

**Design and Products
to be filtered through:**

Universal Design Criteria

- Equitable Design
- Flexibility in Use
- Simple/intuitive
- Perceptible Information
- Tolerance for Error
- Low Physical Effort
- Size & space for approach & use

Sustainable Criteria

- LEED Silver (Fairfax County adoption)
- LEED-Homes
- LEED-Neighborhood Development
- NAHB National Green Building Standard

Baby Boomer Criteria

- Cool design
- Affordability important but not imperative
- Progressive rather than regressive thinking, i.e. moving forward to another positive life phase,
- Responsive to limited mobility, cognitive issues, sensory acuity.
- Holistic approaches
- Integration and inclusion into whole community

**to be incorporated into
a production home for Baby Boomers
in the Northern Virginia Parade of Homes 2011**

WELCOME HOME

FUTURE PRODUCTION HOUSE FOR BABY BOOMERS



**OAK LEATHER KNOLL (PROJECT INDEPENDENCE)
BURKE, FAIRFAX COUNTY, VA**



EXAMPLE OF TOWNHOUSE PROJECT INCORPORATING UNIVERSAL DESIGN

WELCOME HOME

FUTURE PRODUCTION HOUSE FOR BABY BOOMERS



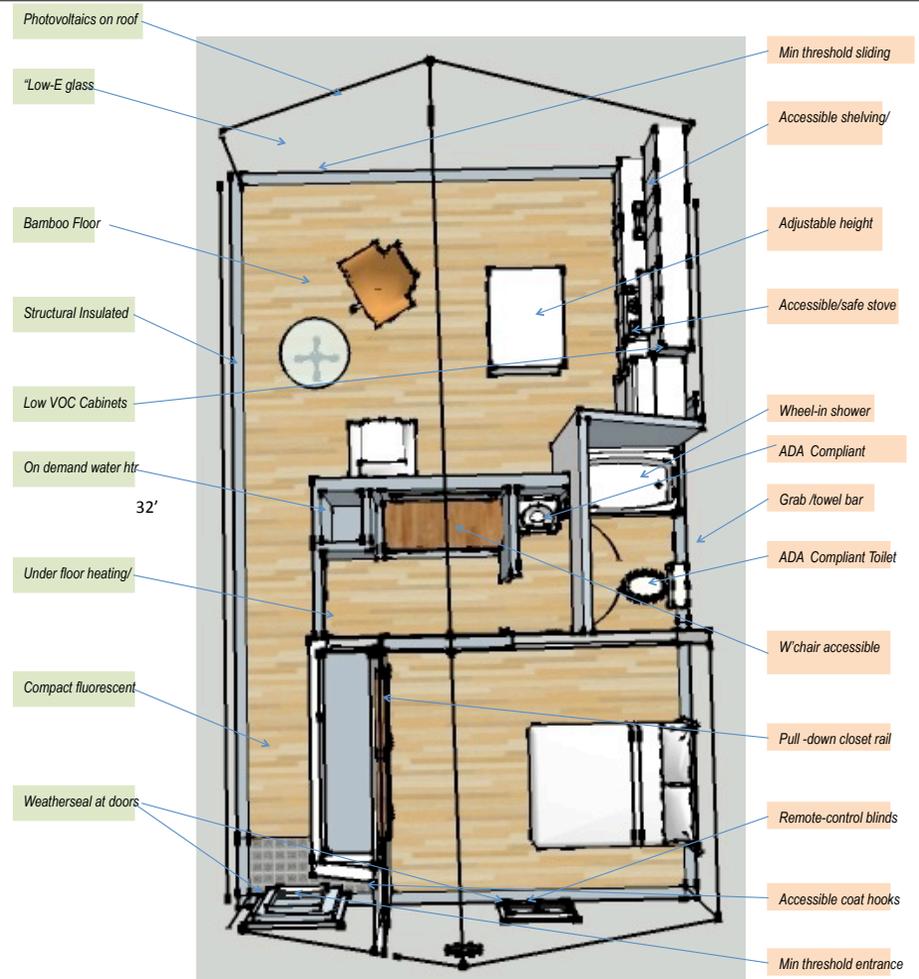
ReDevelopment Group
 Indianapolis, IN
[ReDevelopment Group](#)

Twelve blocks from downtown Indianapolis, this new contemporary condo project was designed and constructed using Green Building practices.



