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Active Design: Creating a Blue Zones model for interior environments

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ACTIVE DESIGN
creating a Blue Zones model for interior environments

alexis c. holcombe
ides 699 spring 2017
virginia commonwealth university
Integrity
- approach work honestly and openly
- intention
- define concept and plan clearly and articulately
- give meaning and order to materials
- respect and care for people and the earth

I am committed to making design that serves many and is universal, because that is economical, sustainable and ethical, but I honor design that celebrates the individual, because that is personal, poetic and joyful.

Design is power
Designers have a responsibility to help people experience and manage their time and place on earth.

— Alexis Holcombe
“It is a question of environment.”

That was the assessment of Dr. Pekka Puska, a cardiologist and public health professor with Finland’s National Institute for Health and Welfare (THL). I was sitting at a cozy kitchen conference table with Dr. Puska and his associate, Vesa Korpe- lainen. They had agreed to meet at their office on Jumattila, Finland, a seven-hour journey by train from Helsinki, through endless miles of thick Baltic birch forest.

I visited Joensuu and Helsinki to discern the connection between interior environments and public health. Dr. Puska had reservations that he could provide any useful insights to a researcher looking for clues to well-being and indoor health. Yet as our conversation continued, it was clear that both men noticed the same growing awareness that I had intuitively grasped after reading Dr. Verus Solotaroff’s The Blue Zones Solution. The environment is critical to healthy living, both indoors and out. The germ of an idea that grew into this book started in the summer of 2015. I had just finished reading The Blue Zones Solution before entering the master’s program at Virginia Commonwealth University’s department of interior design. After a six-week immersion in the department’s summer intensive workshop that prepares master’s students for the rigors of a two-year design program, I started to wonder whether interior design could help people live longer, healthier lives.

I learned about Dr. Puska’s effort to address a public health crisis from reading Buettner’s work on the Blue Zones. Although it was one thing to define areas of the world where people already were living long, healthy lives, Buettner’s challenge was to discover a way one could create a Blue Zone from a community where people led comparatively unhealthy lives.

Dr. Puska explained how, in his capacity as a doctor, he proceeded to help bring Joensuu back from the brink of a serious public health crisis. North Karelia, the eastern province where Joensuu is located, had the highest mortality rate for men under the age of 35 in Finland. Through soil and river, Puska and his associates learned that they couldn’t make a lasting difference by treating people individually. Instead, they discovered communities as a more effective way to address the problem. And so they took an ecological approach and worked with grocers, restaurants owners, teachers, parents, doctors, students—anyone from the community who wanted to participate. Using this example, I conceived of a mixed-use building project in Richmond, Virginia where one could live healthfully and participate in a mind-body strengthening program. In doing so I hope to provide a blueprint for a micro-Blue Zone to be found within the context of a modern-day city like Richmond.

I am grateful to Dr. Puska, Mr. Korpelainen and their associate, Dr. Tiina Laatikainen, for initiating this research and design process.
How might interior environments play a role in promoting lifelong well-being? According to Passarino, et al., genetic variety only accounts for about 25% of the variation of human longevity. A combination of diet, environment and exercise comprise the greatest factors.

The amount of time Americans spend indoors presents a challenge to increasing physical activity: the Environmental Protection Agency (EPA) states that Americans spend 93% of their lives indoors (Roberts, 2016). Therefore, if physical activity is crucial to living longer, the design of interior environments could logically be a critical factor in promoting natural movement and sustaining lifelong well-being.

National Geographic fellow Dan Buettner identified five “Blue Zones” throughout the world where people naturally live longer: Ikaria, Greece; Okinawa, Japan; Olgii-a Region, Sardinia; Loma Linda, California; and Nicoya Peninsula, Costa Rica. These regions have unusually high concentrations of centenarians who had grown old without noticeable signs of heart disease, obesity, cancer or diabetes (Buettner, 2015).

Buettner identified nine common principles that universally characterize well-being in the Blue Zones. The first, and most crucial to design in the built environment, is to “move naturally.” Healthy centenarians, Buettner says, “live in environments that constantly nudge them into moving” (Buettner, 2015).

This research will seek to translate Blue Zones principles aimed at promoting continued well-being through natural movement into principles for the creation of interior environments that can inform principles for the creation of interior environments.

**RESEARCH METHODOLOGIES**

Further analysis of Blue Zones principles will address specific conditions and behaviors that encourage natural movement. A literature review and case studies will be presented that show a correlation between natural movement within the built environment and measurable increases in healthy outcomes. The example projects include La Maison de Verre, Paris, France; L’Unité d’Habitation à Marseille, France; and Tea House, Bethesda, Maryland.

Interior design that encourages regular natural movement occurs primarily in the design of a building’s major circulation systems and its program (Center for Active Design, 2010). Corridors, elevators and lobbies that connect other spaces in the program encourage walking. Elements like stairs, bicycle storage and furniture that produce micro-movement promote activity when they are visible, safe and attractive. Programmed spaces that encourage physical activity (like dance/movement studios and those that promote healthy eating) also lead to increases in healthy behaviors, which ultimately lead to increased longevity.

Using these guides, a building in Richmond, Virginia will be redesigned as a micro-Blue Zone that could be used as a model for promoting increased life-long well-being. This two-level adaptive reuse, mixed use commercial project will address vertical transitions, social spaces and outdoor relationships that encourage residents and visitors to move throughout the day.

Centenarians living in the five original Blue Zones have created environments, where they naturally live longer, move and live healthier lives.

**THESIS ABSTRACT**

How can interior design help us live longer, healthier lives?
There are many factors that work against creating healthy life habits for most Americans. Cheap, high caloric food with little nutritional value adds pounds and degrades our bodies’ ability to fight disease. Technological advances make life easier but also make us more sedentary. Previous generations moved more because they had to and ate simpler diets. Scarcity and hardship created an environment where people’s bodies worked harder to maintain health. As researcher Dan Buettner notes in *The Blue Zones Solution* (2015), most Blue Zones residents, such as those in Sardinia and Ikaria, for example, live in communities that are physically isolated from many modern conveniences. These individuals live largely in the same way they did a century earlier. Their simpler lifestyles hold the key to understanding their long and healthy lives.

Buettner’s research on the Blue Zones shows that it is possible to create modern day environments that mirror the experiences of Blue Zones centenarians. The results from these Blue Zones community “makeover” projects has produced noticeable results in 31 communities across the U.S., with an impact on more than 2,000,000 lives.

The Blue Zone principle of moving naturally means people can add more exercise to their daily routine without going to the gym. Making your food choices, more social connections and having a purposeful outlook round out the Blue Zones blueprint.

This project’s proposed mixed use, adaptive reuse addresses three major program areas: nine residential apartments, a tai chi studio, and a modern day Japanese tea room.

**HOW TO BLUE ZONE THE HOME**

A. Deconvenience the home to maximize movement

B. Create an efficient kitchen layout

C. Have plenty of cleared kitchen counter space and good lighting

D. Make the bedroom a sanctuary for a good night’s sleep

E. Own only one TV

F. Have indoor plants for better air quality

G. Create a quiet destination space for relaxing and meditating

H. Place seating on the floor

I. Ride a bike and walk to get off moving indoors

**HOW TO BLUE ZONE THE ENVIRONMENT**

J. Move naturally throughout the day

K. Have a sense of purpose and live for something beyond work

L. Make food and dining sacred by eating a plant-focused diet with friends and family

M. Bring together a group of mutually committed friends

N. Downshift and shed stress by meditating, praying or praying

**the BLUE ZONES POWER NINE**

01． move naturally People in Blue Zones move enough throughout the day to build movement into their daily routines.

