

NGĀ PAEREWA HOAHOA WHARE DESIGN REQUIREMENTS

FOR PUBLIC HOUSING DELIVERED BY, AND FOR, KĀINGA ORA – HOMES AND COMMUNITIES

VERSION 2.1
JULY 2026

Kāinga Ora
Homes and Communities

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RĒHITA HURINGA
CHANGE LOG

NGĀ PAEREWA HOAHOA WHARE DESIGN REQUIREMENTS V2.1

DATE	DESCRIPTION OF CHANGE
01/01/2023	Initial release v1.0
01/01/2024	First update v1.1
1/07/2025	Second update V2.0
01/07/2026	Third update V2.1

Change identification

To make it easier to identify changes within this document, **purple text** has been used to signify changes. These changes can also be cross referenced in the table below.

MAIN DOCUMENT CHANGE #V2.1	CLAUSE	CHANGE TYPE	SUMMARY
p.9	How to Use This Document	Update	Reintroduced “Making Good Decisions” to emphasise balanced decision-making and management of trade-offs.
p.14	A1.2.2	Update	Clarified solar access requirements, including limit on dwellings without direct sunlight
p.15	A1.3.1	Correction	Gate height corrected from 11.2m to 1.2m
p.16	A1.3.1	Clarification	Service cover lids are bolted or keyed
p.19	A2.1.1	New	Added guidance for prevention of bird roosting in outdoor areas
p.25	A2.4.1	Update	Lawn gradient updated to allow compliance with local authority requirements
p.28	A3.1.1	Clarification	Pedestrian access requirements refined, including minimum pathway widths
p.33	A3.5.1	Update	Low carbon concrete requirement for hardscaping increased from 10% to 30% reduction
p.35	B1.1.2	Update	Structural low carbon concrete requirement increased from 10% to 30% reduction
p.36, 37	B1.2.1	Update	Building envelope requirements and guidance revised to prioritise low-risk, low-maintenance design and durability. Exterior colours choices (M-248) are applied.

RĒHITA HURINGA CHANGE LOG

MAIN DOCUMENT CHANGE #V2.1	CLAUSE	CHANGE TYPE	SUMMARY
p.45	B1.7	Update	Rationale simplified for clarity and guidance expanded to clarify portfolio-level assessment of whole-of-life carbon, including reference to external guidance (Concrete NZ)
p.49	B2.1.3	Clarification	Built-in wardrobes required for all bedrooms
p.51	B2.2.1	Update	Main entry requirements clarified, including definition of sheltered landing and roof cover
p.53	B2.2.3	Clarification	Door and hardware requirements expanded, including minimum clear opening widths.
p.58	B2.4.1	Update	Flooring and materials requirements updated, including durability and installation improvements
p.59	B2.4-1	Update	Materials and finishes table updated, including vinyl entry requirements and moisture-resistant plasterboard
p.60	B2.4.2	Clarification	Storage requirements clarified, including built-in wardrobe provisions
p.70	C1.1.1	New	Water tank lids must be secured/tamper-resistant
p.80	C2.4.1	Deletion	UHF TV aerial requirement removed for low-density housing
p.84, 86, 87	C3.1.2	Update	Mechanical ventilation requirements significantly revised, including interlocking systems and performance criteria
p.97	Appendix A – B1 Metal Roofing	Update	Added light reflectance value (LRV) range of 20–56% and alignment with M-248
p.97	Appendix A – B1 Metal Cladding	New	New section introduced for vertical long-run metal cladding systems
p.98	Appendix A – B1 Brick Cladding	New	New section introduced outlining brick veneer system requirements
p.100	Appendix A – B1 Window Joinery	Update	Performance, durability and hardware requirements expanded and clarified; New NSA supplier
p.101	Appendix A – B1 Glazing	Update	Requirements expanded and clarified; New NSA supplier
p.102, 103	Appendix A – B1 Exterior Doors & Hardware	Update	Updated requirements for door performance, materials and hardware
p.106	Appendix A – B2 Plasterboard	Update	Updated specifications including moisture-resistant products and NSA alignment

RĒHITA HURINGA
CHANGE LOG

MAIN DOCUMENT CHANGE #V2.1	CLAUSE	CHANGE TYPE	SUMMARY
p.108	Appendix A B2 – Carpet & Underlay	Update	Expanded performance and material requirements for residential carpet systems
p.112	Appendix A B2 – Kitchen Cabinetry	Update	Updated NSA-aligned cabinetry specifications and construction requirements
p.121	Appendix A – Heat Pumps	Update	Updated acceptable solution and NSA product list for heat pumps, including performance requirements (GWP limits, sound levels, corrosion protection) and inclusion of approved single split and ducted systems aligned with EECA guidance
p.123	Appendix A - Continuously Operating Mechanical Ventilation Systems	Update	Updated in relation to C3.1.2
p.124	Appendix A - Continuous Mechanical Extract Ventilation (CMEV)	Update	Updated in relation to C3.1.2

PURPOSE

Kāinga Ora has a mandate under the **Kāinga Ora – Homes and Communities Act 2019** to help create sustainable, inclusive, thriving communities that provide people with quality homes.

This Design Requirements document sets out the minimum requirements for the design of all new public housing developed by, and for, Kāinga Ora – Homes and Communities.

Incorporation of these requirements into the design and construction of our homes enables us to meet our responsibilities as a government agency and long-term asset owner as well as the needs of our customers and communities.

LEGISLATIVE COMPLIANCE

The requirements set out in this document are specific to Kāinga Ora. They are not intended in any way to replicate, substitute, contradict or compromise a development's compliance with relevant legislation. The design and construction of all Kāinga Ora developments and dwellings must comply with all requirements set out under existing legislation. Developments must also meet the requirements of local territorial authorities.

The acceptable solutions within this document describe how Kāinga Ora wishes to meet the building code or where we wish to exceed minimum code requirements, in addition to providing requirements where they are not addressed within the building code.

STRATEGIC CONTEXT

The requirements set out in this document support the objectives of the Kāinga Ora – Homes and Communities Act 2019 through the way in which our homes are designed and delivered, contributing to sustainable, inclusive and thriving communities.

This document is part of a suite of resources that support successful design outcomes for urban design, landscape and housing within Kāinga Ora developments across the motu/country (**see Figure 1**).

He mana i te whenua, he kura kāinga, he whare haumaru, he puna ora, hei oranga tangata.

With pride of place, with a space to call home, with a protective house, let the spring of life prosper and bring wellbeing to all.

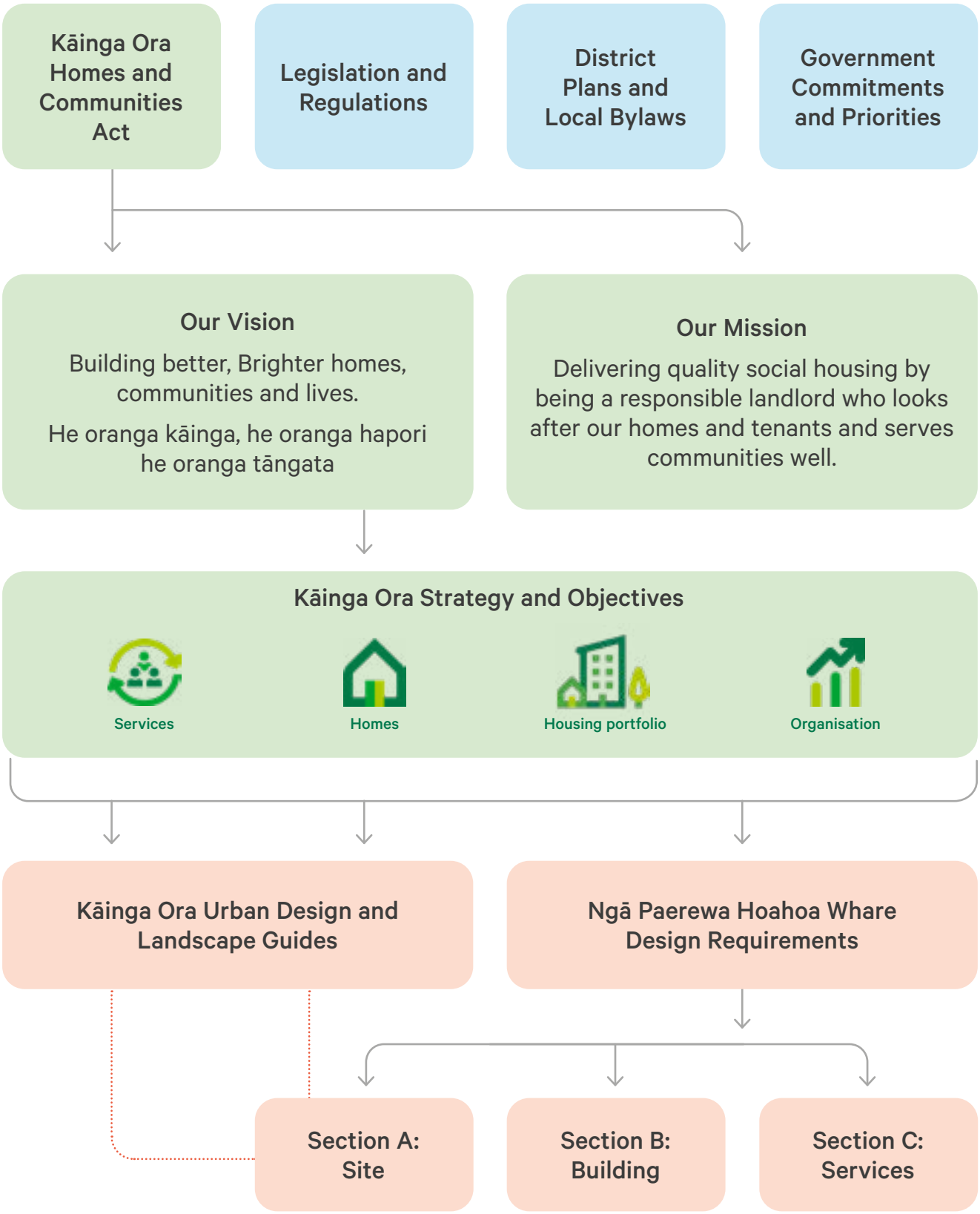


Figure 1: Design Requirements within the strategic context

DESIGN OUTCOMES

The Performance Requirements and corresponding Acceptable Solutions set out in this document outline tangible and achievable design attributes that support our organisation's strategic objectives.

Our customers' experience

Kāinga Ora provides housing to approximately 187,000 people – 4 percent of the New Zealand population. We house a higher proportion of households with high and complex needs than ever before.

Approximately 82,000 of our household occupants are under the age of 20, and 39,000 are tamariki/children under the age of 10 – a critical time in child development. More than 30 percent of our tenancies belong to sole parents. Our homes need to incorporate features that enable safe supervision of tamariki/children and separation of play spaces from vehicle manoeuvring areas.

Safe living environments

Kāinga Ora has a responsibility, to ensure that the health, safety and wellbeing of all customers, employees and contractors is protected and promoted.

In addition to planning and designing for driveway safety, development design should reflect the principles of WorkSafe New Zealand's **Health and Safety by Design** and follow guidance from the Ministry of Justice **National Guidelines for Crime Prevention through Environmental Design in New Zealand**.

Within the dwelling, design detailing can help prevent slips, trips and falls and other accidents. Many of the design requirements are intended to minimise these risks for our customers.

Universal design

Kāinga Ora design and product requirements for new build homes have incorporated Universal Design features for almost two decades.

Universal design enables the environments we create to be accessed, understood and used to the greatest extent possible by all our customers, their whānau/family and manuhiri/visitors regardless of age, size, ability or disability and supports our customers as they journey through life's changes – for example, accidents and illness that may limit their mobility, and aging-in-place.

If an environment is universally designed, usable, convenient and a pleasure to use, everyone benefits.

Culturally responsive design

Under current legislation, Kāinga Ora is required to actively engage and work with Māori and local iwi. This includes in urban development and planning activities and in the design, construction and maintenance of individual dwellings.

Simple design features such as organisation, separation and adjacency of spaces within a home can ensure that Māori cultural practices are facilitated and maintained.

The design process should allow for adequate engagement with customer representatives and/or community representatives and seek to develop designs that are sensitive and responsive to cultural needs and aspirations.

Maintenance and durability

Kāinga Ora is New Zealand's largest residential landlord, accounting for 12 percent of the total rental sector. At the time of publication, we manage over 76,000 properties, and around 187,000 New Zealanders live in our homes.

Environmental sustainability

Buildings and construction create demand on our natural environment through use of materials, energy and water. Kāinga Ora aim to reduce these impacts where practicable to do so.

HOW TO USE THIS DOCUMENT

Key users

This resource is for stakeholders involved in the design and construction of Kāinga Ora public housing developments. It helps ensure that projects meet our obligations as a government agency and a long term-asset owner, while addressing the needs of our customers and communities.

Primary users include external consultants, contractors and subcontractors involved in design and construction of our homes, as well as Kāinga Ora development and project managers.

Other groups such as Kāinga Ora place-based teams, maintenance partners and our customers will not use this document but are directly affected by the requirements contained within.

Making good decisions

Each development project contains its own set of conditions and constraints. Projects should seek to achieve the best overall outcomes for the project and its future occupants. Where trade-offs are required (one outcome is compromised to achieve another) any associated risks or challenges should be made transparent, documented and addressed so that impacts are able to be mitigated or managed.

There can be some challenges when weighing up design options and solutions, for example:

- Creating privacy in homes while enabling solar access and achieving passive surveillance of public spaces
- Providing adequate ventilation to homes located on the busy streets where opening windows may compromise acoustic comfort
- Providing adequate open space, carparking and protecting mature trees where sites are constrained.

Scope of use

The requirements set out within this document are applicable across all new-build public housing projects including those delivered via the Housing Delivery System and Market Acquisitions methods.

Out of scope

These design requirements are not mandatory for Community Group Housing, transitional or emergency housing, but provide a useful set of requirements that can be followed where practicable.

Typologies

Some requirements apply only to specific typologies. When this is the case, it will be clearly noted in the relevant section.

The typologies referred to in the Design Requirements are defined as follows:

- **Standalone, duplex and terraced housing:** This includes single-storey and multi-storey houses that fit within the scope of New Zealand Building Code (NZBC) clause E2 External moisture Acceptable Solution E2/AS1.
- **Apartments:** This includes three-level walk-ups and other multi-storey apartment buildings that typically fall outside the scope of E2/AS1.
- **Multi-unit developments:** This refers to developments where there are multiple dwellings. This may be multiple standalone or terraced houses, apartment buildings or a combination of building typologies within one site.

Document structure

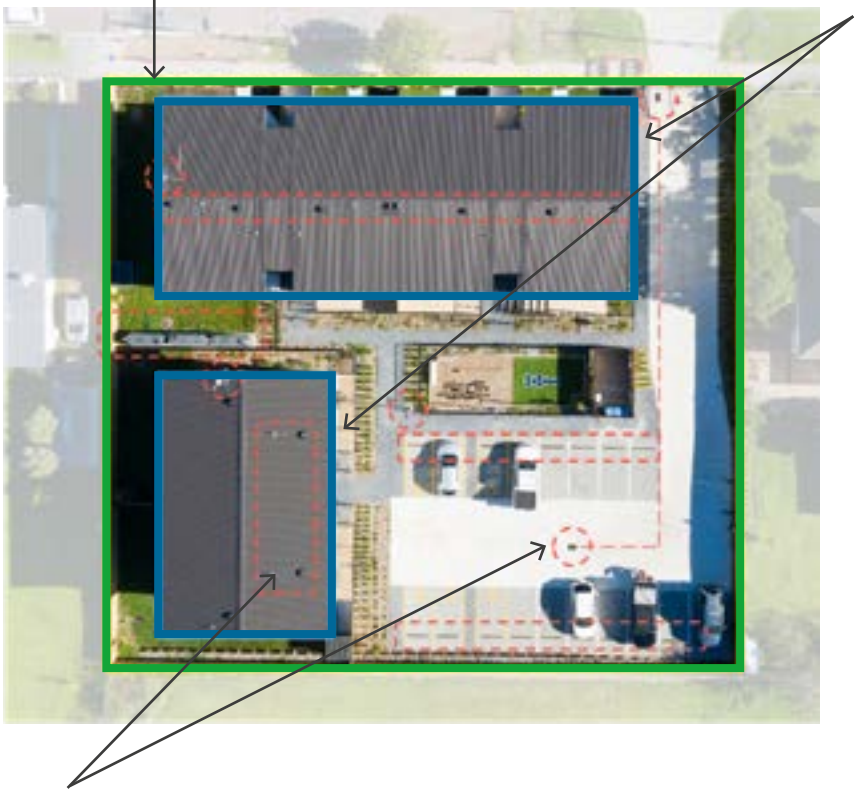
This document is set out in four primary sections:

Introduction

This section describes the context, purpose, desired outcomes and application of the design Performance Requirements.

A. Site

This section aligns with Kāinga Ora Urban Design and Landscape guides. It sets out requirements for site planning, provision and features of outdoor amenity spaces, pedestrian safety, and vehicle access.



B. Building

This section sets out passive design requirements relating to the overall performance of the building, including weathertightness, thermal performance and acoustics as well as internal space sizing and arrangement, fittings and finishes.

C. Services

This section sets out the active system requirements for site and building services, including energy and water supply and distribution, access control and security systems, active heating and ventilation systems.

Appendices

These provide additional detail and guidance as required.

Figure 1: Document structure

Set out of requirements

Our requirements are grouped and organised around design themes and building components. Each requirement is made up of the following parts:

Performance Requirement

The outcome expected from the design solution.



Acceptable Solution

Outlines the design attributes or approach that is deemed to meet the Performance Requirements. These are typically provided as specific statements.

Guidance

The guidance is not mandatory. It provides additional information, definitions or rationale that clarify the meaning and intent of the Performance Requirements and/or Acceptable Solutions.

Terminology

Performance Requirements are grouped and organised around design themes and building components. Each subsection includes the following terminology:

Adequate or appropriate	These terms are used when a specific requirement can't be defined, as the solution depends on factors like the development's size, type or expected number of occupants. In such cases, discretion should be applied, and best practice guidelines followed where available.
Where practicable / where possible	This is the preferred solution, however is not always possible to achieve given the specific constraints or context for an individual development.
Must and must not	This means that the Acceptable Solution must be adhered to unless there is justifiable reason not to.
Consider or consideration	These terms recognise that there may not be a defined solution, or project constraints may prevent implementation. At a minimum, projects must assess the issue and whether the acceptable solution can be applied.
Not permitted	Use of this term means that a product, system and/or design solution must not be used.
Alternative Solution	Sometimes, the best way to meet a Performance Requirement differs from the outlined Acceptable Solution. In these cases, an Alternative Solution may be proposed and reviewed by the Standards or Design Standardisation and Improvements team to ensure it meets the intent of the requirement. Costs are important, so provision of costings upfront and WOL need to be submitted with the solution.

Revisions, feedback and queries

This document undergoes regular reviews and updates to incorporate:

- technical clarifications and corrections
- project and stakeholder feedback
- updated, revised and new requirements that meet changing business needs, priorities and aspirations.

To provide feedback or seek clarification, please contact the Standards team at **standards@kaingaora.govt.nz**.

A WĀHI WHAKATŪ WHARE SITE

A1 Site response

A1.1 Risk management and mitigation

A1.2 Site response: building form and orientation

A1.3 Site response: safety, security and privacy

A2 Amenity provision and configuration

A2.1 Private outdoor areas

A2.2 Communal outdoor areas

A2.3 Outdoor service areas

A2.4 Landscaping

A3 Site movement and circulation

A3.1 Pedestrian circulation

A3.2 Driveway safety

A3.3 Carparking

A3.4 Mobility scooters, bicycles and other transport modes

A3.5 Product, material and system selection



A1 SITE RESPONSE

TERMS AND DEFINITIONS

Private Outdoor Area (POA)

The private outdoor area includes outdoor living space, deck/patio/balcony, household service areas, side yards and any other space within secure/child-proof/non-climbable fencing.

Outdoor Living Space (OLS)

Useable outdoor living space inside the private outdoor area that includes the deck/patio/balcony and lawn (where possible). Directly accessed from the deck or patio (where possible) and/or side yard gate. Clotheslines are acceptable in this space if not visually dominant. Detention tanks and refuse bins must not be in this space.

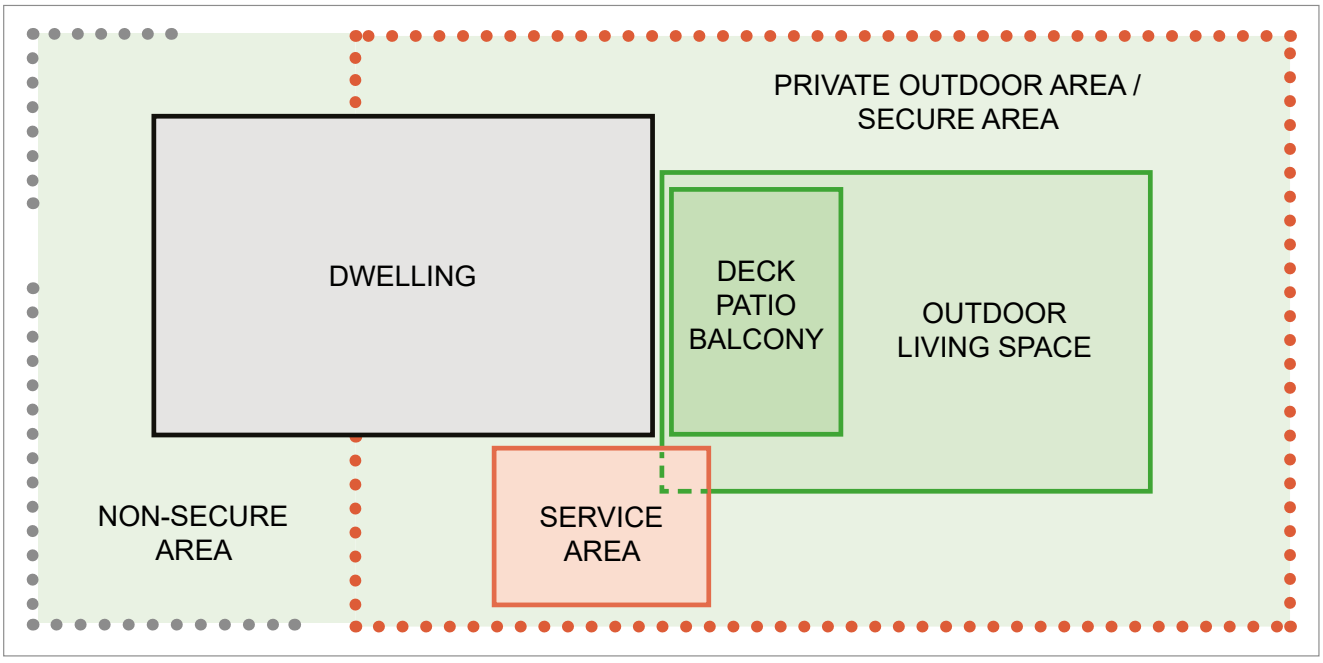
Deck, Patio or Balcony

Unobstructed level area within the OLS that is directly accessed from the main living or dining areas.

Service Areas

These areas may include clotheslines (if there is good solar access), outdoor storage sheds, refuse bins, and detention tanks (provided they are not within the OLS). These elements may be separate and should be located for convenience and practicality.

FIGURE A1.1-1: DEFINITION OF PRIVATE OUTDOOR AREAS



A1.1 RISK MANAGEMENT AND MITIGATION

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A1.1.1 Risk management Site and environmental risks are identified and appropriately managed or mitigated.	A. **Environmental risks** such as soil contamination, flood plains, overland flow paths, unstable land, high voltage power lines, waterways, steep cliffs, stormwater & sanitary sewer systems and service access covers and major arterial routes are considered and mitigated as appropriate. B. Site and master planning **mitigates the effects of noise** from external sources (for example, traffic).

A1.2 SITE RESPONSE: BUILDING FORM AND ORIENTATION

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A1.2.1 **Urban design** – site layout, building form and orientation of buildings and communal spaces is responsive to site context and urban form.	A. **Building form and site layout** is appropriate for the site conditions, context and topography.

Guidance

See the **Kāinga Ora website** for landscape and urban design guidelines.

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A1.2.2 **Solar access** is managed through site layout, orientation of buildings and communal spaces to create a comfortable and pleasant living environment.	A. **Layout and orientation of the building** facilitate controlled passive solar gain. i. Design the main living or dining areas to receive at least three hours direct sunlight between 9.00am and 3.00pm at each equinox. This applies to: a. All standalone, duplex, and terraced homes. b. 70% of all dwellings in an apartment block. B. In an apartment building no more than 15% of the total number of dwellings receive no direct sunlight. C. **Private outdoor areas** and **communal outdoor areas** must be provided solar access to: i. ensure outdoor living spaces are comfortable and useable environments ii. facilitate clothes drying iii. ensure plant species specified are suited to the light and moisture conditions of planted areas

Guidance

Passive solar gain is achieved through effective building orientation and placement, managing overshadowing, and reducing summer overheating. It also relies on optimised window design and thermal performance, along with consideration of vegetation and the use of shading and screening devices to support occupant comfort.

A 9am–3pm window is preferred to minimise glare, overheating, and account for overshadowing. Achieving solar access targets may not be possible on all sites due to competing constraints such as noise, topography, or competing views. Projects should optimise overall outcomes, clearly document trade-offs, and mitigate impacts. 3D modelling is recommended to accurately assess solar access and support alternative, evidence-based design solutions where standard criteria cannot be fully met.

See the **Kāinga Ora website** for landscape and urban design guidelines. Refer to the **terms and definitions** for guidance on how private outdoor areas are defined.

