RESOLUTION

WHEREAS, the City Council has made a commitment to increase the supply of affordable housing in the City through its funding of various loan programs; and

WHEREAS, this Council supports energy efficiency and the concept of Universal Design (creating products which can be used by everyone, regardless of the user’s ability or disability); now, therefore

BE IT RESOLVED by the Council for the City of Charlottesville, Virginia that the following requirements are hereby placed on all transactions which use City funds or in-kind services for construction of new housing:

1. New housing using City-assisted funding (or in-kind services) will be built to Energy Star program standards, or a comparable energy efficiency standard approved by the City Building Official.
2. New housing using City-assisted funding (or in-kind services) will incorporate at a minimum Bronze Universal Design standards in construction plans. Should the house be located on such a steep lot that requirements related to exterior access cannot be met, those may be waived by the City Engineer. For a multi-family building the bottom floor shall be built to Bronze Universal Design Standards.

BE IT FURTHER RESOLVED that City staff will provide educational materials to developers, residents and homeowners who request information on energy efficiency and Universal Design standards, and, to the extent reasonable and possible, be ready to expedite plans which incorporate the above-referenced standards through the site plan approval process.

Approved by Council
April 21, 2008

[Signature]
Clerk of City Council
RESOLUTION
Design for Life C'ville & Universal Design Standards

WHEREAS, by Resolution approved April 21, 2008, City Council adopted a policy placing certain requirements on new housing construction which utilized City funds or in-kind services; and

WHEREAS, the requirements included building such new housing to Energy Star program standards or a comparable energy efficiency standard, and incorporating at least a Bronze Level of Universal Design standards in new housing construction plans; and

WHEREAS, the NDS Design for Life C'ville guidelines, adopted by Council on June 4, 2012, incorporates many of the Universal Design standards, and offers incentives for construction and renovation of housing that provides increased accessibility and livability; and

WHEREAS, City staff recommends that the City Council adopt a single accessibility standard by revising the Design for Life C'ville guidelines to provide accessibility and design elements present in the ANSI A117.1-2009 Code and the HUD Fair Housing Design Requirements; now, therefore,

BE IT RESOLVED by the Council for the City of Charlottesville that the above-referenced policy adopted on April 21, 2008 ("2008 Policy") is hereby revised to replace the Bronze Universal Design standard for all new housing using City assisted funding with the "Live-ability" level of the revised Design for Life C'ville program guidelines, as attached hereto. All other requirements in the 2008 Policy will remain in effect.

BE IT FURTHER RESOLVED that the Design for Life C'ville guidelines, as set forth in the attached document, are hereby approved.

Approved by Council
April 21, 2014

[Signature]
Clerk of Council
To earn the ENERGY STAR, a home must meet guidelines for energy efficiency set by the U.S. Environmental Protection Agency. These homes are at least 15% more energy efficient than homes built to the 2004 International Residential Code (IRC), and include additional energy-saving features that typically make them 20-30% more efficient than standard homes.

And with homebuyers increasingly interested in green building, energy efficiency is the place to start. That's because the energy used in homes often comes from the burning of fossil fuels at power plants, which contributes to smog, acid rain, and risks of global warming. So, the less energy used, the less air pollution generated. And the easy way to make sure a new home is energy efficient is to look for the blue ENERGY STAR mark, the government-backed symbol for energy efficiency. Learn more about how Green Begins with ENERGY STAR Blue (130KB).

Any home three stories or less can earn the ENERGY STAR label if it has been verified to meet EPA's guidelines, including: single family, attached, and low-rise multi-family homes; manufactured homes; systems-built homes (e.g., SIP, ICF, or modular construction); log homes, concrete homes; and even existing retrofitted homes.

ENERGY STAR qualified homes can include a variety of 'tried-and-true' energy-efficient features that contribute to improved home quality and homeowner comfort, and to lower energy demand and reduced air pollution:

1. Effective Insulation
Properly installed and inspected insulation in floors, walls, and attics ensures even temperatures throughout the house, reduced energy use, and increased comfort. Learn more about Properly Installed Insulation (149KB).

2. High-Performance Windows
Energy-efficient windows employ advanced technologies, such as protective coatings and improved frames, to help keep heat in during winter and out during summer. These windows also block damaging ultraviolet sunlight that can discolor carpets and furnishings. Learn more about Qualified Windows (212KB).

3. Tight Construction and Ducts
Sealing holes and cracks in the home's "envelope" and in heating and cooling duct systems helps reduce drafts, moisture, dust, pollen, and noise. A tightly sealed home improves comfort and indoor air quality while reducing utility and maintenance. Learn more about Efficient Duct Systems (163KB).

