# THE VIRGINIA HOUSING DEVELOPMENT AUTHORITY
# LOW INCOME HOUSING TAX CREDIT
# UNIVERSAL DESIGN GUIDANCE

## Introduction

As part of the Low Income Housing Tax Credit program, the Virginia Housing Development Authority (VHDA) has implemented incentives for developers who include Universal Design features when implementing building standards to achieve accessibility in multifamily units. This document describes how this process will be assessed for certification purposes and consists of the following parts:

- Guidance Summary
- Appendix A - Understanding the Uniform Federal Accessibility Standard and Section 504
- Appendix B - Principles of Universal Design
- APPENDIX C - Checklist of Universal Design Features

To aid in this effort, VHDA posted the document entitled *Universal Design Features & Principles and Multifamily Housing: A Guidebook for LIHTC Developers* (July 2007) on www.vhda.com. As a follow up, this document, *Universal Design Guidance* describes how this process will be assessed and certified.

VHDA offers Universal Design Seminars at least twice annually as part of VHDA's ongoing commitment to promoting accessible communities. Architects should attend one or more of these seminars. Likewise, housing developers and housing program professionals are strongly encouraged to attend such training. The seminar schedule is posted on www.vhda.com. Finally, VHDA provides staff assistance for questions about specific issues pertaining to accessibility and Universal Design. If you need such assistance, please contact Dr. Bill Fuller at 804-343-5754 or by email at bill.fuller@vhda.com.

Guidance Summary

## *Understanding the Relationship of Accessibility Building Standards and Universal Design Principles*

VHDA recognizes that Universal Design is not a building standard but rather a set of principles for achieving a design quality that improves esthetics and makes the built environment usable by a greater number of people. Accordingly, it is the architect who must select the appropriate accessibility standard, either:

- ICC/ANSI A117.1 Standard (for units required to meet the Fair Housing Guidelines) or,
- Uniform Federal Accessibility Standard (UFAS) (for units required to meet Section 504 Standards).

If the developer selects the 50 or 30 point category under the accessibility section of the Qualified Allocation Plan (QAP), then the developer is agreeing to provide more accessible units than is required by Section 504. QAP accessibility requirements are separate from the 504 requirements (if Federal Funds are used in the project). However, the QAP accessibility units may qualify as 504 units. UFAS is further discussed in Appendix A.

The building standards (such as ANSI or UFAS) dictate WHAT must be done, whereas Universal Design (UD) attempts to explain HOW to make the design esthetically pleasing and usable by the largest number of people possible by means of the principles articulated in Appendix B – Principles of Universal Design.

VHDA has been providing UD Training for architects since 2004 and strongly recommends that the architect involved with a project claiming points in the UD category for the Low-Income Housing Tax Credit (LIHTC) Program attend this training and become familiar with UD features and how they are used to improve design elements.

Architects are free to implement designs in any manner that meets the UD principles. For further assistance, the VHDA has published on its web site at www.vhda.com a list of consultants

who will be responsible for certifying to VHDA that the UD features included in the checklist are present in the built environment. These design consultants should be engaged early in the design process to insure a seamless certification.

### *An Example of Universal Design Philosophy in Action*

In the UFAS standards, Standard 4.19.4 - EXPOSED PIPES AND SURFACES requires that hot water and drain pipes under lavatories shall be insulated or otherwise covered. There shall be no sharp or abrasive surfaces under lavatories. This standard can be met by wrapping the pipes in fiberglass pipe insulation. However, the incorporation of the Universal Design philosophy into the plans would likely result in the use of a rear drain sink that allows the pipes to be recessed and hidden behind a valance. The rear drain sink allows for accessibility plus better esthetic appearance and the prospect for better unit marketability.

The intent is to improve overall design by using the seven principles of Universal Design when implementing accessibility standards. Appendix B details the seven principles.

### *Using the VHDA Universal Design Checklist*

Universal Design is an emerging design field with elements that change often as improved technologies are introduced into the market place and ideas evolve about what constitutes good design. Therefore the examples used in the checklist that follows are only a few of the possible iterations of UD design. As indicated earlier, architects are free to implement these designs in any manner that addresses the checklist. In addressing the checklist there may be one or more options to choose from, for example, provide either the roll-in shower or a tub with appropriate grab bars. The architect working in collaboration with the consultant will decide how best to address the checklist. At the completion of the development the consultant will provide VHDA with certification that the development has addressed each item on the checklist.

## APPENDIX A
## Understanding the Uniform Federal Accessibility Standard and Section 504

In new multifamily housing, the Civil Rights Act of 1968 as Amended in 1988 requires that 100% of the units in a building with an elevator must be accessible. If a building does not have an elevator, all of the ground floor units in the building (regardless of the percentage or number of units) must be accessible. In rare instances, sites may have steep terrain or unusual characteristics that make it impractical for some units to be made accessible.

Section 504 of the Rehabilitation Act of 1973 states: "No otherwise qualified individual with a disability in the United States ... shall, solely by reason of her or his disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program, service or activity receiving federal financial assistance or under any program or activity conducted by any Executive agency or by the United States Postal Service." (29 U.S.C. §794). This means that Section 504 prohibits discrimination on the basis of disability in any program or activity that receives financial assistance from any federal agency, including the U.S. Department of Housing and Urban Development (HUD) as well as in programs conducted by federal agencies including HUD, such as HOME or CDBG.

