

*Urban Residential Design  
For Ageing-in-Place*



*Angela Carlson  
Studio / Professor Biackoff*

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# Project Overview

## Problem Statement

*To design an urban residential home for Kent and Dianne Carlson that will support their personal needs as they age. The home must incorporate universal design strategies as well as sustainable design elements and aging -in- place design methods. The style of the home will reflect design elements from the time period of Mid- Century Modern.*

## Design Statement

*This home will feature elements of Mid- Century Modern design, universal design principles, aging -in- place techniques, and sustainable design elements. Mid- Century Modern design will be incorporated into the design with the floor to ceiling windows and patio doors on the house. The home will also feature some iconic Mid- Century Modern furniture and lighting features which will act as focal points in the home. I also plan to incorporate universal design elements through the floorplan of the home and the basic design of the home's features. The home will be constructed according to ADA policy with the appropriate clearances. The aging -in- place techniques will be present throughout the home, primarily in the bathroom and kitchen where accessibility will be a key factor. Lastly, sustainable design will account as a factor in the design of the home through the use of renewable products that use green energy and reduce use of unnecessary waste.*

# Programming Phase

## Client Profile

*My clients are Kent and Dianne Carlson, they are in their mid-sixties and they want to downsize from their existing home in the suburbs of Connecticut. They are now looking for a home in an urban setting, particularly in New York City, which will help support their needs as they grow older. Both Kent and Dianne are starting a small consulting business out of their home. Dianne has her own fashion line and together her and her husband Kent manage the business from their home office. The couple is interested in high end modern design and want to see that reflected in their home. They hope to build up their business by entertaining lots of their fellow designers in their new home and so it is essential that their new home is able to accommodate a company.*

## Site Analysis

*Kent and Dianne are looking to live in the heart of New York City and would love to live in a location close to the city without the noise and disturbance of the city. They are looking for a residence with one floor and a patio off the back of the house. The location of the house is situated among others like it and is easily accessible to high end designer boutiques, posh hotels, and fancy restaurants. This allows for the Carlsons to be close to the heart of the city while living on quieter cross streets related to their business. The house itself will overlook a quaint little park full of foliage and a small pond. It will be situated relatively near all the necessary accommodations such as grocery stores, hospitals, etc. They are looking for a house that is in relative walking distance to the city, yet feels like a close, quiet community.*

## *Project Parameters*

- Entry vestibule or foyer with an entry closet- sufficient so that one does not enter directly into living space*
- Guest bathroom and/or Powder room*
- Living/ Entertainment space/ Great Room*
- Dining Area- to accommodate 2-6 people*
- Home office- to accommodate 2 people working and up to 2 guests*
- Kitchen with pantry*
- Master Bedroom Suite with walk-in closet and Master Bath*
- Master Bathroom with 2 lavatories, 1 toilet, accessible shower, tub, and storage*
- Guest Bedroom with access to a bathroom*
- Laundry area, storage area(s) as needed throughout*
- Patio or deck*