4. Efficient Heating and Cooling Equipment
In addition to using less energy to operate, energy-efficient heating and cooling systems can be quieter, reduce indoor humidity, and improve the overall comfort of the home. When properly installed into a tightly sealed home, this equipment won't have to work so hard to heat and cool the home. Learn more about:

* Qualified Heating Equipment (142KB)
5. Efficient Products
ENERGY STAR qualified homes may also be equipped with ENERGY STAR qualified products — lighting fixtures, compact fluorescent bulbs, ventilation fans, and appliances, such as refrigerators, dishwashers, and washing machines. Learn more about ENERGY STAR qualified products:

- Qualified Appliances (153KB)
- Qualified Lighting (170KB)
- Advanced Lighting Package (181KB)
- High Efficiency Water Heaters (177KB)

6. Third-Party Verification
With the help of independent Home Energy Raters, ENERGY STAR builder partners choose the most appropriate energy-saving features for their homes. Additionally, raters conduct onsite testing and inspections to verify the energy efficiency measures, as well as insulation, air tightness, and duct sealing details. Learn more about Independent Inspection and Testing (182KB).

Take a tour behind the walls of an ENERGY STAR qualified home:

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DESIGN FOR LIFE C’VILLE

PROGRAM GUIDELINES AND PROCEDURES

VOLUNTARY CERTIFICATION PROGRAM FOR VISIT-ABILITY AND LIVE-ABILITY IN SINGLE FAMILY ATTACHED AND DETACHED HOME NEW CONSTRUCTION AND RENOVATION

APPROVED: JUNE 4, 2012
REVISED: APRIL 21, 2014
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INTRODUCTION AND PURPOSE

Design for Life C'ville is a voluntary certification and incentive program in Charlottesville for Visit-Ability and Live-Ability in single family attached and detached homes located in Charlottesville. Its guidelines apply to both new construction and renovation of existing homes*. Whether you are a first time homebuyer, young family, career professional, active adult, or person living with a temporary or permanent disability, your home will be enhanced by these additional design features which will meet your needs throughout your life.

Unique features of the Design for Life C'ville Program:

1. One program with two optional standards of accessibility.
2. Voluntary: follows National Association of Homebuilder’s guidelines that support voluntary programs.
3. Targets new construction and renovation of existing homes*.
5. Administered by the City as part of the regular permitting process, not a special process:
   - A checkbox for review and certification is on the standard application for permit.
   - There are no additional permitting costs, beyond the standard fees.
6. Applicants who construct to the standards outlined below will have permit fees on the unit refunded upon certification as follows:
   - Visit-Ability: 25% of all Fees
   - Live-Ability: 50% of all Fees

Features included in the Design for Life C'ville program are intended to provide basic access under the visit-ability standard, while increasing access and quality of life under the live-able standard. This unique program was specifically designed to meet basic standards and to encourage construction and renovation of houses within the City to provide improved accessibility. It is not intended to meet the requirements of any federal or other existing building accessibility standards.

*Please note: Homes built before the program was initiated can apply to NDS for a Building Permit to schedule an inspection to qualify the Design for Life Level. For a minimal fee ($50.00) the home will be inspected by permitting staff for meeting the program requirements, and the owner will be issued a certificate for meeting the standards.

BENEFITS TO THE HOMEOWNER/HOMEBUYER:
Welcome to all visitors
Easier to live in and maneuver
Provides home for life

BENEFITS TO THE BUILDER:
Targets new emerging markets
Offers cutting edge features
Recognition of attention to buyer needs
Rebate of permit fees

BENEFITS TO THE COMMUNITY INCLUDE:
Increased neighborhood continuity
Promotes inclusion of all population segments

1 Note: This does not apply to utility tap fees.
ADMINISTRATION PROCEDURES

1. Applicant must indicate on the permit application that the building design includes
   □ Visit-Ability or □ Live-Ability per Guidelines

2. Applicant must include within the building plans for permit issuance two sets of drawings showing the accessible features and routes.

3. After final permit inspection, NDS will issue Design for Life C’ville Certificate for Visit-Ability or Live-Ability.

4. Submit the Certificate to Neighborhood Development Services for the refund described.

1. **Design for Life Cville is a Two-Tiered Certification Program:**
   
   **Level I – Visit-Ability** is a residence that has the following two features:
   1. At least one building entrance on an accessible route; and
   2. An accessible interior route connecting to at least one powder room or bathroom

   **Level II – Live-Ability** is a residence that has the following five features:
   1. At least one building entrance on an accessible route;
   2. An accessible interior route connecting to at least one bedroom;
   3. An accessible interior route connecting to at least one full bath;
   4. An accessible interior route connecting to an accessible kitchen; and
   5. Accessible controls and switches in all accessible interior routes and required usable spaces.