A1.3 SITE RESPONSE: SAFETY, SECURITY AND PRIVACY

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A1.3.1 Fences, gates and landscape retaining provide safety and privacy.	A. **Fences**: i. Define the **private outdoor area**. ii. Provide secure, child-safe areas, physically separated from vehicular areas. iii. Provide visual privacy between the **private outdoor area** and public or communal areas. iv. Must not obstruct the clear line of sight for drivers and pedestrians. **See Section A3.2.1**. v. Are non-climbable, do not have gaps greater than 100mm, and are not painted or stained (unless specifically required by local authorities or neighbourhood covenants). vi. Do not have sharp tops, and/or extended vertical elements that protrude above the top-rails. B. **Fence heights:** i. Are a min. 1.2m high and max. 1.8m high for secure areas, and up to 0.9m for non-secure areas. a. 1.8m fences must not be provided for the entire extent of the street-facing boundary. b. 1.8m fences to the street should only be used where visual privacy is required. c. 1.2m or 1.5m may be used where visual privacy is not required. C. **Gates:** i. Ungated access should be provided to at least one entrance, unless a gate is requested by Place-Based Team. ii. Are provided to **private outdoor areas** and communal play areas to ensure a secure area and must: a. Open inwards to the private outdoor area, and away from the dwelling facade. b. Be unobstructed by elements, such as window openings, downpipes, heat pump condenser units, etc. c. Not open directly onto vehicular spaces. Where this is unavoidable, the gate is recessed. iii. Gates are metal framed and minimum 1.2m high and: a. Have self-closing hinges, b. Have an automatic magnetic latch set at 1.5m above ground level c. Are not lockable. d. Timber framed gates are not permitted.

A1.3 SITE RESPONSE: SAFETY, SECURITY AND PRIVACY (CONTINUED)

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
	D. **Screens:** i. Are provided to communal refuse areas. ii. Are provided for privacy where outdoor living spaces are visually exposed to neighbouring living areas, communal or public spaces. iii. Do not create CPTED or Driveway Safety issues. E. **Landscape retaining walls:** i. Are avoided where practicable, through the use of a battered slope with a max. gradient of 1:3. ii. That are over 1.0m in height must prevent risk of falling by restricting access or providing a safety from falling barrier as per NZBC. iii. Have vehicle-rated barriers where necessary. iv. When combined with a fence at a property boundary, have a cumulative height that meets local authority rules. v. Can be integrated with boundary fencing to a maximum height of 0.5m. vi. Allow a minimum of 1.0m clear width between the face of a retaining wall and the dwelling. vii. Are not permitted to be painted or stained. F. **Service Access Covers** i. Must prevent risk of unauthorised access by using bolted or keyed lids and safety cages.

Guidance

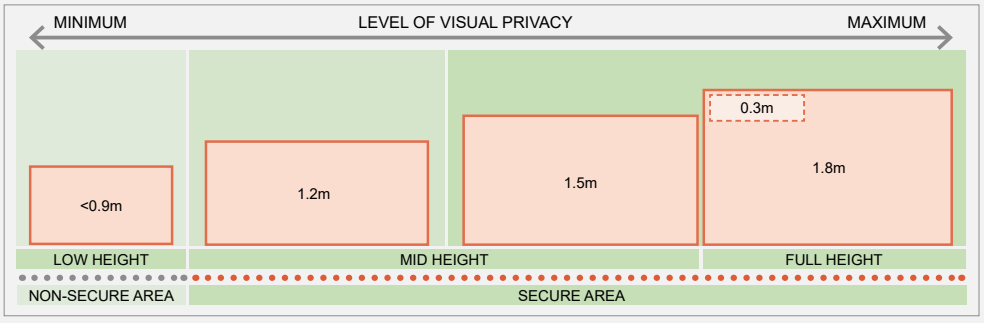
Fencing Height Guidance

- See the **Kāinga Ora website** for landscape and urban design guidelines.
- Refer to **Section C2.3** for outdoor lighting requirements.
- Refer to **Section C.1.1** for stormwater tank placement requirements.
- All fencing must comply with Resource Consent conditions and local authority rules.
- Fencing and retaining wall design should ensure customer safety, while also seeking to maximise useable outdoor area.

Landscape retaining walls

- Where retaining walls are under 1.0m in height no protection from falling, over and above Building Code is required.
- To minimise the visual impact of large retaining walls, use stepped or terraced retaining.
- Are not visually imposing to outdoor living spaces and habitable indoor spaces.

FIGURE A1.3-1: FENCE HEIGHT GUIDANCE



A2 AMENITY PROVISION AND CONFIGURATION

RATIONALE

Adequately sized and well-connected outdoor living areas enhance internal dwelling spaces and are important in supporting customers' health and wellbeing. For larger developments, outdoor shared spaces can support social interaction and community development.

A well-designed and considered landscape can contribute to a development's sense of place, enhancing the customers' experience, which helps to foster social interaction, pride of place and community stewardship. Landscaping helps to soften built form, activate spaces in between and can provide privacy.



Shared play area at Kāinga Ora development in Avondale, Auckland

A2.1 PRIVATE OUTDOOR AREAS

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A2.1.1 **Private Outdoor Area** is provided to each dwelling and is designed for safety, provision of privacy and enjoyment of use.	A. **Private Outdoor Areas** for standalone, duplexes, and terraced housing: i. Must meet the area requirements shown in **Table A2.1-1**. ii. Must be of a usable shape and size. iii. All decks and patios must have direct access to the outdoor living space. iv. The private outdoor area, where small and/or landlocked (e.g. middle-of-terrace units), may be replaced with larger decks/patios, and planting to provide sufficient useable area. B. **Concrete patio areas, where provided:** i. Have a cross-fall of between 1:60 and 1:40, fall away from the dwelling, and prevent water pooling. ii. Channel drains are **not permitted**. C. **Decks, landings and balconies:** fall from height risk mitigation: i. Where a fall risk is between 500mm-1.0m, provide a barrier rail to the perimeter at 1.0m. ii. Where a fall risk is between 1.0m and 1.5m, provide a 1.0m high balustrade. iii. Where a fall risk is over 1.5m, provide a 1.1m high balustrade, and ensure the design reduces the risk of objects falling off the deck/balcony. a. Use only one height balustrade for any deck. D. **Steps:** i. Main entry steps have a 300mm tread depth, and 150-180mm riser height. ii. All other steps have a 280mm tread depth, and up to 190mm riser height. iii. All steps do not have winders. iv. Meet fall from height risk mitigations as described above. v. Main entry steps have a handrail to one side, installed at 900mm. vi. All other steps have a handrail as required by NZBC.

A2.1 PRIVATE OUTDOOR AREA (CONTINUED)

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
	E. **Ramps (where required):** i. Have 1.2 x 1.2m landing top and bottom. ii. Are a maximum 1:12 gradient. iii. A maximum of rise of 760mm total height. iv. Only one mid-landing is permitted. v. Must include: a. Handrails installed at 900mm high b. Mid-rails c. Wheel-stop rails. F. **Apartment balconies:** i. Meet the requirements of **Table A2.1-1** and fall from height risk mitigation strategies. ii. External heat pump units and washing lines are placed to avoid fall from height risks and do not block access onto the deck or balcony.

TABLE A2.1-1: MINIMUM REQUIREMENTS FOR PRIVATE OUTDOOR AREAS

NUMBER OF BEDROOMS	STUDIO	1	2	3	4	5	6
OUTDOOR LIVING SPACE	12m²	20m²	20m²	35m²	35m²	50m²	50m²
Deck, patio, or balcony (within OLS)	4m²	8m²	10m²	10m²	12m²	12m²	12m²

Guidance

- For apartment developments, communal outdoor areas are provided in line with the project brief (Refer to **A2.2 Communal outdoor areas**).
- Balconies should be designed to support ease of cleaning and ongoing maintenance over the life of the asset. Designs should incorporate, where practicable, simple, passive measures to discourage bird activity.
- See the **Kāinga Ora website** for landscape and urban design guidelines.
- Apartment balcony safety-from-falling must meet NZBC.

Refer to the **terms and definitions** for guidance on how private outdoor areas are defined.

A2.2 COMMUNAL OUTDOOR AREAS

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A2.2.1 **Communal outdoor areas,** where provided, are designed and sized to support community building and wellbeing.	A. **Communal outdoor areas** are provided in central, safe and visible locations, and in accordance with the project brief. B. The type and size of communal facilities takes into consideration: i. Size of the development. ii. The number of people anticipated to use the space. iii. The age and ability of the anticipated user group. iv. Location of the development in relation to facilities in the surrounding area. v. Connection to indoor communal spaces. C. **Location and design** of communal outdoor areas considers: i. Solar access. ii. Shelter from prevailing winds. iii. Shade provision from buildings and shading devices. iv. Adjacency to indoor communal spaces. v. Natural surveillance. vi. Noise and noise-sensitivity. vii. Separation of space from vehicle movements. viii. Safe pedestrian routes. ix. Provision of equipment and fixtures to facilitate use e.g., seating. x. Gradients predominantly less than 1:20. xi. Separation from on-site hazards e.g., service access covers. xii. Privacy of adjacent private dwellings. D. **Communal outdoor areas** have: i. Adequate lighting. ii. An outdoor tap. iii. An outdoor power supply.

Guidance

See the **Kāinga Ora website** for landscape and urban design guidelines.

A2.3 OUTDOOR SERVICE AREAS

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A2.3.1 **Rubbish and recycling** areas are provided.	A. **Rubbish and recycling areas for all typologies:** i. Meet council requirements. ii. Are sized to suit the number of dwellings serviced. B. In addition, **communal rubbish and recycling areas** must: i. Allow practical access for collection vehicles. ii. Be located and/or secured to prevent usage by non-residents. iii. Be located so as not to cause nuisance e.g., smell, noise to residents. iv. Be well lit. v. Have an outdoor tap to facilitate cleaning. vi. Have a sump connected to waste water drainage system. vii. Have a durable, non-slip floor surface. viii. Have screening when visible to public or communal areas.

Guidance

- Refuse collection areas should be readily accessed from all dwellings.
- Liaise with asset management and rubbish collection providers as to type of rubbish collection (private or council) and to correctly size the rubbish collection storage area and to obtain tracking dimensions of collection vehicles.
- Where storage or rubbish bin enclosures are located directly adjacent to a boundary, consult a Fire Engineer and/or FENZ to determine any additional fire protection measures.

Refer to the **terms and definitions** for guidance on how private outdoor areas are defined.

A2.3 OUTDOOR SERVICE AREAS (CONTINUED)

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A2.3.2 Adequate and appropriately located **clothes-drying facilities** are provided.	A. **Clotheslines: Standalone, duplex and terrace dwellings** i. An external clothesline is provided and is sized according to **Table A2.3-1.** ii. Have good solar access. iii. Do not obstruct access routes. iv. Are separate from rubbish areas. v. Are screened when visible from communal or public areas. vi. Can be incorporated within service areas. vii. Have a 600mm wide low-carbon concrete path from the dwelling and have 600mm wide hardstand to the clothesline. viii. Are affixed directly to posts (whether freestanding or fence posts). ix. Fixing to fence palings is not permitted. B. **Clotheslines: Apartment Balconies** i. Do not block access from the dwelling when extended. ii. Are located to be non-climbable and away from balcony edge. iii. Must not be attached to the balustrade or screening. iv. Do not interfere with the manufacturer's clearance specifications of heat pump condenser units.

TABLE A2.3-1: CLOTHESLINE LENGTH REQUIREMENTS

NUMBER OF BEDROOMS	STUDIO	1	2	3	4	5	6
Clothesline Length	14m	14-28m	14-28m	14-28m	28-40m	40m	40m

Guidance

Apartments and multi-unit developments:

- Where briefed, a communal drying room may be provided as a combination of private and shared facilities. Private clotheslines must still be provided to each unit.
- Contact the Standards team for information on leased appliances (**standards@kaingaora.govt.nz**).
- Appliances in communal drying facilities must be seismically restrained.

Refer to **Appendix A** for products

A2.3 OUTDOOR SERVICE AREAS CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A2.3.3 **Outdoor storage** is provided that can be secured and sized to suit the dwelling.	**Standalone, duplex and terraced housing** A. A standalone outdoor storage shed is provided to meet **Table A2.3-2**. B. Sheds are not required where the outdoor living area meets all the following criteria: i. Is a middle-of-terrace unit (i.e. landlocked unit). ii. Is less than 24m^2 area. iii. Does not have a lawn. C. Sheds are located min. 1.0m from the boundary as per fire regulations. D. Sheds are located to allow maintenance of the building's façade/cladding. E. A concrete footpath to the shed is not required. F. All types of external storage must be: i. Waterproof. ii. Fixed down to avoid wind up-lift. **Apartments** G. Where ground floor units have a private outdoor area: i. Provide storage in accordance with requirements clauses A-F above. H. **Upper floor units:** i. Storage is not permitted on balconies.

TABLE A2.3-2: OUTDOOR STORAGE SIZE REQUIREMENTS

NUMBER OF BEDROOMS	**STUDIO**	**1**	**2**	**3**	**4**	**5**	**6**
Yard size	12m^2	20m^2	20m^2	35m^2	35m^2	50m^2	50m^2
Shed size option	N/A	A	A	A	A or B	A or B	A or B

Nominal Sizes: Option A = 1.5x1.0m; **Option B** = 1.8mx1.5m

Guidance

- Sheds are located where they can be easily accessed, and do not obstruct pathways.
- Where provided, stormwater tanks should be located behind sheds for efficient use of space.

A2.3 OUTDOOR SERVICE AREAS CONTINUED	
PERFORMANCE REQUIREMENT	**ACCEPTABLE SOLUTION**
A2.3.4 A **letterbox** is provided to each dwelling.	**Letterboxes:** A. Are integral to the site and building's circulation and wayfinding strategy and in a practical location. B. Must be safely located outside of vehicular access routes. C. Meet **NZ Post mailbox specifications**. D. Are clearly numbered. E. Are weathertight and resistant to corrosion. F. Are lockable by padlock (not keyed lock).



A2.4 LANDSCAPING

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A2.4.1 Site layout and landscape design facilitates **maintenance**.	A. All private outdoor areas must be able to be easily maintained. B. **Lawns:** i. Must be of useable size and proportion and receive adequate solar access. ii. Can be accessed with a lawnmower. iii. Have a maximum gradient of 1:5 or to local authority requirements. iv. Must not be synthetic. v. Planting is used where lawn is not practicable. vi. Topsoil for lawn/grass is a minimum depth of 100mm. C. **Soft landscaping** i. **Plant species selection:** a. Are suited to the regional climate and site conditions (refer to ecological guides for local regions). b. Hedges which require clipping are not permitted. c. Excludes species with spines or thorns, that are noxious or trigger allergies or are on any national or regional pest species lists. d. Deciduous specimen tree species can be used where needed to provide shade in summer and sun in winter for both private and communal indoor and outdoor spaces. ii. **Plant placement and set out:** a. Trees and general planting must be distanced from structures and fences, in anticipation of mature size, to prevent maintenance issues and/or damage to buildings, or limit access. b. Is designed to prevent maintenance issues for services, retaining, and fencing. c. For driveway safety does not obstruct the clear line of sight for drivers and/or pedestrians. d. Do not create a trip hazard by obstructing paths e.g., plant types with stringy or strappy leaves. e. Has a natural set out and spacing that is appropriate for the species, accounting for edge offsets.

A2.4 LANDSCAPING CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
	iii. **Planting Implementation:** a. To ensure optimal growth and longevity, topsoil to planted areas must meet the following requirements: 1. Trees: min. 1 cubic metre. 2. Shrubs: min. depth 300mm. c. Substrate must be scarified, and promote free drainage. d. Topsoil may be site-won or imported, must be good quality and free of construction waste and debris. e. All garden beds must have 100mm (settled depth) mulch that is free of inorganic material or dye. f. Where a planted slope is steeper than 1:3, a biodegradable geotextile must be used in place of mulch.

Guidance

Plant selection ideally includes

- A range of New Zealand natives
- At least one fruit tree per unit. Dwarf varieties are acceptable where private outdoor areas is limited.

See the **Kāinga Ora website** for landscape and urban design guidelines.



A3 SITE MOVEMENT AND CIRCULATION

RATIONALE

Site design should allow customers and their whānau and other visitors to **safely and easily access** the property and dwelling. Additional attention to designing for driveway safety is crucial to significantly reduce the risk of injury to a child.



A3.1 PEDESTRIAN CIRCULATION

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A3.1.1 **Pedestrian access** facilitates safe movement and wayfinding for customers.	A. **Main entry to Standalone, duplex and terrace housing:** i. A footpath is provided that is at least 1.0m wide from the street and/or parking area to the main entry. ii. Refer to **B2.2 Private space: access, egress and circulation**. B. **Main entry to apartments and complexes:** i. A footpath is provided to the main building entry that is a minimum of 1.2m wide or to council requirements. ii. Refer to **B3.2 Communal access, egress and circulation**. C. **All footpaths:** i. Have a minimum cross-fall of between 1:100 and 1:50 and are shaped to allow for drainage of surface water to prevent water ponding, collection of debris and growth of moss. ii. Avoid the use of single isolated steps to minimise trip hazards. a. Single steps may be provided where step is located at a natural transition point, like at an entrance threshold or deck landing or at the front gate. iii. Meet driveway safety requirements (Refer to **A3.2.1**) D. **Secondary footpaths are:** i. 800mm wide from a private on-lot carpark to: a. The main entry. b. The side-yard gate. ii. 600mm wide to the clothesline from the private deck or patio. iii. Not required to sheds. E. **Hardscape elements:** i. Must be kept to a minimum to reduce impervious surface. ii. Concrete patios, footpaths, landings and steps must be non-slip. iii. Are designed to fall away from buildings and prevent the need for channel drainage. a. Channel drainage is **not permitted** for standalone, duplex, and terraces with the exception of specifically briefed wheelchair accessible homes.

A3.1 PEDESTRIAN CIRCULATION CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
	F. **Material and finishes selections**: i. Are robust and suited to the intended use. ii. Do not create unnecessary cost, complexity, or inefficiency for installation. iii. **Preferred** selections: a. Concrete broom finished. b. Exposed aggregate concrete. iv. To be avoided where possible: a. Stepping stones. b. Large format pavers. c. Interlocking pavers. d. Concrete pavers designed to reinforce turf/grass areas. e. Loose aggregate. G. **Planter boxes** are not required, unless specifically required by the local authority. H. **Adequate lighting** is provided for and safety and legibility of access and dwelling/building entries at nighttime. Refer to **C2.3 – Lighting**. I. **Signage and wayfinding:** i. Car park numbering/lettering must relate to the street address of the dwelling. ii. Clear signage and numbering are provided (with lighting) to ensure the property/dwelling address is easily located and identified at all times.

Guidance

- Apartment and complexes are to meet access requirements of NZBC.
- Footpaths should be practically and efficiently located, to minimise unnecessary paved area. Avoid large expanses of hard surfaces.
- Pedestrian routes are ideally a gradient of less than 1:20.
- Changes in material are to be used only where provision of driveway safety for pedestrians is paramount. Where changes of materials are used, ensure practical and efficient preparation and installation.
- Cost should be considered in the design and specification of surface treatments

Use of single steps

It is best to avoid single isolated steps on an open path due to costs and to reduce the risks of slips, trips and falls to pedestrians. However, where a single step on an open footpath is unavoidable, provide the following safety interventions as required:

- Nosing contrast
- Lighting
- Change in material
- Handrail
- Non-slip finish

A3.2 DRIVEWAY SAFETY

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A3.2.1 **Pedestrian and vehicle areas** are appropriately separated, with design features to reduce risk of injury.	**Driveway safety** A. Private outdoor areas must be fenced (refer to section **A1.3.1**) to ensure secure areas. B. Vehicular spaces and pedestrian routes must be physically and/or visually separated. This can be provided through: i. **physical separation elements,** including: a. Grade-separated footpaths. b. Planting beds (minimum 500mm width). c. Flush/mountable kerb or dish drain. ii. **Visual separation elements,** including: a. Material change. b. Texture change within surface material (e.g. broom finish and exposed aggregate concrete). c. Painted line markings. C. **Dwelling entry doors** i. Are a distance of no less than 1.5m from a vehicular space. Where this is not practicable, the distance between dwelling entries and vehicular spaces must be maximised to allow adequate reaction time. ii. Steps must not terminate directly onto a JOAL or driveway D. **Vehicle speed is reduced** through site layout, when there is a straight length of access greater than 30 metres, through the provision of horizontal and/or vertical traffic calming devices. These can include: i. Judder bars or speed humps. ii. Build-outs. iii. Chicanes or lateral lane shifts. iv. Rumble strips. v. Speed limit signs. E. **Visibility splays:** i. Are provided in accordance with local authority requirements. **Refer to guidance**. F. Driveway and pedestrian access design prevents informal or opportunistic parking. G. Carparks are located (and allocated) to create the shortest and safest pedestrian route to the dwelling.

A3.2 DRIVEWAY SAFETY CONTINUED	
PERFORMANCE REQUIREMENT	**ACCEPTABLE SOLUTION**
	H. **Wheel stops** i. Are provided for any parking spaces which directly front a pedestrian route or vertical element. ii. Raised kerbs can replace wheel stops where applicable I. Communal pedestrian and vehicle circulation areas are well lit.

Guidance

- See the **Kāinga Ora website** for landscape and urban design guidelines.
- For requirements on designing safe communal play areas, refer to: **A2.2.1 – Communal outdoor area**

Additional driveway safety considerations

- When separating dwelling entries from vehicular spaces, a distance of greater than 2m is recommended to support clear visibility and increase reaction time between pedestrians and moving vehicles.
- It is recommended that signage conveys relevant information to drivers and pedestrians, such as speed limits, children playing, or wayfinding.
- Pedestrian routes should consider desire lines, and also where actual movement patterns may differ from planned routes, to balance safety and practicality.
- Visibility should be maximised around potential desire-line routes because users of a vehicular space will not always follow a formed path.

Visibility Splays

- Must be provided wherever a potential conflict point is created between a pedestrian route and a vehicular route.
- Have dimensions that are ideally:
  - 2m wide x 2.5m deep at a site boundary, or meet Local Authority standards.
  - min. 1.0m wide x 2.5m deep within the site.
- Provide a 1.0m buffer where reverse manoeuvres commence directly onto a pedestrian route (between the back of a car park and a pedestrian route).
- Do not apply to adjacent parking spaces, although consideration should be given to providing wider space if practical to increase visibility.
- Visibility splays are critical to reducing potential conflicts between pedestrians and vehicles. Examples of obstructions to visibility include:
  - Fencing.
  - Planting (except for clear stem trees).
  - Buildings.
  - Refuse bin or cycle parking enclosures.
  - Mailbox banks.
  - Retaining walls.
  - Transformers and other service risers.
- Refer to NZS 2890.1:2004 Parking Facilities- Off street car-parking for requirements on visibility splays and wheel stop placement.

A3.3 CARPARKING

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A3.3.1 Adequate and safe **carparking** and/or drop-off zones are provided.	A. **Car parking** i. **One car park** is provided per unit in standalone, duplex and terraced houses. ii. For apartments, provision of car parking considers: a. Anticipated customer numbers and mix as set out in the project brief. b. Proximity to transit routes and public transport. c. Emergency vehicles and staff working in the building. iii. Car parks are located to allow a single, safe manoeuvre for exit and entry. iv. A standalone/single formed carpark is 3.0 x 5.0m. v. A car park that is adjacent to another car park or a footpath, is at least 2.5 x 5m. vi. Car park gradients are: a. Between 1:50 and 1:25 for standard car parks, with a maximum acceptable gradient of 1:16. b. Between 1:100 and 1:50 for accessible car parks. vii. Where provided, a garage is at least 3.5m (W) x 5.0m (L). B. **For apartment complexes and multi-unit developments:** i. Where parking cannot be provided, there is a drop-off zone that is suitably located for customers' use. This should be supported by easily accessible public transport options and/or other services that support independent living.

Guidance

See the **Kāinga Ora website** for landscape and urban design guidelines.

A3.4 MOBILITY SCOOTERS, BICYCLES AND OTHER TRANSPORT MODES

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A3.4.1 **Bicycle and mobility scooter parking** is sized and located in accordance with the project brief.	**Apartments & Complexes** A. Parking for **mobility scooters & bicycles** is only provided when briefed or required by District Plan. B. Visitor bicycle parking is located within 25 metres of the main entry. C. Residents parking for **mobility scooters**: i. Is secure, weatherproof and easily accessed. ii. Includes a power outlet for charging. D. Residents **bicycle** parking is: i. Ideally one cycle park for every 10 dwellings. ii. Located as close as possible to the main entry. iii. Secure.

Guidance

See the **Kāinga Ora website** for landscape and urban design guidelines.

A3.5 PRODUCT, MATERIAL AND SYSTEM SELECTION

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
A3.5.1 **Low carbon concrete** and, where practicable, low environmental impact materials are used.	A. All concrete used for hardscaping shall be '**low carbon**' which has a minimum carbon reduction of at least 30% below the Infrastructure Sustainability Council (ISC) 2020 embodied carbon baseline.

Guidance

See the **Kāinga Ora website** for landscape and urban design guidelines.

B MAHI HANGA WHARE
BUILDING

B1 Building envelope and overall performance

- B1.1 Structure
- B1.2 Weathertightness
- B1.3 Interstitial moisture
- B1.4 Thermal performance
- B1.5 Windows
- B1.6 Acoustics
- B1.7 Whole-of-life carbon

B2 Private space

- B2.1 Private space: provision and configuration
- B2.2 Private space: access, egress and circulation
- B2.3 Private space: kitchens, bathrooms and laundries
- B2.4 Private space: household storage, materials, finishes and products

B3 Shared space

- B3.1 Shared space: provision and configuration
- B3.2 Communal access, egress and circulation
- B3.3 Communal kitchens, bathrooms and laundries
- B3.4 Shared space: finishes, fittings and furnishings



B1 BUILDING ENVELOPE AND OVERALL PERFORMANCE

B1.1 STRUCTURE	
PERFORMANCE REQUIREMENT	**ACCEPTABLE SOLUTION**
B1.1.1 Structural design for the development is efficient and resilient.	No current requirement beyond legislation.
B1.1.2 **Low carbon, low environmental impact materials** are used wherever practicable.	A. All in-situ ready-mix concrete and precast construction shall be 'low carbon' which has a minimum carbon reduction of at least 30% below the Infrastructure Sustainability Council (ISC) 2020 embodied carbon baseline.



B1.2 WEATHERTIGHTNESS

Rationale

Kāinga Ora is a long-term asset owner with homes located across the various climate zones of Aotearoa New Zealand. Building enclosure design needs to consider whole-of-life impacts, ensuring buildings are durable, cost-effective and easy to maintain. Current and future regional climate and weather patterns should be taken into consideration and the 4Ds of enclosure design (deflection, drainage, drying and durability) adequately addressed.

