Auckland Design Manual

Auckland Council
Te Kaunihera o Tāmaki Makaurau

Standalone Housing Design Guidance

Tāmaki Makaurau Design Ope 19/06/2025 Version 1.0

1 Introduction

Standalone housing, also referred to as “detached housing”, refers to individual dwellings not connected to any neighbouring dwellings.

The provision of standalone housing creates a lower density than any other housing typology. Standalone housing may therefore be more suitable for rural areas or areas that are not likely to be well served by local facilities and/or public transport in the future.

Well-connected urban areas are likely to benefit from higher density, however standalone housing may be necessary where a single site is being developed in isolation and a greater density is not achievable, or where heritage or other overlays impact a site.

A larger parcel of land is generally required to enable standalone housing, which can have implications for project costs and land use considerations.

There are numerous varieties of standalone housing:

Zero lot houses have a wall built along one or more boundaries, usually a side boundary, which allows narrow lots to be used more efficiently. Fire-rating is required for any wall along a boundary, so this approach requires consideration of how sufficient daylight and ventilation will be provided, as well as easements to enable exterior maintenance.

Courtyard houses are built around an enclosed private courtyard. This can provide valuable privacy and shelter to an outdoor living space, however build costs can be higher and there may be less space to plant trees within a central courtyard.

Accessory dwellings (granny flats) are small houses that share a site with a main dwelling. They are best suited to larger sites to ensure that adequate private space is provided and that the front door is visible or directly accessible from the street.

Extended family housing provides for multiple and extended family groups and flexible living or ownership arrangements. The design requires more complex access and internal arrangements. To avoid limiting the potential resale of the house and other life changes, designs should allow for future flexibility.

Semi-detached (duplex) houses share a party wall (intertenancy wall) with one other dwelling. Duplexes can be an efficient use of a site and provide a quality separation between two dwellings. Each dwelling should be designed to best address the orientation and topography of the site - simply mirroring the floorplan along the party wall may not provide the best outcome.

Many combinations of type and configuration are possible, and any detached house might include several of these features. This document provides guidance on how to design standalone housing well.

For guidance for developing housing at scale, see Neighbourhood and Subdivision Design Guidance in the ADM (LINK)

Design statements are a helpful tool to assist with designing standalone housing, and how to communicate the rationale behind the design. Refer to guidance on Design statements in the ADM (LINK).

2 Site Design

The first step in developing a house is site design. Existing site conditions such as ecology and topography can significantly impact on how the site is developed. It is important that the layout of the elements that comprise the development are considered at the same time as the elements themselves.

2.1 Site ecology and habitats

Design outcome: The design maintains and enhances the important natural features of the site and surroundings.

Part of the unique appeal of urban Auckland are the highly valued views of the natural environment, and the wide variety of native and exotic species. Urban development will bring change, but this change should not lead to a permanent loss of ecosystem or habitat.

1. Prepare a thorough analysis of the natural environment before any design work is undertaken. This will identify key aspects of the natural environment that should be protected and enhanced. Avoid building on or close to important habitat areas.

2. Protect mature trees or other vegetation, particularly natives, and use them as features of the development. This is an effective way of integrating a new development into an existing environment and providing amenity to local residents.

3. Improve the ecology and habitat of the site as an integrated part of the development by:

    a) Riparian and other planting, including street trees.

    b) Treating land that has been contaminated.

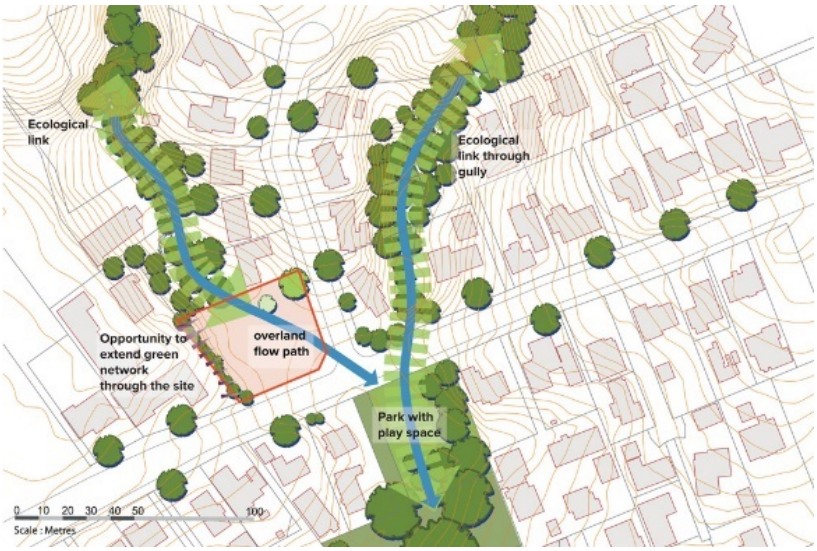
    c) Reducing stormwater quantity and improving stormwater quality through wetlands and natural ponds.

    d) Changing exotic plant cover to native plant cover (preferably eco- sourced).

    e) Pest and weed management.

    f) Retaining and enhancing existing gullies and riparian corridors.

4. Designing housing to front and overlook non-sensitive natural environments including parks, vegetated areas, ponds and wetlands can increase amenity for residents and ensure the spaces are safe and well looked after.



Develop a sound understanding of the natural features and ecological systems.

Wetland networks that detain and treat stormwater are valuable ecological assets. Setback distances from riparian edges protect biodiversity corridors, protect houses from possible flooding and establish a recreational green connection.

2.2 Design for topography

Design outcome: The site design responds to and works with the existing topography to minimise earthworks and ensure retaining elements are carefully integrated.

It is important that any housing development responds to the existing topography and maximises views, solar access and shelter from the wind. It is important to decide how the form aligns with the slope (i.e. along contours or across them), as this can determine the visual impact of the scheme.

1. Any changes to sloping land should appear as natural as possible. This could include:

a) Using stepped and angled retaining wherever possible to reduce the visual impact and create areas for landscaping.

b) Including space for planting and vegetation to soften the view of large-scale engineering structures.

c) Designing stormwater ponds like natural bodies of water, not artificial 'boxes' with straight sides.

2. Balance cuts into the land with fill, instead of only using cuts or fill alone. Use parts of the slope for the open spaces associated with the development, incorporating it as terracing, and create flat outdoor spaces around the buildings. Battering (creating a consistent slope) across the whole site generally creates unusable spaces. Utilise the slope for undercroft (undercut) or basement car parking wherever possible.

3. Incorporate retaining as part of the overall building or as part of the landscape proposal. This can enhance the value of the project. Design the building for 'up-slope' and 'down-slope' conditions relative to the street by:

a) Balancing car parking and access with the provision of a quality streetscape.

b) Minimising the setback for up-slope conditions to achieve a close relationship between the building and street edge. The setback of the building from the back edge of the footpath determines the extent of earthworks, the position of entry level building platform and the length or cut of any vehicular drive.

c) Aiming for level access to the front door wherever possible. However, where houses are close to the road, setting housing slightly higher can assist with privacy.

d) Minimise the use of highly visible large retaining walls. If they are over a metre, they should be stepped and landscaped.

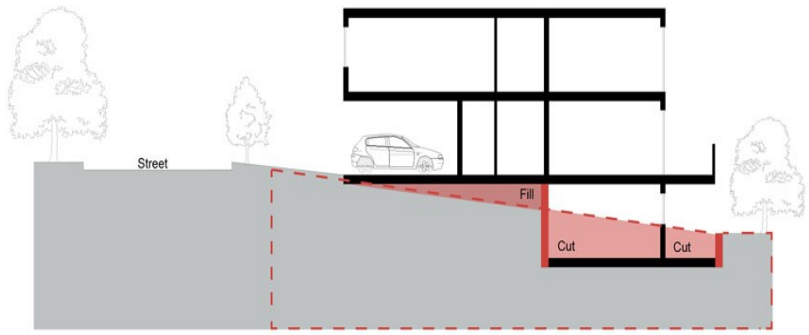
Stepped retaining in the front yard is almost hidden from view by mature planting, making it seem part of the natural landscape.

This house has open space to the side, taking advantage of the sun and slope.

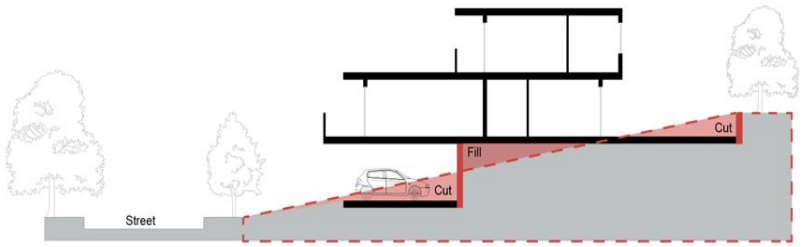
The building utilises the change in site level effectively. The house is above the street and the car is parked under the building.

