



The Kitchen of the Future

Pratt Institute • The LG Studio Process Guide:
Chapter Six, Final Kitchen Design Concepts,
Student Groups One, Two, Three & Four

Chapter 6

Final Design: Group 1

-
- students



Water Flow

JiHyun Park

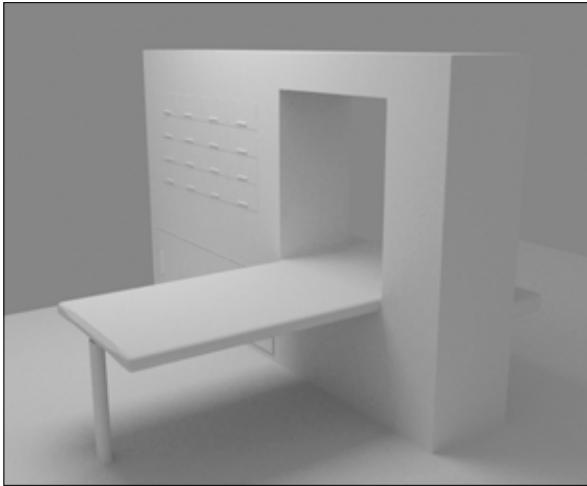
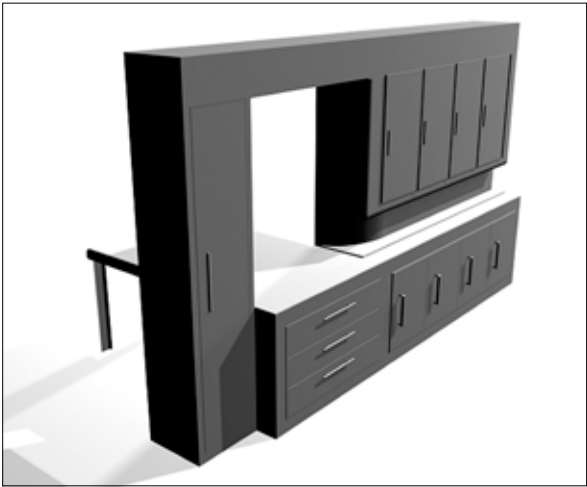
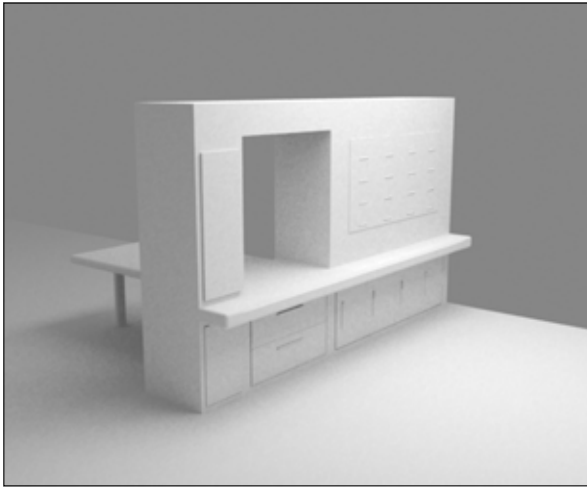


Wall System

You Jin Ko

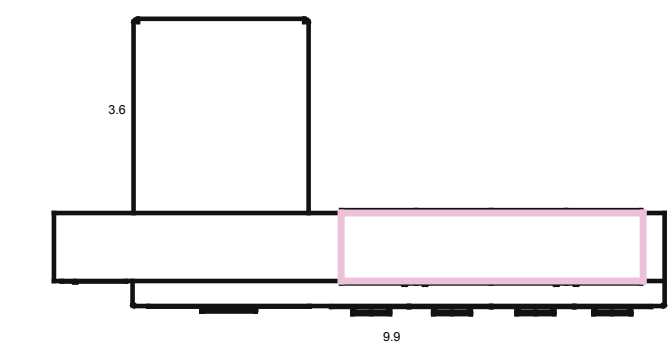
The Kitchen Environment

The Kitchen system I propose is a combines a wall system and room divider. This wall system divides the kitchen from the living area, and it works from both sides.

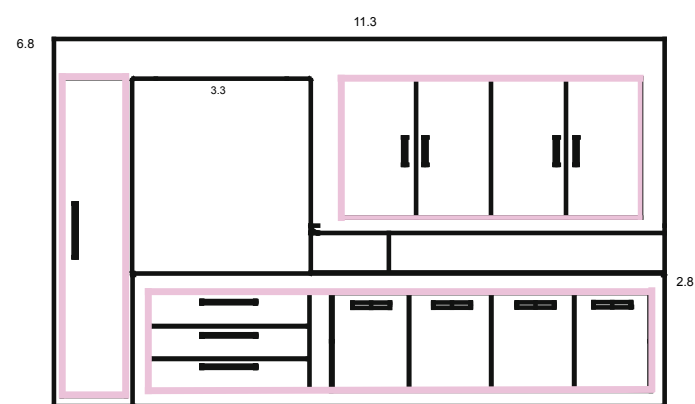


The Kitchen System and the Appliance Design

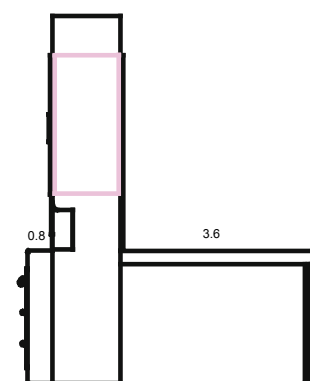
My kitchen design has the possibility to become a dividing wall. A table is connected to the main structure. It can fold up to close the space between the living room and the kitchen. The wall has cabinets that are accessible from the kitchen and from the reverse side, and it has a long cabinet that can hold dry foods and cooking supplies. The refrigerator is horizontal along the bottom of this structure. Because it's already organized by food types, food preparation is made easy.



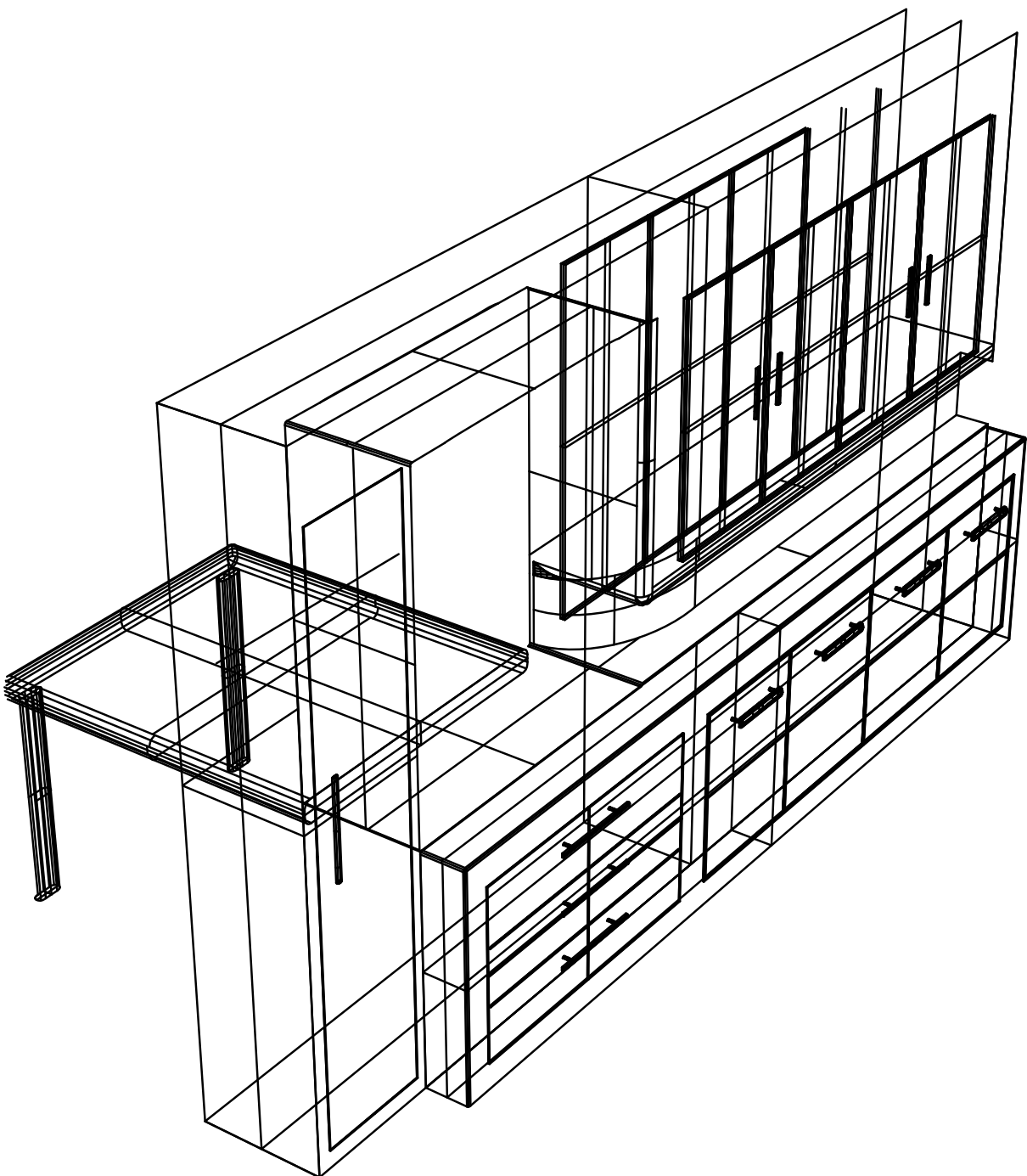
top



front



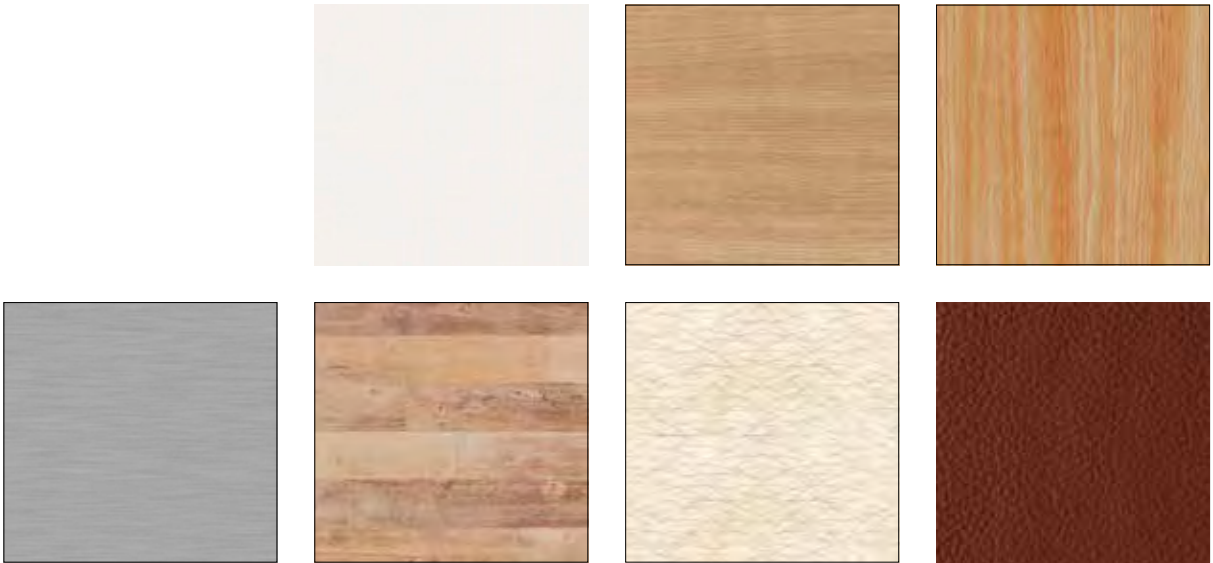
side



perspective

Color / Material / Finish

The kitchen system I propose is based on green materials. I used mostly wood and white lacquer in my kitchen. I wanted to create a modern, white kitchen to represent cleanliness. White materials also provide the illusion of open space.



materials



living room



interior of the kitchen



close-up of space



kitchen



Credenza Kitchen

Sean Perry

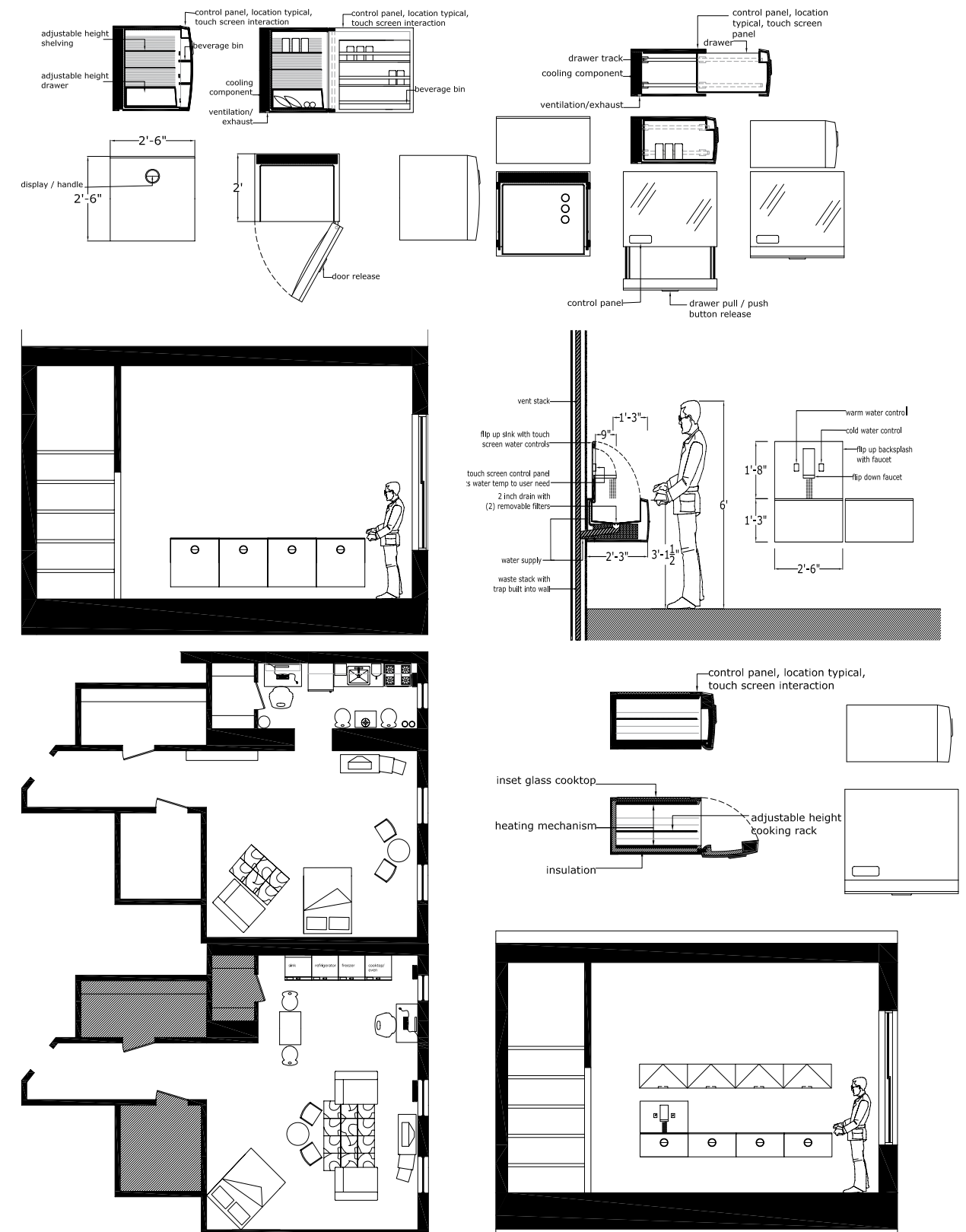
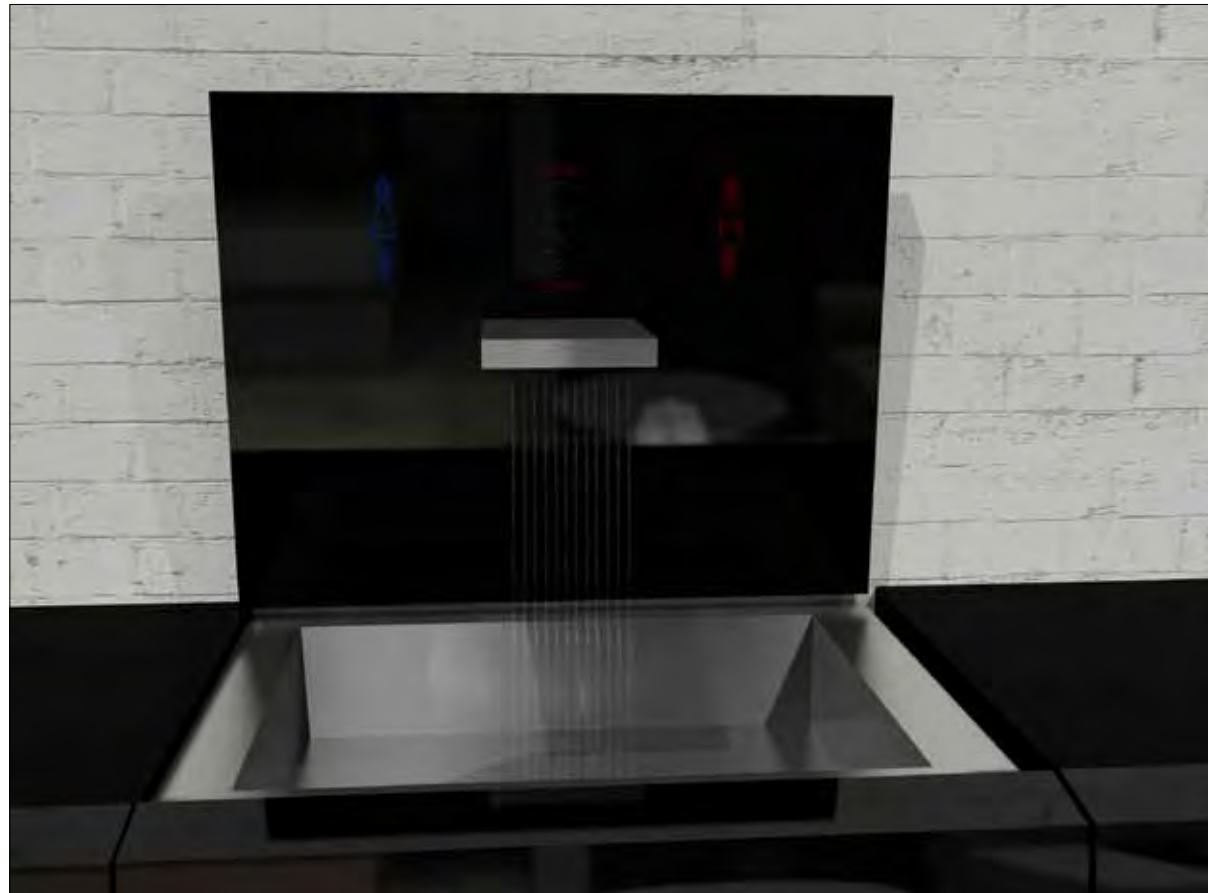
The Kitchen Environment

I propose a kitchen that removes the visual, physical and functional constraints of the traditional kitchen through transformational design. The proposed concept allows one to customize a space by combining the different functions of living in a way that is based on the user's needs. Modules resemble credenzas and can be used as work surfaces as well as kitchen prep surfaces. The pieces will be easily mounted under counters or along the wall. Units will be offered in two sizes: 15 inches x 30 inches x 24 inches and 30 inches x 30 inches x 24 inches.



