

Home Location and Approach

01



UD UD Home Guidance

+ UD Home Plus Guidance

H Houses

A Apartments

Universal Design Homes should be appropriate to their context and create a strong sense of place. Attention to detail and high quality materials are essential to ensure longevity of use. Well-designed housing will be appreciated and treated well by the people who live there.

1.1 Location



Landscaping and approach path to housing development.

Photo Design Features

- Distinctive character to housing and external environment.
- A wide pavement is provided, at least 2000mm clear width.
- Light fittings do not reduce the width of pavement.
- Clear colour contrast between path and planting.
- Open views not obscured by planting – foliage kept to low or high level.
- Semi-public realm well overlooked.

Photo Design Tip

- ↑ Gravel is difficult for many people to use, particularly those using strollers, wheelchairs, walking sticks or crutches.
-



The development creates a new street off an existing busy thoroughfare in the town centre.






Development Sites for New Homes

Design Considerations and Awareness

It is important that development sites be selected on the basis of the quality of the environment which exists or can be created around the new homes. A development site should be well-connected locally, with easy access to transport links and places to socialise and shop. The development should enhance the existing local identity and be a desirable place for everyone to live.

Consider site features that could provide a challenge to some people in the community. For example, steeply sloping sites are difficult for walking, cycling, pulling luggage, pushing a buggy, a wheelchair, or for toddlers, people with breathing or heart conditions.

UD Home and UD Home Guidance

-  Ensure that large schemes include, or are close to, public amenity space, with good access to transport and local shops, pubs and cafes.
.....
-  Avoid steeply sloping sites, or factor in from the outset how to ensure that gradients do not compromise accessibility when developed.
.....
-  On large sites with a gradient between 1:60 and 1:25, provide regular resting places for people.
.....
-  Provide regular resting places on sloping sites, at every 19m maximum, for gradients of 1:25, and at every 25m maximum for gradients of 1:33. An access route steeper than 1:25 should be designed as a ramp.
.....
-  Consider provision of WiFi and mobile applications to further enhance accessibility and provide useful local information for everyone.
.....



Sufficient space is provided for all users to pass, with clear differentiation between traffic and pedestrian areas. Bollards, light fittings and trees are kept within a defined zone and do not interrupt the pavement width.

Roads, Streets and Pavements

Design Considerations and Awareness

The layout of the buildings, roads and streets, and position of signage in a new development should make it easy for everyone to find their way around. All new roads and streets should link well with existing roads in the neighbourhood, and there should be a clear hierarchy from the main circulation road to smaller streets. All routes should be pedestrian, cycle, and vehicle friendly, and well overlooked to provide passive surveillance. Provide wide pavements, where people can pass easily, for example when using walking aids or pushing a buggy.

To make the route comfortable for everyone, avoid placing obstacles such as trees, bins, bollards, lighting columns and signs in the clear footpath area. Ensure that inserts for services such as manholes or drains are level with the paving and that bicycles or wheels of prams cannot get stuck, and high heels or walking aids don't get trapped. Design the pavement with cross-falls to prevent water ponding after rain. This avoids slippery surfaces, a reflective glare, or ice being formed.

Select paving materials that are hard and firm, with non-slip and non-reflective properties as these are comfortable and safe for everyone. Surfaces like cobbles, bare earth, loose gravel and sand are difficult to walk on for most people especially those using walking sticks or crutches, wheelchairs, bicycles, infant buggies and wheeled luggage. Colour contrast on pavements, for example in a pattern, can cause confusion for people with visual or cognitive difficulties. However, contrast colour can be used for kerbs, to indicate the edge of the pavement, assisting those with visual or cognitive difficulties. Consider the ease of making repairs at a later date, as replacement of sections in a different colour may also cause confusion.

Shared surfaces should use contrasting colour and surface textures to make the area easier to understand and safer for everyone. If there is a level change beside a pavement higher than a standard kerb drop to a roadway, provide protection to indicate the level change for safety. Tactile paving is essential for people with visual difficulties, for example to indicate where a dropped kerb or zebra crossing is located.








The parking area is clearly designated as a shared surface area.

Photo Design Tip

- ↑ More design features to signal the designation would ideally have been included, such as trees and carriageway narrowing.

UD Home and UD Home Guidance

-  Provide a clear hierarchy of streets that is logical, easy to understand and well integrated with the existing context.
-  Install street signs at the head of T-junctions, so that visitors can identify easily where they are.
-  Design pavements with a minimum width of 2000mm, narrowing only to 1800mm where unavoidable for electric junction boxes, etc..
-  Design pavements with a minimum width of 2400mm, narrowing only to 2000mm where unavoidable for electric junction boxes, etc..
-  Ensure that pavements are kept clear of obstructions.

- UD Ensure that the surface materials specified are appropriately non-slip with a dry friction coefficient between 35 and 45.
- UD Specify materials which are non-reflective.
- UD Ensure materials can be replaced and repaired easily and quickly.
- UD Ensure that kerbs are installed on pavements.
- UD Provide kerbs in a contrast colour to the footpath paving for good visibility.
- UD Install dropped kerbs at all junctions, matched on each side of the road.
- UD Provide kerb upstands, barriers or guardrails where there is a change of level beside the pavement higher than a kerb.
- UD Avoid the use of cobbles, sand or gravel for pavements.
- UD Ensure that any breaks in paving are maximum 10mm wide and perpendicular to the direction of movement.
- UD Ensure that any insert, whether for an inspection chamber, gully or similar, is level with the paving.
- UD Design pavements with a cross-fall gradient not exceeding 1:50, except where there is a dropped kerb.

UD Home ++ Guidance

Consider providing pavements of minimum width 2400mm for the full length of the pavement without interruptions.





Access path is well-lit and lighting does not obstruct the clear width.