Gold Certified Home
 Bear, DE
[Reybold Development Corporation](#)

These townhomes' standard green features include geothermal heating & cooling, water-saving dual flush toilets, R-19 wall & R-38 ceiling insulation, 2 x 6 exterior wall construction, and insulated low-e glass windows.



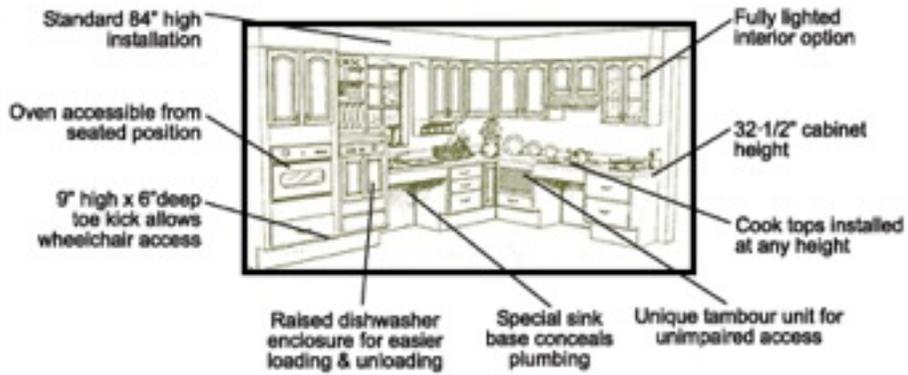
PROJECTS INCORPORATING SUSTAINABLE DESIGN

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FUTURE PRODUCTION HOUSE FOR BABY BOOMERS



Kraftmade



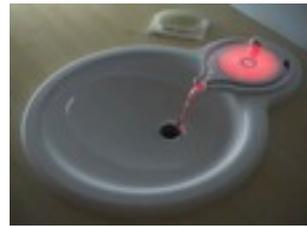
Neff



“COOL” DESIGN IN KITCHENS

WELCOME HOME

FUTURE PRODUCTION HOUSE FOR BABY BOOMERS



“COOL” DESIGN IN BATHROOMS

WELCOME HOME

FUTURE PRODUCTION HOUSE FOR BABY BOOMERS



Some potential features

<p>A "virtual companion" that would relay health-related messages ("It's time to take your medication") and play music, movies and games.</p>	<p>A video system that would monitor the floor at ankle level, so the patient would have privacy but a caregiver would know if there was a problem.</p>	<p>Pressurized ventilation that can keep airborne pathogens in (if the patient is quarantined) or keep outdoor air out (if a patient has a compromised immune system).</p>	<p>A lift, attached to a built-in track in the ceiling, that would move a patient from the bed to bathroom so the caregiver could avoid heavy lifting.</p>	<p>In addition to regular ambient light, lighting at knee height would line the walls, illuminating the floor. Tripping over objects on the floor is the most common cause of falls.</p>
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Loved One

- ▶ Web cam and voice communications by computer or cell phone
- ▶ Movement locator through an ankle or wrist bracelet
- ▶ Feet Sweep
- ▶ Interactive Monitoring Service by an alert necklace
- ▶ Medical Support Monitoring for vitals
- ▶ Medicine consumption monitoring and notification
- ▶ Monitor liquid consumption

Pathogen Protection

- ▶ Positive pressure system for patient protection
- ▶ Negative pressure system for pathogen containment
- ▶ Air filtration
- ▶ Isolation entrance
- ▶ UV and disinfectant system
- ▶ Protective clothing dispenser
- ▶ Hazardous waste disposal

Environmental

- ▶ Room temperature
- ▶ Room oxygen
- ▶ Lighting for both interior and exterior
- ▶ Water temperature
- ▶ Water levels in both tub and sink
- ▶ Door opening
- ▶ Door latching system
- ▶ Smoke/carbon monoxide detection
- ▶ Fence latch status and control
- ▶ Wall interior monitoring

Purpose

- ▶ Affordable and flexible health care environment
- ▶ Extended medical care, rehabilitation and recovery near loved ones
- ▶ End of life care near loved ones
- ▶ Pathogen free environment
- ▶ Most sophisticated monitoring system available
- ▶ Aesthetically pleasing interior and exterior
- ▶ Mobile and temporary