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B1.2.1 **Building envelopes, rainwater systems, products, materials and detailing** are simple, robust, easy to maintain and consider whole-of-life costs.	**All buildings** A. Select or specify suitable low-risk / low-maintenance design features, systems, products, materials, and finishes. B. Avoid high-risk and/or high maintenance details, design features, products, materials and finishes. C. Incorporate features to allow safe inspection and maintenance of the building and rainwater systems. D. Where windows are recessed into the wall careful attention is given to flashings and waterproofing details. E. External wall cladding, roofing, and spouting (gutter and downpipes) are selected in accordance with Appendix A: Products and Materials. F. External wall cladding, roofing, guttering and downpipes shall align with Kāinga Ora Exterior Colour Choices (M-248). **Standalone, terraced housing and 3-storey apartment buildings** G. A score of 12 or less is achieved in the building envelope risk matrix (E2/AS1 Table 2). H. All external wall cladding systems are designed and constructed with a drained cavity. **Apartment buildings that fall outside the scope of NZBC Acceptable Solutions** I. Certified professional engineers in the relevant specialties (for example, façade engineer, fire engineer) are engaged as relevant to undertake specific engineering design (SED) work for the project.

Guidance

Consider the following to minimise whole-of-life cost:

- Ongoing maintenance requirements.
- Availability and supply of materials and components.
- Proven-in-use history in New Zealand.
- Installation and maintenance that does not require specialist installers.

Low-risk / low-maintenance products include:

- Brick veneer cladding.
- Prefinished long-run metal profiled roofing.
- uPVC spouting and downpipes.
- Mechanical fixings and flashings.

Avoid the following high-risk / high-maintenance building envelope junction design detailing:

- Flush eaves.
- Parapets.
- Internal gutters and downpipes.
- Decks over internal spaces.
- Retaining walls as part of the habitable space.
- Concealed fascia or gutter systems.
- Skylights.
- Negative detailing.
- Reliance on sealants as primary weatherproofing.

Avoid the following high-risk / high-maintenance products and materials:

- Liquid-applied roofing membranes.
- Clear plastic roofing or panels.
- Plywood cladding.
- Plaster cladding systems on polystyrene (EIFS) or sheet products.
- Horizontal profiled metal cladding
- Stucco finish cladding systems.
- Stained finishes.
- Painted, bagged or mortar-washed finishes with brick.
- Easily damaged claddings, particularly at ground level.

For further guidance and advice on cladding systems, email the **Standards team** (standards@kaingaora.govt.nz).

B1.3 INTERSTITIAL MOISTURE

Rationale

In all building exterior systems, the risk of interstitial moisture becomes increasingly prevalent as insulation levels increase and buildings become increasingly airtight. Water and moisture generated from indoor activities can pose a risk if not appropriately managed through a combination of window and wall detailing, finishes selection and services design.

Interstitial moisture can lead to issues such as mould and mildew, corrosion of fixings, decreased performance of damp or wet insulation and/or damage to fit-out and finishes. This can have detrimental impact on customer health and wellbeing as well as causing damage to the building and customer possessions.

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B1.3.1 Building envelope design minimises the **risk of interstitial moisture.**	A. High-risk building envelope design features and claddings are avoided. (Refer to **B1.2 Weathertightness**)

Guidance

Design and specification should minimise the risk of problematic moisture build-up within the building envelope by considering:

- The robustness of the system.
- The performance of the thermal envelope, including insulation, minimising thermal bridging and penetrations, and detailing of penetrations.
- Adequacy of ventilation.
- The level of dependency on occupants heating and ventilating to control relative humidity levels.

Wherever possible, where concrete or high-mass walls are used, insulation should be located on the outside of concrete walls. This prevents any build-up of moisture condensing on the cold surface behind the insulation.

Where insulation is to be located on the inside of concrete walls or where building envelope design is deemed to be at higher risk of interstitial moisture, dynamic thermal modelling should be undertaken by a suitably qualified and experienced professional. This should include the use of a mould risk post-processor using reputable software, and consider the materials' ability to prevent or mitigate moisture issues (such as its ability to dry prior to mould forming). Projects should submit the building envelope system for an M-396 system and components review.

B1.4 THERMAL PERFORMANCE	
PERFORMANCE REQUIREMENT	**ACCEPTABLE SOLUTION**
B1.4.1 The building envelope is designed to have appropriate levels of **thermal performance** to facilitate a healthy indoor environment.	A. All new Kāinga Ora redevelopment projects must have the thermal envelope(s) specified to NZBC Clause H1 Energy efficiency H1/AS1, 5th edition, amendment 1 or H1/VM1, 5th edition, amendment 1.
Guidance There are three methods of calculating and demonstrating compliance with New Zealand Building Code clause H1 Energy Efficiency 5th Edition. Kāinga Ora is to select the method based on advice of the project design team.	
PERFORMANCE REQUIREMENT	**ACCEPTABLE SOLUTION**
B1.4.2 Each dwelling can efficiently and effectively achieve **healthy indoor temperatures** throughout the year.	A. Each dwelling meets the Thermal Performance Criteria of **Table B1.4-1**. B. The Kāinga Ora Heating Calculator is used to determine the capacity of heater required to heat the main living area. C. Adequately sized heaters are subsequently specified and installed to the main living area in line with the calculated outputs, noting: i. Gas heating is not permitted. ii. If the heater size required is more than 2.4kW, a heat pump is specified. iii. For homes with 5 or more bedrooms, a whole-home centralised system can be considered. D. **For three-level walk-ups and apartments**, dynamic thermal modelling is undertaken to assess the design for overheating risk. If the risk of overheating cannot be designed out, consideration is given to provision of active cooling systems in problematic areas (such as heat pumps).

B1.4 THERMAL PERFORMANCE (CONTINUED)

TABLE B1.4-1: RECOMMENDED METHOD FOR COMPLIANCE WITH THERMAL PERFORMANCE CRITERIA

TYPOLOGIES	NZBC CLAUSE H1	HEALTHY HOMES COMPLIANCE	OVERHEATING
Standalone	H1 5th Ed. Calculation Method[1]	Whole-of-home heating calculator[2]	N/A
Duplex			
Terraced			
Three-level walk-up	H1 5th Ed. Calculation Method[1]	HVAC consultant design	Dynamic Model[3]
Apartment			

Notes

1. It is expected that H1 compliance will typically be demonstrated using the Calculation Method. However, upon the advice of the project design team, Kāinga Ora may select either Schedule or Modelling method.
2. The Kāinga Ora Heating Calculator is to be used.
3. Dynamic overheating assessment is to be **CIBSE TM59** method for naturally ventilated residential apartment buildings with method adjustments.

Guidance

Clause H1/AS1 5th edition compliance

Window R-values specified in Clause H1/AS1 5th edition amendment 1 effectively require at least thermally broken joinery and insulated glazing units (IGUs) with high-performance pane spacers, specialty low emissivity coatings and/or gas between the panes.

Apartments

If overheating cannot be designed out using TM59 method with 2050 DSY1 future climate files, consider providing active cooling systems (such as heat pumps) in high-risk rooms.

Refer to **Appendix D** for guidance on overheating modelling.

B1.5 WINDOWS	
PERFORMANCE REQUIREMENT	**ACCEPTABLE SOLUTION**
B1.5.1 **Window placement, sizing and specification** supports optimal wellbeing outcomes for our customers.	A. Window size and location is appropriate for the orientation of the building and the floor layout, taking in to consideration: i. Prevention of overheating. ii. Passive surveillance. iii. Privacy. iv. Connection to the outdoors. v. Universal design. vi. Furniture placement.

Guidance

Thermal Performance

For window thermal performance, refer to **B1.4 – Guidance**.

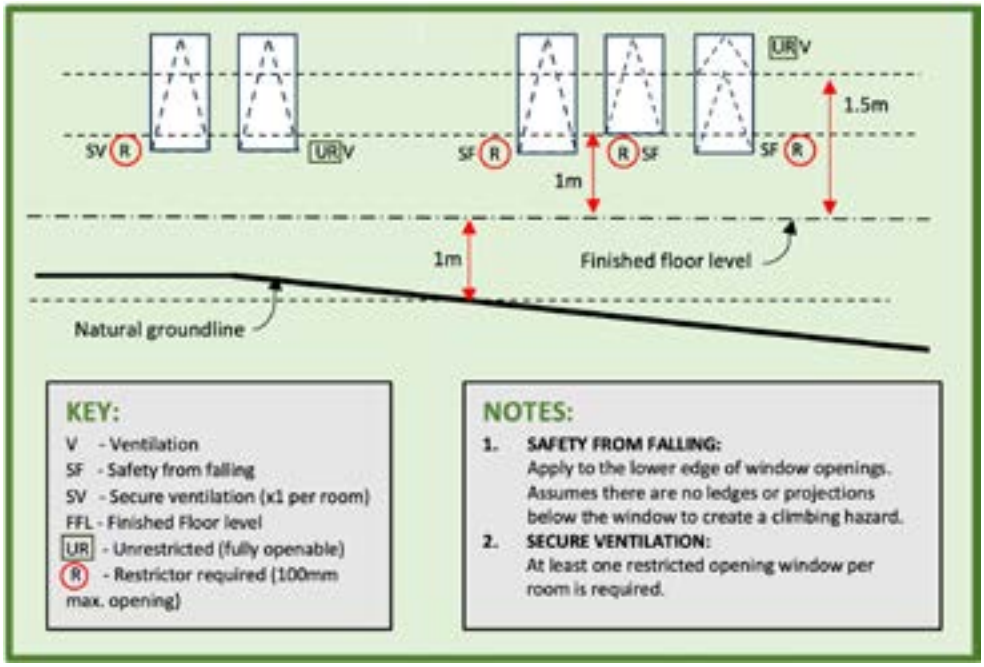
Daylight modelling

Standalone and duplex/terraced Kāinga Ora homes usually meet Building Code Clause G7 (Natural Light) by following the G7/AS1 or G7/AS2 acceptable solutions. However, if a design includes a balcony, the typical balcony depth means compliance must be shown using the G7/VM1 verification method instead.

B1.5 WINDOWS CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B1.5.2 Window openable area facilitates **natural ventilation** without compromising customers' safety and security.	A. Where a window set has only high-level opening sashes, the latches are located no higher than 1.5m above FFL. B. Window restrictor stays: i. Must align with Figure B1.5-1 below. ii. Must be installed where there is a fall risk of 2m or more. iii. Limit window opening to 100mm. iv. Are on at least one openable window sash per room. v. Are on windows where there is risk of someone walking into the open sash e.g., beside a footpath.

FIGURE B1.5-1: WINDOW STAYS FOR PASSIVE VENTILATION AND SAFETY FROM FALLING



Guidance

Restrictor stays

The use of restrictor stays will limit the ability to manage overheating risk through passive ventilation. This will need to be accounted for within thermal modelling and calculations (refer to **B1.4 Thermal performance**).

Entrance doors are not considered to be openable area when calculating natural ventilation requirements due to the potential security risk that results from leaving them ajar. This also applies to glass sliding doors on ground floor household units.

B1.5 WINDOWS CONTINUED	
PERFORMANCE REQUIREMENT	**ACCEPTABLE SOLUTION**
B1.5.3 Design and specification of joinery, glazing and hardware ensures ease of maintenance, ease of use and safety.	A. All windows over 1.5m height have at least one horizontal vision rail. B. All glazing is clear and not tinted. C. Where required for privacy use surface-treated, etched glass. D. High-maintenance joinery, glazing and hardware are not permitted. This includes: i. Fibreboard jamb liners. ii. Bi-folding doors. iii. Sliding windows. iv. Louvres. v. Laminated glass. E. All opening windows include lever-style handles.

B1.6 ACOUSTIC PERFORMANCE

Rationale

The internal living environment has a significant impact on our customers' health and well-being; and noise levels and acoustic privacy play an important role in this. There is a clear link between customers' exposure to noise – particularly over the long term – and psychological and physiological health effects. These can include tinnitus, hearing loss, annoyance and sleep disturbance.

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B1.6.1 Design strategies and features provide an acoustic environment that promotes health and wellbeing, **minimising noise transfer.**	**Multi-unit developments** A. Intertenancy walls and floors are designed to minimise noise transfer: i. Walls, floors and ceilings achieve a minimum sound transmission class (STC) of STC 55. ii. Floors achieve a minimum impact insulation class (IIC) of IIC 55. B. Noise transfer **between dwellings and common areas/circulation spaces** is minimised. i. For walls with doors between living areas and common areas, doors achieve STC 30 and walls achieve STC 45. ii. All other walls abutting a common area achieve STC 55. iii. All floors achieve IIC 55. C. Noise transfer from **building services** is minimised. i. Noise from services located within a dwelling or an abutting dwelling that is transmitted into habitable spaces does not exceed 40dB in living areas or 35dB in bedrooms. ii. Where existing noise from services located in an abutting dwelling exceeds 35dB, the design does not increase this level by more than 1dB. D. **Common areas** are designed to be acoustically comfortable. i. All common areas have a target maximum reverberation time of 0.8 seconds.

Guidance

- STC and IIC levels should be measured as compliant post-construction.
- A suitably qualified acoustic consultant should be engaged on multi-unit developments.
- The design should seek to improve on the Performance Requirements criteria by 5dB where this can be achieved practically within project constraints.
- Acoustic treatments in walls should be taken to the underside of the roof or floor above, and/or acoustically rated ceilings should be used.

B1.7 WHOLE-OF-LIFE CARBON

Rationale

Kāinga Ora is required to report on all our material emissions sources annually from FY 2023 and to develop reduction targets in line with a 1.5°C climate scenario.

Achieving carbon neutrality is a long term objective requiring a gradual approach, with decisions made today shaping future emissions performance.

Guidance

Whole of life carbon is currently assessed at the portfolio level rather than on a project-by-project basis.

Carbon reduction measures are integrated throughout the document, for example, provisions for low-carbon concrete and water-efficient fixtures.

Refer to **2024 Low Carbon Concrete Briefing by Concrete NZ**

B2 PRIVATE SPACE

The following requirements relate to each individual dwelling, whether standalone, terraced or contained within a multi-unit or apartment development.

B2.1 PRIVATE SPACE: PROVISION AND CONFIGURATION

Methods of Measurement definitions

Gross Floor Area (GFA)

Kāinga Ora's Method of Measurement for Gross Floor Area is as follows:

- GFA is measured from the external face of the framing/structure and to the centreline of intertenancy walls.
- GFA does not include:
  - Balconies & decks (enclosed or otherwise)
  - Verandas & pergolas
  - Garages
  - Carports
  - Separate storage areas e.g. sheds
  - Claddings

Net Internal Area (NIA)

This measurement is used for bedrooms and Kitchen-Dining-Living (KDL) spaces. The measurement is taken between the finished surfaces (internal face) of internal walls between rooms.

Measured between framing (MBF)

This measurement is used for halls, stairs, bathrooms, built-in wardrobes and storage cupboards.

Clear width (CW)

This measurement is used for door openings, and circulation between furniture, appliances, and fixtures.



B2.1 PRIVATE SPACE: PROVISION AND CONFIGURATION CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B2.1.1 **Adequate Floor Area and ceiling heights** are provided to allow design of internal spaces for comfortable living and cost effectiveness.	A. Target Gross Floor Area (GFA), aligns with requirements listed in **Table B2.1-1**. B. Ceiling heights are a minimum 2.4–2.7m above FFL for all habitable rooms and circulation routes.

TABLE B2.1-1: TARGET GROSS FLOOR AREA

NUMBER OF BEDROOMS	STUDIO	1	2	3	4	5	6
Max occupants	1	2	4	6	8	10	12
Single-storey GFA	35m^2	45m^2	65m^2	95m^2	118m^2	143m^2	160m^2
Double-storey GFA	N/A	N/A	77m^2	107m^2	130m^2	155m^2	175m^2

Guidance

Studio units

- Studio units may be considered only where their inclusion demonstrably enables greater site planning and design efficiencies, and contributes to the overall financial viability of the project.
- Their use must support efficient site layout, including optimal land utilisation, or increased yield.
- Any project proposing studio units must engage early with the Place-based team to ensure alignment with local housing needs.

Other guidance

- Refer to **Table A2.1-1** for Private Outdoor Area.
- Refer to **Appendix C** for standard furniture sizes and circulation.
- Refer to the **Method of Measurement definitions**.

B2.1 PRIVATE SPACE: PROVISION AND CONFIGURATION CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B2.1.2 **Adequate and well-organised internal living spaces** are provided to allow customers comfortable living and quiet enjoyment of their home.	A. The Kitchen, Dining, and Living area (KDL) must have a Net Internal Area (NIA) that meets the requirements outlined in **Table B2.1-2**. B. The KDL should be one combined space wherever possible. i. if one combined area is not practicable, these areas can be separated. C. Each area must provide sufficient furniture space to suit the size of the household, and adequate clear space to allow circulation (refer to **Appendix C**). D. There must be direct access to outdoor living space from the living/dining area. E. There is step-free access from the main entry to the primary living area.

TABLE B2.1-2: TARGET KITCHEN-DINING-LIVING AREA (EXCL. HALLS & ENTRY LOBBIES)

NUMBER OF BEDROOMS	STUDIO	1	2	3	4	5	6
Max occupants	1	2	4	6	8	10	12
NIA	19m^2	24m^2	32m^2	41m^2	47m^2	55m^2	60m^2

Guidance

- The studio KDL includes the bed space.
- Refer to **Appendix C**: Furniture Size guide.
- Refer to **Table B2.4-1** Materials and finishes.
- Refer to **B2.3.1** for kitchen requirements.
- Refer to the **Method of Measurement definitions**.

B2.1 PRIVATE SPACE: PROVISION AND CONFIGURATION CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B2.1.3 **Adequate and well-organised bedrooms** are provided to allow customers comfortable living and quiet enjoyment of their home.	A. Bedroom NIA meets the requirements outlined in **Table B2.1-3**. B. Refer to **Appendix C** for furniture sizing and clearances. C. All floor area requirements exclude the built-in wardrobe. D. **Double occupancy bedrooms** are: i. One bedroom of at least 10m^2 (main bedroom) per dwelling. ii. All other double bedrooms are at least 9m^2. E. **Single occupancy bedrooms:** i. Are permitted by exception if it enables design or site planning efficiency. Allowance of one single-occupancy bedroom per dwelling. ii. Are a minimum area of at least 6m^2. F. **1-, 2- and 3-bedroom units:** i. Bedrooms may have direct access from the combined KDL (i.e. no hallway) to enable spatial efficiency. G. At least one built-in **wardrobe** is provided per bedroom in accordance with **Table B2.4-2**.

TABLE B2.1-3: MINIMUM BEDROOM SIZES (EXCL. BUILT-IN WARDROBES)

NUMBER OF BEDROOMS	STUDIO	1	2	3	4	5	6
Max occupants	1	2	4	6	8	10	12
NIA	1x 6m^2 (space)	x 1 10m^2	x1 10m^2 x1 9m^2	x1 10m^2 x2 9m^2	x1 10m^2 x3 9m^2	x1 10m^2 x4 9m^2	x1 10m^2 x5 9m^2

Guidance

- See **Appendix C**: Furniture Sizing & Circulation guide.
- See **Methods of Measurement definitions**.

B2.1 PRIVATE SPACE: PROVISION AND CONFIGURATION CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B2.1.4 **Privacy** is facilitated and maintained through the organisation of internal spaces.	A. Where possible, physical and visual separation is provided: i. Between the bathroom, toilet, laundry from the living, dining, kitchen and bedrooms.

Guidance

Māori cultural practices

Where possible, certain household functions are kept separate from others to preserve their tapu (sacred/prohibited) or noa (common/profane) nature. For example, food-related facilities are kept separate from bathrooms, toilets and laundries.

The matrix below outlines the preferred spatial relationship between household functions. This guidance is general and should not be applied if it significantly reduces floor plan efficiency or increases costs.

TABLE B2.1-4: TAPU AND NOA PLANNING MATRIX

	Main entry	Laundry	Toilet	Bathroom	Living	Dining	Kitchen
Bedroom	✗	~	~	~	~	✗	✗
Kitchen	~	✗	✗	✗	✓	✓	
Dining	~	✗	✗	✗	✓		
Living	✓	✗	✗	✗			
Bathroom	✗	~	✗				
Toilet	✗	✗					
Laundry	✗						

~ Neutral ✗ Conflict ✓ Desirable

B2.2 PRIVATE SPACE: ACCESS, EGRESS AND CIRCULATION

Rationale

Kāinga Ora is committed to ensuring homes are safe for our customers, their whānau/family and manuhiri/visitors. Design of circulation routes, thresholds and doors and selection of hardware are key to ensuring ease of movement and prevention of slips, trips and falls.

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B2.2.1 The **main entry** is clearly signalled and welcoming while facilitating privacy, safe access and egress.	**Standalone, duplex and terrace typologies** A. The main entry to an individual dwelling includes: i. Sheltered access to the front door, including: a. A 1.2m x 1.2m landing with a minimum 1.2m x 1.2m roof cover above, providing protection to the door and sill from weather. b. Timber landings shall be level with the FFL. B. All exterior stairs up to the sheltered access landing: i. Have 300mm minimum going/tread and 180mm maximum riser. ii. A handrail at 900mm height on one side, where there is more than one riser. C. The main entry door to an individual dwelling must: i. Be clearly identifiable from the street. ii. Be clearly numbered with a firmly affixed street/unit number. iii. Have a maximum door threshold step height of 180mm. iv. Have an inward swung, solid (non-glazed) hinged door (860mm leaf) with minimum clear opening width (CW) of 810mm. a. Not be a glazed sliding door (ranch slider). v. Have a keyless exit. a. Door handle is installed at a height of 1.2m for child-safety. vi. Include a door viewer installed at 1.5m in height. **Apartments and three level walk-ups** D. Refer to **B3.2 – Communal access, egress and circulation**.

Guidance

- Ideally, there should be no direct line of sight from the main entry into the main living areas.

B2.2 PRIVATE SPACE: ACCESS, EGRESS AND CIRCULATION CONTINUED	
PERFORMANCE REQUIREMENT	**ACCEPTABLE SOLUTION**
B2.2.2 **Private circulation** enables ease of movement of people, furniture and equipment.	**Hallways and doors:** A. Halls are at least: i. 1.050m wide (MBF) on the main living level. ii. 1.0m wide (MBF) on the upper floors in 2+ storey dwellings. B. All internal doors (excluding to wardrobes and storage) are at least: i. 860mm leaf (810mm CW) on the main living level. ii. 810mm leaf (760mm CW) on the upper floors in 2+ storey dwellings. C. Ceiling access hatches must be in hallways. They are not permitted in private bedrooms, cupboards, or above stairs. **Internal stairs and stairwells:** D. All stairs are 1.050m wide (MBF). E. Have 190mm maximum riser height, and 280mm minimum going/ tread depth (maximum pitch 37°). i. Have at least one handrail at 900mm above tread nosing where there is a risk of falling of 500mm to 1m high. ii. Have 1.1m high balustrades where there is a risk of falling of more than 1m from FFL. F. Stair winders are not permitted. G. Allows for the installation of child-restrictor gates at the top and bottom of stairways.

B2.2 PRIVATE SPACE: ACCESS, EGRESS AND CIRCULATION CONTINUED	
PERFORMANCE REQUIREMENT	**ACCEPTABLE SOLUTION**
B2.2.3 **Doors and door hardware** specified are durable, robust, safe and easy to use.	**Interior doors** A. Door handles are lever-type and fitted 1.0m above FFL. B. Internal access garage doors must: i. Open inwards to house. ii. Have a handle located at 1.2m above the FFL. iii. Be fitted with a door-closer. iv. Have seals to prevent fumes entering the house. C. All doors have doorstops. D. Bathrooms and separate toilets have a privacy-lock that can be accessed from outside the room in an emergency. E. Surface-mounted sliding doors can be used for accessible bathrooms or wardrobes. F. The use of bifold or cavity sliders is **not permitted**. **Exterior Doors** G. All exterior doors can be exited in an emergency without the use of a key (key-less exiting). Keyed internal exits are not permitted. H. Bifold doors are **not permitted**. I. All exterior doors to a dwelling are keyed alike. J. All doors have doorstops. K. All exterior hinged and sliding doors have a clear opening width of at least 810mm.

Guidance

Hallways and stairwells

- Circulation routes are to help movement of household furniture (e.g. moving a queen size bed with a solid base).

Refer to **Appendix A** for further requirements and guidance relating to product and materials specification.

B2.3 PRIVATE SPACE: KITCHENS, BATHROOMS AND LAUNDRIES

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B2.3.1 **Kitchens** are adequately sized and located, optimally laid out and designed to be safe and to minimise risks.	**Kitchen Design** A. General i. Meets the size and circulation requirements listed in **Table B2.3-1**. ii. The kitchen is not a main thoroughfare. a. For smaller homes where there is a single length or an L-shape kitchen the main thoroughfare is not directly through the kitchen working triangle. B. A laundry in the kitchen is not acceptable. C. Cabinetry: i. Is industry standard module sizing. ii. Must have 300mm between internal corners and the opening edge of appliances. iii. Includes under-bench drawer storage. D. Benches: i. All benching is 600mm in depth and has an anti-spill edge profile, length to suit cabinets. ii. Bench height is 900mm from FFL. iii. Benchtops and cabinet colours contrast (30 differential LRV). E. Stove: i. Is not located under a window. ii. Is best located on an outside wall for direct extraction ducting from rangehood. F. Fridge space i. Leave space open on one side. a. Do not used cabinetry to house fridge. b. Do not install an end wall.