Photo Design Tip

- ↑ The tactile surface should cover the dropped kerb area but not the radiused corner.

Street Furniture and Lighting

Design Considerations and Awareness

Co-ordination of street furniture such as sign-age, lighting, junction boxes, seats, litter bins and parking meters, as well as planting, should ensure that a clear and wide enough route for all is provided. The design of street furniture should be co-ordinated and incorporate colour or tonal contrast with its surroundings for good visibility. Bollards should be very easy for everyone to see and should never be linked by chains.

Wherever possible all street furniture, such as litter bins and signage between columns, should be the full width down to ground level to allow people with visual difficulties to understand the full dimensions at ground level with a mobility cane.

Good lighting design should provide even illumination along a street, sufficient for everyone to feel safe and move around easily at dusk and night time. Lighting should make it easy to locate entrances and identify front door numbers and signage.

For lighting levels, please refer to section 4.







Broad footpaths that are clear of obstacles, with indicators of the location of the road using tactile surfaces and bollards.

Photo Design Tip

- ↑ The tactile surface should cover the dropped kerb area but not the radiused corner.
- ↑ The bollards should be highlighted, for example by using paint or a reflective strip.

UD Home and UD Home Guidance

-  Ensure that street furniture layout is co-ordinated and consistent.
-  Highlight bollards by means of a light or contrast colour at the top, and do not link with chains.
-  Avoid installing letter boxes, litter bins and telephones on pedestals because they may confuse and cause accidents to people with visual difficulties using a mobility cane.
-  If eye-level signs are not taken down to ground level, ensure that there is a tapping rail between posts at 250 to 400mm above ground level, with posts and rail contrasting visually with the background.

- UD Ensure that eye-level signs do not extend more than 150mm beyond the posts.
.....
- UD Ensure that suspended signs are above head height for tall people and cyclists, at 2300mm minimum.
.....
- UD Highlight free-standing posts and columns with a 150mm-high feature, such as a visually contrasting crest or band 1500mm above ground level.
.....
- UD Locate lighting columns at the back edge of the pavement where possible.
.....
- UD Lighting columns may be mounted on buildings or walls wherever possible to keep pavements clear of obstacles.
.....
- UD Locate lighting columns and any other signage posts at least 1000mm apart.
.....



1.2 Approaching the Home



Terraced housing.

Photo Design Features

- Level access provided from pavement.
- Parking space allows for car door opening and is adjacent to path.
- Firm, non-slip, non-reflective surfaces.
- Planting and materials define boundaries clearly.
- Public realm is well overlooked.
- Consistency in design with no unit standing out.
- A canopy is provided above each front door.

Photo Design Tip

- ↑ Tree reduces pavement clear width locally.
 - ↑ There is a lack of planting for visual interest, distinctiveness, and privacy screening.
-



A mix of house typologies and tenures is provided.

Appearance of the Home

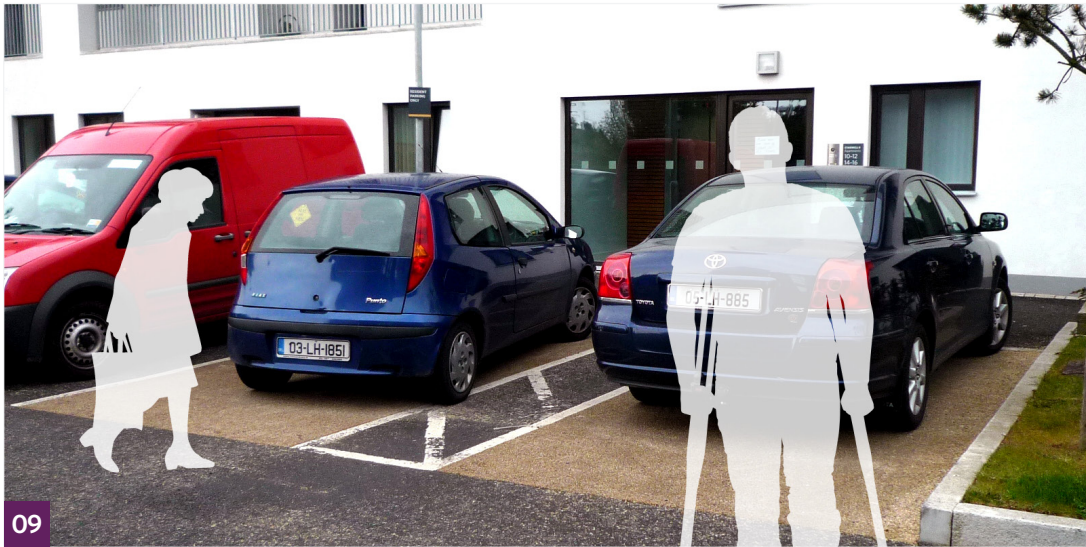
Design Considerations and Awareness

There should be a range of home sizes, types and tenures in every residential area. A mix of family homes and smaller apartments provides moving-on accommodation when it is required, as well as a mixed population which will reflect the make-up of society. It is important to ensure that vulnerable groups in society are not targeted by anti-social behaviour. Therefore the overall external appearance of UD Homes that might be adapted to particular needs should be consistent with neighbouring homes, and should be integrated across the site and not grouped together in one area alone.

Where there are many houses of consistent design it is also important to make it easy for everyone to locate a home, for example by using distinctive design features such as door colours, boundary treatments, planting, porch canopy details etc.

UD Home and UD Home Guidance

- UD** Ensure that all homes are designed to a high standard and of good quality, using sustainable materials with quality detailing.
.....
- UD** Ensure that there is a mix of tenures and home sizes in every development of 20 homes or more.
.....
- UD** Ensure that UD homes that might be adapted to particular needs are consistent with neighbouring homes, and not constrained to one part of a site, or grouped together.
.....
- UD** Ensure that each UD home has potential to be distinctive through individualised design features such as door colours or planting.
.....