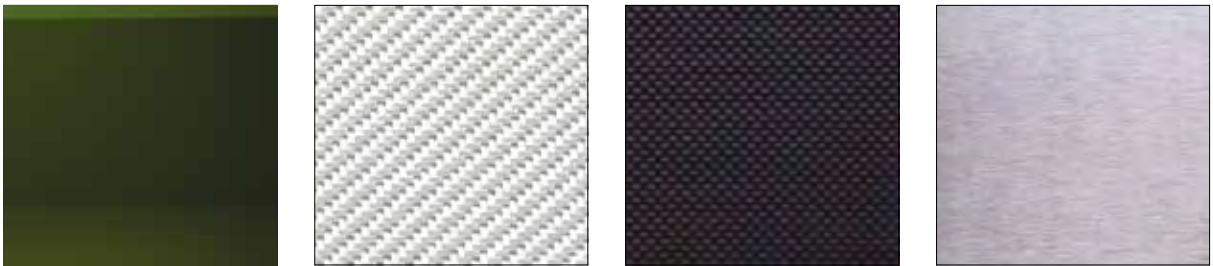
The Kitchen System and the Appliance Design

The user will interact with the appliance through two touch screens. The smaller round handle will act as a display, which will aid in the identification of the appliance. Directly under the display is where the user will open the appliance. Motion sensors will respond to the user's touch and will unlatch, open or slide out the unit. The unit will emit two different sounds which will identify the latching and unlatching of the door.



Color / Material / Finish

The exterior of the appliances will be wrapped in glass or ceramic magnetized glass, while the faces/ doors will be an alternative material. The seamless top surfaces will feature interactive touch screens that can be turned on by tapping the screen. In plan view, these interfaces will be at the center front of the appliance. The utilization of a seamless surface such as glass allows for the top of the appliance to double as a counter top or prep area, thus eliminating the need for counter tops. Materials used for both styles of the kitchen cabinets will be recycled plastic with either a carbon fiber infused face or a glass plated face. Interiors of refrigerators will be stainless steel and semi-translucent Plexiglass.



materials





Show Time

Yong Min Seo

The Kitchen Environment

Large numbers of amateur chefs and food enthusiasts use the internet of information about cooking. Many casual home cooks demonstrate their cooking skills on their own websites or on sites like YouTube. These everyday cooks record their own cooking videos at home and share them online. Other internet users enjoy watching them cook and download their recipes.

“Show Time” is a kitchen system that includes an island and range that incorporate all the necessary tools to support an online kitchen. It includes a camera, a monitor and online access. There are also five cooking zones: an electric range, and areas for cutting and garnishing, as well storage areas for pots and spices.

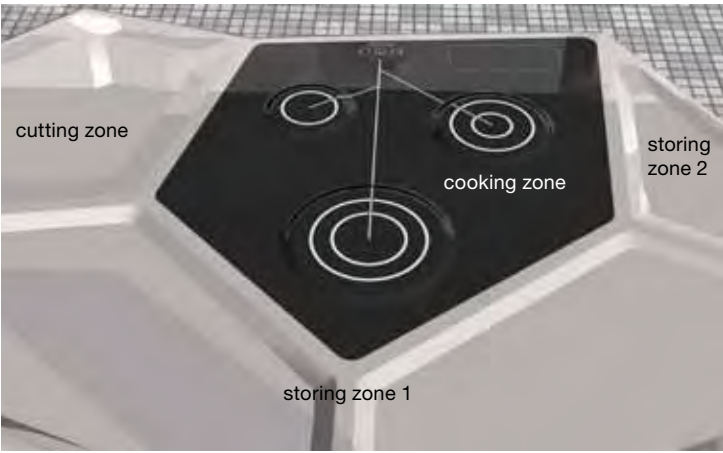
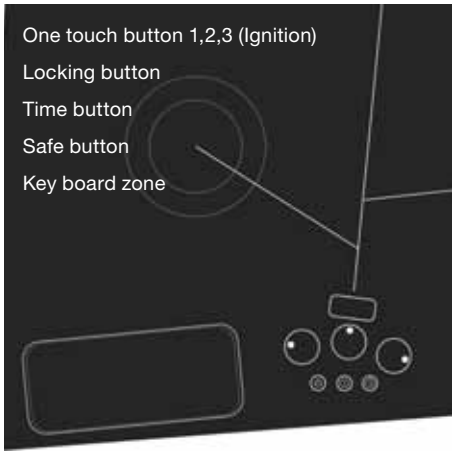
With “Show Time,” the home cook no longer has to run back and forth between her office and the kitchen, or crowd her cooking area with recording equipment. This island with range offers a stage to create and share a personal cooking show.



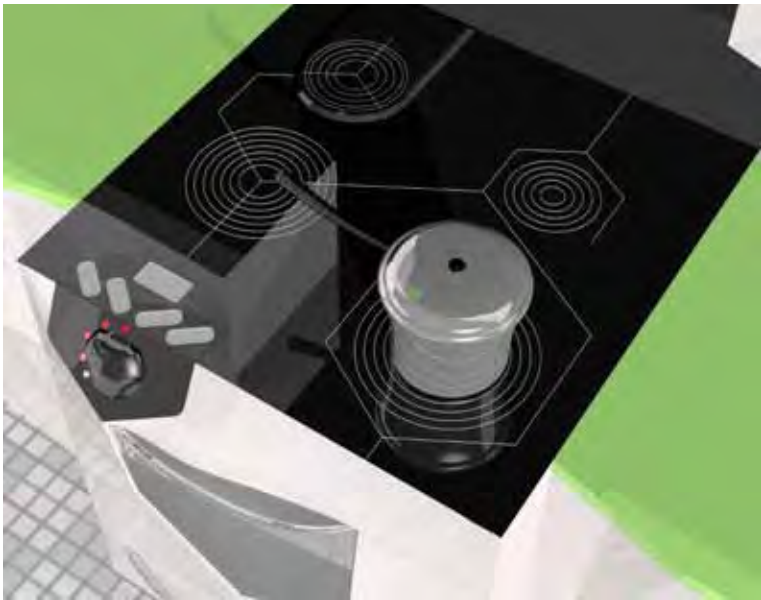
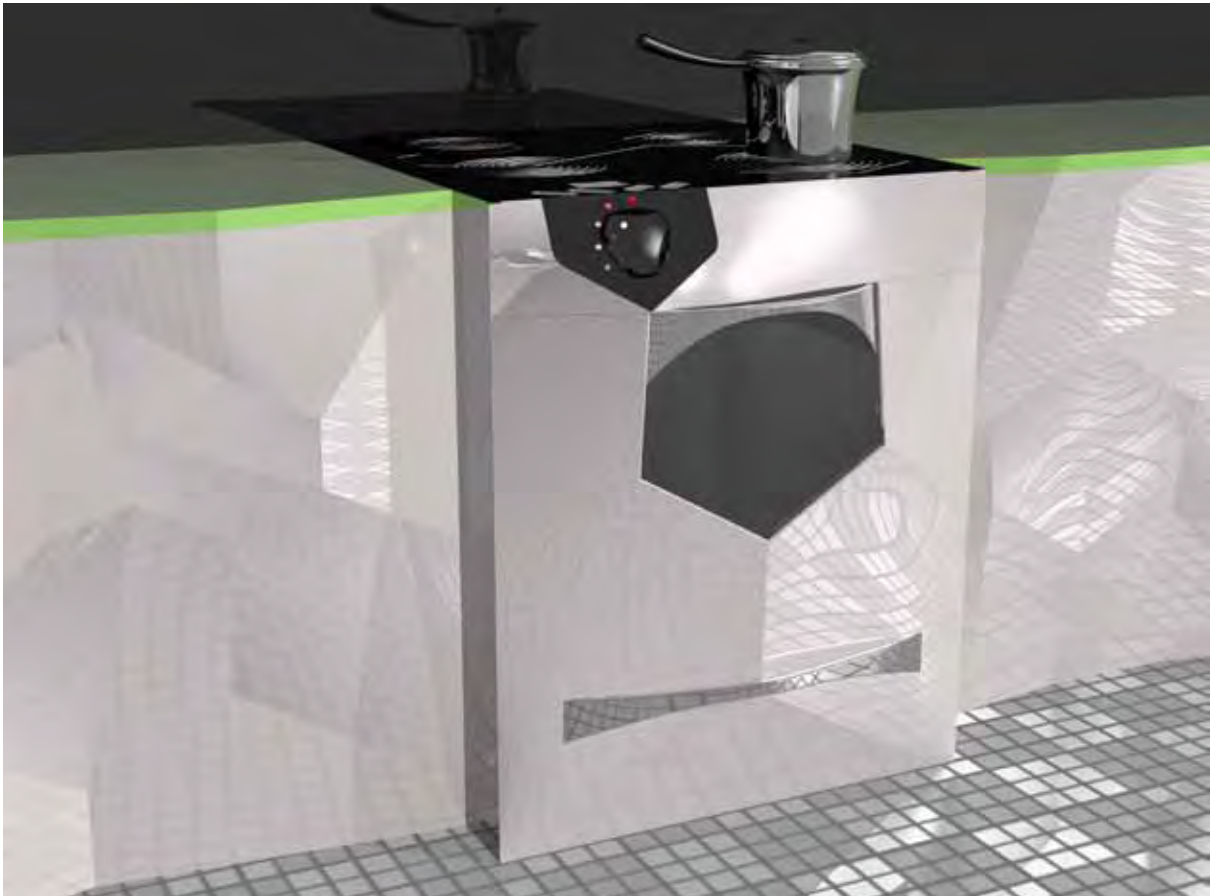
L-shaped with island



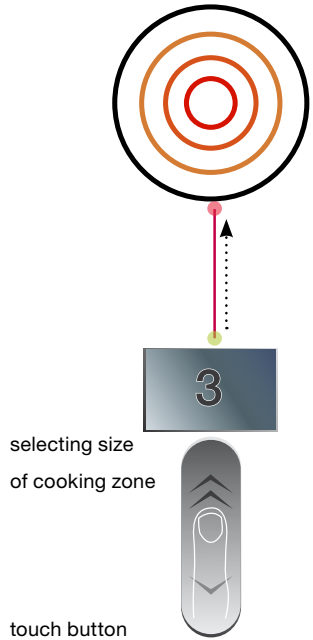
L-shaped with island



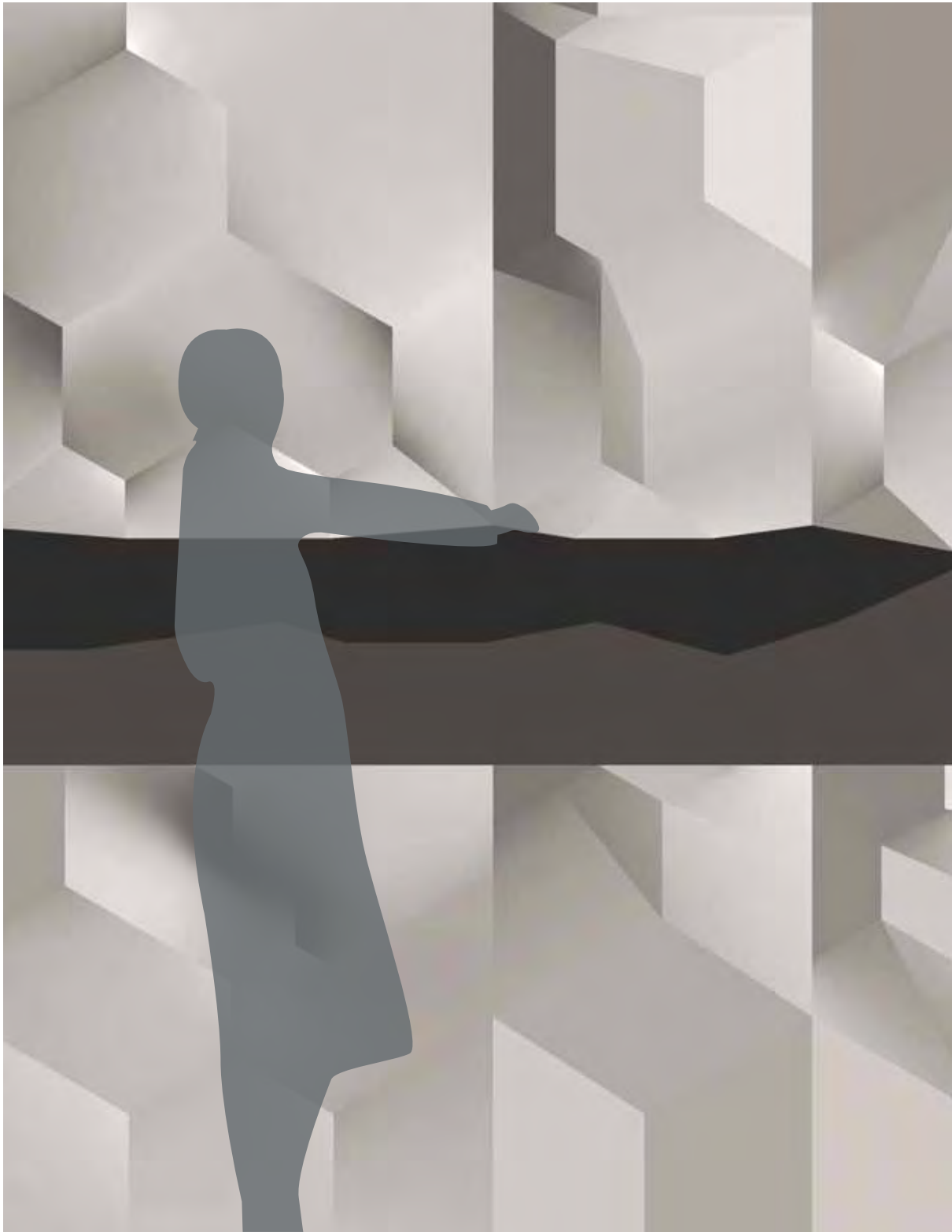
Range



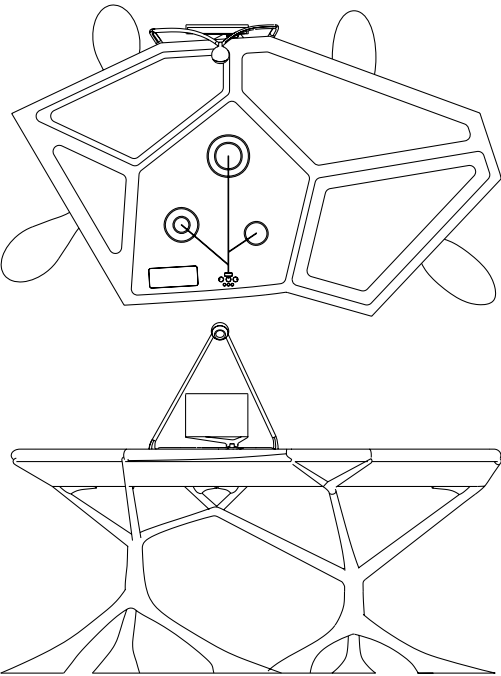
dial ignition



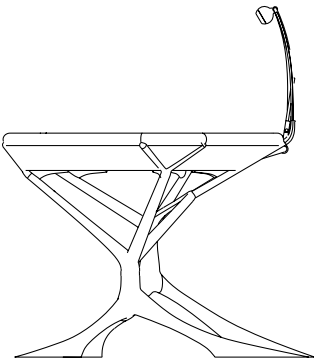
Modularity



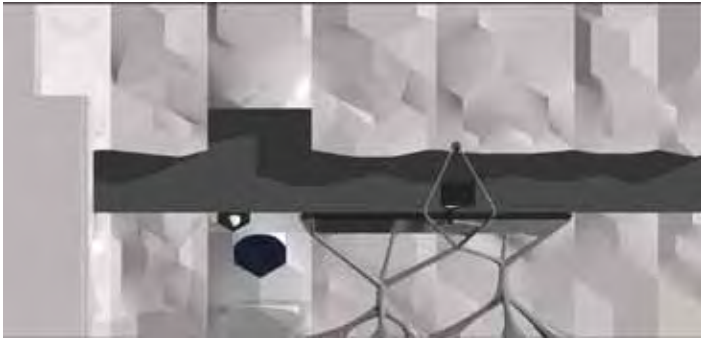
Size



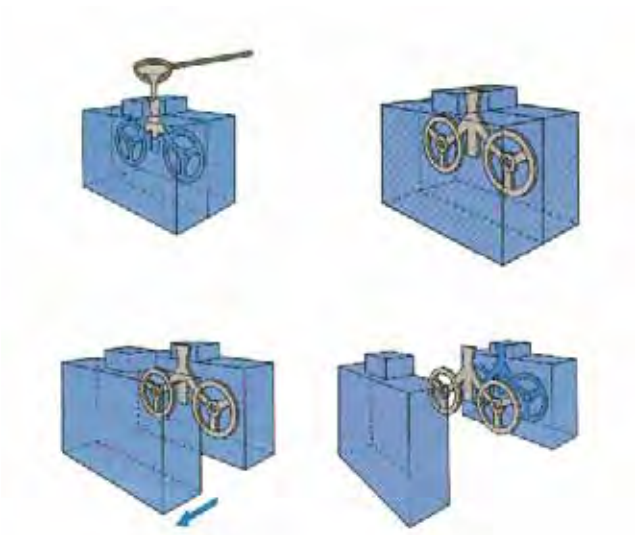
1/2" = 1' scale



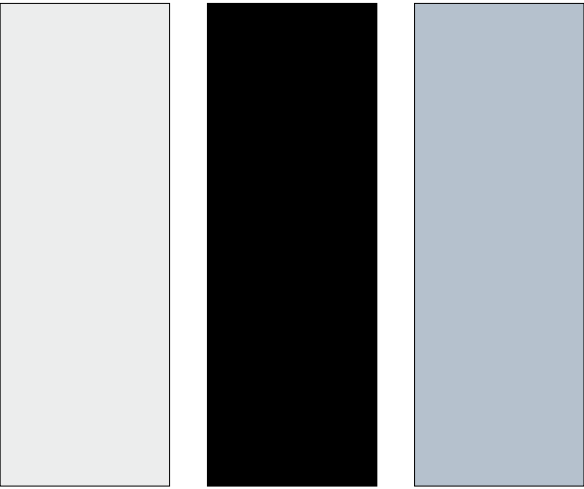
1/4" = 1' scale



Color / Material / Finish



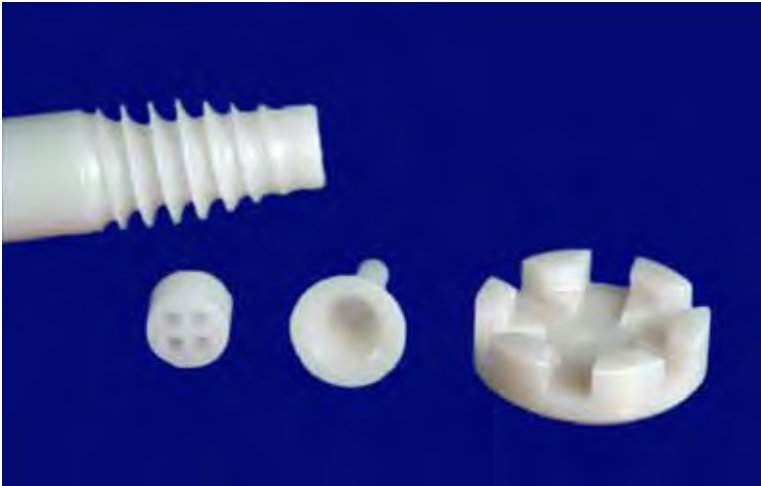
aluminum mold



white / black / silver



aluminum



industrial ceramics





Model 3484

Michala Monroe and Wesley Tong

The Kitchen Environment

This kitchen is designed to be the center of the home. The “great room” combines the living room, kitchen and dining spaces. Similar materials are used throughout the space and into the exterior of the kitchen to create uniformity. Our kitchen design has evolved into three units: two freestanding stations and one wall supported unit. The arrangements of these units are based on the classic triangle, galley, double galley and L-shaped kitchen designs.



