RETROFIT DESIGN STANDARD

CA-GDL-01

VERSION 1.2
JULY 2025

Kāinga Ora
Homes and Communities

Contents

Section 1: General

1.1 Introduction

This resource sets-out the requirements for work undertaken during the Retrofit Programme. It is intended for use by design teams, contractors, project teams, and relevant internal stakeholders who carry out or are affected by work during the project.

1.2 Retrofit Programme

The aim of this programme is to improve the condition and standard of the existing Kāinga Ora portfolio, effectively 'resetting' the life of older homes.

1.2.1 Preliminary risk assessment

All properties selected for the programme must have a risk assessment undertaken by a competent professional to identify any issues around structural and drainage risks that would impact on the reset.

In low-risk regions this can be undertaken during the condition assessment and for regions at higher risk the assessment should be undertaken immediately. The Project Manager will advise which regions are deemed a high risk.

- Structure: foundations, land subsidence – a visual assessment of interior and subfloor components along with surrounding for visual/physical signs of damage and defects.
- Assess the existing house floor, if it has a slope of greater than 50mm the property will be reviewed for exclusion from the programme or redirected to special programmes. Refer to Canterbury residential technical guidance – Indicator criteria – table 2.3. for assessment guidance.
- Drainage are the systems adequate and functional, assess for signs of service water ponding close or under the dwelling.

Where an issue has been identified report back to the Kāinga Ora Project Manager for further investigation and consideration of inclusion in the programme.

1.2.2 Reset of Asset

Project Teams focus on the following four main tasks:

- Improving and upgrading the **thermal performance** of the home, this includes, the installation of ceiling, wall, and floor insulation, and new double-glazed, thermally broken windows and doors.
- **Modernisation** of key dwelling-spaces: upgrading kitchens and bathrooms and, where practicable and cost effective, creating an open-plan kitchen-dining-living space.
- Adding minor features which are appropriate for the dwelling and customers returning to the property, for example grab rails.
- **General renewals**: renewing aged or end-of-life building components on an 'as required' basis; this includes roofs and cladding.

Note:

As this programme renews existing homes, modernisation work is undertaken on a 'where practicable' basis (that is, there will be some instances where, for example, the structure of the existing dwelling prevents full modernisation work).

Dwellings undergoing work as part of this programme will also receive interventions associated

with other programmes delivered by Kāinga Ora. This includes:

- Deferred maintenance work, such as safe removal of asbestos-containing material; repairing or replacing roofs; or replacing rotten cladding or framing.
- By undertaking this work, Kāinga Ora seeks to ensure customers are provided with homes that will be safe, healthy, fit-for-purpose, and sustainable.

1.2.3 Scope of the programme

Typologies:

- **Within scope** – single- and multi-storey stand-alone and terraced homes and duplexes.
- **Out of scope** – homes with >3 storeys, apartment complexes >3 storeys and supported housing developments.

While some multi-unit developments may be applicable (for example, sites that include a combination of stand-alone, terraced, and/or duplexes), this programme does **not** apply to properties that have three or more storeys or those with 10 or more continuous units.

Accessibility modifications:
While Kāinga Ora endeavours to provide fit-for-purpose homes, accessibility modifications generally have been found to be not appropriate for the age of the retrofit housing stock. However, if Asset Management are requested to modify a home for a specific customer, an assessment must be obtained by an Occupational Therapist from Whatu Ora to assess and deem the home appropriate for modifications.

If the dwelling is not suitable for the features listed in the OT report, the customer the customer should be provided an alternative dwelling that better suits their needs.

Some minor modifications **can** be provided within scope of the programme, as outlined below:

Within scope - Minor feature upgrades:

- Grab rails where required
- Handrails

Out of scope - Wheelchair accessible upgrades:

- Widening of hallways and/or doors
- Full featured accessible bathroom
- Ramps and step-free access
- Mobility scooter charging and storage

If, at any time you are unsure which requirements can or should be met, contact your Kāinga Ora representative and/or the Standards team at Standards@kaingaora.govt.nz.

1.2.4 Programme teams and project stages

Successfully undertaking a project within the Retrofit Programme requires effective, on- going collaboration between a core group of internal and external stakeholders.

These stakeholders work together to achieve project objectives, moving through a five-stage project lifecycle.

While high-level information about roles and the project lifecycle is provided in Section 15: Project teams and lifecycles, there are key actions that must be taken at or leading up to the start of retrofit work:

A. Liaison with customers: ensuring they are aware of and understand the processes and timelines involved and their responsibilities, including removal of all possessions and rubbish from the property.

B. Organising all necessary specialist reports including but not limited to a Roof Report and an Asbestos and Hazardous Materials Report.

1.2.5 Clarification and feedback

If any content provided in this resource requires clarification, you have suggestions for how the resource could be improved, or you identify errors in this resource, please contact us at: Standards@kaingaora.govt.nz.

Section 2: Property Exterior

2.1 Paths

A. Check the condition of **existing paths** and repair as required.

B. Ensure all paths are in a good condition and do not have any trip hazards ≥15mm.

   i. Where existing paths are not safe, undertake repairs on the affected area (e.g., grind down and/or replace sections of concrete as required).

C. All properties should include a pathway:

   i. from the driveway and/or the street to the main entry; and

   ii. the dwelling to the washing line.

   iii. No path is required from the dwelling to the outdoor storage shed, except for where an OT report requests one for a specific customer.

D. If one or more paths are missing, provide a new one in accordance with the below. Widening existing paths is **out of scope**.

E. Ensure new paths are:

   i. 800mm wide, to the front entry door.

   ii. 600mm wide, standard from dwelling to clothesline.

F. When laying new paths, ensure:

   i. The path is 100mm thick concrete, with no mesh.

   ii. Trowel in crack control joints at 3m intervals, ensuring the joint depth is ⅓ of the thickness of the concrete.

   iii. Ensure paths are shaped to fall to facilitate drainage of surface-water and to avoid ponding.

Note:

- Non-continuous pavers, laid with gaps between them are **not permitted**.

2.2 Driveways and carparking

A. Ensure all existing driveways are in good condition with no significant trip-hazards (≥15mm).

   i. Where such hazards are present, undertake repairs on the affected area (e.g., grind down, and/or replace sections of concrete as required).

   ii. Extensive repairs are out of scope for the Retrofit Programme. Refer to your Kāinga Ora representative if this is the case.

Note:

- New driveways and carparks are not included in this programme, where there is a need seek guidance from Kāinga Ora.

2.3 Fencing and Gates

2.3.1 Boundary Fencing

A. Where repairs are required, undertake using like-for-like materials and finish e.g., stain or paint.

   i. If repairs exceed 50% of the cost of replacement, refer to the Planned Programme's team.

B. New boundary fences are out of scope and must be referred to the Planned Programmes team.

2.3.2 Wing fencing – secure play areas/driveway safety

A. Install 1.2m-high, 'wing' fencing between the house and boundary fence, to create a safe and secure area which is physically separated from the driveway and vehicle access areas.

   i. Ensure existing wing fences are 1.2m and non-climbable.

B. If there is no boundary fencing, do not install a 'wing' fence, refer to the Planned Programmes team.

C. New fences should be timber. Match existing fences with like-for-like.

D. Wherever possible, ensure this fencing includes a gate that provides access to the main entry of the dwelling.

2.3.3 Self-closing gates to secure play areas

A. Assess all self-closing gates to ensure they are 1.2m high and fully operational.

   i. How to evaluate: Test by opening the gate by 100mm and confirm it self-closes and latches from that position.

B. If the gate and/or latch do not function correctly, adjustments must be made to ensure they are operational and compliant.

C. Timber or pool type gates are acceptable.

D. Do not replace timber gates unless they are not self-closing and functional.

2.3.4 All other gates

A. Check that all other gates (non-self-closing) are fully operational and fit for purpose.

Note:

- Where additional guidance is needed refer to your Kāinga Ora representative
- It is not permitted to:
  - Use close-boarded fencing or wire mesh.
  - Include sharp tops, spikes, or verticals protruding above the top-rail.
- Wherever possible, avoid locating play-areas where manholes are present.
  - Where present ensure they are secure.

2.4 Retaining walls

A. Retaining walls are out of scope however, where there is evidence of existing retaining walls failing and/or a need for a new wall, please advise your Kāinga Ora representative.

2.5 Outdoor storage

A. Ensure existing outdoor storage is secure and weather tight.
   i. If there is a functional and secure garage, then additional outdoor storage is not required.

B. Carry out repairs, if beyond repair or replacement is a more cost-effective solution replace the shed.

C. Ensure the new shed:
   i. Is located with clear-access to the yard that is free from trip-hazards.
   ii. Is located at least the length of its own height away from the boundary; ensure storage sheds are not located within 1m of the boundary/fence line.
   iii. Does not include reticulated services.

D. Replacement sheds should be:
   i. 1830(W) x 1530(D) x 1980(H) shed for properties of 4+ bedroom homes.
   ii. 1530(W) x 1080(D) x 1830-1770(H) for 1-2 and 3-bedroom homes.
   iii. Where the existing customer is moving back, do not reduce the size of the shed.