MEDcottage by N2CARE

Example of proposal with health care monitoring - accepted by Virginia State Governments

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FUTURE PRODUCTION HOUSE FOR BABY BOOMERS



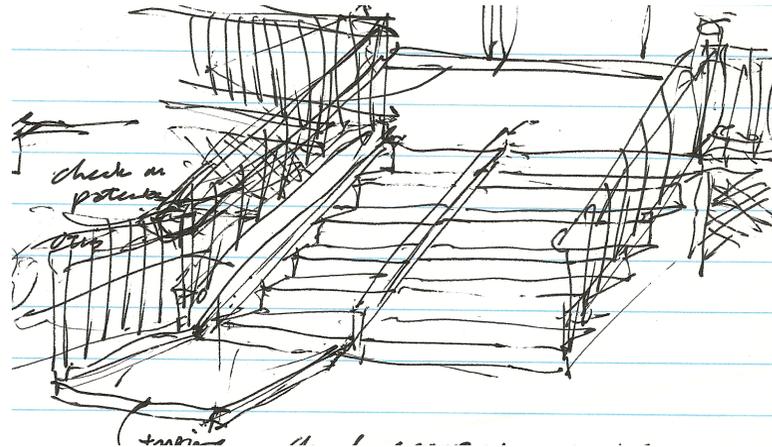
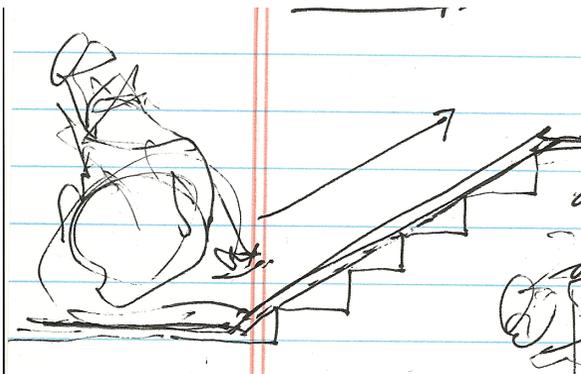
iBOT® 4000 MobilitySystem
without Fold-Flat Seating



iBOT® 4000 MobilitySystem
with Fold-Flat Seating



U3-X Personal Mobility Module by Honda



POTENTIAL ADVANTAGES IN A BUILDING PLAN IF A UNIVERSAL MOBILITY SYSTEM IS ACCEPTED BY THE USER AND PROVIDER :

- NO RAMPS
- NO ELEVATORS NOR STAIR LIFTS
- NO DOOR WIDENING
- NO SPECIAL TURN AROUND SPACES

MOBILITY

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FUTURE PRODUCTION HOUSE FOR BABY BOOMERS



Universal Design is starting to become more and more of a focus for American consumers and manufacturers. TOTO's dedication to Universal Design is evident – our UD center in Japan monitors 280 tests subjects in various situations in developing Universal Design products, the only such facility owned by a plumbing manufacturer in the world. TOTO's Universal Design products take into account user interface and the purpose of the product . In testing, TOTO always takes this balance into account:

- Elegant + Useful
- Beautiful + Accessible
- Unobtrusive + Flexible

TOTO

Example of a company investing in UD research in America

WELCOME HOME

FUTURE PRODUCTION HOUSE FOR BABY BOOMERS

INFLUENTIAL

In 2011 the first baby boomer will be 65.

Quarter US population (77 million)

2 levels of boomer:

- “Leading Edge Boomer” 1946-54 influenced by assassinations of JFK, MLK, RFK and Vietnam - optimistic, experimental
Pushing for civil rights and tolerance
- “Later Boomer” 1955-64 influenced by Watergate, oil embargoes in '70's - distrustful

DESIGN SENSITIVITY

Cool design

Progressive rather than regressive thinking, i.e. moving forward to another positive life phase

Holistic approaches

A home for a baby boomer will have similar requirements as a home for a current 20 to 30 year old

ECONOMIC REALITY

Affordability important but not imperative

Have not saved

Low maintenance, (62 percent)*

Downsized (23 percent)*

AGING REALITY

Responsive to limited mobility, cognitive issues, sensory acuity.