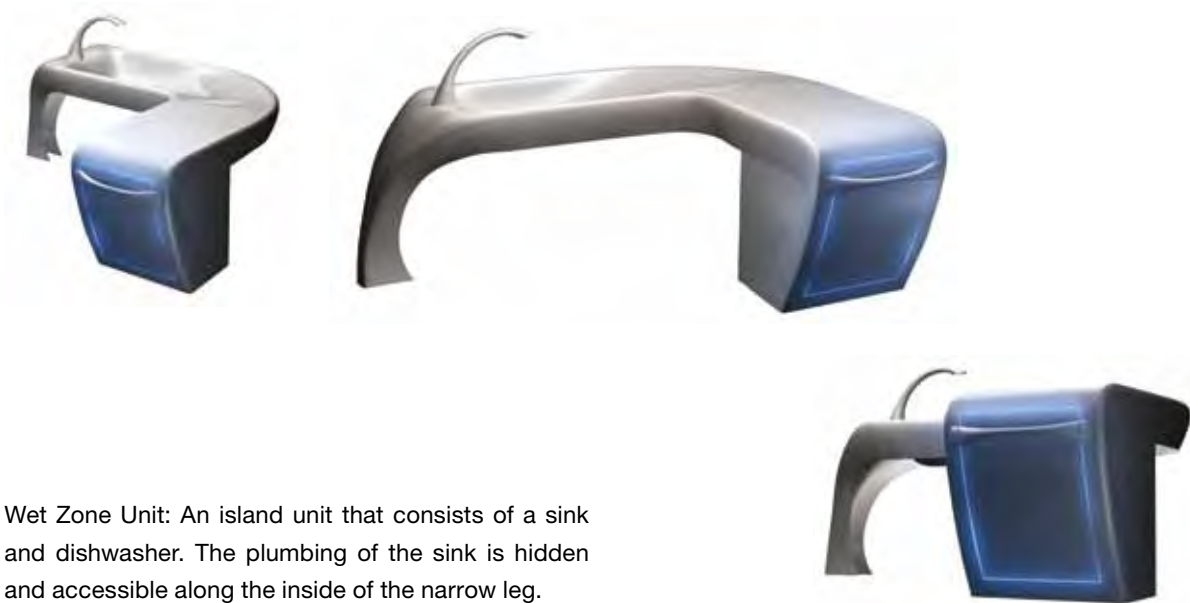
kitchen units in a suburban home setting



kitchen units in an “urban setting” the materials used reflect those of the exterior environment

The Kitchen System and the Appliance Design

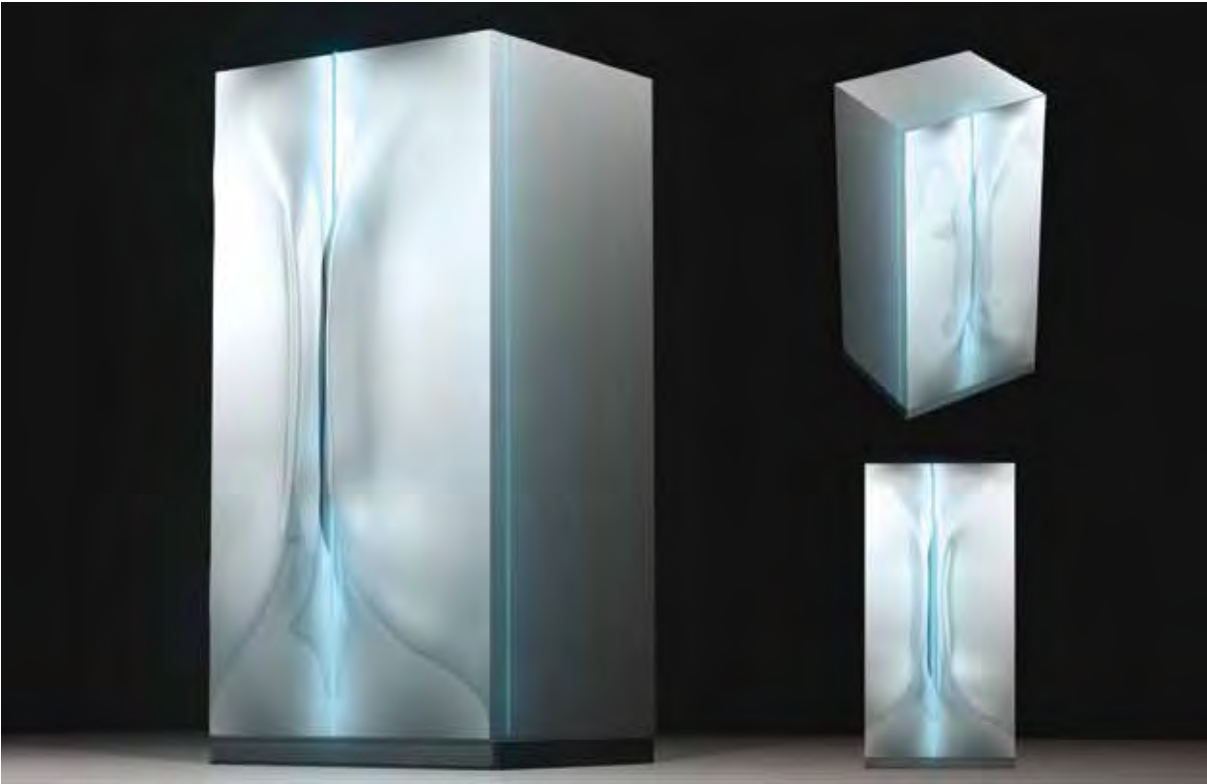
Two similar units were made for “wet” and “hot” items. A third unit was created to house “cold” items. The handles are molded directly into the forms of the appliances. The concept comes from the idea of pinching and pulling the surface of the refrigerator door.



Wet Zone Unit: An island unit that consists of a sink and dishwasher. The plumbing of the sink is hidden and accessible along the inside of the narrow leg.

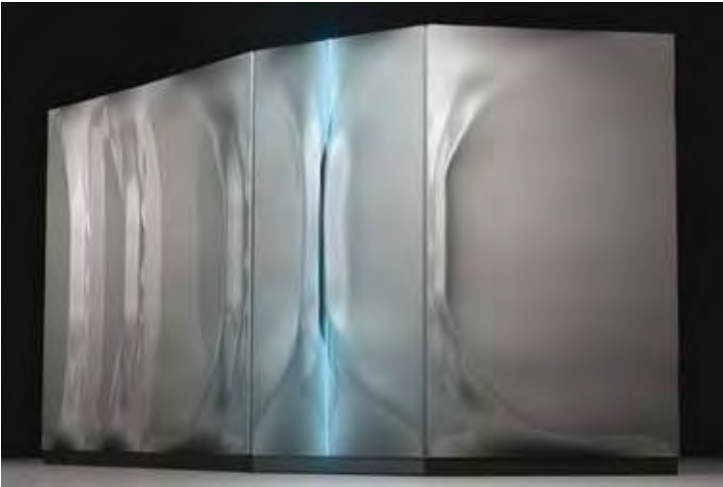
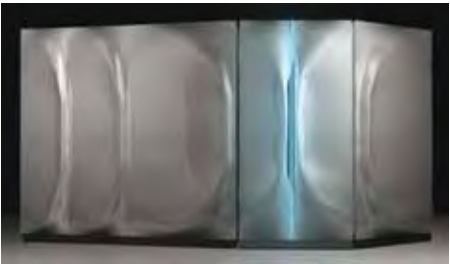


Hot Zone Unit: An island unit that consists of an electric powered magnetic stove range and a convection oven. The leg next to the stove acts as a connector to the wet zone unit or as a space for a trash bin.



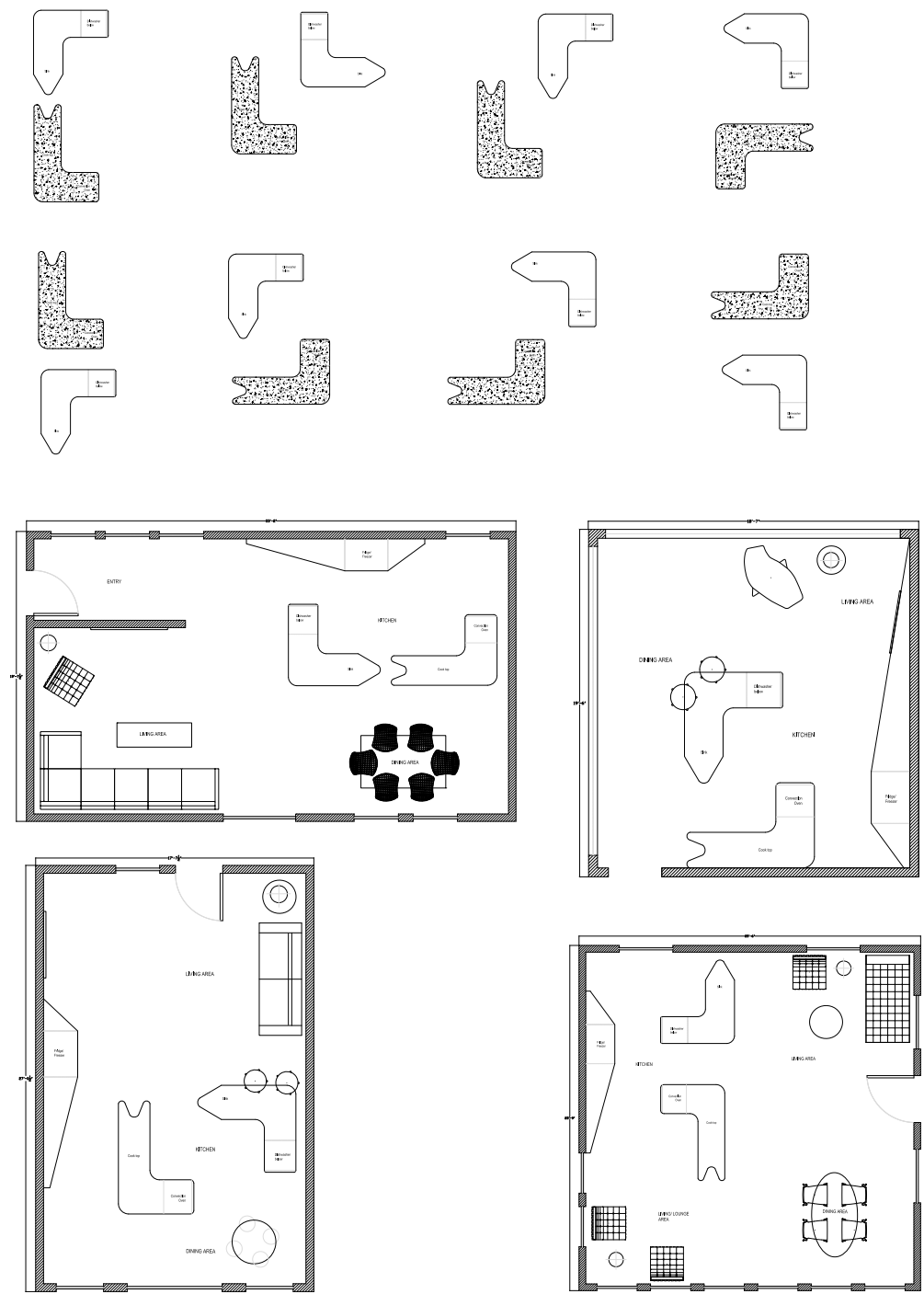
Two Door Refrigerator: Can be either a free standing wall unit or placed between storage wall units

How it would appear against the wall storage unit with refrigerator



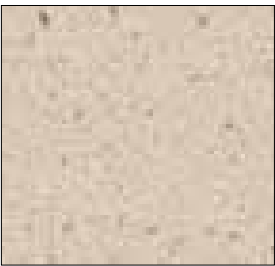
Layout Options

The units provide many layout possibilities and opportunities for personalization. Materials and layouts are flexible. Shown below are eight functional layout options. Four of them have been placed into floor plans to demonstrate how they could be configured in the home.



Color / Material / Finish

Users can select from four different materials which are all inspired from nature. Corian colors and finishes for the kitchen units bring a natural feeling to a technologically advanced material. Concrete may appeal to an urban market whereas marble or slate may be more desirable for a suburban home.



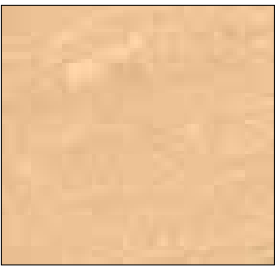
concrete



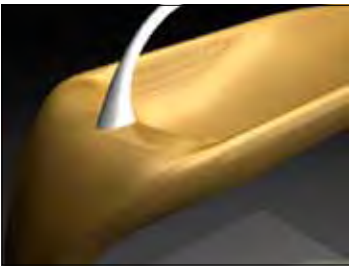
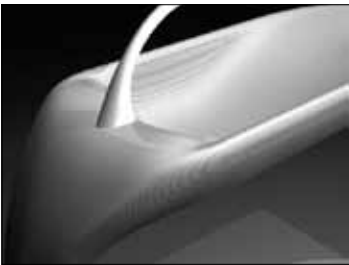
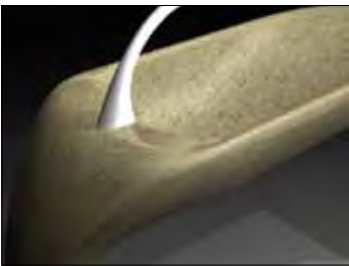
slate



marble



wood



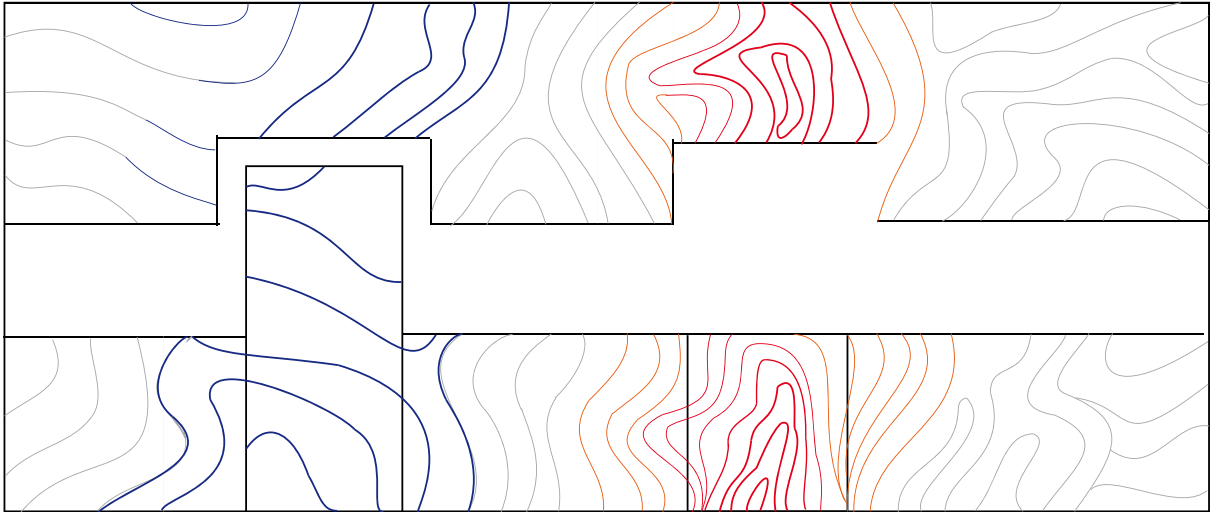


Counter Intelligence

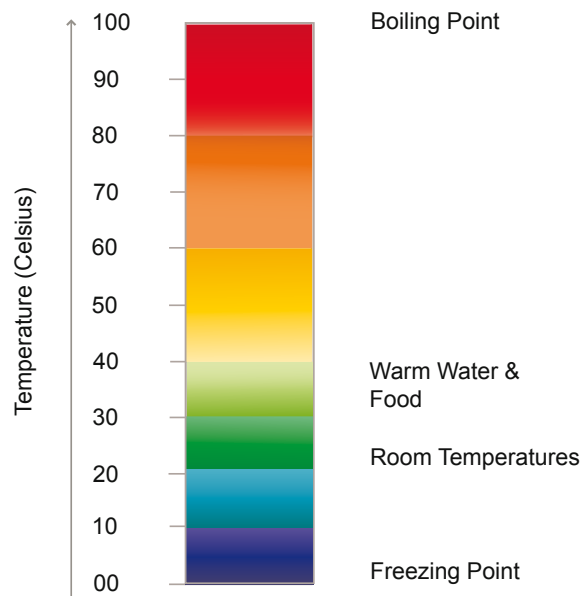
Renee Osgood

The Kitchen Environment

The aim of my kitchen design was to develop one cohesive network of counter surfaces. The entire system rests upon the concept of different “climate zones” of the kitchen: hot, cold, wet and dry. This kitchen uses color to visually display the ever changing levels of temperature upon the counter surfaces.