The retaining is integrated into the wider landscape, making it a positive, valued feature.

The front retaining is stepped and incorporates planting and screening, forming a pleasant edge to the street.



A cross section showing a slope falling away from the street



A cross section showing a slope rising up from the street.

2.3 Integrating site and building

Design outcome: The building and layout of the development responds to the context of the street and wider neighborhood now and in the future.

It is important to understand the context of a site and the surroundings including the streetscape, form and appearance of buildings, movement and open space networks, and location of facilities.

1. The layout and location of buildings on the site should maximise solar aspect, views, access to and overlooking of trees and the natural environment, and protection from the wind.

2. The building and layout of the development should show an understanding of the street context including the scale and appearance of buildings, and existing building lines. To enhance the amenity of the street the development should have a distinctive form that addresses the street with good levels of passive surveillance. It should avoid blank facades and long monotonous street frontages.

3. The amenity of existing adjoining developments should be maintained. In some instances, this can be achieved by using buffers such as vegetation or fencing between different sites.

4. An analysis of the wider neighbourhood within a 5–10-minute walk can show local facilities, movement and open space networks and how the development can support these. It can inform the best location for new access points and road crossings, making the site and neighbourhood easier to move around.

5. Laneways created as part of development needs to have clear visibility from the main street, and separated vehicle and pedestrian spaces. These should connect safely to existing paths and movement networks.

6. The design should explore opportunities to incorporate Māori cultural values into the function and design of the building and landscaping. Engage mana whenua at the beginning of the project for guidance on how to appropriately respond to Whakapapa (ancestral lineage) and Taiao (natural world).

7. In larger developments the types of open space that will benefit residents the most, such as children's play facilities and communal open spaces, should be provided for.

8. A mix of tenures and housing types, including one and two bedrooms as well as larger family housing should be provided within the development to meet the housing needs of the community now and in the future.

9. Design the development to capitalise on important views from the site, and also views or connections from the wider neighbourhood onto the site.

An analysis of the streetscape can help to understand existing form, appearance and character and how the development could respond.

A site analysis can help to understand the solar aspect, prevailing winds, views to open spaces and ecological linkages. This can inform how and where to locate buildings on the site to maximise amenity for residents.

An analysis of the surrounding neighbourhood within a 5-10minute walk can help to identify activities, movement and open networks that the development can respond to and support.

The landscape of the houses, park and street have been considered together to reinforce a sense of place.

The development supports and enhances existing routes, streets and open space connections.

The houses are set back from the street to avoid existing trees, and the building platform is raised to accommodate an overland flowpath.

The existing tree has been retained, adding value to the house and street.

The house is designed around the existing trees, keeping something that is valued by the wider neighbourhood.

3 Placing the building

Placement of the building(s) should be considered early in the design process to ensure fronts and backs, building separation and outlook, respecting the neighbors, and designing for privacy and passive surveillance are worked through carefully.

3.1 Fronts and backs

Design outcome: Houses present a clearly defined 'front' to the public street to provide passive surveillance, and contain a private 'back' to the rear to provide private areas for residents.

1. Houses should have a clear public entrance, including a welcoming pathway to the front door, and a clear private back in the form of a garden, courtyard balcony or roof terrace.

2. Public fronts should face and addressing public fronts, and private backs should face and address private backs wherever possible.

3. Fronts of houses should provide amenity and passive surveillance to the street, access lanes and driveways, or parking courts. Key qualities of 'fronts' should include:

    a) A clearly accessible and visible front door.
    b) Garage doors should be recessed from front doors and the main building line.
    c) A sheltered porch or threshold.
    d) Functional and attractive planting.
    e) A kitchen or other well-used habitable room windows adjacent to the front entrance.
    f) Windows should be waist height so that residents can look out onto the street, whilst maintaining privacy.

4. Houses on street or access lane corners, should address both the primary and secondary streets.

5. Housing accessed via parking courts or access lanes/driveways should exhibit the same front and back arrangements as houses that front on to streets, with the front and entrance opening directly onto the laneway.

6. Provide larger windows and balconies at the first floor level to address the street and provide additional passive surveillance, particularly where there is less ground floor activation and passive surveillance.

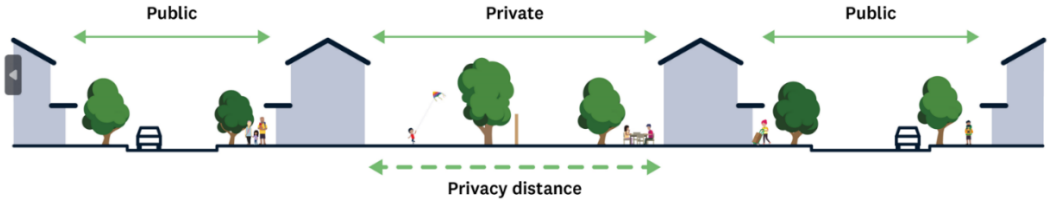
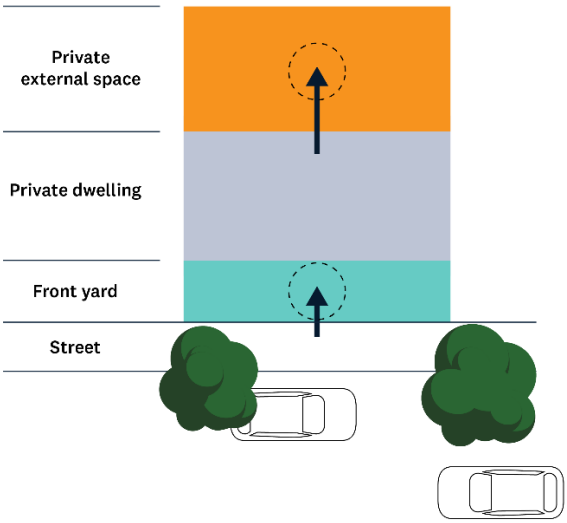


Diagram illustrating a good interface pattern where fronts face fronts in the public realm, and backs face backs in the private realm.



All houses should have a public front, a transitional space which can be the front yard, the private space inside the house, and a private yard.

Houses positively address the street and allow for private space in rear yards.

3.2 Building separation and outlook

Design outcome: Dwellings have adequate separation distances between them that provide for a sense of space and openness, and ensure privacy.

The home is a private setting and should be a place of retreat while also providing the opportunity to look out onto surrounding open space. The immediate proximity of individual houses within a housing development requires greater focus on achieving visual and acoustic privacy, and access to light and outlook in the design.

1. Ensure that back-to-back distances between houses, measured from the edges of facades or balconies (whichever is greater), are greater than 12-metres to ensure privacy between habitable windows and balconies.

2. Ensure the building separation allows for the admittance of sunlight and daylight as well as providing a good standard of outlook and privacy. A wider separation distance is always better than a smaller one and designs should allow for sunlight access into the outdoor spaces of all houses during the winter solstice. Where the separation distance is less than 15m, additional design measures should be used to ensure sunlight access.

3. Design housing to anticipate where neighbouring sites are likely to redevelop or where areas are changing. The correct response will depend on the site, but building along any street edge and maximising the separation distance to adjoining sites is always a good outcome.

Buildings should be at least 15m apart. Where building are less than 15m apart, additional measures should be provided to ensure privacy, outlook, and sunlight access.

3.3 Designing for privacy

Design outcome: The building design and arrangement provides a good level of privacy for residents and neighbours.

The occupants of any developments on neighbouring sites or adjacent houses should be considered. It is important that individual desires for privacy are balanced with potentially conflicting communal desires for safety and security through natural surveillance.

1. Design building layouts to minimise direct overlooking of neighbouring development, on the same or adjacent sites, and their private or communal open spaces. This can be achieved by staggering buildings and increasing separation distances.

2. Orientate proposed windows, balconies and outdoor spaces towards the street or to the back yard. Avoid orientating them directly over the side or rear boundaries wherever possible and offset windows to reduce privacy impacts.

3. Where housing is provided on smaller lots, balconies should be integrated within the building form to ensure privacy from neighbours, while extending outdoor living spaces. Wing walls on balconies can provide privacy for and from adjoining dwellings. Screens, fins, louvres on balustrades as well as pergolas and planter boxes can be used to improve the privacy of balconies.

