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Reclaiming Beercraft  
a sensory experience

**Shani Zeng**

MFA - INTERIOR ENVIRONMENTS  
VIRGINIA COMMONWEALTH UNIVERSITY

Architecture is the art of reconciliation between ourselves and the world, and this mediation takes place through the senses.

- Juhani Pallasmaa

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## abstract

### Motivation

The senses are mainly a source of arousal, enjoyment and pain and are of vital importance for the human body. They are also important because sensory perception is typical of many cultural artifacts and is given unique intensities and extensions, shapes and meanings through them (Heywood, 2017). As Finnish architect Juhani Pallasmaa stated, "architecture is the art of reconciliation between ourselves and the world, and this mediation takes place through the senses" (Pallasmaa, 2012). To make architecture truly meaningful, it should be able to awaken all the senses.

### Issue

The way we feel, smell, and even taste is hard to capture. This difficulty points to the deep-rooted position of visual tyranny (Lupton & Lipps, 2018, p. 14). Sensory studies incorporate a sensory approach to culture, the challenge here being to give full weight to the role of the senses in cultural life. It also includes a cultural approach to the senses, where this suggests setting impacts and uses of the senses within their cultural context, especially in how they are given and contributing to shared meanings (Heywood, 2017, p. 1).

6.1 Fragrance Lab, Selfridges, London



Richmond's history has been intertwined with beer culture going back more than 150 years (Visit Richmond, 2018). Nowadays, people have the opportunity to visit the brewhouse to see the brewing process and enjoy the finished brewed beer. However, they can only see the equipment and the repeated operation of the workers, and cannot participate in it to feel the charm of the craft beer culture.

### Methods

To utilize the interest in local craft beer culture, sensory design will be incorporated into the interior design. From the sense of the human body, sight, taste, smell and touch, it stimulates the sensory functions of beer lovers at multiple levels, enabling consumers to understand the brewing process of beer more realistically and deeply.

The plan is to carefully dissect several precedent studies concerning breweries, wine museums, cellars, and roastery. Previous studies include The Therme Vals by Peter Zumthor, Antinori Winery by Archea Associati and Surly Brewing MSP by HGA. In-depth interviews with employees of Hardywood Park Craft Brewery and Stone Brewery, local beer lovers and local designers who have designed breweries will be included in my methods of research. Researching designers who focus on sensory design, including Juhani Pallasmaa, Steven Holl and Peter Zumthor, will also be key.

### Results

Sensory design or consciously designing a full range of sensory experiences can better connect us to the physical world and help people find the right place. The multi-sensory design concept not only brings a tactile experience to consumers, but also makes people feel sublimated in their hearts, realizes the integration of information, and maximizes the expression of product information.

### Conclusions

The idea is to create a maker space of craft beer, which integrates education, production and entertainment. Here people can learn about the local craft beer history, participate in the beer brewing process through vision, smell, taste and sound, and absorb the knowledge of beer. During the process of experience and interaction, they could make their beer and even participate in the design of beer containers and packaging design, which allows people to experience a process from learning, production, designing to purchasing.

## reclaiming beercraft- a sensory experience

### Sensory Design

The senses are a source of stimulus, pleasure and pain and are therefore fundamentally essential to the human organism. Sensory design promotes everyone's opportunity to receive knowledge, explore the world, and experience joy, wonder, and social connections, regardless of our sensory abilities (Lupton & Lipps, 2018, p. 9). The Cooper Hewitt exhibition "The Senses: Design Beyond Vision" took on the idea that sensory design, or consciously designing for the full spectrum of senses experiences, can better connect us to the physical world and help us find the right place (Heywood, 2017).

The senses blend with memory. From infancy, human beings participate in countless acts of lifting, smelling, rubbing, sniffing, throwing, dropping, listening, balancing, and more, exploring the limits of nature to comprehend the universe we were born to explore. The brain activates neurons, prunes synapses, and forges pathways. Significance and memory thus take shape. If people experience an oddly shaped coffee cup or an updated operating system, they don't see it as being completely alien but focus our attention on the differences between what is new and what we have experienced in the past (Lupton & Lipps, 2018).

The senses move people in space. Our sense organs are linked to a head that turns, arms that reach, and bodies that wander and seek. The sounds, smells, and changing outlines of space or street environment help to guide this knowledge. From all directions, sensory experience hits us. Designers have historically focused on creating static artifacts – the memorial, the ship, the elegant monogram, or the vital logo. Now designers are talking about how people interact with a brand or location over time (Lupton & Lipps, 2018).

The way we feel, smell, and even taste is hard to capture. This difficulty points to the deep-

rooted position of visual tyranny (Bucknell, 2018). The eye symbolizes understanding and salvation in the Western tradition. Visual analysis is the foundation for modern science. Today, digital devices are pumping out constant graphics and text streams, raising demand for quick visual energy hits – often at the detriment of our other senses. However, the atmosphere of rooms, the sound and smell of these places, have the same weight as the look of things (Lupton & Lipps, 2018, p. 7).

In "The Eyes of the Skin", the Finnish architect Juhani Pallasmaa expressed the essence of the tactile sense of our world experience and understanding, but he also wanted to create a theoretical short circuit between the dominant sense of vision and the suppressed sense of touch. He learned that our skin can discern a variety of colors; we see through our skin (Pallasmaa, 2012).

According to Pallasmaa, the ears want the other senses to cooperate. All senses, including sight, can be viewed as expanding the sensation of awareness—as skin specializations. They define the interface between the skin and the environment—between body's opaque interiority and the outside world. Vision disconnected from touch has no knowledge of distance, space or depth, or space or body as a result.

The distant surfaces, contours and edges of your eyes and the unconscious tactile feeling determine the pleasantness and discomfort of the experience. Remote and near experiences are experienced with the same intensity and merge into a coherent experience. In Merleau-Ponty's words: we see how deep, smooth, soft, and hard the objects are; Cézanne claimed we could see their smell. To convey the world, the continuum of its colors must reflect this indivisible whole, otherwise for us the picture would point only to objects and not give them to imperious unity, life, insurmountable fullness, the sense of the true (Pallasmaa, 2012).

Sensory architecture rubs into the world of life. A space is not just a case of the doors and windows. It is a delicate creature with deep pockets and soft shades (Lupton & Lipps, 2018).

The senses are also important as it is typical of many cultural artifacts that unique intensities and extensions, shapes and meanings are provided through sensory experience. As Pallasmaa stated, "architecture is the art of reconciliation between ourselves and the world, and this mediation takes place through the senses" (Pallasmaa, 2012). To make architecture meaningful, it should be able to awaken all the senses. Architecture should include and encircle the body with authentic materials and tactile forms, according to Pallasmaa. Sensory architecture slows down the heat, making it more dense than thin. "An intimate room reverberates with shifting shadows and surfaces wrought from wood, wool, or stone. An atrium changes with the sun. Rough walls and dense fabrics absorb clatter and din" (Pallasmaa, 2012, p. 14).

Our contact with the world takes place on the edge of the self via specialized parts of our enveloping membrane. It is obvious that "life-enhancing" architecture must deal simultaneously with all senses and help fuse our self-image with the world's experience. Accommodation and integration are the essential mental tasks of buildings. They project our human measurements and sense of order into space without calculation or context. Architecture does not make us live in worlds of mere manufacture and fantasy; it articulates the experience of our world and strengthens our sense of self and reality (Pallasmaa, 2012, p. 11).

The architectural work is not perceived as a collection of isolated retinal objects, but in its full and integrated material, embodied and spiritual essence. It provides pleasurable forms and textures molded for the contact

of the eye and the other senses, but it also combines and blends physical and mental structures, offering enhanced coherence and purpose to our existential experience (Pallasmaa, 2012, p. 12).

The Therme Vals designed by Peter Zumthor, is an architecture of formal restraint with a rare sensuous richness addressing all the senses simultaneously. (9. 1) The project creates a cave or quarry-like structure. The hotel and spa are celebrated for offering a sensory experience of hot and cold, light and shadow, and materiality. Working with the natural surroundings, the bathing rooms lay below a grass roof structure half buried into the hill-side. Each pool has a different temperature, and visitors travel in different dimensions between low and high temperatures. Different design treatments are given different sensory experiences, including even the sense of smell, including the sound processing of stone wall echoes. In different bath spaces, people's skin touches the warm and moist stone, feeling the changes in breathing, climate, temperature, humidity and light.



9. 1 The Therme Vals, Switzerland

The gneiss is carefully coated with visually neutral mortar in bands of varying depths. The sparks of the constituent mica and quartz in the stone are shown by different levels of polished smoothness. The stone below the water level appears dark and viscous, and translucent and desiccated above the main pools where the light originates from above. But the opposite happens in the pools illuminated from below. Hot and cold rooms are lined in terrazzo so that the mind of the bathers is focused first on the water and then only on the surrounding area. It emphasizes the sensory experience brought by the interior materials and structure.

Since sensory studies incorporate a sensory approach to culture, the challenge here will give full weight to the role of the senses in cultural life. It also includes a cultural approach to the senses, where this suggests setting impacts and employments of the senses in their cultural context, particularly in how they are given and contribute to shareable meanings.

“How Wine Became Modern” was commissioned by the San Francisco Museum of Modern Art and exhibited in the museum in 2010. (10. 1) It is the first exhibition to consider modern, global wine culture as an integrated and richly textured set of cultural phenomena through the lens of design. The exhibition, which explores developments in the visual and material culture of wine over the past three decades, offers a way of understanding the roles that architecture, graphic design, and industrial design have played in wine’s transformation into a cultural phenomenon. Exhibits of wine-related design—historical artifacts, design objects, examples of wine culture in popular media, label design, glassware design, and even architectural models of vineyard-related architecture—are joined with newly commissioned artworks and multi-media presentations to reveal the commercial and global extent of modern wine culture. These objects and commentaries, which also deeply probe concepts of viticulture and terroir (a theory of place, soil, climate), are combined with sensory installations: a slow drip of red

wine falling from the ceiling, a “smell wall” that allows visitors to inhale from flasks of wine, an installation of bottles showing how the addition of oak chips changes the wine, and the roots and growth of an entire grape vine (Chronicle, 2010).



10. 1 “How Wine Became Modern”, San Francisco

Materials are the artifacts and structures’ flesh and bones. Breath, movement, and sight with glass, wood, and silicone. A bench or curtain absorbs the vibration. Light bounces, absorbs, and fills the periphery — light is not something, but everything changes. Patterns speak both to the eye and the side, incising flat surfaces with real or imaginary depth in which the wandering eyes may wander. Sensory design considers materiality from the visible and beyond across multiple dimensions (Lupton & Lipps, 2018, p. 85).

Materiality invites an embodied response, influencing how we interact with something. We bristle away from a porcupine’s quills. We stroke a cat’s long fur and pat a dog’s matte hair. We sit erect in hard plastic chairs and slump and curl ourselves in the cushioned support of couches. Touch provides a universal interface, guiding our gestures and interactions. For Roos Meerman, tactility humanizes our interaction with technology. In her project “Tactile Orchestra”, she designed tactile interfaces whose materiality invites desired gestures, rather than instructing users to wave or flap their arms in front of a screen. The Tactile Orchestra is an installation she created with KunstLAB Arnhem. In it,

users stroke a wall covered in a furry material to control the intensity and instruments of a musical composition. The “furriness” directs the interaction. As Meerman tells us, “almost everyone approaches something furry with the same response. They want to stroke it” (Lupton & Lipps, 2018, p.84).

Light is a material, too. For shadow and contrast, light models shape, confounding the eye for reflections and glare. Light is a real sign, but it is a trickster as well. By time shifting, it also changes everything it touches. Depending on its strength and color temperature, it strikes us as warm or cool, hard or soft (Lupton & Lipps, 2018).

### Craft beer Process & Culture

Craft beer is one of the representative cultures of Richmond. Richmond has a community of people united by a love of beer since its establishment in the early 18th century. With more than 30 craft breweries (and more on the way), it is also clear why the Wall Street Journal said Richmond “is home to one of the region’s fastest-growing beer scenes.” The history of Richmond beer culture dates back to more than 150 years ago. Richmond was the first location in 1935 to sell beer in a can (“The Richmond Beer Trail, n. d.). Richmond’s brewing history was marked by changes between boom and bust much like the city of Richmond.