   **Alternative Design:** Nothing in this guideline is intended to prevent the use of designs, products, or technologies as alternatives to those presented by this document, provided they result in equivalent or greater accessibility and such equivalency is approved by the administrative authority.
DEFINITIONS

Accessible
When used with respect to single and two-family homes, “accessible,” means that the house can be approached, entered, and used by individuals with physical disabilities. The phrase “readily accessible to and usable by” is synonymous with "accessible."

Accessible route
A continuous and unobstructed path connecting accessible elements and spaces in a house or within a site that can be negotiated by a person with a severe disability using a wheelchair, and that is also safe for and usable by people with other disabilities. Interior accessible routes may include hallways, floors, ramps, elevators, and lifts. Exterior accessible routes may include parking access aisles, curb ramps, walkways, ramps, and lifts. For the purposes of these guidelines, accessible routes must comply with the appropriate requirements of ANSI A117.1-2009 and the applicable provision of the Virginia Uniform Statewide Building Code (USBC).

Approved
Acceptable to the jurisdictional body that adopts or enforces regulations and standards for the design, and construction of buildings and facilities.

Controls and switches
A component of an element used to insert or withdraw objects, or to activate, deactivate, or adjust the element. Items covered are light switches for controlling all room lights; electrical outlets; environmental controls (i.e. thermostats and controls for other heating, air-conditioning, and ventilations); operable windows in accessible bedrooms. Items not covered are circuit breakers; appliance controls; outlets dedicated for specific appliances and equipment; windows in kitchens and bathrooms.

Bathroom
A facility which includes a water closet (toilet), lavatory (sink), and bathtub or shower. It does not include single-fixture facilities or those with only a water closet and lavatory. It does include a compartmented bathroom. A compartmented bathroom is one in which the fixtures are distributed among interconnected rooms. A compartmented bathroom is considered a single unit and is subject to these guideline requirements for bathrooms.

Building entrance on an accessible route
An accessible entrance to a building that is connected by an accessible route to public transportation stops, to parking or passenger loading zones, or to public streets or sidewalks, if available. For the purposes of these guidelines, accessible building entrances must comply with ANSI A117.1-2009.

Powder room
A room containing a water closet (toilet) and a lavatory (sink).

Undefined Terms
The meaning of terms not specifically defined in this guideline or in a referenced document shall be as defined by collegiate dictionaries in the sense that the context implies.
ACCESSIBLE ROUTES

GUIDELINES
Accessible routes must comply with the Definition listed in this document, and, by extension, with ANSI A117.1-2009.

EXPLANATION
Design for Life C’ville understands the importance of ensuring that accessible routes connect all required usable spaces for both Visit-able and Live-able units. The following description and graphics depict clear and turning spaces required for maneuvering through an accessible route in a wheelchair.

Level I (Visit-able) units are required to have an interior accessible route that allows for access to a usable powder room or bathroom. Level II (Live-able) units are required to have interior accessible routes that allow for access to a bedroom, usable bathroom, and usable kitchen.
**Examples**

**Clear Floor Space:** The minimum clear floor space required to accommodate a single, stationary wheelchair is 30 inches by 48 inches. For an approach to an object, counter, or control, depending upon the object, the user may position his or her chair either parallel or perpendicular to the object.

**Turning Spaces:** The space required for a person using a wheelchair to make a 180-degree turn is a circle with a diameter of 60 inches. Alternatively, a person can make a T-shaped turn, similar to a three-point turn in a car, at the intersection of a hall or in a room where some of the space necessary to perform the turn may be under a desk, table, or countertop.
**BATHROOMS AND POWDER ROOMS**

**GUIDELINES**
Usable powder rooms shall contain the following:

1. Clear Floor Space: 30”x48” is the approved sized space available for people to be able to position themselves to use fixtures and facilities. Clear Floor Space is the position adjacent to fixtures; switches and controls to be accessible. Doors are permitted to swing into the clear floor space provided the required clear floor space is beyond the arc of the door swing.

2. Clear Floor Space for sinks, lavatory and toilets shall be centered on the fixture.

3. Reinforcement at the toilet to allow for future installation of grab bars.

Usable bathrooms shall contain all of the above elements as well as the following:

1. Clear floor space centered on the bathtub or a 36”x36” shower.

2. Reinforcement at the bathtub or shower with installed grab bars. Level I (visit-able) units opting to include a bathroom in lieu of a powder room may comply by installing reinforcements only to allow for future installation of grab bars.

3. Installed grab bars at the toilet. Level I (visit-able) units opting to include a bathroom in lieu of a powder room may comply by installing reinforcements only to allow for future installation of grab bars.