Designated parking spaces with 1200mm access zone located close to communal entrance and integrated into the design of the street.

Setting-down Points and Communal Parking

Design Considerations and Awareness

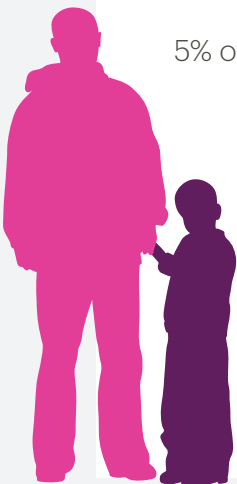
Providing a clearly identified set-down point close to the entrance of any housing complex can benefit everyone. For example, it can make it easier to deliver groceries, and to help young children or older people out of a car, especially in bad weather.

Generous parking spaces make life easier for everyone including people with mobility difficulties, someone unloading shopping from a car, and young families moving from the car to the home.

Depending on the size of car park, there should be at least one clearly marked accessible parking bay with a 1200mm zone on both sides and at the rear located near each communal entrance.

If underground parking is provided, some designated accessible parking bays should be provided close to the lifts serving the apartments above.

5% of car parking spaces should be accessible and suitably located.





Clear designation of set-down area in front of the entrance with level surfaces for everyone to use and ensure there is a buffer zone.

UD Home **and UD Home** **Guidance**

-  Provide a setting-down point in close proximity to the main entrance in addition to any designated car parking spaces, but only where these spaces are not in front of the entrance.

-  Ensure there is a buffer that protects pedestrians from opening vehicle doors and allows easy access to the building's entrance door.

-  Provide a setting-down point in close proximity to the main entrance in addition to any designated car parking spaces of at least 3600 × 6000mm.

-  Provide a dropped kerb for ease of access onto the pavement.

-  Provide signage to ensure that the setting-down point is easily located, and not used for casual parking.

-  Ensure that the setting-down point has a firm, level, even surface, clear of manhole covers and gullies.

-  Design the car parking so that it is well integrated into the streetscape and does not dominate.

-  Ensure parking is located no more than 25m from an apartment block, but preferably much nearer.

-  Ensure that the route between the designated car parking spaces and the entrance to the apartments is accessible, understandable, well-lit and safe to use.

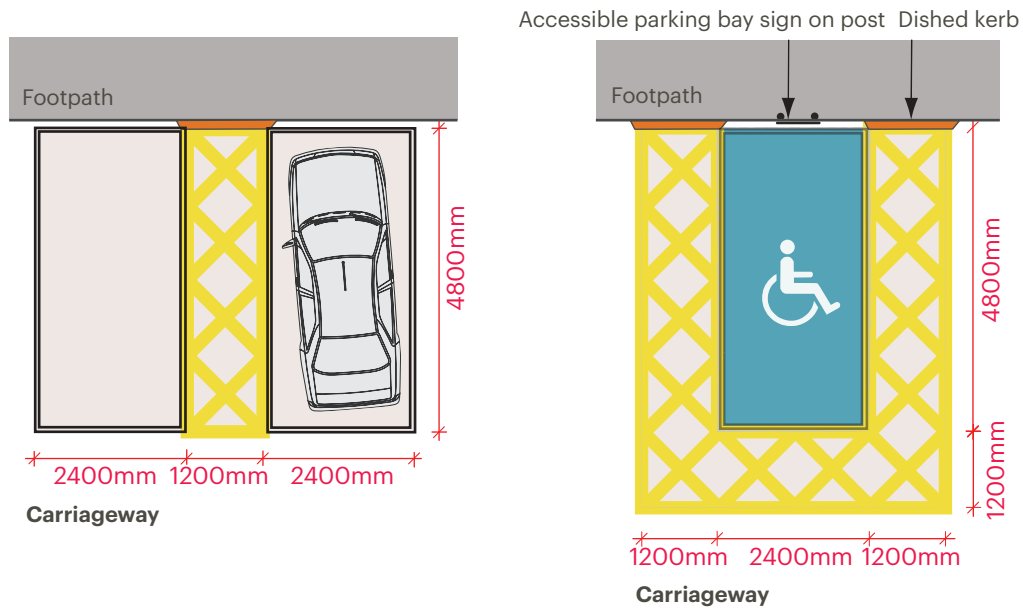
-  Ensure head-on (perpendicular) parking bays are at least 2400 × 4800mm.

-  Ensure parking bays which are parallel with the direction of travel are at least 2400 × 6100mm.



Technical Sketch:

Car parking spaces with shared access space, and fully accessible space.



- UD** Ensure that there is a minimum of one accessible parking space with a 1200mm zone to the sides and rear, located near each communal entrance or lift serving the apartments above.
- UD** Where space permits provide an extra space of 1200mm shared between two bays to make getting in and out of a car easier for everyone.
- UD** Design 5% of parking bays to 3000 × 6000mm.
- +** Provide sheltered parking spaces for electric wheelchairs, scooters, shop-riders, tricycles, etc., located near to the main entrance of the building.
- +** Ensure that some of the communal parking spaces are provided with a power socket for charging batteries etc.



UD Home ++ Guidance

Consider providing:

- A canopy at the setting-down point with a clearance of 2600mm.
- Some parallel parking spaces at 7000mm long.
- At least one van space at 4800 × 8000mm.
- Some dedicated larger parking bays which are 4500 × 6000mm close to a block of apartments.



Footpath to front door located adjacent to parking space, creating a flexible space for everyone to use.



Parking for Houses

Design Considerations and Awareness

For individual houses the car space should be the minimum standard bay size of 2400 x 4800mm, but with the ability to extend the width from 2400 to 3600mm. This can be achieved by locating the footpath to the front door, or a planting bed that could be adapted in the future, adjacent to the parking bay. On-plot parking will also benefit from an electrical socket for charging an electric car or motorised wheelchair, and for connecting a vacuum cleaner when cleaning the car.