Nowadays, more and more people are interested in craft beer. (11. 1) In addition to enjoying beer, people are eager to learn about beer culture, including beer’s raw materials, historical development and production process. Most breweries do not offer people an immersive participatory beer brewing experience.



11. 1 Frequency of Consumption by Age

Every step of the brewing process affects the final flavor of beer. Malt is the main raw material of beer. The variety of malt and the temperature, humidity and time of baking affect the color, aroma and taste of beer. Wooden barrels can also bring different flavors to beer. In addition to the pure fermentation function, different barrels can bring unique aromas to beer. For example, some barrels may have been used to make other drinks, and even some were used to hold chocolate. These residual flavors will gradually infiltrate into the wine body during the process of still fermentation of beer, and finally get a special taste.

Because of different types of beer, the shape of the glass used must be considered. The first is the aroma. The glass with a wide mouth and an open glass will spread the aroma, while the glass with a narrow mouth will lock the aroma. Rich-flavored, unrestrained beer is suitable for open-type glasses; complex-flavored beer is suitable for narrow-mouthed glasses. Furthermore, if you drink with a large-caliber wine glass, you can put the nose into the glass and enjoy the aroma of all beer.

Then there is the foam. Depending on the shape of the wine glass, the foam layer will be different. With a tulip-shaped wine glass, the foam will increase from the narrow part of the glass, showing a beautiful shape. If you use a flute-shaped glass, you can enjoy the bubbles slowly rising from the bottom. The shape of the mouth of the cup will change the irritation of beer into the mouth, because it will affect the part of the tongue that is first touched by people. Depending on where you touch your tongue, your taste will be different, and your impression of beer will change.

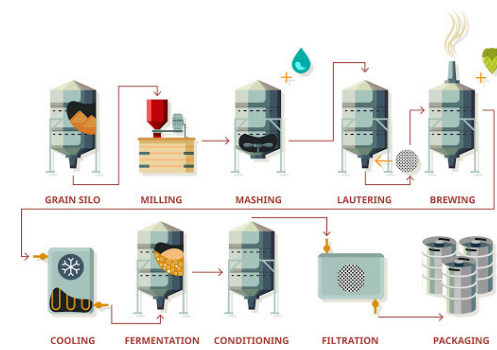
### Beer & Sensory Experience

People have opportunities to visit breweries to see the brewing process and enjoy the finished brewed beer in breweries. However, the sensory experience that most craft breweries bring to people only stays in the sense of taste. They can taste different

types of beers, but their sensory experience only stays in the beer itself. They only see the equipment and the repeated operation of the workers in the brewhouse and cannot participate in it to feel the full expanse of the craft beer culture.

Compared to industrial beer, people can get a very wonderful sensory experience in the world of craft beer. Good craft beer often has a beautiful appearance, a complex and pleasant aroma, a balanced and harmonious taste and a unique overall style. It will impact both the perception of beer and the impressive tip of the tongue.

Also, the craftsmanship of craft beer is very complicated, including malting, mashing, boiling, cooling and fermenting. (12. 1) Due to the freedom of choice of process and raw materials, the world of craft beer is very diverse. According to the classification guide of Beer Judge Certification Program, the current world beer can be divided into 34 categories and hundreds of styles. The smell, taste, body and aroma are different. To produce different flavors of beer, the main thing is the richer raw materials and the arrangement between them.



12. 1 The Brewing Process

Exploring the five senses ensures that the sensory development moves through the brewery, enabling the visitor to touch, see, hear, smell and taste. According to Berkeley, the supposed visual apprehension of materiality, distance and depth of space would not be possible without the cooperation of haptic memory. Vision needs the aid of touch which creates feelings of soundness, resistance and protrusion

(Pallasmaa, 2012, p. 45). A rich sensory experience can inspire people's curiosity and interest, and let people have a deeper understanding of the craftsmanship and make a deep impression on people.

### Design Goals and Programming

By participating in the brewing process, people are able to appreciate craft standards and enjoy the craft beer. A fuller sensory experience may incite respect for beer culture and is also conducive to the inheritance and development of beer culture. People can learn about the local craft beer history, participate in the beer brewing process through vision, smell, taste and sound, absorb the knowledge of beer, such as raw material, classification, storage, tasting, identification and so on. During the process of experience and interaction, they could customize beers and even participate in the design of beer containers and packaging design, which allows people to experience a process from learning, production, designing to purchasing.

The design goal is to incorporate a multi-sensory tasting experience to awaken all senses. People could know and taste different types of beer through senses of vision, taste, hearing and touch by images, interactive devices, music, material and so on. From the sense of the human body, sight, taste, smell and touch, it stimulates the sensory functions of beer lovers at multiple levels, enabling consumers to understand the brewing process of beer more realistically and deeply.

The project will focus on the study of materials. Not only in the use of indoor space materials but also furniture and even brewing equipment. The materials not only bring people a good visual experience but also encourage people to interact, give people a sense of touch, smell and even hearing.

Combining beer-related design exhibits, including beer raw materials, brewing equipment, glassware, etc., with multimedia presentations and sensory devices, to explore the concept of beer brewing in depth. It will

show people how malt changes the color, aroma and taste of beer, how different barrels add different aromas to beer and let people feel the fermentation of beer in interaction.

By creating a comprehensive experience space that integrates education, history, experience, production and entertainment, more beer knowledge is communicated to people. They can learn the difference of crafts and raw materials between different beer types, and how to taste and distinguish the quality of beer, which is conducive to people's better choice of beer and improve the industry standards of the beer market.



## precedents

### THE THERME VALS

Peter Zumthor  
Graubünden, Switzerland  
1996

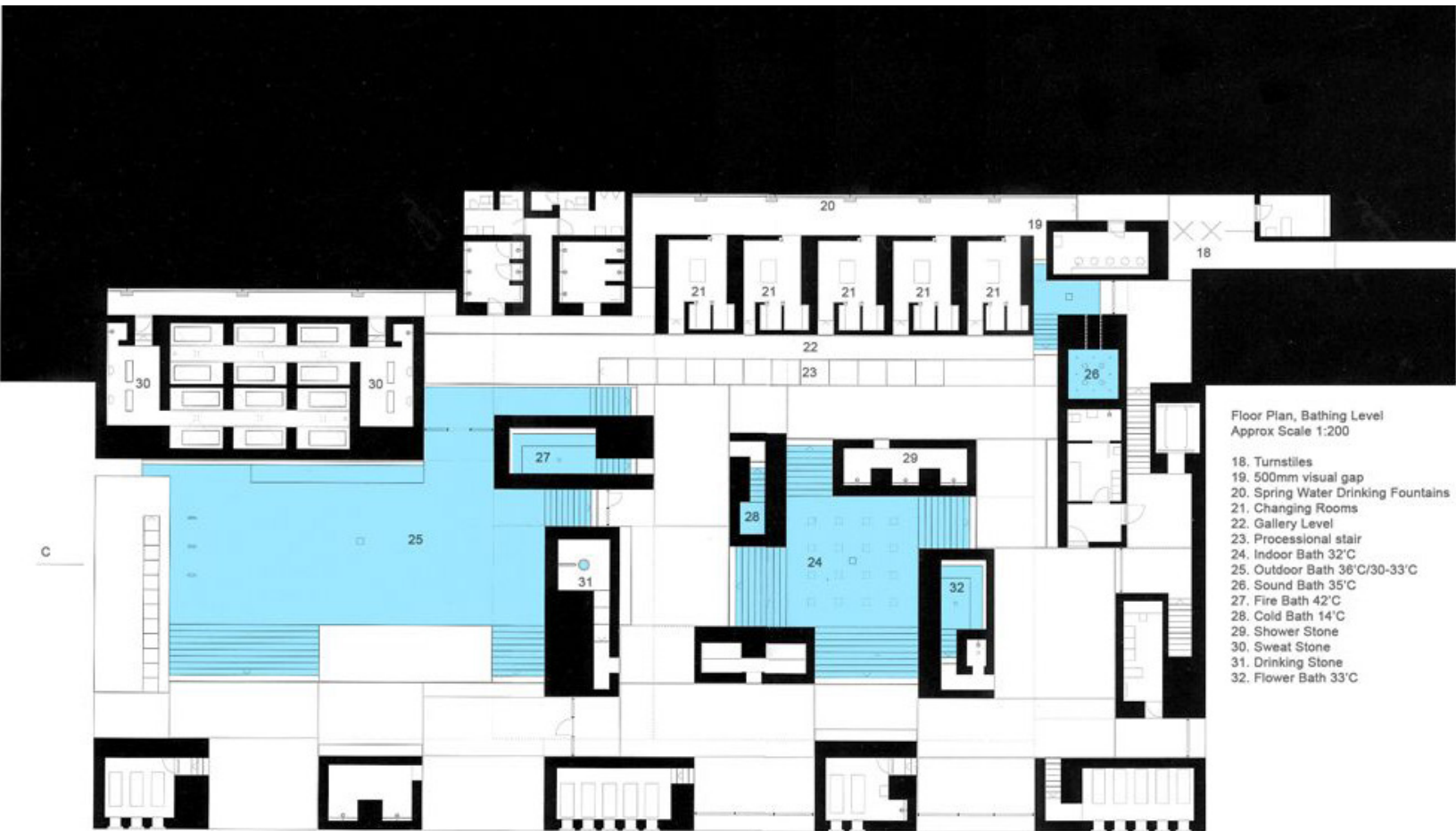
The project intended to create a cave or quarry like structure. Working with the natural surroundings the baths lay below a grass roof structure half buried into the hillside (ArchDaily, 2009).

The building embraces elements of heat, light and sound in different distributions and combinations. Each pool has a different temperature, and bathers travel between low and high temperatures. Different design treatments give different sensory experiences, including the sense of smell and the sound of echoes of the stone wall. In different bath spaces, people's skin touches the warm and moist stone, and senses changes in breathing, temperature, humidity and light (ArchDaily, 2009).

The high contrast in the space is an important factor in the sensory experience of a bather. The combination of linear walls' rhythm, light and shadow and closed and open spaces give people contrasting experiences. For bathers to fully understand the positive aspects of things, they must be allowed to understand the opposite. For example, to let bathers feel the light and open first, let them feel the darkness and closure first (ArchDaily, 2009)..

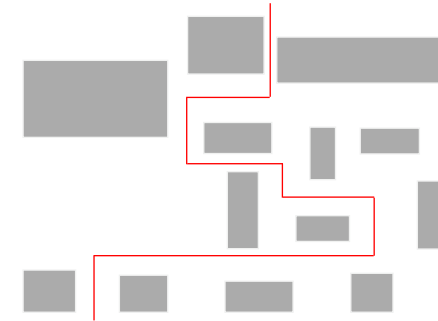
In addition to high contrast, Zumthor also emphasizes the circulation that allows people to explore space. He mentioned: "underlying the formal layout is a carefully modeled path of circulation which leads bathers to certain predetermined points but lets them explore other areas for themselves." With structural stone "tables" being so loosely assembled, the plan encourages the freedom of circulation for the bathers upon entering" (ArchDaily, 2009).



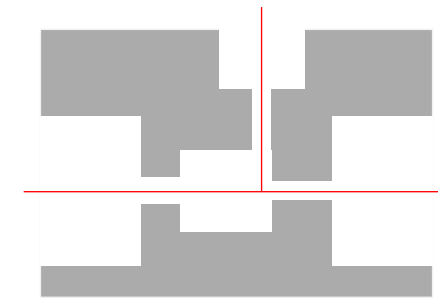


16.1 Floor Plan

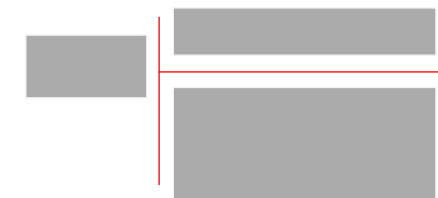
## Diagrams



The rhythmic spatial distribution, by controlling the local spatial landscape, maximizes the stimulating interest of exploration.