2.6 Garages

A. Garages are out of scope, except for:
   i. Attached garages: ensure conformance with hardware, smoke alarm, ventilation requirements and roof replacement.

2.7 Decks

A. Contact your local Kāinga Ora representative where the amenity condition of the deck is compromised and deemed unacceptable as per the Amenity Condition Manual.

B. Where any existing decks, steps, and balustrades are in good condition and were compliant at the time of consent, work is not required to upgrade.

2.7.1 Existing Steps

A. Ensure all existing exterior steps and handrails/balustrades are in a good working order (e.g., not rotten, or damaged) and are free from hazards.

B. Where there are two or more steps and no handrail is present, provide a smooth, 'graspable' handrail.

2.7.2 New Balustrades and Barrier rails

A. Where a fall risk is:

   i. between **500mm-1.0m**, provide a barrier rail to the perimeter at **1.0m**.

   ii. between **1.0m and 1.5m**, provide a **1.0m** high balustrade.

   iii. **over 1.5m**, provide a **1.1m** high balustrade.

      a. If any part of a deck has a fall height over 1.5m, use 1.1m to the entire deck.

2.7.3 New Steps

A. **Treads and risers ideally meet the following:**

   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. No winders are permitted.

B. Fall from height risk mitigations and handrails are provided as follows:

   i. Main entry steps have a handrail to one side, installed at 900mm.

   ii. All other steps have a handrail as required by NZBC.

2.8 Letterboxes

A. Check a letterbox is present, functional and numbers are legible.

   i. Carry out repairs or replacement where required.

B. Letterboxes can be mounted to the fence or on a procured post, scope for a like-for-like replacement.

C. Where there are 2 or more houses sharing the same driveway with the letterboxes at the road front, allow to attach numbers to the front door frame, or where they are clearly visible from the main entry to the property.

2.9 Clotheslines

A. Check the clothesline is present and functional and repair and/or replace components as required.

B. Ensure new lines are procured and appropriately sized:

   i. 28m-long for 1–2-bedroom dwellings.

   ii. 40m-long for 3+ bedroom dwellings.

   iii. Where the existing customer is moving back do not reduce the line length.

C. Where a new path is required, consider the existing location of the clothesline. If it is too far away from the dwelling, allow to relocate to an appropriate location (see Section 2.1 Paths).

Note:

- It is **not permitted** to fix a washing line to the dwelling, and where possible, avoid fixing to a fence.

2.10 Trees, Vegetation and Lawns

A. Prune any unsafe trees and make safe.

B. Only remove tree/s if it is the only option.

C. Trim back overgrown vegetation, including hedging and shrubs that are encroaching onto footpaths, blocking sunlight to the house, within the drip line of the building perimeter or growing directly on the exterior wall(s) of the property.

D. Remove any stumps and make good where their location creates a trip-hazard (e.g., on a lawn but not within a garden area).

E. Ensure lawns are maintained during construction and at project completion.

2.11 Exterior Rubbish

A. Remove all construction materials and waste and ensure the property exterior is left in a tidy condition.

Note:

- Ensure any returning customer is consulted before removing, cutting-back vegetation and/or removing rubbish.
- Properties handed to Retrofit Programme must have customer rubbish and or belongings removed. See 1.2.4 Programme teams and project stages

2.12 External Cleaning

2.12.1 House wash

A. Allow to carry out an exterior house wash if required, including cladding/s, baseboards, glazing, joinery, soffits, external surfaces of spouting and downpipes. Do not water blast.
B. Where cladding is to be partially replaced assess whether the remaining components need cleaning.

2.12.2 Path clean

A. Waterblast moss or slime from paths, where visible.

2.12.3 Decks and stairs

A. Allow to clean surfaces if slippery.

B. Use suitable product, to thoroughly clean all external timber and/or concrete decks, ramps and stairs where needed to remove moss, mildew, and green build-up.

C. Do not waterblast, and if necessary, use a hard brush and rinse with a hose.

Note:

- Ensure the property is left in a presentable condition.

Section 3: Building Structure

3.1 Roof

3.1.1 Roof report

A. Arrange for a roof report to be undertaken by an appropriately qualified professional, the report shall identify:

B. The scope of recommended work, includes:

   i. Any repairs or maintenance.

   ii. A breakdown of the costs.

   iii. Whether the dwelling has a roofline shared with a private neighbour i.e., inter-tenancy walls.

   iv. Whether a Building Consent is required.

C. In addition to the report, carry out a visual check internally, checking for signs of leaks (e.g., water-stained, or bubbled wall and/or ceiling linings etc.)

3.1.2 Roof repairs

A. Undertake the required repairs or maintenance as per the roof report recommendation.

3.1.3 Roof replacement

A. A full replacement is required when at least one of the following applies:
   i. The remaining life of the roof is deemed to be less than 5 years.

   ii. The roof is no longer weathertight.

   iii. There are signs of extensive damage.

B. Attached garages are included within scope. Detached garages are out of scope.

C. If there is evidence of asbestos-containing material, safely remove the roofing ensuring, all work is undertaken in accordance with current asbestos policy and regulations.

D. Allow to replace the spouting system when replacing a tiled roof with iron roofing.

E. Where a concrete or clay roof needs to be replaced with a profiled metal roof, refer to the Roof Repair and Replacement Scoping guide (M-253), for strengthening requirements.

F. Properties with an inter-tenancy firewall e.g., TUS, TUD and Duplexes and having undergone a roof replacement may contain a gap between the new roof and the separating firewall below. If a gap exists, it must be filled with an appropriate fire rated filler/material to prevent fire or smoke spread into adjacent properties.

   i. Check with the local Building Consent Authority to determine any requirements e.g., building consent exemption.

G. If the adjoining property has a tiled roof and is a privately owned, allow for a flashing to bridge the two roof types.

H. If Kāinga Ora owns the adjoining property, seek guidance from your Kāinga Ora representative as consideration should be given to replacing both roofs.

I. If a new television aerial is needed, it is not permitted to have it fixed through the roof.

J. Wherever possible, liquid-applied membranes and profiled plastic roofing should not be used.

   i. If replacing a membrane roof, use a double-layer torch-on membrane or TPO (thermoplastic polyolefin) for small non-habitable areas such as porches.

   ii. Seek guidance from your Kāinga Ora representative if required.

K. Skylights are not permitted; if there is an existing 'old style' skylight, ascertain whether it is required for light and ventilation requirements under the New Zealand Building Code.

   i. If required, replace the existing skylight with an appropriately sized solar tube skylight.

   ii. If not required, remove the skylight, and repair the roof and ceiling as required.

L. Roof profiles should align with procured items (i.e., low, and high trapezoidal profiles)

M. The paint finish must; be factory applied and be suitable for the local environmental conditions and use Kāinga Ora approved colours.

N. There is no requirement to remove existing sarking. Where sarking needs to be removed ensure roof bracing is adequate.

3.2 Chimneys and open fires

A. Four options are available for the removal of redundant chimneys. These include:

   i. Where structural damage is apparent, remove as much of the chimney as needed until safe. This does not need to be to floor level if it is not needed.

   ii. Where a chimney is attached to the exterior of the dwelling, allow for complete removal down to ground level.

   iii. Remove down to ceiling level.

   iv. Where the property is a TUS or TUD and the chimney is located on the inter-tenancy wall, retain the internal section, and reduce the height of the external chimney to approximately 200mm above the roofline, and cap chimney.

B. Allow to make good roofing and claddings etc…

C. Close off **open fires**:

   i. Remove hearths, surrounds and mantels. Make good to wall linings with plasterboard and paint.

   ii. Where guidance is needed consult with your Kāinga Ora representative.

Note:

See Section 11.3 Solid Fuel Burners.

3.3 Spouting and Down-pipes

A. Check to ensure the spouting system is fully-functioning and in an acceptable condition.

   i. Clear any blockages and re-check the system.

   ii. Where stagnant water is pooling allow to repair/re-align system components as required.

   iii. Replace any damaged sections of the spouting system.

B. Where the existing spouting is in overall poor condition scope to replace it.

   i. Check all fascia: where required, ensure it is cleaned and painted and, if in poor condition, replace before the spouting system is installed.

Note:

- Where new spouting is required ensure Kāinga Ora procured products are used.
- If required, alternative solutions should match roofing and local environmental condition, approval is required by Kāinga Ora before proceeding with alternatives.

3.4 Drainage

A drainage assessment is required as part of the preliminary risk assessment please refer to 1.1.1 Preliminary risk assessment

A. Check for drainage issues such as surface water around paths, driveways and indication of water flowing under the dwelling.

B. If there is evidence of insufficient drainage liaise with Kainga Ora, before arranging for CCTV drain inspection.

C. If there is a risk of site water flowing into the sub-floor space, install channel drains to divert the water away from the building.

3.5 Subfloor

An assessment is required as part of the preliminary risk assessment please refer to 1.1.1 Preliminary risk assessment.

