facades for commercial building permit applications.
Future proofing	Enable the requirement for existing buildings to comply with new rules over time in response to the changing climate and social changes, when reasonable.

ISSUES AND PROPOSED SOLUTIONS

A. Accessibility and walkability

A.1. The problem – pedestrian congestion, inaccessible places

There are walkways along shop and office fronts in Avarua town that are too narrow or have obstructions that inhibit efficient movement during heavy foot traffic. This causes pedestrian congestion, which affects the experience and enjoyment of Avarua town. This can have downstream effects on businesses where people may choose to avoid those parts of town.

The infrastructure in Avarua town is discriminatory². The narrow walkways (as well as kerbs and uneven pavement) and disconnected footpaths make it difficult for those who are less able-bodied to access goods and services. We have effectively shut the door on a portion of the community.

There is no existing dimension requirement for premises frontage or a requirement to join a frontage to the public footpath (if there is one) and therefore no means to premises contribute to improving the built environment and the experience of commercial areas.

A.1.1. The solution

² Definition of discriminate in the Disability Act 2008 – “discriminate” shall mean [additional text] or to subject a person with a disability to a detriment in circumstances in which other persons who do not have a disability would not be subjected to such detriment

The New Zealand Pedestrian Planning and Design Guide recommends a minimum clearway of 1.8m to allow two wheelchairs to pass. Central Avarua store and office fronts currently range between 1m to 4.2m. Six shop and office fronts between the Empire Theatre and Raro Mart (that form a public footpath) do not have a 1.8m wide clearway³.

ICI proposes to establish a minimum premises front of 1.8m wide in the Building Code and require joining to a public footpath where there is one. Widening narrow walkways will reduce pedestrian congestion to allow for comfortable movement as well as for wheelchair users to pass each other and make 180 degree turns without causing disturbance to others. Connected walkways provides safe, connected passage for those walking or wheeling.

A.2. The problem – vehicle crossings

There are seventeen vehicle crossings along the public footpath network between the Empire Cinema and Raro Mart. Eight are kerbed, five are sloped and three are partially level or level with the footpath pavement.

Kerbed vehicle crossings reduce the accessibility for those with mobility impairment and the uneven surfaces is a safety hazard and is uncomfortable for everyone. There are three instances of two vehicle crossings being side by side. Multiple vehicle crossings and crossings side by side are a risk to pedestrians and are a result of the absence of good planning. Appendix 2 provides a bird's eye view of the locations of the vehicle crossings and intersections as well as photos of some of the crossings.

The Cook Islands Building Code 2019 requires vehicle access provision (A5.3) to be designed and located to provide for safe, effective and efficient movement to and from the site and minimise potential conflicts between vehicles, pedestrians and cyclists. There is no standard listed to refer to and the 2019 rule cannot be enforced on the existing built environment.

A.2.1. The solution

ICI proposes to require premises with vehicle crossings across footpaths to come into compliance with A5.3 Vehicle Access and have the Building Code refer to a standard or standards for vehicle crossings.

A.3. The problem – mobility impaired access

Under section ND3 of the 2019 Building Code, public buildings (includes commercial premises) are required to ensure buildings are accessible from the section boundary, the carpark and any other building within the same allotment. Accessibility standards can be developed for the public footpaths under the Infrastructure Act but the private property provisions in the Building Code cannot be enforced on buildings built before 2019.

A.3.1. The solution

Require compliance with ND3 Access For People with Disabilities in the Building Code 2019 within a given timeframe to reduce the exclusion of the mobility impaired people from accessing goods and services by a given date.

³ See Appendix 1 for a list of premises and their frontage width

B. Housing

B.1. Problem – Pressure on long term rental housing

Prior to the Covid-19 pandemic, Rarotonga was facing a long term rental housing shortage as a result of private homes being moved to the short term rental market and the increased demand from staff contracted to tourism operators⁴. This led to a substantial increase in long term rental prices. The proportion of household budget dedicated to housing increased from 21.8 per cent in 2006 to 27.6 per cent in 2016. Since the pandemic ended and the border reopened, rental ads, online discussions and word of mouth reveal that the situation has not changed.