The Section 504 regulations define an accessible dwelling unit as a unit that is located on an accessible route and can be approached, entered, and used by individuals with physical disabilities. A unit that is on an accessible route and is adaptable and otherwise in compliance with the standards set forth in 24 CFR 8.32 is accessible. In addition, the Section 504 regulations impose specific accessibility requirements for new construction and alteration of housing and non-housing facilities in HUD assisted programs. Section 8.32 of the regulations states that compliance with the appropriate technical criteria in the Uniform Federal Accessibility Standards (UFAS), or a standard that is equivalent to or stricter than the UFAS, is an acceptable means of meeting the technical accessibility requirements in Sections 8.21, 8.22, 8.23 and 8.25 of the Section 504 regulations.

For a federally assisted new construction housing project, Section 504 requires 5% of the dwelling units, or at least one unit, whichever is greater, meet UFAS or a standard that is equivalent or stricter, as explained in the question and answer above this one, for persons with mobility disabilities. An additional 2% of the dwelling units, or at least one unit, whichever is greater, must be accessible for persons with hearing or visual disabilities.

APPENDIX B
Principles of Universal Design

**PRINCIPLE ONE: Equitable Use**
The design is useful and marketable to people with diverse abilities.

Guidelines:
- Provide the same means of use for all users: identical whenever possible; equivalent when not.
- Avoid segregating or stigmatizing any users.
- Provisions for privacy, security, and safety should be equally available to all users.
- Make the design appealing to all users.

**PRINCIPLE TWO: Flexibility in Use**
The design accommodates a wide range of individual preferences and abilities.

Guidelines:
- Provide choice in methods of use.
- Accommodate right- or left-handed access and use.
- Facilitate the user's accuracy and precision.
- Provide adaptability to the user's pace.

**PRINCIPLE THREE: Simple and Intuitive Use**
Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Guidelines:
- Eliminate unnecessary complexity.
- Be consistent with user expectations and intuition.
- Accommodate a wide range of literacy and language skills.
- Arrange information consistent with its importance.
- Provide effective prompting and feedback during and after task completion.

**PRINCIPLE FOUR: Perceptible Information**
The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Guidelines:
- Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- Provide adequate contrast between essential information and its surroundings.
- Maximize "legibility" of essential information.
- Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).

- Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

**PRINCIPLE FIVE: Tolerance for Error**
The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines:
- Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
- Provide warnings of hazards and errors.
- Provide fail-safe features.
- Discourage unconscious action in tasks that require vigilance.

**PRINCIPLE SIX: Low Physical Effort**
The design can be used efficiently and comfortably and with a minimum of fatigue.

Guidelines:
- Allow user to maintain a neutral body position.
- Use reasonable operating forces.
- Minimize repetitive actions.
- Minimize sustained physical effort.

**PRINCIPLE SEVEN: Size and Space for Approach and Use**
Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

Guidelines:
- Provide a clear line of sight to important elements for any seated or standing user.
- Make reach to all components comfortable for any seated or standing user.
- Accommodate variations in hand and grip size.
- Provide adequate space for the use of assistive devices or personal assistance.

**Appendix C**

# Universal Design Features Multi-Family Housing *CHECKLIST*

## Virginia Housing Development Authority

### Purpose

The Virginia Housing Development Authority (VHDA) is committed to the creation of housing units that contribute to the long-term viability of a community. The application of certain principles during planning can strengthen an overall community as well as enhance the design and construction of individual houses within those communities.

Universal Design represents an important approach in ensuring a community's sustainability by providing residents with a housing product that enables them to age in place or accommodate unexpected changes in a resident's mobility. This guidebook is provided as a resource to developers seeking to develop multi-family rental housing incorporating universal design elements while obtaining VHDA assistance through the Low-Income Housing Tax Credit Program.

***Universal design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.***
**Ron Mace**

# Universal Design Defined

Universal Design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. Universal Design is not a building standard, but rather a model through which building standards can be better applied. The object is to use Universal Design to build smarter, more usable homes. The intent of Universal Design is to simplify life for everyone by making housing usable by more people at little or no extra cost. Universal Design is an approach to design that incorporates products as well as building features and elements, which, to the greatest extent possible, can be used by everyone. While accessible or adaptable design requirements are specified by codes or standards for only some buildings and are aimed at benefiting only some people (e.g. those with mobility limitations), the universal design concept targets all people of all ages, sizes, and abilities and is applied to all buildings.

When designing units competing for low income housing tax credits, the design professional must specify the building standard being used (e.g. CCI/ANSI A117.1 for complying with fair housing standards or Uniform Federal Accessibility/UFAS standard for complying with the Rehabilitation Act Section 504). The principles of Universal Design are then incorporated as an overlay to implement the design features in a way that results in better, smarter design.

A universal design feature may be considered as any component of a housing unit that can be used by everyone regardless of the level of ability or disability.

Universal features are generally standard building products or features that have been placed differently, selected carefully, or omitted. For example, standard electrical receptacles can be placed higher than usual above the floor, standard but wider doors can be selected, and steps at entrances can be eliminated to make housing more universally usable. While a particular design standard may require clear floor space under a sink, Universal Design leads the design professional to choose a rear drain sink rather than wrapping the exposed pipes with foam insulation or duct tape. The composition of our population is changing. Many people are surviving permanently disabling accidents and illness and even more are living longer. Spaces built to accommodate this population must, by necessity, change also. The building and design industries have responded to this need for change by producing special products and spaces for special groups. However, “special” is often synonymous with “expensive”. Specialization leads to complicated building standards and products that, in the end, seldom meet the needs of more than a fraction of those they were intended to help and often seem to stigmatize and separate, rather than normalize and integrate people.

