

**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**



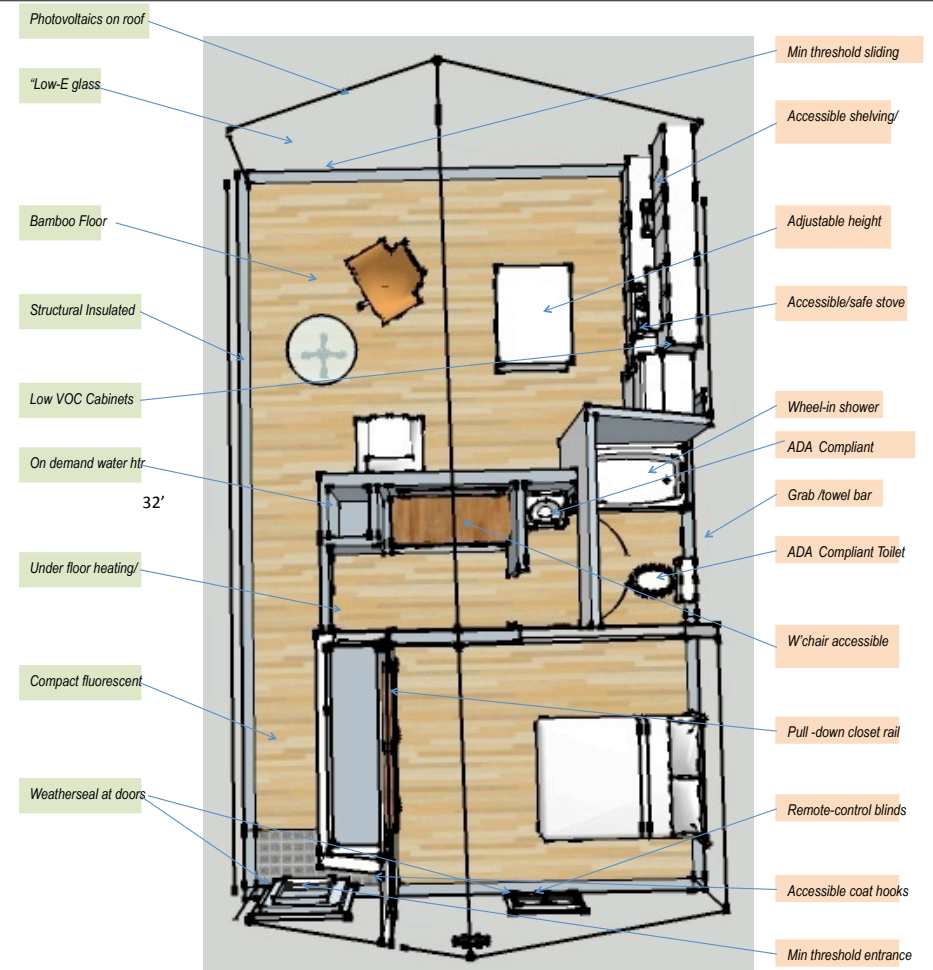
**ReDevelopment Group**  
Indianapolis, IN  
[ReDevelopment Group](#)

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.



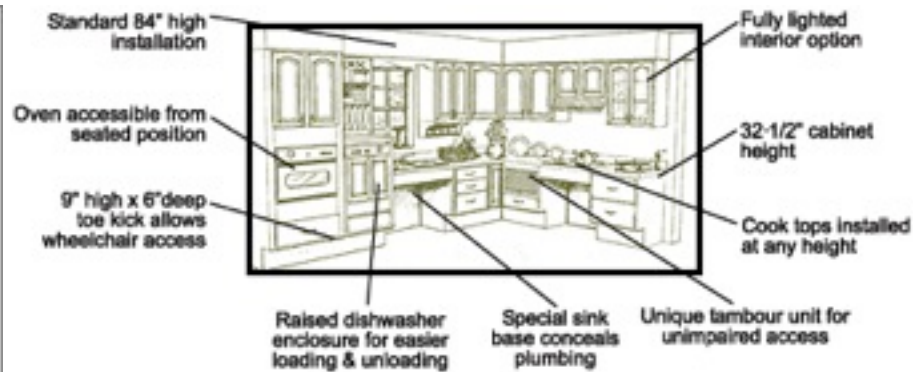
## PROJECTS INCORPORATING SUSTAINABLE DESIGN

**WELCOME HOME**

**FUTURE PRODUCTION HOUSE FOR BABY BOOMERS**



Kraftmade



Neff

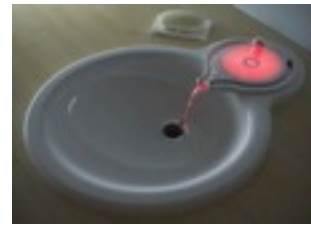


## “COOL” DESIGN IN KITCHENS

**WELCOME HOME**

**FUTURE PRODUCTION HOUSE FOR BABY BOOMERS**





## “COOL” DESIGN IN BATHROOMS

**WELCOME HOME**

**FUTURE PRODUCTION HOUSE FOR BABY BOOMERS**



#### Some potential features



A "virtual companion" that would relay health-related messages ("It's time to take your medication") and play music, movies and games.