3.5.1 Access

A. Ensure a subfloor access door is present, in good working order and can be secured with a pad-bolt (lock to be provided by the customer).

B. Undertake repair or replacement work as necessary. If there is no external access opening, allow for a new access door.

   i. If the under-floor space is less than 400mm advice your Kāinga Ora representative before proceeding.

   ii. Where an external sub-floor door is not possible, access may be within the dwelling,

inspect for an existing floor hatch, if present ensure access is adequate and functioning.

a. If a new hatch is required, ensure the location and size of the hatch allows unimpeded access. A hallway cupboard is an ideal location, if this is not possible a bedroom wardrobe is suitable.

b. Floor hatches **must not** be installed in bathrooms, laundries, kitchens, and separate toilets.

3.5.2 Subfloor ventilation

A. Ensure sub-floor ventilation grilles are clear and functional. Where blocked allow to clear.

3.6 Ground Vapour Barrier

A. If the subfloor is enclosed, and there is no GVB, allow for:

i. 0.25mm-thick, polythene GVB.

B. The subfloor is 'enclosed' if airflow into and out of the space is significantly obstructed along at least 50% of the perimeter of the space by one or more of the following:

i. A masonry foundation wall.

ii. Fibre-cement sheets, timber skirting, or other cladding.

iii. Other parts of the building or any adjoining structure(s).

C. Repair GVB if one or more of the following has occurred:

i. Tape is missing from barrier seams.

ii. The GVB is insufficiently pinned and/or weighed down along overlaps and edges.

iii. The GVB is damaged, has lifted from the floor, or is in a generally poor condition.

iv. Sections of GVB are missing.

3.7 Flooring

A. Where there is a variation in the floor level of >50mm please advise Kāinga Ora so that the property can be reviewed for inclusion in the Retrofit Programme or redirected to special programmes.

i. Refer to Canterbury residential technical guidance – Indicator criteria – Table 2.3.

a. The indicator criteria contained in Table 2.3 can be used to indicate first whether a house is likely to need relevelling, and then secondly, if it does, whether relevelling, a foundation re-build, or a new build is likely to be required. See 1.2.1 Preliminary risk assessment

B. If there is evidence of damage or rot to the existing flooring, allow for new flooring, ensuring:

i. the floor is concrete or CCA-treated H3.2 structural, 19mm-thick (min.) plywood

ii. All timber bottom plates are treated to H1.2.

Note:

- Do **not** use LOSP-treated plywood.

3.8 Insulation

3.8.1 General

Conduct a visual inspection of the ceiling and sub-floor areas to ensure existing insulation is present and complies with the minimum requirements outlined below.

3.8.2 Sub-floor entry - Safety:

A. Before entering the space if foil is present; engage a licensed electrical worker to determine if the foil is live.

i. If live the electrical worker must make the area safe, before entering.

ii. Allow to remove foil and replace with new insulation.

3.8.3 Assessing existing insulation

A. **Replace or overlay** existing insulation if:

i. The R-value cannot be confirmed or does not meet the following requirements.

ii. Ceiling insulation is less than 120mm-thick or does not meet 70% or the original thickness. This only applies to insulation that was installed prior to 2019.

iii. If the existing insulation is not contaminated and there is enough space to achieve the insulation requirements it can be retained. The formula to get the R-value is the thickness divided by the conductivity – e.g. for typical glass wool the density is about 8kg/m³, so:

0.12 m thick
0.052W/m°C
= R2.3 (1 dp)

iv. If the insulation is relatively new and you know who the manufacturer is likely to have been, you can go to the technical specs on their webpage to find out what the typical densities and R-values are for those sorts of products.

v. If the insulation is compressed or old, suggest taking 20% off the R-value to reflect a reduction in performance.

B. **Assess** insulation for gaps, or significant damage and **remove and/or install** insulation if:

i. The property was built prior to 2008.

ii. Insulation is wet, mouldy, or water damaged, remove, and replace.

iii. Insulfluff is present, and if contaminated or if there is not enough room for the new insulation, allow for the removal using an extraction system and safe disposal.

a. Ceiling linings do not need to be removed to extract Insulfluff.

3.8.4 R-values for new Insulation

A. The minimum R-values required for **new insulation**:

   i. Ceilings: R4.4.

   ii. External walls: Retrofit - R2.0 (70mm-thick); Re-clad - R2.5 (90mm-thick), refer to Section 5 Thermal envelope improvement.

   iii. Floors: R1.9.

      a. Existing floor insulation can be retained if it has an R-value of R1.8, and it meets the condition requirements of the Healthy Home standards.

B. Where the roof tapers down towards the eaves and there is limited space to install the required R-value, install a lower profile product with as high an R-value as possible. This should extend over to the external edge of the wall top plate, but not into the soffit.

C. Use either polyester or glass wool products that are approved by Kāinga Ora.

Note:

- Install insulation in accordance with NZS4246:2016 Energy efficiency – Installing bulk
- thermal insulation in residential buildings.

3.8.5 Ceiling access

A. Ensure the existing ceiling access is operational and can open and close.

B. If there is no access to the ceiling, allow for the installation of a ceiling-access hatch, ensure it is flush-finished, 600 x 600mm 12mm- thick CD plywood panel that:

   i. is insulated using Kāinga Ora-procured insulation; and

   ii. has a paint finish that matches the surrounding ceiling.

Note:

- If an existing access panel is located over a stair, in a wardrobe, or in a bedroom, contact your local Kāinga Ora representative; do not place a new access hatch in these locations.

3.9 Exterior Paint finishes

A. Check the condition of the exterior paint and allow to repaint when one of the following applies:

   i. The paint is in unacceptable condition:

      a. Paint is flaking, peeling bubbling and/or has deteriorated.

      b. Paint coverage is inadequate.

      c. A re-clad is to be undertaken.

ii. Where the remaining life of the exterior paint is deemed to be less than 2 years.

B. Allow for a full paint or partial paint if the paint is in unacceptable condition in an isolated area e.g., on one side of the house.

C. For approved colour selections refer to Kāinga Ora Exterior Colour Choices (M-248)

D. Do not paint concrete surfaces which have not been previously painted.

Section 4: Interior

4.1 Pest Control

A. Treat any signs of pests with appropriate treatment and ensure the problem is eradicated before commencing work.

B. Evidence of any timber borer infestation should be raised with your Kāinga Ora representative to confirm suitable actions.

C. Upon final clean; re-treat if necessary.

4.2 Wall and ceiling linings

A. Check all linings are in sound condition, and if needed repair and/or replace:

   i. As a result of modernisation work, ensure to allow for remedial work to linings. Use standard plasterboard in all areas and match thickness.

   ii. Where external wall insulation has been replaced from within the dwelling, allow for new plasterboard that is stopped for a level 4 finish (See Section 5.1 External thermal envelope cladding and insulation options). Use standard plasterboard in all areas.

B. Pinex board is a procured product and can be used to replace ceiling sections where needed.

   i. The previous requirement to replace Pinex ceilings is no longer applicable.

Note:

- Wall linings do not require replacement where wallpaper is present – See Section 4.8 Interior Paint Finishes.
- Existing T&G wall and ceiling linings do not need replacement if in sound condition.

Out of scope:

A. The lining of bathroom ceilings with Hardie™ Glaze Lining.

B. Use of moisture resistant GIB Aqualine is not required.

C. Excludes where repairs are needed and where external wall linings have been removed to install insulation.

4.2.1 Mould affected linings

A. Allow for cleaning of surface mould affected areas.

B. Where penetrating mould is present in the bathroom and is >1m² replace the existing ceiling linings with moisture resistant plasterboard.

Note:

- Ensure all smoke alarms and electrical fixtures are reinstated at completion.
- Specialised interior wall-finishes, including ceramic tiles or wallpaper, are **not permitted**.

4.2.2 Trims

A. Check the condition of all skirting boards, architraves, door frames and window reveal, replace if necessary.

B. Allow for suitably treated timber where required and match existing profiles within the room.

Note:

- It is not permitted to use fibreboard.
- Only use full lengths of trim.

4.3 Vinyl

4.3.1 General Vinyl

A. Check for compromised timber floor substrate.

   i. This can be done visually and/or by feeling for signs of softness or a rough/uneven surface underfoot.

   ii. Allow for replacement floor substrate if needed.

B. Where asbestos is present ensure, all work is undertaken in accordance with the Kāinga Ora asbestos policy and regulations.

C. Lay vinyl in entrances, kitchens, dining rooms, bathrooms, laundries, and toilets.

   i. Carpet is not acceptable in these spaces.

D. Allow vinyl to:

   i. Extend into fridge and oven spaces.

   ii. Be continuous under toilets, floor mounted vanity cabinets, and laundry tubs.

E. Vinyl is not required under baths or showers.

F. Ensure the floor covering provided in storage cupboards matches that provided in the adjacent space.

G. Where vinyl is being replaced in bathrooms and laundries, use a bevel-edge tile reducer at the entrance if the adjoining space is carpet.