Significant increases to the cost of housing is a concern when the average income in the Cook Islands is \$19,246⁵ per person and \$55,150⁶ on Rarotonga for household income.

Overseas, such as in Queenstown⁷ in New Zealand, there is a growing housing affordability problem due to the same issues we are experiencing in Rarotonga, as well as housing speculation⁸. People in towns that have a high reliance on tourism are often being marginalised as homes move to the short term market and competition for housing increases. The local people effectively being displaced.

B.1.1. The solution

In some countries, large commercial accommodation developments in seasonal holiday destinations are required to build their own staff accommodation as part of their overall development.

This solution is one that can be used in the Cook Islands to reduce pressure on the long term housing market. A number of tourist accommodators on Rarotonga already accommodate their expatriate staff. This can be done by adding staff housing to A.5 Planning requirements of the Building Code for large tourism accommodation developments. An option to calculate staff housing occupancy is a staff to room ratio. Staff to room ratio examples from overseas is 2.5:1 (Brazil), 2:1 (China) 1.75:1 (India), and 1:1 (US, Canada, Australia)⁹. The ratios depend on a raft of factors.

C. Parking

C.1. The problem – parking requirements

Land is scarce in the Cook Islands. Limiting land used to store vehicles is important to preserve the natural environment and save land for people, buildings and ecosystem services.

On the other hand, there are premises where on-street parking creates road safety risk. Patrons to specific premises in Muri, Titikaveka and Arorangi park cars along the road or on the footpath which narrows the vehicle lanes on both sides and forces pedestrians to walk in the vehicle lane.

C.1.1. The solution

⁴ Economic Development Strategy, 2020

⁵ 2021 Census Report with Tables and Questionnaire

⁶ Household Income and Expenditure Survey (HIES) 2015/16

⁷ <https://www.qldc.govt.nz/media/e1tdqkw/3g-economic-assessment-13-july-2022.pdf>

⁸ Buying houses specifically for the rental market

⁹ <https://www.linkedin.com/pulse/staffroom-ratio-chaminda-samaranayake/>

Progressive planning is moving away from building for the car in terms of investment in car parks and multi-lane roads and highways, to improving public transport, cycling and walking facilities.

Public parking available in Avarua town provides the ability for businesses to meet parking needs required under the 2019 Building Code. At the same time, the Ministry of Transport have a draft policy direction to work towards reducing car dependency through incentives and disincentives.

ICI proposes to add in a provision to the Building Code to allow for flexibility to the car park rule where there is ample public parking available such as in Avarua Town. Those car parks also need freeing up from workers who park their vehicles there all day so they are available for customers. Solutions to this have been raised in separate discussions¹⁰.

Existing parking rules need to be enforced on properties where on-street parking is insufficient to meet current rules and create a road safety risk. There could be an inability to meet parking requirements at some premises but the Building Controller should be able to work with those premises owners on a way forward such as allocating a public space, an empty section nearby for parking, providing a transfer service and promoting the use of public transport.

D. Water sensitive design

D.1. The problem - stormwater

Stormwater has become a major problem since 2018 when average rainfall intensity increased markedly. Flooding of homes and businesses and sedimentation of the marine environment has become a regular occurrence.

D.1.1. The solution

Directing water quickly out and away is no longer the right way to manage stormwater. Water sensitive design¹¹ is a holistic planning approach with high emphasis on stormwater management. The development permitting agencies are working to build water sensitive design into development rules.

Water sensitive design applies a treatment train approach to managing stormwater, starting at the site level by capturing and holding water where it falls. Rainwater tanks and onsite surface water management (and vegetation) are forms of site specific water sensitive design. Rainwater tanks are already specified in the Building Code (DF7) but are not compulsory.

A standard for onsite stormwater management is required, as it is outlined for rainwater tanks. Both rainwater tanks and stormwater management need to be required in building proposals.

