



3rd Residential Building Design and Construction Conference

Universal Design / Aging-In-Place

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Aging-In-Place - **What is it?!**

Aging in place is a term used to describe a person living in the residence of their choice, for as long as they are able, as they age. This includes being able to have any services (or other support) they might need over time as their needs change.



What is Aging in Place? - Age in Place Definition
ageinplace.com/aging-in-place-basics/what-is-aging-in-place/

Universal Design / Aging-In-Place — **is not just about the elderly**



<http://www.universaldesign.com/about-universal-design.html>

It is about **everyone** able to . . . age in a **place of choice**.
And, able to invite **anyone** over. “**Visitability**”

Universal Design accommodates all people . . .

As a result of . . .

Birth

Accident/Injury

Disease

Age

Health Care costs. Obviously, to stay at home is preferred . . .

Home care — which most people prefer — is generally more affordable than nursing home care, but still can be expensive. When averaged nationally, the cost of a six-hour visit by a home health aide is **\$114**.³ That's **\$29,640** per year for a home health aide visiting six hours per day, five days a week.

[Federal LTC Plan Details and Long Term Care Insurance ...](https://www.ltcfeds.com/start/aboutltc_cost.html)
https://www.ltcfeds.com/start/aboutltc_cost.html

National average costs of care ²	
Nursing home, semiprivate room	
\$227/day	\$82,855/year
Assisted living facility	
\$3,427/month	\$41,124/year
Home care	
\$19/hour	\$29,640/year*
*Based on 6 hours per day, 5 days per week.	

https://www.ltcfeds.com/start/aboutltc_cost.html

Health Care costs. Local Avg. vs. National Avg.

Results for the Cost of Care in Harrisburg, PA

The table below shows the 2013 average cost of care in Harrisburg, PA, (based on the most recent John Hancock Cost of Care Survey). These costs do **not** consider inflation increases. Nursing home costs are based on semi-private rooms. [Click here to find the cost of care in another area.](#)

Harrisburg, PA	Average Costs	Annual Costs
Home health care ³ (hourly average)	\$18.00	\$28,080.00 *
Assisted living ³ (monthly average)	\$3,359.00	\$40,308.00
Nursing home ³ (daily average)	\$244.00	\$89,060.00

National Avg.
 \$29,640/yr
 \$41,124/yr
 \$82,855/yr

https://www.Itcfeds.com/ItcWeb/do/assessing_your_needs/costofcare_results?action=results&strJSESSIONID=evMgR2OwTrVMVZey0m9Y5ZZ

It is UNFORTUNATE that from Birth, Accident, Disease or Age -

- ✓ Many will not be able to **enter own homes** without **various renovations**
- ✓ Many will not have chance to **age in place of their choice**
- ✓ Many will not maintain the same **quality of life**

Universal Design features may **prevent accidents** and permit **life at home** for family and guests/visitors.

Typical modifications to accommodate *all* people

Typical Exterior Modifications:

- ✓ Wheelchair ramp (provide zero step entry)
- ✓ Increased access around exterior
- ✓ Improved lighting

Typical Interior Modifications:

- ✓ Grab bars and handrails throughout home
- ✓ non-slip flooring
- ✓ Stair lifts or elevators
- ✓ Door lever and offset door hinge hardware
- ✓ Light switch / Thermostat and wall receptacle heights
- ✓ Appropriate lighting (Ambient/General , Task and Accent lighting)
- ✓ Widening hallways and doorways (if at all possible)
- ✓ First Floor Bedroom (Ranch or Cape Cod style home)
- ✓ Adaptable & Useable Kitchens (Appropriate heights for counters, sinks, & appliances)
- ✓ Accessible Bathroom

<http://www.homeadvisor.com/cost/environmental-safety/remodel-for-disability-accommodation/>

What are the renovation costs to accommodate disabilities?