## *Sustainable Design*

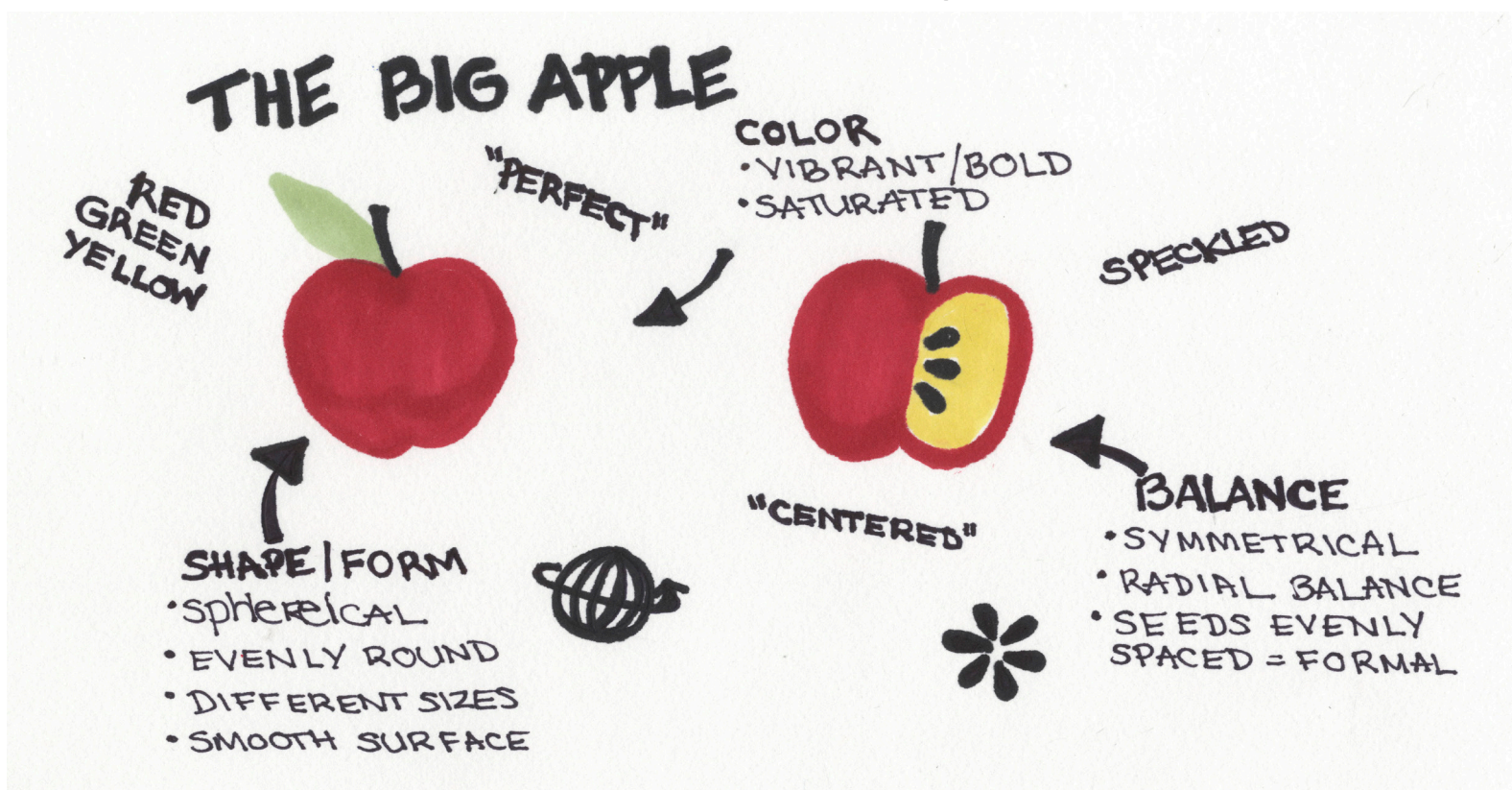
- Use of reusable materials*
- Environmentally friendly and economical*
- A natural cork hardwood flooring throughout the home*
- Energy efficient appliances and heating and cooling units*
- No VOC interior/exterior paint*
- Natural lighting*
- Hard, monolithic surfaces*
- Composite decking material*
- Cluster plumbing*

# *Universal Design*

- *Multi- mode bathroom*
- *Roll- in shower*
- *Foldable and adjustable bench seating in shower*
- *Split level kitchen island*
- *Automatic faucets in sinks*
- *No thresholds in doorways*
- *Grab bars near toilets*
- *Comfortable height for toilets*
- *Easy access lower cabinets*

# Concept Development Phase

## Concept Deconstruction- "The Big Apple"



## Concept Statement

*The apple is a strong symbol of strength and protection on the exterior, and uniqueness and tenderness on the inside. This exemplifies the lives of the growing occupants and the rebirth of life all in one place. While the smooth exterior is organic and free, the interior depicts symmetry and predictability.*

## Concept Model

*My concept model gives a literal representation of my concept for "The Big Apple". I decided to construct a three-dimensional apple to be able to show the inside and outside of the apple. The apple is split into sections in order to allow for a visual of the inside core. The outside of the apple symbolizes the public areas of the home that are open to company while the inside center of the apple represents the private areas of the home that are solely for the homeowners access. My model also relates back to the original deconstruction of my concept.*