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.



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).



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.



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.

#### 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

WELCOME HOME

FUTURE PRODUCTION HOUSE FOR BABY BOOMERS





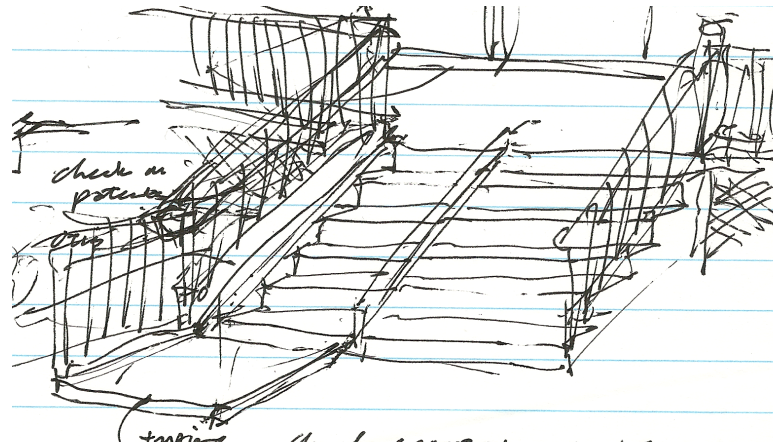
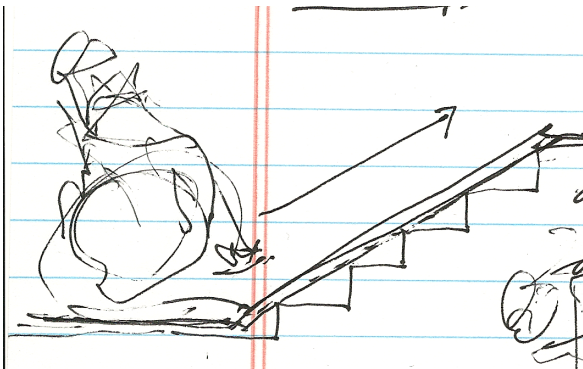
iBOT® 4000 MobilitySystem  
without Fold-Flat Seating



iBOT® 4000 MobilitySystem  
with Fold-Flat Seating



U3-X Personal Mobility Module by Honda



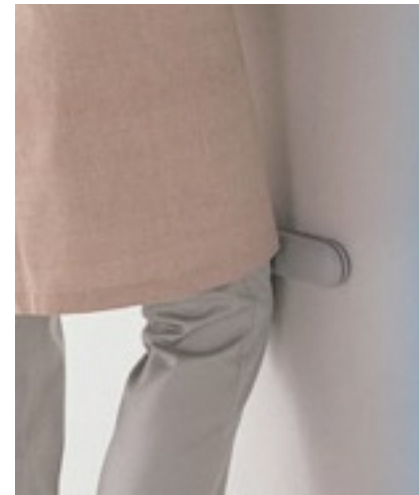
**POTENTIAL ADVANTAGES IN A  
BUILDING PLAN IF A UNIVERSAL  
MOBILITY SYSTEM IS ACCEPTED BY  
THE USER AND PROVIDER :**