From a narrow space to an open space, it brings a strong sense of change, which emphasizes the concepts of release and compression in beer making.



Partial views through the space are controlled to create heightened interest.



19.1 Bathers move from dark areas to bright areas, and the high contrast of space light brings a strong contrast to people's visual experience.

## precedents

### ANTINORI WINERY

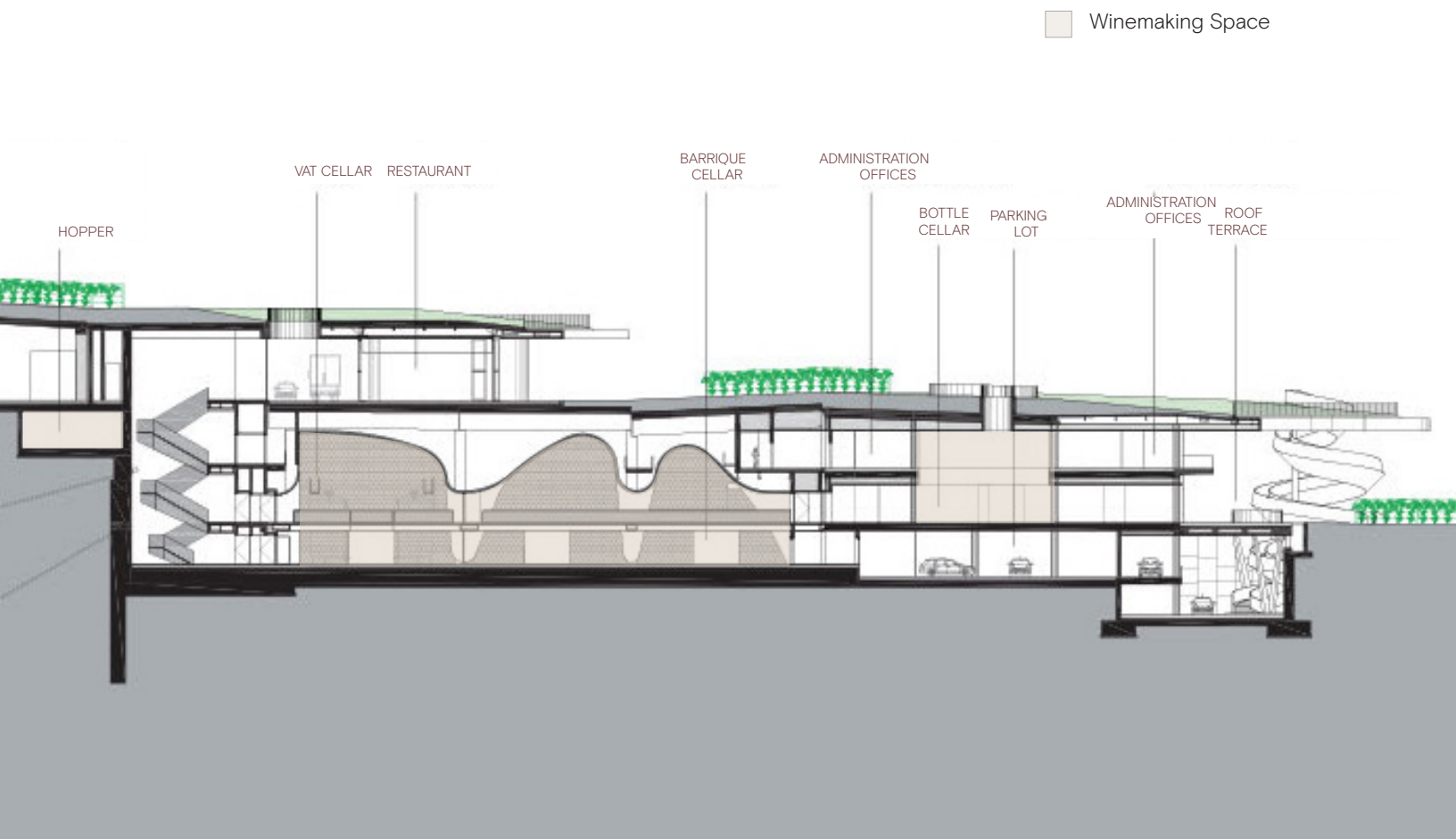
Archea Associati  
Bargino, Italy  
2012

The aim of the project is to merge the building with the rural landscape: The industrial complex seems to belong to the latter, thanks to its roof which is converted into a field of farmlands, overgrown with vines, and interrupted by two horizontal cuts along its outlines that give light to the interior and provide the building with a view of the landscape (ArchDaily, 2013). The winery's interior is divided into two main floors. The lowest standards are for storing and producing wine, while the top-level include a museum, library, auditorium and wine tasting and shopping areas (ArchDaily, 2013).

The numerous facilities are displayed, so the visitor can watch and feel part of the production activities which are kept at the same time independent from the visitor's itinerary. The design successfully integrates and segregates the production facility through elevated routes, so as visitors ascend through the complex from the terrace, they walk over and above the various production spaces (ArchDaily, 2013).



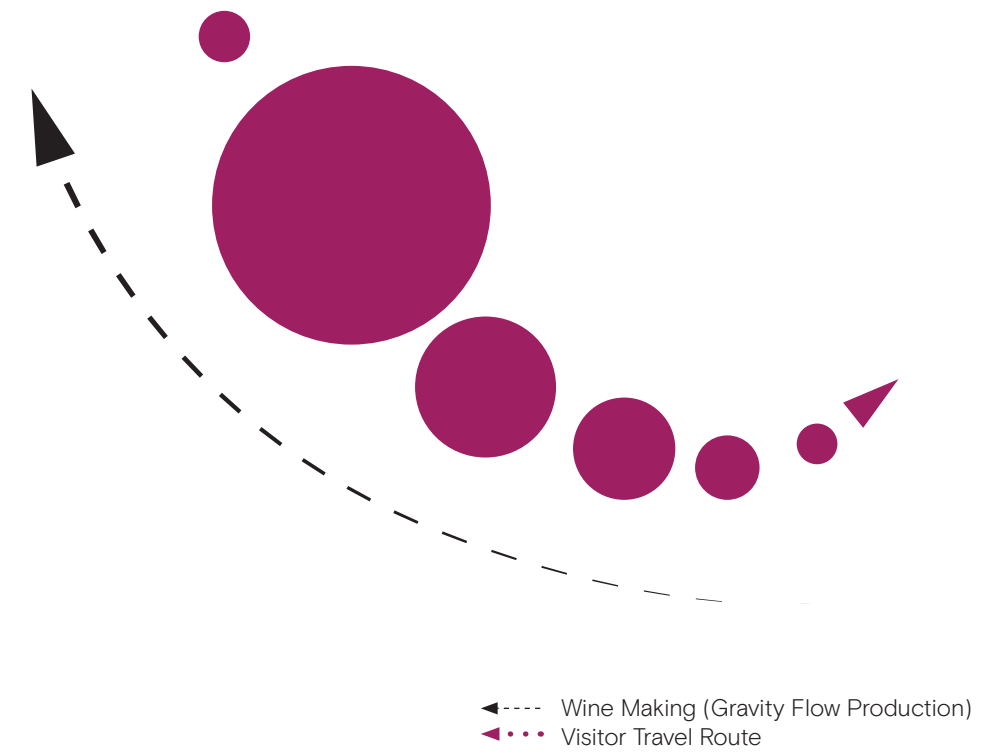
21.1 The interior of the winery is divided into two main storeys. The lowest levels are dedicated to the storage and production of wine, while the upper level contains visitor facilities that include a museum, a library, an auditorium and areas for wine tasting and shopping.



22.1 Section View

In section, the architecture reveals that the altimetry follows the production process of the grapes descending (as if gravity) from the point of arrival to the fermentation tanks to the underground barrel vault. However, the visitors who go up from the parking area to the winemaking and vines through production.

Concept Diagram



An analysis of winemaking as steps in a process was created to inform the layout of the production facility. The circles change in scale due to changes in volume and vessel size. For example, grape is smaller than fermentation tank, which is larger than a wine bottle.



24.1 These double-height cellars are arranged in three rows and are lined with terracotta on every side.



25.1 Visitors are also exposed to the production spaces in the elevated tasting room, which cantilever out into the cellars.

## precedents

### SURLY BREWING MSP / HGA

Minneapolis, MN, USA  
2013  
50,000.0 ft<sup>2</sup>

Surly Brewing MSP is designed as a destination brewery in Minneapolis's Prospect Park neighborhood. It combines brewery production and different public gathering areas. The concept of this project is based on transparency throughout, displaying the brewing process so that people can be immersed in the brewery experience within the building and garden (ArchDaily, 2015).

The Surly choreographs an entry experience to the front door of the building. Visitors are exposed to a portion of the brewing process in the "chamber" entrance with dramatic floor to ceiling walls of glass surrounding the cellar (ArchDaily, 2015).

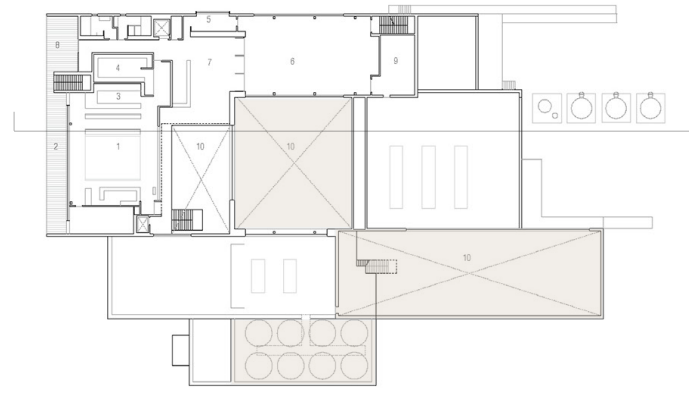
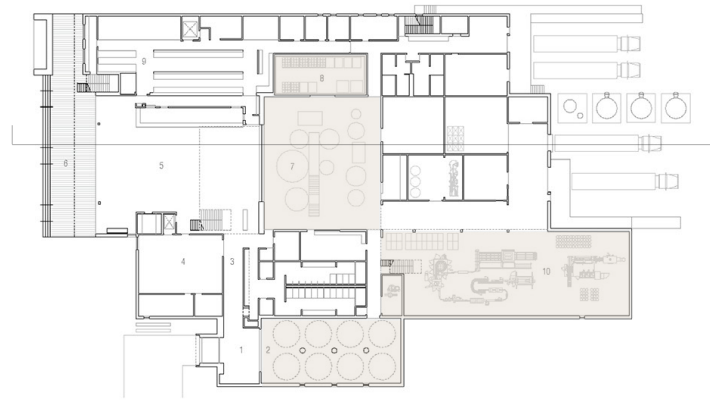
Further into the city, there is an open beer hall with long tables for drinks and meals with the windows looking at the brewing house at one end and the beer deck and gardens at the other. On the western side of the beer hall, a powered glass wall (10-40 feet) lifts and slides to allow visitors to get to the patio, beer garden and amphitheater. At the upper level, space is divided into a more formal restaurant and an event center. The event center contains a prefunctional area and a bar has views of the beer and brewing space. Besides, the restaurant and the event space on the second floor with a view of the amphitheater and the gardens below (ArchDaily, 2015).

This project provides an overview of programs of a brewery with a large green space and would help with space planning (ArchDaily, 2015).



27.1 The concept of transparency runs through the entire project, and people can still see the activities of interior from outside.