Universal Design succeeds because it goes beyond specialization. The concept promotes designing every product and building so that everyone can use them to the greatest extent possible - every faucet, light fixture, shower stall, public telephone, or entrance. Universal Design is a revolutionary but practical leap forward in the evolution of building and design procedures. When designers and manufacturers seize this concept, Universal Design will become common, convenient, and profitable.

*Based on excerpts taken from Universal Design: Housing for the Lifespan of all People, by Ron Mace for the U.S. Department of Housing and Urban Development, 1998.*

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### REHABILITATION PROJECTS

VHDA recognizes that older buildings (particularly those built before 1991) are much more difficult to renovate using extensive Universal Design features. For this reason buildings built before this period will be expected to include Universal Design features only in the areas listed below. The features on the following pages are the specific areas where the UD features will be required to be addressed in the final design.

While developments must follow the guidance in this document, this does not relieve projects of the obligation to also follow UFAS or ANSI, The Virginia Uniform Statewide Building Code, or the VHDA Minimum Design and Construction Requirements, and other codes where applicable.

The documents below correspond to the references in the following pages

- **ANSI** is the ICC/ANSI 117.1 2003
- **FHDM** is Fair Housing reference is the Fair Housing Design Manual, 1998.
- **MDCR** is VHDA Minimum Design and Construction Requirements, Jan 1, 2008
- **IFC** is International Fire Code 2006
- **IPC** is International Plumbing Code 2006
- **NEC** is National Electric Code 2002
- **IBC** is International Building code 2003
- **VUSBC** is Virginia Uniform Statewide Building Code 2006
- **UFAS** is Uniform Federal Accessibility Standards

Remember, a key component of universal design is the market appeal of the home and the integration of universal features into the overall home scheme. Universal design becomes a virtually invisible element of a home when done well. Whether applied to units that fall under ANSI or UFAS jurisdiction or not, the challenge of universal design is to produce as normative and appealing an outcome as possible. The design professional is free to address the areas below in any way they feel is appropriate but must be able to demonstrate a source for alternate outcome whether from consultant advice, information obtained through a website (such as those cited in the July 2007 Guidebook), or a printed reference.

***VHDA has attempted to provide you with as much information as possible. However not all applicable codes may be listed.***

| *January 2008 Text* | *Notes Referencing universal design goals* | *Consultant/Designer notes* |
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| | ***Stepless Entrances*** | |
| At least one stepless entrance is essential | In single family detached, or 2-3 unit attached projects, discretion can be used as to whether the level entrance occurs at the front, back, or side door; or, through an attached garage or car port, access through the front entrance is preferred however decisions should be based on cost of the solution, the design integration that is possible, and the ease of use by the majority of the home's residents. Whichever entrance is selected, the preferred route is via a pathway that, at most is gently sloping, up to 1:20 slope. The designated entrance should provide cover (e.g., porch roof of 6' x 8', carport or garage) to reduce or eliminate water infiltration issues around the doorway and sill.<br><br>**MDCR Section REHABILITATION, SITE WORK 1**<br><br>**ICC/ANSI A117.1- 2003 Section 404.2.4 Thresholds at Doorways**<br><br>**IFC 2006 Section 1008.1.5 Thresholds**<br><br>**UFAS Section 4.13.8 Thresholds at Doorways**<br><br>**IBC 2003 Section 1008.1.6 Thresholds**<br><br>**FHDM Section 3.4 Usable Doors** | |
| Avoid ramps. If ramps are used, integrate into the design. | Ramps are problematic because they are often constructed in such a manner that they are easily removed or deteriorate very quickly. Because they are usually built the maximum slope, they can be difficult for many to use and slippery when icy, wet, or with leaves on them. Ramps are acceptable if, and only if, in the mind of the consultant there is no other reasonable alternative. If ramps (inclines between 5% and 8.33%) are included they should be permanent, not easily removed and made of such substantial construction as to not deteriorate quickly.<br><br>The design and materials should, to the greatest extent possible, match that of the dwelling. (e.g., railings and balustrade should | |

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| | match the style of the home; all wooden portions should be painted the appropriate trim colors of the dwelling).<br><br>**ICC/ANSI A117.1- 2003 Section 405 Ramps**<br><br>**UFAS Section 4.8 Ramps**<br><br>**IBC 2003 Section 1010 Ramps**<br><br>**IFC 2006 Section 1010 Ramps** | |
| | ***Interior Circulation*** | |
| At least one bedroom and accessible bathroom should be located on an accessible ground floor entry level (the same level as kitchen, living room, etc.) | Units having sleeping rooms on the entry level shall have accessible features.<br><br>**IBC 2003 Section 117 Dwelling Units and Sleeping Units**<br><br>**ICC/ANSI A117.1- 2003 Chapters 1-10**<br><br>All bathrooms must have three-fixtures that are on the same level as kitchen, living room, etc<br><br>**FHDM - Section 7b Usable Bathrooms**<br><br>**FHDM Section 6.15 Wall Reinforcement**<br><br>**ICC/ANSI A117.1- 2003 Section 609 Grab Bars**<br><br>**ICC/ANSI A117.1- 2003 Section 304 Turning Space**<br><br>**UFAS Section 4.26 Handrails, Grab Bars, and Tub and Shower Seats**<br><br>**UFAS Section 4.2.4 Clear Floor or Ground Space for Wheelchair**<br><br>**IBC 2003 – Section 3049.7.9 Toilet Rooms** | |
| Provide maneuvering room in the hallways | Hallways should be as short as possible and between 36” to 42” wide. Narrow hallways allow wider doorways and wider hallways allow narrower doorways to get into sleeping rooms and bathrooms. | |
| Doorway widths to at least the kitchen, bathroom and at least one bedroom on an accessible ground floor entry level should be a minimum of 32” | This should be interpreted as meaning 32” clear door opening. Care should be taken to distinguish between nominal door width and clear door opening. (for instance a 36” wide door will result in a 34” wide clear opening.)<br><br>**ICC/ANSI A117.1- 2003 Section 404 Doors and Doorways** | |