climate zoning of the kitchen



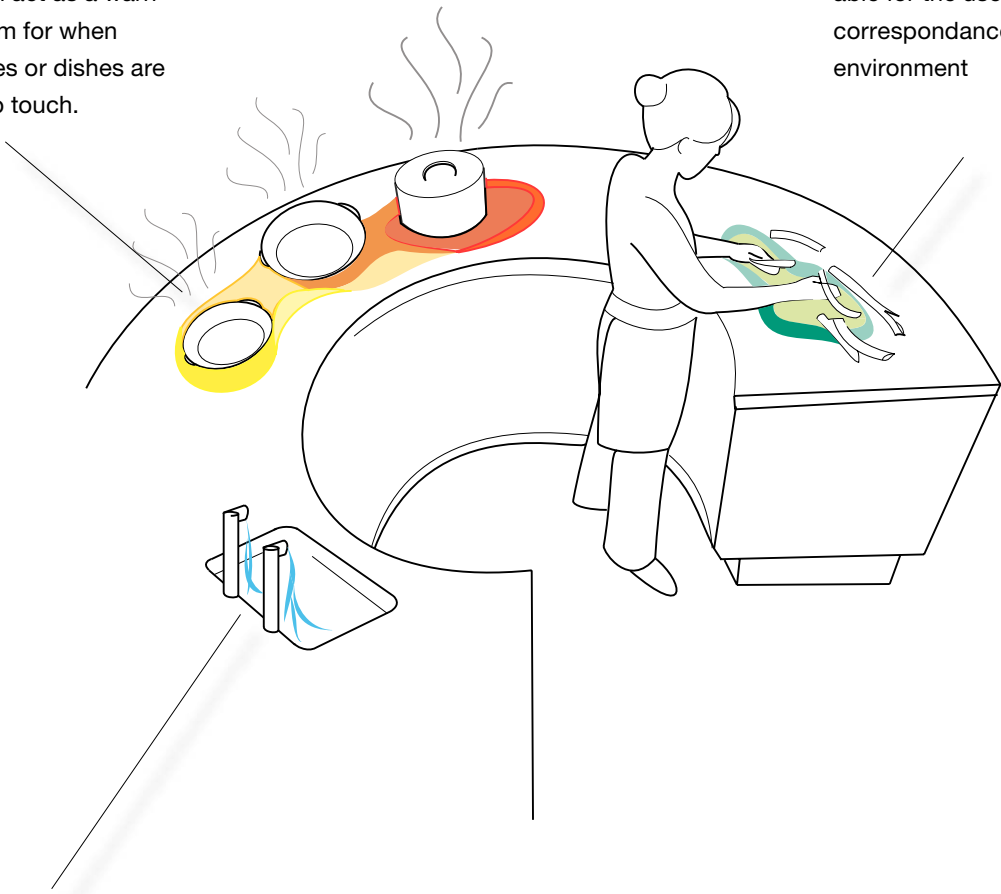
The scale points out different “key” temperatures that occur within the kitchen. The colors shown with the temperatures will be used in the visual display of the countertop.

Safety

Color can act as a warning system for when appliances or dishes are too hot to touch.

Increased Interaction

The kitchen experience can become more enjoyable for the user due to correspondance with the environment



Cooking Aid

This system can help inform the user in situations such as judging when water is cold or warm enough to use for their recipes.

The Kitchen System and the Appliance Design

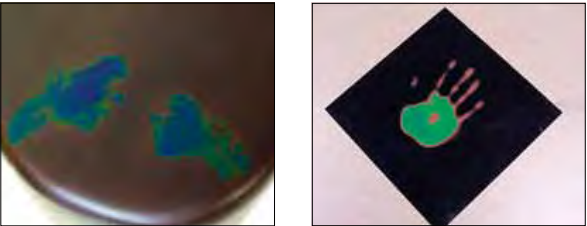
The countertop system can be easily installed, even on top of existing countertops.



Counter Technology

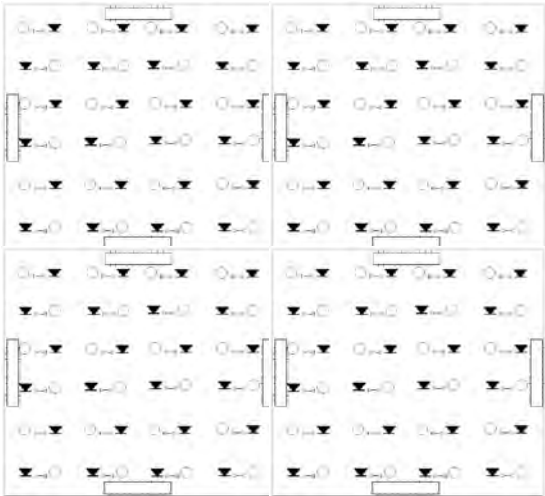
There are two ways to install the color technology onto the kitchen surfaces. The first method would be to use a coat of liquid crystal paint upon a flat surface. The second way is to use LEDs coupled with heat sensitive sensors called thermistors.

Liquid Chrystal Paint on a Tiled Surface

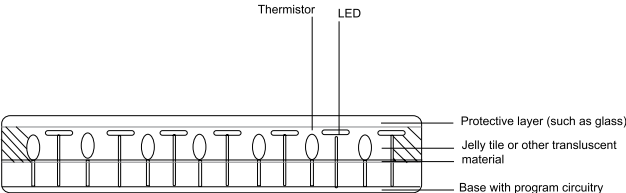


LED Technology with Thermistors

Thermistors can be used to detect temperature changes upon the countertop surface. This information will be sent to a micro-processor (most likely connected to another appliance such as the refrigerator). Tri-colored LEDs will then be programmed to coordinate with changing temperatures.



The tiles are designed to be modular. They can be snapped together in order to achieve the desired countertop dimensions. To replace LEDs, the protective cover top can be snapped off and the LEDs can easily be screwed in to its socket.



Color / Material / Finish

The base of the tile must be a semi-translucent material to allow for the color changes to be seen. They also must be fire resistant. Two options are Jelly Tiles and Crystal, a plastic and glass composite.

Jelly tiles, a polyurethane molded tile, would be an option for the base tile material. It can withstand both wet and dry environments and is also UV and abrasion resistant. Jelly tiles also have good light transferring qualities, which would work well with LED lights. A non-colored version of Jelly Tiles would be used in this application.

Crystal, would be a material option for using liquid crystal paint. The tiles are a polymer composite with embedded glass chips. The surface would be pleasing to its user without coloration effects. Crystal is stain, flame and high-impact resistant.



jelly tiles



crystal





Water Island

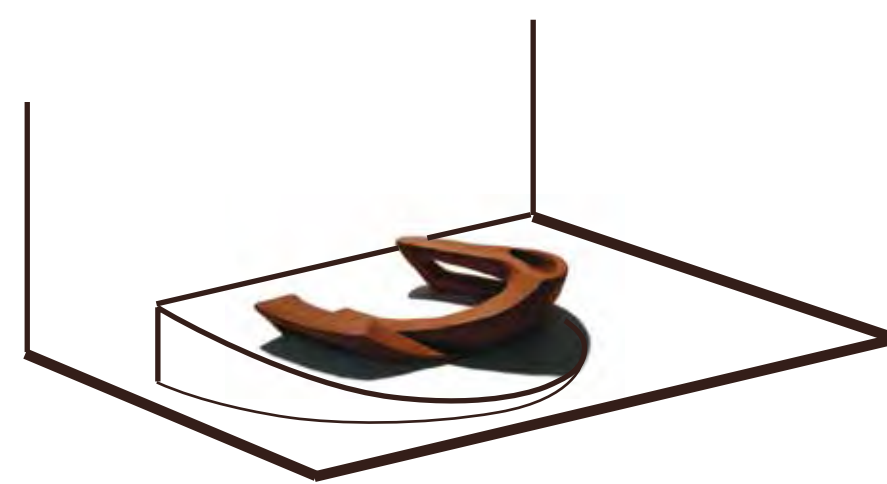
Ijeoma Onyejiaka

The Kitchen Environment

The proposed space unites food preparation with a livable aesthetic. The unit forms a continuous surface from floor to counter to seating. Specific zones have been designed for the “entertainer” and the “spectator,” and they reveal and hides parts of Water Island in a controlled manner.



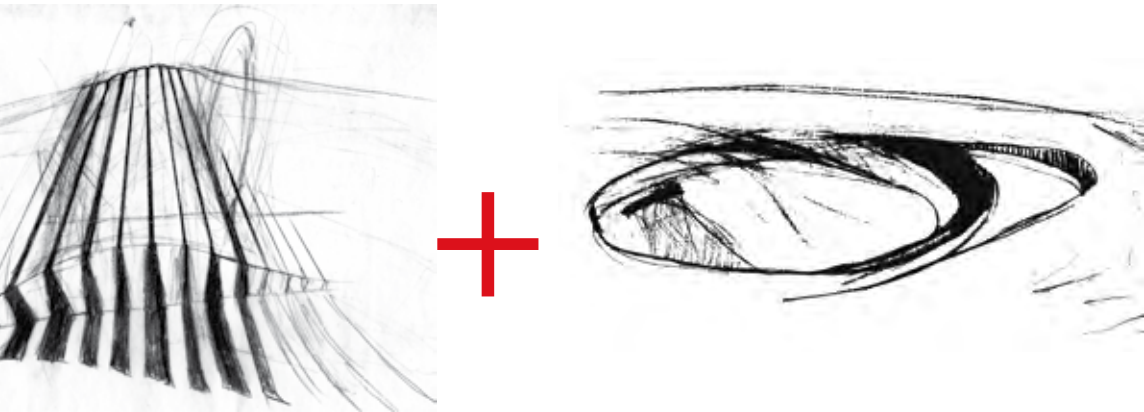
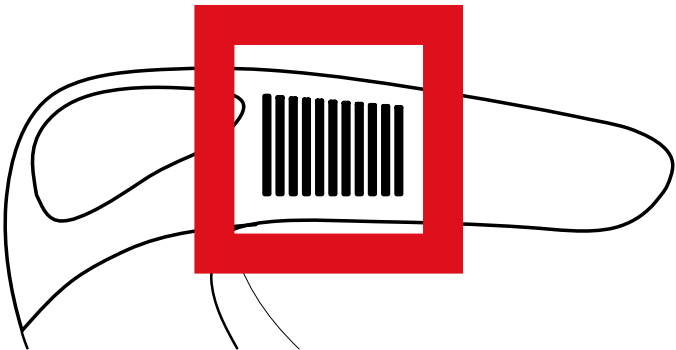
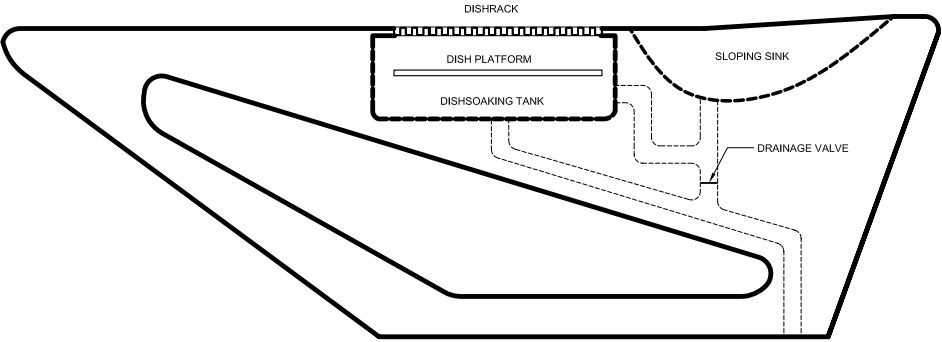
views of water island



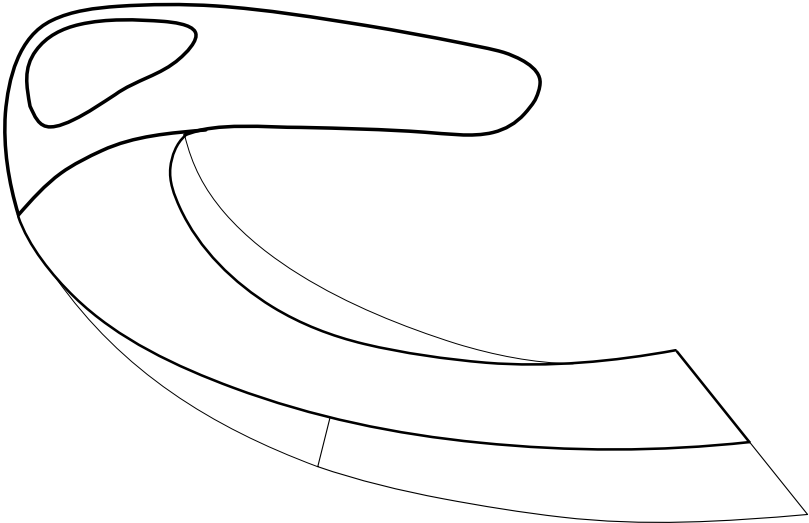
interior scenario

The Kitchen System and the Appliance Design

Run-off water from the sink can be transferred to the dish soaking area/tank for water reuse and conservation.



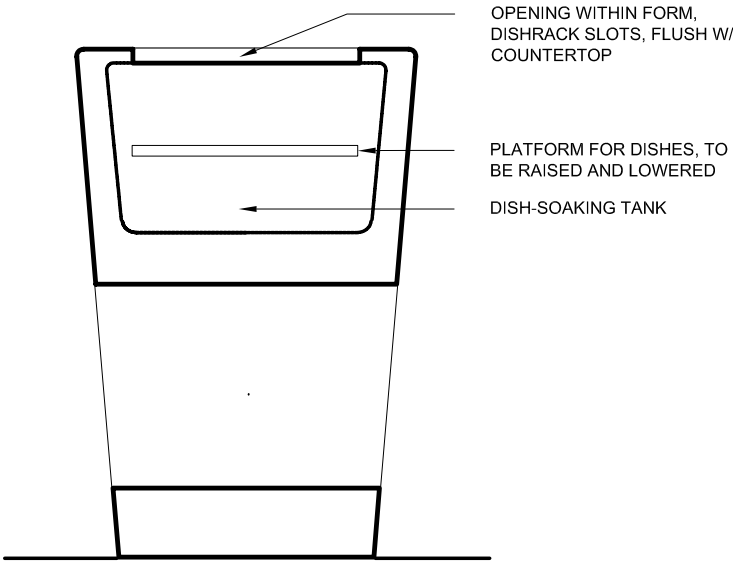
cross section



plan



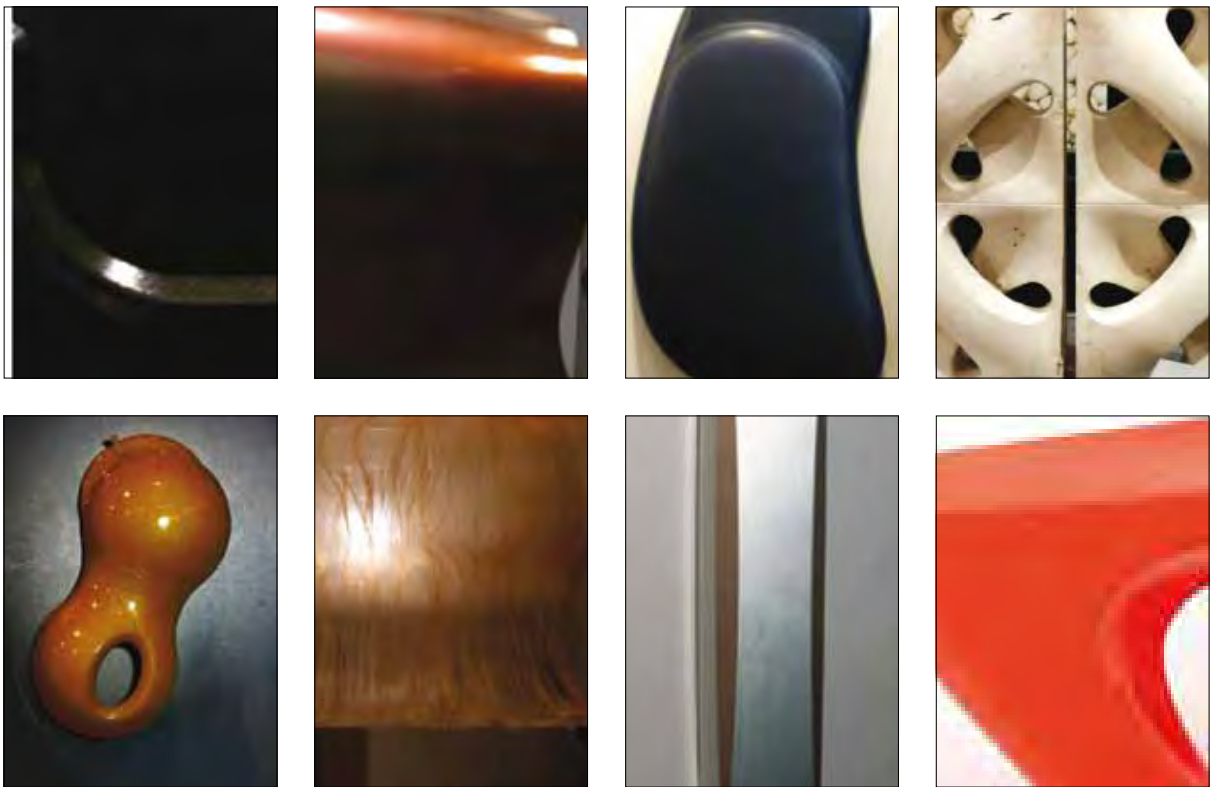
elevations



cross section

Color / Material / Finish

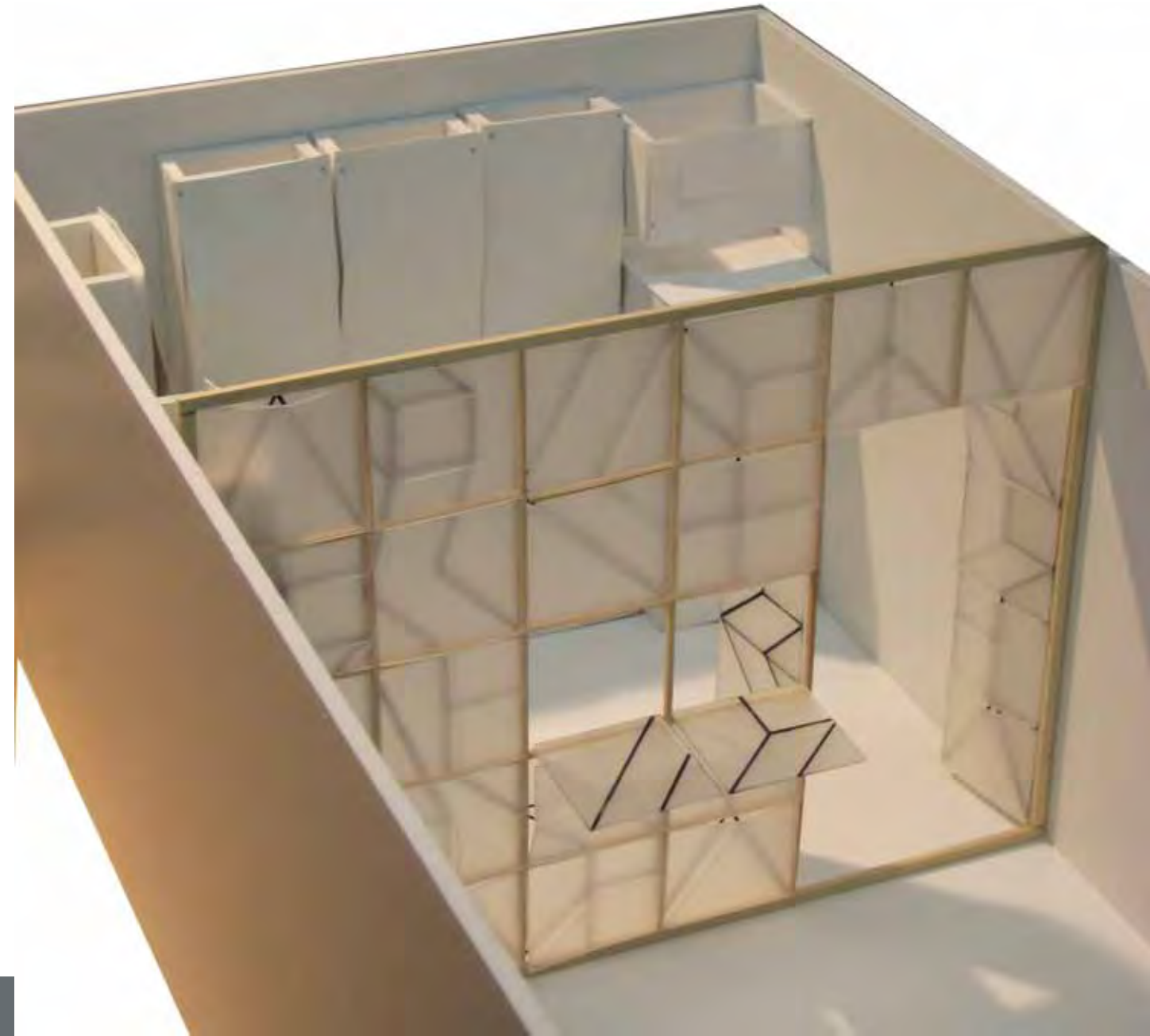
Water Island is made from mineral wekstoff, an aluminum hydroxide/polyester resin based material. It is food safe and waterproof. It is also impact, heat and stain resistant.