■ Beermaking Space



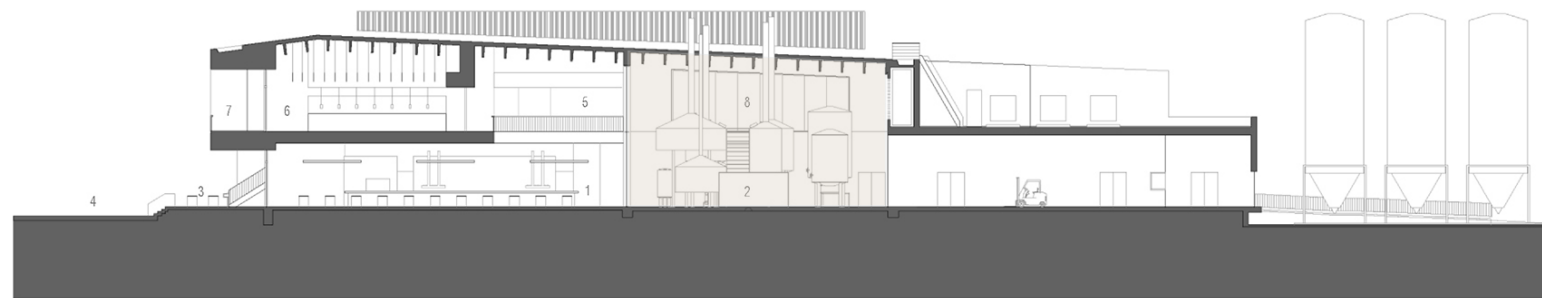
GROUND LEVEL PLAN



- |                        |                  |
|------------------------|------------------|
| 1. Entry Hall          | 6. Beer Deck     |
| 2. Fermentation Cellar | 7. Brew House    |
| 3. Gallery             | 8. Hop Cooler    |
| 4. Store               | 9. Kitchen       |
| 5. Beer Hall           | 10. Canning Hall |

UPPER LEVEL PLAN

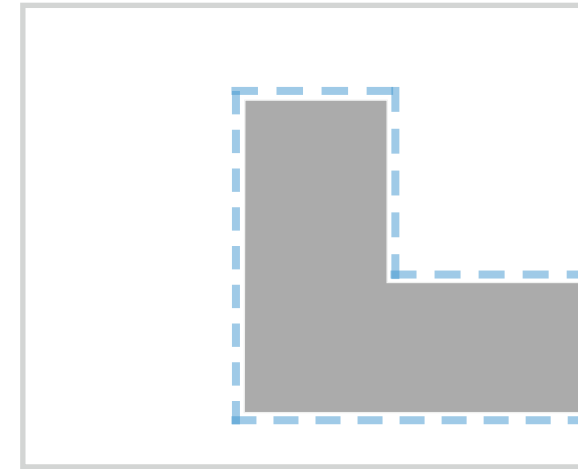
- |                    |                   |
|--------------------|-------------------|
| 1. Restaurant      | 6. Shield Hall    |
| 2. Restaurant Deck | 7. Pre-Function   |
| 3. Display Kitchen | 8. Event Deck     |
| 4. Kitchen         | 9. Storage        |
| 5. Catering Prep   | 10. Open to Below |



BUILDING LONGITUDINAL SECTION

- |               |                |                       |                      |
|---------------|----------------|-----------------------|----------------------|
| 1. Beer Hall  | 3. Beer Deck   | 5. Event Pre-Function | 7. Deck              |
| 2. Brew House | 4. Beer Garden | 6. Restaurant         | 8. Event Hall Beyond |

Diagrams



- Visible
- Service Area
- Production Area





28.1 The square choreographs an entry experience to the front door of the building. Visitors will be exposed to a portion of the brewing process in the “chamber” entrance with dramatic walls of glass floor to ceiling surrounding the cellar.



29.1 The event center contains a prefunctional area and bar with views of the beer and brewing space.

## existing building

### INTERMEDIATE TERMINAL WAREHOUSE NO.3

3101 Wharf St, Richmond, VA 23223  
Built 1937  
30,652 SF

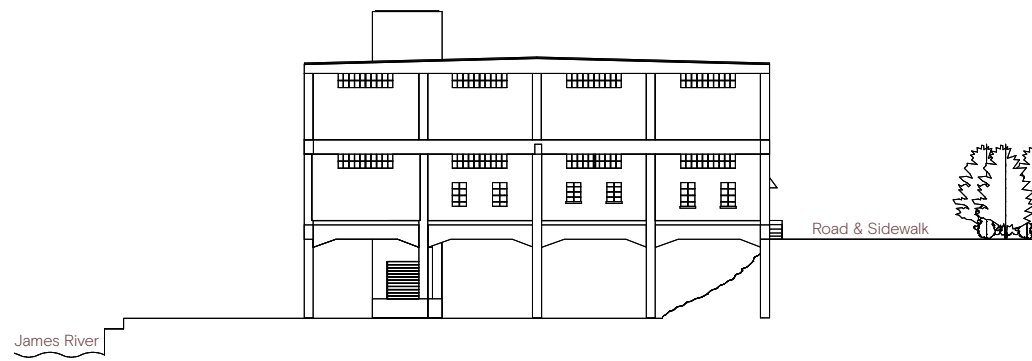
The building was once the storage place for raw sugar for cigarettes, which is a rare resource associated with Richmond's important history as a thriving port on the James River. The city of Richmond, Virginia was founded at its location because of its port, and grew and thrived as a city since its port made possible the economical transport of goods. The building has become an abandoned haven for homeless people since 2007.

Selected due to:

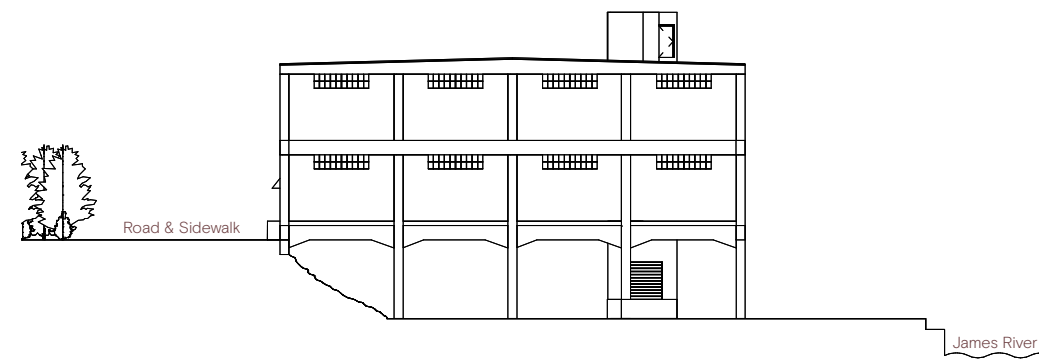
- Space is large enough to meet the program requirements
- Close to the James River which contains the best beer-water in the country
- The James River Steam Brewery, the first large scale brewery in Richmond, was built in the south part of this building in 1866
- Open space for parking nearby and close to public transportation hubs



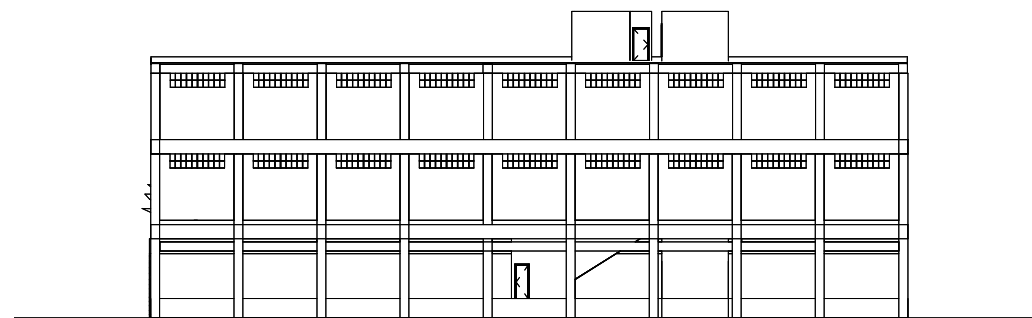
33.1 View from Plaza



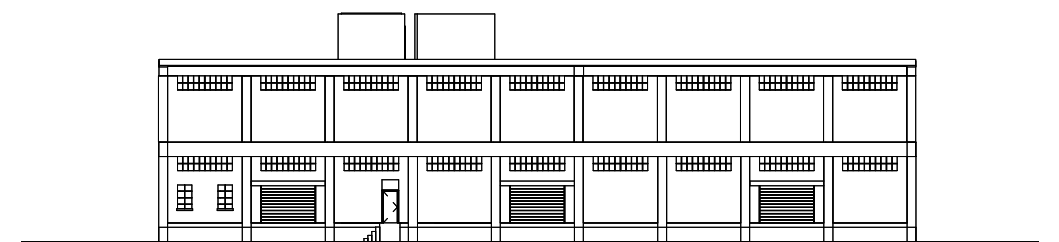
East Elevation  
1" = 30'-0"



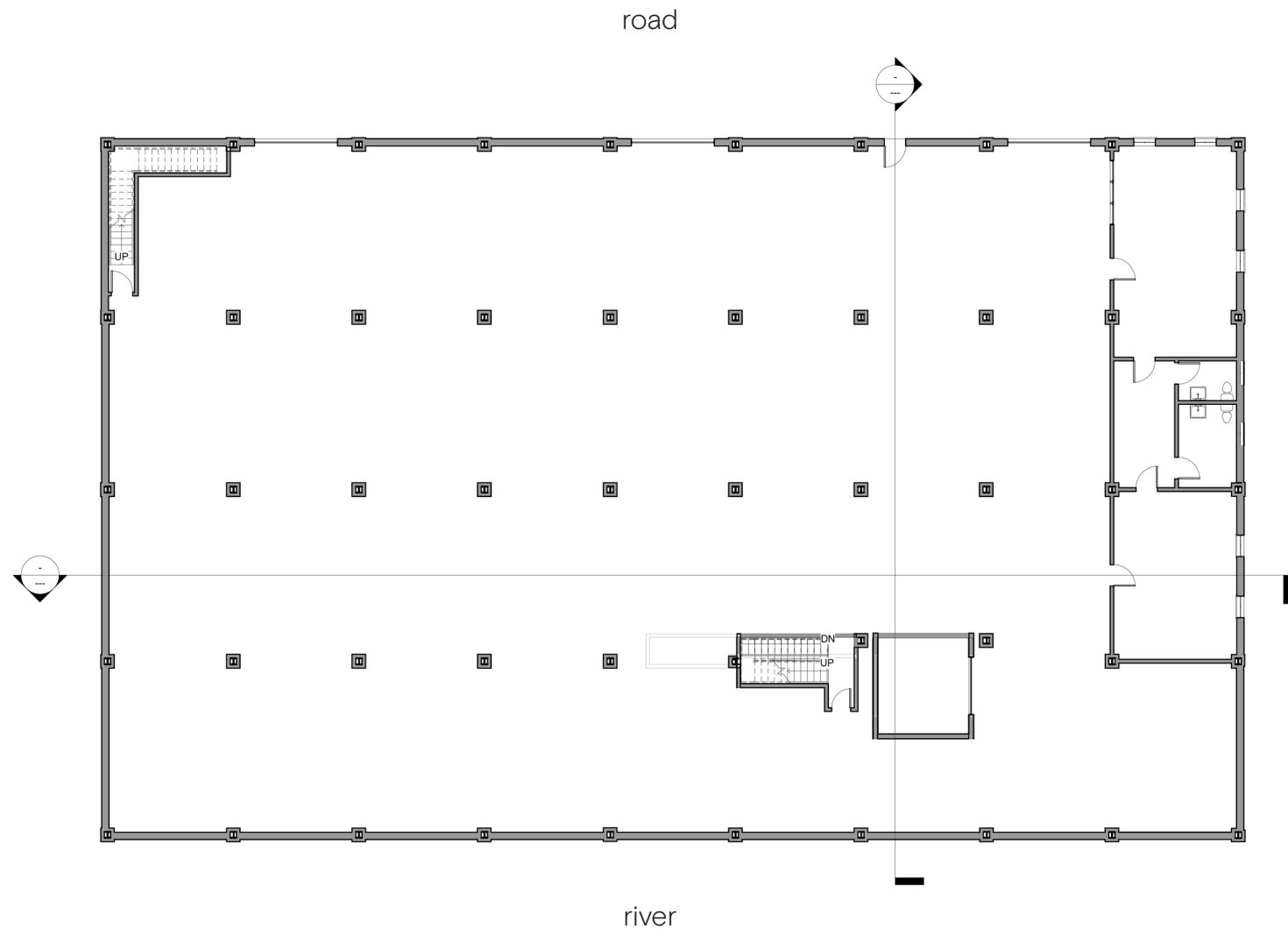
West Elevation  
1" = 30'-0"