4. Ground level private open spaces should be screened with fences and planting to ensure the privacy of residents and neighbours. Tall planting can be used to assist with creating privacy screens.

5. Consider potential future development on adjacent sites and ensure that the proposed development guards against any impacts on privacy. By checking the development rights and potential building envelopes of adjacent sites, principal living spaces and primary views can be located where they will not be blocked or built out.

Careful planting along the rear boundary is an excellent way of achieving privacy. It is important to have a big enough distance between houses to plant trees.

A good separation distance is the most effective way to maintain privacy and sunlight access between houses. These houses have smaller windows on the upper floors to minimise overlooking.

Screening devices on windows can help to increase privacy while allowing for a degree of activation and passive surveillance.

3.4 Designing for light and sun

Design outcome: Houses are orientated to make the best use of sunlight to principal living areas and open spaces, and to provide for shading from summer sun.

Standalone housing provides the opportunity to be comfortably heated and cooled by natural means, including opportunities for passive solar gain, cross ventilation and shading.

With a careful approach a passive solar design can be achieved while dealing with other design issues such as addressing the street.

1. Sunlight should be prioritised to the principal living area and the accessible outdoor garden or balcony, so that everybody in the house can maximise the enjoyment of this space.

2. All private open spaces should receive at least five hours of sunlight across at least half of the garden, courtyard, balcony or roof terrace, as measured on the equinox (22 March / September).

3. Design and orientate all principal living spaces to be directly accessible from private open spaces, and to receive maximum sunlight admission as measured at the equinox on 22 March / September.

4. Provide for shading through the summer months through the use of eaves, awnings, louvres, pergolas and tree planting. With the help of sun studies, these strategies can provide shade in summer but allow the sun's warmth in winter.

Daylight should be provided into all habitable rooms through windows, skylights and clerestory windows, as well as mezzanine arrangements to bring in extra light.

Horizontal slats are used to provide shading in the summer.

Increase daylight access through full height and clerestory windows.

4 Street to front door

The quality of a housing development is strongly influenced by the design of the frontage and front yard between the public street and private building. A well-designed frontage can enhance the safety of the street and the look and feel of the area. This section provides guidance on the elements of housing that contribute to creating a successful frontage, including:

- The interface to the street.
- Boundary treatments.
- Safety, activity and overlooking.
- Shared driveways and accessways.

4.1 Interface with the street

Design outcome: Housing is located to face and engage with the street, increase street activation, and to add value to the neighbourhood.

The quality of housing development is strongly influenced by the design of building frontages, and the front yard between the public street and private building.

1. Undertake an analysis of the streetscape to understand the characteristics of the street, the built environment and building lines, the landscaping and boundary treatments.

2. Use locally-appropriate landscaping and fencing to help a new development fit into the existing area, and reinforce the sense of place.

3. Low fencing and landscaping between the street and front door and windows allow visual interaction between the dwelling and the street.

4. A front yard and berm provide a sense of privacy and separation from the street and allow 'greening' of the street environment.

5. Level changes offer privacy to the internal rooms on the ground floor from the street.

6. Terraced and planted retaining walls provide amenity to the street and allow space for personalization, whilst providing a degree of separation and privacy.

7. Maintain good visual contact and passive surveillance between the house and the street, pedestrian accessway and parking areas to help create a safe and friendly neighbourhood.

8. Design and locate the massing of the building to reinforce the street edge. The building frontage facing the street should be well composed with careful attention to the arrangement of components such as entrances, windows and canopies, to support an attractive pedestrian experience.

9. All access points to the site should be located and designed to integrate with the street. Rear sites should be combined with front sites to integrate long driveways into a comprehensive redevelopment.

10. When designing the street to the front door, make sure:

    a) Front doors are sheltered from the wind and rain, and are clearly visible from the street, shared driveway or laneway.

    b) An accessible path from the street is provided.

    c) Avoid the dominance of garages along the street frontage.

    d) Locate frequently used rooms such as kitchens and dining rooms on the street side.

    e) The entrance to the dwelling is physically separated from the vehicle access improving child safety and legibility of the front door.

Windows overlook the street and a clear pathway to the front door is provided. Planting provides a soft buffer for privacy and greening of the street.

The design of these houses, their front fencing and landscaping all contribute to the success of the street.

Continuing the setbacks, massing and fencing style of the street allows a contemporary response within a historic area.

The retaining has been stepped and is a mix of pool fencing and planting, which forms an attractive edge to the street.

The new houses match the setbacks of the existing buildings, and the frontage continues an existing stone wall.

The street frontage provides clear, level, and well-lit access to the front door.

Facades to the communal accessway are well articulated and with quality soft and hard landscaping.

4.2 Boundary treatment

Design outcome: Boundary treatments balance views and passive surveillance of the street with creating separation and a degree of privacy.

Boundary treatments are those elements that define the site and differentiate between public, communal and private spaces. Front boundary elements generally separate privately owned land from the public realm. The design of front boundary treatments need to provide a balance of passive surveillance and privacy. Carefully design fences or walls to provide privacy and security while maintaining views and light.

1. Consider the choice of material including the ratio of solid to transparent materials and design. Visually permeable soft landscaping or planted elements soften the street edge whilst providing privacy, dappled light and intermittent views of the street. Avoid continuous and monotonous lengths of blank walls at street level.

2. Low front fences allow a positive interface with the street. Front fences should be up to 1.2m in height to allow natural surveillance of the street. Limiting the height of front and side fences to 1.2m within the first 5m of the street allows drivers to see pedestrians on the footpath.

3. Where private open space is located in front of the dwelling next to the street, privacy and street surveillance can be balanced by:

    a) Using a fence, wall, hedge or planting that is sufficiently visually permeable to give passing pedestrians a sense of the private garden without a clear view in.

    b) Minimising direct sightlines by using a change in level from the street to the private garden, or to the ground floor when the frontage is to the street edge.

    c) Carefully designing the height of boundary and retaining walls to control views into a property while allowing views out.

    d) Providing a screening device (which may be adjustable) around an outdoor area rather than at the boundary.

    e) Design fences and walls to add value to the amenity of private or communal open spaces e.g. by incorporating seats into their edge.

Planting is used behind the open fence to provide privacy.

Planting provides privacy for residents while maintaining a degree of passive surveillance. This planted boundary treatment provides green amenity for the street.

A combination of fencing, planting and screening provides privacy to the back yard while providing outlook and avoiding the construction of solid fencing on the boundary.

Continuing the historic stone wall helps this modern house blend in with its surroundings.

A clever use of screening which is opaque when viewed from an angle and mostly transparent when viewed 'straight-on', which allows views out to the park.

A slatted fence with planting behind it provides privacy for a north facing outdoor space adjacent to a busy road.

4.3 Safety, activity and overlooking

Design outcome: Safe and secure public and communal environments with natural surveillance of the street, parking, pedestrian areas, communal spaces and public open spaces.

1. Design the building to maximise natural surveillance of public and communal areas by orientating buildings to address these spaces and locating windows and balconies to provide views over them. The more windows overlooking public and communal spaces the better. Place the main entrances on the public street front, not the rear.

2. Place active areas within the dwelling including kitchens and dining rooms facing public or communal areas to provide regular passive surveillance and overlooking of these spaces.

3. Avoid placing full-height windows on the ground floor facing public and communal areas as this will create a conflict with privacy and lead to closed curtains. Waist and shoulder height windows with blinds provide a balanced solution to passive surveillance and privacy.

4. Avoid blind or dark alcoves near entrances, lifts and stairwells, and within car parks, corridors and walkways. Create clear sightlines into the development and provide well-lit routes throughout the development and communal areas.

5. On corner sites, provide windows, balconies and front doors on both facades to ensure

passive surveillance to both streets or public/communal environments.

Providing screening at the edge of the patio provides privacy to the private yard without having high fencing on the street edge.

A good example of an upper floor deck overlooking the street.

For safety, open space should be overlooked in the same way as a street. This park has open fencing along its edge, and is overlooked by the houses behind it.

Kitchen and dining room windows provide passive surveillance over accessways and parking areas.

Facades to the communal accessway are well articulated and with quality soft and hard landscaping.

5 Outdoor space

For residential dwellings the design of outdoor spaces, both private and communal, is as important as the design of the building. Outdoor areas help to meet people's fundamental expectations to be able to enjoy the outside environment, and the arrangement and quality of the spaces will have a significant impact on residents and neighbours.

Well designed outdoor spaces are highly valued by residents and should be provided for all dwellings. Outdoor space mitigates the effects of living in smaller dwellings and improves the overall livability of a development. Outdoor spaces provide areas for children and young people to play, and help to foster a sense of identity amongst residents.