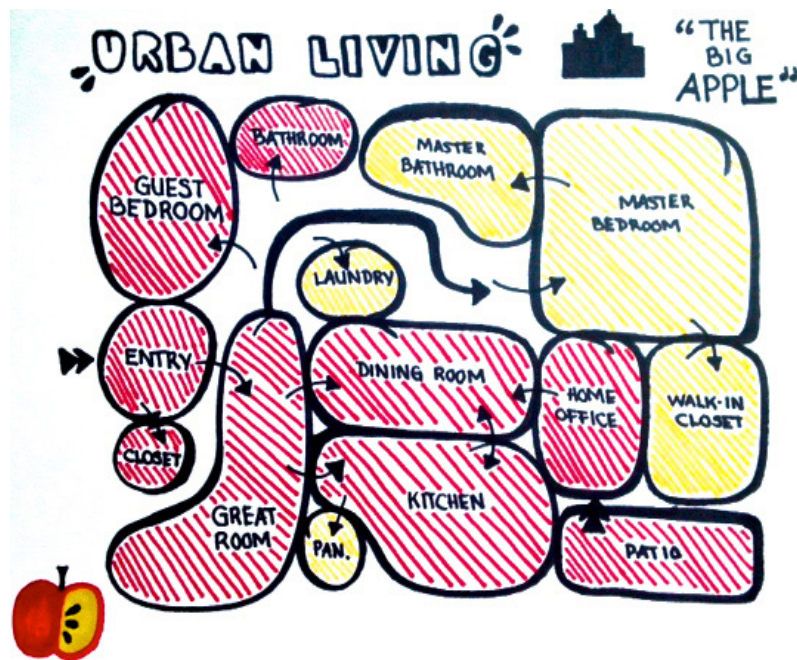


# Schematic Design Phase

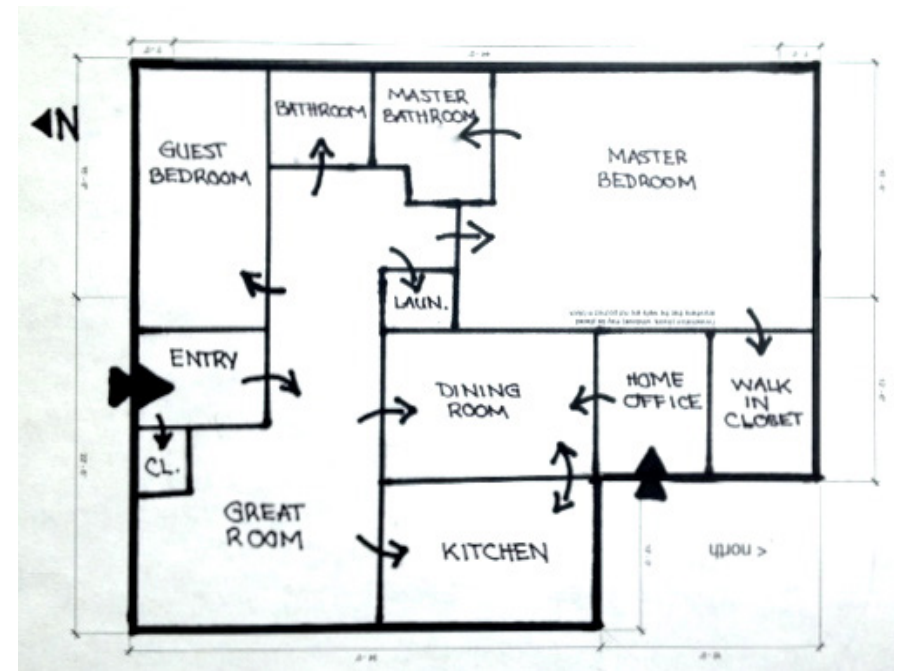
## Bubble Diagram

Yellow= Public Areas

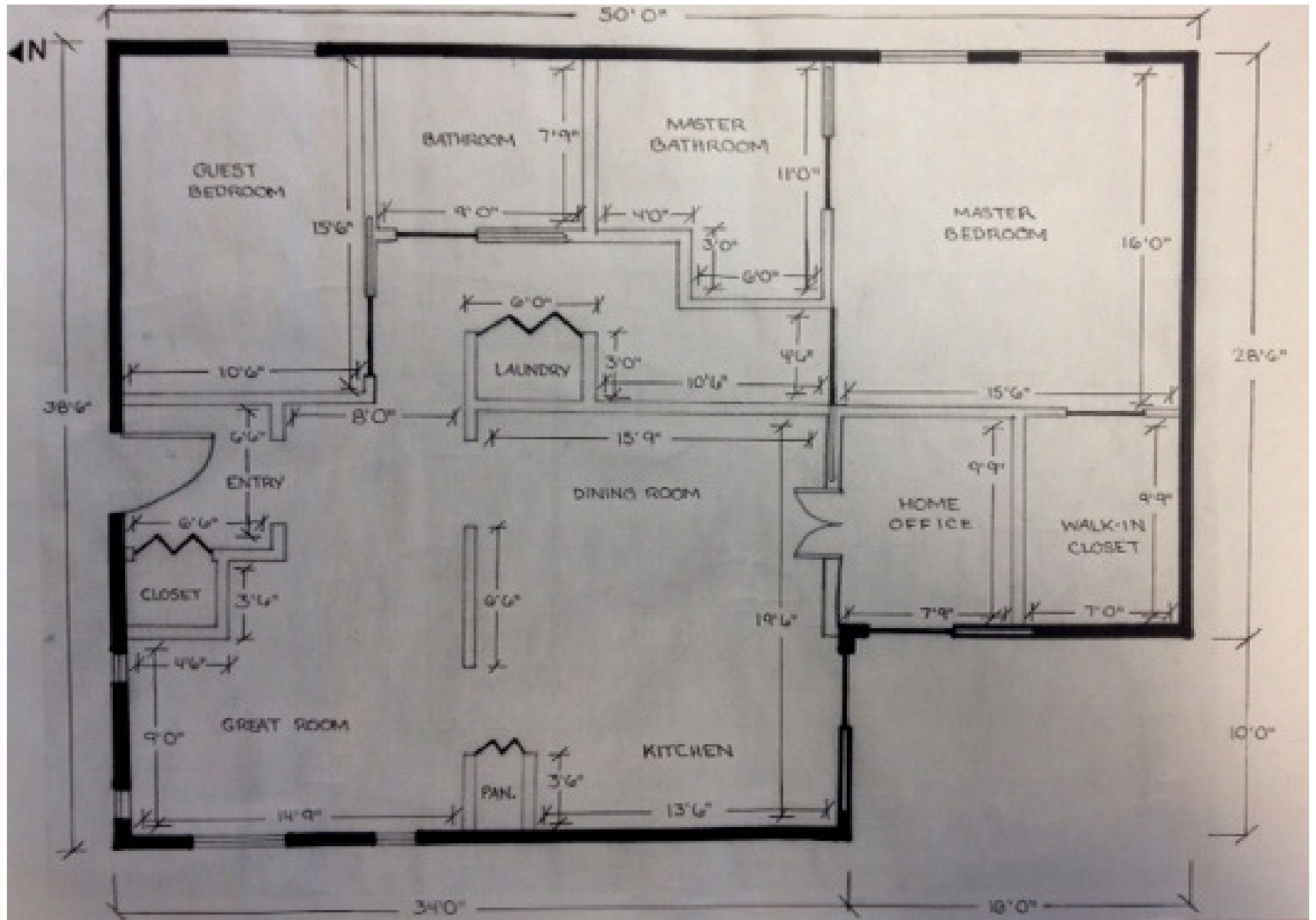
Red= Private Areas



## Block Diagram



# Loose Plan

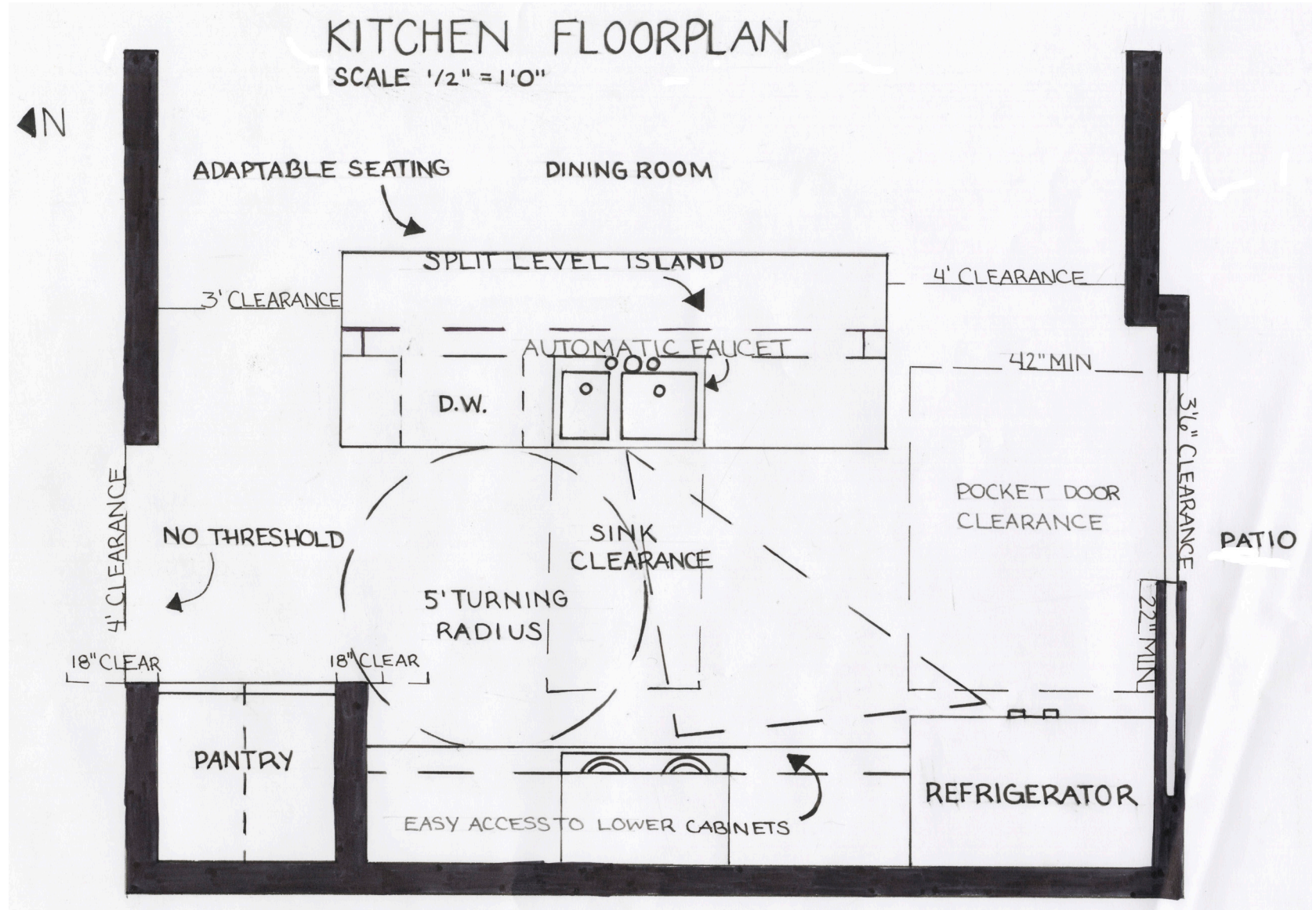


# Design Development Phase

## Rendered Floor Plan



# Enlarged Kitchen Floorplan

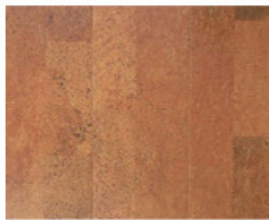


## *Rendered and Sketched Perspectives*



# Furniture, Fixtures and Equipment for Kitchen

## MATERIALS AND FINISHES



Millstead Copper Plank 13/32 in. Thick x 5-1/2 in. Wide x 36 in. Length Cork Flooring (10.92 sq. ft. / case)  
Model # PF9624 Internet # 203198897 Store SO SKU # 782038



Benjamin Moore Interior Paint

16P Bayville Blue

14C-139 Phillipburg Blue

1158 Vapor Trails



Laurey 26-1/2 in. Stainless Steel T-Bar Pull  
Model # 89009 Internet # 202272197

South Shore Furniture Freeport Storage Cabinet Pure Black  
Model # 7270971 Internet # 203546622



allen + roth 4-in W x 4-in L Sugarbrush Quartz Kitchen Countertop Sample  
Item #: 149977 | Model #: NRU601