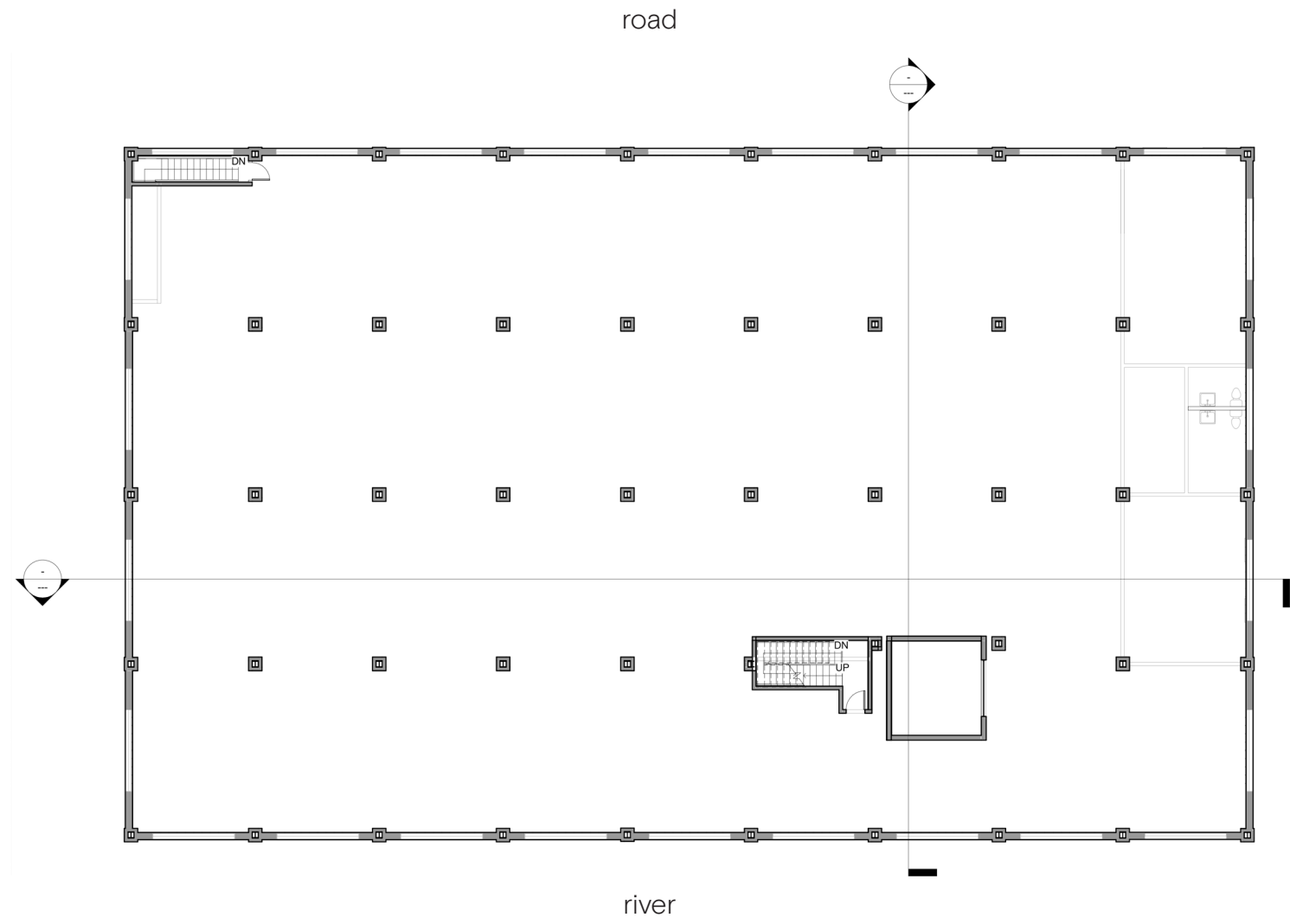
South Elevation  
1" = 30'-0"



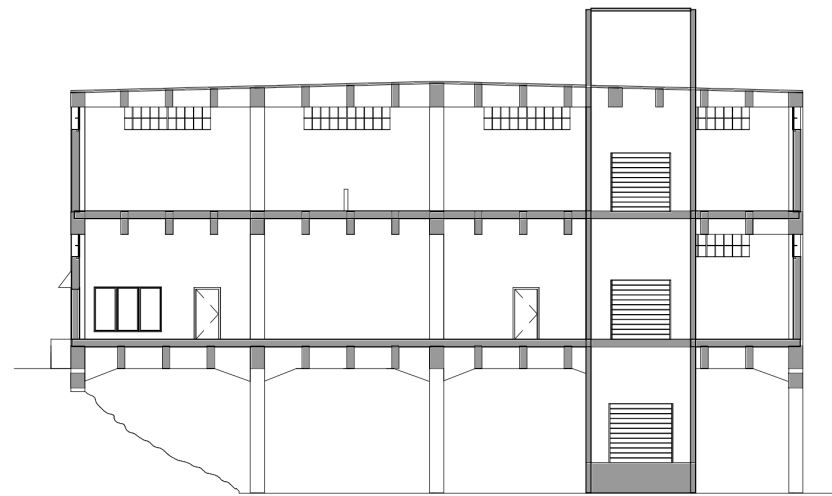
North Elevation  
1" = 30'-0"



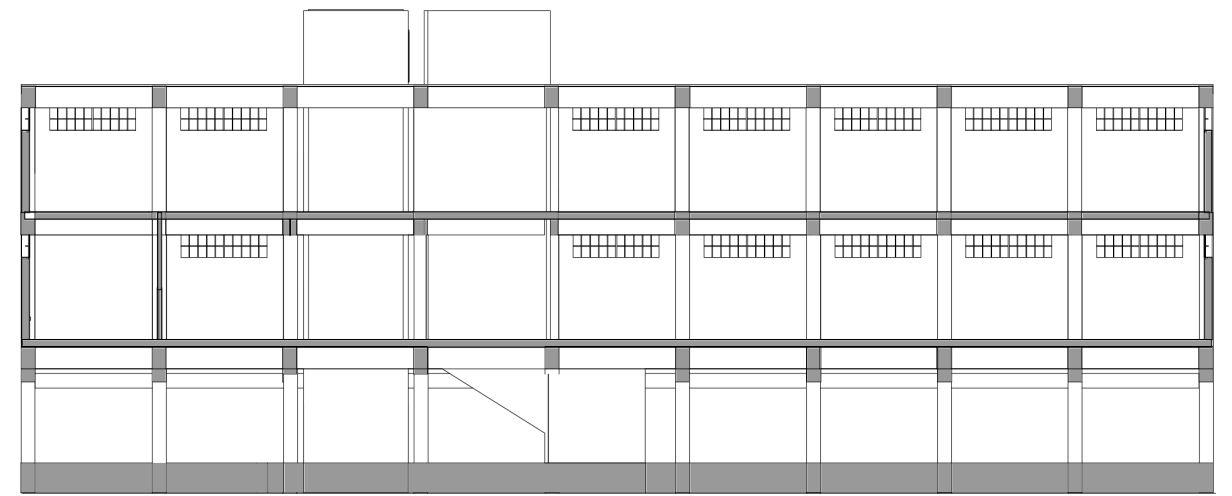
Floor Plan- Main Floor  
 3/64" = 1'-0"



Floor Plan- Second Floor  
 3/64" = 1'-0"



Section A  
3/64" = 1'-0"



Section B  
3/64" = 1'-0"

## neighborhood history

### A. SHOCKOE BOTTOM

The neighborhood was once the center of Richmond's commerce during the 19th century and began to decline in the 1920s. Now more vacant buildings in this neighborhood have been repurposed with residential dwellings and new ones have been built.

### B. JAMES RIVER

The river acts as an edge, separating Shockoe Bottom from the Manchester neighborhood, and also a water path, connecting Richmond to other cities. Because of its port, Richmond was built at its site. Richmond has grown stronger in the city of James Falls because its ports make economic cargo transportation possible (Pool, 2008).

### C. JAMES RIVER STEAM BREWERY

The James River Steam Brewery was located in the south part of the building. It was once operated by David G. Yuengling, Jr., who attempted to bring German beer to the people of the South. The recent recognition of Richmond's beer scene is putting the spotlight on this brewery that dates back 150 years (Gorman, 2016).



41.1 James River



41.2 James River Steam Brewery

## building history

### A. LOCATION

The building is an iconic landmark associated with Richmond's vital port on the James River. It sits along the James River beside Main Street and stretches on pillars over Dock Street and is located between Rockett's Landing and the City Dock (Pool, 2008).

### B. HISTORY

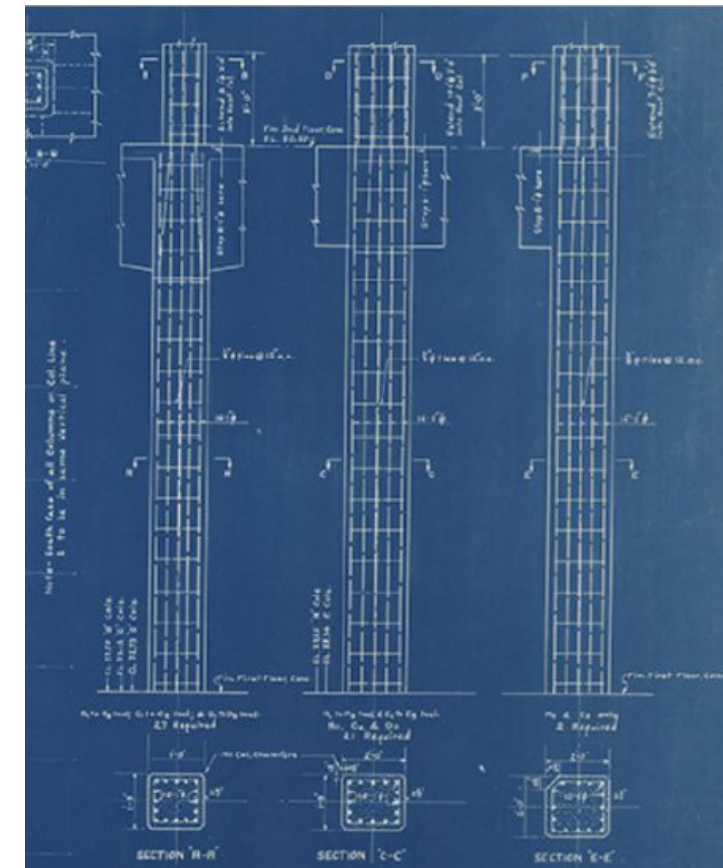
It was built in 1937 and used to be the warehouse for commodities imported (such as sugar from Cuba) and exported (such as tobacco) (Pool, 2008). It also linked Richmond with Havana harbor and Pennsylvania chocolate makers. In 1939, 1.5 million tons of sugar passed through the warehouse, some of which were transferred to the railroad and transported to Hershey, Pennsylvania for candy. Now it has become a haven for homeless people since 2007.

### C. STRUCTURE

The building is built with steel-reinforced concrete. Some plans indicate that reinforcing steel bars was used in all concrete forms, including the concrete piers and flooring (Pool, 2008).