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

## MOBILITY

## WELCOME HOME

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

## WELCOME HOME

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

**WELCOME HOME**

**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**

**WELCOME HOME**

**FUTURE PRODUCTION HOUSE FOR BABY BOOMERS**

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

WELCOME HOME

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

**WELCOME HOME**

**FUTURE PRODUCTION HOUSE FOR BABY BOOMERS**

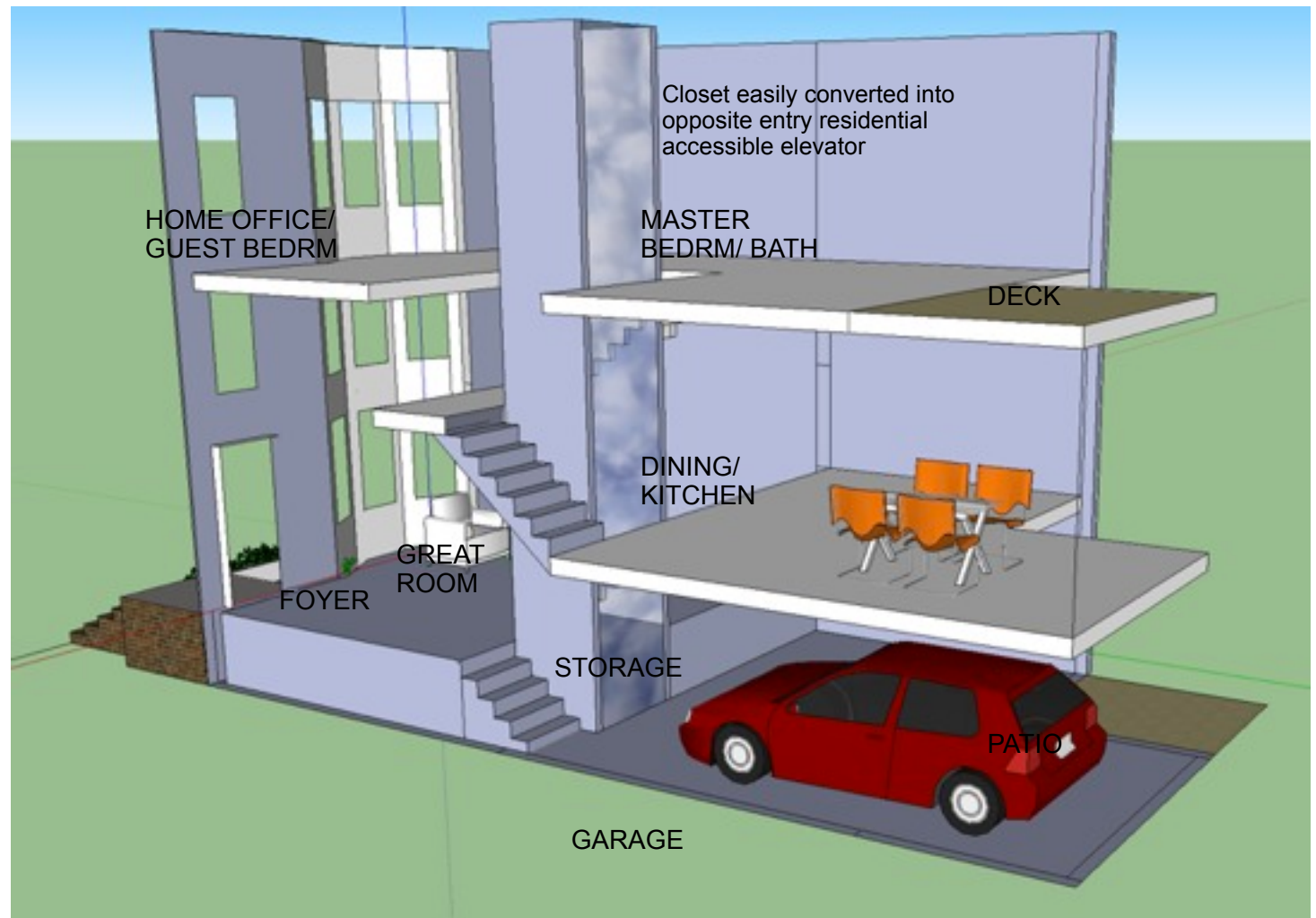


VIEW OF SIMILAR STAIRCASE



Wheelchair lift, hidden

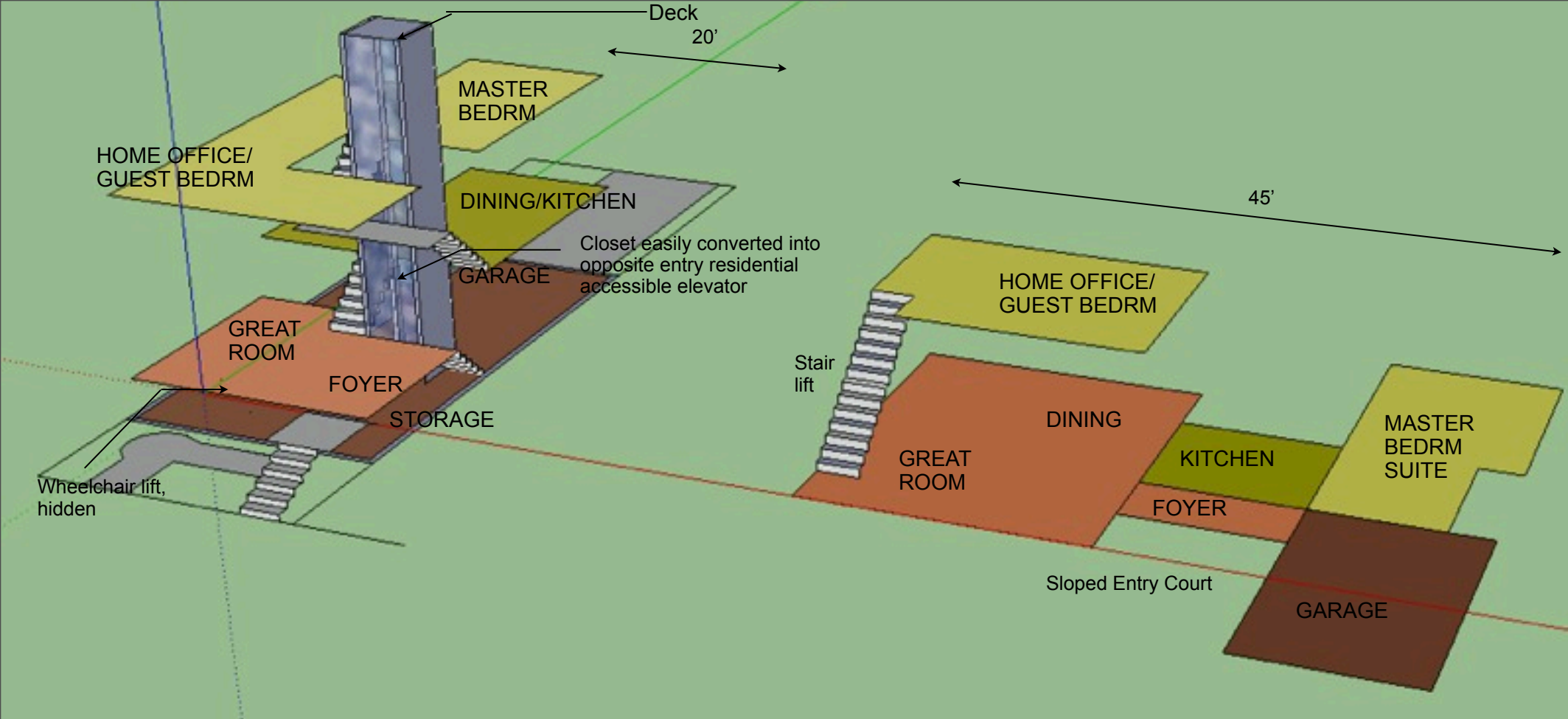
TYPICAL FRONT FACADE -  
DESIGN TO COMPLIMENT  