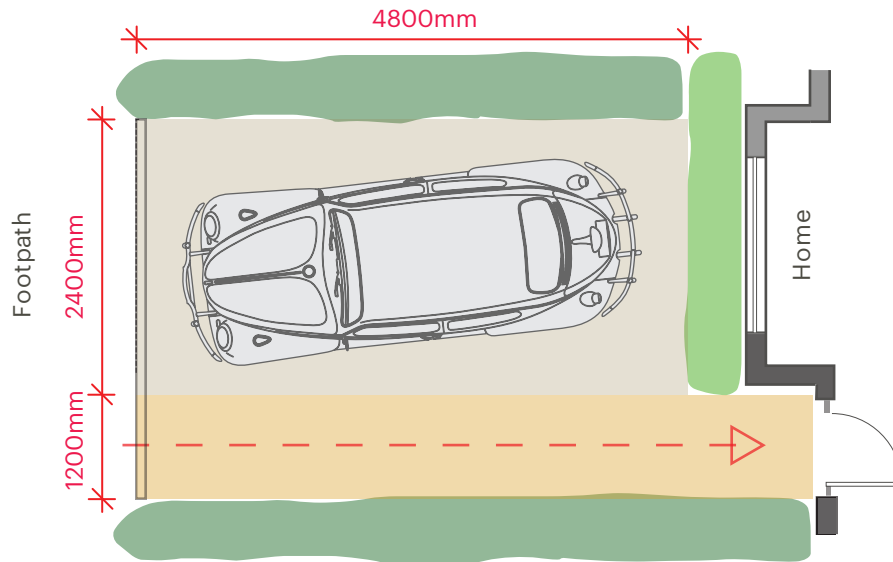


Car parking design quality guidelines

- UD** Design on-plot parking for houses at a length of 4800mm and width of 2400mm, extendable to 3600mm.
- UD** Where garages are provided, ensure they have minimum internal dimensions of 4200 x 5700mm.
- UD** Provide a vehicle charging point at the entrance to the home. The power socket should be installed at an operating height of between 800mm and 1100mm above ground level.
- +** Ensure that the vehicle charging point is sheltered for the comfort of the user.

Technical Sketch:

On-plot parking provision beside path or planted bed.



UD Home ++ Guidance

Consider providing:

- A parking area of 3600 × 7000mm.





The gate is in a logical position with a wide and firm path to the entrance door.

Design Tip

- ↑ The gate should be easier to identify within the fencing.

Gates and Paths (private and communal)

Design Considerations and Awareness



The gate should be located so that it is easily identified from the street or road.

Gates should be easy to use for everyone, regardless of their upper arm strength. Adjust hinges so that the gate does not spring shut on someone pushing a buggy, using a wheelchair, or carrying groceries. Ideally the path to the gate should be extended in width on the latch side to make it easy to open and shut.

The design of paths from the property boundary to the entrance of the home is similar to the design of street pavements generally. Paths need to accommodate people passing with room for those with bikes, buggies or wheelchairs.

Lighting to paths from the entrance to the property boundary should be provided for apartment blocks. This also applies to homes with long front gardens where the light at the entrance door is insufficient for the whole length of path.

UD Home and UD Home Guidance

-  Ensure that pedestrian gates are at least 900mm wide, and easy to open and shut.
-  Ensure that pedestrian gates are at least 1000mm wide, and easy to open and shut.
-  Ensure that gates over 1200mm high are not solid.

- UD Provide wiring for future installation of assisted opening mechanism.
.....
- + Provide assisted opening mechanism for the gates from the outset.
.....
- + Extend width of the path to the gate by 500mm on the latch side of the gate.
.....
- UD Ensure that paving within the property boundary is firm, non-slip and non-reflective.
.....
- UD Provide cross-falls of 1:50 so that the path drains easily.
.....
- UD Ensure that paving is permeable so that it does not pond in wet weather, or contribute to overcharging local drains.
.....
- UD Ensure that the path is completely clear of obstacles throughout its length.
.....
- UD Design the pathway to individual houses at a minimum of 900mm wide, and to communal entrances at 2000mm wide, with a minimum width of 1500mm where there are obstacles.
.....
- + Design the pathway to individual houses at a minimum of 1200mm wide, and to communal entrances at 2000–2400mm wide.
.....
- UD Provide switched or P.I.R. sensor lighting at each pathway entrance to an apartment block, and to long front garden paths to houses.
.....





Ramp and landings provided to raised ground floor with handrails on both sides.

Photo Design Tip

- ⬆ A larger landing outside the front door will make it easier for everyone to manoeuvre and interact.
 - ⬆ There is no guarding at the lower edge of the ramp on the right hand side and there should be tactile paving at the base and top of each section of ramp. There should be tactile warning surface indicators to the top and bottom of each ramp section at communal entrances.
 - ⬆ Steps should be provided as an alternative for ramps longer than 2000mm and the ramp should be lit at night.
 - ⬆ Consider addition of lower handrails for people of smaller stature and children.
-

Ramps and Landings

Design Considerations and Awareness


Ramps and steps are difficult for many people, such as wheelchair-users or someone pushing a buggy, to negotiate. If absolutely unavoidable, ramps and landings need to be fully integrated into the design of the home or apartment development, and designed to look attractive and accessible for everyone. Steep gradients can be difficult for everyone. Level landings provide resting places and the shallower the slope, the longer the interval can be between landings. A maximum length of 10m is allowable in any one stretch.


Wherever there is a level change beside the ramp there should be protection to indicate the level change and avoid creating a hazard. The base of a guard rail or barrier can be taken down to the level of the ramp. The protection should contrast visually with the ramp surface.