<http://www.improvenet.com/r/costs-and-prices/disability-remodeling-cost>

January 2014 data

Baby Boomer Generation – Now 52 and older

ECONOMICS OF THE BABY BOOMER GENERATION

truaxis

Boomers are entering “retirement age”— but are they ready to retire? What impact do baby boomers have on the economy and how does the economy impact them? Learn how this generation is growing into retirement and see what the future may hold for them.

HOW MANY BOOMERS ARE THERE?

1946-1964:
the birth years
of baby boomers

When the last boomers reach 65 at the end of 2029, there will be 72 million senior citizens in America.

There are **80+** million baby boomers, nearly **two times more** than Gen X

72,000,000

10,000 boomers will turn 65 every day for the next 19 years

Baby Boomer Generation – Purchasing Power

Purchasing Power

The collective purchasing power of baby boomers is enormous and shouldn't be ignored.

- Baby Boomers have more discretionary income than any other age group ([source: Baby Boomer Magazine](#)).
- Boomers control most of the net worth of American households and account for 40 percent of total consumer demand ([source: Baby Boomer Magazine](#)).
- By 2017, 50 percent of the U.S. population will be 50+. These consumers spend close to 50 percent of all CPG dollars yet less than 5 percent of advertising is geared towards them as of 2012 ([source: Nielsen](#)).

National Senior Games Assoc. : <http://www.nsga.com/media/documents/media-info-sheets/2015-baby-boomers-health-and-fitness-fact-sheet.pdf>

The anticipated Baby Boomer trend to come . . .

PERSONAL FINANCE

TRENDING

[Outlook 2016](#) | [Dealmakers](#) | [Apple](#) | [RRSP](#) | [Oil](#) | [Housing](#) | [Loonie](#) | [Alberta](#) | [Marijuana](#)

Seniors staying in their home: The next big trend in home renovation?



GARRY MARR | August 9, 2014 7:45 AM ET
[More from Garry Marr](#) | [@DustyWallet](#)

“I’m disabled. It didn’t happen overnight but I had to make a choice between selling my house or adapting the house,” said the polio survivor, whose mobility has decreased over the years from the disease. “It was just easier to adapt. This is a huge market and there are billions of dollars being spent [to make homes adaptable].”

<http://business.financialpost.com/personal-finance/seniors-staying-in-their-home-the-next-big-trend-in-home-renovation>

Yet, as we know . . . there are unfortunate situations where **in-home health care is not possible . . .**

- ✓ **Alzheimer's disease or dementia**
- ✓ **Living alone**
- ✓ **Cannot cook or bathe self**
- ✓ **Need of 24-hour care**
- ✓ **Others . . .**

<https://www.mcguiregroup.com:444/FAQ%20page.html>



<http://danpruittlawfirm.com/wp-content/uploads/2014/03/pressure-ulcer-caused-by-neglect-at-nursing-home-300x242.jpg>

Typical housing doesn't meet universal design



<http://in1.ccio.co/q5/CB/U5/22d3d429800b23e294ef497ed3061259.jpg>

And . . . **potential in-home health care**

The preferred choice is to stay in your home.

Typical housing doesn't meet universal design



<http://in1.ccio.co/q5/CB/U5/22d3d429800b23e>



<http://www.bobvila.com/system/images/BAhbBlSHOGZmIklyMDEyLzA4LzI5LzE2LzMwLzQwLzc0MS9jYXZjb19sYXBzaWRpbmdfbWFudWZhY3R1cmVkX2hvbWUuanBn/cavco-lapsiding-manufactured-home.jpg>

Typical housing doesn't meet universal design



OgZmIklyMDEyLzA4LzI5LzE2LzMwLzQwLzc0MS9jYXZjb19sYXBzaWRpbmdfbWFudWZh
ctured-home.jpg

<http://hillsandheights.org/wp-content/uploads/2012/08/house1.jpg>

Typical housing doesn't meet universal design



<https://archidius.files.wordpress.com/2011/08/chartresmarignytriangleyellowhousejune08.jpg>

<http://hillsandheights.org/wp-content/uploads/2012/08/house1.jpg>

Important to have: **1. Accessible Entry** (Zero Step option)