To account for the existing built environment, ICI seeks to develop the ability to have properties comply with the existing rainwater tank provision and the proposed onsite surface water management solution for the Building Code.

E. Height in relation to boundary

E.1. The problem – shading effects of new buildings on existing buildings

¹⁰ Staff to park cars at Terevete Park, introduce paid parking after a certain time to discourage all day parking

¹¹ Water sensitive design is an inter-disciplinary design approach, which considers stormwater management in parallel with the ecology of a site, best practice urban design, and community values.

Tall buildings close to property boundaries can create adverse effects of height on neighbours such as shading and dominance). ICI receives complaints about new buildings casting shadows on neighbouring homes and solar panels. There is currently no control on a buildings height at the front of the property.

The Building Code allows for a maximum height of buildings of twelve metres and a set back from boundaries other than the road frontage of 1.5 metres. These limits however, do not consider the effects of shadowing on neighbouring properties and dwellings that a tall building could cast on a food garden, on a home or on solar panels at the neighbouring dwelling.

E.1.1. The solution

Countries with developed planning standards use a concept called ‘height in relation to boundary’ and ‘alternative height in relation to boundary’. This concept establishes specific measurements to guide the height and set back of buildings depending on the zone to prevent shadowing. High building density zones have a lower restriction while low density zones have more stringent restrictions. See Appendix 3 for an example.

ICI proposes to establish a height in relation to boundary provision in the Building Code which would be different for a town area than a residential area as density is traditionally acceptable for towns. Such a provision also reduces visual dominance effects on immediate residential neighbours.

F. Urban Design

F.1. The problem – no control in design of commercial buildings

The design of a commercial building and mounted signage is not currently considered in building permit applications. This means that any structure and signage can be built without the need to contribute to the aesthetic quality of business areas, communities and Cook Islands character.

F.1.1. The solution

Require commercial premises to include schematics of the facades and final sign design in their building proposals by inserting a new planning requirement into A5 Planning Requirements. This is to progress positive urban design. An urban design guideline is under development. This will provide design directives to developers. The façade to be assessed by the Building Board with review based on the urban design guideline.

G. Future proofing

G.1. The problem – inability to induce adaptation

Creating new standards in the Building Code does not account for the existing built environment. This means the effects on people, public infrastructure and the environment cannot be mitigated.

G.1.1. The solution

To attend to the existing built environment, ICI seeks a regulation to enable the necessary authority (Minister or Building Controller) to require compliance with new rules to respond to changes to the climate and social needs. ICI will rely on legal advice on how to go about setting a timeframe but expects that negotiation with the affected parties would be a priority for settling on a timeframe.

H. The Building Board

H.1. The problem

The 2019 Cabinet Submission for new a new building Act proposed for a Building Board to be formed. The 2019 submission described membership to the Board to be made up of Heads of Ministries (or their delegates) for the Ministries responsible for infrastructure, public health, environment, disability issues, dangerous goods and fire response. The 2019 submission also outlined that the Building Controller would chair the Board and the Board could bring in additional participants when matters under consideration require it. Having the Building Controller as the chair could be problematic since the Board will be receiving appeals on building permits declined by the Building Controller.

H.2. The solution

The responsibilities of the Board are focused on enforcement of building rules and other legal requirements, receive and consider applications for construction, alteration and demolition, as an advisor to government and recommend changes to law in the context of heritage value, impacts of climate change and rights and interests of persons with disability.

ICI seeks to change the Board membership to be made up of representatives from the building sector and have the Board members choose the chairperson by a vote. Building sector representatives are better able to understand building regulations and standards and know the situation on the ground.

Additionally, all building applications have approval from the National Environment Service before being received by Building Control. This means the building plans have had an environmental review.

I. Intended Outcome

The intended outcome from this work is to:

I.1. Contribute to wellbeing in the built environment through:

- I.1.1. Improved accessibility and walkability
- I.1.2. Improved access to housing
- I.1.3. Protected infrastructure and the natural environment
- I.1.4. Protection from high density development
- I.1.5. Public buildings that contribute to the aesthetic quality of the built environment
- I.1.6. A technical Building Board membership

CONSISTENCY WITH NATIONAL PRIORITIES

Accessibility and walkability

Avarua town a better, happier, safer place to walk and wheel.