material connection



wallpaper.com



Wall System

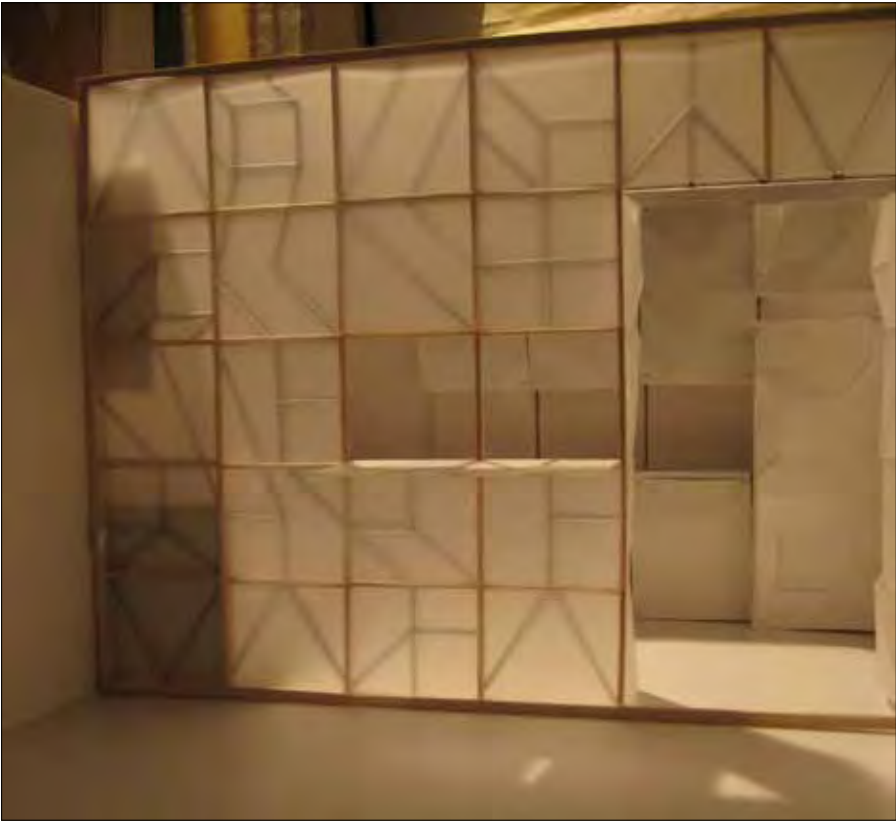
Belinda Park and Sooro Kim

The Kitchen Environment

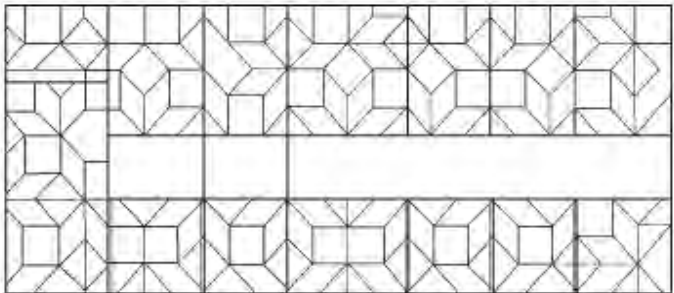
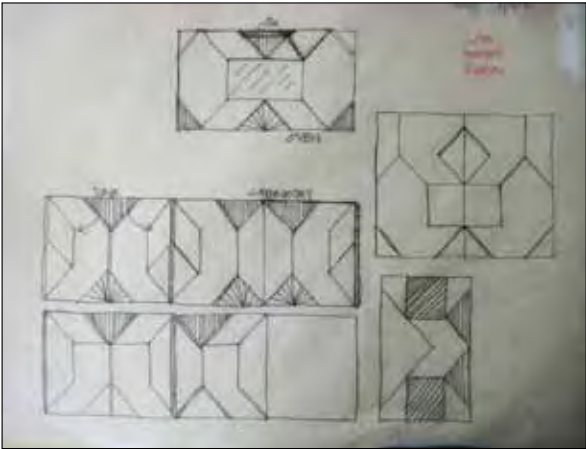
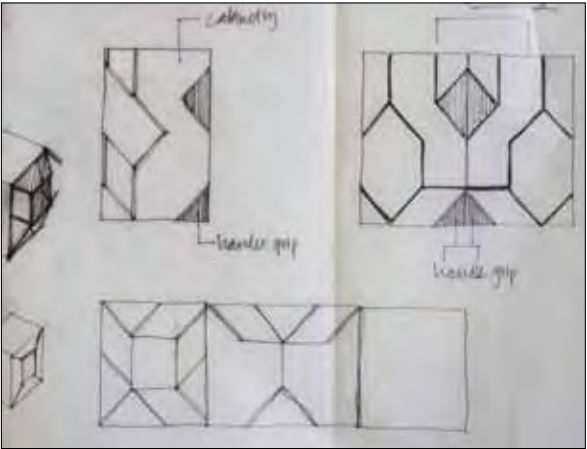
Our kitchen environment features a wall system that divides the kitchen and the living space. Subtle design details conceal the kitchen area so that it can be more fully integrated into the rest of the home. The cabinetry incorporates a complex pattern system for visual impact and to allow for hidden functional elements. Hinges and handles are blended into the external patterns.



This is one of the kitchen layout possibilities. We used a pattern interface to create a cabinetry system for a kitchen.

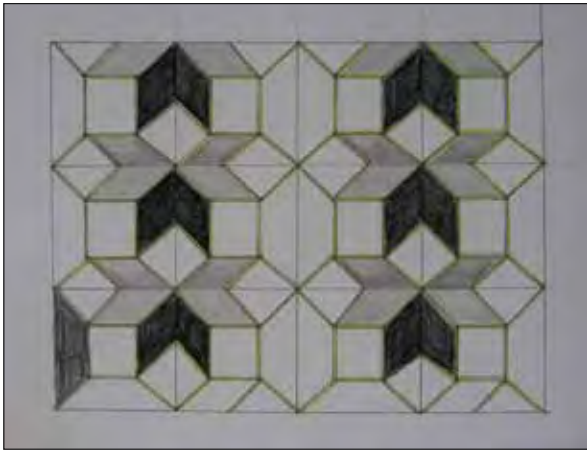


This is the wall system that would divide the space. It was developed out of a two-dimensional pattern, which we used to create the wall.

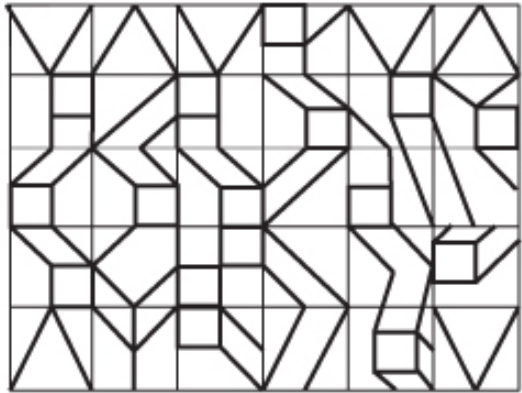


The Kitchen System and the Appliance Design

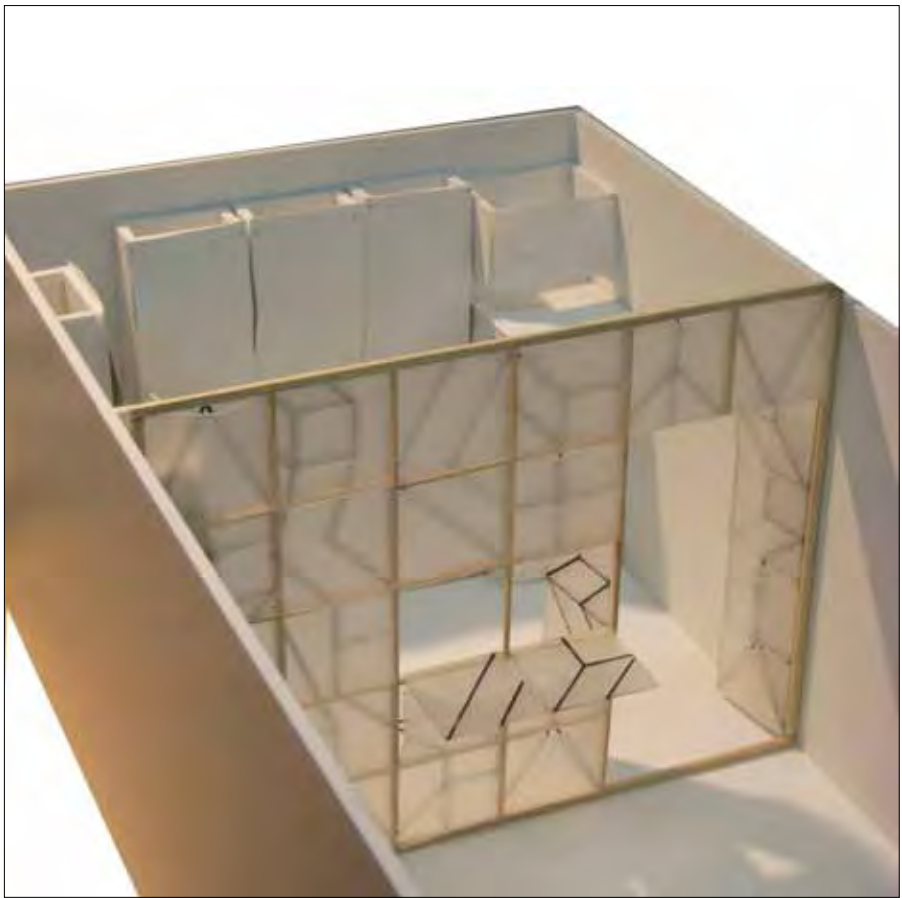
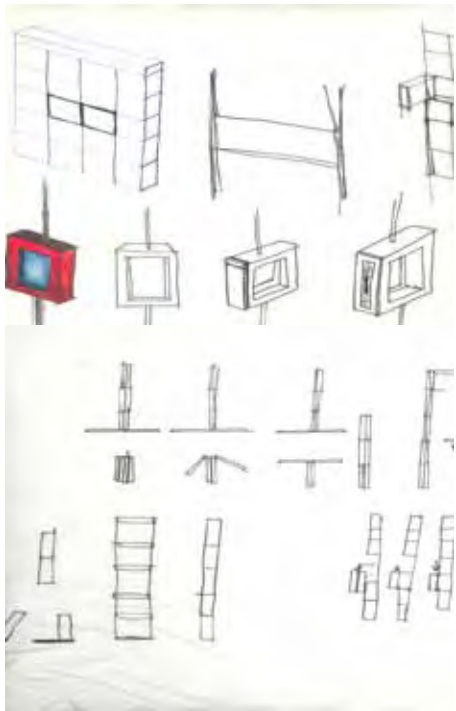
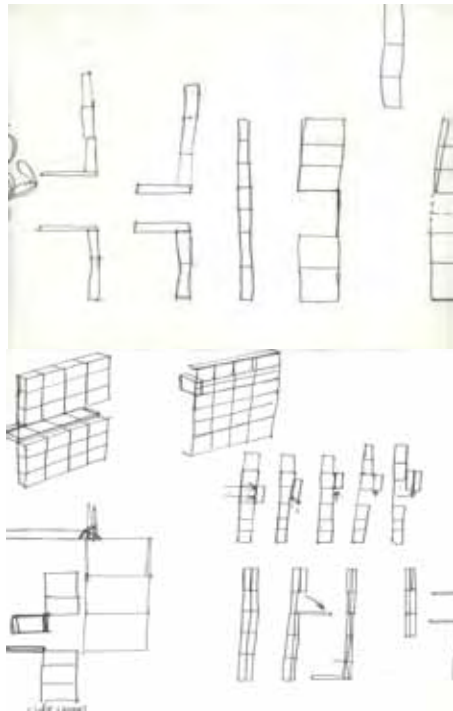
The wall system is designed to create public and privates spaces. It can be used as a divider to separate the kitchen from the rest of the living area, and also as a bar or table that joins the kitchen area with the living area. We developed this system because we were interested in how we perceive different spaces in the home, and how these spaces interact. We were considering how guests and entertaining create unique demands on our living spaces. We wanted to create an open, inviting design that allowed the owner to hide unsightly kitchen mess from guests.



This is the starting point of the wall system design. It was too rigid, and so we created a more free and open design.



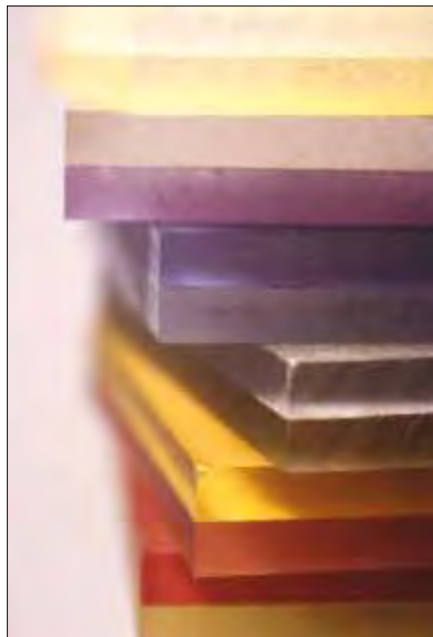
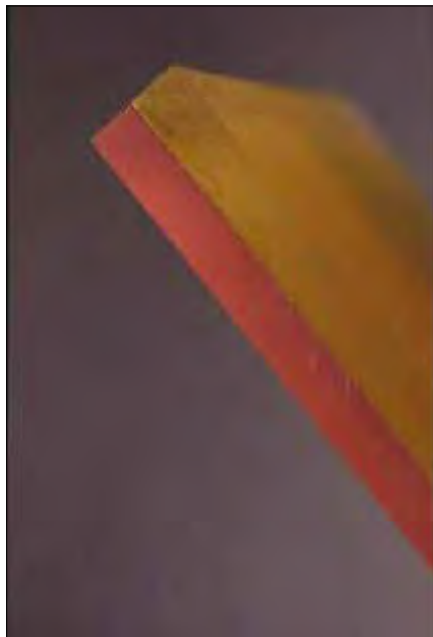
This is the design pattern we settled on.



This image is a view with some of the panels opened so that the kitchen space is linked to the living area. The doors to the kitchen are also open, creating an added sense of movement between the two areas. The materials used for the wall system are opaque, but they let light through, creating an interesting visual effect with shadows and light. The dark lines that outline the pattern help to break up the straight lines of the wall to create more appealing visual effects.

Color / Material / Finish

The materials that are used for our system allow light to pass through. This is an essential feature because we did not want the space to feel enclosed and confining. We wanted it to be illuminated and broken up with light and shadow. We were also looking for a flexible material so that it can be bent into the shapes that make up the wall's three-dimensional exterior. Lastly, we were looking for a material that might also be used for countertops.



Lightblocks: Translucent or opaque colored plastic sheets that are made of acrylic or polycarbonate. Lightblocks are 50% lighter than glass, but they have an impact resistance that is 3 times greater than safety glass and 6 times greater than ordinary glass. The sheets can be molded, curved, slumped, cut, drilled, or carved into textured, glossy, or smooth surfaces. These sheets come in an unlimited range of colors. Because they are resistant to weather and sun exposure, Lightblocks are suitable for both interior and exterior applications. They are often used in storefronts, walls, suspended ceilings, and illuminated ceiling features.



Bioglass: Fused glass surfaces that utilize 100% post consumer recycled material. The slabs are fully vitrified, creating a translucent effect with a fully dense top surface to resist staining. Available in white and green, the sheet comes up in sizes up to 110 inches x 49 inches (2794 mm x 1245 mm) in 3/4 inch (19.05mm) thickness. Additional colors, including green, brown and blue, will be available during 2007. The surface is often polished, honed, or “natural,” and has a hardness of 6 on the Mohs scale. It is resistant to acids, bases, and is Class A fire resistant according to ASTM E-84. Applications are for counter surfaces, backspashes, and decorative wall and floor accents.