A slope may be difficult for some people with mobility difficulties, and some people might prefer to walk a shorter distance, and use steps instead. Steps should always be provided in addition to a ramp.


If the rise of the ramp is 2000mm or higher, it is likely that the control needed to push a wheelchair up, or control a descent, will be too great for the majority of people to manage. Therefore an alternative means of access should be provided, such as a lift or platform lift.


UD Home and UD Home Guidance


-  Avoid ramps and steps wherever possible.


-  Any access gradient which is steeper than 1:25 should be designed as a ramp. Refer to graph on page 41 for ramp gradients and distances.


-  Ensure that ramp slopes are consistent and straight, not curved. Change of direction can take place at a landing.


-  Where unavoidable, design the ramp as an integral part of the garden and building.


-  Ensure that the width of the ramp is not less than the path it serves and:
 - minimum 900mm wide ramp to individual houses.
 - minimum 1500mm wide ramp to communal entrances.


-  Ensure that the width of the ramp is not less than the path it serves and:
 - minimum 1500mm wide ramp to individual houses.
 - minimum 1800mm wide ramp to communal entrances.


-  Ramps of 1:20 or less are preferred for a distance of 10m; a slope of 1:12 is allowable only for a distance up to 2m.


-  Any ramp of 1:25 needs level landings at maximum 19m intervals. At a gradient/slope of 1:33 provide landings at maximum 25m intervals.

-  Provide a cross-fall of 1:50 maximum, sufficient to ensure good drainage of the ramp and landing.

-  Provide a minimum landing length of 1200mm for individual dwellings, and 2000mm for communal buildings, clear of any door or gate swing.

-  Provide a minimum landing length of 1500mm for individual dwellings and 2400mm for communal buildings, clear of any door or gate swing. A landing of 2400 x 2400mm is recommended for large apartment buildings at the top and bottom of all ramps.

-  Locate handrails on both sides of a ramp or steps (see section on Handrails).

-  Continue the handrail around the landings.

- UD Provide protection that visually contrasts with the ramp ground surface where there are level changes beside the ramp.

- UD Provide steps alongside any ramp that is more than 2000mm in length.

- UD Provide a corduroy tactile warning surface indicator (TWSi) at the top and bottom of the flight of steps leading to communal buildings.

- + Provide a corduroy tactile warning surface indicator (TWSi) at the top and bottom of the flight of steps leading to private dwellings.

- UD Ensure that no ramp is greater than 2000mm in height. If it is, provide an alternative means of access, such as a lift or platform lift.

- UD Provide lighting to ramps and landings to 150 lux.

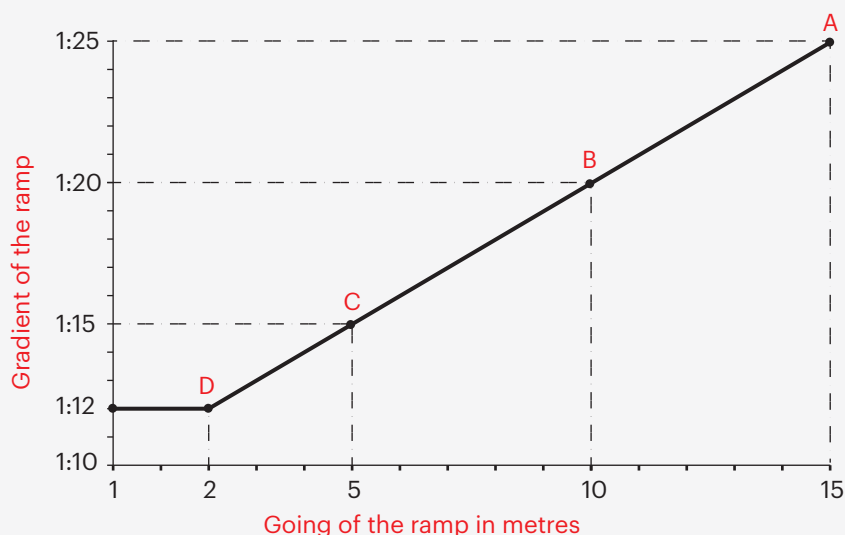
UD Home ++ Guidance

Consider providing:

- A minimum 1800mm wide ramp to individual houses.
- A minimum 2400mm wide ramp to a communal entrance.
- Landings of 2400mm length at the top and bottom of the ramp, with intermediate landings of 2000mm minimum length.

Technical Graph:

Ramp Gradients and Distances.



A = gradient of 1:25 allowed for a distance of 15m
 B = gradient of 1:20 allowed for a distance of 10m
 C = gradient of 1 in 15 allowed for a distance of 5m
 D = gradient of 1 in 12 allowed for a distance of 2m

Any ramp of 1:25 needs level landings at max. 19m intervals.
 At a gradient/slope of 1:33 provide landings at max. 25m intervals.



A ramp is provided in addition to a step.

Photo Design Tip

- ↑ Handrails and visual contrasts should be used. As this is an individual dwelling there is no requirement for TWSi's.
- ↑ Single steps should be avoided as they are a trip hazard and can cause confusion.

Steps and Landings

Design Considerations and Awareness

External steps should always be provided in conjunction with ramps in order to offer a choice for people. The dimensions of the steps (the rise and going) should be consistent, and there should be no single steps as these can cause confusion or create a trip hazard for anyone.