- Overall National Sustainable Development Agenda 2020+ (NSDA) Goal of wellbeing for all – Turanga Memeitaki
 - Comfort and safety in pedestrian networks contributes to everyone’s wellbeing.
- NSDA Goal 6. Connecting our Nation through Infrastructure, Transport and ICT

- This initiative supports developing appropriate infrastructure conducive to walking and wheeling.
- NSDA Goal 7, Health and Healthy Lifestyles
 - A walkable town encourages people to walk between amenities in Avarua town rather than drive promoting a more active lifestyle.
- NSDA Goal 9, Our Inclusiveness
 - Fit for purpose, connected walkways enables persons with a mobility impairment to have equal opportunity to access goods and services in towns.
- NSDA Goal 15. Our Security, a Peaceful and Just Society
 - A built environment that encourages walking reduces motor vehicle use, reducing the risk of motor vehicle accidents.
- Disability Policy and Act
 - The Cook Islands Disability Inclusion Development Policy outcomes 1 to 3
 - Persons with disability¹² have the right to live a dignified life; accessibility for persons with disability is ensured; and that they have equal opportunities to education, health and employment.
 - The Disability Act 2008
 - Directs Government to ensure that persons with a disability have access to certain buildings and to footpaths.
 - Wider, accessible walkways and safer vehicle crossings improves accessibility and thereby maintains the dignity and opportunities for those who are less able-bodied.
- The Cook Islands Constitution Part IVA Fundamental Human Rights and Freedoms 64(1)
 - Section 64 (2) recognises that every person has duties to others for protecting the rights of others in the interests of public safety, morals and general welfare.
 - Accessible public and commercial areas ensures the right of everyone to have a safe and walkable town to access goods and services.
- Climate Change Policy 2018-2028
 - A comfortable walking network encourages people to walk rather than drive individual motorised transport, reducing emissions from transport.
- Cook Islands Road Safety Strategy 2016 – 2020
 - Less vehicles on the road, through reduced use of motor vehicles to move between amenities, reduces the risk of motor vehicle accidents and other vehicle related trade-offs.
- Draft Land Transport Policy
 - Objective to reduce car dependency through improving infrastructure for other transport modes including walking.

Pressure on long term rental housing

Requiring worker housing for tourist accommodation developments

- Overall NSDA Goal of wellbeing for all – Turanga Memeitaki

¹² The definition of a person with a disability includes any person with a congenital or permanent physical impairment, including any sensory impairment, or who has an intellectual or developmental disability, or a person with loss of abnormality of physiological or anatomical structure or function, or a person with a psychiatric disability or any person certified by a Registered Medical Practitioner approved by the Minister for the purpose to be a person with a disability.

- Working towards policies to protect the ability to be housed affordably contributes to wellbeing.
- NSDA Goal 1. Wellbeing for all
 - Reducing the pressure on the long term rental housing market reduces stress on households and benefits everyone.
- NSDA Goal 2. Welfare and Equity
 - Reducing pressure on the long term rental housing market reduces competition, reducing the cost of rent and hardship on families who don't own their own home and is a policy to promote more fair and reasonable opportunity to access housing.
- Economic Development Strategy 2020
 - Objective 1 is to improve equity and access for all.
 - The provision of staff housing has a direct, positive effect on the long term rental market through reducing demand and thus improving equity and access to housing for all residents on Rarotonga.