GE Cafe™ Series 20.7 Cu. Ft. Counter-Depth French-Door Refrigerator  
CWS21SSESS

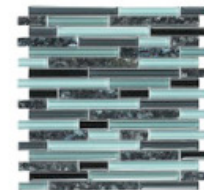


Samsung 30-in Smooth Surface 5-Element 5.8-cu ft Self-Cleaning with Steam Slide-In Convection Electric Range (Stainless Steel)  
Item #: 502409 | Model #: NE58P9500SS

KOHLER Cadence 20-Gauge Double-Basin Drop-In Stainless Steel Kitchen Sink  
Item #: 290874 | Model #: R3145-4-NA



Delta Foundations 2-Handle Bar/Prep Faucet in Chrome  
Model # B28910LF Internet # 203621739



EPOCH Spectrum Blue Pearl-1662 Granite And Glass Blend 12 in. x 12 in. Mesh Mounted Floor  
Model # BLUE PEARL-1662 Internet # 203434289



Progress Lighting Wisten Collection Antique Bronze 1-light Mini-Pendant  
Model # P5167-20 Internet # 202021560 Store SO SKU# 716707

# Appendix

## Research Paper

*Designing a home for the aging population that embodies Mid-Century Modern characteristics while using the principles of universal design and using sustainable design is the objective for this residential project. I wanted to combine these various elements into one project that works harmoniously with each other and fits all of the criteria essential for a successful design.*

*The historical context for the aesthetic design of the project will be Mid-Century Modern which took place from the 1940s to the 1960s. This style is characterized by clean, simple lines, bold geometric patterns, functionality, and naturalistic flow. I plan on incorporating this style into the design of my project by focusing mainly on interior structure of the house. Mid-Century Modern design involves lots of wide, floor to ceiling windows which help bring in lots of natural lighting and connect the indoors to the outdoors for a seamless flow. In order to accomplish this unity of organic and man-made design I plan on using large glass double doors to move from the inside to the patio outside. This will allow for easy visibility of the exterior from the interior and help connect them seamlessly. Another Mid-Century design characteristic I am planning on incorporating into my plan is natural hardwood floors throughout the house because natural materials were popular at the time and many Mid-Century homes featured teak wood.*

*As for the lighting, I want my design to highlight the clean simple lines associated with the historical context but I also want to modernize it and make some fixtures into focal points in the room by displaying them as works of art. Mid-Century Modern also strives to employ bold geometric contemporary patterns on pared-down forms. I want to accomplish this design aesthetic by using simple furniture forms in places like my living room and dining room while upholstering them in geometric fabrics. The main purpose for Mid-Century Modern design at the time was to showcase new streamlined, cutting edge design ideas and products. This is an idea I want to build into my design somehow whether its through the technology I incorporate into the home or the innovative modern furniture forms.*

*The seven principles of Universal Design; flexibility in use, equitable in use, simple and intuitive use, perceptible information, tolerance for error, low physical effort, and size and space for approach and use will all be incorporated into the design of the residential home. Flexibility in use will be integrated through the design of the kitchen island. The island will be a split level island to accommodate those sitting or standing. The shower in the bathroom will also work within this principle because it will be a large, multi-mode shower with roll in use for wheelchair access and easy access. It will also possess a built-in shower ledge for either support or additional shelf space to provide the client with the choice in method of use. Equitable use comes into play with the planned installation of automatic sink faucets throughout the house in order to be accommodate people with diverse abilities. All of the interior doors throughout the home will not have floor trim in the doorway in order to make it easier to pass through the door without the hazard of tripping or having wheelchairs get stuck on the frame. The principle of simple and intuitive use will be featured in my plan to include an easily accessible home security system with simple pictures on the control panel for easy use. I wanted to add this feature in because the aging population becomes more concerned with their safety when they get older and need to have the reassurance of a safe and reliable form of protection. I want to also add a remote control dimmer switch for window shades since I will be featuring large walls of windows which bring in lots of sunlight. The remote control would be easy to use and understand. Other features which will fulfill the perceptible information principle include the plan for a verbal control system which communicates necessary information effectively to the user. The heating and cooling thermostat will also communicate such information through the use of a visual display panel. Tolerance for error will be supported by the use of grab bars in the bathroom shower and near the toilet to eliminate potential safety hazards. The toilet will also be raised to a comfortable height to reduce the risk of falls. Low physical effort will be effective in the living room and kitchen. In the kitchen I plan on lowering the height of the upper cabinets to eliminate the strenuous physical effort needed to reach the upper cabinet shelves. In the living room I will incorporate the same idea by raising the height of the sofa and chairs for easier comfort with minimum fatigue.*