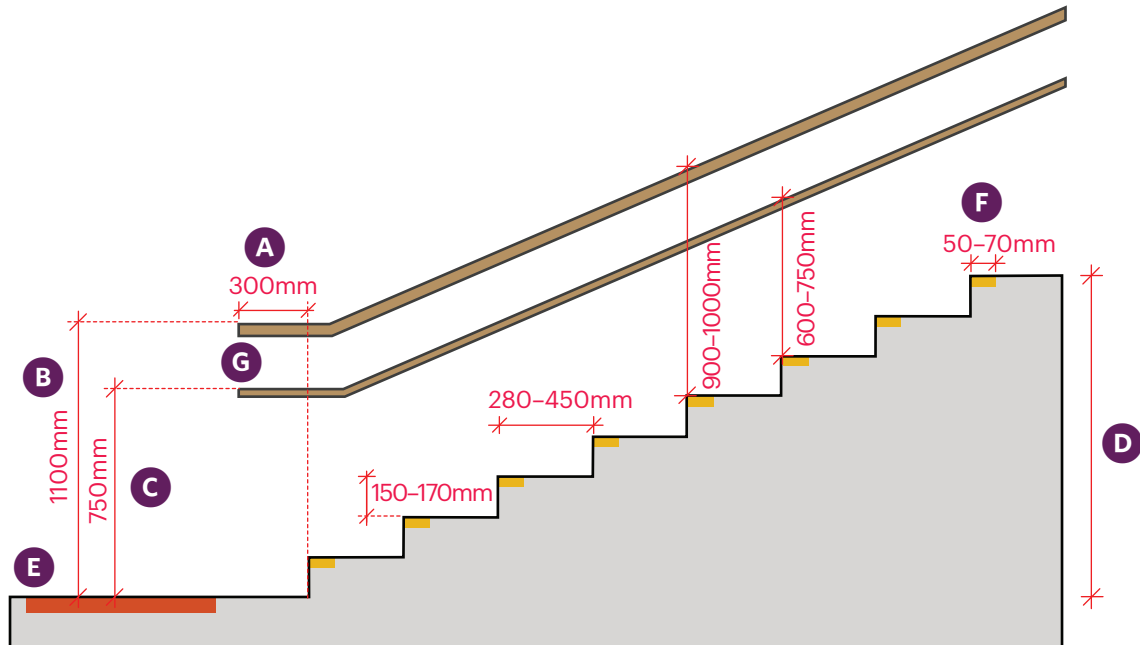
The profile of the steps should be simple, without projections that can cause a risk of tripping. Open risers can be disconcerting and confusing for many people so should be avoided. Steps need to be level and well drained to avoid pooling of water. A contrast strip at the nosing of each tread helps to highlight the location of the edge of the step. This should extend for the full width of the step, and be 50–70mm deep, measured from the front of the step. Avoid using two parallel contrast strips as this can cause confusion.

For steps to a communal entrance, provide corduroy pattern tactile warning surface indicators (TWSi's) to the top and bottom of the flight of steps, and adequately sized landings, to make the steps safe and easy to use for everyone.

Landings at entrances need to be level or gently sloping for people to feel safe while resting or standing. This means that the landing should be flat, or at a gradient not greater than 1:60, and a cross fall not greater than 1:50.


















Technical Sketch:

Dimensions for external steps and handrails.



- A** Handrail overruns 300mm beyond the first and last step.
- B** Upper handrail at 1100mm above landing and 900-1000mm above pitch line.
- C** Lower handrail at 600-750mm above landings and pitch line.
- D** Less than 1500mm rise in one flight between landings.
- E** A corduroy tactile warning surface indicates the top and bottom of the flight of steps leading to a communal entrance.
- F** Contrast nosings extending the full width of the step at 50-70mm deep.
- G** Handrail ends turned towards the wall or downwards.

UD Home and UD Home Guidance

-  Avoid single steps.
-  Avoid open risers.
-  Construct external steps with an easy rise and easy going: 150-170mm rise (height) and 280-450mm going (depth).
-  Ensure that external steps are the same width as ramps and footpaths, appropriate to the type of building they serve.
-  Provide a landing at every 1500mm maximum rise, with equal numbers of risers between landings.
-  Fit contrast nosings extending the full width of the step and 50-70mm deep.
-  Provide landings a length at least the same as the width of the flights of steps, unobstructed by door swings or gates.
-  Provide a profile of the steps which is straight, with no projecting nosings.
-  Protect any area below steps which has a headroom of less than 2100mm.
-  Provide a corduroy tactile warning surface indicator (TWSi) at the top and bottom of the flight of steps leading to a communal entrance.
-  Ensure that steps and landings are lit adequately to 150 lux, so that they can be used safely in the dark.
-  Provide level or gently sloping landings (1:60 maximum slope) at the entrance to every home, and at intervals along long ramps.
-  Cross-falls shall be a maximum of 1:50 to ensure good drainage.
-  At entrances to individual dwellings provide a level or gently sloping clear landing at the entrance door of 1200 × 1200mm free of door swing.
-  At entrances to individual dwellings provide a level or gently sloping clear landing at the entrance door of 1500 × 1500mm free of door swing.
-  At communal entrances provide a level or gently sloping external landing (1 in 60 maximum slope) of minimum 1800mm square clear of door swings at the entrance point to every apartment building.
-  At communal entrances provide a level or gently sloping external landing (1 in 60 maximum slope) of between 1800 and 2400mm square clear of door swings at the entrance point to every apartment building.



Handrails provided on both sides of ramp, and following the line of the ground surface. Supports do not get in the way of hands and the railing turns downwards at the end to avoid clothes getting snagged.

Photo Design Tip

- ↑ Steel handrails are cold and uncomfortable to touch for many people. Specify timber or plastic-coated handrails to avoid this problem.
 - ↑ Provide a second lower handrail for people of lower stature and children.
-

Handrails

Design Considerations and Awareness

Handrails should be provided on both sides of a ramp or steps and should be continuous around the landings as well.