02． purpose Have something to live for in your daily activities.

03． down shift Make a daily habit of taking time to meditate, pray or nap.

04． 80% rule In Japan’s Okinawa region people remind themselves to stop eating when they are 80% full.

05． plant slant All Blue Zones centenarians drink alcohol moderately and regularly — one to two glasses a day.

06． family first Children who are cherished care for aging parents, while having a life partner can add three years’ life expectancy.

07． wine @ five All Blue Zones centenarians drink alcohol moderately and regularly — one to two glasses a day.

08． night time Sleep well to support healthy behaviors.

09． community Attending faith-based services adds four to fourteen years of life expectancy regardless of the denomination or practice.
Buildings and sites can have a measurable impact on occupants’ health. Buildings and the form of buildings, as well as amenity, programming, and circulation have all been shown to affect physical activity (Zimring, Nicoll, and Tsepas, p. 188-90). Likewise, building elements can promote or deter physical activity. Stairs are the building element that have the greatest potential for affecting human health positively. Studies have shown measurable impacts on weight reduction and risk of stroke or death when occupants use stairs rather than elevators or escalators.

Yet while behavioral choices are governed by the built environment, cultural norms, economics and social trends also play a crucial role in defining the ways in which we use buildings. The social behavioral model of individual behavior change is governed by societal, community, organizational, interpersonal and individual factors.

Adults with low self-efficacy only increase their participation in physical activity if they have increased access to sports facilities. Adults with high self-efficacy, on the other hand, find a way to maintain a consistent program of physical fitness regardless of their access to sports facilities. High self-efficacy is also linked to better knowledge about nutrition and social support for eating fruits and vegetables (Zimring, Nicoll and Tsepas, pp. 265-66).

The feature staircase at the Buckingham County Primary and Elementary School is located near the building’s entrance. Colorful handrailings are placed at kids’ heights, while the stair connects important shared common spaces and acts as a social hub. Source: Tom Daly.

Blue Zones residents incorporate instrumental and hybrid activity in their daily lives naturally. For modern societies that rely on convenience, such activity must be more deliberately considered.

Movement and happiness

Equally as important as hybrid physical activity are the smaller and more subtle forms of movement that we engage in every day. A new study tracking 10,000 smartphone users shows that “inactivity, which has been linked to poor physical health, is also linked to poor psychological health” (Lathia, Sandstrom, et al., p. 1). Research on self-reported levels of “happiness” and physical well being has mostly focused on exercise. This new research shows a link between happiness and spontaneous movement by using a smartphone app to track self-reported levels of happiness.

Fidgeting

Humans spend a great deal of time sitting, most of it while sitting motionless. "Leaders of movement promotion initiatives note that most of us spend between eight and 10 hours each day seated. During that time, our bodies and, in particular, our legs barely move" (Reynolds). This causes a clear decline in the flow of blood to our legs, and lower blood flow results in hardening of the arteries. Standing can improve this by causing leg muscles to contract and blood to flow.

But it’s not always acceptable to stand in some situations, such as a long meeting or during a long trip. A study in The American Journal of Physiology Heart and Circulatory Physiology testing a small number of healthy young people shows that fidgeting could produce enough lower body muscle movement to significantly elevate blood flow to the legs.

Building and stress

Five identifiable dimensions of the interior built environment could affect human health by impacting stress levels, which in turn has been shown to affect overall physical health by affecting one’s ability to cope with the stress.

Concern for well-being and the environment can be encouraged by positive social trends: “A built environment (and associated policies and social marketing) may both improve individual health and help the community achieve environmental sustainability,” Behbehani, Zhao and Zhang and the Built Environment.
Building developers and designers have only recently recognized the importance of encouraging stair use to benefit human health. Interestingly, visual appeal is not a significant indicator of whether stairs will be used regularly. A recent study suggested that spatial characteristics of stairs are much more important than attractiveness or a pleasing view in determining stair use, suggesting “a well-placed stair has more impact on stair use than a well-dressed stair” (Nicoll, p. 351).

The study concludes that convenience and legibility are the most important factors of determining stair use, and that “building managers may design interventions to remediate spatial deficiencies such as the lack of stair visibility or intelligibility” (Nicoll, p. 352).

Design and stair use
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Signs placed near stairs and elevators to encourage stair use can encourage building occupants to consider health benefits of using stairs. A review of sign use has shown that 10 of 11 studies of such “point-of-decision prompts showed more people used stairs when signage was used as long as signs are decorative, informative, and situated for the targeted user population (The Community Guild).

New York City addresses stair use
The New York City Council recently passed a bill that increases stair visibility by allowing some stair doors to be held open by magnetic devices that will close automatically in case of an emergency. These devices make code-compliant fire stairs more visible and therefore more likely to be used. Before this, special permission needed to be granted by the city to install magnetic hold-open devices on stairway doors.

The Center for Architecture in New York City uses hold-open devices on the door of its main circulation stair. Rick Bell, Executive Director of the New York City chapter of the American Institute of Architects, says “The Center welcomes 5,000 visitors a month, and of those visitors, ninety five percent take the stairs to reach our gallery spaces and lecture halls” (Center for Active Design).

A pending NYC bill ensures that all new construction provides building occupants with stair access to all floors. The bill also will allow the use of fire-rated glass and point-of-decision stair prompts “in at least one stairway in each building”.

Fire-rated safety glass and stair use
Using fire-rated glass assemblies can make stairs more visible, even in existing buildings. In addition to making stairs more appealing for everyday use, naturally, fire-rated glass can be better lit, more accessible and usable. According to the annual (2010) International Building Code (IBC), codes for fire exits require a maximum allowable glass vision panel of 100 square inches, whether or not the building is fully sprinklered. However, this requirement applies only to traditional “safety” wired glass and ceramic products. Recently developed special fire-rated glass assemblies can extend to heat-tempered glass and to black reclaim glass.

While fire standards are not met in 60- to 90-minute exit enclosures, fire-rated assemblies that limit heat damage are now available (NFPA 80:2007).

Products such as SuperLite II-XL can be used to form glazing assemblies for fire exit enclosures, such as this one at a St. Cloud University stairway in Minnesota. Source: SaftiFirst.
Wellbeing research connects to practice

Several recent initiatives are addressing the connections between wellbeing and interior environments. While each of these initiatives seeks to promote healthy and engaged workforces, they share a number of overlapping criteria.

The Blue Zone principle of natural environment is evident in each of these programs. In most cases, the focus is on a more natural building, programming for active movement, and integrated paths of travel that are visible and appealing.

The Center for Active Design, in New York City, is one such organization that uses research to promote healthy and engaging workplaces. The center’s building design checklist focuses on a building’s corridors. The Center also assisted the U.S. General Services Administration (GSA) and the Centers for Disease Control and Prevention (CDC) in designing the Fitwel rating system for office buildings to take a holistic approach to wellbeing in the built environment.

The Urban Land Institute has developed a similar matrix for designing healthy spaces. The Building Healthy Places Toolkit has been designed in cooperation with the Center for Active Design to promote the ULI’s educational and research mission.