<http://www.universaldesignstyle.com/stone-wheelchair-ramp-by-schaffer-construction/>

Gradual Sloped Entry:
\$3,000 and up
+ labor and landscape

<http://www.aarp.org/livable-communities/housing/info-2015/home-fit-dollars-and-sense.html>

1. Accessible Entry (Zero Step option)



<http://idea.ap.buffalo.edu/Services/HomeMods/images/trex-ramp1.jpg>

Wood ramp:
\$500 and up
+ labor and landscape

<http://www.remodelcostguide.com/handicap-access-remodeling-cost-guides/>

2. Accessible Horizontal Circulation



http://st.hzcdn.com/fimgs/e4d175c709e90fcc_4287-w500-h666-b0-p0--contemporary-hall.jpg

- ✓ Dense, Low pile carpet
- ✓ Non-slip flooring
- ✓ No trip

Widening hallway costs:
If possible financially, structurally or spatially . . .
will require . . .

- ✓ Demolition
- ✓ New wall construction
- ✓ Wiring
- ✓ HVAC work?
- ✓ Wall, ceiling and floor finishes

Actual costs vary per application

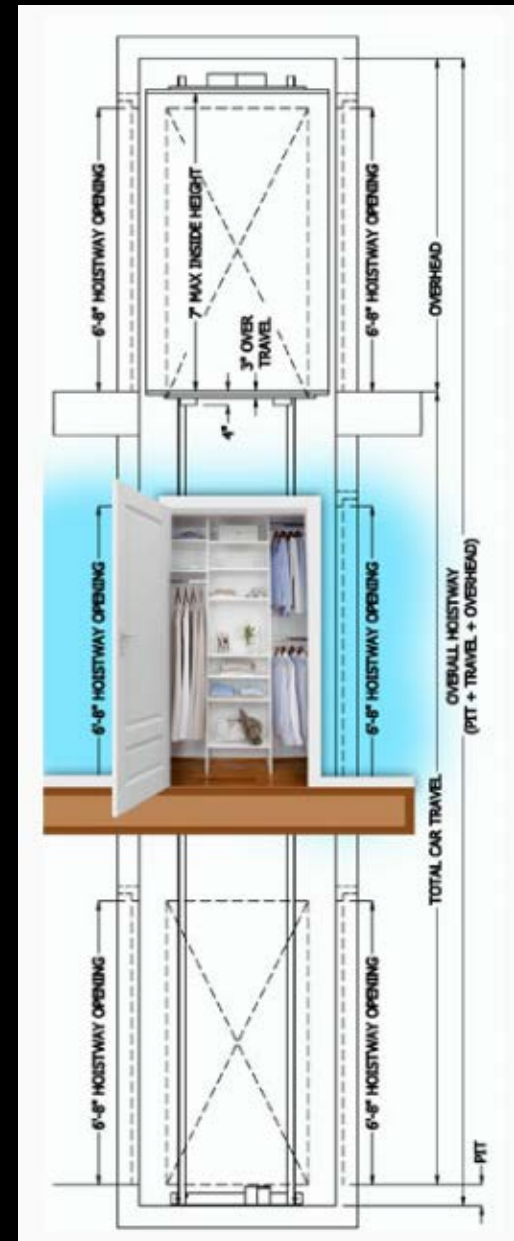
3. Accessible Vertical Circulation



<http://www.customhomeelevator.com/Images/Products/Home%20Elevator.jpg>

Home Elevator costs:
\$10-15K + labor

<http://www.fixr.com/costs/elevator-installation>



<http://www.njelevatorrepair.com/www.acelevator.com/closets.html>

3. Accessible Vertical Circulation

Stair lift costs:




Straight Stair = \$2,500 - \$6,000
(including parts & labor)

Curved Stair = \$10k and up
(including parts & labor)