43.1 Intermediate Terminal #3 in 1944



43.2 Detailed Blueprint Plans

photographic studies



Northeast



Southeast

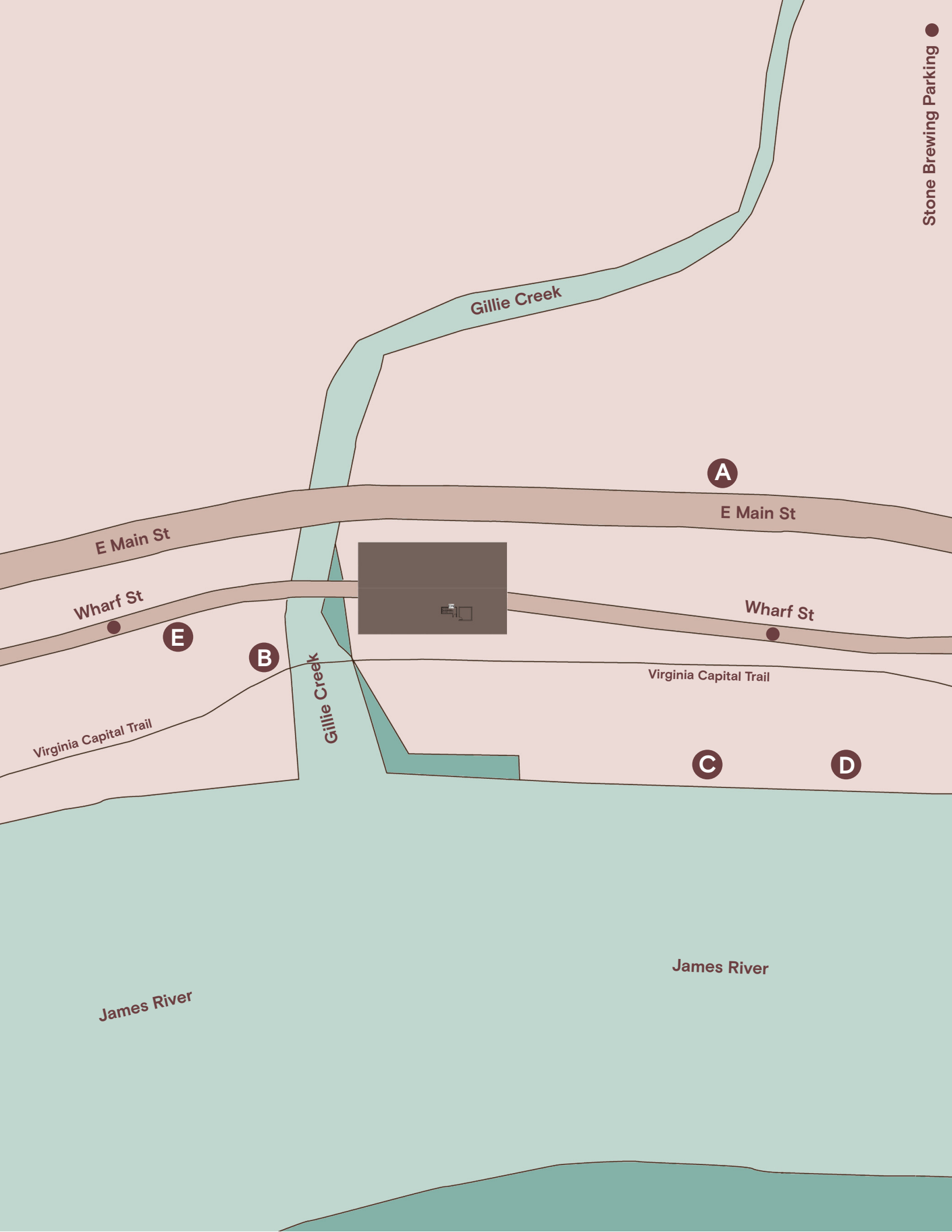


Southwest



Northwest





View A - From Bus Station



View B - From Bridge



Aerial View (Google)



South View D



View C - From Plaza

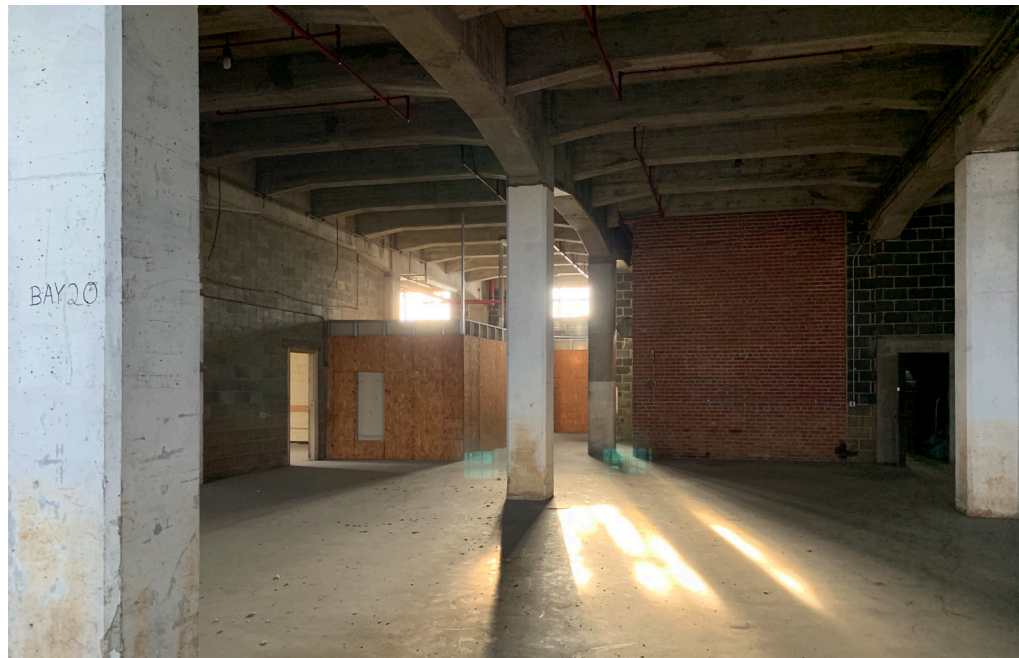


West View E

First Floor



West View From Entrance



South View From Entrance

Second Floor



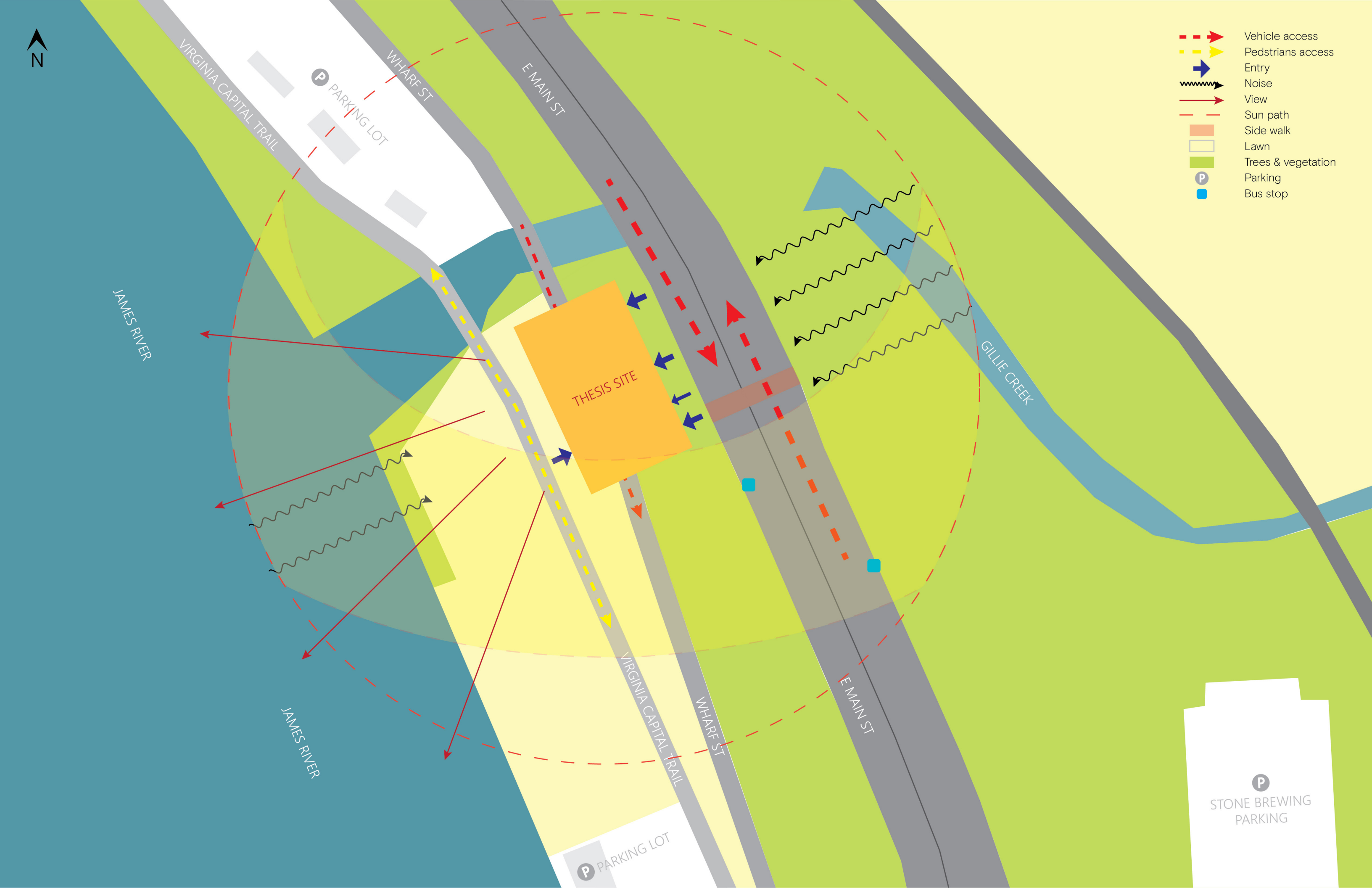
North View



Elevator



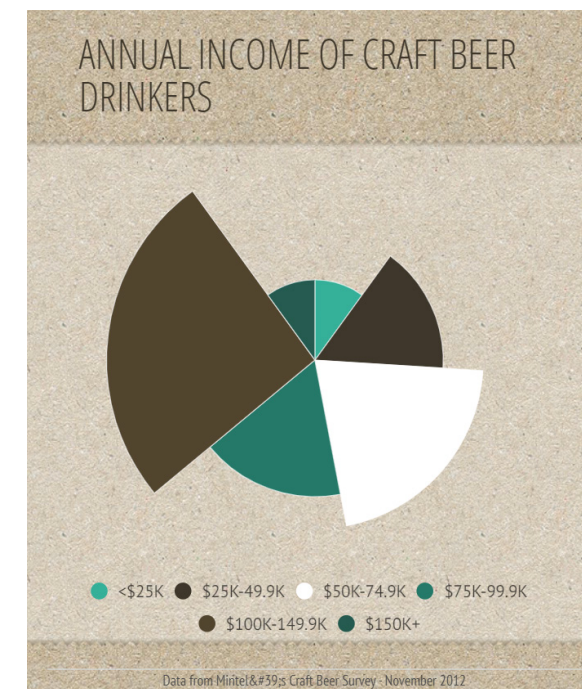
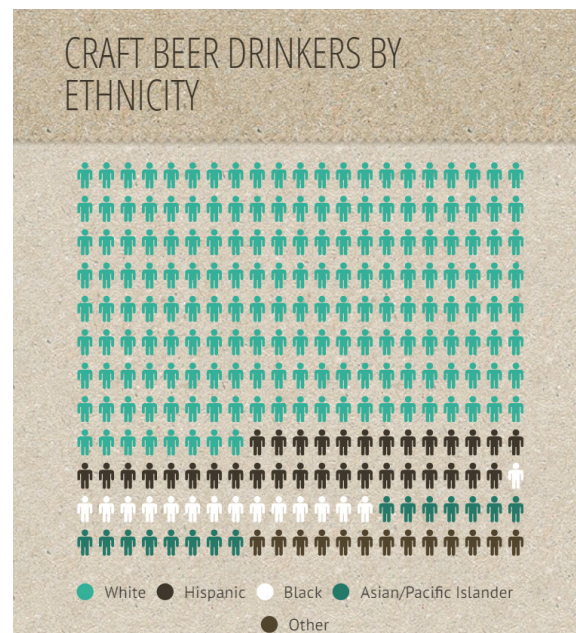
- Vehicle access
- Pedstrians access
- Entry
- Noise
- View
- Sun path
- Side walk
- Lawn
- Trees & vegetation
- Parking
- Bus stop



**P**  
STONE BREWING  
PARKING

## craft beer survey

Data from Mintel's Craft Beer Survey  
- November 2012



According to the infographic, most of the people who drink craft beer are white men and their annual income is mostly between 100K-149.9K.