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| | **UFAS Section 4.13 Doors**<br><br>**IBC 2003 Section 1008 Doors, Gates and Turnstiles**<br><br>**IFC 2006 Section 1008 Doors, Gates and Turnstiles** | |
| | ***Vertical Circulation*** | |
| Stair handrails placed on both sides of stairs | **ICC/ANSI A117.1- 2003 Section 505 Handrails**<br><br>**IBC 2003 Section 1009 Stairways and Handrails**<br><br>**IFC 2006 Section 1012 Handrails**<br><br>**UFAS Section 4.26 Handrails, Grab Bars, and Tub and Shower Seats** | |
| | ***Bathrooms*** | |
| At least one FULL bathroom on the accessible level must have one of the following accessible bathing fixtures: Minimum 5' long x 3' (4' preferred), deep curbless shower or tub (5' x 30") with properly mounted grab bars | This choice can depend on how many full bathrooms there are in the unit. (e.g., if two, one should have a tub/shower combination; the other should be a curbless shower).<br><br>If grab bars are not required by code, or proffered in the LIHTC application omit grab bars. But in all cases where possible, use broadly applied blocking in walls behind toilets, tubs and showers. And in cases where new fiberglass tub/shower units are being specified – they can be purchased with factory installed blocking.<br><br>**FHDM Section 6.15 Wall Reinforcement**<br><br>**ICC/ANSI A117.1- 2003 Section 609 Grab Bars**<br><br>**UFAS Section 4.26 Handrails, Grab Bars, and Tub and Shower Seats** | |
| Adequate maneuvering space | This can take the form of a clear 5' turning diameter, room for a T turn, maneuvering room that might include space under wall hung lavatories or wall hung commodes, of a series or 30 x 48" clear floor spaces. The maneuvering space in the bathroom should comply with no less than Fair Housing standard "B" bath.<br><br>**ICC/ANSI A117.1- 2003 Section 304 Turning Space**<br><br>**UFAS Section 4.22.3 Clear Floor Space**<br><br>**UFAS Section 4.2.4 Clear Floor or Ground Space for Wheelchair** | |
| | ***Fixture Controls*** | |
| Lever water controls | Could be any single or double lever type | |

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| at all plumbing fixtures and faucets | handle or handles, easily used with limited hand dexterity or when hands are wet.<br><br>**ICC/ANSI A117.1- 2003 Section 309.4 Operation**<br><br>**UFAS Section 4.19 Lavatories and Mirrors**<br><br>**FHDM Section 7.60 Handles, Faucets, and Controls** | |
| | ***Kitchens*** | |
| Adequate maneuvering space | This can take the form of a clear 5' turning diameter (preferred), room for a T turn, or maneuvering room that might include space under counters with knee space. Minimize long aisles and provide at least 40" of space between the farthest projecting element of counters/cabinets refrigerators or other appliances. [Designs with 42" between cabinets provide greater assurance of adequate space]<br><br>**UFAS Section 4.2.4 Clear Floor or Ground Space for Wheelchair**<br><br>**ICC/ANSI A117.1- 2003 Section 304 Turning Space**<br><br>**FHDM Section 7.21 – 7.30 Examples of Kitchens**<br><br>**ICC/ANSI A117.1- 2003 Section 1004.12 Kitchens** | |
| Full-extension, pullout drawers, shelves and racks in base cabinets for easy reach to all storage space. | D-pulls or touch-latches on all cabinets. | |
| Lever water controls at all plumbing fixtures and faucets | Could be any single or double lever type handle or handles, easily used with limited had dexterity or when hands are wet.<br><br>**FHDM Section 7 Usable Kitchens and Bathrooms** | |
| | ***Switches and Controls*** | |
| Light switches above floor, 42" - 48" maximum height | Required if light switches are being moved.<br><br>When replacing switches, consider using rocker panel switches.<br><br>Usable heights can vary depending on whether someone who is sitting has a forward (generally more difficult) or a side approach (generally easier) to an item. Up to 48" for switches accessible to a side reach is allowable, 42" for forward reach. | |

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| | **FHDM Section 5.2- 5.8 Controls and Outlets**<br><br>**ICC/ANSI A117.1- 2003 Section 1002.9 Operable Parts**<br><br>**UFAS Section 4.27 Controls and Operating Mechanisms** | |
| Thermostats at 48" maximum height | **FHDM Section 5.2- 5.8 Light Switches, Electrical Outlets, Thermostats and other Electrical Controls in Accessible Locations**<br><br>**ICC/ANSI A117.1- 2003 Section 1002.9 Operable Parts**<br><br>**UFAS Section 4.27 Controls and Operating Mechanisms** | |
| Electrical outlets, 18" minimum height, allows easy reach from a sitting position as well as for those who have trouble bending over | Required if outlets are being moved. Electrical outlets, however under no circumstances shall be lower than 15" above the floor.<br><br>**ICC/ANSI A117.1- 2003 ANSI Section 308 Reach Range**<br><br>**ICC/ANSI A117.1- 2003 ANSI Section 309 Operable Parts**<br><br>**UFAS Section 4.27 Controls and Operating Mechanisms**<br><br>**FHDM Section 5.3-5.8 Controls and Outlets** | |

If REHAB UNITS are constructed incorporating all of the Authority's Universal Design features indicated above, 15 points will be awarded if all the units in an elderly development meet this requirement; 15 points multiplied by the percentage of units meeting this requirement will be awarded for non-elderly developments.