The Well Building Standard and the affiliated Well Living Lab are supported by the International Well Building Institute. The Well Living Lab is a joint venture between the Mayo Clinic and Delos Living, LLC, a wellness real estate concern. It is the organization that uses research to promote healthy and engaged workplaces.

The Well Building Standard and the affiliated Well Living Lab are supported by the International Well Building Institute.


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<th>Category</th>
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<tr>
<td>Physical Activity</td>
<td>1. Incorporate elements of active design into standard building codes and site planning and development.</td>
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<td>2. Increase access to natural environments along paths of travel.</td>
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<td>3. Designate stairs for everyday use and integrate stairs with the building’s design and programming.</td>
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<td>4. Provide visually appealing environments along paths of travel.</td>
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<td>5. Design stairs that are wide enough to accommodate groups traveling in two directions.</td>
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<td>6. Locate stairs near the building’s entrance and consider fire-rated glass enclosures.</td>
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<td>7. Make stairs the primary means of vertical travel and integrate stairs with the building’s design and programming.</td>
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<td>8. Provide visually appealing staircases that are designed to encourage everyday use.</td>
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<td>9. Make stairs less prominent while providing elevator access for persons with disabilities.</td>
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<td>Too Much</td>
<td>Too Little</td>
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<td>1. Park spaces are well designed and visible.</td>
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<td>2. Park spaces are accessible.</td>
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<td>3. Pedestrian amenities are well designed and visible.</td>
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<td>4. Pedestrian amenities are accessible.</td>
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<td>5. Stair signs and stair prompts are clearly visible and accessible.</td>
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<td>1. Provide high-quality spaces for multidisciplinary play and recreational activities.</td>
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<td>2. Provide spaces for healthy eating.</td>
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<td>3. Provide spaces for healthy drinking.</td>
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<td>4. Provide spaces for physical activity.</td>
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<td>5. Provide spaces for social engagement.</td>
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<td>6. Provide spaces for nature engagement.</td>
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<td>7. Provide spaces for cultural engagement.</td>
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<td>8. Provide spaces for spiritual engagement.</td>
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<td>Comfort</td>
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<td>Water</td>
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<td>Fitness</td>
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<td>2. Incorporate fitness equipment into the building’s design and programming.</td>
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<td>10. Use materials and products that support healthy indoor air quality.</td>
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<td>Social Equity &amp; Inclusion</td>
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The Well Living Lab in Rochester, Minnesota simulates real life indoor living and working environments. Created as a joint venture between Rochester's Mayo Clinic and Delos Living, LLC, a wellness real estate concern, the lab studies indoor environments to identify factors that make interiors healthier places to live in.

While the evidence-based methodology used by the Well Living Lab does not specifically address the Blue Zones principles identified by Dan Buettner, the lab's mission taps into the same critical environmental factors and quantifies them.

The lab uses advanced biometric and wearable sensor technology that allows study participants to move about naturally. Sensors monitor and record the body's response to stimuli such as sound, motion, air flow, light, and sleep. The lab uses advanced architectural features like reconfigurable mechanical and structural systems designed by Steelcase to simulate a wide range of living situations and other features such as sound and noise simulators, residential modules and open office environments (welllivinglab.com, 2017).

The research methodology uses large and small groups of subjects with varying demographic and health measurements. Outcomes such as sleep, performance, stress, fitness and nutrition are studied in a variety of environmental configurations. Jolene Bernau, Innovation Coordinator for the lab, says the first study tested the lab's capabilities in addition to collecting performance data. She stresses that this is a simulation of a real world environment, not a recreation of one.

In an interview at the lab's Rochester facility, Bernau notes that the best way to measure productivity in the simulated office environment is to measure cognitive function. Preliminary data already show that stress and fatigue lead to lower levels of productivity. Results like this can give employers, designers and contractors a sense of where the best return on investment lies for installing upgraded lighting systems, for example.

The project began when Delos Ventures approached the Mayo Clinic's Center for Innovation (CFI). Barbara Spurrier, the lab's Administrative Director, said in an interview that the CFI took lessons from the lab's work and applied these in its own projects. She also notes that new real-world research connections with other Mayo entities such as a senior center and a fitness center are central to the work of the lab.

“Scalability” is therefore one of the lab’s highest priorities. According to Alfred Anderson, the lab’s Information Technology Director, the lab’s success hinges on achieving “a system that can scale operationally.” Barbara Spurrier agrees, saying that the lab’s ability to extend its work to the real world is a key factor in its success.

The field of wellness research in interior environments is just beginning. As part of its effort to establish accountability in healthy building design, the International Well Building Institute released the WELL Building Standard v.1 in 2015. Developed in cooperation with the U.S. Green Building Council, the standard is modeled on the Leadership in Energy & Environmental Design (LEED) credentialing program. Individuals can become WELL Accredited Professionals (WELL AP) by successfully passing the WELL AP exam and buildings can receive WELL AP certification.
Tai Chi Chuan, or Tai Chi, is a form of martial arts using singular movements that are combined into a series of continuous movements (Hong, 2008). Increased muscle strength, flexibility, balance, and coordination can be achieved through the practice of Tai Chi (Lan, Chen, Lai, 2008). Tai Chi can be practiced nearly anywhere and at any time, making it a versatile form of exercise.

Research shows that Tai Chi can be an effective method for reducing stress and anxiety while promoting a sense of overall well-being and quality of life (Yau, 2008). Tai Chi can be practiced by people of all ages and fitness levels, making it a safe and effective exercise option for individuals of all abilities.

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Chado, the Way of Tea, also known as Teaism, was introduced in China thousands of years ago by Zen Buddhist monks to prevent sleep. After water, tea is the most frequently consumed beverage in the world.

Yet while the tools and processing of tea originated in China and India, Teaism is a full expression of Japanese character. Also known as Cha-no-yu, literally “Hot Water for Tea,” the ceremony of drinking tea in Japan embodies the simplicity and restraint of Buddhist philosophy.

As A.L. Sadler notes, the devotion to a calm and simple life in Japanese society was enforced on Japan out of postwar necessity. The rejection of the ego and public display of vulgarity was an effective way to moderate “the disruptive forces of society” and emphasize “esthetics, economics and etiquette” (pp. xxi-xxii).

As early as 4,000-5,000 years ago, the Chinese understood that tea could promote health and prevent some human diseases (Chen and Lin, p. 87). In the 1980s a more modern approach was begun to assess the medicinal benefits of tea, with over 800 academic papers published between 2012 and 2015 on this subject. (p. 87). A survey of these studies points to several important benefits of drinking tea.

Acta compounds called catechins were found to have protective effects on health, including prevention of some types of cancer. The Chinese discovered that green tea with regular consumption of green tea (Chen and Lin, p. 88).

Ten studies indicate that green tea could reduce body weight and body fat. The risk of type 2 diabetes could also be lowered by drinking three to five cups of tea a day. Catechins in tea could reduce blood pressure or inflammation (pp. 84-85).

Studies in Japan and the US suggest significantly lower cardiovascular disease when more than 6 cups of tea per day are consumed. Black and green tea “may reduce risk of both coronary heart disease and stroke by 20% - 40%” (Chen and Lin, p. 65).

Tea and human health

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Plan of a typical Japanese roji or garden, and elements of a traditional tea house.

A. space for changing clothes
B. bathroom
C. middle gate and seat
D. bathroom
E. water basin
F. tea room entrance
G. tea room
H. tokonoma display niche

**Tokonoma**

Plan of a four-mat tea room called Kansui-an to have been given by the third Shogun Iemitsu to Okudaira, lord of Nakatsu in Kyushu.