**site visit**

ARDENT CRAFT ALES

3200 W Leigh St, Richmond, VA 23230  
Area: 4,368 ft<sup>2</sup>

Furniture Type

The taproom is divided into outdoor and indoor spaces with different types of tables and chairs.

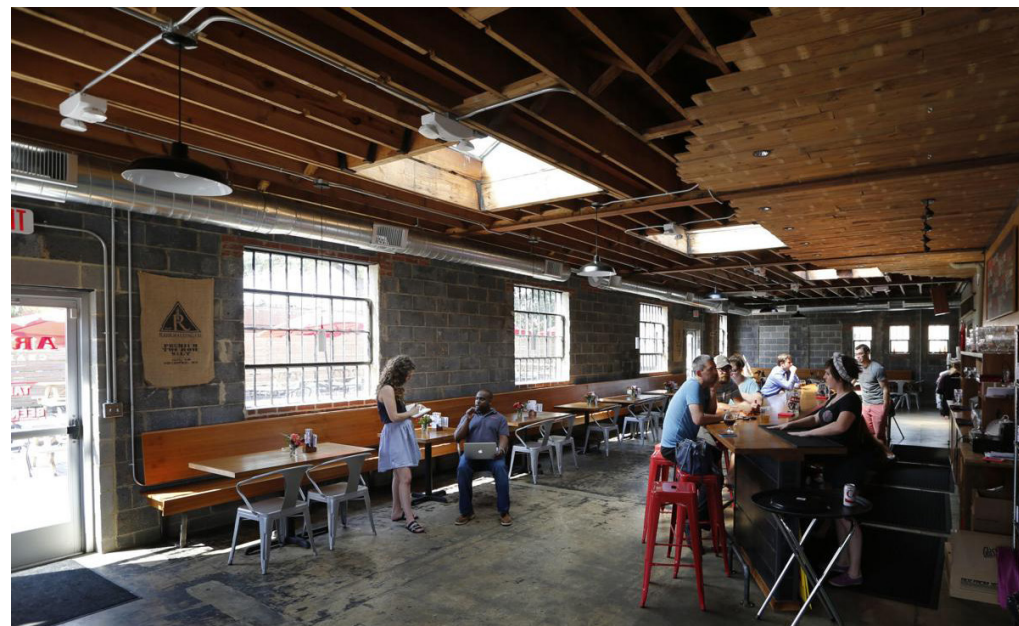
Special ff&e

Beers are served over a counter.

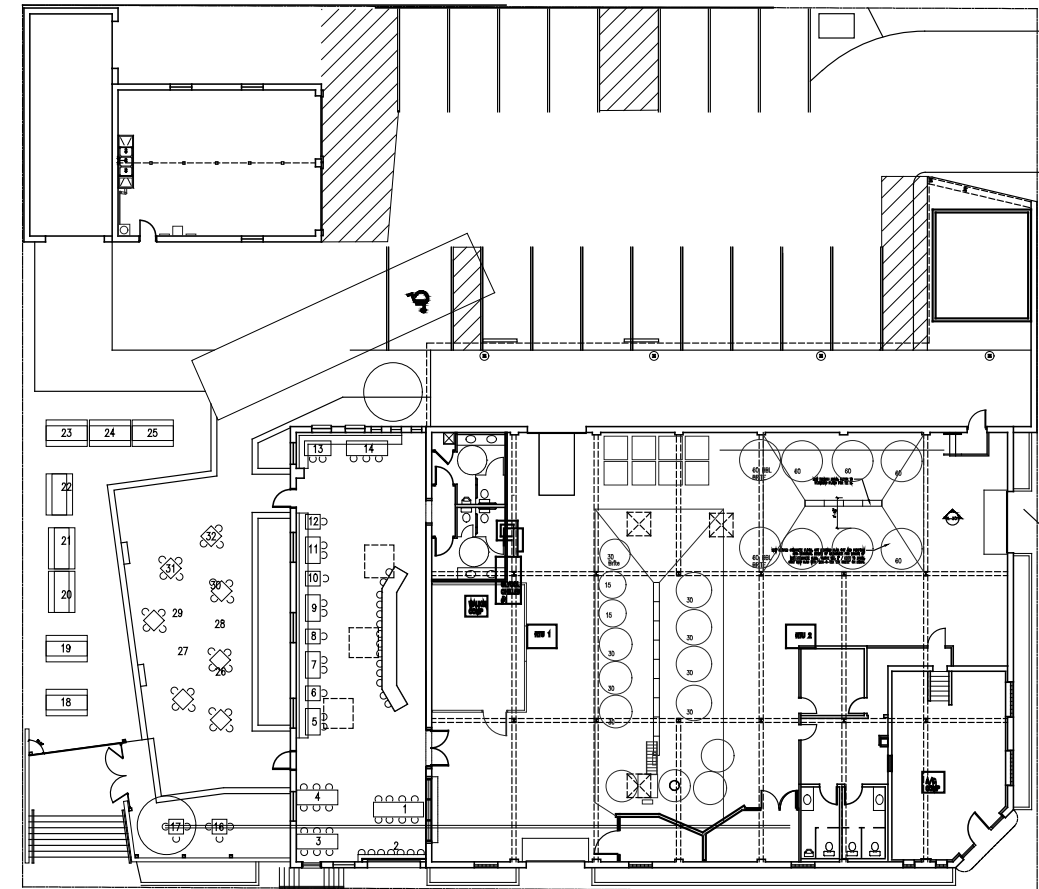
Adjacency- Walkin Comp/ Brewery Space

Walk-in Comp - It is the place to compensate for beer and connect taps of the taproom.

Brewery Space - It guarantees beer supply of tap-room which also offers an open view into the brewery.



Taproom



Floor Plan



Taproom look to bar



Brewery



Taproom look to brewery



Beer Graden

**site visit**

**HARDYWOOD WEST CREEK**

820 Sanctuary Trail Dr, Richmond, VA 23238  
Area: 60,000 ft2

The West Creek taproom provides views of the brewhouse, fermentation hall, quality assurance lab, ingredient processing area, and packaging hall. There are shuffleboard, arcade games, board games and two regulated bocce courts to entertain the entire family,



Storefront



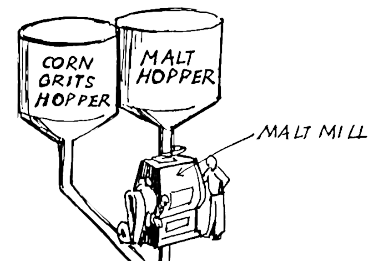
Catwalk look to Taproom



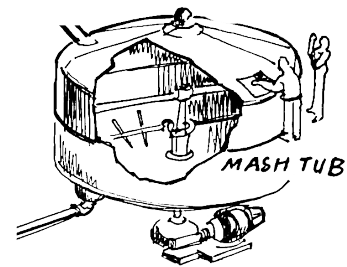
Catwalk look to Stage



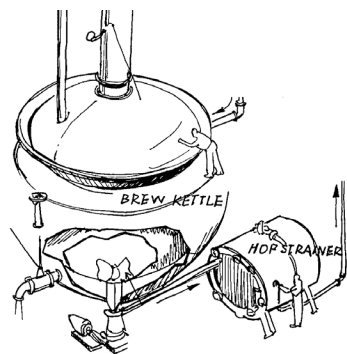
brewing process



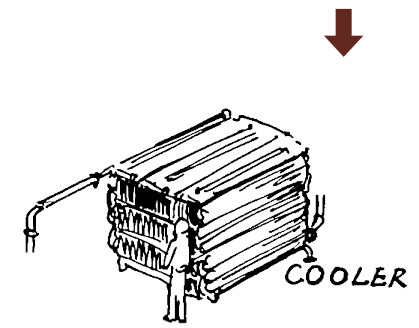
milling



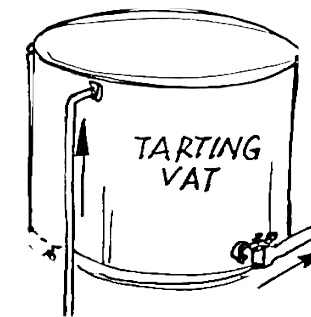
mashing



boiling



cooling



fermentation

### **project statement**

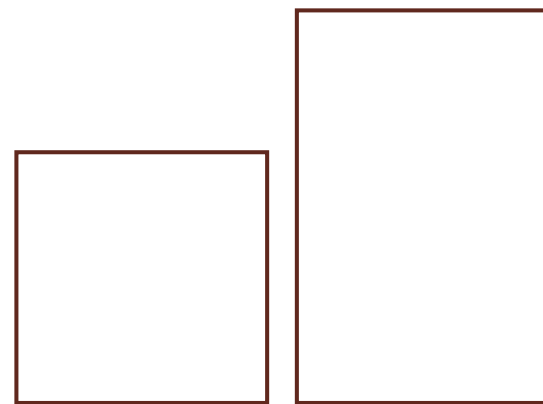
The project is to create a maker space of craft beer, which integrates education, production and entertainment. People can know about the local craft beer history, have a great tasting experience and participate in the brewing process through vision, smell, taste and sound.

### **concept statement**

The project celebrates beer craft. The brewing process includes malting, mashing, boiling, cooling and fermentation, which is a process of repeated compression and release, and also a strong sense perception. The process of transformation informs the strategies within the project to heighten the sensory qualities of spaces.

## diagrams

High contrast brings people a strong sense of change. The combination of light and shadow, closed and open, hot and cold give people great contrast experiences.



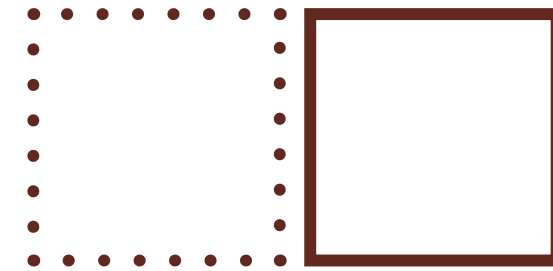
ceiling height



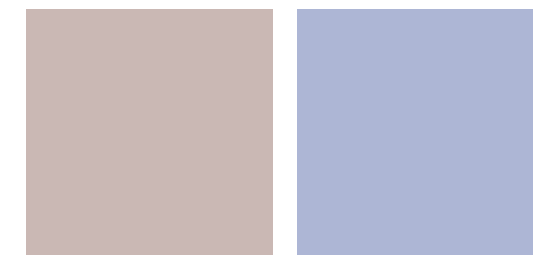
expansion & contraction



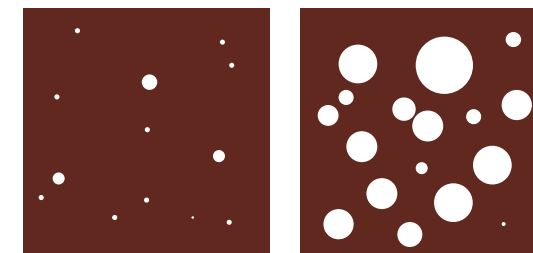
bright & dark



visible & invisible



warm & cold



quiet & noisy

## code summary

### GROSS AREA

Main Floor: 15,326 SF  
Second Floor: 15,326 SF  
Total: 30,652 SF

NET AREA: 18,400 SF  
OCCUPANT LOAD: 449

assuming 50% female, 50% male, occupant load used to determine necessary plumbing fixtures

### PLUMBING REQUIREMENTS

#### Toilets

female: 1 per 75 (IBC)  
224 females: 3 fixtures  
male: 1 per 75 (IBC)  
224 males: 3 fixtures

#### Water Fountains

1 per 500 (IBC)  
449 occupants: 1 fountain

,

### RECEPTION

A place for welcoming and providing space maps and visit information. It aids in the orientation of the occupants and facilitates entry into the spaces beyond.