Parking

Flexible parking rules where there is ample public parking, enforcing parking rules where there isn't

- NSDA Goal 6. Connecting our National through Infrastructure, Transport and ICT
 - A flexible parking rule is appropriate in the instance of available public parking.
- NSDA Goal 11. Our Biodiversity and Natural Environment
 - Land can be left for other purposes such as housing or commercial enterprise or left natural rather than paved over or compacted from vehicular traffic.
- NSDA Goal 12. Climate Change, Resilience (Renewable Energy and Energy Efficiency)
 - Land left natural and vegetated reduces heat island effects, lowering urban temperatures and absorbing rainfall and reducing flooding.
- NSDA Goal 15. Our Security, a Peaceful and Just Society
 - Organising parking and enforcing new parking rules, improves road safety

Water sensitive design

Requirement for rainwater tanks and onsite stormwater management

- NSDA Goal 11. Our Biodiversity and Natural Environment
 - Holding back surface water reduces sedimentation to the stream and marine environment, therefore protecting biodiversity, coral reefs, and improving water quality.
 - Reducing runoff reduces erosion of soils.
- NSDA Goal 12. Climate Change, Resilience (Renewable Energy and Energy Efficiency)
 - Water sensitive design improves the resilience of communities in the face of climate change related rainfall intensity.
 - Reducing runoff protects those who live in low lying areas.
- The Cook Islands Climate Change Policy 2018-2028
 - Mainstream climate change in development planning.
 - Policy Measure B: strengthen resilience and reduce vulnerability to climate change.

- Building water sensitive design into building rules is adaptation and mainstreaming climate change into development planning and strengthens resilience.
- The National Environment Policy 2022-32
 - Objective for holistic planning to address development impacts and address challenges to national planning that includes sustainability, resilient infrastructure and tourism.
 - Water sensitive design is a key holistic planning approach to land development.
- The Cook Islands Roads and Road Drainage Policy 2017
 - Problem of discharge of surface water onto roads from adjacent land and contaminated runoff into the lagoon.
 - States that more advanced treatment methods may be required in Avarua town due to the greater area of impervious surface.
 - Water sensitive design, beginning at the private property level will reduce runoff to roads and the lagoons.

Height in relation to boundary

Implementing height in relation to boundary rules

- NSDA Goal 15. Our Security, a Peaceful and Just Society
 - Rules to protect people from the negative effects of development is a key role of government.

Urban design

Buildings that contribute positively to the landscape, promotes Cook Islands character

- Overall NSDA Goal of wellbeing for all – Turanga Memeitaki
 - Beauty across the built environment contributes positively to how we feel.
- NSDA Goal 13, Cultural Heritage, History, Identity and Language
 - An aesthetically pleasing built environment that promotes Cook Islands character, contributes to how we feel in places and creates community pride.

The Building Board

A board that understands construction related matters

- NSDA Goal 15, Our Security, a Peaceful and Just Society
 - A technical building board ensures capable and qualified persons are advising on building matters, improving public service performance to protect the wellbeing of people.

SOCIAL/ENVIRONMENTAL IMPACTS

Businesses or landowners will be adversely affected by the proposed compliance requirements since they have to pay for alterations and installations at their premises to comply with the Building Code and proposed new provisions. In terms of the alterations that improve walkability, when you improve walkability, businesses are positively affected¹³.

¹³ <https://economicdevelopment.extension.wisc.edu/files/2022/01/DE0719.pdf>

Large tourist accommodation developers will be affected by the worker housing rule. Available land for the commercial development used for worker housing reduces the area they could use for higher return, tourist rentals. Alternatively, if land off-site is leased, this will be an additional financial cost and complexity to the development.

If or when compliance requirements are placed on homeowners there will be a financial cost to comply such as having to get a water tank to capture roof runoff. Raingardens are low cost or no cost solutions that can work for managing stormwater depending on the site.

Extending out premises fronts to meet a minimum width will affect some premises storefront parking. The parking will have to change to parallel parking or only permit small vehicles.

Water sensitive design will benefit the environment.