In-Counter

Joseph Coffman

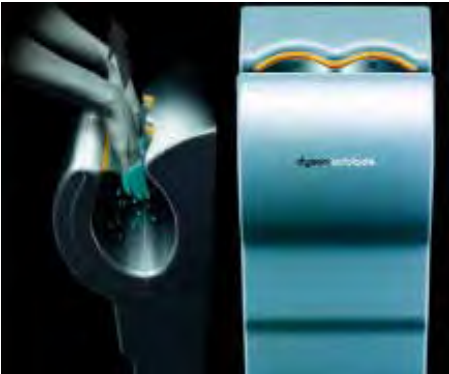
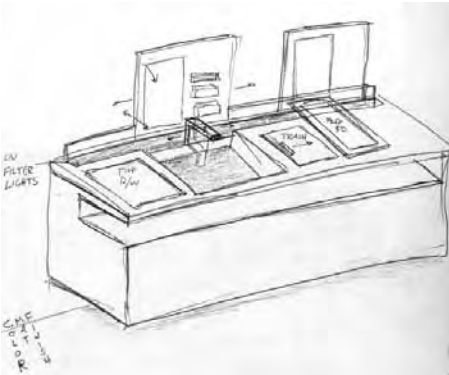
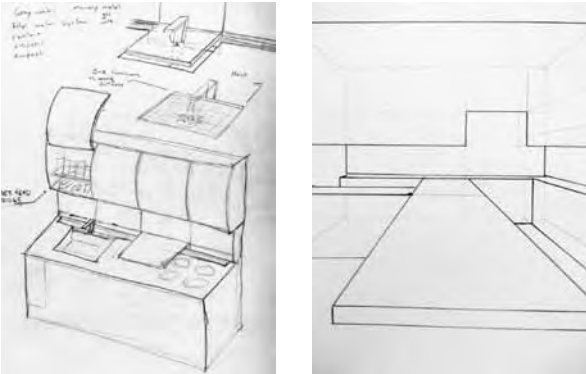
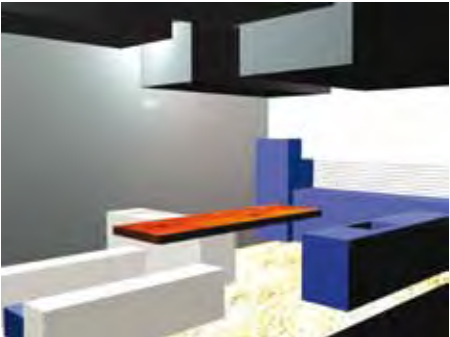
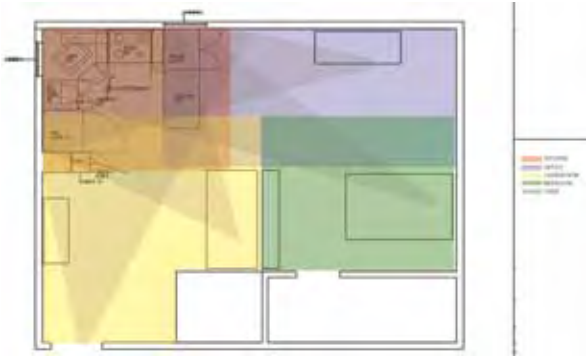
The Kitchen Environment

The kitchen of the future is a kitchen that feels like an extension of the rest of the house. It is a kitchen with the soul of a living room. It provides ample counter space for a great working environment, and it is also a good overall social environment for family and friends. This kitchen will contain furniture pieces, not ordinary cabinets and counters. This furniture will function as standalone objects that relate to their kitchen function, and it will break free of the traditional standards and expectations of the past. The kitchen of the future will be environmentally friendly, utilizing materials with little or no impact on the environment. The appliances will be highly efficient and consume lower amounts of energy.



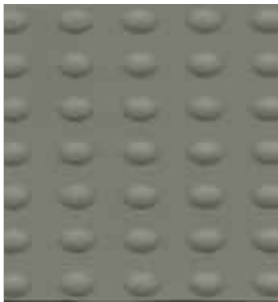
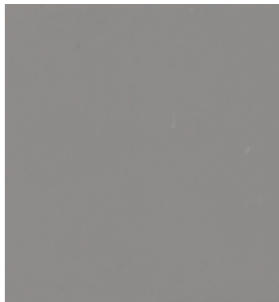
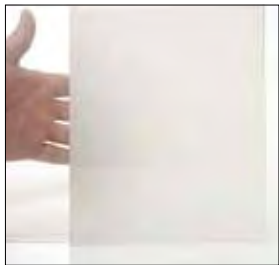
The Kitchen System and the Appliance Design

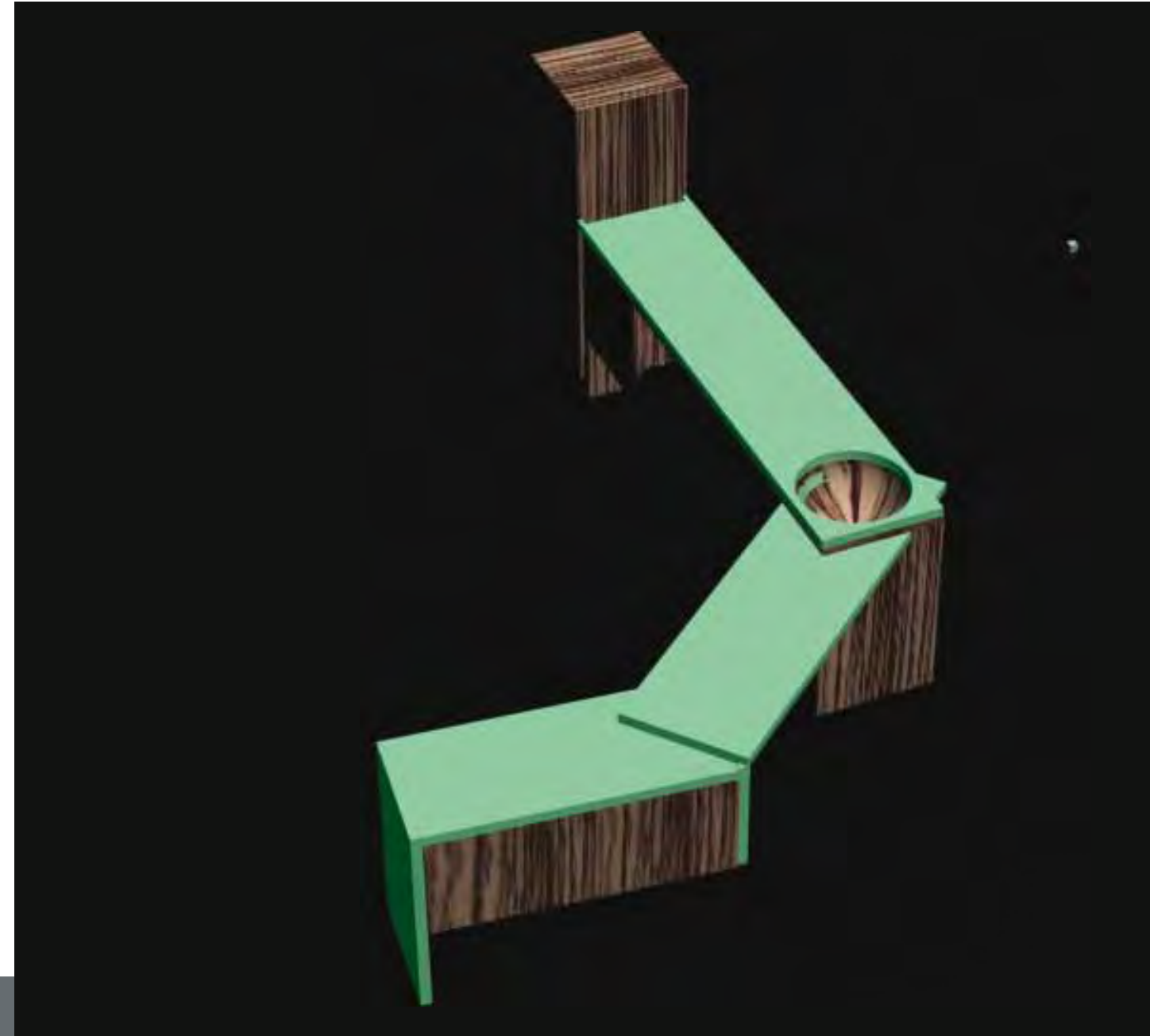
The kitchen system I propose is based on the functional needs of the work surface. The work surface will have a trough toward the back to allow for easy clean up and disposal of scraps. The trough will transfer waste to an upper counter area that allows for compost collection. The kitchen also includes usable surfaces below the counter, which doubles as a storage space and allows for one to keep necessary objects close by. This allows for an in-counter cooktop that will double as a food warmer.



Color / Material / Finish

The materials for the kitchen of the future are non-toxic and non-allergenic to humans. They will have little impact on indoor air quality, emitting little or no VOC. A material that meets these standards is Corian, which is a solid surface material that can be formed into many shapes and many colors. It provides a seamless, durable, and clean surface for any kitchen. This produce is also Green Guard Certified, meeting the requirements of low VOC. Other materials in this kitchen will come from reclaimed or sustainable materials like silicone and copper. Multi-layered glass laminate that switches from clear to opaque instantaneously at the application of an electric charge will be used as well.



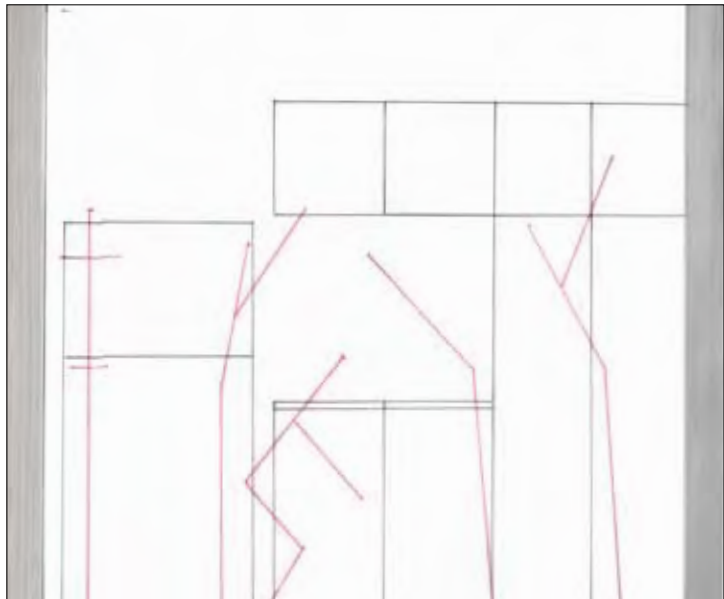


Power Play

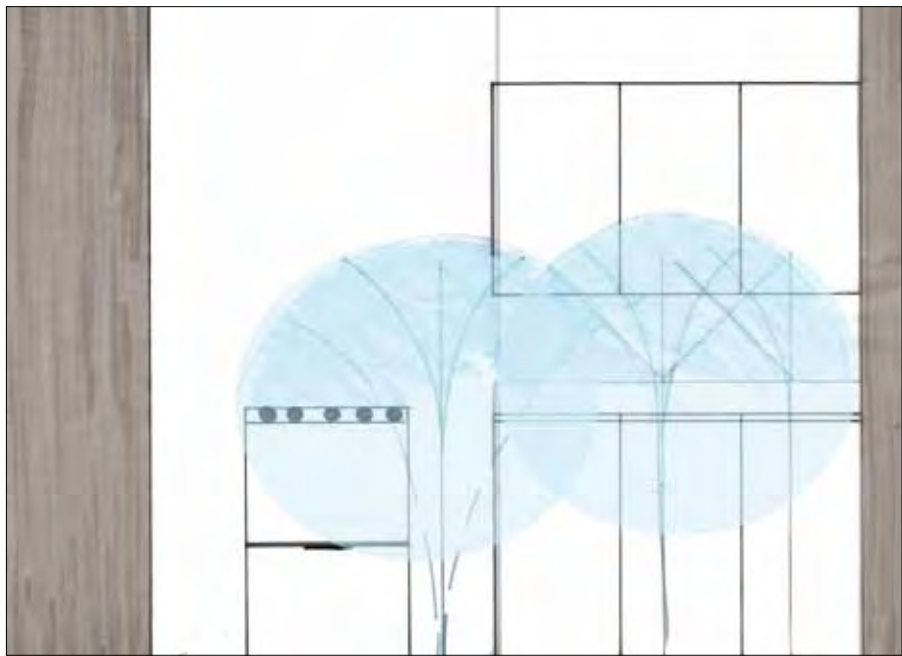
Olga Lysenko

The Kitchen Environment

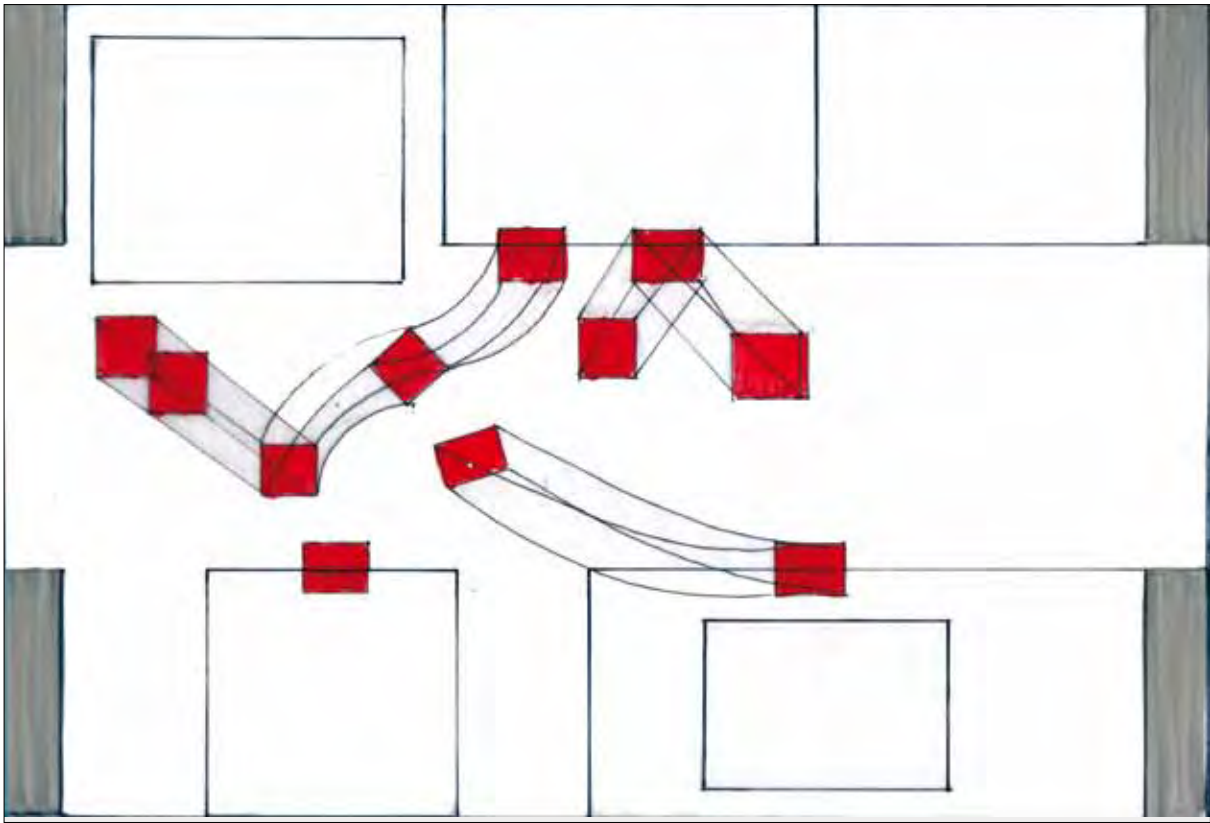
The kitchen of today is outdated, programmatically separated, with no visual or physical access to the other surrounding spaces. This kitchen perpetuates the 1950s housewife mentality. Furthermore, the kitchens of today do not consider the users of the spaces. Sterile materials trap the human body in a series of repetitive movements, programming the way we cook and clean.



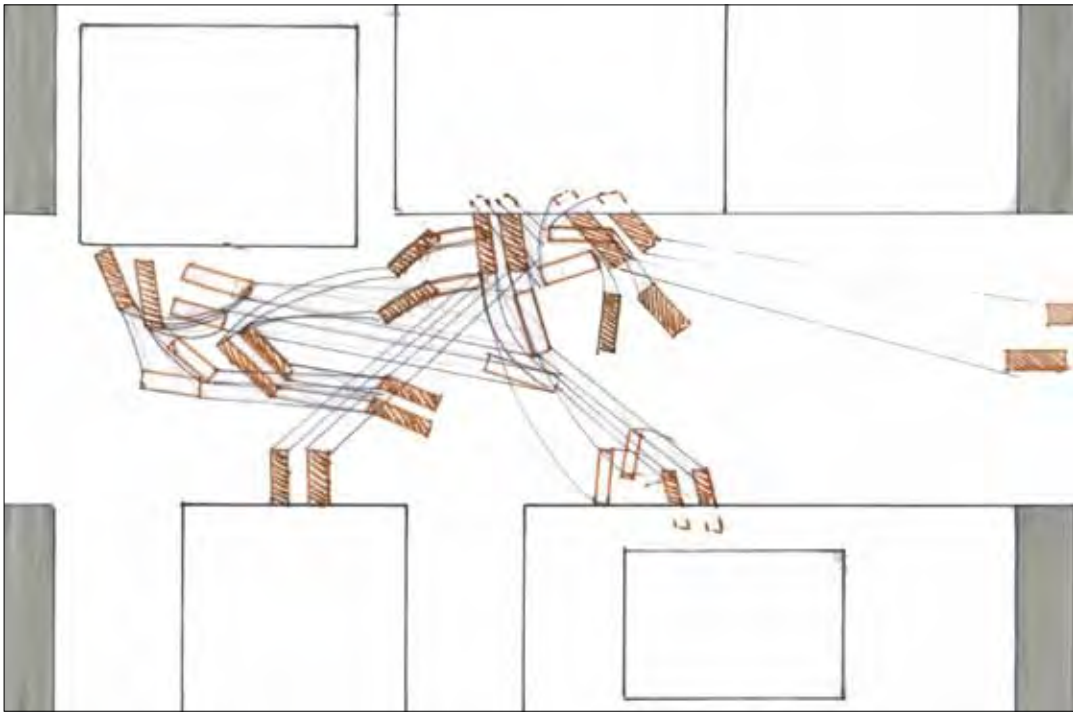
analysis of body reach in a typical kitchen



activity hot-spots in a typical kitchen



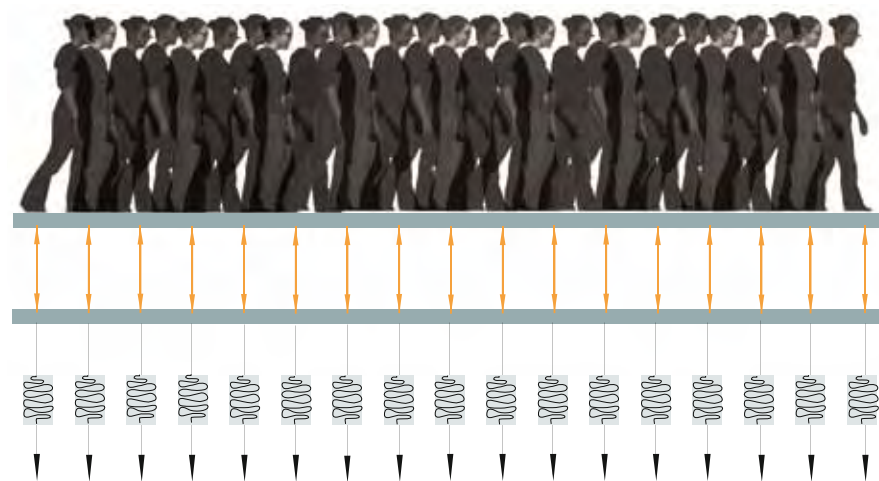
this is the design pattern we settled on