5.1 Private outdoor space

Design outcome: Private outdoor spaces are spacious, functional, and well designed for sun, shade and shelter.

Standalone housing is best suited to larger sites where there is the opportunity to provide a range of usable private outdoor living areas and outdoor spaces at ground.

1. The location and design of the primary outdoor space should take advantage of the sun and be protected from the prevailing wind. All private open spaces should receive at least five hours of sunlight on the equinox (22 March or 22 September) on at least half of the garden, courtyard or balcony. If primary open spaces are to the south, a secondary

open space facing as close to north as possible should be provided.

2. Open spaces should be designed to optimise the topography creating terraced spaces where possible.

3. Ground level outdoor spaces are preferred for standalone housing as they typically offer greater spaciousness and privacy than upper level balconies. They can also offer more landscape garden qualities for mature tree planting, food production and outdoor dining.

4. Above ground balconies should be orientated to maximise views over public and communal spaces and away from neighbouring windows and private outdoor spaces.

5. The connection between the principal living area and the private garden or courtyard should be directly accessible, with a level threshold.

6. Private outdoor spaces should allow for a range of different uses including outdoor dining in reasonable privacy, as well as separate screened areas to allow for clothes drying and other functions such as bin storage.

The form of the house provides privacy to the outdoor spaces and provides access to, and shelter from, northern sun.

Planting is an excellent way to maintain privacy between houses, particularly in dense urban environments.

As these trees along the property boundary grow, they will block the view from the upper floor windows. Consider the speed of growth, final height and potential shading when selecting plants.

Outdoor space is located on the sunny side of the house, connects directly into the living area, and is large enough to accommodate residents and guests.

Directly accessible connection between the principal living area and the outdoor space

5.2 Communal outdoor space

Design outcome: Communal outdoor space is provided for additional places for residents to meet, play, and relax, and to create community cohesion.

Communal outdoor space refers to the spaces that can be shared by more than one house within the development. It can be shared by specific clusters of houses, or by residents in the whole development. When private outdoor spaces are small, additional communal spaces should be provided for residents to cater for their outdoor and recreational needs.

1. The size, design and facilities provided within the communal space should reflect the number and ages of the residents who will live there. More than one communal space can be provided offering different activities, both passive and active.

2. Design the communal open space to maximise sunlight at the Spring and Autumn Equinox of (22 March and 22 September), and to be sheltered from the prevailing wind.

3. The design of the edge interfaces to communal outdoor spaces, including fences, should provide a good balance of natural surveillance over the space, and privacy for residents within their dwelling. Houses should front and overlook communal spaces wherever possible.

4. The space should provide for day and night-time uses. Good lighting should be provided to help ensure that the space is attractive, safe and aid surveillance after sundown.

5. Communal space should be easily accessible to residents and visitors of all ages and mobility levels. Communal space should be located on relatively flat gradients or usable terraces. Design pathways to be continuous and at least 1500mm wide, use very shallow-pitched ramps if these are required, and minimise steps.

6. Use both soft landscaping (trees, shrubs, grass, planted beds, vege gardens etc.) and hard landscaping (paving, furniture, fixtures etc.) to provide amenity and define areas. Locate around existing mature trees to provide visual amenity and shade.

7. Ensure a clear distinction between any areas designated for servicing (rubbish collection, outdoor washing-drying spaces) and communal amenity spaces.

8. A maintenance plan should be provided to ensure communal outdoor spaces become a long term asset to the development.

9. Areas of existing trees, overland flow paths and areas of steep gradient should be integrated into the design of communal open space as a positive feature

Dwellings front and address the communal space.

The landscape of the houses, park and street have been considered together to reinforce a sense of place.

5.3 Service areas

Design outcome: Service areas are integrated into the design of the development, are located for ease of use, and are not visible from the street, communal areas or building entrances.

Service areas are external to the building and used for the storage of waste, garden sheds and clothes lines.

1. Auckland Council's Solid Waste Calculator can be used to determine space requirements for storing waste.

2. Where waste bins are visible from the street, communal areas or building entrances, they should be screened in an integrated way with the boundary treatment and/or house design.

3. Consider integrating rubbish areas into a communal refuse area for efficient collection and to reduce clutter across the development.

4. Rubbish collection is an important part of how to design for rubbish bins. Having rubbish collection that is twice as frequent will require half as much storage for bins.

5. Provide a dedicated service area for outdoor clothes drying, and storage of gardening equipment.

Bin stores, utility boxes, and weather protection at the entrance are integrated into the overall design.

5.4 Landscaped areas

Design outcome: The landscape design adds greening, biodiversity and amenity, works with the topography and reinforces the local distinctiveness of the area.

Standalone housing is best suited to larger sites, enabling quality planting and landscaping to

occur.

The landscaped areas can improve the appearance and livability of the house, provide shade and reduce temperatures in summer, bring biodiversity to the area, and help to manage stormwater.

New landscape should include trees, shrubs and ground covers, ideally native, that are common to the area to reinforce or enhance the local character. Hard landscape elements that are characteristic of the area should be used in the landscape concept.

Retain existing mature trees and incorporate them into the overall development. Locate private and communal spaces and entranceways to take advantage of existing trees. Trees reduce sun and heat in summer, provide an essential rainwater soakage function, and contribute to landscape amenity both onsite and for the wider neighbourhood.

1. Identify ecological areas, streams and planted areas in the adjoining and surrounding areas that the development can connect to and enhance through the landscape design.

2. Use specialist landscape inputs to design the landscaped areas. This will ensure that it is given the same attention to detail as the buildings.

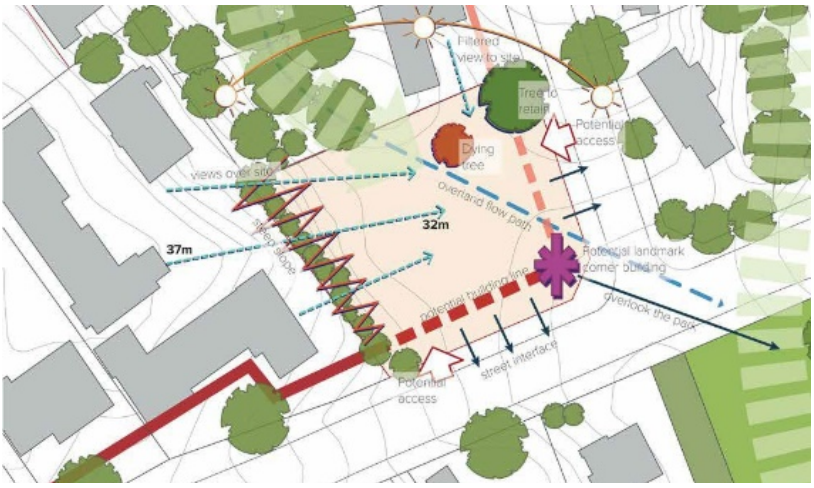
3. Prepare and implement a landscape maintenance plan to ensure landscaped areas remain attractive and contribute to biodiversity and stormwater management over time.

4. Where new developments involve removing existing planting, replacement landscaping should be of an equal or higher standard to ensure the amenity of the character and amenity of a neighbourhood is maintained or enhanced.

5. Ensure that landscape design addresses all spaces around housing, including hard surfaces such as paths and driveway.

6. Select and locate trees carefully, considering summer shade and winter sun, as well as the shadow they will cast when fully grown. Consider using evergreens in open spaces to the southwest to avoid shading while offering protection from the prevailing wind.

7. When choosing trees and other planting, consider how high they will be at maturity and the impact of this on neighbours, particularly their open space.



Site analysis plan identifies trees for retention and possible future ecological linkages.

The landscape of the houses, park and street have been considered together to reinforce a sense of place.

The landscape design of this house includes mature trees as well as new native planting, including at the street boundary.

6 Designing the building

This section covers the scale, massing, design and appearance of the building.

6.1 Scale and massing

Design outcome: The scale and massing of the development responds well to its context and reduces the impacts on privacy and shading.

The scale and massing of a development will have an impact on how it is perceived from adjoining neighbours, the street and the surrounding environment.

1. Building massing refers to the overall form and composition of the building. The way a building is arranged on its site is particularly important for larger buildings. The following should be considered in relation to building massing:

    a) Permitted maximum height.

    b) Street character and position within the town/city context – is the location part of an established neighbourhood and does there need to be a consistent height.

    c) Height punctuation and accent at corners, junctions, or to terminate views.

    d) How to support local street views and strategic views.

    e) Avoiding overshadowing and optimising sunlight access into adjacent public space and neighbouring properties.

    f) Local micro-climatic factors, particularly wind.