B2.3 PRIVATE SPACE: KITCHENS, BATHROOMS AND LAUNDRIES CONTINUED

TABLE B2.3-1: KITCHEN REQUIREMENTS

	NUMBER OF BEDROOMS						
	STUDIO	**1**	**2**	**3**	**4**	**5**	**6**
Underbench cabinets (excluding stove)	2.4m (total width)	2.4m (total width)	2.4m (total width)	3.6m (total width)	4.2m (total width)	4.8m (total width)	4.8m (total width)
Fridge space (0.7m depth)	0.75m (width)	0.75m (width)	0.75m (width)	0.85m (width)	0.85m (width)	0.85m (width)	0.85m (width)
Pantry Cabinet (0.6m depth, 2.0m height)	0.45m (width)	0.45m (width)	0.45m (width)	0.60m (width)	0.90m (width)	0.90m (width)	0.90m (width)
Clearance between benches	1.2m	1.2m	1.2m	1.2m	1.5m	1.5m	1.5m
Stove space (0.62m width)	x1	x1	x1	x1	x1	x1	x1
Drawer banks (0.6m width)	x1	x1	x1	x2	x2	x2	x2

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B2.3.2 **Bathrooms and Separate Toilets** are adequately sized.	**Bathrooms – all dwellings** A. Provide bathrooms and separate toilets to meet **Table B2.3-2**. B. Circulation: i. There is 800mm (CW) between shower and vanity. C. Floor wastes: i. Are provided in bathrooms and separate toilets above ground floor. D. Toilet pans: i. Can be in bathrooms. ii. Are located 450mm to the centre of the bowl from a side wall. E. Vanities must: i. Be at least 100mm (CW) from a shower or bath. ii. Have childproof catches installed on all opening doors to vanity cabinets. iii. Be between 600-900mm width. F. Medicine cabinets: i. Are set 1.2m above FFL. ii. Do not need childproof catches. G. Shower Enclosures: i. Provide a minimum 900x900mm square shower. a. Use the acrylic shower tray system designed specifically for Kāinga Ora. Refer to **Appendix A** for the preferred product. ii. Have a fixed shower head at 1700mm from FFL and lever shower mixer at 1200mm from FFL.

B2.3 PRIVATE SPACE: KITCHENS, BATHROOMS AND LAUNDRIES CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION

Bathrooms – all dwellings (continued)

H. The following are **not permitted:**

i. Showers over baths.

ii. Heated towel-rails.

iii. Wall heaters.

iv. Fixed shower seats.

I. **Apartments and 3 Level walk-ups:**

i. 3-bedroom apartments do not require a bathtub. Where a bathtub is not provided, an adjustable shower hose/rail to shower enclosure must be installed.

J. **Multi-storey homes:**

i. Two-storey, 3–6-bedrooms, must have 1x toilet per level.

a. Include an additional toilet where required.

ii. Three storey, 4-6-bedrooms, have 1x toilet to the main living level and 1x toilet to the second storey only.

TABLE B2.3-2: BATHROOM REQUIREMENTS

	NUMBER OF BEDROOMS						
	STUDIO	**1**	**2**	**3**	**4**	**5**	**6**
Number of bathrooms	1	1	1	1	1	2	2
Number of separate toilet rooms	Not Required			1	1	Not required (One recommended)	
Fixtures and Fittings	**Total number of fixtures per home**						
Toilet pan and cistern	1	1	1	1	2	2	2
Shower	1	1	1	1	1	2	2
Bath	0	0	0	1	1	1	1
Vanity	0	1	1	1	1	2	2
Medicine cabinet with mirror	1	1	1	1	1	2	2
Towel rail (800mm long)	1	1	2	3	4	5	6

Note: Where provided, separate toilet rooms must include: a toilet pan, toilet roll holder, small hand basin, towel ring and have a clear width of 900mm. Grab rails and fixed mirrors are not required.

B2.3 PRIVATE SPACE: KITCHENS, BATHROOMS AND LAUNDRIES CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B2.3.3 **Laundries** are adequately sized and located, optimally laid out and designed to be safe and to minimise risks.	A. **Laundries:** i. Accommodate the requirements of **Table B2.3-3**. ii. Are not in a kitchen. iii. Are located on the main living level. iv. Can be within the bathroom in 1- and 2-bedroom homes. v. Provide a dryer space above the washing machine in 1-4-bedroom homes. vi. Must be in a separate room for 5- 6-bedroom homes a. Include a laundry tub and space for both washing machine and dryer at floor level. vii. Must have 1.0m clearance in front of all fittings and appliances. viii. Include a shelf at a height of 1200mm min. from FFL, located above the tub.

TABLE B2.3-3: MINIMUM SIZE REQUIREMENTS FOR LAUNDRY COMPONENTS

	NUMBER OF BEDROOMS						
	STUDIO	**1**	**2**	**3**	**4**	**5**	**6**
Laundry tub unit width	0.35m	0.35m	0.35m	0.35m	0.56m	0.56m	0.56m
Washing machine/ dryer space (clear width dimensions)	0.65m (W) x 0.7m (D)	0.65m (W) x 0.7m (D)	0.65m (W) x 0.7m (D)	0.65m (W) x 0.7m (D)	0.65 (W) x 0.70m (D)	1.4m (W) x 0.70m (D)	1.4m (W) x 0.70 (D)
Shelf (1200mm from FFL)	0.7m (W) x 0.2m (D)	0.7m (W) x 0.2m (D)	0.7m (W) x 0.2m (D)	0.7m (W) x 0.2m (D)	0.7m (W) x 0.2m (D)	0.7m (W) x 0.2m (D)	0.7m (W) x 0.2m (D)

Guidance

- Provide extraction, power and lighting as per **C: Services**.
- Grouping wet areas and locating them to south façades will enable efficient provision and layout of services and free up west, north and east façades for living spaces.
- Refer to **B2.4 Private space: finishes, fittings and furnishings**.
- Refer to **Appendix A** for further requirements and guidance relating to product and materials specification.

B2.4 PRIVATE SPACE: HOUSEHOLD STORAGE, MATERIALS, FINISHES AND PRODUCTS

Rationale

Kāinga Ora maintains over 70,000 dwellings. Replacement and repair of finishes, fittings and furnishings within these homes can be disruptive for our customers, particularly if the finishes, fittings or furnishings are difficult to source, fix or replace within a short timeframe. Finishes, fittings and furnishings need to be durable, robust and easy to maintain while providing our customers with the amenity they need. The use of pre-assessed National Supply Agreement products simplifies maintenance by ensuring consistency, availability of replacements and parts, and robustness of products.

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B2.4.1 Materials, finishes and products for **floors, walls and ceilings** are durable, robust, easy to maintain, healthy and safe and consider whole-of-life costs and impacts.	**All homes** A. Materials and finishes align with **Table B2.4-1**. B. Where possible, **National Supply Agreement (NSA)** products should be specified to enable efficient maintenance, repair, repaint and replacement over the life of the home. C. All doors use contrasting paint colours of at least 30 LRV points different from the adjacent wall. D. Flooring i. Floor coverings shall extend into wardrobes, storage cupboards, linen cupboards, and hot water cylinder cupboards. ii. Vinyl flooring shall be installed continuously under appliances and all bathroom fixtures and shall be sealed at skirtings. a. Coved upstands shall be provided where wet areas are adjacent to intertenancy walls and within accessible wet-area bathrooms. iii. Apartments: a. Provide acoustic-rated flooring or underlay throughout. b. Extend vinyl under kitchen joinery. iv. Garage laundries: Provide vinyl 1500 mm from wall across full garage width, including internal access door, to meet slip resistance. v. Main entry: Provide 900 mm deep vinyl; not required to other external doors or to apartments accessed via internal common hallways. E. Wall reinforcement is provided to support installation of hardware and appliances. F. All sealants are mould-resistant and anti-bacterial. G. The following are **not permitted:** i. Tiles. ii. Wallpaper. iii. Polished concrete. iv. Timber strip-flooring. v. Contact between the splash-back wet-wall-lining and the bathtub or the up-stand of the shower tray. vi. Solvent-based adhesives for fixing fibre-cement sheet-linings.

B2.4 PRIVATE SPACE: HOUSEHOLD STORAGE, MATERIALS, FINISHES, AND PRODUCTS CONTINUED

TABLE B2.4-1: MATERIALS AND FINISHES

<table>
<tr><th>SPACES</th><th>FLOORING & SKIRTINGS</th><th>WALL AND CEILING FINISHES</th><th>SPLASH-BACKS AND WET-AREA LININGS</th><th>REVEALS, SKIRTINGS, ARCHITRAVE, AND TRIM</th></tr>
<tr><td>Main Entry</td><td rowspan="2">Vinyl sheet flooring</td><td rowspan="3">Standard plasterboard (stopped to level 4 finish)
Paint finish – acrylic, low sheen</td><td rowspan="2">N/A</td><td rowspan="4">Dressed timber-finger-jointed, pine
Paint finish – water-based enamel, gloss
Note: Do not use MDF product.</td></tr>
<tr><td>Dining area</td></tr>
<tr><td>Halls and Stair</td><td rowspan="3">Fitted carpet and underlay</td></tr>
<tr><td>Bedrooms</td><td rowspan="2">Splashback (stove)
Upstand (stainless steel sink-bench)</td></tr>
<tr><td>Living areas</td><td rowspan="3">Vinyl sheet flooring</td></tr>
<tr><td>Kitchen</td><td rowspan="2">Splashback (basin, bath, vanity and laundry tub)
Acrylic liner (shower)</td></tr>
<tr><td>Separate toilet</td><td rowspan="2">Moisture resistant plasterboard (stopped to level 4 finish)
Paint finish – acrylic, semi-gloss</td></tr>
<tr><td>Laundry</td></tr>
<tr><td>Bathroom</td><td></td><td></td></tr>
</table>

Guidance

- Refer to **Appendix A** for NSA product information.
- These acceptable solutions are designed to reduce the risk of water damage to walls and adjacent rooms/spaces and maintenance costs.
- Products procured through Kāinga Ora National Supply Agreements (NSAs) should be specified to enable efficient maintenance, repair, repaint and replacement over the life of the home.
- Refer to **Kāinga Ora Interior Colour Choices (M-250)**.

B2.4 PRIVATE SPACE: HOUSEHOLD STORAGE, MATERIALS, FINISHES, AND PRODUCTS CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B2.4.2 Provide customers with adequate and easily accessed **storage**.	A. Storage is provided in line with **Table B2.4-2**. B. Wardrobes i. Provide one built-in wardrobe per bedroom. ii. Minimum width 1.2m per wardrobe (600mm per occupant). iii. Apartments exception only: a. Fixed cabinetry wardrobes can be used provided they are shown on plans and not included in bedroom area calculations. C. General and linen Storage: i. All cupboard types can combine apart from bedroom wardrobes. a. each separate built-in cupboard must be at least 600mm-wide. D. HWC Storage: i. Cupboard for hot water cylinder facilitates maintenance and replacement. E. All cupboards: i. Do not have locks and are openable from the inside. ii. Must be built-in.

TABLE B2.4-2: MINIMUM REQUIREMENTS FOR HOUSEHOLD STORAGE

	NUMBER OF BEDROOMS					
	1	**2**	**3**	**4**	**5**	**6**
Linen	0.6m x 0.6m	0.6m x 0.6m	0.6m x 0.6m	1.3m x 0.6m	1.9m x 0.6m	3.6m x 0.6m
Genral Storage	0.6m x 0.6m	0.6m x 0.6m	0.6m x 0.6m	1.4m x 0.6m	2.0m x 0.6m	2.0m x 0.6m
Wardrobe Storage	1.2m x 0.6m	2.4m x 0.6m	3.6m x 0.6m	4.8m x 0.6m	6.0m x 0.6m	7.2m x 0.6m
HWC Storage	0.7m x 0.8m	0.7m x 0.8m	0.7m x 0.8m	0.7m x 0.8m	1.4m x 0.8m	1.4m x 0.8m
Total Storage Area	**2.0m²**	**2.7m²**	**3.4m²**	**5.0m²**	**7.0m²**	**8.8m²**

Guidance

- Refer to **Appendix A** for storage product requirements.
- Bathroom storage and fixtures are provided in line with **Table B2.3-2**.
- Kitchen and laundry storage is provided in line with **Table B2.3-1** & **B2.3-3**.

B2.4 PRIVATE SPACE: HOUSEHOLD STORAGE, MATERIALS, FINISHES, AND PRODUCTS CONTINUED	
PERFORMANCE REQUIREMENT	**ACCEPTABLE SOLUTION**
B2.4.3 **Window treatments** provide customers with privacy.	A. Provide **curtains** to all spaces with the exception of: i. Bathrooms and separate toilets. ii. Laundries. iii. Kitchens. iv. Sidelight windows next to main entry doors v. Where the window sill is over 2m in height i.e., unreachable from the floor. B. Curtains must be: i. At least 300mm away from fixed heaters. ii. At least 1m away from the stove or hob. iii. Able to open clear of glazing where practical. C. Where privacy is an issue, a blind is acceptable for installation at the kitchen window.
Guidance • Refer to **Appendix A** for products. • Refer to **B1.5** for window requirements.	

B3 SHARED SPACE

The following requirements relate to the shared and communal spaces within multi-unit developments, excluding spaces for Kāinga Ora staff.

The requirements for Kāinga Ora staff workspaces should be designed to comply with the New Zealand Government Procurement **workplace standards for office space**.



B3.1 SHARED SPACE: PROVISION AND CONFIGURATION

Rationale

As we continue to increase the density of our housing portfolio, it is important that we design multi-unit sites to include necessary communal and operational spaces to meet our strategic goals and customer needs. Communal spaces provide the opportunity for our customers to connect with each other and their community to form bonds and a sense of belonging. Developing relationships and networks make communities safer places to live, and the activities and behaviours facilitated within spaces can help improve customer health and wellbeing.

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B3.1.1 **Fit-for-purpose** communal spaces, storage and space for building services are provided for multi-unit developments.	A. Communal spaces are provided in accordance with the project brief. B. Shared spaces are designed to commercial standards. C. Service and utility spaces are provided. D. Cleaners' cupboards are secured to prevent unauthorised entry and provide safe storage of chemicals.

Guidance

Consultation with the local Kāinga Ora place-based team and the local community may assist to determine the potential uses and needs for the space.

Shared/communal spaces may include:

- security/concierge
- multi-purpose rooms
- meeting rooms
- kitchenettes/kitchens
- playrooms
- storage rooms (for example, for play equipment, chairs)
- utility rooms
- bathrooms and shared laundries

Where **meeting rooms** are provided, these should be sized for the number of intended occupants – at least 1.25m² per occupant with a minimum size of 5m². For larger meeting rooms, ceiling height should be at least 2.7m.

B3.1 SHARED SPACE: PROVISION AND CONFIGURATION CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B3.1.2 **Location and arrangement** of dwellings and communal spaces within multi-unit developments facilitates safety, security, passive surveillance and privacy.	A. **Arrangement of dwellings** within the development facilitates a sense of safety, security and privacy by: i. Limiting the number of dwellings and total occupants using each accessway. ii. Staggering of dwellings and staggering of entry doors where on a double-loaded accessway. iii. Designing windows and doors to allow for customer privacy from neighbours. iv. Incorporating CPTED principles. B. **Arrangement of shared and communal spaces** within the building ensures: i. **Security** by locating security and concierge facilities to have good visibility to the main entry of the building or complex. ii. **Ease of access and use** by locating communal spaces: a. Near the main entry. b. Adjacent or in close proximity to each other (for example, toilets easily accessed from communal rooms, kitchen adjacent to multi-purpose rooms). c. With direct access to outdoor communal areas. iii. **Passive surveillance** by providing visual and physical connection between communal spaces and outdoor public and shared space.

Guidance

Arrangement of dwellings

As a guide, the number of dwellings serviced by any accessway should be limited to:

- 5 dwellings per single-loaded accessway
- 6 dwellings per double-loaded accessway
- 24 customers living off any accessway (based on 2 customers per bedroom)
- 12 dwellings per floor.

Arrangement of shared spaces

Location of indoor laundry and drying rooms should prevent entrapment and should have visual connection between other high-use areas.

B3.2 COMMUNAL ACCESS, EGRESS AND CIRCULATION

Rationale

Kāinga Ora is committed to ensuring developments are safe for our customers, their whānau/family and manuhiri/visitors to move around. Design of circulation routes, doors and hardware are key to ensuring we are able to provide equitable access and use.

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B3.2.1 Communal entry, accessways and stairs enable **safe access and egress**, while preventing access by unauthorised people.	**3+ Storey Apartment Buildings** **Entry** A. The communal main landing and entry includes: i. An easily identified, safe, well lit, sheltered landing designed for the size and type of apartment building lobby it services. **Access** B. The design of communal accessways: i. Prevents entrapment. ii. Prevents disturbance to customers from impact sounds and flanking to adjacent spaces (refer to **B1.6 Acoustics**). iii. Mitigates the creation of cold, wet, windswept areas that let in water, dirt, leaves and similar detritus. iv. Facilitates natural lighting, ventilation and surveillance. C. The design restricts access to unauthorised individuals, using building access control systems. D. Where the building has multiple units accessed via a single principal entrance, there should be a secure lobby that limits visitor access to no more than 6 units. E. Utility rooms, service areas and building systems are able to be easily accessed as required for maintenance purposes. i. Doors are secured with a key lock keyed to a 197-service key and must open outward from the space. **Stairs** F. All communal stairs, internal and external: i. Do not include stair winders. ii. Include at least one handrail located on one side of the stairs (regardless of the number of risers). G. Where there is a risk of falling over 1.0m, include a (minimum) 1.1m high balustrade.

B3.2 COMMUNAL ACCESS, EGRESS AND CIRCULATION CONTINUED

Egress

H. All 3+ storey apartment buildings must have a FENZ approved evacuation plan which defines the evacuation strategy for the building. This must be developed in partnership with FENZ at preliminary design stage.
   i. Lifts and evacuation chairs are not permitted as part of an evacuation strategy for Kāinga Ora properties.

I. All floors above ground level are designed for ambulant emergency egress only. They cannot be classified as accessible.

J. Multi-purpose rooms, meeting rooms, consultation rooms, satellite offices, security and concierge facilities have two means of egress.

Guidance

- Avoid climbable landscape and building features to mitigate unauthorised access.
- Refer to **C2.5 Access controls and security systems**.

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B3.2.2 **Lifts** are provided as required by the project brief.	**All apartments** A. Where an apartment building has 4 or more storeys, ensure there is at least one lift provided. i. Ensure lift cars and lift doors are: a. Commercial quality and vandal resistant. b. Sized to support movement of furniture and the number of building occupants. c. Minimum lift capacity 1000Kg or 13 persons, 1 m/s, lift car internal finished dimensions minimum 1400 x 1600mm, door opening 1000 x 2100mm.

Guidance

- For larger apartment complexes, provision of two lifts should be considered so that one may remain operational in the event the other requires maintenance.
- Lifts and evacuation chairs cannot be included in the evacuation strategy because their use would require a fully staffed, 24/7 on-site operation to facilitate accessible lift evacuation during a fire. If this type of design is being considered for the project, consultation with FENZ is required at the feasibility stage.

B3.3 COMMUNAL KITCHENS, BATHROOMS AND LAUNDRIES

Rationale

Kitchen, bathroom and laundry areas require careful consideration to avoid hazards and risks and to enable safe and easy use. These spaces typically have higher risks and maintenance requirements compared to other areas, given they are frequently used spaces that involve water use, cooking, repetitive movement and use of fixtures and fittings.

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B3.3.1 **Communal kitchens and kitchenettes** are appropriate for the size of the communal space it services.	A. Where a communal **kitchen or kitchenette** is provided, it must: i. Prevent residents and/or visitors from using the kitchen as a main thoroughfare. ii. Be physically, visually and acoustically separate from bathroom, toilet and laundry facilities (and vice versa). iii. Include: a. 1.5m clearance in front of cupboards and appliances. b. Space for waste and recycling bins. c. Secure/child-proof storage. d. Stainless steel benchtop with upstand and integral sink. e. Anti-tip device to free-standing stove (where provided).
B3.3.2 **Communal area toilets** are fit-for-purpose and provided in line with the project brief.	A. Where communal area toilets are provided: i. The number of fixtures and fittings provided is suitable for the number of occupants the community facility serves. ii. The space is in proximity to the areas it serves, with clear signage and wayfinding. iii. At least one unisex accessible toilet facility is provided that includes a baby change table.
B3.3.3 **Communal laundries** are fit-for-purpose and sized appropriately for the number of expected users.	A. Washers/dryers are seismically restrained.

Guidance

Wherever possible, kitchens, bathrooms and laundries are near each other to enable efficient provision of services (such as potable and hot water, heating and ventilation), however, this should not compromise privacy and cultural considerations.

Refer to **B3.1.2** for guidance regarding arrangement of communal spaces.

B3.4 SHARED SPACE: FINISHES, FITTINGS AND FURNISHINGS

Rationale

Kāinga Ora maintains over 70,000 dwellings over their life. Replacement and repair of finishes, fittings and furnishings within these homes can be disruptive for our customers, particularly if the finishes, fittings or furnishings are difficult to source, fix or replace within a short timeframe. Finishes, fittings and furnishings need to be durable, robust and easy to maintain while providing our customers with the amenity they need.

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
B3.4.1 **Products, materials and finishes** for communal area floors, walls and ceilings are durable, robust and easy to maintain.	A. Commercial grade finishes are provided to communal space floors, walls and ceilings, and floor finishes should allow for movement of furniture and equipment on castors.
B3.4.2 **Fittings, fixtures and equipment** in communal areas are specified that are adequate, robust, safe and easy to maintain.	A. Soft fitout is commercial grade. i. Window treatments and furnishings are fire retardant. ii. Window treatments do not have loose cords that pose a strangulation risk for small children. B. Adequate storage is provided to communal rooms and sized to suit the size and use of the room. C. Cupboards, handles and other hardware are commercial grade.

Guidance

- Space for an emergency and/or civil defence kit should be provided as appropriate for the type of space and number of anticipated occupants.

C NGĀ RATONGA WHARE SERVICES

C1 Three waters

C1.1 Stormwater
C1.2 Wastewater
C1.3 Water supply
C1.4 Water metering
C1.5 Water fixtures, fittings, hydraulics and hot water

C2 Energy and electrical

C2.1 Energy supply and metering
C2.2 Electrical distribution
C2.3 Lighting
C2.4 Data, communications and controls
C2.5 Access controls and security systems

C3 Heating, ventilation and air conditioning

C3.1 Heating, ventilation and air conditioning

C4 Fire protection systems

C4.1 Fire protection systems



C1 THREE WATERS

C1.1 STORMWATER

Rationale

Local councils around New Zealand typically set requirements for developments, which may include rainwater retention/detention tanks or other design features to manage stormwater and control sediment on site.

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C1.1.1 **Stormwater management** systems are designed to be safe, reliable, easy to maintain and suitable for current and anticipated future needs.	A. Wherever possible, stormwater is discharged to the public network using a gravity-fed system. B. Access chambers are not located within play or recreation areas and have lockable covers or grilles. C. Inspection/maintenance points should be easily accessible without damaging the building finishes. D. Install access chamber covers level with finished grade to avoid them being buried or becoming a trip hazard. **Where retention/detention tanks are required** E. If above ground, tanks: i. Are placed to allow maintenance of the dwelling's cladding. ii. Are seismically restrained. iii. Do not infringe upon outdoor living, recreation, services or access space. (Refer to **Section A. Site**.) iv. The water tank lid must be secured and tamper-resistant to prevent unauthorised or accidental access (including by children), and to mitigate risks of falls, entrapment, and contamination. F. Tanks located under floor slabs must be easily maintained and have a life expectancy of at least 50 years.

Guidance

- Underground tanks may be preferable on small/constrained sites to avoid reducing functional outdoor space.
- When stormwater re-use systems are specifically required by the consenting authority, contact the **Standards team** for guidance (Standards@kaingaora.govt.nz).

C1.2 WASTEWATER

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C1.2.1 Wastewater management systems are designed to be safe, reliable, easy to maintain and suitable for current and anticipated future needs.	A. Laundry tubs or washing machines are not directly connected to floor waste gullies. B. Wherever possible, wastewater is discharged to the public network using a gravity-fed system. C. Wastewater inspection/maintenance points are easy to access without damaging the building finishes. D. Where any on-site treatment system or pumping is required: i. It has a separately metered power supply where it serves multiple dwellings. ii. The system is easily accessible for maintenance. iii. System design allows for continued occupation of homes during a power outage. E. Access Chambers are: i. Not located within play or recreation areas. ii. Have lockable covers or grilles. iii. Chamber covers are level with finished grade to avoid them being buried or becoming a trip hazard. F. Tundish drains are included where a heat pump or heat-recovery ventilation system is required.

Guidance

- If designing a commercial kitchen or laundry, contact the **Standards team** for guidance (Standards@kaingaora.govt.nz).

C1.3 WATER SUPPLY

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C1.3.1 **Potable water supply** is safe, reliable and allows ease of maintenance.	**Public supply** A. Wherever possible, potable water is supplied by public water mains. B. Water is supplied at a consistent water pressure to all dwellings. C. Where required to achieve required water pressure: i. One or more booster pumps are provided and/or. ii. Pressure-reducing valves are provided. **Booster Pumps for Apartments** D. Any booster pump serving private reticulated networks in apartments: i. Is easy to access for maintenance. ii. Has a back-up system in the event of pump failure. iii. Includes a separately or independently metered power supply. iv. Is connected to an emergency power system (such as a portable generator) where one is provided.

Guidance

Where municipal water supply cannot be used, contact the **Standards team** for guidance (Standards@kaingaora.govt.nz).

C1.4 WATER METERING

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C1.4.1 **Water metering** is configured to enable future private ownership of dwellings and is safe and easy to access.	A. A water-supply meter and check valve is: i. Provided for each dwelling. ii. Accessible via clear pedestrian access from the road. **Homes with independent land area e.g., single, duplex, terrace homes (see Figure C.1.4-1)** B. Individual water meters with isolation check valves are located in an accessible valve chamber in the public berm. C. Bulk water meters are not to be used. **Homes with shared exterior space e.g., walk-ups and apartments (See Figure C1.4-2)** D. A bulk water meter and strainer/filter is provided between two isolation valves. Individual water meters with isolation check valves are located in an accessible valve chamber. E. A single cold water rising main is included that can be isolated from the main water supply at each dwelling via an external check valve, located in a service shaft.