torso and foot movement in a typical kitchen

The Kitchen System and the Appliance Design

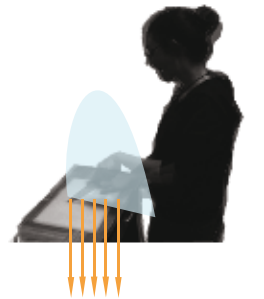
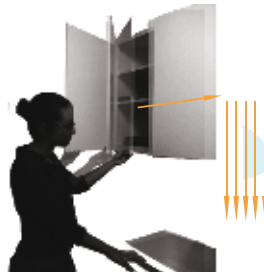
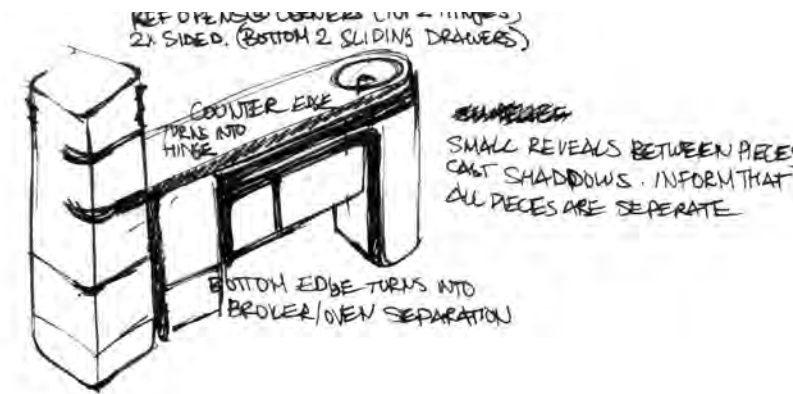
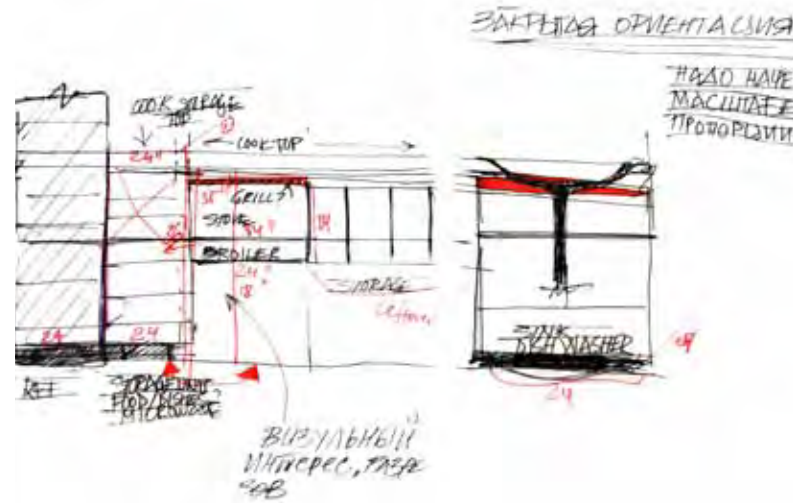
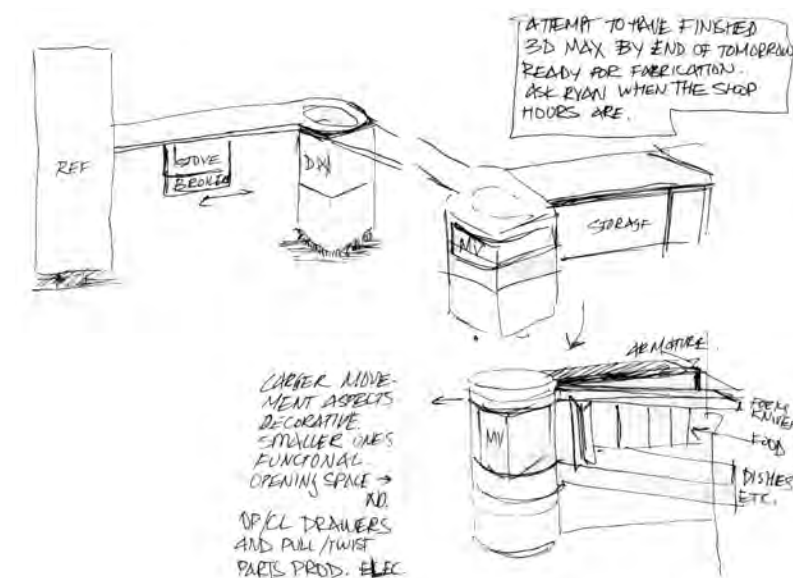
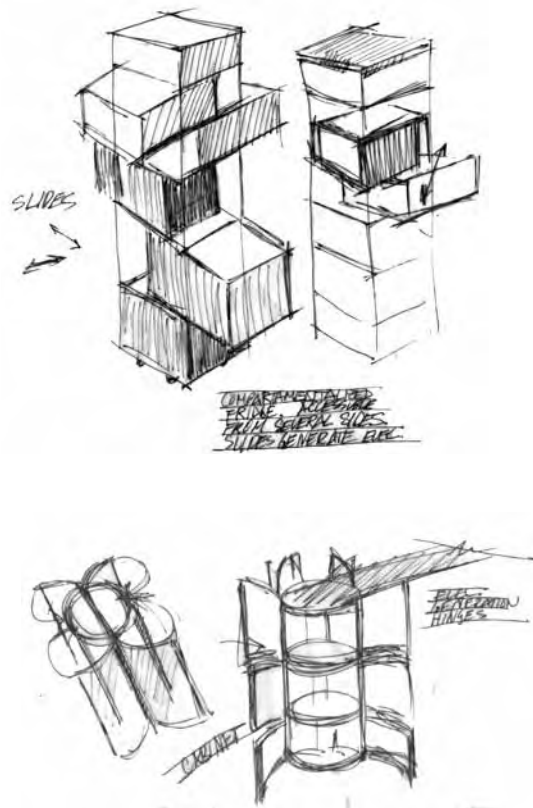
The kitchen of the future will be mobile and changing. The goal is to establish a symbiotic relationship between the user and the used, blurring the distinction between the two. Energy-harvesting components return human mechanical energy as electricity. The proposed unit expands to integrate into occupants' lifestyles or collapses to be stored out of the way.



analysis of expanded human energy

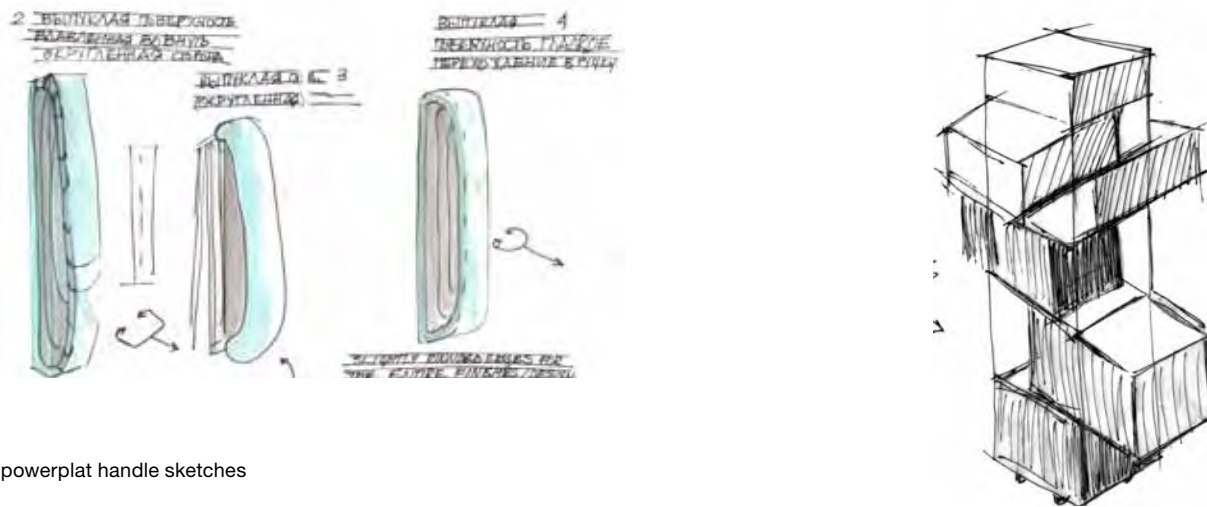


proposed kitchen system

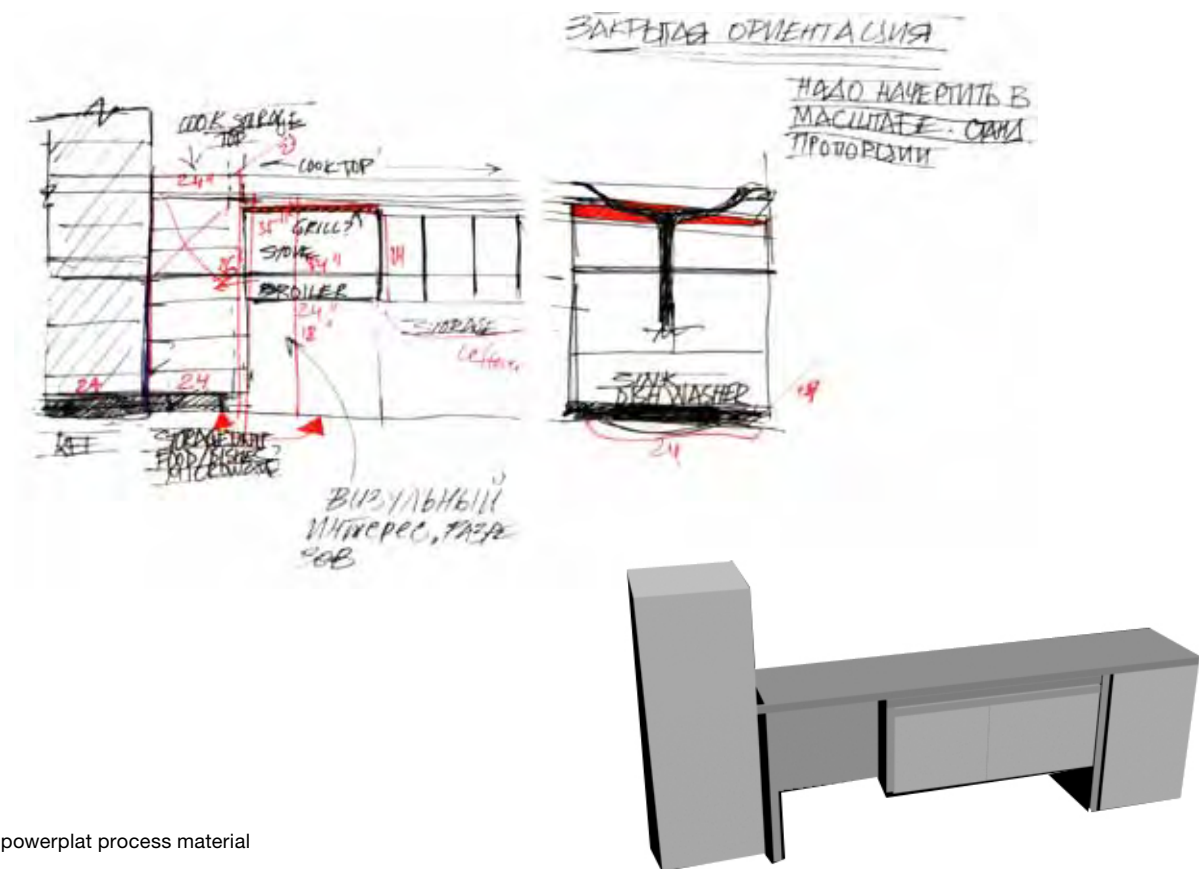


Color / Material / Finish

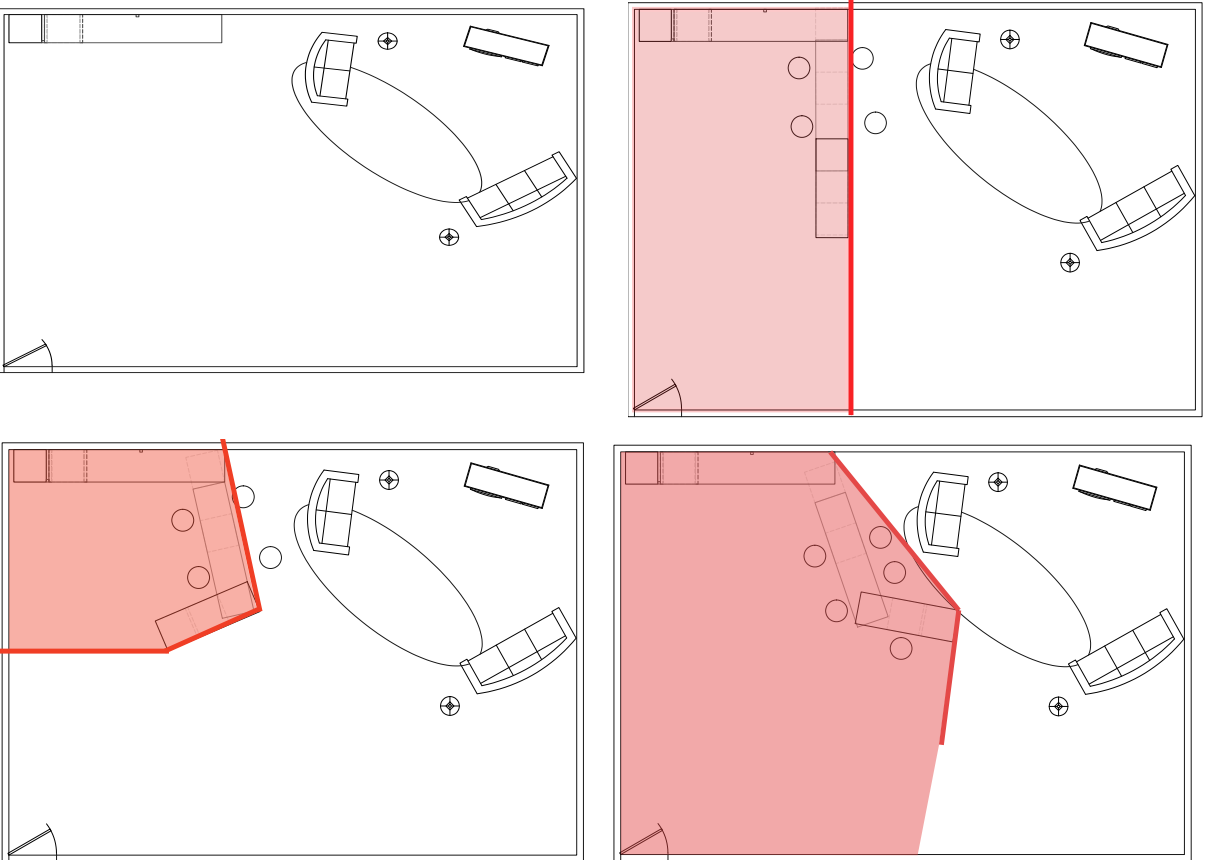
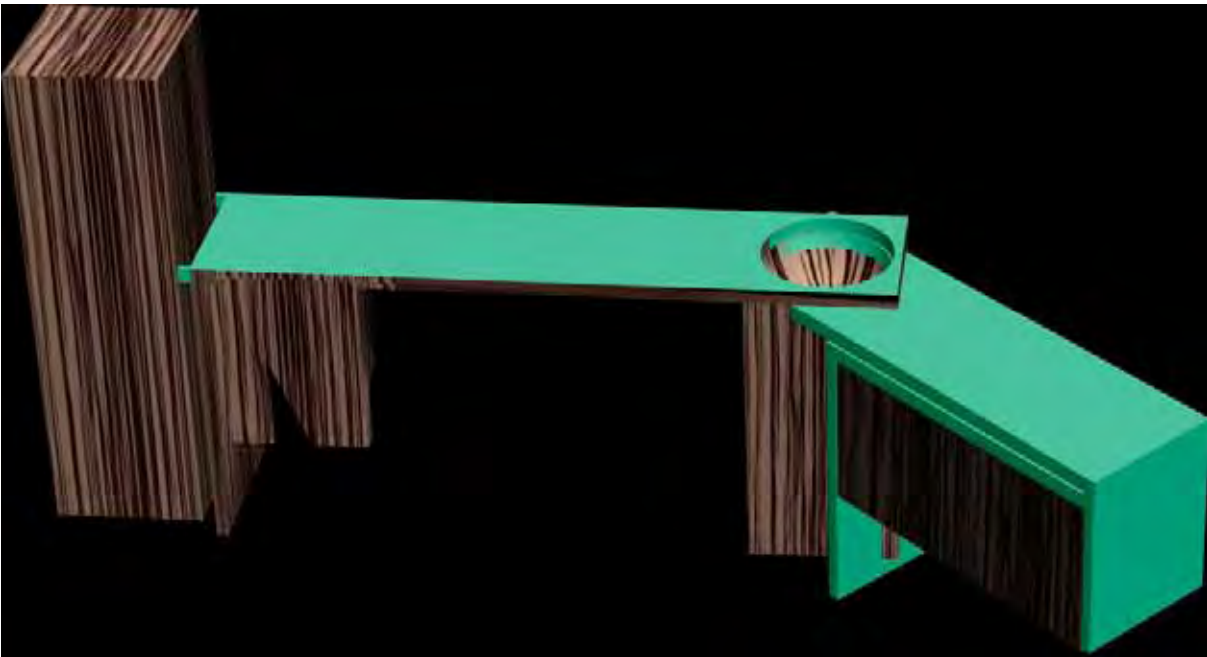
The finishes for Power Play are versatile. The armature is a non-interchangeable part of Power Play because it provides the backbone of the construction. The finishes for the cabinetry itself, however, can be chosen from a wide variety of available options. During renovation of the living space, one simply has to call in an exchange order rather than trashing the entire kitchen.



powerplat handle sketches



powerplat process material



powerplay spatial division diagrams



AquaStrate

Carolina Kim

The Kitchen Environment

AquaStrate responds to a stylistic move away from static modular components. Instead, it reflects the trend towards personalization. The surface tiling patterns generate a sense of energy and movement while the smaller patterns indicate interface and handle options. Like most future products, sustainable materials, energy conservation and gray water reuse will be implemented into the overall system.



the kitchen environment



alternate view



front elevation



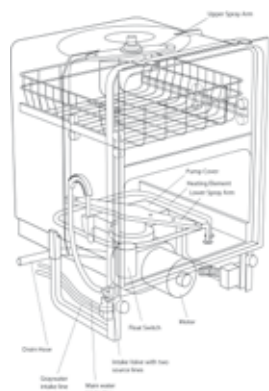
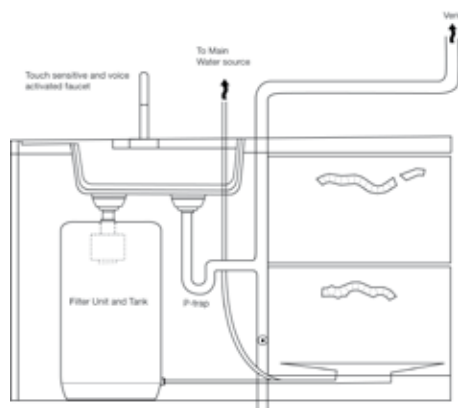
variations in translucency



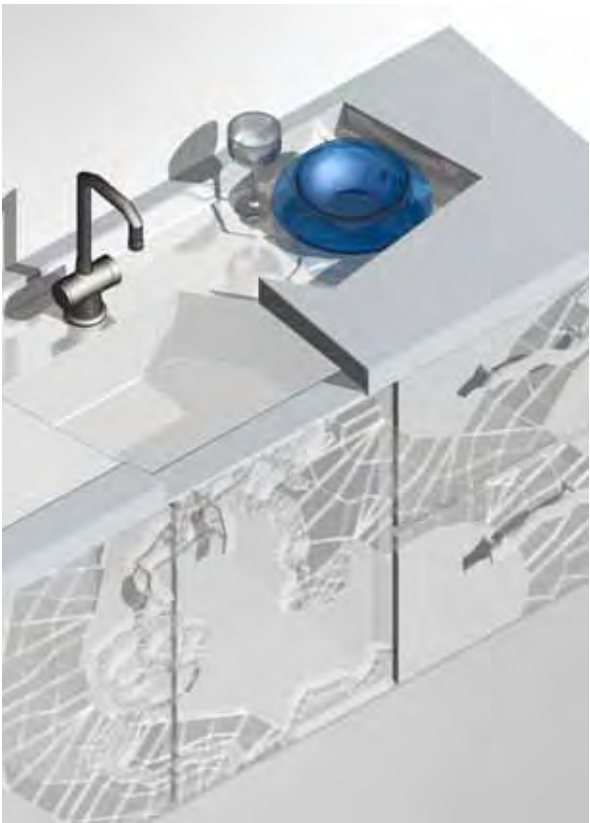
Aquastrate is for individuals who entertain frequently and require space to move comfortably between the appliances and the center island while they cook and interact with their guests.