(1) tokonoma
(2) board floor
(3) mizuya
(4) nijiri-agari
(5) shelf
(6) setsuin
(7) waiting arbor
(8) windows
(9) crouching basin
(10) lantern
(11) nobleman’s entrance
(12) garden gate

**Buddhist monks and craftsmen designed temples and mansions.** "(T)raditional *Teaism* was the art of making a home as well as being in it. the *Tea Master* was the architect in many cases" (Sadler, p. xxi). A professional *Tea Master* would also be known as an artist, architect, decorator and connoisseur.

Using the ken, a measurement of 3 feet by 6 feet, or the dimensions of a Japanese tatami mat, the plan of the house is designed to fit around the plan of the garden, with all ornamentation and construction clearly in view.

**The Japanese home and garden**

Viewing life from a different angle leads to a greater sense of place in the universe.
Created in close consultation with metalworker Louis Dalbet, and the clients, Dr. and Mme. Dalsace, La Maison de Verre is so richly detailed that its interior is equally if not more significant than its architecture. In fact, in his 1969 essay, architecture critic Kenneth Frampton wondered whether it would be more accurate to call La Maison “a greatly enlarged piece of furniture” (Frampton, p. 77), noting that architect Pierre Chareau was largely interested in interiors.

While adhering to principles of modern design proposed by Le Corbusier, La Maison shows a greater sense of liveability and suitability for its occupants. Serving as a medical office for the owner, Dr. Dalsace, and a family home, the building features moving parts such as screens and staircases. The complex path of travel shifts from floor to floor, providing constant movement. Simple forms and materials support the flow.

This project has been selected because of its unique circulation and arrangement of many moveable elements. By displacing the major horizontal planes and organizing a complex but orderly path through the house, Chareau’s house is an excellent model for organization of this thesis site.

CASE STUDY

LA MAISON DE VERRE

Pierre Chareau and Bernard Bijvoet, 1928–1932
Paris, France

The glass block facade of La Maison de Verre, as seen from the forecourt, allows in light while maintaining privacy. At the time, the use of glass block “lenses” on such a scale for residential architecture was relatively unknown. The material was originally developed in Japan and indeed contributes to the Japanese character of the house. Photo source: Subrealistsandu/Arch Daily.

The recessed entrance is located on the lower right. Source: Perspecta magazine.
The pivoting door leading from the medical suite to the private quarters with perforated metal sub-screens. (Photo source: Francois Halard via Edwards and Gjertson.)

Axon of the main stair. (Image source: Michael Carapetian via Perspecta.)

(top) Retractable stair from Madame Dalsace’s day room. (bottom) Plan and section of the retractable master bedroom stair. (Both images: Michael Carapetian via Perspecta.)

Four different stair solutions in the house include (01) an auxiliary stair for the doctor to access his study and the main salon, (02) the main stair with its steel string beams, (03) Access stair to the second floor to provide access to master bedroom and, (04) a retractable ship’s stair to the master bedroom. (Photo sources: 04, Michael Carapetian. 01 02 03 04

A mobile stepladder can be moved to access the double height bookcase in the main salon. Note: these stepladders enable mobility in each room and are integral to the transformational quality of the house. (Photo source: Subrealistsandu/Arch Daily.)

The family dining area on the first floor facing the hallway to the butler’s pantry. The family room opens up to a stair in the center leading up to the upper floor, (Photo source: Francois Halard via Edwards and Gjertson.)

The family dining area on the first floor facing the hallway to the butler’s pantry. The family room opens up to a stair in the center leading up to the upper floor, (Photo source: Francois Halard via Edwards and Gjertson.)

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A view of the main salon with furniture designed by Pierre Chareau. The second floor contains a private study and gallery spaces. (Photo source: Francois Halard via Edwards and Gjertson.)

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A view of the main salon with furniture designed by Pierre Chareau. The second floor contains a private study and gallery spaces. (Photo source: Francois Halard via Edwards and Gjertson.)

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RESEARCH

Site plan showing the arrival path family, staff and patients take from the street through the forecourt and to the main entrance. (above) Ground floor plan showing paths of travel for the family, staff and patients. (Source both images: Perspecta magazine.)

First floor plan of public and semi-public spaces features the main salon and stair to the master bedroom. (above) First floor plan of public and semi-public spaces. The service wing with kitchen and maids’ quarters is located in the lower right. (right) Second floor plan showing the family’s private quarters. (Source: Perspecta magazine.)
Vertical living was one of Swiss modernist architect Le Corbusier’s signature achievements. The ideal of providing mass housing through efficient use of space was realized in 1952 with the ‘Radiant City’ known popularly as the Marseille Block.

Building vertical housing made efficient use of scarce land resources. It also allowed for some basic advantages and allowed dwellers to equally benefit from shared services in the building complex (Choay and Herve, 1961).

Le Corbusier’s unique plan allowed the apartment units to be inserted onto a central corridor, which he likened to wine bottles in a rack. The units wrapped up and over, or down and under, a common interior “street,” making a highly efficient use of space that gave all units windows on either side and two-level living (Shawne, 1967).

This project has been selected because of its vertical orientation and adaptability to a constrained volume. The long, narrow apartments maximize movement, both along length of each level and in transitioning between levels.

Le Corbusier, 1946–1952
Marseille, France

section perspective showing the access to natural light, vertical transitions and generous volume in a narrow space (Source: Choay and Herve, 1961).

view of the living area looking into the kitchen (Source: Choay and Herve, 1961).

exterior view from Boulevard Michelet (Source: Boesiger and Girsberger, 1961).

Le Corbusier likened the apartments to wine bottles inserted into a rack (Source: Boesiger and Girsberger, 1961).

section and plan of apartment
1 typical corridor
2 entry
3 living room with kitchen
4 parents’ room with bath
5 lockers, wardrobe, cupboards, ironing board, children’s bath
6 children’s room
7 void over common room

People in Blue Zones live in environments that build movement into their daily routines.
Architect David Jameson’s tea house, located in a back yard of a suburban Maryland residence, appears suspended, like a lamp, on the woodland string. While it appears to hang from a steel structure, cantilevered over the garden’s edge, the tea house is in fact fully anchored to the ground. The structure of the house holds the building in place, as it were, while lighting accentuates the apparent suspension.

This space can be used for meditation or as a quiet space to entertain and serve tea, or to simply relax. This project can be a model for the Japanese tea room in a Model Blue Zone, addressing the principles of Downshift, Plant Slant, and Community.

Purpose
Have something to live for when waking up each day. Having a sense of purpose adds seven years of extra life expectancy.

Downshift
Make a daily habit of taking time to meditate, pray or nap.
**RICHMOND AND THE FAN DISTRICT**

**POPULATION**
- Richmond metropolitan area population: 1.25 million

**Richmond metropolitan statistical area**
- Population: 1.25 million
- The Richmond metropolitan statistical area is the 44th largest metro in the US

**Demographics**
- 56% of the population is in the prime working ages of 25-64, higher than the national average of 53%
- 48% male, 52% female
- 62% white, 30% black, 3% Asian, 1.6% other
- High school graduate 87.8%, some college or associates degree 28.4%, bachelor’s degree or higher 32.5%

**LOCATION**
- Located at the midpoint of the East Coast/mid-Atlantic region of the United States.
- Lies on the I-95 corridor, the major north-south highway on the East Coast.
- Also bisected by I-64, a major Virginia artery connecting Richmond with Norfolk, Newport News and Virginia Beach to the east and Charlottesville on the I-81 corridor to the west.
- Served by Richmond International Airport (RIC) and Chesterfield Airport.
- Amtrak passenger rail stops in Staples Mill and the Main Street Station in historic Shockoe Bottom.