**EXPLANATION**
The plans presented on the following pages are examples of “usable” bathrooms and powder rooms that comply with the Design for Life C’ville guidelines. Level I (Visit-able) units are required to have an accessible powder room, while Level II (Live-able) units are required to have an accessible full bathroom with bathtub or shower. The accessible powder room in Level I can, however, be substituted for an accessible full bathroom with bathtub or shower if so desired. These plans are only a sampling of possible layouts that would conform to the specifications and are not intended to limit designers’ options; certainly other layouts are feasible. The plans are neither required nor even suggested as ideal examples. They are included to illustrate typical applications of interpretations of specific requirements of the guidelines under various circumstances.

The toilet used measures 29” from the back wall to the front edge of the bowl. Doors are shown as 34” wide to provide the required nominal 32” clear opening. These plans may need to be adjusted if fixtures and/or doorways used are different in size from those shown in the examples.

Some of the plans are more usable than others by people with disabilities and comments are included to describe where improvements could be made. The plans are divided according to bathing fixture type: bathtub/showers, showers, and multiple bathing fixtures. The plans are presented in pairs, with the first showing the overall room shape while the dimensioned plan describes the clear floor spaces at fixtures and indicates minimum wall and/or floor areas to be reinforced as applicable.

Text and notes presented in *italic* type are comments or recommendations and are not required.
Bathroom with Bathtub

no leg or support should be present on right outside corner so user can pull in under the lavatory

since parallel approach centered on basin not possible, cabinet below lavatory must be removable

where a removable cabinet is provided below a countertop less than 32" in width, care must be taken to prevent support method or brackets from encroaching upon required kneespace

door must swing out (see note below)

reinforcing may be required in floor depending on type of grab bars planned for

reinforcing must be located in this area to provide support for a drop-down grab bar or a floor-mounted bar similar to those shown on page 6.6; the bar must swing out of the way so access to the tub and controls is available

countertop lavatory with knee space below to allow forward approach to fixture

A person using a wheelchair would back into the room to use the bathtub but must be able to close the door and have an unblocked forward approach to the bathtub; therefore, to comply, the door must swing out.

Legend:
- ■■■■■ reinforcing in walls or floors for grab bars
- ◼◼◼◼◼ min. clear floor space at each fixture
- ••••• min. clear floor space outside swing of door
Bathroom with Bathtub

Legend:
- Reinforcing in walls or floors for grab bars
- Min. clear floor space at each fixture
- Min. clear floor space outside swing of door

Door and countertop sized so they do not conflict.

While not required, access is improved if door swings out and an auxiliary door handle is installed.

Clear floor space for maneuvering outside swing of door.

Vanity with clear floor space centered on basin to permit parallel approach.

24" minimum reinforcing required, 42" preferred.

Clear floor space at lavatory doubles as clear floor space at bathtub.

9'-8" 5'-0"
Bathroom with Bathtub

The guidelines do not require space for a five-foot turn or a T-turn in bathrooms. In this bathroom, most persons using a wheelchair will not be able to turn around and may have to back into or out of the room. This, combined with the lack of space to the latch side of the door, makes this room difficult to use by many people. Therefore, it is recommended that the 5'-2" dimension be increased and/or that knee space be provided under the lavatory.

Legend:

- **Reinforcing in Walls or Floors for Grab Bars**
- **Min. Clear Floor Space at Each Fixture**
- **Min. Clear Floor Space outside Swing of Door**
Bathroom with Bathtub

if tile area is a shelf, reinforcing should be located in the vertical wall to support future grab bar mounted 33" to 36" above the floor

tile area could be either a seat or a shelf

while not required, access is improved if door swings out and an auxiliary door handle is installed

24" minimum reinforcing required, 42" preferred

vanity with clear floor space centered on basin to permit parallel approach

if tile area is a seat at back of bathtub, reinforcing at least 6" to 8" wide must be located here

no reinforcing required in this wall

Legend: | reinforcing in walls or floors for grab bars | min. clear floor space at each fixture | min. clear floor space outside swing of door
Bathroom with Bathtub

Only 19 inches of the required 30-inch x 48-inch clear floor space can go under a lavatory. A deeper lavatory would require that the clear floor space be positioned away from the plumbing wall and closer to the tub, causing it to overlap with the door swing. If a deeper lavatory is desired the room must be lengthened.

Legend:
- Reinforcing in walls or floors for grab bars
- Min. clear floor space at each fixture
- Min. clear floor space outside swing of door

19” maximum deep wallhung lavatory with knee space
Bathroom with Bathtub

Option 1:
Plumbing on Opposite Walls
Lavatory With Base Cabinet Below
(No Knee Space)

Option 2:
Plumbing on Common Wall
Lavatory With Shallow Knee Space

Legend:
- Reinforcing in walls or floors for grab bars
- Min. clear floor space at each fixture
- Min. clear floor space outside swing of door

8'-6" 36" wide vanity with offset basin to permit parallel approach centered on basin
Bathroom with Bathtub

Legend:

- Reinforcing in walls or floors for grab bars
- Min. clear floor space at each fixture
- Min. clear floor space outside swing of door

shallow linen closets may have doors that do not provide a nominal 32" clear opening

controls located within reach of seated user

clear floor space for maneuvering outside swing of door (extends into knee space at lavatory)

24" long max. partition wall

removable base cabinet at knee space

24" min. reinforcing required, 42" preferred

24" deep max. countertop lavatory with removable vanity cabinet below to allow a forward approach,

reinforcing for deck-mounted grab bars

- 5'-0"
- 2'-11"
- 8'-3"
- 6'-0"
- 2'-8"
- 1'-8"

8'-3"
Compartmentalized Bathroom with Bathtub

Legend:
- Reinforcing in walls or floors for grab bars
- Min. clear floor space at each fixture
- Min. clear floor space outside swing of door

Clear floor space for maneuvering within tub/toilet area

Removable base cabinet at knee space

Open to bedroom

If 6" of space were added between bathtub and toilet, bathroom also could be a "B" bathroom

24" deep vanity with clear floor space for parallel approach to right basin plus knee space below left basin for a forward approach

In "A" bathrooms all fixtures, including both lavatories, must be usable
BATHROOMS WITH SHOWER BATHING FIXTURE

“A” and “B” Bathroom with Shower

while not required, access is improved if door swings out and an auxiliary door handle is installed

linen closets may have doors that do not provide a nominal 32" clear width if they do not require the user to pass through the door to reach the contents

36" x 36" min. shower with clear floor space offset to provide access to optional seat

vanity with clear floor space centered on basin to permit parallel approach

24" min. reinforcing required, 42" preferred

transferring onto toilet may be difficult for some people, recommend increasing this dimension 6"

Legend:

- - reinforcing in walls or floors for grab bars
- - - min. clear floor space at each fixture
- - - - min. clear floor space outside swing of door
Bathroom with Shower

where a removable cabinet is provided below a countertop less than 32" in width, care must be taken to prevent support method or brackets from encroaching upon required knee space.

36" x 36" min. shower with clear floor space offset to provide access to optional seat.

30" wide countertop lavatory with knee space below to allow forward approach to fixture.

no leg or support should be present on left outside corner so user can pull in under the lavatory.

clear floor space for maneuvering outside swing of door while not required, access is improved if door swings out and an auxiliary door handle is installed.

removable base cabinet at knee space.

Legend:  ■ reinforcing in walls or floors for grab bars  ■ min. clear floor space at each fixture  ■ min. clear floor space outside swing of door
Bathroom with Shower

Legend:
- reinforcing in walls or floors for grab bars
- min. clear floor space at each fixture
- min. clear floor space outside swing of door

36" wide vanity with offset basin to permit parallel approach centered on basin

24" min. reinforcing required, 42" preferred

36" x 36" min. shower with clear floor space offset to provide access to optional seat

clear floor space for maneuvering outside swing of door

alternate door location

Legend:
- reinforcing in walls or floors for grab bars
- min. clear floor space at each fixture
- min. clear floor space outside swing of door

Legend:
- reinforcing in walls or floors for grab bars
- min. clear floor space at each fixture
- min. clear floor space outside swing of door

36" wide vanity with offset basin to permit parallel approach centered on basin

24" min. reinforcing required, 42" preferred

36" x 36" min. shower with clear floor space offset to provide access to optional seat

clear floor space for maneuvering outside swing of door

alternate door location
Bathroom with Shower

Legend:

min. clear floor space at each fixture

outside swing of door

while not required, access is improved if door swings out and an auxiliary door handle is installed

storage shelves

24" min. reinforcing required, 42" preferred

36" x 36" min. shower with clear floor space offset to provide access to optional seat

36" wide vanity with offset basin to permit parallel approach centered on basin

optional shower seat

Legend: 

reinforcing in walls or floors for grab bars 

min. clear floor space at each fixture 

min. clear floor space outside swing of door
Bathroom with Large Shower

- Oversized shower with glass door enclosure
- Clear floor space for maneuvering outside swing of door
- Storage shelves
- Pedestal lavatory with clear floor space centered on basin to permit parallel approach
- 24" minimum reinforcing required, 42" preferred
- Sliding glass doors may have to be removed to provide opening large enough to allow a transfer from outside the shower
- Optional additional set of controls and shower head for use from seat
- Optional built-in seat

Legend:
- Reinforcing in walls or floors for grab bars
- Min. clear floor space at each fixture
- Min. clear floor space outside swing of door
Single Room Occupancy Unit
with Roll-In Shower

roll-in shower has no lip or curb

bathroom floor is waterproofed and sloped so entire room acts as shower/wet area

clear floor space for maneuvering within shower/toilet room

door must swing out

sleeping/dressing area

24" minimum reinforcing required, 42" preferred

vanity with clear floor space to permit parallel approach centered on basin

optional folding shower seat

Legend: 🕒 min. clear floor space at each fixture 🟣 min. clear floor space outside swing of door