Do not accept “aging”

Less than optimal personal health habits

COMMUNITY

Integration and inclusion into whole community - although trend against civil engagement

Prefer urban environment within a dense area with community networks, facilities and services.

Many are childless - do not want to die alone

Those who have children do care for them and are close.

Tendency to disengage from community activities

Prefer an Active Adult Community that is part of a multi-generational neighborhood.*

CONTINUE TO WORK

Home office - continuing to work.

* 2004 Del Webb Baby Boomer Survey

ENVIRONMENT

Concerns over energy/environment.

BABY BOOMER FACTS - 1

WELCOME HOME

FUTURE PRODUCTION HOUSE FOR BABY BOOMERS

Most Baby Boomers Prefer to Age in Place, But Growing Numbers Head to Age-Restricted Communities

April 28, 2009 - Most Baby Boomers, like their parents, are choosing to “age in place,” but a large and growing number – more than 1.2 million households – are choosing to move to communities designed to meet their needs, according to a study released today by the National Association of Home Builders (NAHB) and the MetLife Mature Market Institute (MMI). The data is significant because by 2010 the Boomers will represent one quarter of the U.S. population – a group that will greatly impact the choices available in the housing market.

“The Baby Boomers’ influence on housing choices has been profound, and will have a huge impact on trends in housing for the mature market as that age group continues to move toward retirement,” said Sandra Timmerman, director of the MetLife Mature Market Institute. “Some findings, such as the tendency for buyers in 55+ communities to continue to work in greater numbers and for longer periods of time, show us that this group is redefining the traditional notion of retirement to suit their lifestyle choices.”

The multi-phased study, “Housing for the 55+ Market: Trends and Insights on Boomers and Beyond,” examines a number of trends and behaviors of the important boomer segment and the population in general. The research, released during NAHB’s Building for Boomers & Beyond: 50+ Housing Symposium in Philadelphia, includes an in-depth profile of the 55+ market, based on figures from the U.S. Census Bureau’s American Housing Survey from 2001 through 2007. The study showed that the new homes offered to 55+ buyers and renters grew in size from an average of about 1,800 square feet to about 2,300 during that time period – likely still a downsize for many, since almost no one reported that a desire for a larger home was among their reasons to move. Those who moved from their existing homes did so primarily for reasons relating to their families, but the design and look of the community, and the quality of the home, as well as the design and layout of the new residence, were the factors most often considered by those who chose to move.

“NAHB has tracked the 55+ population and its share of the housing market for decades,” said David Crowe, NAHB’s chief economist. “But this new data gives us our first look at specific consumer behaviors and preferences – what they look for in a home, the reasons why they move, the characteristics of the communities they choose – over an extended period of time. By examining emerging trends, we have a clearer picture of what the mature market wants in homes and communities, which gives builders the tools to build housing that will meet those needs.”

The research showed that while most 55+ consumers prefer to stay in their current home as they age, an increasing number (3 percent, compared to 2.2 percent in 2001) will opt for an age-restricted community designed to attract “active adults” with a heavy emphasis on lifestyle. The analysis also confirmed that while most consumers were generally happy with their current homes, residents of age-restricted active-adult communities had the highest satisfaction rates.

The research noted that those who were residents of multifamily dwellings often sought less expensive homes. Of the Baby Boomers who are close to the traditional retirement age of 65, many are not yet planning to retire, are looking for a community close to their place of employment, or one that allows them to transition into a work-from-home situation. The number of people who chose a community close to work increased from 11.4 percent in 2001 to 16.6 percent in 2007.

And while there is increasing interest in age-restricted housing among mature adults, the number of units being built has decreased with the downturn in the economy. Not coincidentally, sales of new homes for active adults have fallen off as interested buyers either cannot sell their current homes, or simply decide to wait for a more stable market.

BABY BOOMER FACTS - 2

WELCOME HOME

FUTURE PRODUCTION HOUSE FOR BABY BOOMERS

PERSONS OF RETIREMENT AGE

National Association of Home Builders (a 2009 NAHB/MetLife Mature Market Institute survey).