PROPERTY NAME

_____

DEVELOPER

_____

ARCHITECT of RECORD

_____

I certify that the above referenced property meets the requirements to be considered Universal Design for the Low Income Housing Tax Credit Program.

_____ _____

CONSULTANT SIGNATURE DATE

# THE VIRGINIA HOUSING DEVELOPMENT AUTHORITY
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## NEW CONSTRUCTION

While developments must follow the guidance in this document, this does not relieve projects of the obligation to also follow any of a variety of other codes or standards. For example, all new projects that fall under the jurisdiction of the Fair Housing Act Amendments of 1988 might need to follow guidance in the Fair Housing Design Manual, ANSI A117.1, or others. Depending on project funding, some units may also need to comply with UFAS. Other controlling documents include The Virginia Uniform Statewide Building Code, or the VHDA Minimum Design and Construction Requirements, where applicable.

Remember, a key component of universal design is the market appeal of the home and the integration of universal features into the overall home scheme. Universal design becomes a virtually invisible element of a home when done well. Whether applied to units that fall under ANSI or UFAS jurisdiction or not, the challenge of universal design is to produce as normative and appealing an outcome as possible. The design professional is free to address the areas below in any way they feel is appropriate but must be able to demonstrate a source for alternate outcome whether from consultant advice, information obtained through a website (such as those cited in the July 2007 Guidebook), or a printed reference.

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| ***January 2008 Text*** | ***Notes Referencing universal design goals*** | ***Consultant/Designer notes*** |
|---|---|---|
| | ***Entrances and Accessible Pathways*** | |
| High-visibility address numbers | House number clearly visible from the sidewalk, parking area, or street. Size of numbers depends on how far away a typical viewer might be.<br><br>House numbers color-contrast. Proper lighting of numerals at night is critical. Visibility can be improved by placing numbers beneath a light. Consider reflective lettering.<br><br>Check from the street to make sure the numbers are not obscured by foliage.<br><br>Numeral sized with a minimum of three inches in height and one-half inch in width. Suggested are sans-serif fonts. Brass numerals do not always show up well, especially against a brick or dark background.<br><br>**IBC 2003 Section 501 General**<br><br>**ICC/ANSI A117.1- 2003 Section 703.2 General** | |
| Drop-off or parking. | Provide drop offs and parking spaces located on a convenient, continuous, and accessible route of travel including curb cuts -to accessible entrances. This should include accessible route of travel from existing street sidewalks and public transit stops.<br><br>**MDCR NEW CONSTRUCTION 6**<br><br>**FHDM Section 1.8-1.19, 1.15-1.19**<br><br>**ICC/ANSI A117.1- 2003 Section 502 Parking Spaces**<br><br>**ICC/ANSI A117.1- 2003 Section 503 Passenger Loading Zones**<br><br>**UFAS Section 4.6 Parking and Passenger Loading Zones**<br><br>**IBC 2003 Section 1104 Accessible Route**<br><br>**IBC 2003 Section 1106 Parking and Passenger Loading Facilities** | |

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| Level walkways with little or no slope or cross slopes. Accessible route from vehicle. | All UD units must be reachable from a convenient, continuous, and accessible route of travel from parking to accessible entrances. In general, up to a 2% cross slope is allowed on outside decks, paths and porches to allow for water drainage. When ever possible, running slopes along the path of travel should not exceed 5%.<br><br>Ramps (inclines between 5% and 8.33%) are generally considered a last resort option. Ramps are problematic because they are usually built to the maximum slope and they can be difficult for many to use and slippery when icy, wet, or with leaves on them. Ramps are acceptable if, and only if, in the mind of the consultant, there is no other reasonable alternative. If ramps are included, they should be permanent, not easily removed and made of such substantial construction as to not deteriorate quickly.<br><br>If used, shallow ramp slopes (such as 6.25%) should be considered. If ramps are used, integrate into the design. Depending on circumstances, building up a slope or "berm" of earth to create a new walkway may be a good alternative.<br><br>The design and materials should match that of the dwelling to the greatest extent possible. (e.g., railings and balustrade should match the style of the construction; all wooden portions should be painted the appropriate trim colors of the dwelling.)<br><br>**FHDM Section 1.7-1.19 Walks on Accessible Routes**<br><br>**MDCR NEW CONSTRUCTION 2**<br><br>**MDCR NEW CONSTRUCTION 6**<br><br>**ICC/ANSI A117.1- 2003 Section 403 Walking Surfaces**<br><br>**ICC/ANSI A117.1- 2003 Section 405 Ramps**<br><br>**UFAS Section 4.3 Accessible Route**<br><br>**UFAS Section 4.8 Ramps** | |