Legend: ⌚️ reinforcing in walls or floors for grab bars 🕒 min. clear floor space at each fixture 🟣 min. clear floor space outside swing of door
BATHROOMS WITH TWO BATHING FIXTURES

Bathroom with Two Bathing Fixtures
(Accessible Shower/Inaccessible Bathtub)

Legend:
- Reinforcing in walls or floors for grab bars
- Min. clear floor space at each fixture
- Min. clear floor space outside swing of door

Although not required, since the toilet is in an alcove, it is recommended that the alcove width be increased from the min. of 33" to 36" (shown at 33")

24" long max. partition wall

Inaccessible raised or sunken whirlpool bathtub

While not required, access is improved if door swings out and an auxiliary door handle is installed

Clear floor space for maneuvering outside swing of door

36" x 36" minimum shower with clear floor space offset to provide access to seat

Optional shower seat

Because bathtub is inaccessible, clear floor space at that fixture is not required; however reinforcing for grab bars is required

24" minimum reinforcing required, 42" preferred
Bathroom with Two Bathing Fixtures (Accessible Bathtub/Accessible Shower)

- Whirlpool bathtub

- Clear floor space for maneuvering outside swing of door (extends into knee space at lavatory)

- Removable base cabinet at knee space

- Deck or floor-mounted grab bar reinforcing should be 6" to 8" wide min.

- Reinforcing for grab bars may be installed in the floor when whirlpool bathtub is not surrounded by walls

- Controls located within reach of seated user

- 30" x 48" shower with clear floor space

- 24" minimum reinforcing required, 42" preferred

- Custom corner countertop lavatory with knee space below to allow forward approach to fixture

- 24" long maximum partition wall, shorter preferred

- Although not required, since the toilet is in an alcove, it is recommended that the alcove width be increased from the min. of 33" to 36" (shown at 33")

Legend:
- Reinforcing in walls or floors for grab bars
- Min. clear floor space at each fixture
- Min. clear floor space outside swing of door
Bathroom with Two Bathing Fixtures
(Accessible Bathtub/Inaccessible Shower)

clear floor space
for maneuvering
outside swing of door

controls located within
reach of seated user

linen closet doors may be
less than 32" nominal clear
width if user is not required
to pass through the door to
reach the contents

this room could be improved
by omitting the closet to allow
additional maneuvering space

some people using wheel-
chairs will have to leave the
sliding door open in order
to position their chair to
make a transfer onto toilet

grab bars can be deck-
mounted if solid construc-
tion, wall-mounted if tub
is prefabricated

deck or floor-mounted

grab bar reinforcing should
be 6" to 8" wide min.

inaccessible
shower still must
have reinforcing
for grab bars

Legend:
- reinforcing in walls or
  floors for grab bars
- min. clear floor space
  at each fixture
- min. clear floor space
  outside swing of door
**Powder Rooms**

- **Legend:**
  - reinforcing in walls or floors for grab bars
  - min. clear floor space at each fixture
  - min. clear floor space outside swing of door

- **removable base cabinet at knee space**

- **clear floor space for maneuvering outside swing of door (extends into knee space at lavatory)**

- **while not required, access is improved if door swings out and an auxiliary door handle is installed**

- **24" minimum reinforcing required, 42" preferred**

- **24" deep countertop lavatory with knee space below to allow forward approach to fixture**

- **where a removable cabinet is provided below a countertop less than 32" in width, care must be taken to prevent support method or brackets from encroaching upon required knee space**
Powder Room

Legend:

- Reinforcing in walls or floors for grab bars
- Min. clear floor space at each fixture
- Min. clear floor space outside swing of door

removable base cabinet at knee space

clear floor space for maneuvering

to comply, door must be outswinging so there is a clear floor space outside the swing of door

countertop lavatory with knee space below to allow forward approach to fixture

where a removable cabinet is provided below a countertop less than 32" in width, care must be taken to prevent support method or brackets from encroaching upon required knee space

24" min. reinforcing required, 42" preferred
Powder Room

While an inswinging door is allowed, it is difficult to open door once inside the room unless the user backs into the space. Access is improved if door swings out and an auxiliary door handle is installed.