The design of the handrail should take into consideration all users. Ensure that brackets do not get in the way of someone who needs to grip around the entire handrail and/or hold on all the time. Locate brackets underneath the handrail, far enough away from the adjacent wall or surface to prevent knuckles being grazed. Extending the handrail sufficiently beyond the line of the first and last step or edge of a ramp makes it easier for people to approach or leave the steps or ramp. If the rail is turned towards the wall or downwards, then someone who has visual difficulties will know that the end of the stair has been reached. An additional handrail at a lower height will be beneficial to people of shorter stature, including children.

People who need to grasp a handrail firmly will find a cold rail uncomfortable or even painful. Therefore the choice of material for the handrail should be comfortable for all, for example by using timber or plastic coated steel.

UD Home and UD Home Guidance

Design the handrail so that it is:

- Extended 300mm beyond the end of the first and last step and the ends of a ramp.
- Constructed with profiles which are circular in cross-section (40-50mm diameter) or elliptical (50mm wide and 38mm deep) which are easy to grasp.
- Supported centrally and at intervals on the underside, so that fingers aren't knocked.
- Constructed with a clear gap of minimum 75mm below the handrail. Set out with a clearance from a wall of minimum 50mm with a smooth wall, and 75mm for a rough surface.
- Installed with a positive end, curving downwards or against the wall.
- Visually contrasting with the background.
- Warm to touch - timber or plastic-coated steel are acceptable.
- Continuous across landings and ramps or steps, and easily distinguishable from the background.

 Set the handrail at 900–1000mm above the pitch line of the stair or ramp, and 1100mm above landings.

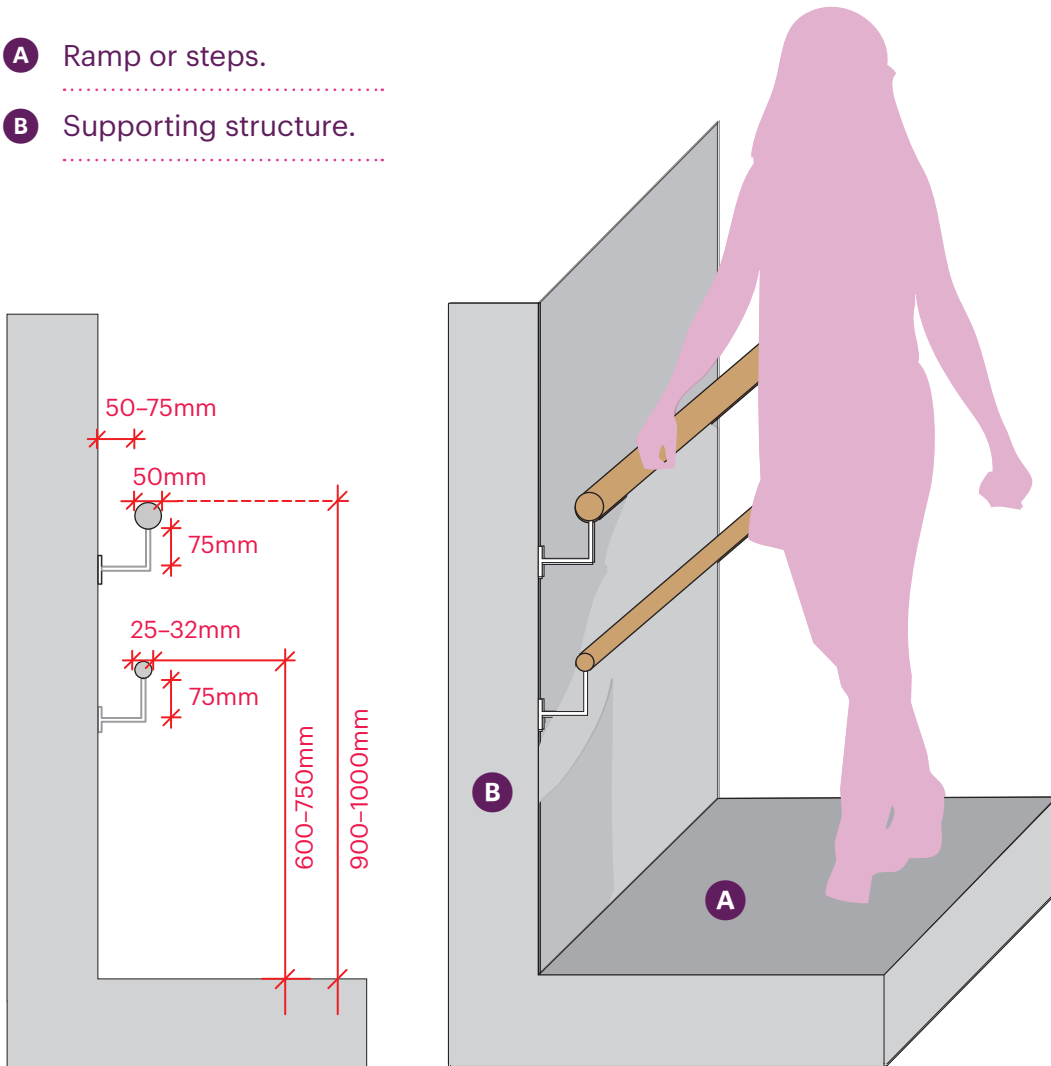
 Provide an additional handrail at 600–750mm height above the pitch line of the stair or ramp for people of smaller stature or children, of diameter 25–32mm to suit smaller hands.



Technical Sketch:

Dimensions for handrails.

- A** Ramp or steps.
- B** Supporting structure.





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Access path is well-lit and lighting does not obstruct the clear width.

Photo Design Tip

- ⬆ The lighting is very directional and may result in the pooling of light. It is preferable to have an even lighting level.

Lighting

Design Considerations and Awareness

Lighting around the entrance to the home or the apartment building is important for safety, security, and ease of use for everyone.


The route from the gate on the street to the entrance of the home should be easily legible at all times, with an even, adequate spread of light across the route. Avoid pools of light or dark, reflections or glare.