<http://arrowlift.com/stair-lifts/stair-lift-prices/>



4. Accessible Doors (32" min. clearance)

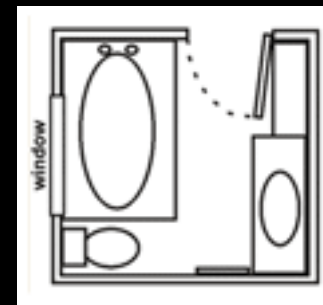
 <p><input type="checkbox"/> Compare</p>	<p>ReliaBilt Prehung Hollow Core 2-Panel Square Interior Door (Common: 24-in x 80-in; Actual: 25.562-in x 81.688-in)</p> <p>\$82.09 Not Yet Rated</p>
 <p><input type="checkbox"/> Compare</p>	<p>ReliaBilt Prehung Hollow Core 2-Panel Square Interior Door (Common: 28-in x 80-in; Actual: 29.562-in x 81.688-in)</p> <p>\$82.09 Not Yet Rated</p>
 <p><input type="checkbox"/> Compare</p>	<p>ReliaBilt Prehung Hollow Core 2-Panel Square Interior Door (Common: 36-in x 80-in; Actual: 37.562-in x 81.688-in)</p> <p>\$82.09 Not Yet Rated</p>

<http://www.lowes.com/Search=interior+reliabilt+prehung+doors?storeId=10151&langId=-1&catalogId=10051&N=0&newSearch=true&Ntt=interior+reliabilt+prehung+doors#!>



Offset Hinges:
\$20 - \$45 / pair + labor

http://www.adaptiveaccess.com/offset_hinges.php



<https://s-media-cache-ak0.pinimg.com/originals/f4/09/76/f409765aa89d890e1ec9366790e4ccbd.gif>

If possible, to widen a door way:
\$75 - \$500 and up for material costs + labor

<http://www.remodelcostguide.com/handicap-access-remodeling-cost-guides/>

5. Accessible Electrical Controls

Light Switches and HVAC controls
(36" – 42" AFF vs. 48" AFF)

Electrical outlet / receptacles
(18" - 24" AFF vs. 16" AFF)

**Switches & Receptacles
including wire and labor:**

New Construction - \$100/ ea.

Renovations - \$200 or more ea.

<https://answers.yahoo.com/question/index?qid=20070529172413AAPtQkN>



http://www.zillow.com/homes/for_sale/Leisure-World-Mesa-AZ/pmf,pf_pt/7674564_zpid/112275_rid/featured_sort/33.407943,-111.688031,33.398216,-111.708974_rect/15_zm/



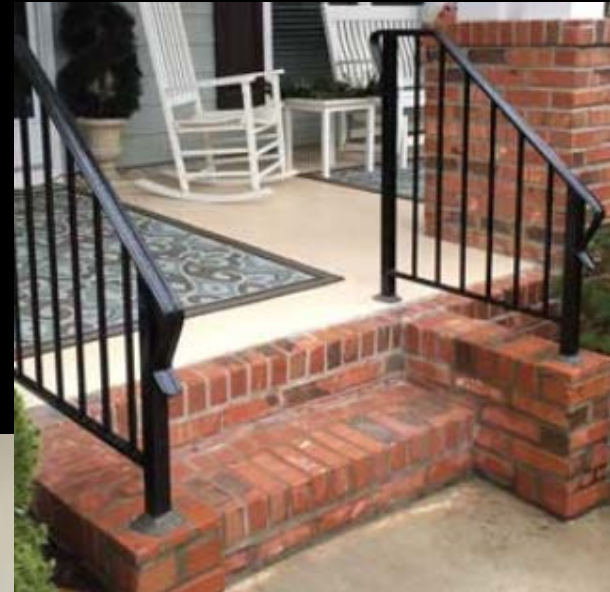
http://www.zillow.com/homes/for_sale/Leisure-World-Mesa-AZ/pmf,pf_pt/7674840_zpid/112275_rid/33.410988,-111.678193,33.391534,-111.720078_rect/14_zm/

6. Reinforced Walls (for future grab bar / railing installation)

Various applications



<http://www.johnbridge.com/vbulletin/attachment.php?attachmentid=155093&d=1386190301>