Appendix 1 – Store/office fronts in Avarua Town used as public walkways

Shop fronts	Clearway Width (mm)	To meet 1800 clearway	Total Width (mm)
Empire Theatre	2315	0	2315
BCI	1590	200	1800
Foodland	1280	520	1800
BSP	2108	0	2108
Island Craft	1470	330	1800
Marekos	1470	330	1800
Stacks	2030	0	2030
Dive Shop - Split by pole	2760 / 1170 / 1590	Move pole, extend or shorten exterior roofline	2760
Western Union	2750	0	2750
Vonnia's	4200	0	4200
Grand Central Building (Smartie)	1620	180	1800
Grand Central Building (Jay Cars)	1000	800	1800

*NB Rows in blue highlight the business premises that do not meet the 1800mm clearway

Appendix 2 –Vehicle crossings in Avarua town cross the public footpath, inland side of the road



-  Sloped vehicle crossing
-  Kerbed vehicle crossing
-  Partially level or level vehicle crossing



- Kerbed vehicle crossing
- Partially level vehicle crossing

Photos of vehicle crossings



Empire Theatre crossing (kerbed)



ANZ vehicle crossing (sloped, obstruction)



CITC Shopping Centre vehicle crossing (sloped)



Tutakimoa Rd intersection (kerbed, obstructions)



Police and Polynesian rentals vehicle crossings (kerbed)



Fave Design vehicle crossing (kerbed, obstruction)



Vehicle crossing to private residence next to the Goldmine (partially level, sloped road edge, obstruction)



St Joseph's Rd intersection (kerbed, obstructions)



Energy Centre and Police vehicle crossings (kerbed, partially level)

Appendix 3 - Height in relation to boundary examples

Extract from the Auckland Unitary Plan

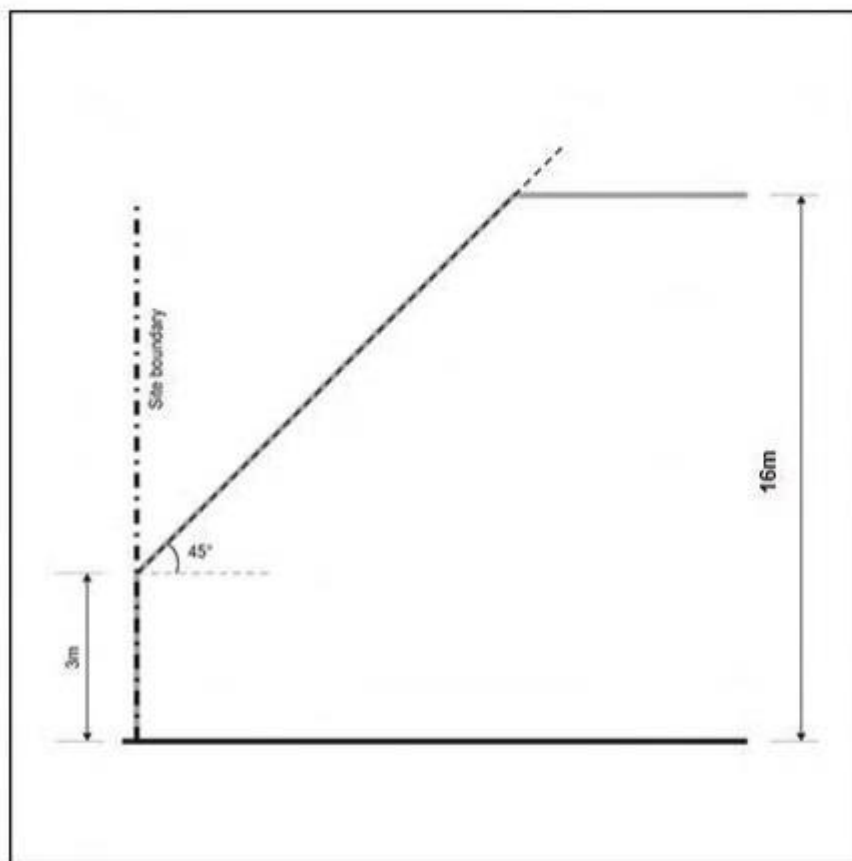
Zone: Auckland Residential – Terrace Housing and Apartment Buildings Zone

H6.6.6. Height in relation to boundary

Purpose: to minimise the adverse effects of building height on neighbours (i.e. dominance and shading) and reduce the overall visual dominance of buildings at upper levels.