2. Provide the greatest internal floor-to-ceiling height at the ground level and offer an appearance of greater solidarity and connection to the ground.

The contemporary house relates to the historic context of the neighbourhood, and references the positive form, proportions, detailing and street presence of its neighbour.

6.2 Design and appearance

Design outcome: The design and appearance of walls, roofs, windows and doors are considered together to create a high quality building that relates well to its context.

The building will usually comprise of a principal façade that addresses the adjacent street or communal accessway. That façade should be visible and attractive and should enhance the existing character of the local area or street context. When a building is exposed to public view on all sides all visible parts of its façades should be carefully designed.

1. Ensure the façade displays an appropriate scale, rhythm and proportion through a hierarchical arrangement of elements. The façade should achieve this by:

    a) Avoiding monotonous repetition of the same unit.

    b) Having dimensions appropriate to the scale of the building and adjoining development.

    c) Clearly defining building entries.Integrate façade depth and shadow casting detail, including projecting elements, setbacks and expression of window reveals, to give visual richness and interest.

2. Respond to any locally relevant or important character. The design should either directly reference or contrast with this, while avoiding mimicry or pastiche.

3. Coordinate details and integrate building service elements such as down pipes, grilles, screens, ventilation louvres and garage doors into the overall façade. Consider the position and attachment details of fixtures such as TV aerials and sky dishes in the early design stages.

4. Incorporate elements such as sun shades, screens, fins and blades to control the

admittance of sunlight where required. Consider façade arrangements that use a hierarchy, or layers, of elements. Display a simple rhythm and coherent logic in the design and materials of all façades.

5. Ensure the different elevations or façades respond to their particular orientation for optimal access to sunlight. Integrate any required signage into the façade design.

6. Balconies have the potential to enhance the design of a building. They should be designed to ensure the user will have a good level of privacy and to provide functional space. Cheap balustrade treatments should be avoided.

7. The roof should be integrated into the overall design of the house to create an attractive rhythm or form at the skyline.

A very modern house using a traditional overall form, scale, roofline, street relationship, and material palette to relate to the context. It is designed as a 'pair' with its neighbour.

6.3 Detailed building elements

Design outcome: The detailed parts of the house contribute positively to the overall design.

It is important to design the building and all façades as a whole, not forgetting about the details.

6.3.1 Porches and entries

1. Design porches and entries as an integral part of each house and ensure the entry is clearly visible, addresses the street or driveway/accessway and provides shelter for people entering the house.

2. Make front porches deep enough to be functional, allowing them to accommodate a person with shopping and/or a pram, as well as providing a suitably generous space for

meeting and greeting.

6.3.2 Doors and windows

1. Align doors and windows on the façades to develop a coherent pattern and rhythm. For coherence, these should be considered as a 'suite' of related shapes and sizes that are used throughout the development.

2. Relate the size, location and number of windows to the overall scale and proportions of the house, as well as providing daylight and controlling solar access to internal rooms.

6.3.3 Materials and colours

1. Integrate material selection with the overall façade design. Materials are an important element to consider in responding to character and reinforcing or establishing sense of place.

2. Use a materials board, including colours, to illustrate materials, choice, and how they work together.

3. Consider how materials selection and use of colour can reinforce and tie together the primary building elements of the house.

4. Provide a varied but co-ordinated palette of materials where appropriate.

5. Aim for low maintenance, robust materials that will weather well.

6.3.1 Roofs and eaves

Auckland is a hilly city and roofs are often highly visible. The roof design is a critical component of a house and can change its overall appearance and the appearance of a development at scale.

1. The roof should be integrated into the overall design of the house. Use the roof form to reduce any visually dominant massing.

2. Use eaves to provide weather protection, shade, and provide a clearly defined edge to the roof.

Auckland is a city of hills. The roofscape forms an important part of the image of the city.

Wide eaves provide a simple way to protect the house from the weather.

Even a simple building can look elegant when the details are well designed. This house has a 'family' of doors and windows that follow consistent rhythm and proportion.

The traditional roof pitch of villas is a very strong design element which has been incorporated into the design of these new houses.

Deep eaves can be a simple but effective design element. The eave line will form the skyline when viewing the building from the street.

This contemporary house directly responds to the historic setting with a modern interpretation of the historic materials, roof form, balconies and windows.

This house uses a range of materials and finishes to express the different forms of the building.

Many parts of Auckland have a wide variety of house types and deciding on the right approach requires a good understanding of the context. Here, the traditional pattern is a fine grain of houses on narrow lots.

The overall scale and form of the building has been further defined as a series of smaller forms that step down towards the neighbour. Overall, there is a consistent series of proportions, shapes, and materials that tie the design together.

7 Internal spaces

This section provides guidance on internal space requirements, including for kitchen/living/dining spaces, habitable rooms and storage, so that they meet the needs of occupants.

Best practice design should provide for homes which are flexible and adaptable over time. Therefore, where relevant, this section also incorporates Universal Design principles. Universal Design refers to designs and spaces which are accessible to all.

In particular this guidance references the New Zealand Lifemark Standards which have been created to achieve adaptable, accessible design solutions.

For further detailed information refer to the Lifemark website www.lifemark.co.nz

7.1 Living and dining spaces

Design outcome: That the fittings and furniture for the target occupancy level (two people per bedroom) can be accommodated to enable occupants to comfortably carry out normal daily activities.

Contemporary houses tend to combine dining, kitchen and living areas into open plan layouts and this is often considered desirable by occupants. However, where houses are being designed for specific cultural needs it may be preferable to separate the kitchen from living and dining or other combinations.

1. Living and dining rooms should have a minimum width of 3.8m. This helps to create functional spaces that can comfortably accommodate furniture and allow for easy movement through rooms.

2. When designing living and designing rooms consider how the space will function. Floor plans should show a proposed furniture layout. The arrangement of furniture should create spaces that are practical and pleasant to use. This includes:

    a) A circulation space of at least 800mm around furniture and fittings.

    b) Dedicated access and seating space of at least 1000mm between a dining table and a wall or fixtures.

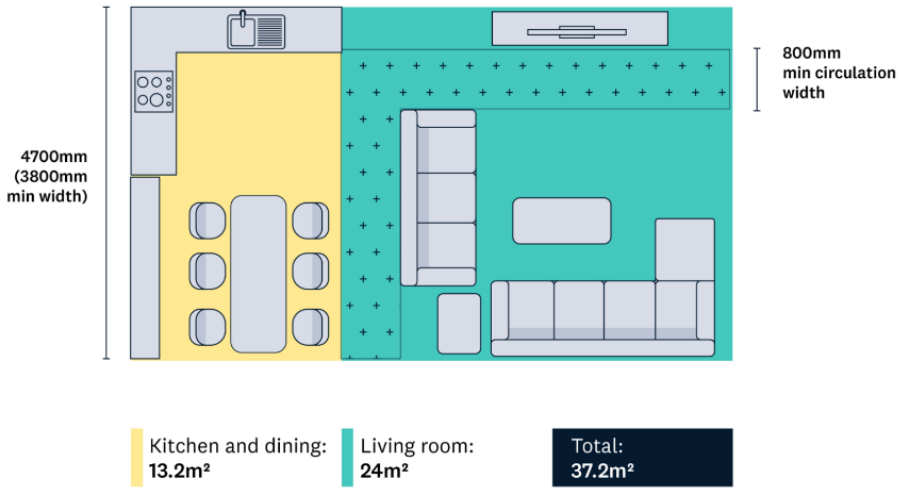
    c) Dedicated seating space of at least 600mm if a dining table is alongside circulation space.

    d) Access to bedrooms and bathrooms that avoids crossing through the middle of living spaces. Movement should be directed around the edges of these rooms.

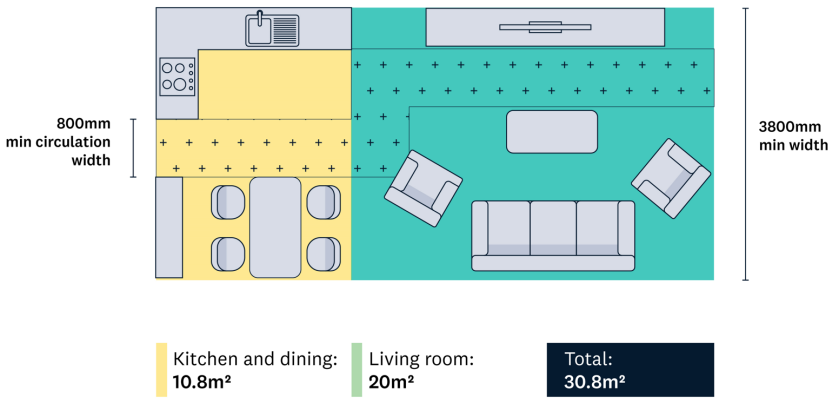
3. The size of furniture should also be considered when designing living spaces as this has an impact on the size of the spaces and circulation areas required. The type and size of furniture also affects the sense of spaciousness within the home.