Legend:

- Reinforcing in walls or floors for grab bars
- Min. clear floor space at each fixture
- Min. clear floor space outside swing of door

24" min. reinforcing required, 42" preferred

vanity with clear floor space to permit parallel approach centered on basin
Powder Room

Legend:
- Reinforcing in walls or floors for grab bars
- Min. clear floor space at each fixture
- Min. clear floor space outside swing of door

clear floor space for maneuvering outside swing of door

storage shelves
to comply, door must be outswinging so there is a clear floor space outside the swing of door

removable base cabinet at knee space

24" minimum reinforcing required, 42" preferred

countertop lavatory with knee space below to allow forward approach to fixture

30" is insufficient space to make a 90-degree turn under the lavatory, therefore 36" is recommended
KITCHENS

GUIDELINES
Kitchens require a 40-inch clear passageway between cabinetry and appliances. It is recommended that U-shaped kitchens provide a 60-inch clear floor space between the faces of opposing cabinets and appliances to make all sides usable.

EXPLANATION
The design of kitchens usable by a person with a disability demands careful consideration and thoughtful planning. Careful location of appliances, plumbing fixtures and cabinetry is essential to achieve the required maneuvering clearances and clear floor spaces that are required in the necessary functions in an accessible and functional kitchen. Attentive design will produce a kitchen that provides an accessible and functionally efficient kitchen that is easily usable by a person with a disability or mobility impairment, as well as an able-bodied person.

The plans presented on the following pages are examples of “usable” kitchens that comply with the Design for Life C’ville guidelines. These plans are only a sampling of possible layouts that would conform to the specifications and are not intended to limit designers’ options; certainly other layouts are feasible. The plans are neither required nor even suggested as ideal examples. They are included to illustrate typical applications of interpretations of specific requirements of the guidelines under various circumstances.

Level II (live-able) units are required to have a usable kitchen. There is no requirement for a useable kitchen for Level I (visit-able) units.
The Guidelines require a clearance of at least 40 inches between all opposing base cabinets, countertops, appliances, and walls. The 40-inch clearance is measured from any countertop or the face of any appliance (excluding handles and controls) that projects into the kitchen to the opposing cabinet, countertop, appliance, or wall.

Refrigerators vary greatly in depth and may extend up to eight inches beyond cabinet faces. Standard free-standing and drop-in ranges may project up to three inches. Appliance depths (excluding door handles) must be included when calculating the 40-inch clearances.
In a narrow kitchen the 40-inch minimum clearance provides an additional five inches on either side of the required clear floor space of 30 inches x 48 inches at each fixture or appliance, so a user in a wheelchair can maneuver as close as possible to appliances or fixtures. A narrow kitchen such as the one shown to the right meets the guidelines and is usable, but may be difficult for many people using wheelchairs. Its narrow corridor design requires a user in a wheelchair to exit the kitchen to turn around.

In more elaborate kitchens where an island is planned, the 40-inch clearance must be maintained between the face of the island and all opposing features. Even though an accessible route for a 90-degree turn around an obstruction is 36 inches, to ensure sufficient space for maneuvering within the kitchen, the guidelines require that the minimum clearance of 40 inches be maintained.
A 60-inch diameter turning circle is required in a U-shaped kitchen that has a sink, range, or cooktop at its base. This turning diameter is necessary to provide adequate maneuvering space for a person using a wheelchair to approach and position themselves parallel to the appliance or fixture at the base of the U. Any appliances, such as refrigerators and ranges (excluding door handles), that project beyond countertops and cabinets must not encroach upon this 60-inch diameter turning space.

In addition to the turning space, the kitchen must be arranged so there is a 30-inch x 48-inch clear floor space for a parallel approach centered on the sink, range, or cooktop. The centerline of the fixture or appliance must be aligned with the centerline of the clear floor space.

When a sink, even a standard single basin sink, is at the bottom of the U and a dishwashing machine is planned to be included adjacent to the sink, the distance between the legs of the U must be greater than 60 inches to allow for a full centered approach at the sink. See the lower plan in the right column.
**CONTROLS AND SWITCHES**

**GUIDELINES**
The requirements for accessible controls and switches are outlined in pages 32-35 of this document.

**EXPLANATION**
Design for Life C'ville acknowledges that accessible design of controls and switches is a critical component of ensuring a unit is fully usable for a person with a physical disability. To that end, the guidelines for accessible controls and switches are required for Level II compliance (Live-able), but are not required for Level I compliance (Visit-able).

The following provides explanation and guidance on locating controls and switches for approaches from the front and side, with varying levels of obstruction.
Examples

Accessible Locations

Height specifications for wall-mounted controls and outlets are based upon the reach ranges of seated people given in the ANSI Standard. Typically ANSI and other accessibility standards present reach ranges for both forward and side reaches: 1. where the user must reach over an obstruction, and 2. where the user’s approach is not restricted by an obstruction. One of these positions, a side reach from a parallel position without an obstruction, requires a 48-inch long clear floor space parallel and close to the wall so a user can get close enough to reach controls and switches. Once a dwelling unit is furnished, sufficient room to execute such a parallel approach usually is not available; thus this specification is not required.