4.3.2 Skirtings or Coving

A. Coving is required to all bathrooms.

B. For laundries and toilets, the following options are available:

   i. Re-cove

   ii. New skirtings: Replace existing coving with H3.1 dressed timber skirting board; paint finished.

4.3.3 Main entry vinyl inserts

A. Allow for a vinyl insert to the front and back door entry.

   i. The insert shall extend the full width of the entry door and extend 900mm deep (minimum).

   ii. In a smaller entranceway if the insert finishes across a door entry into another room extend the vinyl or consider installing vinyl in the entire room.

   iii. A smaller entrance is deemed less than 2000mm in length Where a ranch slider is currently the main-entry, ensure there is a 300mm-deep vinyl insert that runs the full length of the ranch slider.

      a. This is not required where the ranch slider is not used as a main entry, however, can be installed to a frequently used entry to prevent wear.

4.3.4 Wet-area bathrooms

A. Use non-slip vinyl in wet area bathrooms with a bevel-edge tile reducer at the entrance.

B. Wet-area bathrooms (wheelchair friendly/accessible) must have vinyl coving.

4.3.4 Colour and Product Selection

A. Refer to Kāinga Ora Interior Colour Choices (M-250)

4.4 Carpet

A. Install new wool carpet and underlay, to all bedrooms, living rooms, hallways, and stairs. Use NSA product.

   i. Allow to extend into any adjacent wardrobes and storage cupboards.

4.4.1 Colour Selection and procured products

A. Refer to Kāinga Ora Interior Colour Choices (M-250)

4.5 Curtains

4.5.1 Curtain locations

A. Curtains are provided on all windows in living and dining rooms, bedrooms, hallways, and stairwells.

B. Install new Kāinga Ora procured curtains and tracks if:

   i. There are no curtains present.

   ii. Existing curtains and tracks performance are not equivalent to that of the procured curtains. See M-215 5530

Note:

- Stairwells shall be excluded if they cannot be reached by standing on the floor.
- Sidelight windows next to main entry doors do not require curtains.
- Return non-approved customer owned curtains to the customer.
- Consider donating to a local curtain bank if they do not meet Kāinga Ora requirements and are not customer owned.

4.6 Doors

4.6.1 Exterior doors

A. Replace all exterior doors within the thermal envelope (that provide a front and rear entry) with the programme-specific product below.

B. Ensure all door entrance openings have a minimum clear width of 760mm. Increase to 810mm clear openings only where practicable.

   i. The existing opening width of the main door must not be reduced.

C. Ensure **all other** exterior doors and their components are in an acceptable condition.

D. Inspect all exterior doors and frames if gaps exceed 3mm, repair as necessary to reduce the gap.

E. Stop any unintentional gaps between the door and frame that cause noticeable draughts. As a general guide an unreasonable gap should be considered as >3mm (width of a New Zealand $2 coin). This means the edge of the coin can fit into the gap, and it is causing a noticeable draught, the gap needs to be sealed, or draught stopped.

F. Ensure doors are functioning e.g., opening, and closing with ease, repair or replace as needed.

G. Where used, ensure sidelights are only fixed lights.

4.6.2 Internal doors

A. Ensure all doors and door frames are functioning e.g., opening, and closing with ease.

B. Repair as needed:

   i. Where a repair is not possible or there are two or more holes in a door, allow to replace, with a Kāinga Ora procured interior door.

   i. Ensure all hardware is present and functioning.

Note:

- Door swings do not need to be altered unless there is a spatial gain.
- Bi-folding door hardware and hollow-core doors are not permitted.

4.6.3 Interior door hardware:

A. Ensure the main-entry door includes:

   i. A procured or approved, lock that does not require a key to exit the dwelling.

   ii. Ensure the main-entry includes a door-viewer installed at 1500mm above the FFL.

B. Where all door handles require replacement, install lever-style handles, using the existing holes.

C. All bathrooms and separate toilets have a privacy- lock that can be accessed from outside the room in an emergency.

D. Wardrobes, and linen, general storage, and HWC cupboards:

   i. Have horizontal, dummy- lever-type handles.

   ii. Can be opened from the inside (to ensure children cannot be locked inside), to achieve this a soft-close, counter-sunk magnetic catch can be installed into the top edge of the door and frame.

      a. Allow to make good doors when removing latches.

   iii. Coat hooks are not a requirement and should not be replaced when missing inside wardrobes.

   iv. Where there is an open cupboard/alcove in a hallway and the coat hooks are missing or damaged then allow to replace.

E. All doors must have a functioning doorstop.

Note:

- Except for privacy locks all doors must not be lockable from the inside.

4.7 Windows

4.7.1 General

A. Replace all windows within the thermal envelope of the home, this includes bathrooms, toilets, and internal laundries, but excludes rooms such as lean-to- laundries, toilets and garages see Section 5. 2 Windows - Thermally Broken Aluminium.

   i. Where a room is not within the thermal envelope line, check the windows are in good condition and functioning, and repair as needed e.g., ease, rehang and ensure hardware is in an acceptable condition.

   ii. New glazing must comply with NZS 4223.3:2016 Glazing in buildings, Part 3: Human impact safety requirements.

4.7.2 Window Stays for Passive Ventilation and Safety from Falling

A. Allow for a restrictor stay that provides a maximum opening of 100mm, to one opening sash, per room for secure ventilation.

B. Fall safe windows; restrict all opening windows where:

i. The exterior fall height is greater than 2.0m from the bottom edge of the opening sash; **and** the bottom edge of the opening sash is less than 1.5m from the floor.

4.8 Interior Paint Finishes

A. Repaint all internal rooms matching the existing finishes e.g., polyurethane or paint finish.

i. Exclude wardrobes and cupboards if in an acceptable condition.

B. For approved colour selections refer to Kāinga Ora Interior Colour Choices (M-250)

C. **Paint over wallpaper**; The ACM-200 provides guidance on acceptable papered surfaces to paint over.

i. Where the wallpaper is not in a suitable condition to paint over, and Kāinga Ora have provided approval allow to remove the wallpaper and to skim-coat in preparation for painting.

4.9 Cleaning

4.9.1 Interior clean

A. **Prior** to property completion:

i. Ensure all interior surfaces, fixtures and fittings are thoroughly cleaned.

ii. Clean the oven, cook-top, and ventilation system – including range-hood, extract fans, filters, and grilles if needed.

4.9.2 Rubbish removal

A. Remove construction material and waste. Customer belongings and rubbish is out of scope and should be removed prior to commencement of the retrofit contract work.

i. If customer belongings or rubbish is present, refer to asset management team.

Note:

- Refer to Maintenance Delivery Team **before** removing any customer belongings and/or rubbish from the site.

Section 5: Thermal Envelope Improvement

5.1 Retrofitting or Recladding

5.1.1 Objective

The retrofit improvement work ensures the dwelling is weather-tight and has an improved thermal envelope.

5.1.2 Cladding assessment

A. Assess the overall condition of the cladding for damage, rot, broken components, and/or asbestos.

B. **Two options** are available to improve the thermal envelope: select one based on the outcome of the cladding assessment.

   i. Cladding is sound and/requires minor repairs, <20% per external wall face, select Option One – "Retrofit"

   ii. Cladding requires extensive repairs >20-30% per external wall face and/or asbestos is present, select Option Two – "Reclad"

5.1.3 Option One – "Retrofit"

A. Repair cladding:

   i. Replace and/or repair compromised cladding with like-for-like material.

      a. Where brick cladding is present allow to regrout and/or repair as required.

      b. Remove and/or make good any redundant fixtures and penetrations to the exterior cladding.

      c. Carry out repairs and/or replacement of soffits where required.

   ii. Refer to 3.9 Exterior paint finishes

B. Insulate external walls from the **interior**:

   i. Remove and dispose of interior wall-linings and associated items on the interior of external walls, ensuring minimal damage to adjacent components.

   ii. Where existing cladding is direct fixed:

      a. Install new R2.0 (70mm-thick) insulation with strapping, ensuring there is a 20mm air gap between the back-face of the insulation and any existing building paper (if present) or external cladding.

      b. Where no building paper is present it is not required. If paper is present and is in disrepair allow to remove paper.

   iii. Where cladding is over a cavity batten:

      a. Install new R2.5 (90mm-thick) insulation with strapping to the full frame depth. If framing is not 90-100mm an alternative option will need to be considered. Liaise with your Kāinga Ora representative.

b. Seal penetrations

iv. Install plasterboard linings and trim to match existing materials. Refer to 4. Interior and 4.2 Wall and ceiling linings.

v. Refer to Section 3.8 Insulation and Section 4.8 Interior Paint Finishes.