FIGURE C1.4-1: HOMES WITH INDEPENDENT LAND AREA

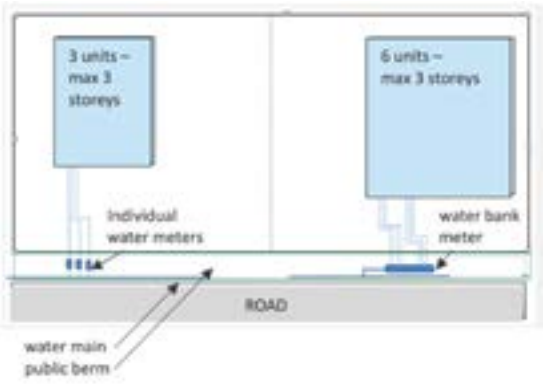
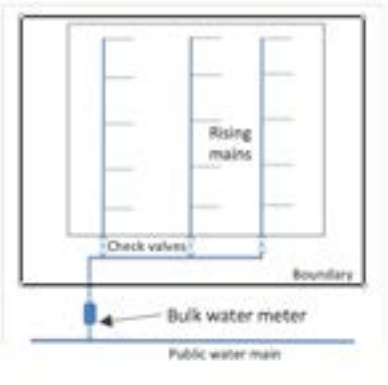


FIGURE C1.4-2: HOMES WITH SHARED EXTERIOR SPACE



C1.5 WATER FIXTURES, FITTINGS, HYDRAULICS AND HOT WATER

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C1.5.1 **Water fixtures and fittings** promote efficient use of water and are safe and easy to use.	A. Maximum fixture flow rates: i. Shower = 9 litres/minute ii. Kitchen tap = 7.5 litres/minute iii. Basin and vanity tap = 4.5 litres/minute iv. Laundry tap = 7.5 litres/minute B. All tapware has lever-style handles for easy use by people with limited hand use. C. Toilets have a dual flush of 4.5 litres/3 litres.
C1.5.2 **Hot water** supply is adequate to meet customer needs and is safe and energy efficient.	A. Storage type hot water heaters i. Are sized in accordance with **Table C1.5-1.** ii. Storage for 5+ bedroom homes can be split across two cylinders if required. iii. Are easily accessible for maintenance and replacement. iv. have a dedicated electrical circuit. B. Hot water supply is tempered between 45°C and 50°C at the outlet. C. Tempering valves are protected by an anti-tampering device. D. All pipework from the hot water tank within the cupboard space is insulated to reduce heat loss and protect occupants. E. The length of pipe-runs from the water heater to the kitchen sink outlet meet the requirements of NZS4305 Table 5. F. The following are **not permitted**: i. 3-phase systems for individual dwellings. ii. Gas-fired water heaters (natural or LPG). **For apartments and communal spaces** G. Hot water supply to hand basins in communal facilities is tempered to 45°C at the outlet. H. All pipework in recirculating hot water systems is insulated. I. Cleaners sinks and infrequently used common areas have on-demand electric water heating.

TABLE C1.5-1: MINIMUM REQUIREMENTS FOR THE CAPACITY OF HOT WATER CYLINDERS

	DWELLING SIZE (BY BEDROOM NUMBER)						
	STUDIO	1	2	3	4	5	6
Hot water storage capacity (litres)	90L	90L	135L	180L	180L	300L	360L
Element Size	2kW	2kW	2kW	2-3kW	2-3kW	3kW	2-3kW (each cylinder)

C1.5 WATER FIXTURES, FITTINGS, HYDRAULICS AND HOT WATER (CONTINUED)

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C1.5.3 **Layout and design of hydraulic systems** is efficient, quiet, reduces the risk of water damage and enables ease of maintenance.	A. Individual dwellings: i. Are metered separately to enable future divestment. ii. Have a separate, easily accessible isolation valve (toby). for water supply. B. System design and placement minimizes: i. Noise, including for neighbours. ii. Risk of frost damage during prolonged power outages. C. Outdoor taps are provided for private ground-level outdoor private spaces for gardening and vehicle washing. D. Taps are provided for wash down to areas liable to contamination (e.g. communal refuse storage areas).
C1.5.4 Where used, **Heat Pump Hot Water Systems** are efficient, quiet, easy to maintain, and external units are well-located.	A. **Heat Pump Hot Water systems:** i. Have a similar ability to meet peak and overall daily demand to the electric resistance hot water heaters listed in **Table C1.5-1**. ii. Have storage cylinders located within the thermal envelope. B. External fan units must: i. Not pose a risk to falling from heights (e.g. on balconies). ii. Be easily accessed for maintenance. iii. Be securely fixed and placed to avoid damage and/or vandalism. iv. Not obstruct or deposit condensate across external pathways. v. Be placed and specified to minimise noise and reverberation nuisance to occupants and neighbours. vi. Only have covers where these have been approved by the heat pump manufacturer.

Guidance

Refer to **EECA's Good Practice Installation Guide to Heat Pump Installation** for more detailed information on placement of fan units.

C2 ENERGY AND ELECTRICAL

C2.1 ENERGY SUPPLY AND METERING

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C2.1.1 **Energy supply** to the site and buildings is safe, reliable, low-carbon and suitable for current and anticipated future needs.	A. Grid-supplied electricity is the primary energy source for all dwellings. B. Natural gas is **not** used as an energy source. C. Where on-site renewable energy systems are installed: i. Clearly labelled switches are installed in an accessible location to electrically isolate all photovoltaic hardware. ii. Signage is included to warn of the electrical shock posed by photovoltaic panels. D. Any earth stakes are protected by a non-conductive toby box. **Back-up supply – apartments and multi-unit developments** E. A source of back-up power is provided for essential services.
C2.1.2 **Metering** is designed to be safe, easy to access and configured to allow for future private ownership of buildings.	A. Each dwelling has an individual utility-supplied smart meter. Communal electrical loads shall be connected to a separate smart landlord meter. B. The metering system includes easy-to-read labelling that identifies the ICP number and which dwelling, common area or user the meter is associated with. C. Meter and distribution boards are placed in areas so they: i. Do not obstruct or restrict circulation. ii. Are not prone to water damage. iii. Are not exposed to moisture or dampness. **Private dwellings** D. Meters are placed in the hall or garage, and are flush with the wall lining to avoid intruding on circulation spaces. **Apartments and multi-unit developments** E. Meters are placed in a secure utilities room or cabinet that can be accessed from communal areas. F. Separate distribution boards are provided for essential services.

Guidance

Essential services include (but are not necessarily limited to):

- Lifts.
- Fire detection and protection services (including associated exhaust or ventilation systems).
- Security systems.
- Water-pressure/potable water supply pumps.
- Sewerage or stormwater pumps.
- Exit lighting.
- Building management and control systems (BMS).

C2.2 ELECTRICAL DISTRIBUTION

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C2.2.1 Electrical distribution is safe, easy to access and adequate to meet customers' current and future needs.	A. Distribution of power outlets inside the dwelling i. Power and data outlets are located: a. 500mm above FFL, b. Behind appliances; between 900mm-1200mm above FFL. E.g., fridge, and washing machine. c. Between 250mm-300mm above kitchen benchtops and at least 400mm away from stoves and hobs. d. At least 500mm away from internal corners. e. 1.0m above FFL in bathrooms adjacent to vanities or basins. B. Internal distribution boards have at least 20% spare capacity. C. Power outlets are provided in line with **Table C2.2-1: Power Outlets**.

TABLE C2.2-1: MINIMUM REQUIREMENTS FOR DISTRIBUTION OF POWER OUTLETS INSIDE THE DWELLING

SPACE	REQUIREMENT	NOTES
Living and dining area (combined)	x4 double socket outlets	Place to facilitate communications, TV use and housekeeping
Kitchens	x3 double socket outlets and x1 dedicated outlet (each) for fridge, stove, and microwave	
Bedrooms $9m^2$ or less	x2 double socket outlets	One outlet per bedside
Bedrooms more than $9m^2$	x3 double socket outlets	One outlet per bedside
Bathrooms	All dwellings: x1 double socket outlet	Adjacent to the bathroom vanity
Hallways	x1 double socket outlet	
Star wiring boxes	x1 double socket outlet	
Private garages	x2 double socket outlets	One placed on the ceiling for the garage door opener. Additional outlets will be required where garage accomodates the laundry.
Laundries	x1 double socket outlet	
Communal areas		As per relevant project brief, fed from communal power (landlord meter)

C2.3 LIGHTING

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C2.3.1 **Energy-efficient interior and exterior lighting** solutions are provided to meet customer needs and simplify maintenance.	A. **Interior lighting:** i. Lighting levels align with **Table C2.3-1**. ii. The Lighting Power Density of fixed interior lighting is no greater than 5W/m². iii. Is 'warm white' LED. iv. Does not create strong, contrasting patterns of light and dark v. Highlights any step or level change. vi. Is located no more than 2.7m above FFL. vii. Includes task lighting to kitchen benches and vanities. viii. Includes two-way switching to all hallways and stairs. ix. Includes large rocker-style switches located 1.0m above FFL. x. Where there is more than one main light fixture in the main living area, they are separately switched. B. **Exterior lighting:** i. Is LED. ii. Is provided to all entry doors, exterior steps, pedestrian access routes from the street and carparks, driveways and common areas. iii. Is integrated with passive and active security measures and natural surveillance relating to overall CPTED design. iv. Does not cause disturbance to neighbours. v. Includes controls that include photocells and motion detection to reduce energy consumption. **Additional requirements for apartments and multi-unit developments** C. Where lighting is provided to public areas, emergency lighting and wiring is vandal-resistant to IK10. D. Batteries (where included) can be replaced without changing the whole fitting.

TABLE C2.3-1: MINIMUM INTERIOR LIGHTING (LUX) LEVELS

AREA	STANDARD – CALCULATED	SCHEDULE
Living and dining areas[5]	150lx (floor)/300lx (task[3])	2x30watt
Bedrooms[1]	50lx (floor)/150lx (bed)	
Kitchens[4]	300lx (work surfaces)	1x18watt
Bathrooms[1]	100lx (work surfaces)	1x18watt
Separate toilets[1]		1x18watt
Laundries		1x18watt
Hallways and landings	150lx (floor)	
Stairways[2]	100lx (treads)	
Offices/meeting rooms	300lx (task[3])	
Garages	50lx (floor)/300lx (bench)	

Notes:

1. Additional task lighting is recommended for kitchens and for bathroom mirrors.
2. It is recommended lights are mounted at a lower level for ease of replacement.
3. Allow for adjustable light fittings and/or install a power outlet close by for task lighting.
4. Where storage is built into a dwelling or apartment, ensure adequate lighting is provided. Standalone sheds do not require lighting.
5. Light switching must allow for different areas of multi storey apartments to be separately switched.

Guidance

- Consider solar-powered solutions for common areas, long pathways and driveways.
- Kitchen work surfaces and bathroom vanities should be well-lit in use, without strong patterns of shade.
- Where storage is built into a dwelling or apartment, ensure adequate lighting is provided.
- Standalone sheds do not require lighting.

C2.4 DATA, COMMUNICATIONS AND CONTROLS

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C2.4.1 Access to free-to-air **television**	A. Provide Master Antenna Television (MATV) to apartments, located in a service room and supplied on common power. B. Locate power outlets with consideration of TV viewing.
C2.4.2 **Phone and internet services** are provided to each dwelling and, where relevant, communal areas and utilities rooms.	A. Where **available**, all dwellings are connected from an external termination point (ETP) to the optical network terminal (ONT) and then to a fibre-optic network. i. ONT is located in star wiring box ready for connection to internal network and not in a wardrobe. ii. Data cabling from the star wiring box uses a CAT6 copper cable and designated switch sockets. iii. Star wiring box design shall comply with Chorus' requirements. iv. Star wiring boxes shall be recessed into corridor or main living area walls. B. Where fibre is **unavailable**, a high-speed copper service is provided from the ETP to the building's master jack point in: i. 50Ø ducting for up to 12 units. ii. 100Ø ducting for 12+ units.
C2.4.3 Where required, **building control and management systems (BMS)** facilitate operation of building systems and services.	A. **Control systems** for mechanical services and electrical systems are provided that: i. Facilitate operation of building systems. ii. Are simple to operate and program. B. A **BMS system** is provided when local control is inadequate (thermostat, sensor, time switches) or as required by the project brief. C. **Lift-emergency communication systems** are provided to lifts and are activated via voice calling over broadband (VoIP).

Guidance

- UHF TV aerials are not required for new low-density housing (standalone dwellings, duplexes, and terraces).

C2.5 ACCESS CONTROLS AND SECURITY SYSTEMS

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C2.5.1 **Access-control, intercom and CCTV systems** provide security, while supporting safe access and egress. Systems are durable and be easy to maintain.	**Buildings with a communal access route** A. **Electronic access control:** i. Is programmable and provides 24/7/365 day access to all communal areas. These include: a. Stairwells. b. Lifts and lift lobbies. c. Hallways and accessways. d. Common rooms/spaces (such as multi-purpose rooms). e. All entrances to the building or complex. f. Other shared spaces (such as. Communal drying rooms). ii. Provides access via both swipe access and keypad entry to all communal accessways to allow access for emergency services. B. **Access control systems** include: i. Access controls and keypads located at 0.9–1.2m above FFL. ii. Clearly labelled proximity readers. iii. Clearly labelled emergency releases, and 'press to exit' buttons on the secure side in the path of travel to the applicable door. iv. Hard-wired emergency release connected to the building fire alarm system. v. Audible alarms to warn of secure doors being wedged open. vi. Self-closing components to prevent tailgating and unauthorised access. C. **CCTV monitoring systems for complexes** i. Where CCTV systems are briefed, all common areas (interior and exterior) have continuous 24-hour monitoring including site boundaries, vehicle access routes and pedestrian pathways, car parks, refuse areas and laundry facilities, entries, stair-ways, lift lobbies and corridors. ii. CCTV systems and hardware must: a. Have a dedicated hardwired internet connection for the site. b. Have remote and onsite access capabilities. c. Be supported by end user training. d. Have a minimum 31 days of images storage capacity prior to overwrite. e. Be actively supported by the manufacturer (not an end-of-life product). f. Have digital masking activated for the privacy of residents. g. Have capacity for additional cameras. h. Not be connected to the electronic access management system. iii. CCTV audio is not required.

C2.5 ACCESS CONTROLS AND SECURITY SYSTEMS CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
	C. **CCTV monitoring systems for complexes** (continued) iv. Signage is: a. Outside every entrance to a building and wherever an occupant is going to be within CCTV view. b. Clearly visible and well-lit, alerting customers and visitors to the presence and use of CCTV. v. System equipment is secured in an alarmed and secured location. vi. Components located in publicly accessible areas are weather- and vandalism-resistant. D. **Intercom Systems** i. Communal entries have a voice-only intercom system that is connected to each dwelling, which: ii. Gives customers the ability to restrict access to the lobby to their guests and/or other approved visitors. iii. Does not grant visitors access to the lifts, stairwells or accessways without customer escort. iv. Is hard wired and independent of the telephone and electronic access systems. v. Intercom controls include a mute function for occupant use.

Guidance

On-site manager and regular on-, or off-site monitoring is not typically provided.

CCTV

- For project specific guidance on CCTV system requirements, contact the **Standards team** (standards@kaingaora.govt.nz).
- CCTV should support natural surveillance, not substitute for it.
- The CCTV system should not be an analogue signal type.

C3 HEATING, VENTILATION AND AIR CONDITIONING

C3.1 HEATING, VENTILATION AND AIR CONDITIONING

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C3.1.1 Active **heating** meets legislative requirements and complements passive strategies to ensure healthy and comfortable indoor environments and reduced operational energy costs for our customers.	**Compliance** A. To demonstrate main living area heating compliance with the Residential Tenancies (Healthy Homes Standards) Regulations 2019, heaters must be sized using either: i. The Kāinga Ora Heating Calculator for standalone, semi-detached and terrace typologies, or ii. Heating calculations done by a suitably qualified professional as set out in the regulations (refer **B1.4 Thermal performance**). B. Documentation demonstrating compliance with the heating standard must be submitted to Kāinga Ora. **Heating** C. Electric heating in the main living area: i. All heaters are hard-wired and separately switched. a. Where the heater model has an independent thermostat it is to be installed in a central location not directly influenced by solar or internal heat gain from nearby appliances. ii. Heat pumps are required where the calculated heater output is more than 2.4kW. a. Heat pumps each have a dedicated electrical circuit. D. Gas (LPG or natural gas), pellet or multi-fuel heating is **not permitted**. E. A solid fuel burner is permitted only in places with electricity insecurity.

Guidance

Heating calculators

Kāinga Ora requires heating calculations to demonstrate that a temperature of 20°C can be maintained in the living area (Healthy Homes minimum requirement is 18°C). This is automatically accounted for in the Kāinga Ora Heating Calculator.

C3.1 HEATING, VENTILATION AND AIR CONDITIONING

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C3.1.2 **Mechanical ventilation** systems promote a healthy and comfortable indoor environment while minimising risks associated with internal moisture.	**All mechanical ventilation systems** A. The as-installed static resistance of ductwork, grilles, and diffusers must be accounted for. B. Bathrooms: i. Intermittent/boost mechanical extract ventilation shall be interlocked with the bathroom lighting circuit, and shall have a 15-minute run-on timer. C. Laundries: i. Intermittent/boost mechanical extract ventilation shall be installed in all laundries, and extract fan power shall be interlocked with the electrical circuit supplying the appliance outlet labelled 'Dryer' on the laundry double-socket power outlet. D. Combined Bathroom/Laundry spaces: i. Where a room contains both bathroom and laundry facilities, the intermittent/boost mechanical extract ventilation shall be interlocked with both: a. The bathroom lighting circuit (as per Clause B.i), and b. The laundry dryer power outlet circuit (as per Clause C.i.). E. Lint filtration is provided for mechanical extract fans serving laundry spaces and drying rooms. This includes combined bathroom/laundry spaces and common utility spaces. F. Extract grilles in bathrooms shall be located above or in close proximity to the shower to capture moisture at source and shall be positioned to maximise airflow across the bathroom such that makeup air is drawn from the entry door across as much of the space as practicable. G. Kitchen rangehoods: i. Are separately ducted directly to the outside. ii. Recirculating rangehoods with charcoal filters are permitted by exception. Please contact the **Standards team** for guidance. iii. In 1- and 2-bedroom apartment and walk-up units, shall not exceed an extract rate of 550 m³/h at maximum speed, as tested in accordance with IEC 61591. iv. Rangehoods shall be provided with dedicated makeup air in dwellings predominantly enclosed from precast concrete, in-situ concrete, or concrete blockwork. H. External through wall vents must be fitted with backdraft dampers and cowls. I. Dwellings predominantly enclosed from precast, in-situ concrete, or concrete blockwork: i. Shall have balanced continuous mechanical ventilation systems.

C3.1 HEATING, VENTILATION AND AIR CONDITIONING

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
	All continuous mechanical ventilation systems J. For balanced continuous mechanical ventilation systems and continuous mechanical extract ventilation systems the minimum background ventilation rate must be the highest of the following three criteria: i. Whole house ventilation rate of at least 0.35 ACH. ii. Occupancy based ventilation rate of: a. 7.5 L/s/person based on two people per main bedroom plus one person per additional bedrooms (e.g., 2 bedrooms = 3 people). iii. The total minimum background ventilation rate is made up from the below flow rates/room: a. 12 L/s in kitchens. b. 10 L/s in bathrooms. c. 8 L/s in laundries (unless separately ventilated). d. 10 L/s for a combined bathroom/laundry. e. 6 L/s separate toilet. K. The minimum boost ventilation rate for above criteria 1 and 2 must be: i. At least 7.5 L/s/person based on two people per bedroom for every bedroom. ii. Is linked to the bathroom light switch with run-on timer of 15 minutes. iii. Where present, CO_2 sensors in central fan units are set to 800 ppm, and where specified, CO_2 sensors in bedrooms are set to 1000ppm. L. If the above Criteria 3 is used to specify the minimum background ventilation rate no boost is required. M. Positive pressure ventilation systems are **not permitted**. N. Airflow through the habitable spaces is enabled by: i. Door undercuts of 20mm over vinyl, or ii. Door undercuts over carpet of 10mm, or iii. Suitable alternative transfer grills are installed.

C3.1 HEATING, VENTILATION AND AIR CONDITIONING CONTINUED

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C3.1.3 Where used, continuous mechanical extract ventilation systems must have adequate make-up air for silent operation at the background ventilation rate.	A. In household units with a built air permeability of less than 3.0m³/h/m² @ 50 Pa adequate make-up air is provided by deliberate vents by either: i. Wall or trickle vents that: a. Have at least 4000mm² equivalent area of opening per bedroom and other habitable spaces. b. Where trickle vents have an automated partial-close function, the opening size must be based on the automated closed state. c. Are placed to avoid short circuiting of air flow (e.g. away from extract points, and not in wet rooms). d. Are installed at 1.7m or higher from FFL and placed/specified to avoid discomfort to occupants (external noise and draughts). e. Keep pests and insects out. f. Suit the local environment, considering airborne and noise pollution. g. When used in multi-storey buildings, are: 1. Engineered to the applicable wind pressures. 2. Accessible for maintenance (where needed). ii. Aluminium trickle vents are thermally broken. iii. Ducted fresh air intakes that have filters accessible from inside the dwelling to prevent ingress of insects and outdoors contaminants. iv. External wall vent cowls are: a. Protected from the prevailing wind. b. Placed to avoid obstructing passers-by, accidental damage, and vandalism. c. Internally, are placed to avoid obstruction by furniture or window treatments.

Guidance

Cooling

Where overheating is a risk and cannot be designed out (e.g. with shading devices), active cooling systems (e.g. heat pumps and/or mechanical ventilation) should be specified.

Ventilation

"Intermittent/boost mechanical extract ventilation" for the above clauses means mechanical extract ventilation that operates either intermittently or in boost mode.

Dedicated kitchen rangehood makeup air

Refers to the provision of intentional replacement air to balance kitchen exhaust and maintain safe pressure conditions within the dwelling. This is typically achieved using an active makeup air system. Where alternative solutions are proposed, designers shall demonstrate equivalent performance under peak extract operation and seek approval from the Standards team on a case-by-case basis.

C3.1 HEATING, VENTILATION AND AIR CONDITIONING CONTINUED

Guidance continued

Air Permeability

Household units with intertenancy walls (e.g., apartments, walk-ups, terraces, and duplexes) are likely to have air permeability below 3.0m³/h/m² @ 50 Pa and therefore require deliberate vents for makeup air to CMEV systems.

Where a dwelling enclosure is predomininantly enclosed by precast concrete, in-situ concrete, or concrete masonry elements, such construction may result in low air permeability. In such cases, operation of mechanical extract systems may cause significant depressurisation unless adequate makeup air is provided.

Heat Pumps

Refer to **EECA's Good Practice Installation Guide to Heat Pump Installation** for more detailed information.

Exterior heat pump units

- Placement of heat pump outdoor units must not reduce safety from falling when located on balconies.
- Covers for outdoor units should only be installed where approved by the heat pump manufacturer.
- Condensate from heat pump outdoor units should not be allowed to flow across areas subject to foot traffic.
- Sound levels of outdoor heat pump units must not exceed local body noise bylaws. Do not locate where noise can cause a disturbance to home occupants or neighbours.

Indoor heat pump units

- Indoor heat pump units be placed where they can easily be maintained, i.e. not above stairs.

Central and solid fuel heating systems

In certain circumstances:

- a solid fuel burner may be appropriate (i.e. where energy security is an issue).
- centralised heating and cooling systems may be more suitable than spot heating (i.e. larger homes).

Any Alternative Solution needs to be proposed for consideration to ensure the solution will meet customer and Kāinga Ora business needs.

Continuous mechanical ventilation

- Balanced mechanical ventilation with heat recovery and a summer bypass function is the preferred solution.

Continuously operating mechanical ventilation systems

- Boost ventilation is intended to manage indoor air quality and is not intended for purge ventilation or to address overheating.
- Mechanical equipment is placed in an area that:
  - Is easily accessible for maintenance (preferably from common areas in apartment buildings).
  - Discourages tampering.
  - Any condensate drains should not discharge across areas subject to foot traffic.
- All continuously operating mechanical ventilation systems should be designed to operate at low and high volume. At low volume, the noise level measured 1.0m from the inlet/grille should not exceed 35dBa in bedrooms and 40dBA in other habitable areas. Where background noise exceeds this, systems should not have a sound level greater than 1dB above the background noise level.
- Controls should be located at an accessible height (i.e. between 900mm and 1200mm above FFL). Hand-held remote controls should be provided with a wall mount.

C3.1 HEATING, VENTILATION AND AIR CONDITIONING CONTINUED

Guidance continued

- Where balanced ventilation and/or mechanical heat recovery ventilation is being provided:
  - Ensure that the ventilation does not become contaminated with grease from cooking.
  - It is recommended that these are commissioned and balanced on installation. Reports should be provided to the applicable Kāinga Ora representative.

Wall or Trickle Vents

- Trickle vents are preferred, but wall or ducted vents may be used if required.
- Where wall or trickle vents are used, consideration should be given to their impact on thermal performance, occupant comfort (prevention of draughts), acoustic performance, reliability and ease of maintenance.
- Where a vent is automatically actuated, the equivalent area of opening should be measured on the minimum opening setting.
- Trickle vents should be easily reached and operated.
- Consider acoustic performance while in both open and closed positions.
- Well-considered design and specification can reduce the impact of external noise and its impacts on occupants. This is particularly important for dense urban areas and/or areas close to roads, businesses, and/or educational facilities etc.

C4 FIRE PROTECTION SYSTEMS

C4.1 FIRE PROTECTION SYSTEMS

Rationale

The incidence of fires in Kāinga Ora homes is greater than for the general population. Also, many of our customers have infirmities and many spend longer in their homes than average. Consequently, we have requirements for fire protection that are over and above statutory requirements.

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C4.1.1 **Fire services** are designed to protect and promote customers' safety, health and wellbeing.	**Standalone and terrace housing** A. Fire warning systems are provided as per **Table C4.1-1**. **3+ Storey Apartment Buildings** B. Fire warning systems are provided as per **Table C4.1-2**. C. The design and specification of fire protection systems must satisfy the Fire and Emergency New Zealand Act 2017 and be able to obtain a FENZ-approved evacuation scheme. D. Manual call points are fitted with tamper-proof covers.

TABLE C4.1-1: FIRE WARNING SYSTEM REQUIREMENTS FOR STAND ALONE/TERRACE HOUSING

This table highlights specific requirements above those required by legislation.