4. All living spaces should have external windows. To maintain views to the outside while seated, living areas should have a maximum window sill height of 800mm above the finished floor level.

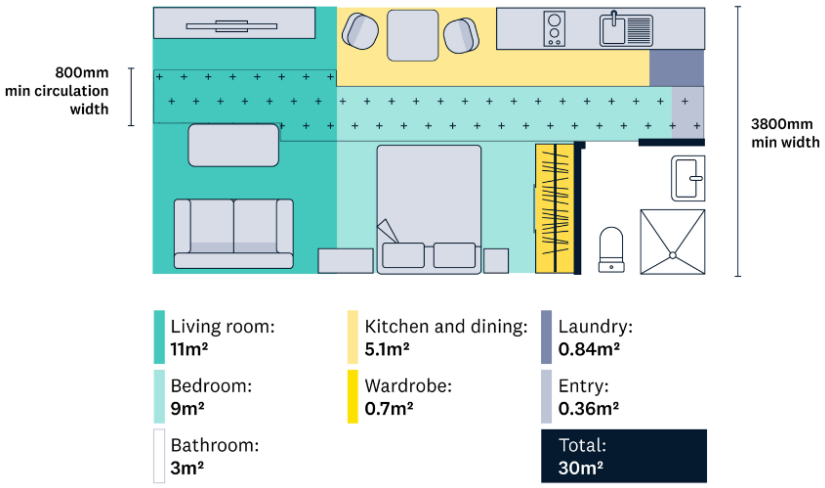
5. Houses should conform to New Zealand Standard 4121 (Design for Access and Mobility) for wheelchair user access. A living space should also be provided at the entry level of the house.



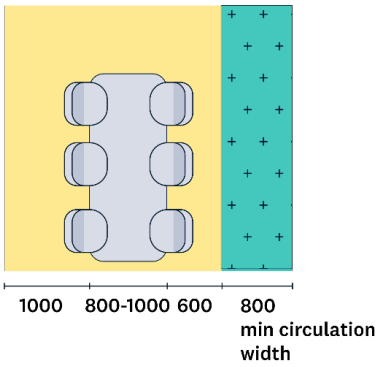
Minimum living/dining/kitchen room dimensions for a 2 bedroom dwelling.



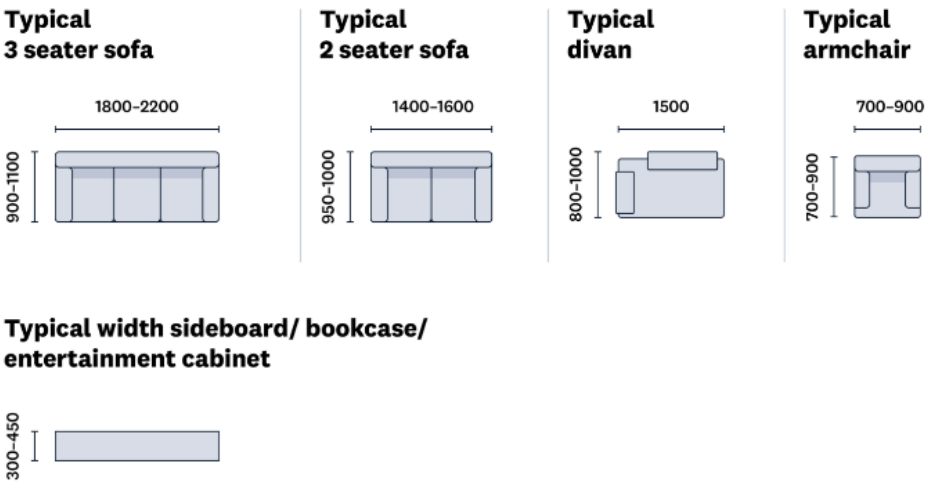
Minimum living /dining/kitchen room dimensions for a 1-bedroom dwelling.



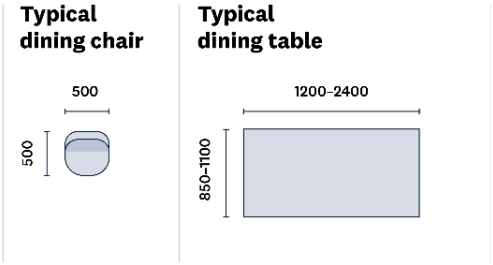
Minimum room dimensions for a studio dwelling.



Circulation space around a dining table requires 1m between a table and wall, or 600mm between a table and any room circulation.



Standard sizes of living room furniture.



Standard sizes of dining room furniture.

Adequate space is provided around the dining table.

7.2 Kitchens

Design outcome: Kitchen space, fittings and furniture allow two people to circulate conveniently, carry out food storage, food preparation and cooking, serving, eating (if no separate dining area) and storage of separated waste.

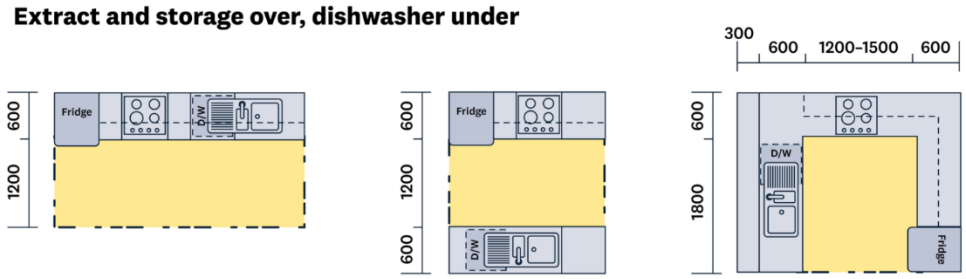
1. Kitchens should have a 1.2m access space in front of the base kitchen units. This may be reduced to 700mm where the access space adjoins general circulation space (i.e. a 500mm deep overlap is acceptable).

2. Kitchen design will vary according to the size of the house. A large, family house has different requirements to a more compact house. However there are some basic space requirements to be incorporated in a kitchen area, as illustrated below.

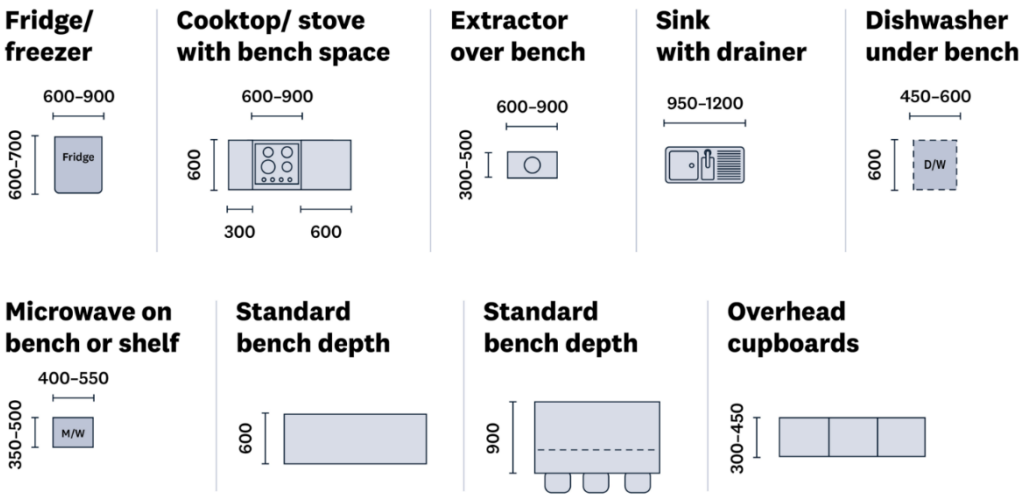
3. The standard bench depth should be 600mm.

4. Storage should be provided for:
    - food
    - crockery
    - cutlery

- miscellaneous kitchen appliances
- bowls, baking and roasting dishes
- baking papers, wraps etc.



Kitchen layout with adequate circulation space.