Highlights:

- Overall trend toward smaller, more energy efficient homes with space-saving designs, creative storage and lots of natural light
- Retirees are faced with smaller nest eggs, soaring fuel costs and difficulty getting mortgages (banks and home loans)
- Majority want single story homes in the suburbs with amenities such as high-speed internet, master suites on the main level, w/d, simple storage, easy open windows, simple climate controls
- Relative "indifference" to universal design features (levered handles, wider doors and hallways, full bath on entry level)
- Desire for emergency call buttons, nonslip floors, larger medicine cabs, lower kitchen cabs (all currently not standard in most new homes)
- Desire for walk-in closets, 2-3 bathrooms, master bedroom suites, hardwood floors, quality carpeting, kitchens with stainless, solid counters, plenty of storage
- Low-maintenance exteriors

GENERAL POPULATION

5 Things Buyers Want in New Homes Now by HOOKEDONHOUSES on March 12, 2010

1. Large Kitchens with Islands.
2. Home Offices.
3. First-Floor Master Bedrooms.
4. Outdoor Living Rooms.
5. Soaker Tubs. (Losing popularity in the bathroom: whirlpool tubs. Gaining: oversize showers with seating.)

<http://hookedonhouses.net/2010/03/12/5-things-buyers-want-in-new-homes-now/>

PRIORITIES IN HOME

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FUTURE PRODUCTION HOUSE FOR BABY BOOMERS

Married professional couple

He was born in 1948

She was born in 1954

Have two children, both with their own families in other parts of the country

Both went to University and have Master's Degrees

Presently live in a 3B 2BTH suburban house for the last seven years, worth \$600,000

They presently have two cars but feel they could get rid of one and walk or use public transport more.

Wish to downsize and live in a more urban area

Have traveled a great deal both domestic and abroad

He works for an engineering company salary \$90,000

She works as a teacher salary \$70,000

Both are politically aware, and support several charitable causes

They are looking to work out of their house and semi-retire

They have about \$500,000 in savings

She suffers from arthritis and wears glasses

He has diabetes and high cholesterol

Both were smokers but gave it up about 10 years ago.

His father had Alzheimers

Her mother had cancer

POSSIBLE BABY BOOMER CLIENT PROFILE

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FUTURE PRODUCTION HOUSE FOR BABY BOOMERS



**TOWNHOUSE UNITS
DOWNTOWN NORFOLK, VA**

HOT DC AREAS FOR TOWNHOUSE UNIT DEVELOPMENTS :

BRADDOCK, ALEXANDRIA; PETWORTH, DC; ADAMS MORGAN, DC ROCKVILLE CENTER MD

EXAMPLES OF DOWNTOWN TOWNHOUSE NEIGHBORHOODS, CLOSE TO SERVICES

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FUTURE PRODUCTION HOUSE FOR BABY BOOMERS

Miller & Smith (#19 on the Tour Map)
11978 Benton Lake road, Bristolow, VA 20136



Centex Homes (#41 on the Tour Map)
42800 Hay Road, Ashburn, VA 20147

KB Home (#34 on the Tour Map)
2083 Laura Mews Place, Alexandria, VA 22303



k Homes - Potomac Greens (#3 on the Tour Map)
ry Lane, Alexandria, VA 22314



Craftstar Homes - Potomac Highlands (#6 on the Tour Map)
4126 Potomac Highlands Circle, Triangle, VA 22171



2009 NOVA PARADE OF HOMES - TOWNHOMES

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FUTURE PRODUCTION HOUSE FOR BABY BOOMERS

Stanley Martin Homes Darlington Oaks (#37 on the Tour Map)
113 Anthem Avenue, Herndon, VA 20170



Quaker Custom Homes LLC (#26 on the Tour Map)
6173 Cobbs Road, Alexandria, VA 22310



Classic Springs Madison Model (#15 on the Tour Map)
12914 Canova Drive, Manassas, VA 20112



2009 NOVA PARADE OF HOMES - TWO STORY SINGLE FAMILY HOMES W/GREEN FEATURES

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FUTURE PRODUCTION HOUSE FOR BABY BOOMERS