	INTERCONNECTED WIRELESS SMOKE DETECTORS	WALL MOUNT TEST/HUSH BUTTON
Hallways		
Stairways		
Bedrooms		
Bathrooms		
Living-areas		
Dining-areas		
Landings		
Kitchens	Note 1	
Laundries		
Attached garages		

Note 1: Enclosed kitchens shall be provided with a heat detector interconnected with other alarms in the home.

C4.1 FIRE PROTECTION SYSTEMS CONTINUED

TABLE C4.1-2: FIRE WARNING SYSTEM REQUIREMENTS FOR MULTI UNIT APARTMENTS

	Analogue addressable or Conventional Photoelectric smoke detector connected to fire alarm panel	Interconnected encapsulated conventional fixed temp (57C) heat detector	Hush button connected to residentail alarm panel	Commercial fire alarm panel	Manual fire alarm call point	Sounder (65dB Sound Pressure Level minimum required)	Sounder (75dB Sound Pressure Level minimum required)
Hallways	■		■		■	■	
Stairways	■			■		■	
Bedrooms	■			■			■
Bathrooms		■		■		■	
Living-areas	■			■		■	
Dining-areas	■			■		■	
Kitchens		■		■		■	
Laundries		■				■	
Circulation spaces (enclosed)	■				■	■	
Circulation spaces (open)		■				■	
Lift lobbies	■					■	
Communal stairways	■					■	
Communal area kitchens		■				■	
Multi-purpose rooms	■					■	
Meeting/Consultation rooms	■					■	
Satellite offices	■				■	■	
Security and concierge facilities	■				■	■	
Communal drying rooms		■				■	
Utilities and service rooms	■					■	

PERFORMANCE REQUIREMENT	ACCEPTABLE SOLUTION
C4.1.2 **Sprinkler systems for community group housing** are designed to meet the specific needs of the intended customer group.	A. Fire sprinkler systems are required where occupants: i. Are fully dependent, require 24-hour full care or are non-ambulant, severely disabled or non-communicative. ii. Have varying levels of dependence, are ambulant (or ambulant with support), require full-time supervision or sleep-over care, have moderate disability, are psychiatric residential or disability residential or have progressive disability.
C4.1.4 Where required, **sprinkler systems** are designed to minimise tampering and the chance of accidental damage.	A. Sprinkler heads in habitable spaces are concealed with a cover plate. B. Sprinkler heads provided in common areas (such as service spaces or parking areas) are fitted with protective cages.

Guidance

The design of all fire services (except for single dwellings) should be undertaken during the preliminary design phase (or at the very least reviewed) by a Fire Engineer.

Smoke and heat detectors

- Encapsulated heat detectors should be in areas prone to accidental activation, including kitchens, bathrooms or laundries (where steam may activate a detector), open circulation spaces (where dust may activate a detector) or areas such as stairways or the underside of balconies (where moisture from cleaning or waterblasting may activate a detector).

Fire risers and extinguishers

- Fire hydrant systems and extinguishers are specified and placed to reduce the risk of vandalism or tampering.

Fire evacuation equipment

- Where required by the building evacuation plan, fire evacuation equipment should be:
- located to minimise the risk of vandalism or tampering,
- provided with vandal-resistant wall-brackets and storage covers,
- accompanied by appropriate signage and located to minimise the risk of vandalism or tampering.

Fire dampers

- Where fire dampers are required for a given property, ensure they can be easily accessed from the outside of dwellings. This will facilitate inspection and maintenance, minimising disruption to customers.

Access doors/hatches

- Where access doors or hatches are required for maintenance, ensure that they require specialist service tools to open and supply the necessary tools.

Hazard-activated power isolators

- These devices may be installed to provide protection from accidental cooking fires. In some applications, isolator equipment is not installed but interfaces in terms of audio/visual and tactile alerting devices are installed to provide adequate warning for those hard of hearing or visually impaired.

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FOREWORD

PRODUCT REQUIREMENTS

This Appendix outlines the products, systems and material requirements for new Kāinga Ora homes to ensure durability, functionality, and ease of maintenance.

NSA PRODUCTS AND PRODUCT GUIDES

This Appendix includes some products available under Kāinga Ora's National Supply Agreements (NSA). NSA products are pre-assessed for suitability in public housing, ensuring consistency, robustness, and ease of replacement for ongoing maintenance.

The latest **Product Guides** referenced throughout this Appendix are available on the Product Information Teams Channel. For access, or for NSA and supplier related queries, contact **supplychain@kaingaora.govt.nz**.

ALTERNATIVE PRODUCTS

Non-NSA products must meet the requirements outlined in this Appendix and its referenced documents.



PRODUCTS AND MATERIALS REQUIREMENTS

A1: Site response

FENCING AND GATES

A1.3.1 Fencing

A. Steel Fencing and Gates:
   i. Hot-dipped galvanised steel after machining without a powder-coat; or
   ii. Hot-dipped galvanised steel with 600g/m2 powder-coat finish.

B. Timber Fencing:
   i. Posts are H4 treated (100x75mm)
   ii. Rails are H3.2 treated (100x50mm)
   iii. Palings are H3.2 treated (150 x25mm).

NSA PRODUCTS

Refer to PlaceMakers Product Guide FY27

Gates (self-closing and keyless)

2910096 – Res Gate LH Inc Base Posts/Lock/Hinges 1.25mx1.03m

2910097 – Res Gate RH Inc Base Posts/Lock/Hinges 1.25mx1.03m

2910098 – Res Gate LH W In Ground Posts/Lock/Hinges 1.25mx1.03m

2910099 – Res Gate RH W In Ground Posts/Lock/Hinges 1.25mx1.03m

Pool fencing

2351043 – Edgesmith Fencelab Rigid Wire Fence Panel 1.2 X 1.8m Hdg With Fixings

2351044 – Edgesmith Fencelab Rigid Wire Fence Panel 1.2 X 2.4m Hdg With Fixings

A2: Amenity provision and configuration

DECKS, PATIOS AND STEPS

A2.1.1 Private Outdoor Area, B2.2.1 Main Entry

A. Decking and steps are concrete, timber or composite material.

B. Ramps and steps have a non-slip finish.

C. All composite decks must include:
   i. Concealed fixing that are durable and suitable for all corrosion zones, easy to install and maintain
   ii. Acceptable Wet Slip resistance (R11)
   iii. UV and Moisture protection
   iv. Planks have a minimum of 80% recycled material.

NSA PRODUCTS

Refer to PlaceMakers Product Guide FY27

1012474 – 100 X 40 (88x32) H3.2 Grip Tread Premium Decking Radiata

CLOTHESLINES

A2.3.2 Clothes drying facilities; Table A2.3-1

A. **Clotheslines must:**

i. Be wall-mounted fold-down; or a rotary line; or a T-bar type, comprised of galvanised steel or powder-coated.

ii. Have a line capacity in accordance **A2.3.2 Clothes drying facilities**.

NSA PRODUCTS

Refer to PlaceMakers Product Guide FY27

Fold-down

3590199 – Austral Standard 28 Fold down 2.4 X 1.5m Woodland Grey (28.5m line space)

3590198 – Austral Compact Fold down 2.4 X 0.94m Woodland Grey (28.5m line space)

3590322 – Austral Balcony 14 Fold Down Clothesline Woodland Grey (14.8m line space)

Retractable

3590363 – Austral Retractaway 40 Plus Clothesline Woodland Grey (40m line space)

Rotary

3590201 – Tasman Rotary Clothesline Galvanised (40m line space)

LETTERBOXES

A2.3.4 Letter boxes

A. Letterboxes must:

i. Be durable, resilient and UV-resistant

ii. Have an easily opened, hinged-opening that prevents water from entering the door or mail-slot

iii. Have a facility for locking the letterbox with a padlock. Keyed letterboxes are not permitted

iv. Not have any sharp edges or spring-flaps

NSA PRODUCTS

Refer to PlaceMakers Product Guide FY27

Standard Letterboxes

2910046 – Wilson Letterbox Black NLB7 KOHC

2910047 – Wilson Letterbox Beige NLB8 KOHC

2910048 – Wilson Letterbox Mountain Blue NLB9 KOHC

Slimline Letterboxes

2910049 – Wilson Letterbox Slimline Black SLM1 KOHC

2910050 – Wilson Letterbox Slimline Mountain Blue SLM2 KOHC

EXTERNAL STORAGE SHEDS

A2.3 Outdoor Service Areas, A2.3.3 Safe and secure storage, Table A2.3-2

Garden Sheds:

A. Have a concrete or timber floor and **are fixed down** to avoid wind up-lift.

B. Are pre-finished and corrosion resistance.

NSA PRODUCTS

Refer to PlaceMakers Product Guide FY27

1.5 x 1m sheds

5615909 – Garden Master Shed 1.53 X 1.08m GM1511 Alu-Zinc KOHC

5615910 – Garden Master Shed 1.53 X 1.08m GM1511 Desert Sand KOHC

5615914 – Garden Master Shed 1.53 X 1.08m GM1511 Karaka KOHC

5615912 – Garden Master Shed 1.53 X 1.08m GM1511 Gull Grey KOHC

1.8 x 1.5m sheds (for 4-bed + units only)

5615917 – Garden Master Shed 1.83 X 1.53m Gm1815 Alu-Zinc KOHC

5615924 – Garden Master Shed 1.83 X 1.53m GM1815 Karaka KOHC

5615922 – Garden Master Shed 1.83 X 1.53m GM1815 Gull Grey KOHC

Wooden Floor

5615916 – Garden Master Wooden Floor 1.53 X 1.08m Gm1511 KOHC

5615926 – Garden Master Wooden Floor 1.83 X 1.53m GM1815 KOHC

B1: Building envelope and overall performance

METAL ROOFING

B1.2 Weathertightness, B1.3 Interstitial Moisture

A. **Long-run profile metal:**

i. Panels are factory pre-painted to suit the environment in which they are used i.e. geothermal and marine environments.
ii. Coated-steel panels and flashings have a minimum BMT of 0.55mm.
iii. Zinc- or aluminium-alloy coatings must be at least 150g/m^2.
iv. Wash-down requirements must be satisfied by the annual New Zealand rain-fall range.
v. The colour-range has a limited light reflectance value (LRV) of 20-56%.
vi. Roofing and component colours to align with Kāinga Ora Exterior Colour Choices (M-248).

NSA PRODUCTS

Refer to Dimond Roofing Product Guide FY27

WEATHERBOARD PROFILE CLADDING

B1.2 Weathertightness, B1.3 Interstitial moisture

A. Fibre cement weatherboard:

i. Able to span up to 600mm.
ii. Available in a range of industry standard sizes and profiles.
iii. Supplied with all side-edges pre-primed, with pre-priming finish compatible with water-based paint system.

B. Timber weatherboard:

i. Use components that are supplied pre-sanded and pre-primed on all sides/edges.

C. Direct fixing of all cladding is prohibited.

NSA PRODUCTS

No NSA products

METAL CLADDING

B1.2 Weathertightness, B1.3 Interstitial Moisture

A. **Vertical long-run profile metal:**

i. Panels are factory pre-painted to suit the environment in which they are used i.e. geothermal and marine environments.
ii. Zinc- or aluminium-alloy coatings must be at least 150g/m^2.
iii. Coated-steel panels and flashings have a minimum BMT of 0.55mm.
iv. Coated aluminium panels have a minimum BMT of 0.7mm and are at least 5000-series.
v. Wash-down requirements must be satisfied by the annual New Zealand rain-fall range.
vi. The colour-range has a limited light reflectance value (LRV) of 20-56%.
vii. Cladding and component colours to align with Kāinga Ora Exterior Colour Choices (M-248).

NSA PRODUCTS

Refer to Dimond Roofing Product Guide FY27

BRICK CLADDING

B1.2 Weathertightness, B1.3 Interstitial moisture

A. Brick veneer cladding:

i. Brick units are clay or concrete.

ii. Standard modular sizes (70mm, 90mm, and 100mm).

B. Brick veneer system includes:

i. A drained and vented cavity with nominal cavity gap of 50mm.

ii. Step-down at slab edge of 70-100mm minimum, incorporating a DPC and a sloped fillet at the base of the cavity to ensure water is directed externally.

iii. Rebate depth minimum 90-145mm.

iv. Stretcher bond layout only (i.e. no stack bond).

v. Natural face brick only (i.e. no plaster, cement wash or painted finishes).

vi. Brick and mortar unit colours to align with Kāinga Ora Exterior colour choices (M-248).

C. Joint detail and mortar:

i. Rolled (tooled) mortar joint detail.

ii. Factory dry pre-mixed mortar.

D. Accessories:

i. Flashings and brick ties are compatible and corrosion resistant.

NSA PRODUCTS

No NSA products

INSULATION

B1.3 Interstitial moisture, B1.4 Thermal performance

A. Wall, ceiling and underfloor insulation:

i. Is semi-rigid or rigid.

ii. Will not reduce the performance of a fire-rated assembly.

iii. Is protected against, or resistant to damage by vermin and insects.

B. Foil products are **not permitted**.

NSA PRODUCTS

Refer to PlaceMakers Product Guide FY27

Pink Batts Range

3400017 – Pink® Batts® Classic R1.8 Ceiling – 13.7m^2

3680324 – Pink® Batts® Ultra® R2.6 Wall – 9.6m^2

3401031 – Pink® Batts® Classic R3.2 Ceiling – 8.4m^2

3401049 – Pink® Batts® Classic R3.6 Ceiling – 7.4m^2

3401056 – Pink® Batts® Ultra® R4.0 Ceiling – 6.3m^2

3400048 – Pink® Superbatts® R4.5 Ceiling – 5.6m^2

3400062 – Pink® Superbatts® R5.0 Ceiling – 4.5m^2

3400081 – Pink® Superbatts® R6.0 Ceiling – 3.9m^2

3400072 – Pink® Superbatts® R7.0 Ceiling – 3.4m^2

3400022 – Pink® Batts® R2.6 SnugFloor® Narrow – 8.8m^2

3400021 – Pink® Batts® R2.6 SnugFloor® Wide – 10.6m^2

3400073 – Pink® Batts® R3.2 SnugFloor® Narrow – 8.2m^2

3400070 – Pink® Batts® R3.2 SnugFloor® Wide – 8.5m^2

Mammoth Range

3401165 – Mammoth R1.9 Polyester Multi 370mm 6.75m^2

3401166 – Mammoth R1.9 Polyester Multi 425mm 7.75m^2

3401167 – Mammoth R1.9 Polyester Multi 475mm 7.58m^2

3401168 – Mammoth R1.9 Polyester Multi 580mm 7.93m^2

WINDOW JOINERY

B1.5 Windows, B1.2 Weathertightness, B1.4 Thermal performance

A. All windows and sliding-doors are suitable for use in:
   i. Wind zones up to and including "extra high" zones as defined in NZS 3604:2011 – Timber Framed Buildings or to 2.5kPa.
   ii. All corrosion zones as defined in "Section 4: Durability" of NZS 3604:2011 – Timber Framed Buildings
   iii. Have a minimum R-value of 0.50m²K/W.

B. All aluminium joinery must:
   i. Be designed to the Acceptable Solutions E2/AS1, and E2/AS3 under New Zealand Building Code Clause E2: External Moisture.
   ii. Be finished with a powder-coated surface, which shall comply with AAMA 2605: Voluntary Specification, Performance Requirements, and Test Procedures for Superior Performing Organic Coatings on Aluminium Extrusions and Panels, or an equivalent recognised standard.
   iii. Have profiles that are thermally broken.
   iv. Differential thermal expansion between inner and outer sides of the frame must not cause bending that makes opening or doors hard to open or close.

C. All uPVC joinery must:
   i. Be designed as an alternative to aluminium windows and doors referenced in paragraph 9.1.10 of the Verification Method E2/VM1 and Acceptable Solutions E2/AS1, and E2/AS3 under New Zealand Building Code Clause E2: External Moisture.

D. Window hardware and accessories.
   i. All windows must be able to be fitted with a window restrictor that limits window opening to 100mm for safety and ventilation control.
   ii. All handles must be lever-type, double-tongued and designed without reliance on low-durability nylon closing wedges. Where nylon components are used, they must be of high-grade, wear-resistant nylon, securely integrated to ensure long term performance and reliability.
   iii. Incorporate co-extruded EPDM seals and gaskets to ensure long-term durability and effective weather sealing
   iv. Have accessories with appropriate fasteners, safety/restrictor stays, vison rails (or manifestations), and door hardware as required.

E. Sliding door hardware includes:
   i. An internal lockable, easy graspable (D Shape) handle that allows a keyless exit, mounted between 900-1200mm above the bottom –edge of the door.
   ii. Tracks designed for minimise resistance and facilitate smooth, effortless operation and maintenance.
   iii. Durable, long-life rollers engineered for smooth and reliable operation.

F. Timber reveals:
   i. Are H3.1 treated (or equivalent), fitted, finger-jointed, dressed solid timber supplied pre-sanded and pre-primed on all sides/edges, applied in accordance with AS/NZS 2311:2017 Specification for Performance of Windows, or equivalent. The pre-prime coating must be compatible with a water-based paint system.
   ii. Composite timber is not acceptable.

G. Window frame colour is to align with Kāinga Ora Exterior colour choices (M-248).

NSA PRODUCTS

Refer to APL Product Guide FY27

GLAZING

B1.5 Windows

Glazing:

A. Conforms to NZS 4223: 2016 – Glazing in Buildings.

B. Includes, when the glazing panel is higher than 1.5m, a horizontal vision-rail or manifestations (on inside surface of the IGU) that conforms to NZS 4223.3: 2016 – Glazing in Buildings: Human Impact Safety Requirements.

C. Is clear or, where privacy is required, obscure.

D. IGU glazing must have high-performance glass incorporating a low-emissivity (Low-E) coating and argon gas fill and must achieve a thermal transmittance (Ug) of 1.1 W/m²·K, resulting in a minimum window and door R-value of 0.50m²K/W, in accordance with NZ Building Code Clause H1 (5th Edition), Table E.1.1.1.

NSA PRODUCTS

Refer to APL Product Guide FY27

GUTTERS AND DOWNPIPES

B1.2 Weathertightness

A. Spouting is externally bracketed uPVC with an 85l/min flow-rate capacity.

B. Round down-pipes; minimum 80mm with PVC-mesh domes in truncated cone form, suitable for the rain-fall intensity and catchment area plus at least one additional downpipe.

C. Concealed fascia spouting is **not permitted**.

D. Where required, alternative solutions should match roofing and local environmental conditions.

E. Internal gutters are **not permitted**.

NSA PRODUCTS

Refer to Mico NZ Product Guide FY27

EXTERIOR DOORS

B2.2.1 Main Entry, B2.2.3 Doors and door hardware

A. All exterior doors must meet the following requirements. Where doors are required to be fire-rated, fire door system requirements take precedence over material and construction provisions below:
   i. Shall be suitable for the corrosion zones in which they are used.
   ii. Shall include weather seals and gaskets for air and water tightness.
   iii. Shall have appropriate hardware, including a minimum of three hinges (or as required by the door system).
   iv. Where glazing is provided, it shall be toughened or compliant with fire-rating requirements.
   v. Where used sidelights are used, they shall be fixed.

B. Non-fire-rated exterior doors:
   i. Achieve a minimum R-value of 0.50 $m^2 \cdot k/w$.
   ii. Are thermally insulated aluminium or composite fibreglass:
      a. Aluminium doors and frames are powder-coated with a long-lasting, durable finish.
      b. Composite doors have glass reinforced polyester (GRP) skins and a polyurethane foam core for thermal insulation and reinforcement zones to support secure hardware installation.
   iii. Must comply with standard New Zealand industry practices and have a thickness of 40-42mm.
   iv. Have H3.1-treated timber reveals finished with a factory applied undercoat with acrylic enamel topcoat.

C. It is not permitted to use:
   i. A sliding door as the main-entry door.
   ii. Bi-folding doors.

NSA PRODUCTS

Refer to APL Product Guide FY27

Refer to PlaceMakers Product Guide FY27

3050063 – Duramax Fibreglass EXT Door 1980 x 810mm

3050064 – Duramax Fibreglass EXT Door 1980 x 860mm (main entry door)

EXTERIOR DOOR HARDWARE

B2.2.1 Main Entry, B2.2.3 Doors and door hardware

A. All exterior doors have a lever-type handles and keyless exit.

B. All aluminium doors shall be fitted with a euro-cylinder lock or equivalent.

C. All timber doors are fitted with a single-cylinder dead latch.

D. Where there is no sidelight provided, the main-entry door must have a fitted door-viewer with a 200° viewing-angle.

E. Patio/sliding bolts are not permitted on exterior doors.

F. All external entry door hardware including locks, latches, handles, and accessories shall be fully compatible with standard industry door thickness (typically 40-42mm) and must be suitable for the building's designated wind zone and environmental exposure conditions.

NSA PRODUCTS

Refer to APL Product Guide FY27

Refer to PlaceMakers Product Guide FY27

Hardware for timber doors

4582533 – Lockwood Deadlatch Lever Single Cylinder Open IN L002-1L1SP

2910052 – Lockwood Deadlatch Lever Single Cylinder Open OUT L002-4L1SP

*** Install a non-locking latch set in conjunction with the chosen lock above*

Door viewers (required if no sidelight provided to main entry)

4612412 – Yale Securi Viewer Brass MC96PB

4612404 – Yale Securi Viewer Satin Chrome MC96SC

B2: Private Space

INTERNAL DOORS

B2.2.2 Circulation routes and doors, B2.2.5 Doors and door hardware

A. Internal doors:
   i. Have a solid polystyrene or equivalent core and a 4mm, MDF skin.
   ii. Are hung on at least x3 hinges.
   iii. Are paint finished.
   iv. Are 860mm (W) x 1.98m (H) (except wardrobe, cupboard, or storage doors).
   v. Are permitted to be 810mm (W) x 1.98 (H) on upper levels.

B. The following are not permitted:
   i. Bi-folding or cavity sliding hardware.
   ii. Hollow-core doors.
   iii. Locks other than privacy locks.

NSA PRODUCTS

Refer to PlaceMakers Product Guide FY27

Interior doors and associated hardware

2910089 – Superior Doors 1980 X 810 X 38 Solid Poly KOHC (810mm – for use on upper levels only)

2910090 – Superior Doors 1980 X 860 X 38 Solid Poly KOHC (860mm)

2910091 – Superior Doors 1980 X 910 X 38 Solid Poly KOHC (910mm)

4551684 – Schlage Medio Centra Quick Fix Passage Set BSC (includes handles with barrel and latch)

4551686 – Schlage Medio Centra Quick Fix Privacy Set BSC (for bathrooms and separate toilets)

4584793 – Air Cushion Doorstops White 70107265

Wardrobe, cupboard and storage doors and associated hardware

Superior Doors 1980 x 38mm Solid Core EPS PP 4mm Skin KOHC: 2910082 (460mm), 2910083 (510mm), 2910084 (560mm), 2910085 (610mm), 2910086 (660mm), 2910087 (710mm), 2910088 (760mm), 2910089 (810mm)

4551687 – Schlage Medio Centra Quick Fix Single Dummy Trim BSC (no barrel or latch)

4556374 – Miles Nelson Door Mag CP (magnetic catch for wardrobes and storage door cupboards)

TIMBER PLYWOOD FLOORING
B1.4 Thermal performance, B1.6.1 Minimising noise transfer
A. Suspended timber floors are H3.2 plywood; at least 19mm-thick.
NSA PRODUCTS
Refer to PlaceMakers Product Guide FY27 2420560 – CNSTN Ply Rad F8 H3.2 CD 2400 x 1200 x 21mm

TIMBER TRIM
Table B2.4-1: Materials and Finishes
A. All interior trims, skirting boards and architraves are timber with a paint finish. B. Fibreboard, MDF, particle or chip board is **not permitted**.
NSA PRODUCTS
Refer to PlaceMakers Product Guide FY27

PLASTERBOARD WALL-LININGS

Table B2.4-1: Materials and Finishes

A. Wall-linings are paper-faced gypsum plasterboard suitable for level 4 acrylic or solvent-based paint-finish.

NSA PRODUCTS

Refer to PlaceMakers Product Guide FY27

Standard Plasterboard

2800027 – Gib Standard 2400x1200 10mm Wallboard
2800035 – Gib Standard 2700x1200 10mm Wallboard
2800043 – Gib Standard 3000x1200 10mm Wallboard
2800357 – Gib Standard 3300x1200 10mm Wallboard
2800050 – Gib Standard 3600x1200 10mm Wallboard
2800373 – Gib Standard 4200x1200 10mm Wallboard
2800423 – Gib Standard 4800x1200 10mm Wallboard
2800051 – Gib Standard 6000x1200 10mm Wallboard
2800076 – Gib Standard 2400x1200 13mm Wallboard
2800084 – Gib Standard 2700x1200 13mm Wallboard
2800092 – Gib Standard 3000x1200 13mm Wallboard
2800381 – Gib Standard 3300x1200 13mm Wallboard
2800100 – Gib Standard 3600x1200 13mm Wallboard
2802866 – Gib Standard 4200x1200 13mm Wallboard
2802874 – Gib Standard 4800x1200 13mm Wallboard
2800101 – Gib Standard 6000x1200 13mm Wallboard

Moisture Resistant Plasterboard

2801934 - Gib Aqualine 2700X1200 13mm Wallboard
2801942 - Gib Aqualine 3000X1200 13mm Wallboard
2801959 - Gib Aqualine 3600X1200 13mm Wallboard
2801876 - Gib Aqualine 2400X1200 13mm Wallboard
2801884 - Gib Aqualine 2400X1200 10mm Wallboard
2801892 - Gib Aqualine 2700X1200 10mm Wallboard
2801900 - Gib Aqualine 3000X1200 10mm Wallboard
2801918 - Gib Aqualine 3600X1200 10mm Wallboard
2801920 - Gib Aqualine 4800X1200 10mm W/BD TE/SE

INTERIOR PAINT
Table B2.4-1: Materials and Finishes; Kāinga Ora Interior colour choices M-250
A. Paint must: i. Possess a current Level A eco-label approved by the New Zealand Green Building Council. ii. Have mould and bacteria-resistant qualities. iii. Provide adequate cover with no more than two finishing coats. B. Paint colours align with **Kāinga Ora Interior colour choices M-250**.
NSA PRODUCTS
Refer to Resene Product Guide FY27 **Plasterboard, Walls & Ceilings Dry Areas** 3101XXX – Crown Acrylic Interior Low-sheen 3107XXX – Crown Acrylic Wallboard Sealer **Plasterboard, Walls & Ceilings Wet Areas** 3104XXX – Crown WB Enamel Semi-Gloss **Timber Doors, joinery and trim** 3105XXX – Crown Acrylic Primer Undercoat 152XXXX – Resene Enamacryl

RESIDENTIAL CARPET AND UNDERLAY

Table B2.4-1: Materials and Finishes; Kāinga Ora Interior colour choices M-250

A. The below requirements pertain to carpet installed to private dwellings only. Where commercial grade carpet is required e.g. communal areas in apartments and complexes, please contact Standards@Kaingaora.govt.nz.