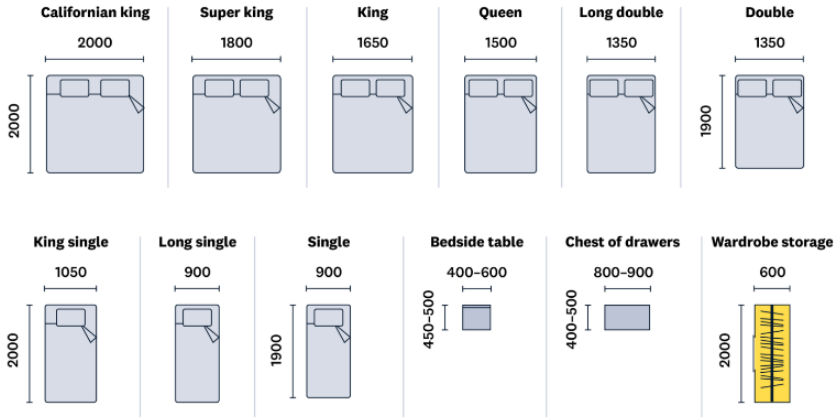


Standard kitchen dimensions.

7.3 Bedrooms

Design outcome: Bedrooms comfortably fit two people per bedroom, as well as their fittings and furniture.

1. Design the size of bedrooms to accommodate standard NZ furniture dimensions.

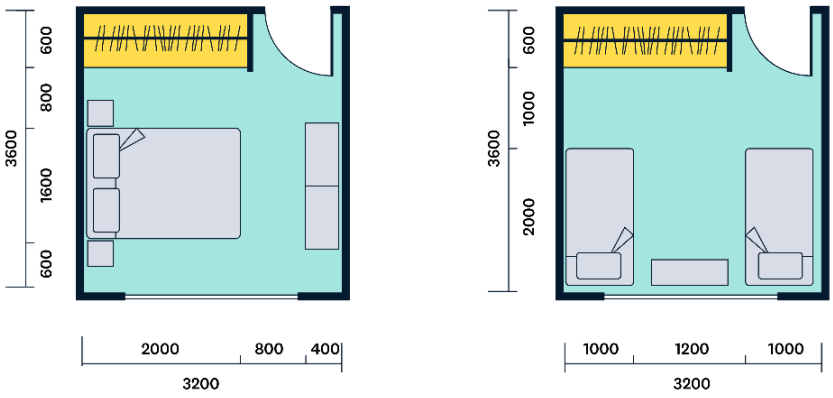


Standard bedroom furniture sizes (sizes vary slightly due to manufacturing tolerances, levels of padding and support/frame type).

2. Two-person bedrooms should allow for at least one queen-size bed with circulation space on both sides of the bed.

3. For a two-person bedroom a 2.8m minimum dimension gives little plan flexibility and no room for drawers or a desk

4. A 3.2m x 3.6m minimum dimension allows space for secondary furniture, and allows more flexibility of furniture layouts, as illustrated below:



5. Bedroom layout should provide the following minimums:
   a) A bed space 2m long by 1.6m wide, or two bed spaces side-by-side each 2m long by 900mm wide.

   b) An 800mm wide access space free from obstruction at the foot of the bed or beds - a total of 1200mm of side access space. If split around the two sides of one bed, there should be 600mm per side.

   c) A wardrobe 2m long and 0.6m deep, with adequate access space in front

   d) A desk or dressing table space of at least 800mm wide by 500mm deep with

adequate access space in front.

e) An access space from the entry door to the foot of the bed that is no less than 800mm wide. Note: Access space requirements for different elements in bedroom spaces may overlap.

7.4 Decks and balconies

Design outcome: Houses have a deck or paved area (patio) that is directly accessible from the living or dining room and connected to the outdoor living space.
(See also Section 4: Outdoor space)

Access between living rooms and outdoor space provides private access to the outdoors and an opportunity for outdoor passive recreation. This can also be a major source of daylight and natural ventilation for the unit via large opening glazed areas.

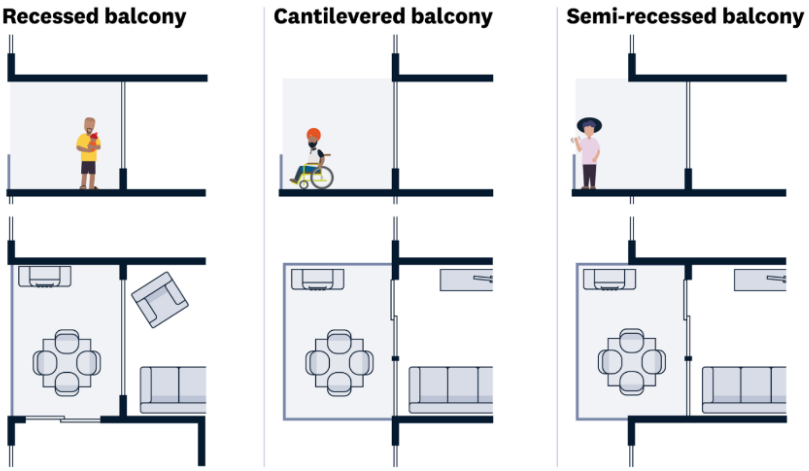
1. The deck or patio should be directly accessible from the living or dining area. Additional balconies, decks or terraces may be accessible from any other habitable room.

2. A deck or patio space should be large enough so that the equivalent of two persons per bedroom can circulate, sit, eat or barbeque safely and comfortably.

3. For houses of four bedrooms or more, these spaces should be able to accommodate six people.

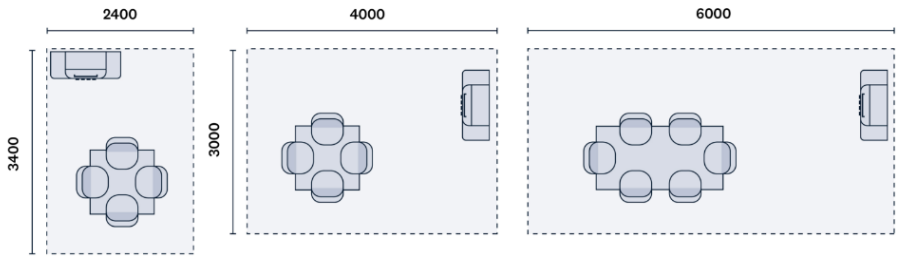
4. Balconies or patios should provide an area that can be screened to allow for clothes drying.

5. A deck or courtyard space should be large enough so that the equivalent of two people per bedroom can circulate, sit, eat or barbeque safely and comfortably. For houses of four bedrooms or more, these spaces should be able to accommodate six people. This can be indicated on the plans by showing a table and chairs suitable for the occupants of the house plus guests.



Balconies can be cantilevered, semi-recessed or recessed into the building line. Recessing the space can offer a greater degree of privacy.

Balcony proportions



Decks should be proportioned to the number of people and for their intended purpose.

7.5 Storage and utility spaces

Design outcome: Adequate space is provided for storage of everyday household items and for utility activities such as washing and drying.

A lack of storage space is often cited as a major dislike of occupants in more compact residential houses. Providing storage space for items ancillary to people's living needs, including everyday items such as cleaning equipment and occasional use items such as suitcases, is an important part of the design.

1. Suitable space for utilities (washing, drying, waste and recycling) should be designed into the house, and in a way that does not negatively impact on any habitable rooms. Utility areas should be well ventilated or otherwise allow for drying clothes.

2. Storage space should be provided inside the unit (or the garage) for large items such as sporting and garden equipment or bicycles.

3. Readily accessible space inside the house should be provided for equipment associated with children, such as pushchairs and bicycles.

4. The size of the storage space should be proportional to the number of occupants intended for the house.

5. Ideally, storage spaces are built-in as this allows for the most efficient use of space. They should be easily accessible and located in entry ways, hallways or living spaces. Storage space must be considered in the early stages of the design process.

6. Owner-supplied freestanding storage units should be allowed for in the floor plan, including units for audio-visual equipment and personal effects.

7. Consider providing storage outside/remote to the unit. This space is particularly important for storing larger items (sporting equipment etc.) when a garage is not included as a part of the house.

8. Dedicated storage rooms or spaces within garages or basements, or otherwise located close to car parking, are convenient for sports equipment as this is usually transported by car and may be difficult to move upstairs.

9. Bedroom wardrobes should be at least 600mm deep internally and 1.8m wide.

10. Minimum dimensions for an audio-visual unit should be 450mm deep and 900mm wide.

Storage is integrated into the design of the unit.

8 Building performance

This section provides guidance on how to provide good levels of amenity for building occupants including heating and cooling and ventilation.

8.1 Heating and cooling

Design outcome: Houses are designed to maximise the ability of the natural environment to heat and cool the house.

A key benefit of standalone housing is the relative flexibility on larger sites to capture and manage the sun.