Lighting to steps and ramps should be located so that it clearly highlights the tread and riser surfaces or the ramp slopes without casting shadows. If lights are fitted at a low level the light source should not be visible, as this can cause glare. Also avoid the use of floodlights because of the glare.

Lighting should be provided around an entrance door to highlight the location and orientate people at night or when the weather is overcast. External canopies should not block out any of the external lighting. Ensure that the door number and keyhole are adequately illuminated.


A Passive Infrared (PIR) sensor-activated light can prevent the need to locate a switch, and if it is linked with a sounder which is audible inside the home, this will help to advise the occupants with vision or hearing difficulties that someone is approaching. Sensor lights need to be located and adjusted so that they are not switched on inadvertently as this can cause anxiety among a household who may be continually alerted by a light or sound activated by passers-by and animals.


UD Home and UD Home Guidance


-  Provide an external light or lights to all entrances.


-  Provide at least the recommended levels of illumination (lux) externally as follows (measured at ground level):


Entrances	100
Pedestrian access routes and walkways	50
Walkways, if colours are to be visible	30
Steps, ramps and landings	100
Designated parking spaces	30
Passenger setting-down points	50
Signage	30


-  If it is important that colours are to be visible, then 50 lux min. illumination is required.


-  Ensure glare ratings are generally less than or equal to 50 lux.

-  Ensure that access routes are well lit with an even spread of light.

-  Ensure that the door number and keyhole are adequately illuminated.

-  Provide P.I.R. sensor-activated lighting which is adjusted to suit its location.

-  Install lighting along one side of the access route only to avoid confusion.

-  Ensure that kerbs are illuminated where they are intended to be used as guides along a route.





Low maintenance planting defines boundaries and provides privacy and security.

Planting

Design Considerations and Awareness


Planting provides an opportunity for personalisation of a home, visual interest, some control of privacy and views, and definition of boundaries. In apartment developments planting may also soften hard, reverberating surfaces.


Avoid installing plants which produce high levels of pollen dispersal at approaches to apartment buildings or houses, as these can cause distress to people who suffer from allergies. Avoid plants with poisonous fruit or flowers that might be within reach of children. Planting design should avoid creating a hiding place for a potential intruder, for example within or behind a large shrub. Generally planting should achieve a clear zone between 1 and 2 metres in height, in order to ensure all areas are visible and therefore improve safety and security.


Distinctive trees and shrubs, scented flowers, colourful plants with berries, fruit or flowers, or unusual leaves, will all help to distinguish one building or home from another. This is very helpful to people who have vision or cognitive difficulties.


More information is provided about planting and gardens in Section 3.

UD Home and UD Home Guidance

-  Ensure that planting provided does not affect the clear width required for any pathway, steps or ramp.

-  Avoid designing a planting scheme which might provide hiding places for a potential intruder.

-  Avoid installing plants which might cause allergies or other health problems.

-  Distinguish between similarly designed homes and apartment buildings by means of different planting schemes.



Robust and conveniently located enclosure for communal bin store with firm, level, non-slip ground surface. Pedestrian access for home owners is from the side pavement.

Photo Design Tip

- ↑ Please note that the dropped kerb in the image is for the movement of bins and is not suitable for wheelchair-users. Bin stores should be accessible for everyone to use. A level area is required in front of the gates for ease of access by a wheel-chair user.
- ↑ A bin store will need an accessible and easy to use external tap for convenient cleaning of the area and bins.

Refuse Disposal and Recycling

Design Considerations and Awareness

The design and layout of refuse disposal for all homes should be easy to access and use, and avoid causing a nuisance in terms of unsightly appearance, noise or smells. Refuse arrangements will depend upon storage capacity, collection methods and frequency of collections.

For individual houses, a storage location for bins should be provided in an accessible location that is convenient to the house and collection point.


For apartment blocks and housing complexes, the collection point for communal waste should be conveniently located. A refuse storage location close, but not adjacent, to shared entrances is usually best for bagged waste carried down and deposited by residents.


Alternatives to wheelie bin collection exist in apartment buildings, such as the incorporation of vertical refuse chutes or the use of an underground refuse system


with a small accessible silo at ground level. These should be carefully designed so as to avoid noise and smells and to accommodate collection procedures.


Provide enough space inside the home to store non-recyclable and recyclable waste in an accessible location at an accessible height. Kitchen cupboards can be fitted with separated bins for different sorts of recyclable waste, and these are often colour-coded for ease of distinction.


UD Home and UD Home Guidance


-  Ensure compliance with the local authority's storage and collection systems.


-  Provide storage space within the home for non-recyclable waste and recyclable waste, bearing in mind the level of pre-sorting of recyclable waste required by the local authority.

-  Provide storage for food waste internally, and composting space for food and organic waste externally in the gardens of houses and ground floor units.

-  Ensure that bins and bin storage areas are easy to use and accessible, and do not require anyone to lift a bin bag above a height of 1100mm.

-  Locate the communal bin store near the entrance of the block to ensure that people use it.

-  Provide all refuse storage facilities with a hard, level non-slip floor and a tap to facilitate cleaning.

-  If refuse chutes are installed, ensure that:
 - there is adequate space around refuse chutes for a 1500mm clear turning circle.
 - hoppers open wide enough for bags to be inserted easily.
 - hoppers are located at a height of 700-1100mm from floor level.
 - chutes are coated with a sound-deadening material to avoid noise nuisance.
 - there is a nearby point with a water supply for washing down and cleaning chutes regularly.

UD Home Guidance:

Consider providing:

- A central accessible composting point for organic waste (grass cuttings, raw fruit and vegetable peel) in large developments.
- An Underground Refuse System which is accessible and maintains a clean and tidy environment.
- A bespoke pick-up system for refuse disposal offered by a caretaker or estate officer for those who have difficulty accessing their refuse storage space.