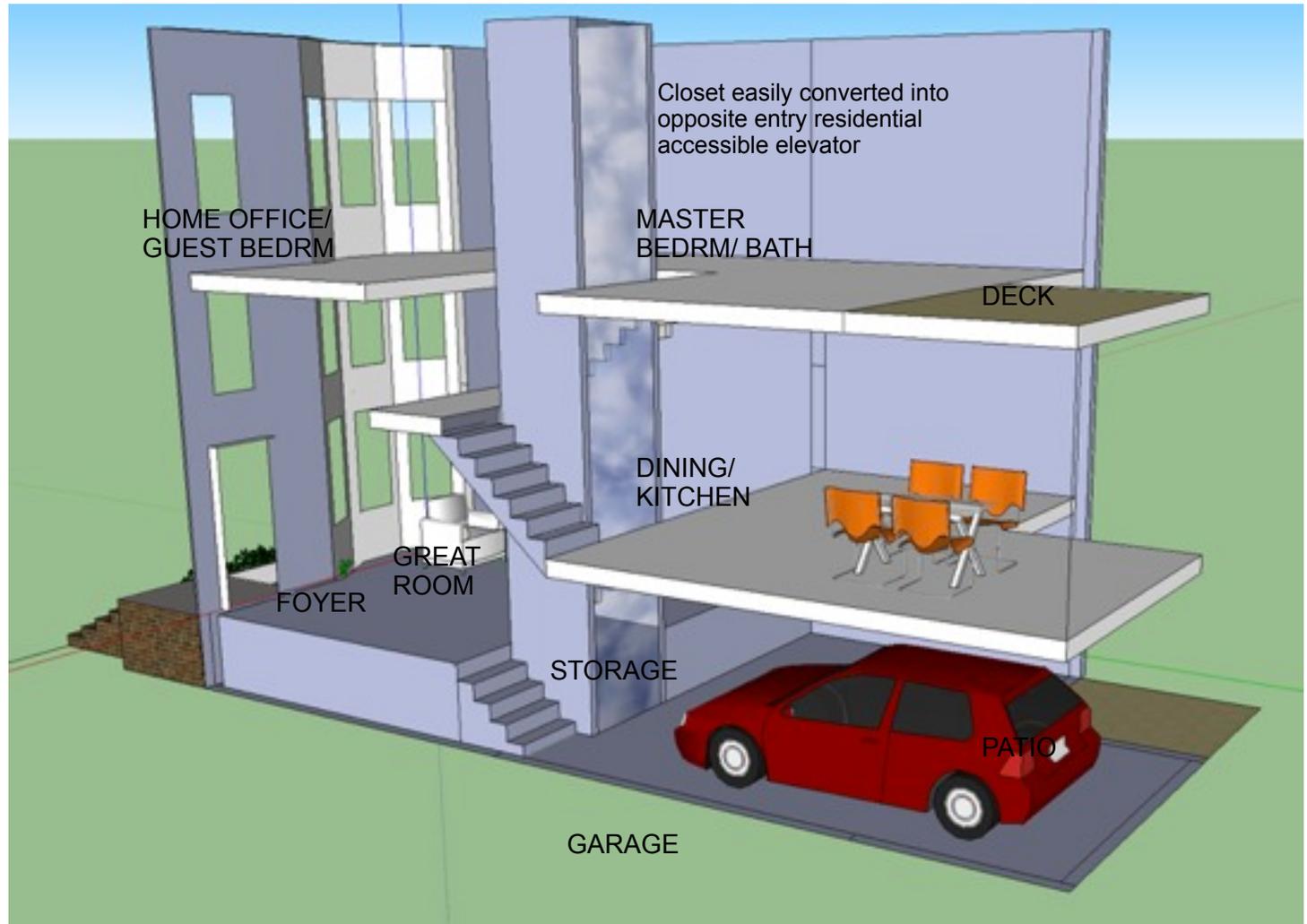


VIEW OF SIMILAR STAIRCASE



Wheelchair lift, hidden

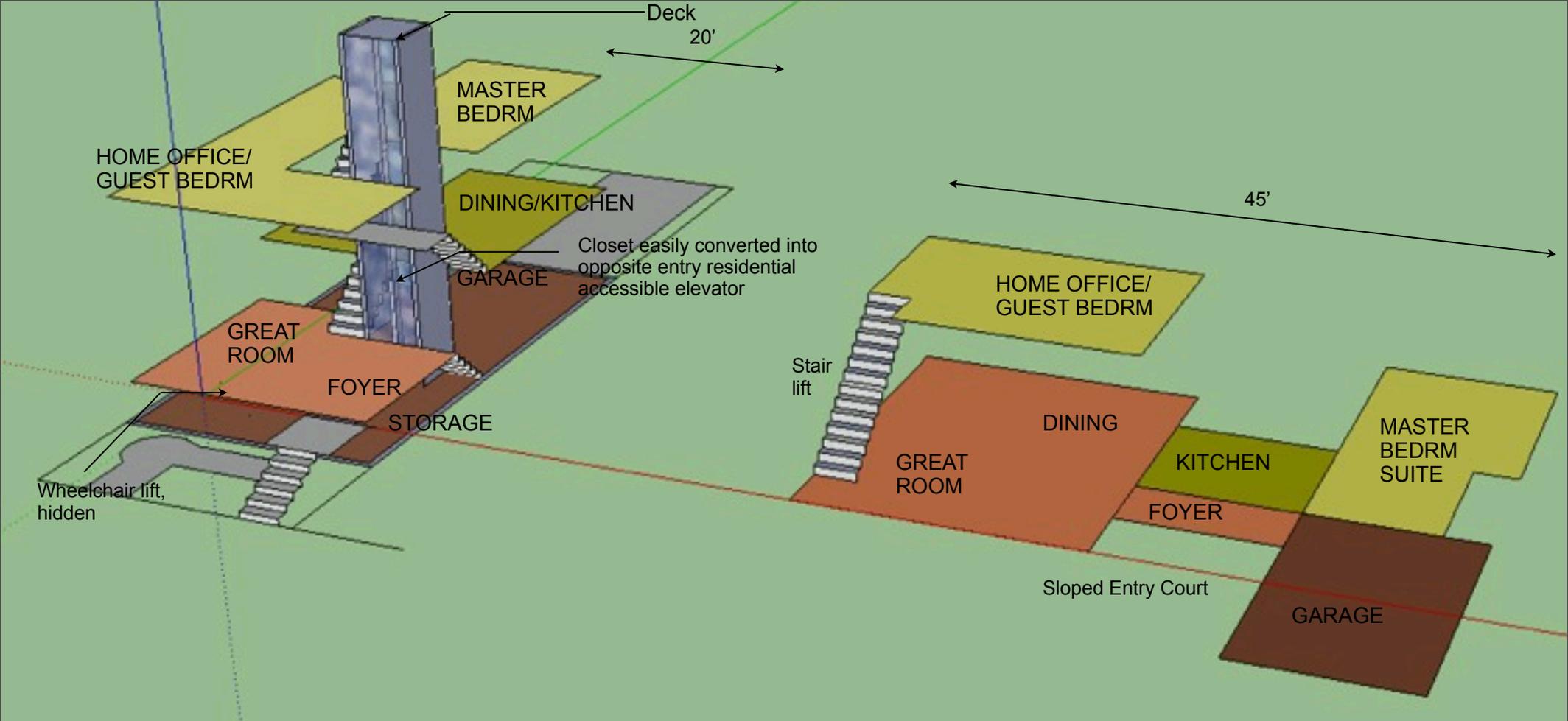
TYPICAL FRONT FACADE -
DESIGN TO COMPLIMENT
OTHER TOWNHOUSE UNITS BY DEVELOPER



TOWNHOUSE MODEL - VIEW FROM SIDE

WELCOME HOME

FUTURE PRODUCTION HOUSE FOR BABY BOOMERS



Heated 1,500sf
 Unheated 400sf (not incl storage)
 Footprint 800sf

TOWNHOUSE MODEL

Heated 1,500sf
 Unheated 400sf
 Footprint 1,900sf

TWO STORY SINGLE FAMILY MODEL

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FUTURE PRODUCTION HOUSE FOR BABY BOOMERS

QUALITY OF LIFE

DESCRIPTION

Home sensor technology that allows seniors to retain their independence while remotely reporting their activity through an online system.

OUTCOME

- 700 installations at the end of 2007.
Began program as a 20-unit pilot over two years ago.