B. All carpet:

i. Has an industry standard broadloom width.
ii. Is treated or cut to resist staining.
iii. Can be installed in conjunction with a smooth edge to the perimeter and threshold bars at junctions with other flooring types
iv. Can be used with a carpet adhesive with a maximum TVOC content of 50g/l of product.
v. Is low- or no-VOC
vi. Can be cleaned, without damage, using common methods, including a 'hot water extraction' method.
vii. Refer to Kāinga Ora Interior Colour Choices M-250 for colour selection.

C. Nylon carpet must:

i. Must be 100% solution-dyed and manufactured from nylon-six fibres with a minimum pile-weight of 550-600g/m2.

D. **Wool carpet** must:

i. Contain wool-fibres with an average fibre-diameter of approximately 33 micron.
ii. Be a level loop-pile, 100% wool carpet on woven jute backing with a minimum pile weight of 850g/m².
iii. Have an appropriate rating from the Australian Carpet Classification Scheme, Woolmark™, or the Wool Board.

E. Synthetic or natural fibre carpet or a carpet-blend must:

i. Have a minimum pile-weight to suit the principal fibre-type.

F. Carpet underlay:

i. Foam-chip underlay must contain verifiable recycled content.
ii. Has a minimum thickness of 8mm and a minimum density of 69kg/m3.

G. All ancillary components must:

i. Be supplied and be appropriate for, and compatible with, the specified material, including:
   a. Carpet trims
   b. Fixings, adhesives, and fixing bars
   c. Threshold strips

NSA PRODUCTS

Refer to Godfrey Hirst Product Guide FY27; Refer to Bremworth Product Guide FY27

Godfrey Hirst Nylon Carpet ; Tucson Graphics 18oz Carpet

Colours: Jade – colour code 970, Oxide – colour code 750, Clay – colour code 570

Bremworth Wool Carpet

1506 – Carpet Wainamu. Level Loop Berber, 100% New Zealand Wool

Colours: Kōkopu - colour code 17, Raupō - colour code 67, Mātātā - colour code 167

Carpet Underlay

1112 – Carpet underlay, 8mm. 69kg/m3 1.8m x 15m rolls

Carpet Gripper

122 – Carpet gripper, concrete/wood dual nail (100 x 1.2m lengths)

VINYL

Table B2.4-1: Materials and Finishes; Kāinga Ora Interior colour choices M-250

A. All vinyl sheet flooring:

i. Has a minimum thickness of 2mm.

ii. Has heavy duty high wear, abrasion, stain, and fading resistance.

iii. Is low- or no-VOC.

iv. Is easy to install perimeter integral coving including in cooler temperatures.

v. Has a minimum sound-resistance level of 3dB.

vi. Can be easily cleaned with standard household cleaning products.

vii. Has a non-matching pattern.

viii. Can be welded.

NSA PRODUCTS

Refer to Godfrey Hirst Product Guide FY27

2mm Homogeneous Sheet Vinyl – entry, kitchen, dining, bathroom

488345-H1-0150 – 2mm Vinyl – Maidstone PUR – Saunderby 150

488345-H1-0500 – 2mm Vinyl – Maidstone PUR – Barnsley 500

488345-H1-0740 – 2mm Vinyl – Maidstone PUR – Mersley 740

2mm Safety vinyl – wet area bathrooms only

488313-H1-0300 – 2mm Safety Vinyl – Sandstone R10 – Pumice 300

Corresponding Weld rods

488434-H1-0150 – Weld Rod – Maidstone – Saunderby 150

488434-H1-0500 – Weld Rod – Maidstone – Barnsley 500

488434-H1-0740 – Weld Rod – Maidstone – Mersley 740

488435-H1-0300 – Weld Rod – Sandstone R10 – Pumice 300

Vinyl Accessories

489702-H1-0100 – Aluminium Wall Cap – Mill Finish – 2.44m

489706-H1-0150 – Naplock Bar Pinned – Silver – 2.44m

489706-H1-0300 – Naplock Bar Pinned – Champagne – 2.44m

489704-H1-0150 – Classic Trim Bar – Silver – 2.44m

489704-HF-0300 – Classic Trim Bar – Champagne – 2.44m

489688-H1-0300 – 5.2mm Plywood Sheet – 1.220m x 1.220m

489692-H1-0130 – Vinyl Sheet Adhesive – 15L

489694-H1-0999 – Cement Compound A30 – 20kg Bag

CURTAINS / WINDOW TREATMENTS

B2.4.3 Window Treatments

A. Curtains:

i. Are provided to external glazing in all spaces (excluding kitchens and wet areas such as laundries and bathrooms).

ii. Are fire-resistant and triple woven.

iii. Are machine washable.

iv. Are hung on a face-fixed curtain track.

v. Have a minimum under hang of 150mm or to the nearest restriction, if there is one, within the 150mm allowance (e.g. FFL).

vi. Are neutral colours.

B. The following are not permitted:

i. Pull-cords to curtains.

ii. Extendable curtain tracks.

NSA PRODUCTS

Refer to Harvey Furnishings Product Guide FY27

KOC01 – Kāinga Ora-specified curtain (colour: Natural)

KOFFT1 – Kāinga Ora-specified curtain track

KOG01 – curtain track glides (pack of 100)

KOEC01 – curtain track end caps (pack of 20)

KITCHEN BENCHES

Table B2.3-1: Minimum size requirements for kitchens

A. Stainless steel – wet bench:
   i. Is 600mm deep.
   ii. Polished 304-grade stainless-steel.
   iii. Include a minimum 75mm up-stand on the wall-edge.
   iv. Have an anti-spill lip on the front and side edges.
   v. Have an integrated sink-bowl that is at least 410mm (L) x 355mm (W) x 170mm (D) and includes overflow.

B. High pressure laminate – dry bench:
   i. Must be:
   ii. 600mm deep.
   iii. Burn-, cut-, water and stain-resistant and provide an easy- to-clean hygienic surface.
   iv. Have a leading edge that is resistant to impact damage.
      a. Straight square edge is not permitted.

NSA PRODUCTS

Refer to Mico NZ Product Guide FY27

Stainless steel – Wet benches

1250mm

783786 – Classicline C2-500 1225 X 510 Sink Bench WBP341066

783788 – Classicline C2-500 1250 X 510 Sink Bench WBP341068

1525mm

783789 – Classicline C3-500 1525x500 Sink Bench WBP341006

783783 – Styleline M15 1525x510 Sink Bench WBP341042

783792 – Classicline Sink Bench 1525 Left Drain 1525x600 WBP341008

1675mm

783784 – Styleline M16 1675x510 Sink Bench WBP341048

783781 – Classicline1675x600 Sink Bench C4-600 WBP341018

783790 – Classicline C4-500 1675 X 500 Sink Bench WBP341012

783793 – Classicline Sink Bench 1675 Left Drain 1675x600 WBP341020

1825mm

783782 – Classicline1825x600 Sink Bench C5-600 WBP341030

783785 – Styleline M18 1825 X 510 Sink Bench WBP341054

783791 – Classicline C5-500 1825 X 500 Sink Bench WBP341024

783795 – Classicline Sink Bench 1825 Left Drain 1825x600 WBP341035

KITCHEN TAPWARE

C1.5.1 Water fixtures and fittings

A. Kitchen tapware must have a maximum flow rate of 7.5 l/m or 4-star WELS rating.

NSA PRODUCTS

Refer to Mico NZ Product Guide FY27

831064 – LF Basis Sink Mixer R1 Chrome BAS016C4AF (4 star WELS rated, 7.5L/min)

KITCHEN CABINETRY

Table B2.3-1: Minimum size requirements for kitchens

A. Cabinetry
   i. All kitchens are designed to industry standard cabinetry module sizes.
   ii. Should have a minimum:
      a. 16mm pre-finished moisture-resistant carcass, with water resistant edging.
      b. 18mm pre-finished moisture-resistant doors and drawer fronts with 2mm PVC edging.
   iii. Have a toe-kick space.
   iv. Install child-resistant safety catches to under sink cupboards.
   v. All cabinetry includes D-style handles that are easy-to-grip with a minimum finger clearance of 25mm.

B. Cabinet doors
   i. Are no more than 450mm wide.
   ii. Hinges provide a 115-170° opening and are recess-mounted; x2 per under-bench leaf and x4 to full height (e.g. pantry) doors.

C. Drawers
   i. The underside of the bench has at least one bank of drawers with 2 x smaller above, 2 x larger drawers at the bottom.
   ii. Provide a cutlery insert tray for the top drawer.

D. Where kitchen layouts allow, a space for a microwave is recommended to be located at bench height, with a nearby power outlet, to support safe and accessible use.

E. The following is **not permitted**
   i. Sliding, bi-folding, or double-hung (corner) doors.
   ii. A fixed-end panel.
   iii. Melamine edging tape.

NSA PRODUCTS

No NSA products

FREE-STANDING STOVES

Table B2.3-1: Minimum size requirements for kitchens

A. Electric free-standing ovens with hobs have:

i. An anti-tip device, including a drop-bolt seismic movement limiting-device.

ii. At least 80-litre capacity.

iii. An integral storage drawer.

B. Where controls are within reach of children, there is an integrated child proof lock function.

NSA PRODUCTS

Refer to Electrolux Product Guide FY27

Freestanding stoves

WLE624WC – Westinghouse White 60cm freestanding cooker with 80L capacity conventional oven and electric hob with 4 coil elements.

** Refer to JA Russell Product Guide FY27 for the associated plug, lead, and switch*

SPLASHBACKS

Table B2.4-1: Materials and Finishes

A. Splash-backs and impervious linings must have a finish that is easy to clean using domestic household cleaners.

NSA PRODUCTS

Refer to PlaceMakers Product Guide FY27

Kitchen Splashbacks (behind stoves only)

5711033 – Splashback 750x600mm Glacier White

5711157 – Splashback 750x600x5mm White Toughened Glass

LAUNDRY TUBS AND TAPS

Table B2.3-3: Minimum size requirements for laundry components

A. Laundry tubs must:

i. Have an integrated lever-handle tap with an adjustable flowrate set to a maximum of 7.5L/min.

ii. Have an integrated washing machine waste pipe.

iii. Include a child-resistance catch to opening door of cabinet.

NSA PRODUCTS

Refer to Mico NZ Product Guide FY27

Supertubs with integral tapware

765018 – Robinhood Supertub Slim for Kainga Ora 35cm (for 1-3 bed units)

765019 – Robinhood Supertub for Kainga Ora 56cm (for 4bed + units)

SHELVING AND STORAGE

Table B2.4-2: Minimum Requirements for Household Storage

A. Linen Cupboards include:
   i. At least x5 full-width, 400mm-deep shelves made up of securely fixed 70mm x 20mm (minimum) solid timber slats with 10mm gaps, vertically spaced at 360mm, OR:
   ii. At least three-fixed full-width, 400mm deep shelves vertically spaced at 360mm, with 10mm gaps between boards.

B. A bottom shelf placed at 1.25m above FFL.
   i. Wardrobes include:
   ii. x1 400mm-deep pre-finished or solid timber shelf with 'stiffener' under the front edge at 1.65m above FFL and
   iii. x1 hanging rail at 1.55m above FFL and 300mm from the wardrobe's rear wall.
   iv. A support to prevent sagging, where the rail or shelf is longer than 1.2m long.

C. Hot water cylinder storage includes at least x1 full-depth, full-width shelf made up of screw-fixed 70mm x 20mm (minimum) solid timber slats with 10mm gaps.
   i. Note that where apartments are served by central hot water systems, HWC storage space is not required within each dwelling.

D. General Storage includes:
   i. At least x3 full-width, 400mm-deep shelves vertically spaced at 360mm;
   ii. Bottom shelf placed at 1.25m above FFL.
   iii. Note that this may be provided as 2 or more separate cupboards; each individual cupboard must be at least 600mm-wide.

NSA PRODUCTS

No NSA products

SHELVING AND STORAGE HARDWARE

B2.2.3 Doors and door hardware

A. Handles are horizontal, dummy-lever-type.

B. Soft-close, counter-sunk magnetic catches are flush-finished into the top-edge of the door and frame.

NSA PRODUCTS

Refer to PlaceMakers Product Guide FY27

Wardrobe, cupboard and storage doors and associated hardware

4551687 – Schlage Medio Centra Quick Fix Single Dummy Trim BSC (no barrel or latch)

4556374 – Miles Nelson Door Mag CP (magnetic catch for wardrobes and storage door cupboards)

BATHROOM TAPWARE

C1.5.1 Water fixtures and fittings

A. Basin and vanity tapware must have a maximum flow rate of 4.5 litres/minute.

NSA PRODUCTS

Refer to Mico NZ Product Guide FY27

831064 – LF Basis Sink Mixer R1 Chrome BAS016C4AF (Vanity) 4.5 litres/minute

831063 – LF Basis Basin Mixer R1 Chrome BAS015C5AF (Basin) 4.5 litres/minute

BATHROOM STORAGE, VANITY AND BASINS

Table B2.3-2: Bathroom Requirements

A. Medicine cabinets have:

i. A moisture-resistant carcass.

ii. A mirror front.

iii. Two shelves.

B. Vanity Cabinets:

i. Have a moisture-resistant carcass.

ii. Are either wall-hung with heavy-duty wall-brackets OR floor- mounted with a waterproof plinth.

iii. Include adjustable, self-closing hinges.

NSA PRODUCTS

Refer to Mico NZ Product Guide FY27

Medicine Cabinet

783821 – 400x730x115 Mirror Cabinet LH Hinge White

Wall-hung Vanity 2 Doors, White Gloss Melamine, Ceramic Basin top

783823 – 600mm

783824 – 750mm

783825 – 900mm

Free-standing vanity 2 Doors, 1 Shelf, White Gloss Melamine, Ceramic Basin top

783826 – 600mm

783827 – 750mm

783828 – 900mm

Basins (for separate toilets only)

718281 – 450x250mm Hand Basin Luna Wall

784246 – Raymor Essentials Wall Hung Basin with Shroud

BATHTUBS

Table B2.3-2: Bathroom Requirements

A. Bathtubs:

i. Are sized: 1525mm, or 1675mm (L) x 760mm (W) x 420mm (D).

ii. Are stain-resistant and easy-to-clean using domestic cleaning products and methods.

iii. Have an integral over-flow.

iv. Have integral soap dishes.

NSA PRODUCTS

Refer to Mico NZ Product Guide FY27

728651 – Bath Pacific 1525 O/Flow No Frame

724800 – Bath Pacific 1655 O/Flow No Frame

554976 – Waste & Overflow

SHOWER ENCLOSURES

Table B2.3-2: Bathroom Requirements

A. Shower enclosures with an acrylic base and wall linings:

i. Have a low-threshold base

ii. Are a minimum 900mm x 900mm

iii. Include an easy to clean trap

iv. Are stain-resistant and easy-to-clean using domestic cleaning products and methods.

v. Are well supported and are tested by an IANZ accredited laboratory to be able to take 200kg of point load from a 30mm flat end steel chair leg without causing more than 2.5nn if deflection or compromising the structural integrity or water-tightness of the tray and associated plumbing

B. Door sets:

i. Are a minimum 6mm Safety Glass

ii. Are robust with replaceable hardware

iii. Include full length magnetic door seals

iv. Have stainless or equivalent door handles

v. Are hinged or pivot door only with chrome plated brass hardware

vi. Have a minimum clear width opening of 710mm

vii. Sliding doors are **not acceptable**

Note: Always install the shower tray and linings in accordance the manufacturer's instructions.

NSA PRODUCTS

Refer to Mico NZ Product Guide FY27

Acrylic Shower Enclosures

900 x 900mm

783735 – Adina 3S 900x900 FW White Centre Waste ADN9841

783736 – Adina 3S 900x900 Side Mould Acentre Waste White DN0021

915 X 915mm

783728 – Adina 2S 915x915 Flat Wall White Off Set Waste ADN9827

783729 – Adina 2S 915x915 Side Moulded Off Set Waste White ADN9995

Acrylic Shower Enclosures

1000 X 1000mm

783730 – Adina 2S 1000x1000 Fw White Off Set Waste ADN9834

783732 – Adina 2S 1000x1000 Side Mould Off Set Waste White ADN0007

783737 – Adina 3S 1000x1000 Flat Wall Centre Waste White ADN9858

783738 – Adina 3S 1000x1000 Side Mould Centre Waste White ADN0038

Wastes

783741 – Adina 2S 900x900 Flat Wall Centre Waste White

783742 – Adina 2S 900x900 Side Mould Centre Waste White ADN5132

783743 – Adina 2S 1000x1000 Flat Wall Centre Waste White ADN5149

783744 – Adina 2S 1000x1000 Side Mould Centre Waste White ADN5156

SHOWER MIXER AND HEAD

Table B2.3-2: Bathroom Requirements, C1.5.1 Water fixtures and fittings

A. All shower heads have a maximum flow rate of 9 litres/minute.

NSA PRODUCTS

Refer to Mico NZ Product Guide FY27

Combined mixer and rose

783844 – Turbostream KO Shower Mixer & Rose Complete White – ST HTUHKO WH

512793 – Handle Wall Turbostream St WH WH AQT

736508 – Felton Wallset & Mixer Low Pressure – KOHHCE

736509 – Felton Wallset & Mixer High Pressure KOHCH

Separate mixers

721888 – Mixer Shower Promix CP PRSHCP2

Separate shower head

512437 – Designer II WSHD2 Felton White

Adjustable shower hose/rail*

783845 – Sinfonia Single Spray Handshower Kainga Ora SN SSHSS KO

**for accessible units (where specifically briefed) and 3-bed apartments where a bathtub is not provided.*

TOILET SUITE

Table B2.3-2: Bathroom Requirements

A. Toilet suits:

i. Are floor mounted, vitreous china

ii. Include a rigid shatterproof double-flap toilet seat

iii. Include a low-flow, smart- and dual-flush 3/4.5 litre cistern.

NSA PRODUCTS

Refer to Mico NZ Product Guide FY27

Toilet suites

833433 – Origin Closed Rimless Bi/Be Coupled S OR015

577579 – SNV S/Flush Caravelle Seat Cosmo Sov Care 987916W

741121 – Raymor Care S Pan White 374900S

Toilet Cistern Tap

525096 – Tap Cistern Kowhai 22C CP MET

BATHROOM/TOILET FIXTURES

Table B2.3-2: Bathroom Requirements

Ensure all fixtures and fittings are secured to solid blocking.

A. Towel rails:

i. Heated towel rails are not permitted.

ii. Should be provided at 900mm minimum total length per bedroom.

iii. Should be securely fixed at a min 850mm above FFL. In larger dwellings, towel rails may be stacked (maximum of two rails set 400mm apart. Mid-rail support is required for rails longer than 1.2m.)

iv. Towel rail ring to be set a min 850mm above FFL (for separate toilets).

NSA PRODUCTS

Refer to PlaceMakers Product Guide FY27

Towel rails

Miles Nelson Towel Rail Tube Aluminium

3692639 – 19MM X 1800mm CP

3692621 – 19MM X 1200mm CP

3692613 – 19MM X 900mm CP

3692605 – 19MM X 600mm CP

Bracket

3699303 – Miles Nelson Towel End Bracket 19mm Cp

Toilet roll holder

7713729 – Raymor Projex Toilet Roll Holder Chrome

Grab rails*

7726221 – Raymor Care Classic Grab Rail 300mm Accessibility Knurled

7726227 – Raymor Care Classic L-Rail 750x750mm Accessibility Knurled

Shower curtain*

2910056 – Watertight Shower Curtain 2200x2000 Weighted

**for accessible units (where specifically briefed)*

C1: Services

HOT WATER SUPPLY

C1.5.2 Hot water supply, Table C1.5-1: Minimum requirements for the capacity of hot water cylinders

B. All water heaters include a visible, legible, fixed sign that reads “No Scrap Value”.

NSA PRODUCTS

Refer to Mico NZ Product Guide FY27

Mains Pressure Hot Water cylinders

90L (1-bed units)

783840 – 90L RHEEM Elec W/Heater + HWC Seismic Restraint Kit

135L (2-bed units)

717650 – 135L MP HWC Electric 2kw GE 1395x488 Outdoor ME135488E20

556827 – 135L MP HWC S/S 2kw 550X1020 MS13555020

180L (3-,4- and 6-bed units)

717654 – 180L MP HWC Electric 3kw GE 1790x488 Outdoor ME180488e30

717653 – 180L MP HWC Electric 2kw GE 1790x488 Outdoor ME180488e20

717654 – 180L MP HWC Electric 3kw GE 1790x488 Outdoor ME180488e30

741346 – 180L Dux HWC 580x1190 3kw 180ST130 913702

(note 6-bed units require 2 cylinders and a total of 360L capacity)

300L (5-bed homes)

515252 – Elec Optima 91330025 300L 580x1825 2x3KW NSIM RHE

Seismic Restraints

684131 – Cylinder Restraint Kit Stainless 2 Strap Kit

Cylinder Safe Trays

784234 – HWC Safe Tray Plastic 450x450 with 40mm Waste KOHCTRAY450

784236 – HWC Safe Tray Plastic 540x540 with 40mm Waste KOHCTRAY540

784237 – HWC Safe Tray Plastic 640x640 with 40mm Waste KOHCTRAY640

DISTRIBUTION BOARDS

C2.2 Electrical Distribution

A. Distribution boards must be sized to provide a minimum of 20% spare load capacity and 20% spare spaces for breakers.

NSA PRODUCTS

Refer to JA Russell Product Guide FY27

50350264 – Dist board 20way flush mt bare

50350265 – Dist board 30way flush mt bare

50350266 – Dist board 40way flush mt bare

LIGHTING

Exterior lighting: A1.3.2 Design feature Table C2.3.1: Minimum Interior Lighting (LUX) Levels

A. **All lighting is LED**

B. Exterior bollard lighting should be avoided where possible.

NSA PRODUCTS

Refer to JA Russell Product Guide FY27

Exterior Lighting

ASEC16WPC – Ambius CCT Security Light 2x 8w Power Adj (white)

ASEC16WPCB – Ambius CCT Security Light 2x 8w Power Adj (black)

Interior Lighting

Q5040460 – Ceiling light LED 12/25W 3-4K

Q5040440 – Ceiling light LED 12/25W 3K

Q6020380 – Lamp LED 12W ES 3K A60 200d

Q6020400 – Lamp LED 12W BC 3K A60 200d

ELECTRIC HEATERS

C3: Heating, Ventilation and Air Conditioning

A. Electric resistance heaters must:

i. Have a maximum output of 2.4kW

ii. Include a thermostat (either wall mounted or integrated)

iii. Be able to permanently wall-mounted

iv. Include internal over-heat protection

v. Be rust-resistant

vi. Have surface temperatures that minimise risk of injury when positioned within reach of children

vii. Be designed to prevent fires occurring if detritus and/or foreign objects enter the case of the heater (e.g. posting paper into vents)

viii. Are IP24-rated

B. Be installed in accordance with manufacturer's requirements, including the required clearances to fittings, fixtures, curtains, and considering the expected placement of furniture

NSA PRODUCTS

Refer to JA Russell Product Guide FY27

87040280 – Heater fan 2.4kW surf manual

87030260 – Heater bathroom 2.4kW WH (accessible bathrooms only, where briefed)

HEAT PUMPS

C3: Heating, Ventilation and Air Conditioning

A. Air-source heat-pumps:

i. Provide basic functionality without the need for a remote control

ii. Heat-pump external fan units:

a. Are anti-freezing

b. Have specified coatings appropriate for the local corrosion-zone

c. Include well-insulated, UV-protected refrigerant lines

d. Have a maximum outdoor sound pressure level (SPL) of 60dBA

iii. Are included on the Energy Efficiency and Conservation Authority's Approved Heat Pump Products for Council Funding Programmes – (**https://www.eeca.govt.nz/assets/EECA-Resources/Co-funding/Approved-heat-pump-list.pdf**)

iv. Must use a refrigerant with a maximum Global Warming Potential (GWP) of 675 (for example, R32, R744/CO2)

v. Centralised heat pump units have a wall-mounted thermostat

vi. Must be installed in accordance with manufacturer's requirements, including the required clearances to fittings, fixtures, curtains, and considering the expected placement of furniture.

vii. Must be sized and specified according to the Kāinga Ora Heating Calculator.

NSA PRODUCTS

Refer to Trade Depot Product Guide FY27 for full product list

Single Split Heat pumps

909150 - Midea Xtreme Plus 2.6kW

909151 - Midea Xtreme Plus 3.5kW

909152 - Midea Xtreme Plus 5.0kW

909153 - Midea Xtreme Plus 6.0kW

909154 - Midea Xtreme Plus 7.0kW

909155 - Midea Xtreme Plus 8.0kW

909156 - Midea Xtreme Plus 9.0kW

Ducted Heat Pumps

908433 - Midea 10.5kW high static ducted system

908787 - Midea 12.5kW high static ducted system

908444 - Midea 14kW high static ducted system

D/UCMI14OB/IHB - Midea 14kW medium static ducted system

BATHROOM / LAUNDRY EXTRACTION FANS

C3: Heating, Ventilation and Air Conditioning

A. Intermittent bathroom and laundry extract fans must:

i. Have a minimum extraction rate of 25L/s.
ii. Have a 15minute run-on timer and be linked to the bathroom light.
iii. Be ducted to discharge to the exterior with min 120mm diameter ducting.
iv. Have a maximum noise level of 60dB, when measured 1m from the grille.
v. Have an easy-clean lint filter if in a laundry or drying room.
vi. Comply with the Healthy Homes Ventilation Standard requirements.