**COSTS AND SERVICES**
- Richmond's cost of living is more than 5% below the national average.
- Housing, groceries, and transportation are all lower than the national average.
- Healthcare and utilities costs are higher than the national average.

**Housing**
- The average monthly apartment rental is $867 for a 950-square-foot two-bedroom unit with 1 1/2-2 baths, excluding all utilities but water.

**Healthcare**
- The region has more than 4,100 physicians and 19 acute care and specialty hospitals.
- VCU’s Medical College of Virginia is the most comprehensive teaching hospital in Virginia.

**ACCOLADES**
- One of America’s 50 Best Running Cities by Runner’s World (August 2016)
- Top City for Creatives by Thrillist (July 2016)
- Top Destination for Food Travel by National Geographic (January 2016)
- Top City to Celebrate the New Year by Travel + Leisure (December 2015)
- No. 3 on international list of Best Places to Travel in 2016 by Travel + Leisure (November 2015)
- Richmond ranked among 15 Most Walkable Mid-Sized Cities of 2016 by Redfin (October 2015)
- Richmond’s Fan District among Top 10 Great Neighborhoods by the American Planning Association (October 2014)
Development of the Historic Fan District grew from a late 19th century trolley transit line. Emboldened in 1817, the district was a magnet for Richmond’s emerging middle class following the end of the Civil War. Building in the Fan was largely completed by 1920.

As Drew St. J. Carneal notes, a rich tapestry of late 19th C. architectural styles is represented. Because a relatively small number of architects designed the majority of Fan structures, the district has a sense of visual unity, in spite of the variety of styles. Although the district is largely residential, the commercial corridors of West Main, North Lombardy, North Robinson and Strawberry Streets continue to serve residents.

The streetscape is very walkable, with sidewalks edging all streets and set backs that keep residential and commercial buildings within reach of pedestrians. The limitation of building height throughout the district creates a very human scale and sense of repose.

Geographically, many streets “fan” out radially from Monroe Park in the eastern region of the district, which creates the most dominant node for travel and for understanding the district’s geometry (fanofthefan.com). This arrangement also creates several triangular shaped parks throughout the Fan. According to the nomination form for the district’s National Register of Historic Places Inventory, the grid of linear streets and square blocks is mediated by the small parks and many trees that line the streets, softening its edges. Visual scope is increased by the varied “rooflines, turrets, dormers, bay windows, cornices, projecting porches and recessed arched entrances.”
The proposed project site is located at the intersection of West Main and North Vine Streets in the Fan District. It is a 15-minute walk from the Fan’s landmark Monroe Park at the heart of Virginia Commonwealth University’s main campus. For dining and cultural events, the popular Carytown shopping district and the Virginia Museum of Fine Arts are each less than a 20-minute walk away. For hiking, rafting and kayaking, Brown’s Island and Belle Isle on the James River can be reached by bike in 10 minutes.

Several restaurants, cafes and bars are located within a four block radius of the project site. Many galleries are also located along this part of West Main Street, with regular gallery openings and other special cultural events.

West Main Street bisects the cross streets into North and South street name designations. The immediate neighborhood is organized in a strong regular grid with rectangular blocks. Except for the Main Street commercial activity, the neighborhood, like the Fan as a whole, is mostly residential.

The dense development is well over 100 years old. Many old trees provide shade and frame the streetscape. While the site is located just three blocks from the busy I-195 Downtown Expressway corridor, the neighborhood’s density creates a barrier to highway noise and traffic.

1700 West Main Street has a high Walk Score rating of 94. This makes the building an ideal location as a model Blue Zone, one that encourages natural movement by walking and biking to nearby amenities. The location also serves residents of all ages. Young professionals can appreciate the social amenities while families will feel secure and supported by nearby schools and the residential character. Older residents can take advantage of the many cultural opportunities within a safe and stimulating environment.
Binford Middle School at 1701 Floyd Avenue was designed in 1914 by Richmond architect Charles M. Robinson. The school and its site are the most dominant feature of the block. Built in the Tudor Gothic Revival style, it features “castellated parapets, a Tudor-arched stone entrance with decorative carving, and an ornate window-trimmed in stone” (National Register of Historic Places).

Eight attached rowhouses (Nos. 1, 3, 5, 7, 9, 11, 11 1/2, and 15) occupy North Allen Avenue from the northeast corner of West Main Street to Floyd Avenue. Vernacular and Colonial Revival in style and built c. 1910, all are brick 6-course American in construction. Two- to two-and-a-half stories, the first six have pedimented dormers, while several feature slate mansard roofs, Tuscan columns, and porches.

An asphalt parking/track/ball field occupies the center of the block. The building at 1700 West Main is a trash that defines the northwest corner and creates a boundary between the street and the school’s “backyard.” A tree line shades a school garden, establishing a boundary along West Main Street. It buffers the playground from street activity and creates a sense of security for the children.

West Main Street is a two-lane, one-way street that flows toward the west end of Richmond. There is no traffic light at the intersection of West Main and North Vine Streets, so the traffic passes by the project site at a very high rate. The city has placed crossing stripes at the intersection to assist pedestrians with crossing West Main Street. However, this measure has done little to make crossing safer and easier.
Binford Middle School

1. Bike park

2. Rain Garden

3. Heritage restaurant

4. Heritage restaurant

5. Heritage restaurant

6. Heritage restaurant

7. Heritage restaurant

8. Heritage restaurant

9. Heritage restaurant

10. Heritage restaurant

11. Heritage restaurant
The property at 1700 West Main Street is a two-story, fully detached by 1820 gross sf. rectangular block with five bays, a flat roof and central pediment that caps the middle three bays.

Originally built as a warehouse for the James E. Kershner Mfg. Co., a plumbing supply firm based in Baltimore, it was constructed in 1920 using brick by Davis Brothers Inc. The building was then expanded and doubled in size sometime between 1920 and 1924.

There is no architect of record so Davis Brothers was likely the designer as well as builder. The scale and detailing nod to the district’s late 19th century residential buildings in materiality and form.

Right: The east elevation entry door features a fan pediment and classical Doric pilasters.
SECTION TITLE

BUILDING AND SITE

FIRST FLOOR PLAN

SECOND FLOOR PLAN

(Source: Johannes Design Group).
A 1924 photo from Sketches of Richmond shows 1700 West Main Street four years after it was built by the James Robertson Mfg. Co., a plumbing supply firm from Baltimore.

(Source: Johannes Design Group).

PLUMBING AND HEATING SUPPLIES

SOUTH ELEVATION

WEST ELEVATION

EAST ELEVATION

NORTH ELEVATION

[Drawing: Johannes Design Group]
Aged concrete penetrates the worn antique floor boards in the Capital Mac showroom on the first floor southeast corner of the building. Sundeck, awnings, and blinds shade the Capital Mac showroom from the intense mid-day sun.

Sunny apartments at 1700 West Main Street celebrate the building’s warehouse structure and material palette. Mechanical systems are exposed, making use of the 12-foot ceiling height.