Employing passive solar design principles will save money over the life of the house, making it both less expensive to run and more healthy to live in. This means designing the house to

maximise the ability of the natural environment to heat and cool the house.

How occupants use the house will determine how much energy they use. It is just as important that they understand how to make the heating, cooling and ventilation systems work efficiently, as it is to provide energy saving features. Design systems that are simple for occupants to use and operate.

There are a number of tools available that provide guidance on how to design and build more sustainably. One of these is New Zealand's own Homestar www.homestar.org.nz tool which has been developed by the New Zealand Green Building Council www.nzgbc.org.nz in collaboration with BRANZ www.branz.co.nz to enable homeowners and house builders to evaluate and benchmark the sustainable performance of their homes.

1. Locate living areas towards the north, east or west side of the house, to maximise the sun for heating and daylight.

2. To reduce the risk of overheating, locate bedrooms to allow for daylight and sunshine during the earlier hours of the day.

3. Consider using the action of hot air rising and cool air falling to redistribute heat through the house by

    a) using ceiling fans as a way of circulating cool air in summer, and warm air in winter, or

    b) mechanically ducting warmer air in the upper rooms including the roof space back into colder lower levels of the house.

4. Locate garages, bathrooms and service areas internally or on the southern side of the house as these spaces require less heat and daylight than living areas and bedrooms.

5. Provide eaves, louvres and screens on the outside of the building to reduce the direct sun during summer and allow sun during winter.

6. Avoid recessed down lights that require large insulation clearances as these can compromise ceiling insulation. Use lighting or down lights that are designed to allow insulation.

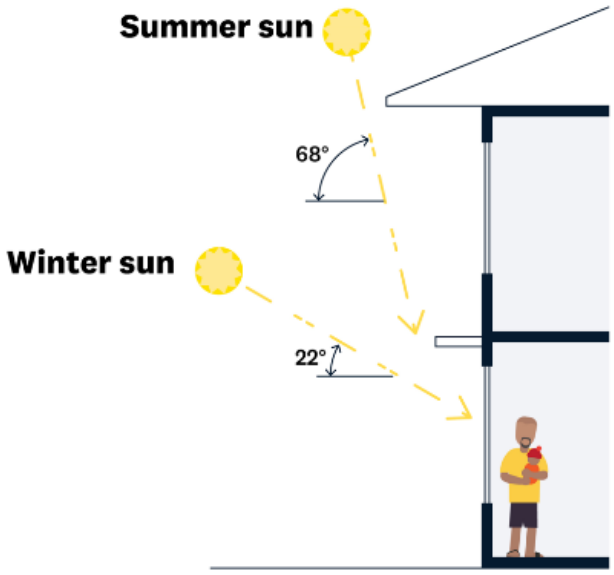
7. Use joinery types and systems that do not allow thermal bridging. Thermal bridging refers to the ways heat can leak through building elements. This happens where thermally conductive materials connect the inside with the outside.

8. Use double glazing to reduce heat loss through windows. This will also reduce condensation, mould growth and noise. Well fitted drapes are also effective at reducing heat loss.

9. North facing spaces should be designed with a layout and material finishes that support passive solar design using floor and wall areas to store heat.

10. Provide for possible installation of solar panels for hot water or electricity, either now or in the future. A north facing sloping roof is the most efficient place to locate panels. Locate and shape the building so its north side receives sun between 9am and 3pm in winter.

11. Large concrete areas, such as driveways, can reflect a great deal of heat. Consider reducing the area, changing materials or using landscaping to shade the surface.



Design eaves for the different sun angles that occur throughout the year. The depths of the eaves and the position of the windows can block midsummer sun, but allow winter sun to enter the house.

Large north and northwestern facing windows are prone to overheating – this house incorporates screening which can be adjusted from inside.

Vertical louvres are best suited to western-facing windows, to provide shade from the low sun.

Eaves and recesses provide shade for the windows and doors to help prevent overheating within the house.

8.2 Ventilation

Design outcome: Fresh air moves through the house through mechanical and/or natural ventilation.

Ventilation is important as many health issues are connected to damp conditions. A key benefit of standalone housing is the relative ease of providing natural and passive ventilation through providing external windows on all external walls.

As well as being environmentally advantageous, natural ventilation is free. The cost of artificial ventilation and cooling over the long term can be considerable.

1. Provide windows on external walls to make all habitable rooms, including studies, naturally lit and ventilated.

2. Provide windows on two walls of a room to allow for cross-ventilation.

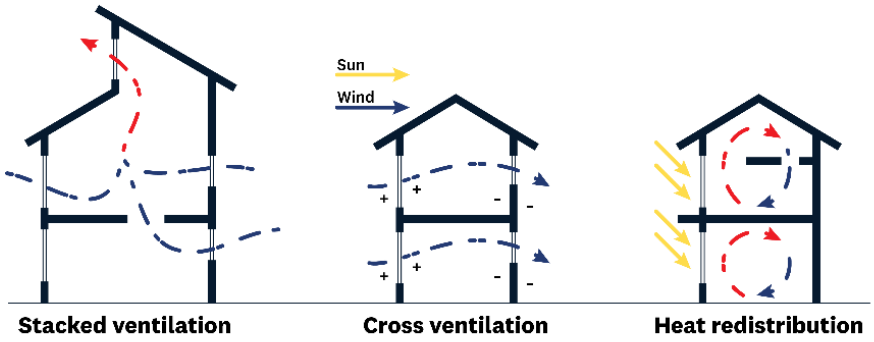
3. Stack-ventilation moves air vertically up through the house and ventilates it through a high window. Design the house to utilise the ‘stack effect’ to optimise how natural air movement can cool the house.

4. Position windows and doors to take advantage of cooling summer breezes and avoiding winter winds. The house should be protected against the cold south westerly wind and opened up to the warmer north-easterlies, which are Auckland’s prevailing winds.

5. Ventilate all bathrooms and kitchens to the outside to prevent a build-up of moisture.

6. Light tubes (solar tubes) can be fitted with double glazing and ventilation and can be an effective means of lighting and ventilating internal spaces.
7. It can be hard to control unwanted heat loss and heat gain through non-openable glass ceilings and skylights.

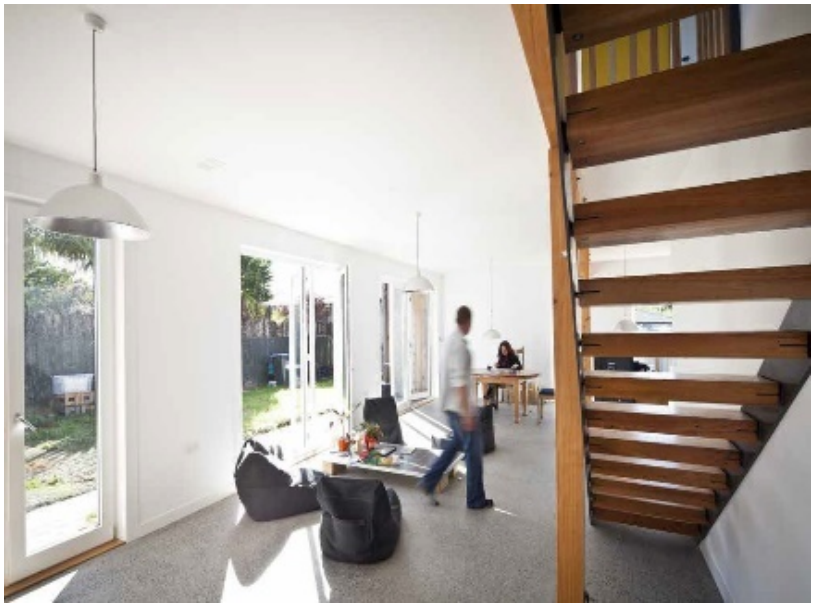
8. Light tubes (solar tubes) and skylights can be an effective means of lighting and ventilating internal spaces. To control unwanted heat loss and heat gain, aim for triple glazed and thermally broken joinery that also can provide natural or mechanical ventilation.



Different types of ventilation can be combined to maximise energy efficiency and natural ventilation.

Simple design interventions can increase light in the home. Here a piece of roofing steel has been replaced with plastic to let more sunlight in through the front window.

The Zero Energy house has used careful placement of the house on site, selection and placement of windows, and use of materials to maximise heating from the sun and cooling from the breeze.



The house is comfortably heated and cooled by natural means. Sustainable, energy efficient houses can also be beautiful and a joy to live in.

For any questions or feedback, please contact us through our email address: AKDesignmanual@aklc.govt.nz

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