NSA PRODUCTS

Refer to JA Russell Product Guide FY27 for full product list

FANEF13V2 – Single room extract ventilation through roof flashing mounted fan with timer

FANEF8 – Single room extract ventilation via inline fan and through roof flashing with timer

FANEF6 - Single room extract ventilation via inline fan and through soffit grille with timer

FANEF10 – Single room extract ventilation via wall mounted fan directly through external wall cowl with timer

FANEF9 – Two room extract ventilation through soffit grille with timer

FANEF5 – Two room extract ventilation through single roof flashing with timer

RANGEHOODS

C3: Heating, Ventilation and Air Conditioning

A. Kitchen rangehoods must:

i. Have a minimum extraction rate of 50L/s.
ii. Be ducted to the exterior with a 150mm diameter fire-resistant ducting
iii. Have washable filters.
iv. Have a maximum noise level of 60dB at high speed
v. Comply with the Healthy Homes Ventilation Standard requirements.

NSA PRODUCTS

Refer to Electrolux Product Guide FY27

Rangehoods and associated ducting kits

WRC604WC – Westinghouse White Wall Mounted 600mm Canopy Rangehood

ULX150 – Unilux Rangehood Ducting Kit – Wall / Eave – 150mm

ULX152K – Unilux Rangehood Ducting Kit – Roof – Metal – 150mm

CONTINUOUSLY OPERATING MECHANICAL VENTILATION SYSTEMS

C3.1: Heating, ventilation and air conditioning

Continuously operating mechanical ventilation systems must have:

A. Kitchen rangehoods are separately ducted to the exterior independently of other extract systems.

B. A continuous ventilation rate of:

   i. At least 10l/s from each bathroom, and

   ii. At least 12 l/s for kitchens.

C. High speed activated by the interlock with the bathroom light switch circuit and laundry dryer power outlet circuit.

NSA PRODUCTS

No NSA Product

CONTINUOUS MECHANICAL EXTRACT VENTILATION (CMEV)

C3.1: Heating, ventilation and air conditioning

A. Continuously operating mechanical ventilation fans must have:
   i. Kitchen rangehoods that are separately ducted to the exterior independently of other extract systems.
   ii. High speed activated by the interlock with the bathroom light switch and laundry dryer power outlet circuit.
   iii. A minimum fan-efficacy of 0.57l/s/W.
   iv. EC (Electronically Commutated) motors to minimise the noise produced by normal system operation.
   v. A maximum low-speed noise-level of 35dBA at 1m from the unit.
   vi. An appropriate size for the dwelling to provide:
      a. The air change rate required by C3.1.2 Mechanical Ventilation.
      b. The required airflows against the static resistance of (as installed) ductwork, grilles, and diffusers.
   vii. A tailed-plug for power connection that allows easy-disconnection for servicing.

B. The CMEV system:
   i. Is comprised of corrosion-resistant componentry.
   ii. Provides facility for fans to be manually switched to high-speed (boost function).
   iii. Has a maximum low-speed noise-level 1m from the inlet of 40dBA in living areas, and 35dBA in bedrooms.
   iv. The boost function has a variable fan run-on timer function that provides a delay before setting back to low-speed (to allow purging of moisture and odours)
   v. Is not connected to kitchen range-hood systems and/or directly to clothes dryers.
   vi. Requires lint filters if installed in spaces containing laundry facilities.
   vii. Includes:
      a. A wall-mounted control panel that provides facility for easy user-control to enable manual boost
      b. Tamper-proof controls to prevent occupants turning systems off
      c. Terminals for:
         i. A relay interlink that connects boost control with a remote CO2 sensor or bathroom lights.
         ii. A laundry power-sensing module linked to clothes dryers' power-supply (so the CMEV is switched to high-speed when the dryer is operating).
      d. All components (e.g., ducting, grilles, filters, cowls, and diffusers) needed for CMEV system installation and operation.

NSA PRODUCTS

No NSA Product

TRICKLE VENTS

C3.1: Heating, ventilation and air conditioning

A. Trickle vents must be:

i. Suited to all corrosion and wind zones.

ii. Suited to the local environment, including UV exposure and local pollution (airborne and noise).

iii. Thermally broken if aluminium.

iv. Able to be manually fixed in a closed position.

NSA PRODUCTS

No NSA Product

WALL VENTS

C3.1: Heating, ventilation and air conditioning

A. Wall vents must:

i. Be suited to highly exposed sites and all corrosion zones

ii. Have external hoods that are robust, impact and UV resistant

iii. Be easily accessible for maintenance and simple to maintain.

iv. Prevent entry by pests and insects.

v. Not create noise issues in windy conditions or when continuous mechanical extract ventilation systems are operating on high flow rate.

NSA PRODUCTS

No NSA Product

MECHANICAL VENTILATION HEAT RECOVERY

C3.1: Heating, ventilation and air conditioning

If using this type of system, please contact the **Standards Team** for Product Requirements (standards@kaingaora.govt.nz)

NSA PRODUCTS

No NSA Product

SMOKE ALARMS

C4: Fire Protection Systems

A. **Battery powered interconnected smoke alarm systems:**

i. Must be installed in all new homes.

ii. Simultaneously transmit and receive radio frequency (RF) signals as a network so that when one detector is activated, all detectors in the home are activated.

iii. Have an alarm system test and silence function via a wall mounted controller.

a. Controller batteries are sealed and have a 10-year battery life.

iv. Interconnected system components are capable of operating as a system with other related devices including:

a. Heat detectors

b. Visual [stroboscopic] alerting devices

c. Vibration alerting device [pillow shakers]

d. Power isolating device

v. Detectors:

a. Have a decibel-rating of more than 75dBA (sound pressure level) operate at 926.365MHz.

b. Have test and 'hush' buttons

c. Include a sealed battery with a 10-year life.

d. Have an indicator that alerts users to depleted battery-levels.

B. **Hard-wired smoke alarms:**

i. Can be used instead of battery powered.

ii. Mains electric smoke alarms, must be compliant for use with a 230V, 50Hz electrical supply.

C. Fire warning systems are provided as per table C4.1-2 Fire warning system Requirements for **Multi-unit apartments**.

NSA PRODUCT

Refer to JA Russell Product Guide FY27

Wireless interconnected smoke alarms

88080010 – Smoke alarm 10yr 3V wireless

88080020 – Heat detector 10yr 3V wireless

Additional components

88080030 – Smoke alarm remote control

88080050 – Smoke alarm hearing impaired

88080040 – Smoke and heat alarm stove

APPENDIX B: UNIVERSAL DESIGN AND ACCESSIBILITY

INTRODUCTION

STANDARD FEATURES	ADAPTABLE FEATURES (FULL UNIVERSAL DESIGN)	WHEELCHAIR FRIENDLY FEATURES
Kāinga Ora incorporates universal design features as standard throughout all newly built homes. These simple features generally go unnoticed however they help to **improve the everyday convenience of a home** by creating spaces that naturally work well for people of all ages and abilities.	When a home has a **bedroom and bathroom on the main living level**, additional universal design features can help to **future-proof** the space. These enhancements allow the home to be more easily modified later if needed, making it more adaptable for changing mobility requirements or specific customer needs.	Additional features will be necessary if a home is required to be **wheelchair friendly**. These features are only provided where **specifically required** by the project brief and where budget allows. The **wheelchair friendly checklist** provides guidance on key features to consider. In some cases, an Occupational Therapist report may be necessary to ensure the design meets the specific needs of the intended occupant or cohort.

The checklists provided on the following pages highlight the universal design features included in all new build Kāinga Ora homes (embedded in our standards), as well as additional features which enable some homes to be more adaptable or wheel-chair friendly.

LIST OF STANDARD UNIVERSAL DESIGN FEATURES	
Typology Application: All Kāinga Ora new build homes	
Our design standard ***Ngā Paerewa Hoahoa Whare Design Requirements*** incorporates fundamental universal design features throughout. As a result, all newly built Kāinga Ora homes include the following Standard Universal Design features:	
Parking	One carpark is provided per dwelling (or as briefed).
Exterior Circulation	There is a 1.2 x 1.2m sheltered landing at the main entry.
	The main entry pathway is at least 1m wide from the street and/or parking area. (Max cross-fall 1:50)
	Apartment complexes and multi-unit developments: Drop-off zone for customers' use, (crossfall between 1:100 and 1:50) with direct access into building(s), supported by public transport within close proximityproximity.
	One path is at least 600mm wide between the dwelling and the clothesline
	Where Timber landings and decks are provided, they are level entry.
	All **exterior doors** have a **clear opening width** of at least **810mm**.
Interior Circulation	**Circulation routes** on the main living level are **at least 1.05m-wide** (between framing) and include **at least 800mm clearance between items of furniture and fixtures**.
	There is step-free access from the main-entry to the main living-area.
	All ground floor interior doors (other than to cupboards and storage) have a clear opening width of at least 810mm.
	Any internal stairs have: a maximum rise of 190mm; a minimum tread of 280mm; and include a handrail on at least one side, and do not use stair winders.
Kitchens	**Studio – 3 bedrooms:** 1.2m clearance in front of kitchen benches and appliances **4+ bedrooms:** 1.5m clearance in front of kitchen benches and appliances
	All cabinetry includes easy-to-use handles (with a finger grip).
	There is at least 300mm between internal corners and the opening-edge of appliances.
Bathroom	**All bathrooms** on the main living level are **at least 2120mm x 1920mm** (measured between framing) with clearances of at **800mm between fixtures**. Do not install a wet area-shower. No floor rebate required. Door swing inwards.
	Toilet pans are installed 450mm from the side wall to the centre of the pan.
Laundry	There is **1050mm** clearance in front of all laundry fittings and appliances
Fixtures and Fittings	All door handles are lever-style handles placed at 1m above the FFL.
	All windows include lever-style handles that can be easily opened with one hand.
	All tap-ware has lever-style handles.
	All light switches are aligned with door handles (at 1.0m above floor level)
	All power and data outlets are located 500mm above the FFL and at least 500mm away from internal corners.
	There is two-way switching for lights in all hallways and stairways.

Finishes	All walls and doors use contrasting colours. Refer to M-250 interior colour choices.
	All bench-tops and cabinets use contrasting colours (30 point LVR difference to adjacent surfaces).
	Vinyl with a slip-resistance for floors 'considered dry in normal use' (as per Table 2 of D1/AS1). Use standard procured vinyl.

ADAPTABLE FEATURES (FULL UNIVERSAL DESIGN) FOR TYPOLOGIES WITH GROUND FLOOR BEDROOM AND BATHROOM	
Typology Application: Standalone and Terrace typologies with a bedroom and bathroom on the main living level.	
New-build typologies with a **bedroom and bathroom on the main living level** should include these universal design features (in addition to the **Standard Universal Design Features**) to maximise the suitability of the home.	
Carparks	**Private parking:** At least one 3.5 x 5m carpark. Crossfall between 1:100 and 1:50. **Shared carparking:** At least one 2.5 x 5m carpark per dwelling, and approximately 25% of which are 3.5 x 5m. Crossfall between 1:100 and 1:50. *(note, if car-parking requirements above cannot be achieved, a drop-off zone should be provided).*
Exterior Circulation	**The main entry pathway and door threshold can be adapted to be step-free.** (Max step up at 180mm). If it is not practicable to provide this access to the main entry, then a secondary entrance is acceptable. Demonstrate on the plans where the space for a future platform lifts or ramp is designated.
Bedroom	There is a minimum **10m² ground floor bedroom** sized to fit a **queen size bed** with at least **900mm clear-space around both sides and the foot of the bed**.
Bathroom	There is a **ground floor standard bathroom (of at least 2120mm x 1920mm)** Do not install a wet area-shower. No floor rebate required.

LIST OF DESIGN FEATURES FOR WHEELCHAIR FRIENDLY HOMES	
Typology Application: As determined by the project brief. Wheel-chair friendly homes are bespoke and must be designed in collaboration with an Occupational Therapist within the available funding.	
Most features in this list are likely to be suitable for wheelchair users. The combination of design features selected for a project will depend upon the needs of the cohort or specific customer. This list is for general guidance only.	
Carparks	**Private and shared parking:** At least one 3.5m x 5m carpark per wheel-chair friendly dwelling.
Accessways and Entranceways	There is **step-free access** from carparks to the main-entry door.
	Main entry pathways are at least **1.2m-wide**.
	The **main-entry door** is **910mm-wide** (with a clear-opening of 810mm) with a 300mm return-wall provided on the door-handle edge.
	All o**ther external doors** are **at least 860mm-wide** (with a clear-opening of 810mm).
	Access to the patio or deck has a **level threshold**.
	A **wheel-stop is** provided **on main entry ramps** where there is a **fall height of ≥ 20mm** to a lower level.
	A 1.2m **wide path** is provided from dwelling **to external bins and washing line**.

Internal Circulation	A **300mm return-wall** is provided on the **door-handle edge of all doorways** (when doors swing toward the user).
	All ground floor hallways are 1.2m wide (measured between framing).
	Provide at least 900mm clear width between furniture and fixtures.
	The KDL, bathroom and bedroom include a 1.5mØ clear turning-circle.
Bedroom	There is a **12m² ground floor bedroom** (minimum bedhead wall length of 3370mm between framing) sized to fit a **queen size bed** with at least **900mm clear space** around **both sides** and the **foot of the bed**.
	Three-way light-switching located by the door and **each side** of the bedhead.
	A hanging-rail of adjustable height is provided in the wardrobe.
Bathroom	There is a wet-area bathroom on the ground floor of at least 2.1m x 1.9m in size, with clearances of at least 800mm between fixtures, and a wet area floor sloping at least 1:100 to the floor waste. Door swing outwards from bathroom or surface sliding door. Must have 810mm clear opening and 300mm from corner.
	Shower: There is a 1200mm x 1200mm step-free wet area shower with slide-rail shower and separate wall mixer and grab rails with 1500x1500mm impermeable shower wall-lining (floor sloping at least 1:25 to the floor waste). Ply to be installed to the extent of the wet wall linings.
	Fittings and Fixtures • There is a toilet (at 460mm height) with grab rails beside • wheel-chair friendly basin or vanity • Medicine cupboard installed min 1.2m above FFL • wall fixed mirror 1.0m from FFL, installed above basin. • hardwired bathroom heater with a separate switch. **Do not install:** • secondary power outlet • fixed wall seat (unless specified in the Occupational Therapist report)
	Vinyl with a slip-resistance for floors 'considered wet in normal use' (as per Table 2 of D1/AS1) with 150mm coved upstand to all walls, and flush drain-covers. Use procurement safety vinyl.
Kitchen	Install a standard kitchen unless specific customer needs are known and an Occupational Therapist Report has been provided with bespoke requirements.
	Kitchen benching is continuous (rather than 'galley'-style), with a clearance in front of kitchen benches and appliances of 1.5m.
Laundry	There is at least 1.2m-clearance in front of all laundry fittings and appliances.
Fixtures and Fittings	Windows can be opened from a maximum height of 1.2m above the FFL on the main living level.
Finishes	The floor-finish is suitable for castors (e.g. double-stick carpet or standard vinyl)
Structure	**Foundation/flooring:** additional support as determined by the OT report for
	Ceiling: additional support for ceiling hoists as determined by the OT report.

APPENDIX C: FURNITURE SIZING AND CIRCULATION

FOREWORD

Appendix C sets out **nominal furniture sizes** and **circulation** requirements which are to be used by designers when planning Kāinga Ora homes. These nominal sizes are based on standard furniture dimensions in New Zealand and enable assessment as to whether room layouts meet circulation needs and account for the intended number of occupants in the home. Using both the target Gross Floor Area and the furniture sizes specified within this Appendix gives designers the opportunity to create efficient home layouts. This approach supports the delivery of fit-for-purpose, universally designed homes that meet the functional needs of public housing, promote customer wellbeing, health and safety, and maintain cost efficiency.

FURNITURE SIZING AND CIRCULATION

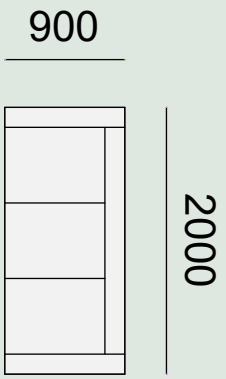
Homes are expected to be furnished to accommodate two occupants per bedroom. For example, a six-bedroom home is expected to have lounge and dining areas with seating to accommodate 12 people. Minimum space and circulation requirements for these areas are specified in Table B2.1-2 (KDL area requirements) and B2.1-3 (minimum bedroom sizes).

Note: The furniture sizing below must be shown on plans for assessment purposes.

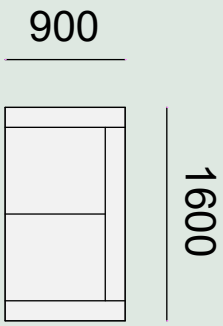
LIVING ROOM FURNITURE

Circulation: 900mm

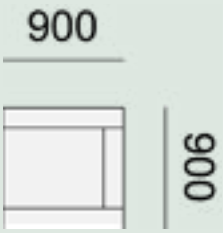
3-seater sofa



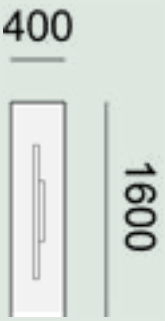
2-seater sofa



Armchair

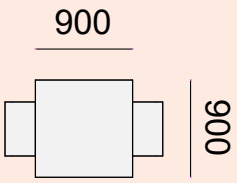


TV cabinet

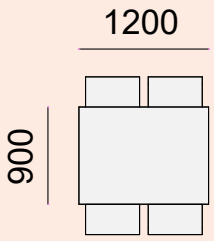


DINING TABLE NOMINAL SIZES

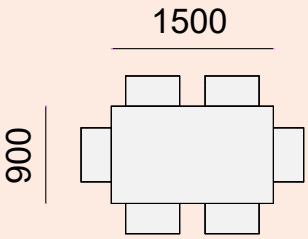
Studios & 1-bedroom



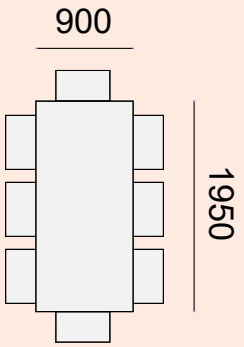
2-bedroom



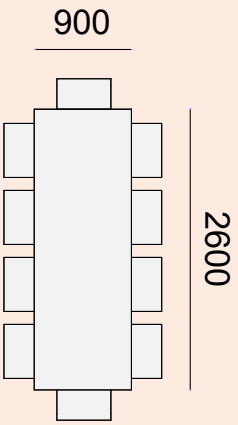
3-bedroom



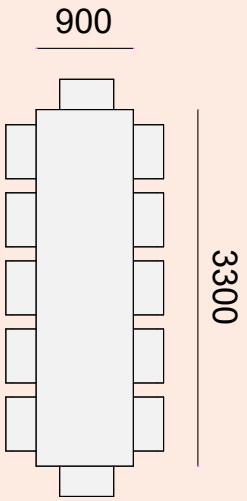
4-bedroom



5-bedroom



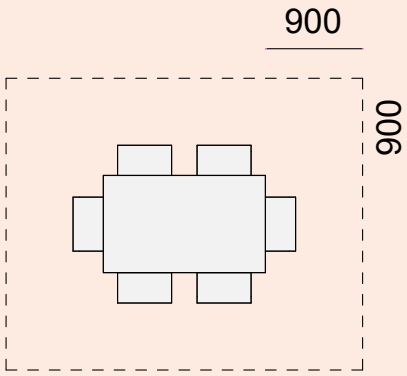
6-bedroom



DINING ROOM CIRCULATION

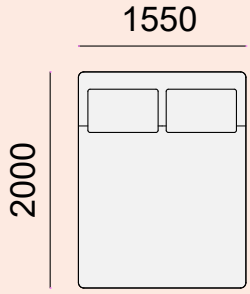
Circulation: 900mm

Dining Table Circulation

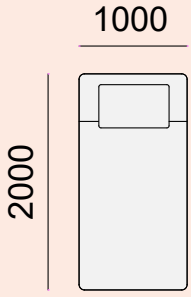


BEDROOM FURNITURE NOMINAL SIZES

Queen Bed



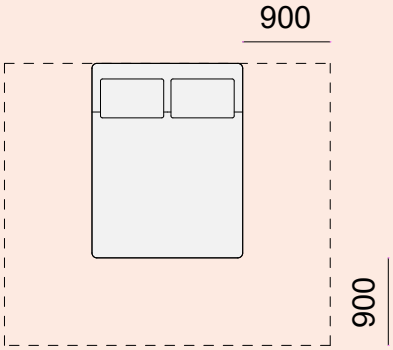
Single Bed



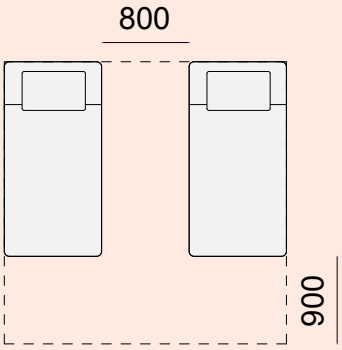
BEDROOM CIRCULATION

Circulation: 900mm

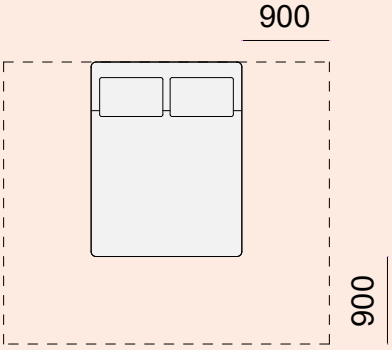
Main bedroom (min 10m²)



Secondary bedroom min 9m² (excluding wardrobe)

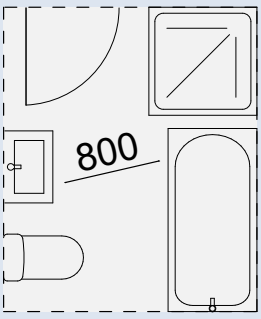


1x Main living level (FUD) min 10m² (excluding wardrobe)



BATHROOM CIRCULATION

Circulation between fittings, fixtures: 800mm



DOOR OPENING CLEAR WIDTH

810mm clear width opening



APPENDIX D: TM59 OVERHEATING MODELLING

GENERAL

Kāinga Ora requires that TM59 modelling be undertaken for new build walk-up and apartment projects to understand their overheating risk. The CIBSE TM59 method for assessing overheating risk in homes requires the modeller to make choices for some inputs. The purpose of this Appendix is to limit these choices to ensure greater consistency of overheating risk assessment between Kāinga Ora projects.

When conducting CIBSE TM59 overheating risk assessment on Kāinga Ora projects, the modeller is required to **Target a complete pass** under CIBSE TM59 using Category I (vulnerable occupants). Priority should be given to passive overheating mitigation solutions. Any method to reduce overheating risk must comply with Ngā Paerewa Hoahoa Kāinga: Design Requirements.

SAMPLE SIZE

The modeller should model a sufficiently representative sample of walk-up/apartment units. An example of this is minimum sample size does *not* need to exceed the sample size assessed using the NZGBC's Homestar v5 'Typology Approach.

MODELLING SOFTWARE

The software used should include an Airflow Network to better represent wind and buoyancy effects in overheating risk assessment.

CLIMATE FILE

The location specific DSY1 design summer year file under the M2 morphing scenario (SSP2-4.5 @ 2050) is to be used to assess for a pass/fail under CIBSE TM59. Latest climate files are available at **www.building.govt.nz/getting-started/climate-change-work-programme/resources/weather-files-aotearoa-new-zealand**.

FOLIAGE

Foliage should not be modelled.

INFILTRATION

Ensure realistic infiltration rates are modelled. Where the project is not targeting any specific level of airtightness, refer to BRANZ Study Report 455 for guidance on typical airtightness of New Zealand homes.

INTERNAL BLINDS AND SHADING DEVICES

Internal blinds and shading devices must not be modelled.

FIXED CEILING FANS

Fixed ceiling fans must not be modelled.

OCCUPANCY

Two occupants per bedroom.

HEATING SET-POINT

Active heating systems should be off.

WINDOW AND DOOR OPENINGS

The following limits on CIBSE TM59, Window and Door Openings section, apply. These limits are summarised in the following table.

a. When a room is occupied, openings should be modelled as fully open if the opening is on the first floor or above and is not easily accessible (see below table).
   - TM59 occupied periods are bedrooms 24hrs, living rooms/kitchens 9am-10am.
   - Fully open means to model within the opening's limits e.g., a security stay may limit a window opening to approximately 100mm.
   - Easily accessible is defined as one of the following.
     - A window or doorway, any part of which is within 2m vertically of an accessible level surface, such as the ground or basement level, or an access boundary.
     - A window within 2m vertically of a flat or sloping roof (with a pitch of less than 30 degrees) that is within 3.5m of ground level.

b. Simple opening controls may be modelled (rather than the opening control rules of Approved Document O of the UK Building Regulations).

<table>
<tr><th rowspan="2">Period</th><th rowspan="2">Floor</th><th colspan="2">Bedrooms</th><th colspan="3">Kitchen, dining, living rooms (KDL)</th></tr>
<tr><th>Window</th><th>Internal door</th><th>Window</th><th>Glass slider</th><th>Entrance door</th></tr>
<tr><td rowspan="2">Daytime
(9am-10pm)</td><td>Mid/upper level</td><td>Open if not easily accessible</td><td rowspan="2">OPEN or CLOSED (optional)</td><td>Open if not easily accessible</td><td>Open if not easily accessible</td><td>CLOSED</td></tr>
<tr><td>Ground level</td><td>Open if not easily accessible</td><td>Open if not easily accessible</td><td>CLOSED (Ground level)</td><td>CLOSED (Ground level)</td></tr>
<tr><td rowspan="2">Night-time
(10pm-9am)</td><td>Mid/upper level</td><td>Open if not easily accessible</td><td rowspan="2">CLOSED</td><td colspan="3" rowspan="2">Unoccupied (CLOSED)</td></tr>
<tr><td>Ground level</td><td>CLOSED (Ground level)</td></tr>
</table>

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