5.1.4 Option Two – "Reclad"

A. Reclad and install external wall insulation:

i. Remove and dispose of existing cladding (See Health and Safety at Work (Asbestos) Regulations (2016)).

ii. Install R2.5 (90mm-thick) insulation with strapping:

a. **Do not** remove internal wall-linings when carrying out a reclad for the purpose of installing the insulation.

iii. Install permeable or breather type building wrap.

iv. Reclad with a new ventilated cavity weatherboard system or an alternative approved Kāinga Ora cladding system.

a. Direct fix cladding to covered porches and alcoves, where existing space is at a premium.

v. Refer to Section 3.8 Insulation, and Section 3.9 Exterior Paint Finishes

5.1.5 Option One and Two Notes

A. Always:

i. Install insulation in accordance with NZS 4246: 2016 – Energy-efficiency: Installing Bulk Thermal Insulation in Residential.

ii. Follow manufacturer instructions.

B. The following items are not permitted for use:

i. Plywood, polystyrene and plaster, stucco, or horizontal profiled metal sheet cladding.

ii. Single-skin, exterior insulating finish systems; and/or

iii. Stained finishes or paint finishes with brick.

C. Where extensive rot or mould is encountered, liaise with your Kāinga Ora representative.

5.2 Windows – Double Glazed Thermally Broken Aluminium

5.2.1 Window Upgrade

A. Replace all windows within the thermal envelope of the home.

B. Ensure new double glazing is clear (i.e., not tinted or frosted), except where needed for privacy reasons (e.g., in bathrooms/toilets) where glazing should be surface-treated,

obscure glazing.

C. When reorienting the kitchen as part of KDL reconfiguration work, any windowsills in the kitchen are placed at a minimum height of 1100mm.

D. Where window sizes are changed or removed, match existing cladding material.

E. Where there is an existing sunroom in the dwelling, remove windows to achieve a window-to-wall ratio of 30%.

F. Where a room is not within the thermal envelope, check the windows are in good condition and functioning, and repair as needed e.g., ease, rehang and ensure hardware is in an acceptable condition. See Section 4.7 Windows.

5.2.2 Window hardware

A. Ensure all window catches are double-tongued, lever-style handles.

B. Refer to Section 4.7.2 Window hardware for additional requirements.

Section 6: Kitchens

This section outlines requirements for upgrade to kitchens.

6.1 Layout

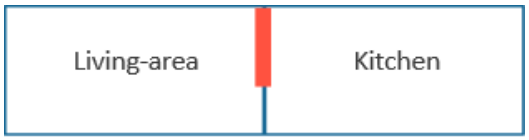
6.1.1 General Requirements

A. Leave the kitchen, dining, and living rooms in their existing locations.

B. If practicable and budget allows, the kitchen-dining-living area can be modernised by creating partial open-plan living:

   i. Remove part of the wall or provide a new doorway opening between the living-area and the kitchen as per *Figure 2*.

Figure 2: KDL Modernisation



C. Do not remove entire wall. This is to minimise the impact on ceilings (e.g., using beams/lintels below the ceiling).

D. Ensure there is minimal disruption to existing plumbing, window openings, and load-bearing structures.

E. Ensure all fittings and finishes align with the requirements set out in Section 4: Interior

F. Inter-tenancy walls should not be altered as part of modernisation/conversion work.

G. Fire walls are out of scope; the retrofit programme does not undertake work that involves complete or substantial replacement of any component or assembly that contributes to the buildings structural behaviour or fire-safety properties i.e., the existing firewall/system remains unchanged/untouched.

   i. Refer to your Kāinga Ora representative if guidance is required.

   ii. Excludes re-roof work – refer to 3.1.3. Roof replacement.

6.2 Kitchen Upgrade

6.2.1 General

A. Provide enough space to accommodate the customers' needs, ensuring the design affords at least the same level of amenity as that provided prior to retrofit work.

B. Refer to *Table 2* for guidance on recommended kitchen component sizing.

Table 2: Kitchen requirements

COMPONENT	NUMBER OF BEDROOMS 1	2	3	4	5	6
Under bench cabinets (total width, excluding stove)	2.4m	2.4m	3.6m	4.2m	4.8m	4.8m
Fridge space (0.7m depth)	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)	0.6m (width)	0.9m (width)	0.9m (width)	0.9m (width)
Clearance between benches	1.2m	1.2m	1.2m	1.5m	1.5m	1.5m
Stove space (0.62m width)	x1	x1	x1	x1	x1	x1
Drawer banks (0.6m width)	x1	x1	x2	x2	x2	x2

Note:

- If table 2 requirements are not achievable, contact your Kāinga Ora representative for further instruction.
- For further guidance on specific customers' needs, contact your local Kāinga Ora representative and liaise with other members of the Project Team as appropriate.

6.2.2 Cabinetry:

A. Is industry standard module sizing. Do not use bespoke size cabinetry.

B. Install childproof latch to under sink cupboard.

C. Must have 300mm between internal corners and the opening edge of appliances.

D. The pantry has x5 full width fixed shelves.

E. Cupboard door hinges provide a 115-117 degree opening and are recess-mounted; **x2** under-bench leaf and **x3** to full height (e.g., pantry) doors.

F. All cupboards and drawers include D-style handles that are easy to grip with a minimum finger clearance of 25mm.

G. Includes under-bench drawer storage.

   i. With one top drawer cutlery insert.

   ii. The underside of the bench has drawers in banks of 4 (x2 smaller above and x2 larger drawers at the bottoms), with a cutlery insert tray provided in the top drawer.

   iii. Drawer runners with a minimum load capacity of 30kg.

6.2.3 Benches:

A. All benches are 600mm in depth, and a length to suit cabinets.

B. Bench height is 900mm from FFL.

C. Benchtops and cabinet colours contrast (30 differential LRV).

D. A microwave space is located at bench height with an adjacent power outlet.

6.2.4 Fridge space

A. Leave space open on one side

B. Do not used cabinetry to house fridge.

   i. Do not install an end wall.

Note:

The following items are not permitted:

- sliding, bi-folding, or double-hung (corner) doors
- Wall-hung cupboards (over-head)
- A fixed-end panel to the fridge space.
- Fully enclosed, temporary waste and recycling spaces and built-in bins.
- Melamine edge tape on cabinet doors or drawers.

6.2.5 Existing Benches and sink-tops

A. Where required, replace existing High-Pressure Laminate (HPL) bench tops. An upstand is not required.

B. Retain stainless-steel sink benches where they are an acceptable condition.

   i. if required, replace with a procured item.

C. Reuse the existing single lever sink mixer if in an acceptable condition or replace.

Note:

The following are **not permitted**:

- Straight square edge to HPL bench tops.
- Top-mounted insert type sink bowls.

6.3 Kitchen Appliances - stove and rangehood

6.3.1 Stove Repairs

A. Assess the free-standing stove:

   i. is fully functional,

   ii. Has all components present and

iii. Is free from damage.

iv. Has an anti-tip device and drop bolt.

B. Where required, undertake repairs using procured parts. Replace any missing or faulty components.

C. Allow to clean. See Section 4.9 Cleaning

D. Where beyond repair replace with a new procured free-standing stove.

6.3.2. Stove

A. Is not to be located under a window.

B. Is best located on an outside wall for direct extraction ducting from rangehood.

C. Allow for a new procured free-standing stove if beyond repair.

D. An under-bench stove and separate hob can be considered where there are spatial restrictions.

E. Follow manufacturer's instructions and ensure compliance with clearance requirements.

6.3.3 Heatshield

A. Ensure a heatshield is installed behind and/or beside where appropriate to the stove.

i. Where required, replace the existing or, if absent, install a new procured 600 x 600mm pre-painted glass heatshield.

ii. Remove any existing heatshields which are not fire-resistant e.g., HardieGlaze is not an acceptable heatshield.

6.3.4 Rangehood

A. Repair or, if not possible, replace any existing rangehood that is damaged, is not fully-functioning or is a recycling air type hood, with a procured product.

i. Roof-vented mechanical extract ventilation systems are preferred. Soffit-vented systems are permitted where they are a better option. These systems must meet Healthy Homes ventilation requirements,

ii.

iii. Make use, if possible, of existing ducting and vents etc.

iv. Advise Kāinga Ora if mechanical ventilation cannot be fitted or vented to the exterior.

v. Replace existing range-hood filters if they are beyond cleaning (See Section 4.9 Cleaning).

Note:

- It is not permitted to use recirculating range-hoods.
- Fire resistant plasterboard behind stove is not required.

Section 7: Bathrooms and toilet facilities

The requirements below should be considered alongside those presented in Section 4: Interior and Section 13: Hydraulics.

7.1 Bathroom and toilet modernisation

7.1.1. General

A. Retain existing bathroom and sperate toilet configurations.

   i. Do not demolish walls.

B. Minimise disruption to existing plumbing, window openings, and load-bearing structures.

C. Replace bathroom and separate toilet fittings and fixtures.

   i. Refer to M-215a Drawings for details on installation.

D. Retain existing wall and ceiling linings in good condition:

   i. Allow for minor repairs where required.

   ii. Where replacement is required, use standard plasterboard.

E. Ensure all bathrooms/separate toilets located on the second story (or above) have a chrome-plated, brass floor-waste gully.

F. Where showers over baths are being retained, relocate the shower head to an internal wall to avoid water splash to vanity and windowsills.