<http://www.aarp.org/livable-communities/housing/info-2015/home-fit-dollars-and-sense.html>



http://img.webmd.com/dtmcms/live/webmd/consumer_assets/site_images/articles/health_tools/slideshow_making_an_ms_friendly_home/getty_rf_photo_of_handrails_on_living_room_walls.jpg

Wall Blocking:
Scrap wood if installed during construction

Railings:
Costs vary per application

<http://simmermon.net/wp-content/uploads/2013/04/resize11.jpg>

6. Reinforced Walls (for future grab bar installation)

Bathrooms

Wall Blocking:
Scrap wood if installed
during construction

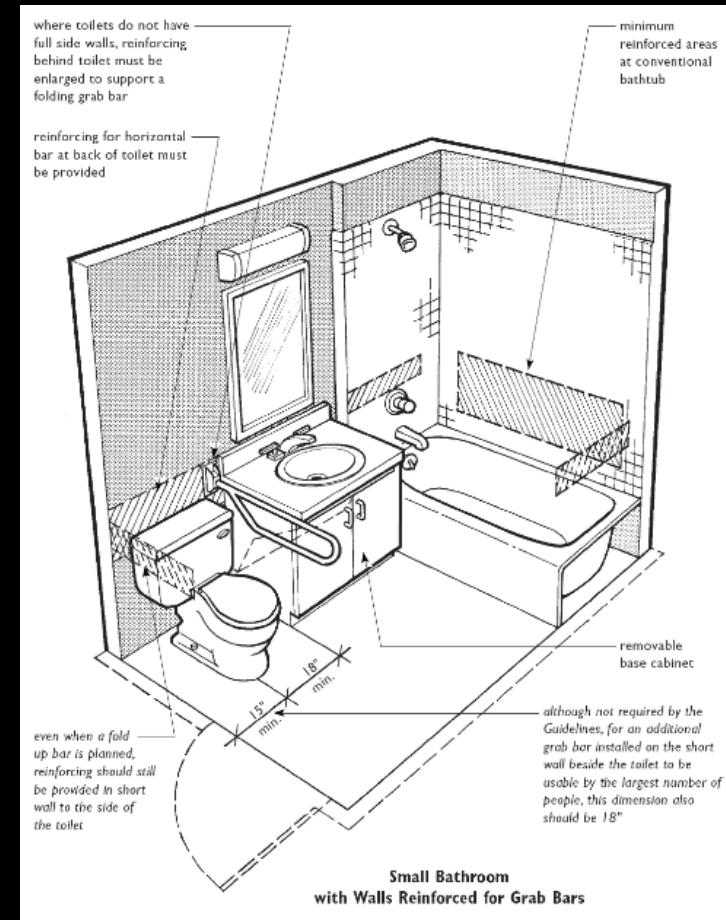
Railings:
Costs vary per
application



<https://s-media-cache-ak0.pinimg.com/236x/ae/4b/31/ae4b31e0691dbcac5398a82819cad639.jpg>



<http://media-cdn.tripadvisor.com/media/photo-s/07/d8/55/0c/shilo-inn-suites-nampa.jpg>



<http://empoweringthematuremind.com/wp-content/uploads/2012/12/GrabBars-InstallLocations.png>

7. Accessible Kitchens & Bathrooms

Kitchens



1. Multiple counter / work station heights
2. Low cook top with leg room
3. Shallow sink with leg room
4. Lever handle faucet with pull out spray
5. Open shelves and pull out drawers/cabinets
6. Appropriate lighting

<http://w.neilkellycabinets.com/services/remodeling/universal-design/>

National Avg. for Kitchen
Renovation costs:

Low - \$5,000

Typical - \$11K – over \$28K

High - \$45,000

<http://www.homeadvisor.com/cost/kitchens/remodel-a-kitchen/>

7. Accessible Kitchens & Bathrooms

Bathrooms

National Avg. for Bathroom Renovation costs:

Low - \$2,870

Typical - \$5K – over \$13K

High - \$20,000

<http://www.homeadvisor.com/cost/bathrooms/remodel-a-bathroom/>



<http://www.showerremodels.com/wp-content/uploads/2013/04/bathroom-stall-for-handicapped-people.jpg>



http://www.us.kohler.com/webassets/kpna/articles/image/ADAsinks_327x246.jpg

1. Chair height toilet
2. Easy grip hardware / hand held shower
3. Curbless shower w/seat & non-slip surfaces
4. Grab bars and accessible tub
5. Appropriate lighting

<http://w.neilkellycabinets.com/services/remodeling/universal-design/>

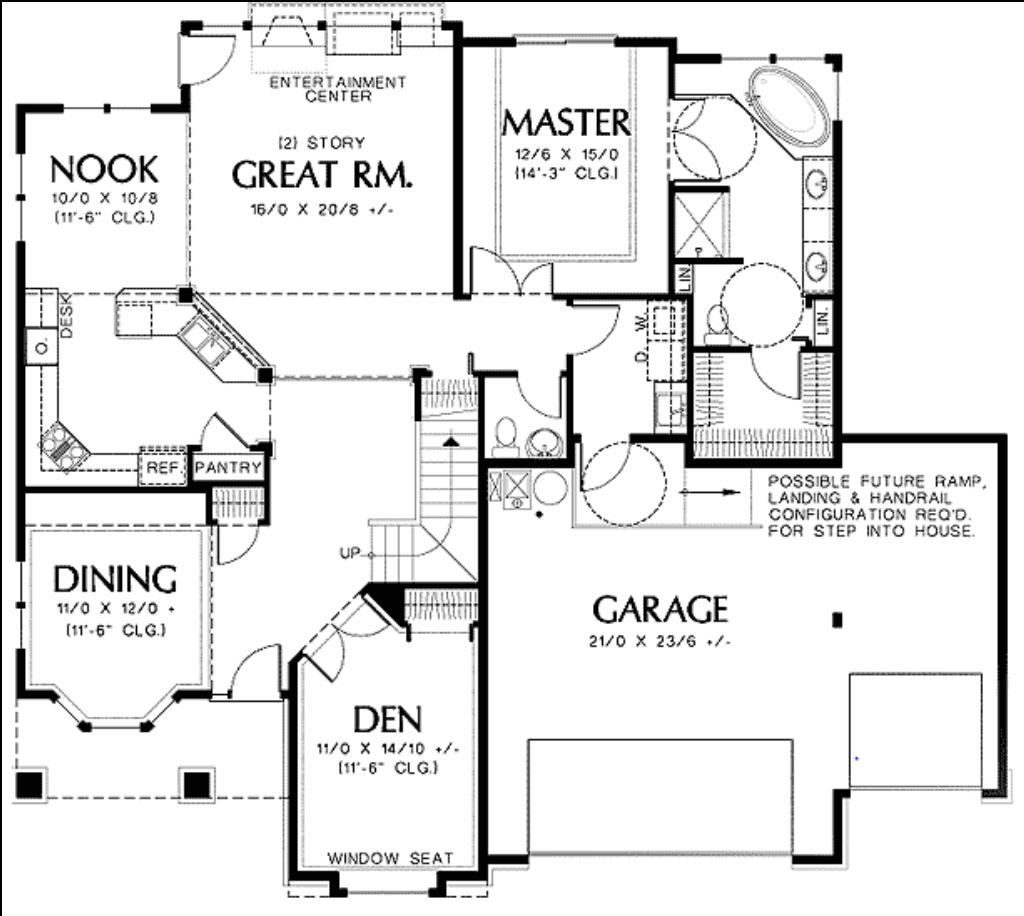


Universal Design / Aging-In-Place

Universal Design is another form of SustainAbility!