Without any adjacent structures to overlook the building at 1700 West Main Street, the south and east elevations receive intense sun while the north side facing the parking lot receives filtered sun, mainly in the winter. The setting sun completely shades the north elevation the 16-car parking lot on the rear of the building. The west elevation, originally solid brick, was the rear north side of the building after the Capital Mac shop no longer existed in the area.

Redwood added several balcony niches to the west elevation, the original solid brick west elevation had no windows or doors.
One can see the strong relationship between the original rectangular block and its historic twin, built within four years of one another. The regular column grid, symmetry along both major axes and massing make it immediately recognizable as a warehouse structure. Yet the building’s two story building height and sympathetic material palette allows it to fit easily into the residential character of the Fan District.
This building in Richmond, Virginia will be redesigned as a micro-Blue Zone that could be used as a model for promoting well-being. The two-level adaptive reuse, mixed-use project addresses vertical transitions, social spaces and outdoor relationships. The Blue Zones principle of natural movement as defined by Active Design is the primary driver for the project’s design. Japanese design principles guide the use of form and materials for the project.

The apartments, exercise studio and restaurant each occupy two levels. The tai chi studio and tea room are open to the public and to residents. Visitors include patrons and employees of the tea room and studio. Building owners control the leasing of spaces, residential and commercial, so that all use is aligned with Blue Zones principles.

Interior design that encourages regular natural movement occurs primarily in the design of a building’s major circulation systems and its program (Center for Active Design, 2010). Corridors and lobbies that connect other spaces in the program encourage walking. Elements like stairs and bicycle storage and furniture that produces micro-movement all promote activity when they are visible, safe and attractive. Programmed spaces that encourage physical activity and those that promote healthy diets also lead to increases in healthy behaviors.

When

The tai chi studio is open from 6am to 9pm. Tai chi classes take place in the studio and the Binford Middle School garden. The tea room is open from 8am to 9pm for breakfast, lunch and dinner. Residents come and go throughout the day.

Program and Code

<table>
<thead>
<tr>
<th>Type</th>
<th>III-A construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>9,600 gross sft/floor, two floors</td>
<td>9,600 sft + 9,600 sft = 19,200 total gross sft</td>
</tr>
<tr>
<td>Efficiency ratio = .60 (generous/excellent)</td>
<td>9,600 sft X .60 = 5,760 net sft/floor</td>
</tr>
<tr>
<td>5,760 sft + 5,760 sft = 11,520 total net area</td>
<td></td>
</tr>
<tr>
<td>Assume these estimated program areas</td>
<td>2,400 gross sft for T’ai Chi studio</td>
</tr>
<tr>
<td>2,400 gross sft for tea room</td>
<td>2,400 sft X .60 = 1,440 net sft for T’ai Chi Studio</td>
</tr>
<tr>
<td>2,400 sft X .60 = 1,440 net sft for tea room</td>
<td>14,400 sft for residential apartments</td>
</tr>
<tr>
<td>14,400 sft X .60 = 8,640 sft for residential apartments</td>
<td></td>
</tr>
</tbody>
</table>

Summary

T’ai Chi studio 1,440 sft net 288 occupants allowed, 25 intended based upon research and observation of Richmond T’ai Chi studio class and Pure Barre, Alexandria. 1,080 sft for studio/class floor and chair space 360 sft for all other functions 121 sft for reception 76 sft office 3 changing cubbies, 24 sft each, total 72 sft 2 single user restrooms, 45.5 sft each, total 91 sft

Tea Room

1,440 sft net 96 occupants allowed, 96 intended, based on research of Starbucks coffee shop 60% of space, 864 sft for Front of House functions (sales, bar, cafe) 40% of space, 576 sft for Back of House functions (workroom, 2 single restrooms/restroom vestibule)

Residential Apartments

14,400 sft gross, 8,640 sft net 72 occupants allowed, 72 intended 288 + 96 + 72 = 456 occupants in the building allowed 456/2 = 228 men, 228 women

Pumbing Requirements

No. of water closets required per gender: T’ai Chi Studio (A-3, 40 person occ)1/125male, 1/65 female Tea Room (A-2, 96 occ) 1/40 male, 1/40 female Residential (R-2, 72 person occ)1/10 male, 1/10 female No. of lavatories required per gender: T’ai Chi Studio (A-3, 40 person occ)1/200 male, 1/200 female Tea Room (A-2, 96 occ) 1/75 male, 1/75 female Residential (R-2, 72 person occ) 1/10 male, 1/10 female No. of water fountains: T’ai Chi Studio (A-3, 40 person occ) 1/500 W Tea Room (A-2, 96 occ)1/500 Residential (R-2, 72 person occ) 1/100

Exit Requirements

Minimum No. of exits per story = 2 (less than 500 occupancy per floor, IBC Table 1005.2.1) Minimum No. of exits per residential unit 1 water closet:males, 1 water closet:females 2 water closets:males, 2 water closets:females Minimum 1 water closet per residential unit 1 lavatory:males, 1 lavatory:females 2 lavatories:males, 2 lavatories:females Minimum 1 lavatory per residential unit 1 water fountain 1 water fountain Minimum 1 water fountain per 1,000 sq ft

48 ft/3 = 16 ft minimum distance between units
**GRAPHIC PROGRAM AND ADJACENCIES**

- **Total for entire building**: 19,220 sft gross
- **Total residential**: 8,640 sft net
  - Two 3 Bedroom Apartments: 1,920 sft net each
  - Two 1 Bedroom Apartments: 960 sft net each

**Tea Room**
- Sleeping space: 432 sft total (144 sft each)
- Dining/Kitchen space: 225 sft
- Living space: 446 sft
- Office space: 72 sft
- Bathing space, 2 bath: 70 sft each

**Tai Chi Studio**
- Front of house functions: 1,728 sft
- Back of house functions: 1,061 sft
- 2 single user rest rooms, total 91 sft
- 4 changing cubbies, total 125 sft
- 240 sft for storage lockers/retail

**3 Bedroom Apartment**
- Front of house functions: 3,840 sft
- Back of house functions: 2,880 sft net
- Total: 6,720 sft net

**1 Bedroom Apartment**
- Front of house functions: 1,245 sft
- Back of house functions: 1,061 sft
- Total: 2,306 sft net

**Footnotes**
- Total 1,638 sft for studio/class floor and chair space
- 191 sft for reception/lounge/waiting
- 240 sft for storage lockers/retail
- 2 single user rest rooms, total 91 sft
- 4 changing cubbies, total 125 sft

**Diagram**
- Layout of the entire building with rooms and spaces delineated.

**Dimensions**
- Parking lot
- Garden
- Front St.
- Vine St.
- Maui St.
Although they live in vastly different parts of the world, inhabitants of the original Blue Zones share many common traits. Their lives are nurtured in environments that encourage them to move, socialize, and get outside on a daily basis. They seek purpose in life, meditate regularly, eat simply but well and place a high value on family and friends. Moreover, they have found ways to adapt to life’s challenges.

But Blue Zones environments live in the real world, not in utopia. That is why the research into how and why they live as long as they do is so meaningful. For those communities, families or individuals who seek a long-lasting framework for life long well-being, it is best to examine the lives of those who have already lived well.