G. Always use procured products and follow manufacturers installation instructions.

7.1.5 Accessible wet-area shower/ bathroom (where existing)

A. Replace like-for-like of fixtures, fittings, wall and floor linings.

B. Conversion/ upgrade of a standard bathroom to an 'accessible' bathroom is **out of scope** of the Retrofit Programme.

Note:

- By exception, when fittings or fixtures or linings are in excellent condition, consult with the Asset Manager to see if they should be retained or replaced.
- If a bathroom has existing grab rails, check with the Asset Manager to see if they should be removed or replaced.
- The following is not permitted:
  - Two-sided or non-procured shower trays
  - Contact between the wall-lining and the up-stand of the shower tray and/or the bath.
  - Bath edge-mouldings with high-lip baths.

7.1.6 Shower curtains/rails and door seals replacement

A. Replace shower curtains if required.

B. If curtain rails are rusted or compromised replace.

C. If an existing shower cubicle is retained, replace door seals if needed, and ensure the door opens and closes with ease.

Note:

- Weighted shower curtains are required where there is a purpose-built shower enclosure or if there is an existing accessible wet-area shower.
- Shower curtains installed in bathrooms should ideally just touch the shower floor, and for showers over baths fall a maximum of 100mm above the bottom of the bath.

7.2 Bath and shower tapware

7.2.1 New shower rose and mixer

A. Where a new shower is being installed install a 'slide shower mixer' comprised of a:

i. slide-rail, hose, and hand piece, with the top of the rail mounted at no higher than 1900mm above the FFL; and

ii. separate lever-mixer set at no higher than 1000mm above the FFL and so it can be safely- and easily accessed from both inside and outside the shower.

B. Ensure shower mixers achieve the low-flow requirements of 6-8litres-per-minute (i.e., it takes 8-10 seconds to fill a one-litre jug) Lever-handle shower mixers can have the flow regulated by adjustment within the mixer.

Note:

- **Do not** position the shower mixer so that the water-flow is directed to the shower curtain or shower door where applicable.

7.2.2 Miscellaneous Bathroom and Toilet Fixtures

A. Towel rails, towel ladders and rings:

i. When replacing a towel rail and the wall space allows a minimum length of 700mm per bedroom, provide the additional length if possible.

ii. Ladder rails must not be installed less than 500mm from the FFL.

B. If there is an existing customer-installed heated towel-rail present, check the rail and:

i. Leave in place if it is: in working order, securely attached, and safe to operate.

a. If not, remove the rail, disconnect, and remove associated electrical fittings, and repair the wall.

C. Toilet roll holder, ensure a toilet roll holder is present and easy-to-reach.

D. If there is an existing wall hung mirror present, and in acceptable condition retain. If the mirror is in an unacceptable condition remove and make good to wall.

Note:

- The following are not permitted:
  - new mirrors other than medicine cabinet.
  - New heated towel-rails

7.2.3 Vanities, Basins, Storage and Tapware.

A. Check the existing vanity or basin; ensure it is in an acceptable condition.

   i. If a vanity or basin requires replacement use procured products, a wall-hung vanity is the first preference.

   ii. If this is not possible a free-standing vanity can be installed. Only install a new basin if space restricts a vanity from being installed.

B. Allow for a new single-lever mixer tap, if required.

C. If retaining the existing vanity, ensure the tapware is in good working order.

D. A vanity is not considered childproof (unless a pair of childproof catches are present).

E. Provide a fixed chain and plug.

7.2.4 Mirrored medicine cabinet

A. Ensure the cabinet and mirror is in an acceptable condition and, if required, repair with like-for-like materials; or replace with a procured product.

B. Do not recess cabinet into wall.

7.2.5 Toilet Suite

Check the existing toilet and associated components; repair and/or replace components as needed, with procured products.

7.3 Mechanical Extraction - Bathroom

A. Ensure all existing mechanical ventilation is in an acceptable condition, where required repair or replace the ventilation system, with procured products.

   i. Mechanical extraction systems are to be ventilated to the exterior, preferably through the roof, and need to comply with the Healthy Homes Standards.

   ii. Rooms with a bath and/or shower must include a fan and ducting that is at least 120mmØ, or a fan with ducting with an exhaust capacity of 25L/s, unless the building has a continuous mechanical ventilation system.

   iii. Allow to remove humidistats, do not replace.

B. **New exhaust fans**: Install exhaust fans to the manufacturer's requirements, AS/NZS 3000:2018, and G4/AS1.

C. Switching and timers:

   i. Connect all mechanical extraction fans with the associated light fitting switch.

   ii. All mechanical extraction in bathrooms and laundries require a separate run on fan timer that is set to a minimum of 7 minutes.

D. Advise Kāinga Ora if mechanical ventilation cannot be fitted or vented to the exterior.

Section 8: Laundries

The content below sets out the requirements for laundries that are in addition to those presented in Section 4: Interior and Section 13: Hot and Cold water.

8.1 General requirements

A. Wherever possible, the laundry should provide enough space for:

   i. A laundry tub (350mm-wide for 1–2-3-bedroom homes; 560mm-wide for 4+ bedrooms) where possible.

   ii. A washing machine (at least 850mm-wide); and

   iii. A dryer placed at floor level or space on the wall.

   iv. Install **one** 250 (D) x minimum 500mm (W) melamine shelf above the laundry tub at between 1200-1500mm above the FFL.

      a. Where existing shelving is present, ensure it is damage-free and securely attached to the wall; repair, reattach, or replace the shelves as required.

B. Ensure the laundry cabinet and tub is in an acceptable condition.

   i. If not, undertake any required repairs and/or cleaning or replace the existing with a procured laundry cabinet sized in accordance with the above.

   ii. A laundry cabinet is not considered childproof (unless a childproof catch is present).

Note:

- Retain existing wall and ceiling linings, there is no requirement upgrade to moisture resistant plasterboard.
- The laundry may be in a bathroom, cupboard, or in a garage; regardless of the dwelling-size, it must not be placed in the KDL space.

8.2 Mechanical Extraction - Laundry

A. If present, check the existing mechanical extraction system; ensure it is in an acceptable condition.

B. If the system is not acceptable or there is no extraction, install a new fan in alignment with the requirements listed in Mechanical Extraction – Bathrooms – Section 7.6

Note:

- Laundries located in garages also require mechanical extraction.

Section 9: Household storage

The content below sets out the requirements for storage provided inside the dwelling. For outdoor storage, refer to Section 2: Exterior.

9.1 General requirements

A. The amount of internal storage provided in the dwelling must not be reduced.

   i. Wherever possible, there should be separate linen and general storage provided in addition to a wardrobe or hot water cylinder.

B. Ensure all storage is **not** lockable and can be opened from the inside and hardware is in working order.

   i. refer to Section 4.6 Door hardware

9.2 Wardrobes

9.2.1 Wardrobes

A. Assess if there is one wardrobe per bedroom. Where a wardrobe is not present, scope to either construct an in-built or fixed cabinetry wardrobe.

   i. Where practicable, **new wardrobes** are a minimum width:

      a. 1.2m for **double occupancy** bedrooms.

      b. 600mm for **single occupancy** bedrooms.

   ii. A bedroom is considered:

      a. **double occupancy** when they are between 9-12m^2.

      b. **single occupancy** when they are between 6-9m^2.

   iii. Fixed cabinetry wardrobes must be affixed securely to wall framing.

   iv. Do not provide new wardrobes in rooms less than 6m^2, including sunrooms.

B. Check existing wardrobes, rails, and shelving and ensure they are in an acceptable condition; if not, replace.

C. If a new shelf is required, use an item that:

   i. Matches the width and depth of the existing shelf and is at least 18mm-thick.

   ii. If more than 1.2m-wide, ensure there is a 40 x 20mm pine ‘stiffener’ under the front edge.

9.3 New storage cupboards

Where new storage has been built, where possible the following shelving requirements should be met.

9.3.1 General

A. General storage (i.e., all other storage that is not linen or HWC storage, kitchen cabinetry, bathroom vanities, or laundry cupboards) should include (at least):

   i. three full width shelves where possible

9.3.2 Linen Storage

A. Linen storage should include five fixed full-width slated shelves.

9.3.3 HWC Cupboard

A. Ensure a new HWC cupboard is located to minimise pipe-runs and that it is sized to accommodate the size of the cylinder, see Section 13.1 Plumbing and water supply and Section 13.2 and that it includes:

   i. At least one full-depth and full-width slatted shelf.

Section 10: Electrical and Gas

The content below sets out the requirements for all services provided in all homes.

10.1 General

A. An electrical whole-of-house assessment report shall be undertaken at all properties by a registered electrician.

   i. A template has been provided and must be used during the assessment (refer to attached to your Kainga Ora representative.

   ii. Make safe immediately if any electrical issues are present.

B. Ensure there are electrical connections from street-front public junctions to the dwellings' termination point.

   i. If there are buildings with multiple dwellings on-site, ensure electrical connections run to building termination points in a common shared-services trench.

C. Ensure the 'Earth' pin is protected within a plastic 'Toby box'.

D. Ensure there is an internal distribution board that provides at least 20% spare capacity, and which includes RCD-protection for all circuits.