2,732 SF Residence

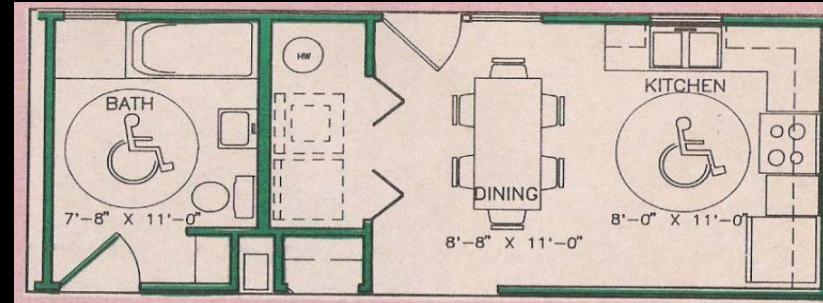
If Universal Design features are incorporated when the home is built or allowing for easy adaptability, (such as stacked closets). If so, additional renovation costs are none to very little – while typically accommodating all ages and people, permitting aging-in-place.



<http://www.architecturaldesigns.com/european-house-plan-69337am.asp>

Universal Design is another form of SustainAbility!

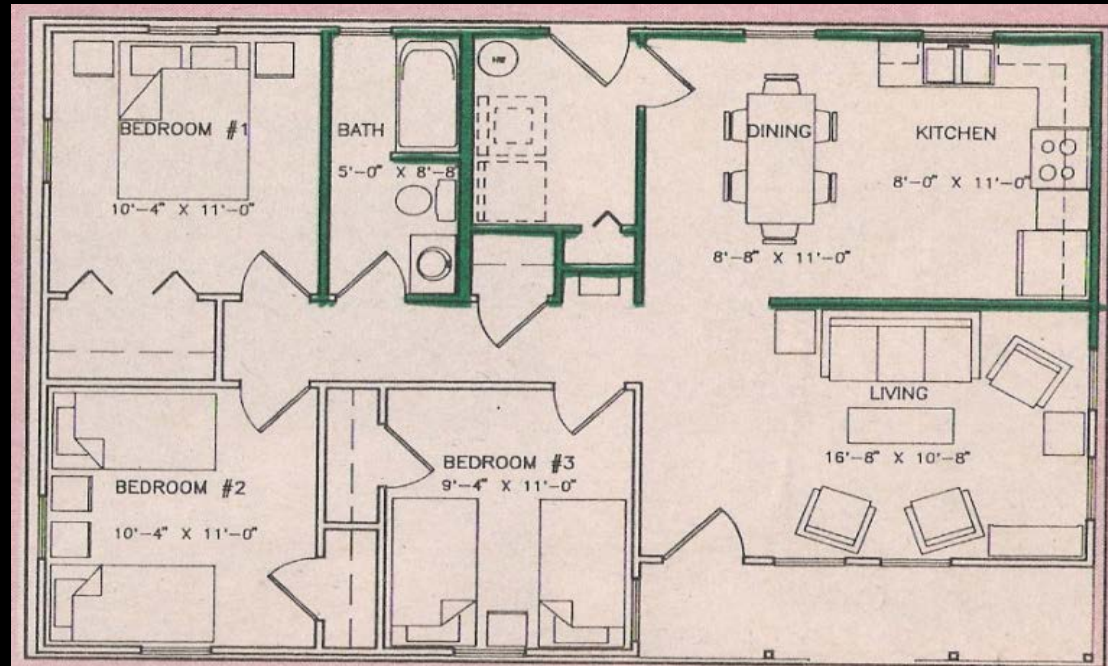
At roughly **\$80/sf x 143SF = \$11,440** to renovate this 13x11 bath/utility area



Optional Universal/Accessible Design partial plan (above)

1,002 SF Residence

Universal Design features do not have to require additional space. It simply is a **wiser use of space** - while accommodating all ages and people, permitting aging-in-place and minimizing future renovation costs.



This plan (bottom) is for a typical three-bedroom, 1,002 square-foot, Habitat house. The detail (top) shows how it can be easily modified for wheelchair accessibility.

Universal Design – Aging-In-Place

Q & A