The concept of “a fully lived life” contains all of the traits that are present in the programming for creating a “micro-Blue Zone” project in Richmond. Study of active design, tai chi and Japanese tea traditions shows many intersecting characteristics that strengthen the mind-body connection that is so important for overall health.

While heredity plays a role in measuring relative health, lifestyle still plays the dominant role.
Well-being is most durable when a mental-body balance is supported within a naturally active micro- and ambient environment. Strong social and family connections supported by a healthy diet and purposeful meditation practices provide the energy needed to adapt to the disruptive challenges that we all face.

The Japanese figure of the arrow pattern initiated the project’s vertical movement concept. (Above) An old pair of the author’s jeans illustrates the patch and repair philosophy that Blue Zones residents use to mend and make do. (Left) Folded paper concept models continue to explore verticality, and (Right) a wall of concept displayed at VCU’s department of interior design.
The Japanese philosophy of wabi-sabi embraces the flawed and imperfect. The Japanese highly value marks of wear and use in objects and this ideal forms the basis for the selection of materials for this model Blue Zones project. Rather than throw away broken or torn objects, the Japanese have made an art form of their repair. The kintsugi technique highlights cracks in pottery as a chapter in the object’s life story. The Japanese treat torn textiles with the same reverence as other objects. Their textiles, from kohai, celebrate the imperfection and timelessness of the Japanese peasants. Generations of family pass along these mended garments, weaving their shared history. The raku pottery technique likewise celebrates imperfect forms and surfaces. Wabi-sabi reflects the acceptance of change and fate as natural and necessary parts of human life. In the Blue Zones, each life experience strengthens the mind and body. Building materials such as soapstone, copper, brick and charred wood take on the wear and use of the people who lived and worked there, embedding the character of the building’s occupants in their surface.

WABI-SABI
AND MATERIALITY

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Alberene soapstone floor and stair treads
patinated copper stair railing
steel L-beam
existing brick walls
charred white oak flooring both levels
lilac frosted glass tile
patchwork ceramic tile bar
charred cypress paneling rotating bar cabinet
 frontier white oak floating bath bowls

agnes blue chawan, or tea bowls (1988) [SINGHTO, etsy.com]

Japanese blue chawan, or tea bowls [SINGHTO, etsy.com]

A watercolor study inspired by Japanese ceramic plates for the project.

The kintsugi technique uses gold to fill cracks in pottery [apartmenttherapy.com]

Japanese chawan, or tea bowls [SINGHTO, etsy.com]
The schematic design phase focused on understanding adjacencies for the three program areas of the project: apartments, a tai chi studio, and a tea room.

Additional considerations included a climate annex for storage and repairs. This was seen as an important element of the design. Zoning issues for leading-edge apartments were also considered. The design team at the time believed that the need for separate storage and repair spaces would be critical.

Privacy and acoustics from West Main Street traffic were also considered. Similar issues were considered for residents. Smaller issues were also considered, such as how the design could be made more efficient, with less waste.

On the other hand, the provision of more open space would require significant changes to the many buildings in the area.

The schematic design phase involved several iterations. The first iteration focused on the overall circulation in the building. The second iteration addressed the need for social connections in a Blue Zone. This led to the identification of oblique lines in the plan of the front half of the building that could then be inverted and used in the back half of the building. This approach resolved the overall plan of the building in spite of two very different column grids for the front and back.

Using the parti organization to address programming requirements with greater emphasis on maximization of natural movement throughout the building.

This discovery led to identifying an obligation to consider the building's orientation along West Main Street and Vine Street. The tea room was designed to face the street, providing views and natural light. The tai chi studio was designed to face inward, providing a more private space for those seeking quiet and focus. The residential areas were designed to face inward as well, providing a more private space for those seeking a sense of community.

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Design progression progressed from schematic design to analyzing new case studies. The two unique halves of the building, front and back, could not successfully be joined while addressing the three program areas of the project.

Therefore a new plan was developed that paired a new case study with the apartments in the rear of the building. Further research on Japanese architecture provided a map for organizing the commercial portion of the project in the front while the linear arrangement of architect Le Corbusier’s plan for L’Unite d’Habitation in Marseille provided a standardized framework. Each apartment unit becomes its own individual self within the unified whole of the building. Each of the four apartments (two have three bedrooms and two have one bedroom) is situated on both levels, thus allowing vertical transitions that satisfy the need for natural movement.

The one bedroom apartments are narrow, at just twelve feet across, but their length and generous two level plans make them spacious enough for two.

Using principles of Japanese design and the garden and tea house informed the development of the tai chi studio, tea room, and overall circulation of the project.

The meandering path of the Japanese garden was a conceptual metaphor for Blue Zone living as a means for living life as a progressive journey. This path also functions as a literal organizing plan from the main entry on West Main Street.

Finally, the foot movements of Yang style tai chi suggested a flowing pattern that organizes the first level of the studio.

Vertical movement by means of different staircases through La Maison de Verre formed a model for addressing stairs in the project. La Maison has many built-in elements that are moveable and these inspired the addition of some moveable features in the apartments.

La Tea House and placemaking examples, both located in Bethesda, Maryland, provided a useful guide for this study.

Elevations and openings in the building’s entrance walls were studied to determine more natural and organic stair riser heights. Room layouts (shown below) were made to determine the number of stairs necessary to clear adequate ceiling heights for staircases and landings. The stair of La Maison de Verre (shown right) provided a model for the studio.

Design and development progressed from schematic design to analyzing new case studies. The two unique halves of the building, front and back, could not successfully be joined while addressing the three program areas of the project. Therefore a new plan was developed that paired a new case study with the apartments in the rear of the building. Further research on Japanese architecture provided a map for organizing the commercial portion of the project in the front while the linear arrangement of architect Le Corbusier’s plan for L’Unite d’Habitation in Marseille provided a standardized framework. Each apartment unit becomes its own individual self within the unified whole of the building. Each of the four apartments (two have three bedrooms and two have one bedroom) is situated on both levels, thus allowing vertical transitions that satisfy the need for natural movement. The one bedroom apartments are narrow, at just twelve feet across, but their length and generous two level plans make them spacious enough for two. Using principles of Japanese design and the garden and tea house informed the development of the tai chi studio, tea room, and overall circulation of the project. The meandering path of the Japanese garden was a conceptual metaphor for Blue Zone living as a means for living life as a progressive journey. This path also functions as a literal organizing plan from the main entry on West Main Street. Finally, the foot movements of Yang style tai chi suggested a flowing pattern that organizes the first level of the studio. Vertical movement by means of different staircases through La Maison de Verre formed a model for addressing stairs in the project. La Maison has many built-in elements that are moveable and these inspired the addition of some moveable features in the apartments. Finally, the Tea House and placemaking examples, both located in Bethesda, Maryland, provided a useful guide for this study.
GARDEN PATH STUDY

The branching garden path, below, was simplified into rectilinear shapes, then shapes were layered in a series of repetitive diagrams that tested the possibilities for organizing the plan of the project.

The final result of the new study shows the apartments in the back of the building and the new entry gate, main staircase, atrium and social porch in the front half of the building.

Solid/void relationships in the new design show how the atrium and general circulation connect the residential and commercial halves of the building.
Before the atrium is developed, the relationship among the three program elements is strengthened around the entry gate and main staircase.

UNIFYING THE PROGRAM

Fresh design development shows the four apartments in the rear of the building, the tai chi studio occupies two levels of the building on the south western corner and the tea room is in the apt.