E. The retrofit programme is responsible for all work related to gas conversion, including decommissioning. Where existing gas connections are present, refer to the M-259: Kāinga Ora Gas Conversion Scoping Guide for guidance on converting to electrical supply and completing all associated work:

i. Decommissioning gas supply.

ii. Removing all gas fittings and appliances.

iii. Repairing damage to affected areas (e.g., wall- and ceiling-linings; cladding; or roofs).

iv. Supplying and installing new electric appliances.

Note:

- If the distribution board and/or gas flues and surrounds are identified to include ACM, allow to replace the entire distribution board and associated circuitry in accordance with the Kāinga Ora Asbestos Policy and Health and Safety at Work (Asbestos) Regulations.
- Ensure electrical work complies with NZS 3000:2018 – Australian/New Zealand Wiring Rules.
- Check to ensure the electrical system is able to accommodate additional electrical load requirements; if it cannot, undertake the required upgrades as required.
- Use Kāinga procured products.

10.2 Lighting

Replace all unearthed Moonlight fittings, either interior or exterior where present, with new procured double-insulated LED fittings.

10.2.1 Exterior lighting

A. Ensure there is existing main entry lighting to the main front and rear entry areas.

B. Lighting is required to any immediate steps leading to the front door.

C. If these areas are not covered by, existing light sources:

i. Adjust the existing light.

ii. Replace the existing light.

iii. Or provide another fitting located appropriately to add the needed light.

D. Upgrade to LED lights, where required using Kāinga approved products.

i. For any replacements use an LED sensor porch-fitting or dual LED security light.

ii. Ensure any other existing LED lighting (including sensor lighting) is fully functional.

iii. Pedestrian access routes from: the street; the carpark, driveway, or parking-area.

10.2.2 Interior lighting

A. Ensure there is at least one Kāinga Ora-procured, ceiling-mounted light fitting for each room within the dwelling including any separate toilets and internal garage.

i. Only replace lighting to under house if existing.

B. If not already present, ensure there is a two-way switching provided at:

   i. Each end of all hallways.

   ii. The top and bottom of all stairways.

C. Replace existing lighting if it does not meet the following:

   i. LED, double-insulated with an acrylic diffuser.

   ii. Provides a minimum efficacy of 40lm/W.

   iii. Where appropriate, is IP-rated for wet-areas.

   iv. Lighting-levels should conform with the minimum levels indicated on Table 4.

   v. Where the minimum levels cannot be achieved, install additional procured lighting in the appropriate area.

D. If existing lighting meets the above requirements, ensure it is in an acceptable condition and, if not replace.

E. Ensure any new lighting circuit switches are see set between 900mm-1200mm above FFL (measured at the centre of the plate).

   i. Existing light switches do not need to be relocated.

Table 4: Recommended Minimum Lighting-levels for 'Standard' Dwellings

AREA	LUX-LEVEL
Living- and Dining-areas	50lx (work surface)
Bedrooms	50lx (floor) / 150lx (bed)
Kitchens	300lx (work surfaces)
Bathrooms	100lx (work surfaces)
Separate Toilets	100lx (work surfaces)
Laundries	100lx (work surfaces)
Hallways and Landings	150lx (floor)
Stairways	100lx (treads)
Garages	50lx (floor) / 300lx (bench)

Note:

- Recessed down-light fittings, halogen bulbs and fittings, fluorescent tubes and fittings, and incandescent bulbs are not permitted.
- It is not permitted to locate a light fitting over a stairway.

10.3 Power outlets

10.3.1 General requirements

A. Check existing outlets to ensure they are in an acceptable condition, if not replace affected outlets, with procured products.

B. Ensure power outlets for **new circuits** are horizontally mounted between 400-600mm above the FFL and 250mm above bench-tops and mounted at least 500mm away from

internal corners, where possible.

C. Existing outlets do not need to be relocated.

D. Allow for double outlets for new or replacement.

E. Check the relevant locations as per Table 5; if needed, install a new item:

10.3.2 Table 5: Recommended Power Outlets

SPACE	REQUIREMENT	NOTES
Living and dining area (combined)	x4 double socket outlets	Place to facilitate communications, use and housekeeping
Kitchens	x3 double socket outlets and x1 dedicated outlet (each) for fridge, stove, and microwave	
Bedrooms 9m2 or less	x2 double socket outlets	One outlet per bedside
Bedrooms more than 9m2	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	
Laundries & attached gara	x1 double socket outlet	

Section 11: Heating

The content below sets out the requirements for the heating provided in all homes. Whole-of-house heating is out of scope, refer to 11.1, D. for exceptions.

11.1 Main living area heating

A. All heating must comply with the requirements of the Residential Tenancies (Healthy Homes Standards) Regulations (2019).

B. Properties must have an appropriate heating solution that can achieve and maintain a minimum temperature of **20°** in the **main living room**.

C. Heating provided must have a heating-source that complies with current legislation.

D. Whole-of-house heating should only be provided where:

   i. The returning customer has a condition such as asthma or rheumatic fever.

   ii. There is a 'Right at Home' referral.

   iii. Refer to the Heating Scoping Guide (M-245) for instructions on whole-of-house heating.

E. Existing heaters in bedrooms and bathrooms are to be left in place if it is in working order, securely attached, and safe to operate.

   i. if not in working order, securely attached, and safe to operate, remove the heater and associated electrical fittings, and make good to wall.

11.2 Heater and Air Conditioning Requirements

A. Ensure existing heat sources are in an acceptable condition and meet the below requirements.

B. Undertake the Kāinga Ora heating calculation method to ensure they meet the required heating capacity for the room.

C. Where either A. or B. are not met, allow for a suitably procured replacement heater that does comply, noting that:

   i. Electric resistance heaters must not have a heating capacity that exceeds 2.4kW.

   ii. Where higher heating capacity is required, a more efficient type of heater is required, (i.e., a heat-pump).

   iii. All heat pumps should each have a separate, dedicated circuit.

   iv. Provided there is available capacity, an electric resistance heater may be wired into existing circuits.

D. Gas heating is not permitted.

11.3 Solid Fuel Burners

11.3.1 Assessment

Assess the solid fuel burner (including flue), hearth and wall surround; retain, or replace depending on the following:

A. Remove solid fuel burners (including flue), hearth and wall surrounds, and replace with a heat-pump if the burner is:

   i. >10 years old.

   ii. <10 years old but does not achieve the required heating capacity for the room/s as calculated using the Kāinga Ora heating calculator.

   iii. <10 years old, but remaining life expectancy is low and/or repair and maintenance costs are substantial.

   iv. Customer expectations see 11.3.2.

B. **Retain** solid fuel burner (including flue), hearth and wall surrounds:

   i. Solid fuel burner <10 years old, and is in good condition, with a reasonable life expectancy.

C. Fix minor defects to hearth and wall surrounds and clean flue as required. Where more than minor defects are present to hearth and wall surrounds, refer to Maintenance delivery team.

11.3.2 Customer expectations

A. Where an existing tenancy is to be continued, it is important to manage expectations where a burner is no longer fit-for-purpose.

B. Before work proceeds Kāinga Ora will need to discuss the change with the customer.

   i. If the customer declines a heat-pump, due to electricity supply insecurity in the area, this will need to be considered.

C. Using the Kāinga Ora heating calculator, calculate the heating capacity required for the room and select an appropriately sized procured heat source.

   i. Only a single fixed heat source is required. If the solid fuel burner is retained a heat-pump is not required.

Note:

- See Section 3.2 Chimneys and open fires.
- Check with the local Building Consent Authority to determine any requirements.

Section 12: Communications and Television

12.1 Telecommunications

12.1.1 General

A. Ensure there is telecommunications supply from the street that is connected to an External Termination Point (ETP) on the exterior of the property.

B. From the telecommunications' ETP:

   i. **Copper networks** connect to a master jack point.

   ii. **Fibre-optic networks** connect to an ONT located in the living-area via fibre-optic cabling; a distributor; designated switched-socket; patch-panel; and cords.

   iii. Where damaged, reinstate copper or fibre-optic networks in wall-mounted outlets that conform to the requirements set out below.

   iv. There is no requirement to upgrade networks to fibre-optic.

12.1.2 Telecommunications outlets

A. Check any existing outlets, ensuring they are in an acceptable condition and that there is at least one telecommunications outlet in the combined KDL space.

B. If an outlet is not in an acceptable condition, is faulty, or is missing, install a new outlet. Where possible, locate new outlets:

   i. Horizontally mounted at 500mm above the FFL.

   ii. 250mm above benchtops.

   iii. At least 500mm away from internal corners.

Note:

- Where the dwelling has two or more storeys, locate an outlet in a bedroom on each level above the ground floor.
- Ensure the location of outlets is shown on electrical layouts.

12.2 Television

12.2.1 Aerials

A. Leave in place all TV aerials and Sky TV® satellite dishes where the roof is not being replaced (redundant or otherwise).

   i. Where there are no existing aerials, do not install new.