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| | **IBC 2003 Section 1104.1 Accessible Route**<br><br>**IBC 2003 Section 1010 Ramps**<br><br>**IFC 2006 Section 1010 Ramps** | |
| No-step entry with weather-sealed door threshold less than 1/2" high | Care should be taken to distinguish between nominal door width and clear door opening. A 36” wide door will result in a 34” wide clear opening. Exterior doors should be 36” wide.<br><br>An identified UD unit that is not step free will not receive credit for having other UD features within the unit.<br><br>**FHDM Section 1.10-1.11 Accessible Entrances**<br><br>**FHDM Section 4.12 - 4.15 Thresholds at Exterior Doors**<br><br>**MDCR NEW CONSTRUCTION ARCHITECTURAL 3**<br><br>**ICC/ANSI A117.1- 2003 Section 404.2.4 Thresholds at Doorways**<br><br>**UFAS Section 4.13.8 Thresholds at Doorways** | |
| Level maneuvering space (turning circle) on both sides of door | Space at entry doors should be a minimum 5’ x 5’ level clear space inside and outside of entry door for maneuvering while opening or closing door.<br><br>Clear floor space (18” minimum) beside door on pull side at latch jamb provides space to move out of the way of the door swing when pulling it open.<br><br>**FHDM Section 3.4 Accessible and Usable Doors**<br><br>**UFAS Section 4.13.6 Maneuvering Clearances at Doors**<br><br>**ICC/ANSI A117.1- 2003 Section 404.2.3 Maneuvering Clearance at Doors.** | |
| Weather-sheltered entryway | The designated entrance should provide cover to reduce or eliminate water infiltration issues around the doorway and sill.<br><br>**MDCR NEW CONSTRUCTION ARCHITECTURAL 3**<br><br>**FHDM Section 1.10-1.11 Accessible Entrances** | |

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| Package shelf or bench for parcels, groceries, etc | Handy shelf outside the door (such as on the porch railing) to set down items while you open the door. Within 6' of door, preferably latch side, mounted at 32" – 40" H, under cover preferably. | |
| All walkways generously wide | Care should be taken to balance the need and requirements for adequate travel widths and the need to scale the design to the size of the project and the expected traffic that will use the path. Widths between 36" – 60" are appropriate. Not less than 36". Consider permeable walkway surfaces.<br><br>**UFAS Section 4.3.2 Location**<br><br>**ICC/ANSI A117.1- 2003 Section 303 Changes in Level**<br><br>**ICC/ANSI A117.1- 2003 Section 403 Walking Surfaces**<br><br>**MDCR NEW ARCHITECTURAL Site Work 6** | |
| | ***Interior Circulation and Other Overall Features*** | |
| Clear opening on interior doors | Care should be taken to distinguish between nominal door width and clear door opening. A 36" wide door will result in a 34" wide clear opening. A 34" wide door will provide a 32" wide clear opening.<br><br>**ICC/ANSI A117.1- 2003 Section 404.2.2 Clear Width**<br><br>**FHDM Section 3.3 – 3.6 Accessible Doors**<br><br>**UFAS Section 4.13.5 Clear Width** | |
| 18" minimum space beside door latch to operate and avoid in-swing | Include a more full consideration of approaches on both sides of doors.<br><br>**ICC/ANSI A117.1- 2003 Section 404.2.3 Maneuvering Clearance at Doors**<br><br>**UFAS Section 6.13.6 Maneuvering Clearances at Doors** | |
| Lever handles on all doors | Provide as residential an appearance as possible.<br><br>**ICC/ANSI A117.1- 2003 Section 404.2.6 Door Hardware**<br><br>**UFAS Section 4.13.9 Door Hardware** | |
| Five-pound maximum force to open doors | May occur on entry doors with closers or moment of force on sliding doors. Is an issue with many people, those carrying packages and | |

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| | particularly older people. This may conflict with fire safety compliance. Might be solved with power assist doors.<br><br>**UFAS Section 4.13.11 Door Opening Force**<br><br>**ICC/ANSI A117.1- 2003 Section 404.2.8 Door-Opening Force**<br><br>**IFC Section 1008.1.2 Door Swing** | |
| Circulation routes (40" minimum) through rooms, hallways, archways | | |
| Non-slip floor for walker/chair use (dense/uncut pile, no pad, glue down) hardwood or tile where appropriate. | Provide slip resistant flooring, especially near entry, in kitchen, bathroom and laundry, including vinyl, tile, carpeting, etc. and including joints where dissimilar flooring materials meet.<br><br>**ICC/ANSI A117.1- 2003 Section 302 Floor Surfaces**<br><br>**ICC/ANSI A117.1- 2003 Section 303 Changes in Level**<br><br>**UFAS Section 4.5 Ground and Floor Surfaces**<br><br>**UFAS Section A 4.5 Ground and Floor Surfaces** | |
| High color-contrast, glare-free floor, wall, and table surfaces or finishes | | |
| Electrical outlets 18"-22" above floor for seated or non- stoop use. | Electrical outlets shall be no lower than 15” above the floor.<br><br>**ICC/ANSI A117.1- 2003 Section 308 Reach Ranges**<br><br>**ICC/ANSI A117.1- 2003 Section 309 Operable Parts**<br><br>**UFAS Section 4.5 4 Clear Floor and Ground Space for Wheelchairs**<br><br>**FHDM Section 5.2 - 5.8 Controls and Outlets**<br><br>**MDCR NEW CONSTRUCTION, ELECTRICAL, 2** | |
| contrasting-color back plates are more visible on both outlets and switches | | |

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| Touch/rocker light switches | Add lighted switches in some locations – foyer, | |
| luminous light switches for visible, hands-free use | hallways, top and bottom of stairs, bathrooms, etc. | |
| Light switches maximum 42"-48" from floor (stand/sit to use). | Select either 42” or 48”. Usable heights can vary depending on whether someone who is sitting has a forward (generally more difficult) or a side approach (generally easier) to an item. Up to 48” for switches accessible to a side reach is allowable.<br><br>When replacing switches, consider using rocker panel switches.<br><br>**ICC/ANSI A117.1- 2003 Section 308 Reach Ranges**<br><br>**ICC/ANSI A117.1- 2003 Section 309 Operable Parts**<br><br>**UFAS Section 4.27 Controls and Operating Mechanisms**<br><br>**FHDM Section 5.2 - 5.8 Controls and Outlets** | |
| Dimmer switches allow flexibility in amount and brightness of light | | |
| Large/raised number thermostats at chair-usable height (max. 48" high) | Given the rapid development of technology in this area, new solutions may be available all the time. Large number, LED digital read outs work well. Larger number, tactilely revealing analogue devices such as the traditional round versions offer some advantages. Digital/analogue versions that “talk” offer more information redundancy.<br><br>**ICC/ANSI A117.1- 2003 Section 308 Reach Ranges**<br><br>**ICC/ANSI A117.1- 2003 Section 309 Operable Parts**<br><br>**UFAS Section 4.27 Controls and Operating Mechanisms**<br><br>**FHDM Section 5.2 - 5.8 Controls and Outlets** | |
| Windows with views have sills maximum 36" high, usable for egress | | |
| Crank-open (casement) | Windows should be operable by cranks or levers and have all controls no | |