ECUMEN (Example of technology project above)

CENTER FOR AGING SERVICE TECHNOLOGY

TOTO

GEORGE MASON UNIVERSITY

AIA/ASID

USGBC

AARP

NAHB

FAIRFAX COUNTY

NORTHERN VIRGINIA BUILDERS

POTENTIAL RESEARCH/DESIGN PARTNERS

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FUTURE PRODUCTION HOUSE FOR BABY BOOMERS

JULY 2010

MAY 2011



RESEARCH

- ARTICULATING UNIVERSAL DESIGN, SUSTAINABILITY, BABY BOOMER CRITERIA
- APPROACHING RESEARCH/ DESIGN PARTNERS TO DEFINE SPECIFIC AREAS OF INTEREST
- WORKING WITH BUILDERS ON PRACTICAL & FINANCIAL FEASIBILITY OF PROJECT

DESIGN

- RESEARCH/DESIGN PARTNERS WORK ON DESIGN SOLUTIONS
- SOLUTIONS ARE INTEGRATED INTO FINAL DESIGN, COORDINATED WITH BUILDERS
- CONSTRUCTION DOCUMENTATION IS PREPARED

IMPLEMENTATION

- BUILDERS CONSTRUCT UNIT FOR PARADE OF HOMES
- MARKETING & PUBLICITY

POTENTIAL TIMELINE

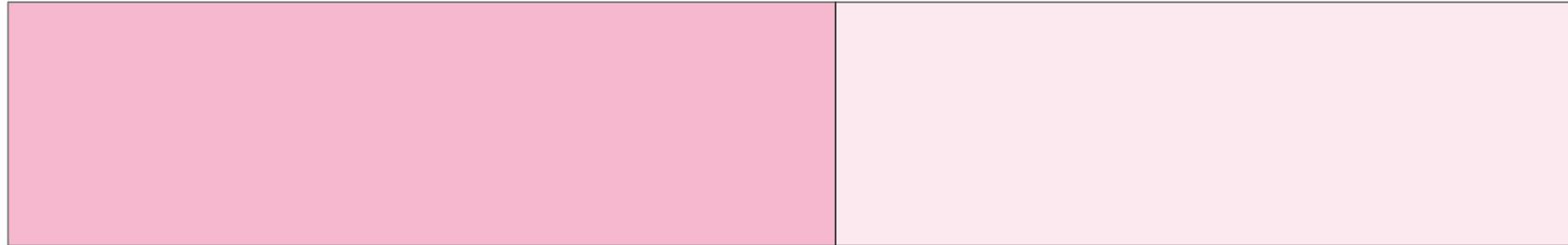
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FUTURE PRODUCTION HOUSE FOR BABY BOOMERS

AUGUST 2010

AUG 13

WEEK OF AUG 23-27



**PREPARATION
DEADLINE**

- **Formulate:**
 - **Goal for the project;**
 - **Key presentation topics/
questions**
 - **Process for presentation,
discussion and recording**
- **Have builder on board**
- **Finalize list of prospective
participants**

**ON-LINE
SESSION**

- **Send out to all prospective
participants :**
 - **Goal for the project;**
 - **Key presentation topics/
questions**

ON LINE BRAINSTORMING SESSION - SCHEDULE

WELCOME HOME

FUTURE PRODUCTION HOUSE FOR BABY BOOMERS

FIVE TOPICS/QUESTIONS FOR GROUPS TO DISCUSS

Who will be the client and what are their needs? Baby Boomers born 1946-1954? / all Baby Boomers? / younger/older generations? / veterans from the Vietnam and other wars? / formulation of a client profile

What would be the best way to promote the Welcome Home Concept? Demonstration house at the Parade of Homes? / development of a set of guidelines for products and designs to be incorporated in every home, similar to an award/rating systems such as LEED or EnergyStar? / What incentives are there for a builder/developer to construct a Welcome Home or to incorporate Welcome Home features? / other

If a demonstration house, what spaces and activities should be incorporated within the design? Sitting area / home office / food preparation / eating / master bedroom / dressing area/ bathrooms/ guest bedroom/ outdoor living/ one or two car garage -accessed from front or rear? / other

What would be the essential universal design elements - in the kitchen / bathroom /no-step access at which entrances? / forms of vertical mobility should be used -a wheelchair lift? a stair lift? a ramp? a residential elevator? stairs with wide treads/low risers? a stair-climbing wheelchair? / other

What form could the house take? - a townhouse? / a two story unit with universal design features primarily on the first floor? /a single story unit? / other

DRAFT QUESTIONS FOR BRAINSTORMING SESSION

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FUTURE PRODUCTION HOUSE FOR BABY BOOMERS