The last Universal Design principle, size and space for approach and use, will be apparent in the bathroom by tilting the mirror above the sink forward to accommodate people of all body sizes and heights. The other plan for this principle is to create a form of an adaptable seating area to provide a wide range of seating preferences and physical abilities. To accomplish the task of creating an "Aging in Place" environment, I need to achieve a balance of accessibility, visitability, and Universal Design principles. In order for a home to be suitable for the elderly aging population the individual's specific abilities need to be in balance with their living surroundings. Their home needs to reflect their situation. This is becoming an important issue for interior designers because as designers we need to learn how to design for a changing demographic so that their home works for them and not against them. A home can potentially be detrimental to their health if it doesn't offer them the needed essentials for their safety and well being. This topic is similar to universal design because the elderly population does in fact need specialized accessibility to different parts of their home and need certain aspects to be more usable due to their physical ability. It's different in the aspect that if their home needs to be directly accessible to their specific needs which might be inaccessible to others. With this information in mind, I plan to incorporate this concept into my design primarily by creating an open floor plan to allow for more space and mobility. There would be enough space in all the rooms for a wheelchair to complete a turn. This also means enough room for individuals of the aging population to move about comfortably in their home. I also plan to incorporate lots of easily accessible features that make their home safe and comfortable for them to live in.

Sustainable design will be a key factor in designing this home. Since Mid-Century Modern is about uniting the indoors and outdoors I really want to try to incorporate natural reusable materials in my design to reflect the organic theme. I found that cork and bamboo flooring, which are renewable resources, are termite resistant which means that it eliminates the need for chemical treatment which could affect the aging population who suffer from respiratory disease. Another great benefit of using these renewable flooring resources is that they are softer and give more of a cushion when walked on, this is easier on the joints especially for the elderly who commonly suffer from arthritis. Front load washers, which are energy efficient, are also more accessible for those who have limited mobility. Energy efficient lighting help reduce energy waste as well and cost less but they also have a reduced need to be replaced which is better for the aging.

This residence would be able to successfully cover all the necessary areas needed to create an aging in place home. It would incorporate sustainable design, universal design, and the Mid-Century Modern design scheme, making it ideal for a home that grows with its occupant's abilities.

## Supporting Research

Burgstahler, S. (n.d.). *Universal Design: Process, Principles, and Applications*. Universal Design: Process, Principles, and Applications. Retrieved January 30, 2014, from <http://www.washington.edu/doiit/Brochures/>

Rowen, P. (n.d.). *Design for Aging - How Not to Do It*. ASID. Retrieved January 30, 2014, from <http://www.asid.org/content/design-aging-how-not-do-it>

Shankman-Cohn, L. (n.d.). *Design for Aging and Green Design: THEY'RE MORE ALIKE THAN YOU THINK!*. ASID. Retrieved January 30, 2014, from <http://www.asid.org/content/design-aging-and-green-design-they%E2%80%99re-more-alike-you-think>

*So Your Style Is: Midcentury Modern*. (n.d.). Houzz. Retrieved January 31, 2014, from <http://www.houzz.com/ideabooks/1492446/list/So-Your-Style-Is--Midcentury-Modern>

*Spring Decorating Ideas*. (n.d.). *Add Midcentury Modern Style to Your Home : Decorating : Home & Garden Television*. Retrieved January 31, 2014, from <http://www.hgtv.com/decorating-basics/add-midcentury-modern-style-to-your-home/pictures/index.html?i=1>

*The 7 Principles of UD*. (n.d.). *The 7 Principles of UD*. Retrieved January 31, 2014, from [https://www.ksu.edu/humec/atid/UDF/7\\_prin](https://www.ksu.edu/humec/atid/UDF/7_prin)

# Additional Sketches