- (1) Buildings must not project beyond a 45-degree recession plane measured from a point 3m vertically above ground level along the side and rear boundaries, as shown in Figure H6.6.6.1 Height in relation to boundary below.

Figure H6.6.6.1 Height in relation to boundary

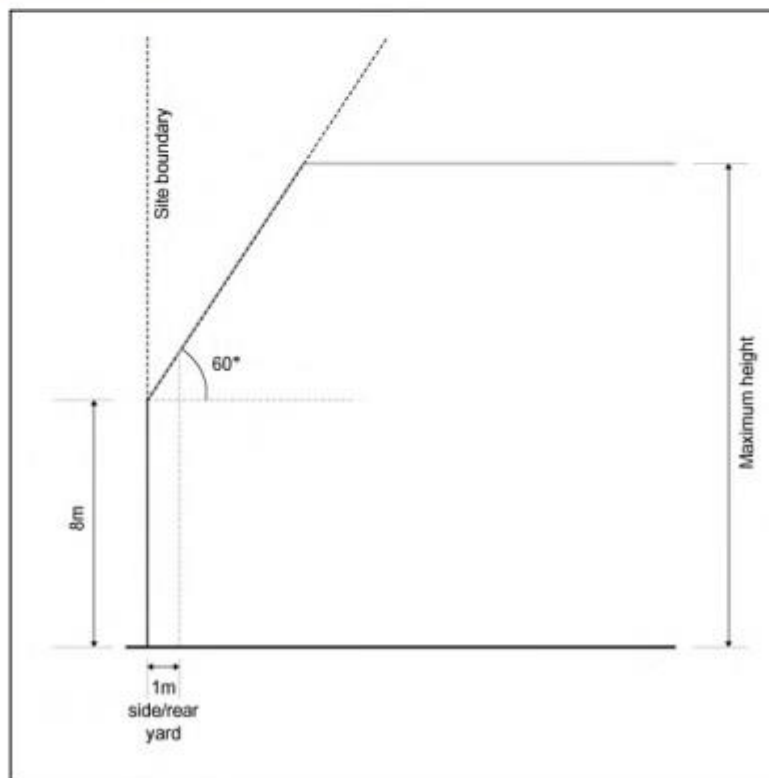


H6.6.7. Alternative height in relation to boundary within the Residential – Terrace Housing and Apartment Buildings Zone

Purpose: to enable the efficient use of the site by providing design flexibility at the upper floors of a building, while maintaining a reasonable level of daylight access and reducing visual dominance effects to immediate neighbours.

- (1) This standard is an alternative to the permitted Standard H6.6.6 Height in relation to boundary and applies to sites in the Terrace Housing and Apartment Buildings Zone that adjoin another site in the same zone or any other zone not specified in Standard H6.6.8 Height in relation to boundary adjoining lower intensity zones.
- (2) Buildings or any parts of buildings must not project beyond a 60 degree recession plane measured from a point 8m vertically above ground level along side and rear boundaries within 20m of the site frontage, as shown in Figure H6.6.7.1 Alternative height in relation to boundary within 20m of the site frontage below.

Figure H6.6.7.1 Alternative height in relation to boundary within 20m of the site frontage



- (3) Buildings or any parts of buildings further than 20m from the site frontage must not project beyond a 60 degree recession plane measured from a point 8m vertically above ground level, and 2m perpendicular to side and rear boundaries, as shown in Figure H6.6.7.2 Alternative height in relation to boundary further than 20m from the site frontage below.

Zone: Single House Zone

H3.6.7. Height in relation to boundary

Purpose: to manage the height and bulk of buildings at boundaries to maintain a reasonable level of sunlight access and minimise adverse visual dominance effects to immediate neighbours.

- (1) Buildings must not project beyond a 45-degree recession plane measured from a point 2.5m vertically above ground level along side and rear boundaries, as shown in Figure H3.6.7.1 Height in relation to boundary below.

Figure H3.6.7.1 Height in relation to boundary