B. Where an aerial and/or satellite dish has been removed as part of roof and/or chimney replacement, reinstate (if still in good condition) or replace (aerial and/or Sky TV® satellite dish) in the same location, facing the same direction as it was originally, attaching it to the highest point of the most suitable wall.

C. Install new cabling when replacing aerials:

   i. Cabling is at least concealed dual-shielded coaxial; and

   ii. if underground, a 'Flooded' cable.

Note:

- It is not permitted to fix new aerials through the roofing.
- Sites with high interference should have channelized amplification.

12.2.1 Television Outlets and Aerial Ports

A. Check to ensure existing outlets/ports are fit-for-purpose, functional, and free-from damage and that there is at least:

   i. one outlet in the KDL space; and

B. Where required, replace and/or install a new item, ensuring all outlets are:

   i. Horizontally mounted at 500mm above the FFL (not applicable to replacement outlets)

   ii. F-type connections with a PAL adaptor installed.

   iii. At least 500mm away from internal corners.

C. Before property completion, ensure TV outlets are functioning correctly.

Section 13: Cold and hot water supply

13.1 Cold water supply

13.1.1 General

A. Ensure water-supply has a separate meter and 'Toby box'.

   i. Check to ensure the 'Toby box' is in an acceptable condition; undertake or arrange any repairs as required.

B. If present, remove any header tanks located in the ceiling space.

C. Check all existing fittings and fixtures; if they are faulty and/or no longer fit-for-purpose, replace as required, if there is considerable cost associated with replacement seek approval from Kāinga Ora first.

D. Ensure hot water supply is tempered to:

   i. 45^{o}C at the shower; and to

   ii. 45 – 50^{o}C at all other outlets.

13.1.2 Pipework

A. Check the condition and functioning of existing pipework and where required undertake/arrange repairs as necessary.

   i. Replace all galvanized pipework and all "Dux Quest" pipework with Kāinga Ora procured polybutylene pipe.

13.2 Hot water cylinders (HWC)

13.2.1 Replacement

A. Where HWC is in good condition, it does not need to be upgraded to meet the recommended capacity sizes in the table 6 below.

B. A replacement cylinder is only required when at least one of the following applies:

   i. Is no longer in good working order e.g., there are signs of leaks or noticeable issues.

C. Ensure new cylinders:

   i. Are procured.

   ii. The cylinder is sized in accordance with Table 6.

   iii. A safe tray is installed (with new cylinders).

      a. New Safe trays are not required unless the HWC is being replaced or removed and refitted, for building alteration purposes.

      b. Where the dwelling has a concrete slab, it may not be possible to connect the safe tray overflow to drain to the exterior, install the tray regardless.

D. In addition, ensure both new and existing cylinders:
   i. Are fitted with seismic straps as set out by Clause B1 of the New Zealand Building Code/manufacturers' installation instructions (whichever requirement is higher).
   ii. A temperature-reducing valve is installed if required.
   iii. The HWC temperature is set to 60°C at the cylinder.
   iv. The delivery temperature at the shower must be set a 45°C and all other outlet temperatures must be between 45-50°C.
   v. The thermostat cover is sealed.

E. Where the HWC floor space could be utilised to improve new KDL or bathroom plans, consider:
   i. 1-2-bedroom dwellings, consult with a structural engineer around installing the cylinder in the ceiling space, will need to ensure cylinder has sufficient insulation.
   ii. >3 bedrooms installing an external cylinder.

Table 6: Capacity requirements for hot water cylinders

	DWELLING SIZE (BY BEDROOM NUMBER)				
	1	**2**	**3-4**	**5**	**6**
Cylinder capacity (litres)	90L	135L	180L	300L	x 2 180L
Element size	2kW	2kW	2-3kW	3kW	2x 3kW

Note:

- Where the cupboard space prevents, a large cylinder from being installed refer to Kāinga Ora for guidance.
- Cylinders come in different dimensions which are captured in the Building Materials Procurement Schedule (M-217). External cylinders are also available; approval is required for external and ceiling installation.
- ~~o~~ Where a 300L cylinder is needed, there are two options – a 300L Optima Mains Pressure indoor/outdoor cylinder or a 250L and 90L can be installed where space does not allow a larger cylinder.

Section 14: Fire services

The content below sets out the requirements for the fire services in all homes. Refer to Table 7 below.

14.1 Interconnected fire warning systems

14.1.1 Fire protection upgrades

A. Ensure all standalone, duplexes, and terraced homes have interconnected fire warning systems provided as per Table 7.

B. Where required, upgrade system using NSA procured products.

Table 7: Interconnected Fire warning system requirements for stand-alone, duplex and terrace housing

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

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

Note:

- Mechanically operated fire protection systems are not permitted.

Section 15: Project teams and lifecycles

15.1 Project teams

As noted earlier, successful delivery of a project under the Retrofit Programme requires effective collaboration between Project Team members.

15.1.1 Table 8: Key Tasks of Retrofit Programme Core Project Team Members

Roles	Key Tasks
Kāinga Ora Programme Manager	Responsible for the overall delivery and scheduling of the programme.
Advisor: Customer Liaison	Responsible for consulting with and supporting the customer through the retrofit process. The ACL helps identify the address the customer will move to and arranges for the customer to move out of and, where applicable, back into the property.
Housing Support Manager	Responsible for the customer and the tenancy. The HSM helps assign the customer to temporary accommodation and continues to support them throughout the retrofit process.
Lead Designer/Architect	Responsible for investigating the building and then providing designed responses to address building defects and upgrades as per the Retrofit Standard and as agreed with Kāinga Ora. The design consultant will produce all design documentation (including structural design elements within scope of NZS3604:2011), obtain consents as required, provide contract observation services to ensure the works are constructed in accordance with the design and objectives and close out the project with records of the work done.
Quantity Surveyor	Tasked with undertaking financial analysis and providing advice to Kāinga Ora for all project costs as well as providing budgetary estimates of the design throughout the project lifecycle.
Structural Engineer	Should only be engaged and involved for specific structural issues identified in a property outside of NZS:3604 (i.e., standard retrofit scope work should not require an engineer). Responsible for the structural design elements out of scope of NZS3604:2011. Provides a PS1 and/or PS3 as required.

Project Manager	Responsible for managing, liaising with, and coordinating all consultants and contractors and their associated activities. This role is accountable for project delivery to Kāinga Ora within the set timeframes. The project manager will also coordinate the physical works contract, including completing contract administration activities, contract communications, project documentation etc.
Main Contractor	The contractor will be responsible for executing the physical works.

15.2 Project lifecycle

Typically, a project within the Retrofit Programme is comprised of several stages.

Briefing and scheduling: The project is briefed and the project is scheduled.

Investigation and concept design: This stage involves information-gathering, during which the scope of work is confirmed and validated, and any project risks are identified and, where possible, limited.

Drawings, Building Consent, and procurement: Subsequent to approval, this stage involves documenting all design work into a full set of working drawing and documents that can be used to secure Building Consent and Contractors' pricing.

Construction: Possession of the site is handed to the build partner who undertakes the physical work set out during previous stages. The Project Team undertakes construction monitoring activities to confirm construction work is completed in accordance with the approved design.

Post-contract: There is a 3-month defects liability period from the point of Practical Completion. Notable defects to the completed works only are remedied by the build partner. Following this period, only defects that affect plant (such as heat pumps) are remedied. All other works are referred to the maintenance system.

Supporting information

The list below identifies key reference documents that should be read alongside this standard.

Legislative resources

- Building Act (2004).
- Building Regulations (1992) [Schedule 1 – New Zealand Building Code].
- Health and Safety at Work (Asbestos) Regulations (2016).
- Residential Tenancies (Healthy Homes Standards) Regulations (2019).

Internal Kāinga Ora resources

- Accessibility Policy: 2019-2022 (2019).
- ACM-200: Amenity Condition Manual (2021).
- Asbestos Management and Control Policy (SS-POL-103) (2020).
- M-215: Maintenance and Programmed Work Specification (2021).
- M-215a: Standard Detail Drawings (2021).
- M-217: Building Materials Procurement Schedule (2023).
- Kāinga Ora Interior Colour Choices (M-250)
- Kāinga Ora Exterior Colour Choices (M-248)
- M-242 Insulation and energy scoping guide (2023)
- M-253: Roof Repair and Replacement Scoping Guide (2021).
- M-259: Gas Conversion Scoping Guide (2021).
- Mould Policy (POL-372).
- Nga Paerewa Hoahoa Whare Design Requirements (v2.0)
- The Management of Trees and Vegetation Policy (POL-367).
- Paint Containing Lead Management and Control (SS-POL-104)

Externally produced resources

A Guide to Driveway Safety for Property Owners (2013); Housing New Zealand, Safekids Aotearoa, New Zealand Transport Agency, New Zealand Police, and Roadsafe Nelson Bays.

Code of Practice: Management and Removal of Asbestos (2016); WorkSafe New Zealand. Good Practice Guideline: Conducting Asbestos Surveys (2016); WorkSafe New Zealand.

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