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| window style with glare-free window treatments | higher than 48", or 42" if located at front reach or over counters or other built in features.<br><br>A designer can choose a cost effective window style based on the functional requirements. Choose windows that are easy to open, close, lock and require little strength to use.<br><br>**UFAS Section 4.27 Controls and Operating Mechanisms**<br><br>**ICC/ANSI A117.1- 2003 Section 506 Windows**<br><br>**ICC/ANSI A117.1- 2003 Section 309 Operable Parts** | |
| Flexible, adjustable-height rods and shelves in lighted closets | All closets should have flexible or multi-height storage. Lighting is optional except in walk in closets where it is mandatory. | |
| Kitchen, bath, laundry, and at least one sleeping room on the main floor. | | |
| Open floor plan (avoid long, narrow hallways; consider larger open areas | Hallways should be as short as possible and between 36" to 42" wide. Narrow hallways require wider doorways and wider hallways allow narrower doorways to get into sleeping rooms and bathrooms. | |
| without sharp boundaries, such as a kitchen/dining/living room area) | | |
| | **Bathrooms** | |
| Extra-wide entry | Care should be taken to distinguish between nominal door width and clear door opening. A 36" wide door will result in a 34" wide clear opening. A 34" wide door will provide a 32" wide clear opening.<br><br>**ICC/ANSI A117.1- 2003 Section 404.2.2 Clear Width**<br><br>**FHDM Section 3.3 – 3.6 Accessible Doors**<br><br>**UFAS Section 4.13.5 Clear Width** | |
| Toilet space sufficient | Ample floor space for maneuvering between bathroom fixtures. Allow at least 30 inches by 48 inches of clear floor space among the fixtures; 60 | |

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| | inches by 60 inches is ideal. (If your shower entrance has no raised threshold, the shower floor can provide part of the clear maneuvering space.)<br><br>At least one bath on the accessible level should meet no less than Fair Housing standard “Type B”. All others shall comply with no less than Type A bath.<br><br>**ICC/ANSI A117.1- 2003 Section 603 Toilet and Bathing Rooms**<br><br>**UFAS Section 4.34.5.2 Water Closets**<br><br>**FHDM Section 7.33 Usable Bathrooms** | |
| Tub where provided with non-slip bottom | **MDCR NEW CONSTRUCTION Plumbing 3** | |
| 24" full-length drying space along side | **UFAS Section 4.34.5.4 (1) Bathtubs**<br><br>**FHDM Section 7.56 Clear Floor Space at Showers** | |
| Curb-less roll-in (min. 5'X3') or transfer shower (min. 3'X3') with seat where there are two or more baths | Where there are two or more three-fixture baths in a unit, one should have a curbless shower and one a tub/shower fixture.<br><br>A full sized (at least 3’ x 5’) curbless shower Is the preferred shower unit. All curbless showers have little or no threshold or lip to traverse –no more than ½ inch high and beveled. Consider an integral wet area bath/shower floor. Slope the shower floor a maximum of 1/8 inch per foot.<br><br>Because of the small size, a 3’ x 3’ transfer shower can have a curb. | |
| Toilet/tub/shower walls blocked for grab bar installation where needed; | Broadly applied blocking should be employed, 48” H in toilet installations, 72” H in tub/shower.<br><br>**ICC/ANSI A117.1- 2003 Section 1003.11.4 Reinforcement**<br><br>**UFAS Section 4.34.5.4 (3) Bathtubs**<br><br>**UFAS Section 4.34.5.5 (3) Showers**<br><br>**FHDM 6.14 Recommended Reinforcing Methods** | |

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| High and low-level, recessed soap dishes and shampoo ledges | | |
| Tub/shower controls offset toward entry for easy reach from out/inside | | |
| Adjustable-height hand held shower | If provided, provide 6' long hose, large push button hand control, and location to "hang up" hand held unit within seated reach.<br><br>**ICC/ANSI A117.1- 2003 Section 607.6 Handheld Shower**<br><br>**UFAS Section 4.20.6 Shower Unit** | |
| Approach area in front of all bathroom fixtures | **ICC/ANSI A117.1- 2003 Section 304 Turning Space**<br><br>**UFAS Section 4.22.3 Clear Floor Space** | |
| 34" min. height sink counter, rear drain sinks | Could have higher and lower sinks (32" and 36", or 32" and 34") if two lavatories are used.<br><br>A sink with the drain placed toward the back, rather than in the middle, so that the pipes below the sink are less in the way for storage or for a seated user.<br><br>**ICC/ANSI A117.1- 2003 Section 606.3 Height**<br><br>**UFAS Section 4.19 Lavatories and Mirrors** | |
| Vanity with knee space & foldaway doors; | Adaptable cabinetry is a preferred universal solution to provide flexibility in a bathroom. This will provide clearance under the sink to allow for a seated user. Interior of this space should be finished, including flooring material extended into the area under the sink (Be sure to cover or insulate pipes to prevent burns.)<br><br>**ICC/ANSI A117.1- 2003 Section 1003.11.5 Lavatory**<br><br>**UFAS Section 4.34.5.3 Lavatory, Mirrors, and Medicine Cabinets (2)**<br><br>**FHDM 7.49-7.51 Removable Vanity Cabinets** | |
| Childproof medicine chest w/ interior light at counter | If medicine cabinet provided, and if practical.<br>Provide accessible storage for bathroom accessories. | |