The Kitchen System and the Appliance Design

Water flows directly through several layers of the sink, made from porous, antibacterial ceramic, into a filtration system based on UV light technology, nanofiltration and reverse osmosis. The sink integrates a cutting board, which is easy to clean. The counter top drops into a layer with raised patterns for accumulating used cups, plates and silverware until ready for the dishwasher.



basic technology



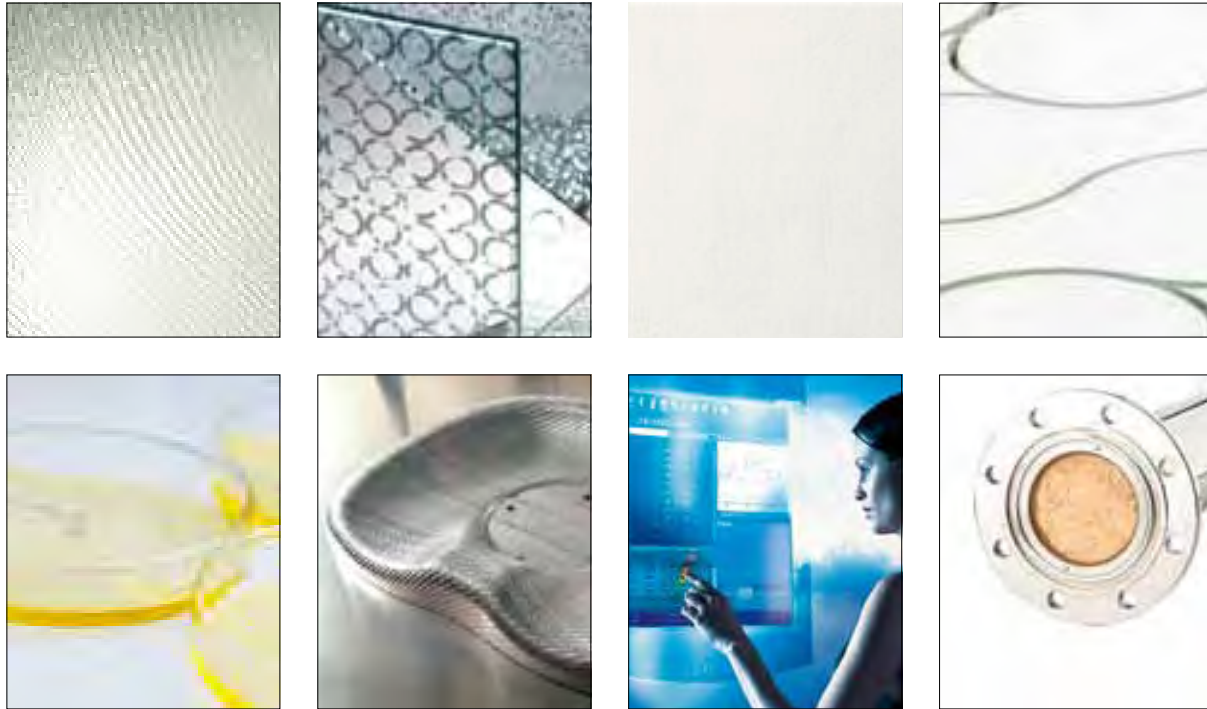
the countertop includes a recessed area for dishes



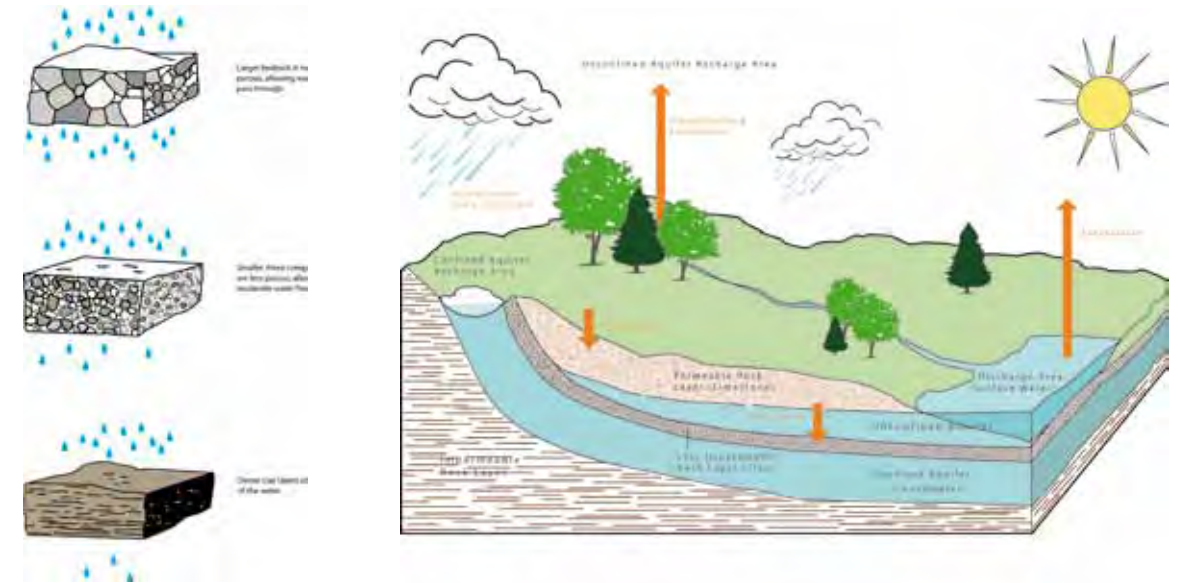
user scenario

Color / Material / Finish

The cabinet surface relies on the interplay of transparency and translucency. The patterns, created from a tiling system, will allow users to see through only certain areas of the kitchen cabinetry and appliances. Because the focus will be on the integration of exterior and interior visibility, the surface will remain subtle in its finish.

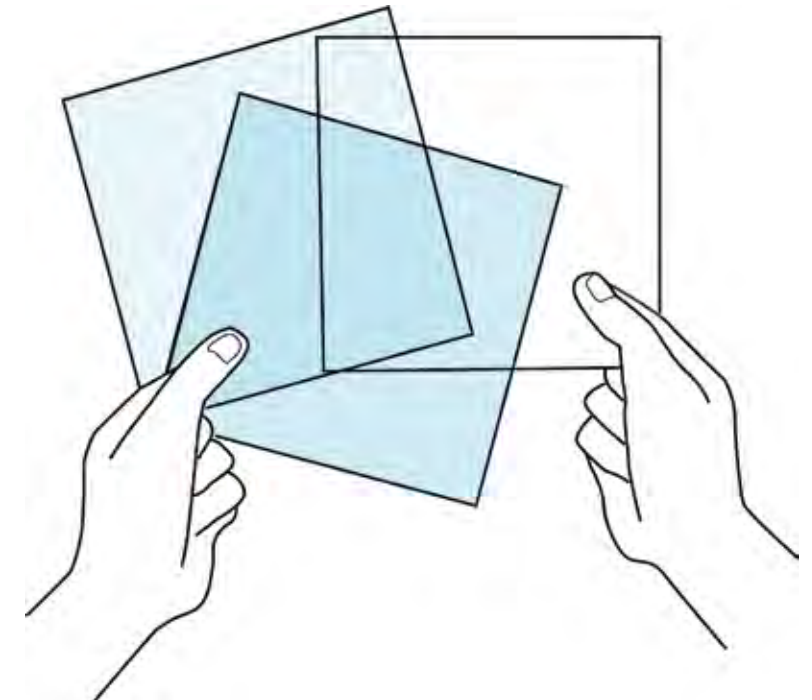


Cabinet and appliance surfaces will be made from ecoresin, hollowed out following the lines of the tiling pattern. The layers of the material surface will give the illusion of depth and three-dimensionality. The dish rack and the sink will be made from ceramic infused with antibacterial agents. Raised areas of the sink will be for resting dishes and cups. The dishwasher will be made from a natural fiber composite like Flexform or a self-reinforced polypropylene (moldable fabric) from Pure Technologies. The dishwasher interior will be partially visible through a semi-translucent window. The touch screen interface will also be embedded with anti-bacterial nanotechnology like Microban.



Natural aquifers were the source of inspiration for the sink and dishwasher unit's material fabrication methods and overall technology.

Layering of materials provides an opportunity for transparency and translucency.



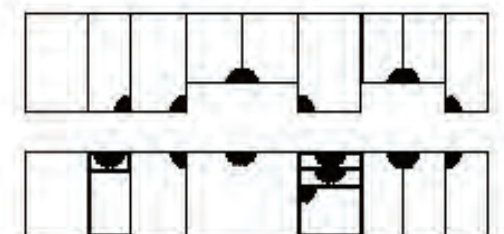
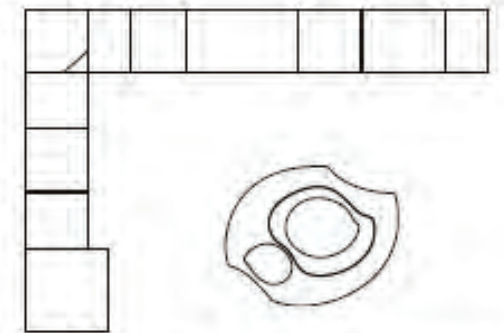
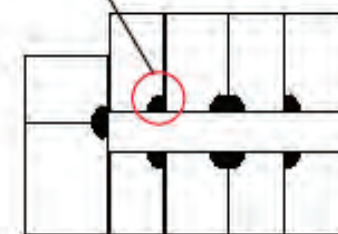
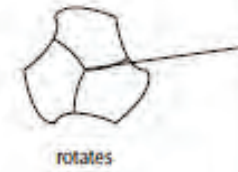


Hot Pot Island

Amy Yeh

The Kitchen Environment

The cabinetry of this kitchen environment highlights surface areas that directly interface with its users. Surface texture and pattern, inspired by periodic tiles and budding flowers, indicate how much and how often certain areas are used. Where the patterns are more densely clustered indicate areas of more use and also inform the user on how the cabinets open (upwards, left side, right side, pull out).



The Kitchen System and the Appliance Design

The appliance I propose is a cook and dine kitchen island with a built-in mini refrigerator. It is inspired by the hot pot, an Asian styled, interactive dining experience in which a pot of boiling soup is the centerpiece of a table. Diners sit around the table and add raw ingredients to the soup. Hot Pot Island will specialize in this form of communal dining and will also have cold & hot zones to keep the foods fresh before and after cooking. A built-in mini refrigerator will be used to house side dishes, appetizers and desserts to streamline the food preparation process.



"Hot pot" refers to several varieties of Chinese steamboat stew. A metal pot is placed at the center of the dining table for everyone to share. The hot pot's soup is usually made out of meat broth. Thinly sliced meats, leafy vegetables, mushrooms, wontons, egg dumplings and seafood are added to the pot by diners who sit around the table, cooking and eating at the same time.

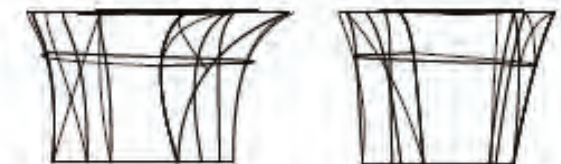
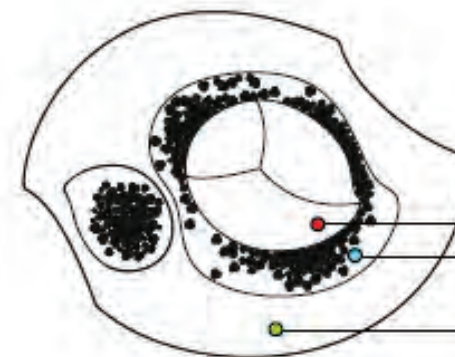


Pre-prepared cold side dishes can be housed in the built-in refrigerator to reduce food preparation time.

Hot Pot Island

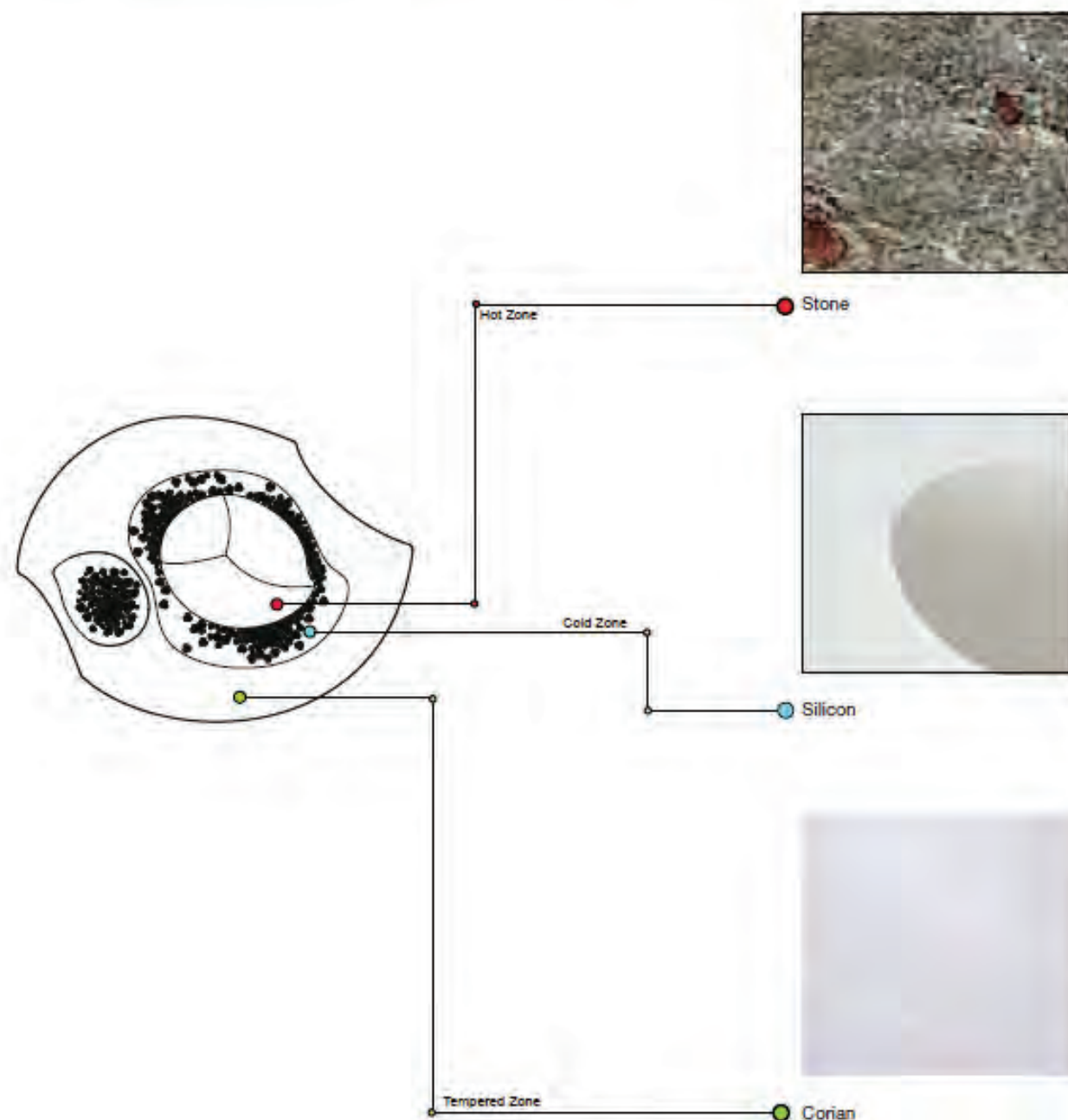


other options of island legs



Color / Material / Finish

The main body of Hot Pot Island will be made from corian, a material derived from acrylic polymers and alumina trihydrate. The hot zone will be made out of stone while the cold zone will be layered with silicone. Cabinet surfaces will also be made from corian. To compliment the intricate details of the surface patterns, I limited the kitchen's color to white.





Pratt



Pratt Institute • The School of Art & Design,
The Departments of Industrial & Interior Design, Senior Studio.
The LG Studio Process Guide, Autumn 2007

Studio Faculty Advisors: Professor Alissa Bucher, Interior Design
Professor Katrin Mueller-Russo, Industrial Design
Departmental Chairs: Matthew Burger, Industrial Design
Anita Cooney, Interior Design