OTHER TOWNHOUSE UNITS BY DEVELOPER



## 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

# WELCOME HOME

FUTURE PRODUCTION HOUSE FOR BABY BOOMERS



QUIETCARE	QUALITY OF LIFE	
	DESCRIPTION	OUTCOME
	Home sensor technology that allows seniors to retain their independence while remotely reporting their activity through an online system.	<ul style="list-style-type: none"> <li>700 installations at the end of 2007.</li> </ul> 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**

**WELCOME HOME**

**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**

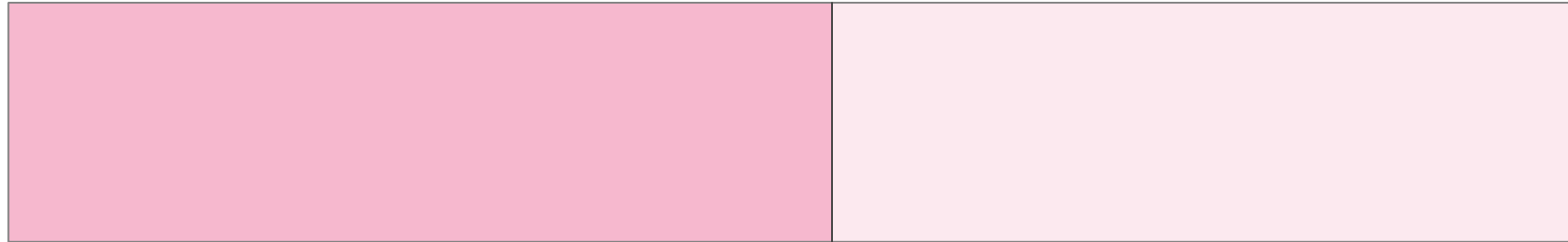
## **WELCOME HOME**

**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**

### **WELCOME HOME**

#### **FUTURE PRODUCTION HOUSE FOR BABY BOOMERS**