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| level next to sink | **UFAS Section4.34.5.3 Lavatory, Mirrors, and Medicine Cabinets 3** | |
| Mirror extends to lavatory backsplash | Consider mirror(s) placed for both standing and sitting, such as a full-length mirror.<br><br>**ICC/ANSI A117.1- 2003 Section 1003.11.6 Mirrors**<br><br>**UFAS Section 4.19 Lavatories and Mirrors** | |
| Mirror tilts at top for seated view | | |
| Lever handles on all faucets for one-handed or one fisted use | Could be any single or double lever type handle or handles, easily used with limited hand dexterity or when hands are wet.<br><br>**ICC/ANSI A117.1- 2003 Section 309.4 Operation**<br><br>**UFAS Section 4.19 Lavatories and Mirrors**<br><br>**FHDM Section 7.60 Handles, Faucets, and Controls** | |
| Extra, non-glare lighting above/ on both sides of lavatory and in shower | Direct light source should be provided in the sink area. (e.g. much higher lumen fluorescent bulbs (compared with higher wattage standard incandescent lights) can now be used with low energy usage and low heat output.) | |
| | ***Kitchens*** | |
| Min. 30"x48" approach to front of all appliances | This can take the form of a clear 60” diameter turning (preferred), room for a T turn, or maneuvering room that might include space under counters with knee space. Minimize long aisles and provide at least 40” of space between the farthest projecting element of counters/cabinets. [Designs with 42” between cabinets provide greater assurance of adequate space]<br><br>**FHDM Section 7.21 – 7.30 Examples of Kitchens**<br><br>**ICC/ANSI A117.1- 2003 Section 1004.12 Kitchens** | |
| Continuous counters to slide heavy items between work centers | | |
| Adjustable or varied work surface heights (28"- 45"), | Providing fixed height work surfaces at 38”, 36”, or 45” is effective. Consider using pull out cutting boards, snack eating areas, etc. | |
| perhaps with removable | Item separated from above. Consider adjustable base cabinet doors that | |

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| base cabinets or just removable doors | allow for typical cabinet appearance and use, and allow quick conversion to accommodate knee space. (e.g., under sinks.)<br><br>**FHDM Section 7.12 - 7.13 Removable Base Cabinets** | |
| Built-in desk provides lower surface for computer or other seated work | **ICC/ANSI A117.1- 2003 Section 902.3 Height** | |
| Roll-out carts to move/serve without lifting (park in kitchen out of sight) | | |
| Sink sprayer located to fill coffee maker and other pots without lifting | **ICC/ANSI A117.1- 2003 Section 309.4 Operation** | |
| Clear knee space under sink and near cook top, rear drain sinks | **ICC/ANSI A117.1- 2003 Section 306.3 Knee Clearance** | |
| Front-mounted (vs. rear) controls on all appliances | Look for controls located on the front of the range, so the cook doesn't have to reach across hot burners. | |
| larger knobs and large-print overlays also useful | **FHDM Section 7.20 At Other Appliances and Fixtures** | |
| Raised dishwasher or dish drawers for no-stoop, no-bend un/loading | Provide on no more than 6” pedestal. Consider locating at the end of counter run or integrating with higher counter space. | |
| Where provided place microwave oven about waist-high with landing space, to avoid scalding when reaching up for too-hot containers that tip when pan hits | | |
| Side-by-side, frost-free | Refer to Product selection guide | |
| 3 times the usual amount of light over sink, range, mix center; indirect light sources and matte | Direct light source should be provided above the sink area and all other countertop prep areas”. As long as there are directly lit countertops, the occupant/buyer can vary the intensity of light with their choice of bulbs. Much higher lumen fluorescent bulbs (compared with higher wattage | |

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| surfaces reduce potential for glare | standard incandescent lights) can now be used with low energy usage and low heat output.<br><br>**MCDS, NEW CONSTRUCTION, ELECTRICAL, 1. Fluorescent – only** | |
| Color-contrasted counter edges and floor vs. cabinets are more visible | D-pulls or touch-latches on all cabinets | |
| D-pulls or touch-latches on all cabinets | D-pulls, also known as loop handles | |
| Full-extension, pullout drawers, shelves and racks in base cabinets for easy reach to all storage space | D-pulls or touch-latches on all cabinets | |
| Base cabinets with 6"-9" toe kicks have space for feet and footrests | **ICC/ANSI A117.1- 2003 Section 306.2 Toe Clearance** | |
| Waste and recycling containers on rollers under counters in work areas | | |

If NEW CONSTRUCTION units are built incorporating all of the Authority's Universal Design features indicated above, 15 points will be awarded if all the units in an elderly development meet this requirement; 15 points multiplied by the percentage of units meeting this requirement will be awarded for non-elderly developments.

PROPERTY NAME: _____

DEVELOPER: _____

ARCHITECT of RECORD: _____

I certify that the above referenced property meets the requirements to be considered Universal Design for the Low Income Housing Tax Credit Program.

_____ _____

CONSULTANT SIGNATURE DATE