The entry gate begins to take shape, wider connections to the tai chi studio and tea room develop.
SECTION THROUGH TAI CHI STUDIO, ENTRY GATE AND TEA ROOM

SECTION THROUGH 1 BR APARTMENT, SOCIAL PORCH, ATRIUM, ENTRY GATE AND TEA ROOM
The sunny atrium on the second level allows light into the back of the apartments and creates a breathing space for occupants, inspired by the random breath control technique used by tai chi students.
Two one-bedroom apartments feature an open staircase that leads to a mezzanine. A bar cabinet rotates to serve dining and living areas while the media cabinet’s sliding screen hides the TV when not in use.

Alberene soapstone floor and stair treads
Baltic birch paneling ceiling and walls
Charred cypress paneling scaling bar cabinet
Charred white oak flooring both levels
Silent knife drawing progress on developing the space under the apartment stairs leading to the mezzanine. Initial plans called for floor seating under the staircase. Later the floor seating was moved to the mezzanine.
As in a Japanese garden, the Entry Gate acts as an entry point for all points in the building on both levels. The Tokonoma display niche features Japanese shibori textiles and serves as a mail and parcel drop for building residents.
The tea room's menu celebrates the healthful qualities of tea and features a selection of mostly plant-based meals. The lower level retail display case holds several varieties of domestic and imported teas for sale.

patinated copper bar soffit
patinated-leather bar stool

Magis Stool_One
Moving Blanket Brooklyn Navy on custom sofa

patchwork ceramic tile

TEA ROOM LEVEL 1

narrow sketch showing progress on developing frame for ceiling and the screens covering the windows facing North

View North
The bar and lounge on the lower level serve casual dining and tea service while the upper level caters to lunch and dinner patrons.

- The bar and lounge feature charred white oak flooring on both levels.
- Mute acoustic felt pendant fixtures provide light and enhance the ambiance.
- Existing brick wall and charred cypress paneling create a warm and inviting atmosphere.
- Feature wall on the first level.
- Display cabinets on both levels.
- The boro dining chair celebrates imperfection and flaws by skewing the lumbar seat support. The maple seat and back are supported by painted solid maple legs and an aluminum lumbar.
The tai chi studio is a calm space that is finished in gentle, smooth materials. The curves and cylinders in the space recall the flowing foot patterns of the Yang-style Tai Chi Chuan 24 forms, or movements.
TAI CHI STUDIO LEVEL 2

(Below) The tea room screen appears in the entry gate, the tea room second floor entry and the partition between the tea room and tai chi studio on the second level.

TAI CHI STUDIO LEVEL 2

3'-0"

levels of 10'-0"

charred white oak flooring both levels

Baltic birch paneling, ceiling panels and casework

existing brick walls

charred white oak

floating build floor.
Long term projects demand patience and a great sense of humor. Luckily, the graduate class of interior design MFA students at Virginia Commonwealth University for 2017 has both in great supply. From the first day we met in July 2015 until the present day, we have worked hard to support one another. The days and nights have been long and certainly there were times when it seemed the process would never end. Yet here we are, at the end of one road, getting ready to turn on to another one.

With an undergraduate degree in political science and a master’s in journalism and public affairs, I’ve naturally gravitated to exploring issues that impact the public welfare. Studying the public health angle and mental health connection that is crucial for long-term health was a natural fit for me as an emerging interior designer. I hope to continue this passion for understanding the human dimension in interior design for many years to come. I thank my studio colleagues and the VCU interior design faculty for helping to focus my passion and pushing me to reach further than I thought possible.

— Alexis Holcombe, May 2017
Interviews with Pekka Puska and Vesa Korpelainen on May 30, 2016 in Joensuu, Finland.

Interview with Tiina Laatikainen on June 1, 2016 in Helsinki, Finland.


THE WELL LIVING LAB

Interviews with Barbara Spurrier, Administrative Director, Well Living Lab and Senior Vice President, Delos Ventures; Jolene Bernau, Innovation Coordinator, Well Living Lab; and Alfred Anderson, Information Technology Director, Well Living Lab on February 17 2017.


TAI CHI CHUAN


Interview with Floyd Herdich and Sondra Sealine of Richmond Tai Chi on November 1, 2016. http://travel2health.blogspot.com/2015/05/yang-style-tai-chi-chuan-24-forms.html?m=1

Teaism


Case Studies


Richmond and the Fan District


Site Study

Richmond and the Fan District

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The patient process of learning through discovery is rewarding and challenging. Thanks to my studio colleagues for making this journey so enjoyable: An Liu, Lauren Prisco, Mingming Zhao, Heather Overby, Lucy Dabney and M.J. Rhodes. Special thanks to An for assistance with laser cutting and graphic design guidance.

Dr. Pekka Puska and Dr. Tiina Laatikainen, National Institute for Health and Welfare (THL), Helsinki, Finland, and Vesa Korpelainen, North Karelia Center for Public Health, Joensuu, Finland welcomed me to their offices without reservation in May 2016 to discuss the relationship between interior environments and health. Their collective experience in Finland’s public health sector helped to confirm my growing interest in well-being and environment.

I would like to gratefully acknowledge the wisdom and experience of the faculty of the Department of Interior Design at VCU. Roberto Ventura, thesis mentor and all-around super teacher, has been with our cohort from the start. Camden Whitehead, Christiana Lafazani, Sara Reed, Jillian Chapin, Emily Smith, Jen Fell, Rob Smith and Hillary Fayle have also guided me in this thesis work. VCU alum Roy Abdun-Nur has been a generous advisor and friend. Andrea Alvarez and Lauren Ross assisted with curation and exhibition at Anderson Gallery. Additionally, several people generously gave their expertise and time to assist with research on this project: Meg Hughes, curator at the Valentine Museum for historic documents; Anne Durkin, architect, Johannes Design Group for documentation of 1700 West Main Street; Floyd Herdich and Sondra Sealine of Tai Chi Richmond; and Patrick Bell, Nicole Killian, and David Shields for advice on graphic design. Carla Mae Corkendale of VCU's Cabell Library assisted with research and Marnie Wolfford of CapitalMac gave me permission to visit and record their store at 1700 West Main Street. Special thanks to VCU associate professor of fashion design Kristin Caskey, who helped me articulate the concept of this project with critical insight on wabi-sabi and materiality.

Elizabeth Bolka of Worth Higgins & Associates in Richmond handled my printing requests professionally and predictably. The staff of the Well Living Lab in Rockton, Minnesota introduced me to Tai Chi and gave me a tour of their facility and presented their methodology: Jolene Bernauer, Barbara Spurrier, Brent Bauer, Nicholas Clements, Andrea Alvarez, Andrea Alvarez and Lauren Ross assisted with curation and exhibition at Anderson Gallery. Additionally, several people generously gave their expertise and time to assist with research on this project: Meg Hughes, curator at the Valentine Museum for historic documents; Anne Durkin, architect, Johannes Design Group for documentation of 1700 West Main Street; Floyd Herdich and Sondra Sealine of Tai Chi Richmond; and Patrick Bell, Nicole Killian, and David Shields for advice on graphic design. Carla Mae Corkendale of VCU's Cabell Library assisted with research and Marnie Wolfford of CapitalMac gave me permission to visit and record their store at 1700 West Main Street. Special thanks to VCU associate professor of fashion design Kristin Caskey, who helped me articulate the concept of this project with critical insight on wabi-sabi and materiality.

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