To accommodate all users in situations where there may or may not be a built-in counter, base cabinet, or other obstruction to interfere with reach, there are specific requirements for mounting controls and switches so a person using a wheelchair can execute: 1. a forward reach with no obstruction, 2. a forward reach over an obstruction, and 3. a side reach over an obstruction.

![Diagram of Forward Reach From a Perpendicular Approach Included in Guidelines](image1)

![Diagram of Side Reach from a Parallel Approach Not Included in Guidelines](image2)

rarely is an unobstructed 48” long expanse of wall present in a furnished dwelling unit

user is parallel to wall for a side reach

user is perpendicular to wall for a forward reach

Forward Reach From a Perpendicular Approach Included in Guidelines

Side Reach from a Parallel Approach Not Included in Guidelines
**Forward Reach with No Obstruction**

Where there are no obstructions to interfere with the reach of a person using a wheelchair, controls and outlets may be mounted in a range from 15 to 48 inches above the floor. There must be a clear floor space of 30 inches x 48 inches perpendicular to the wall, adjoining a 36-inch wide accessible route, to allow a person using a wheelchair to approach and get into position to execute a forward reach to the control or outlet.

Thermostats and other controls that must be read pose additional considerations. Even though people using wheelchairs may be able to execute a forward reach of 48 inches at a clear wall, they may have difficulty seeing the small numerals and indicators generally found on thermostats. A person using a wheelchair, when positioned perpendicular to a wall, must lean forward over his or her feet and knees making it difficult to get close enough to read small type. Therefore, it is critical that thermostats and similar controls that must be read are mounted at or lower than 48 inches above the floor.

**Forward Reach Over an Obstruction**

Controls and outlets may be positioned above obstructions (e.g. built-in shelves and countertops) and still be mounted in locations that are accessible. A minimum 30-inch wide clear knee space as deep as the reach distance, adjoining a 36-inch wide accessible route, must be available below the counter/obstruction to allow a person using a wheelchair to pull up and execute a forward reach over the obstruction.
For obstructions extending from 0 to 20 inches from the wall the maximum height for a control or outlet over the obstruction is 48 inches above the floor. Deeper shelves, extending 20 to 25 inches from the wall, reduce the maximum mounting height of controls and outlets to 44 inches. Controls and outlets mounted over obstructions extending further than 25 inches are outside the reach range of people using wheelchairs and are not considered to be in accessible locations. However, Design for Life C'ville allows an industry tolerance of 1/2 inch to permit the installation of standard countertops that may project from the back wall for a maximum dimension of 25-1/2 inches.

**Maximum Forward Reach**

*From a Perpendicular Approach* over an Obstruction
**Side Reach**

**Over an Obstruction**

To reach controls and outlets mounted over base cabinets which lack knee space, a person using a wheelchair must be able to approach the cabinet from a position parallel to the cabinet and execute a side reach. This parallel position is made up of a 30-inch x 48-inch clear floor space adjoining a 36-inch wide minimum accessible route. When executing a side reach over a cabinet, the upper limit of the range is reduced to 46 inches.

Cabinet depth is limited to 24 inches. Design for Life C’ville permits use of a standard 24-inch deep cabinet with an additional extension of 1 to 1-1/2 inches for countertops for a maximum depth of 25-1/2 inches. If a built-in shelf, cabinet, or other obstruction must be deeper than 25-1/2 inches, then any switches, outlets, and controls that must be in accessible locations are not permitted to be installed over such deep surfaces.

**Mounting Locations for Outlets**

For accessible controls and outlets, all operable parts must be within the ranges specified above. When electrical outlets are installed horizontally or vertically, duplex outlets must have both receptacles within the reach range. Measurements are made as illustrated below.
RECOMMENDATIONS FOR 
INCREASED ACCESSIBILITY

Design for Life C’ville does not specify that controls and switches installed in dwelling units be accessible in terms of ease of operation, but that they be in accessible locations. For anyone specifying building products and appliances and wishing to enhance the accessibility of dwelling units, the following is a brief discussion of the types of switches and controls that increase usability for people with disabilities, as well as other persons who may experience hand limitations.

The most universally usable switches are rocker switches, toggle switches, and touch type electronic switches because they can be operated by a single touch, require little force, and do not require gripping, twisting, or fine finger dexterity.

Lever controls are generally usable by people with disabilities because they do not require grasping or significant force, and in some instances, their shape may double as an integral pointer to indicate the control’s position. For people with limited strength or hand dexterity, smooth round knobs are especially difficult, as are controls that must be pushed down and turned at the same time.

Switches Most People Can Operate

rocker

toggle

touch sensitive

smooth round knobs are difficult for people with hand limitations as well as for people with visual impairments

Poor Choice

levers are ideal but rarely found on appliances

blades help indicate position and make turning somewhat easier

small lever or extended blade provides position pointer and leverage for easy turning without gripping

Better Control Choices