Occupancy Type: A-3  
Max. Occupancy: 30  
Area: 900

### BEER ACADEMY

A time tunnel demonstrating knowledge of beer and history of Richmond breweries. A variety of multimedia interactions encourage people to learn while playing. After learning the basics and history, you will be awarded a certification and qualified to access to the next space.

Occupancy Type: A-3  
Max. Occupancy: 40  
Area: 1200

### TAPROOM

A taproom for challenging senses and enjoying beer. Different types of beer are displayed to people through senses of vision, taste, hearing and touch through images, interactive devices, music, material and so on. After looking for a favorite beer through a multi-sensory experience, people could sit down to enjoy a beer.

Occupancy Type: A-2  
Max. Occupancy: 160  
Area: 2,400

### CONNOISSEUR ROOM

A private connoisseur space for tasting with a personal guide. People could reserve a private connoisseur room for a tasting experience like no other. The expert staff will take them on a journey leading right to the heart of the beer. Exquisite space and private professional guidance give beer lovers an unforgettable experience.

Occupancy Type: A-2  
Max. Occupancy: 32  
Area: 1,600

### QUALITY ASSURANCE LAB

A space to ensure quality and consistency of beer.

Occupancy Type: B  
Max. Occupancy: 12  
Area: 600

### COLD STORAGE ROOM

A space for storing keg, hop and serving vessels with low temperature.

Occupancy Type: S-2  
Max. Occupancy: 16  
Area: 800

#### DRY STORAGE ROOM

A space for storing grain and malt.

Occupancy Type: S-2

Max. Occupancy: 20

Area: 1,000

#### BREWERY

A space for customizing your own beer. This is a space where people could learn and participate in the brewing process.

Occupancy Type: S-2

Max. Occupancy: 58

Area: 7,000

#### PACKAGING ROOM

A Space for people to participate in the design of beer containers and packaging design.

Occupancy Type: S-2

Max. Occupancy: 5

Area: 600

#### MULTI-PURPOSE SPACE

Flexible space for lectures, presentations, parties and collaborative meetings.

Occupancy Type: E

Max. Occupancy: 50

Area: 1,000

#### ADMINISTRATIVE OFFICES

A space for executive staff to conduct research and development for the brewery and hold private meetings.

Occupancy Type: B

Max. Occupancy: 16

Area: 1,000

#### STAFF ROOM

A space for staff to take breaks, have lunch and store personal items.

Occupancy Type: S-2

Max. Occupancy: 10

Area: 300

#### BEER GARDEN

A variety of unique events and festivals that unite the community and support local artists, makers, and musicians will happen in rooftop.

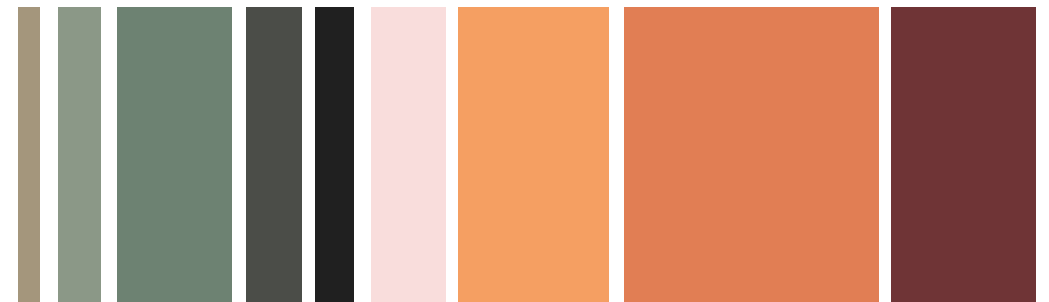
Location: Rooftop

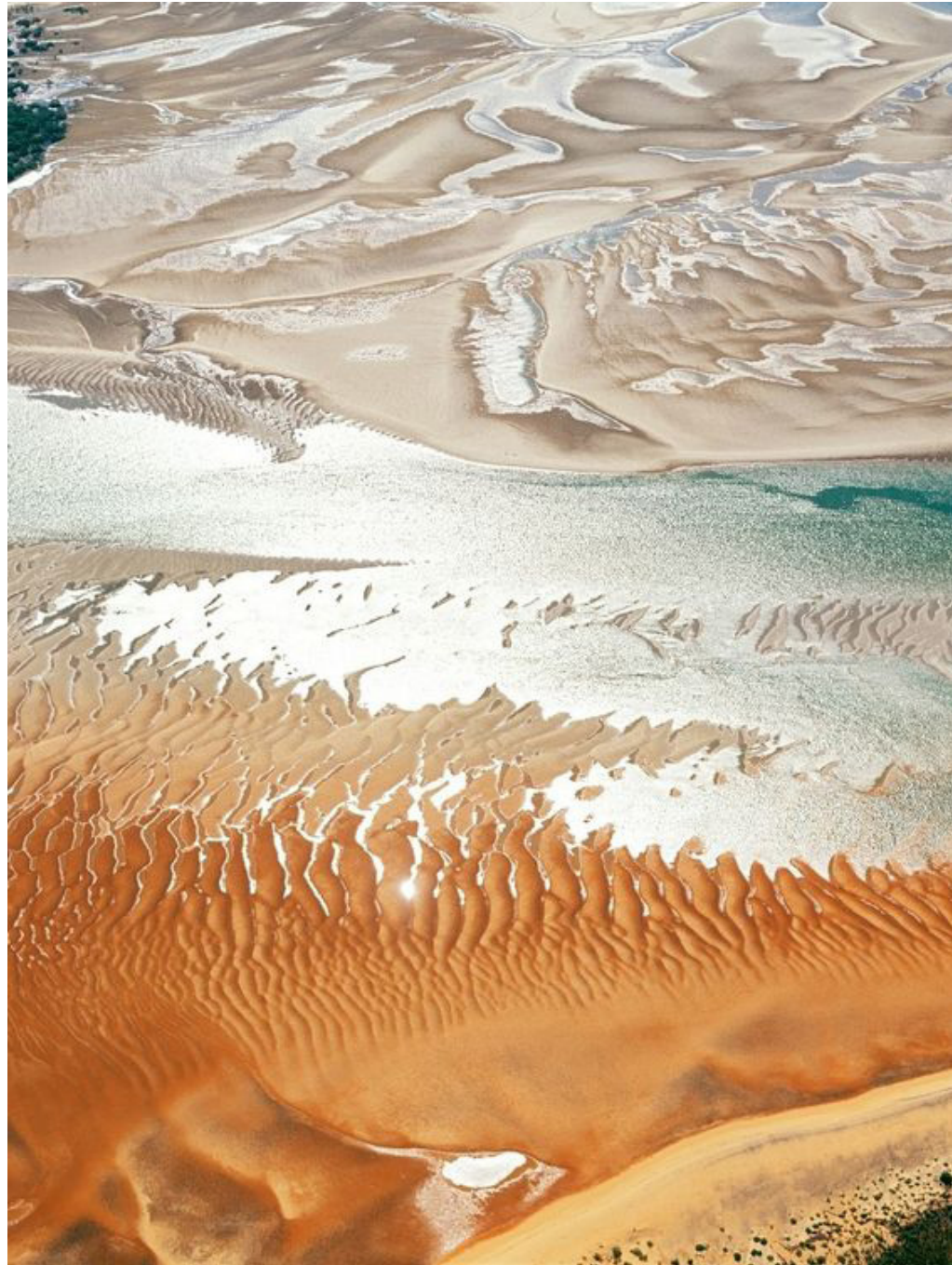
Area: 4,500

color expansion



Photograph by Wild Wonders of Europe



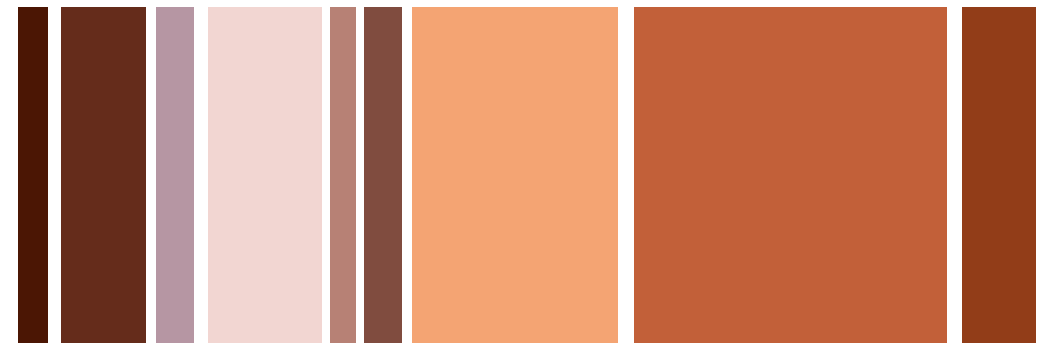
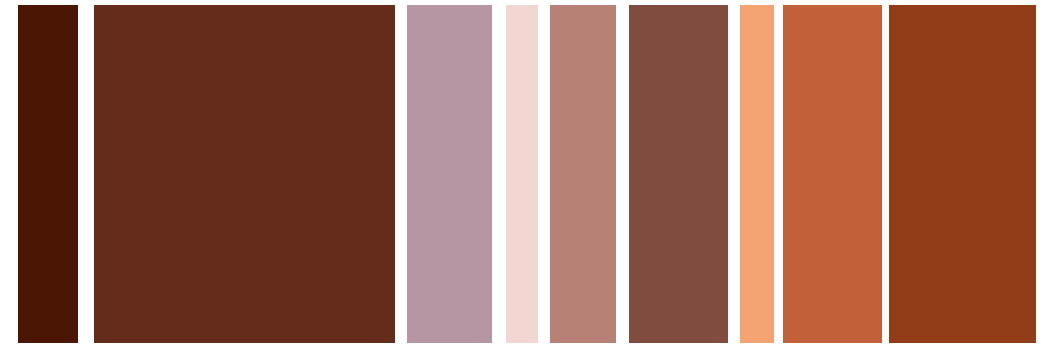
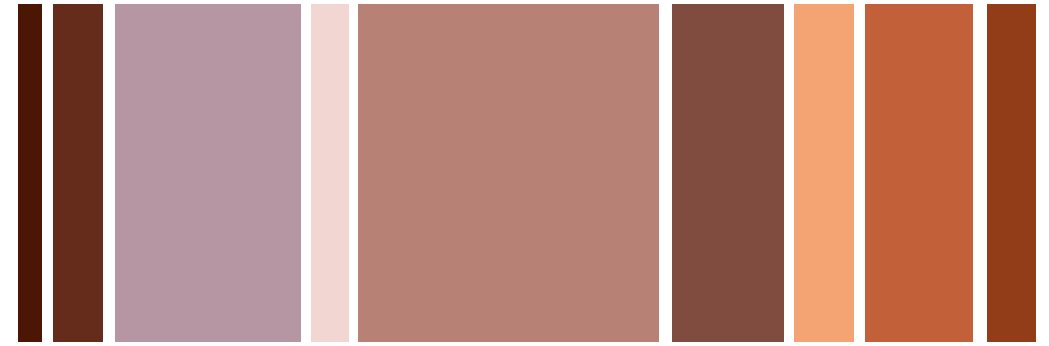
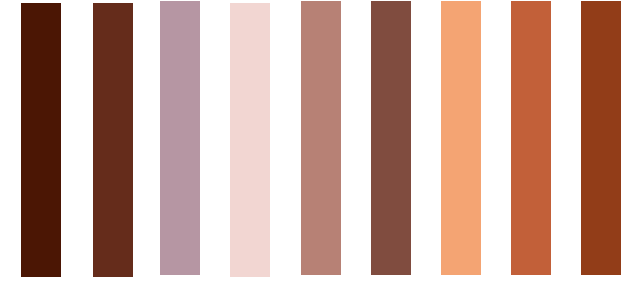


Photograph by Richard Woldendorp



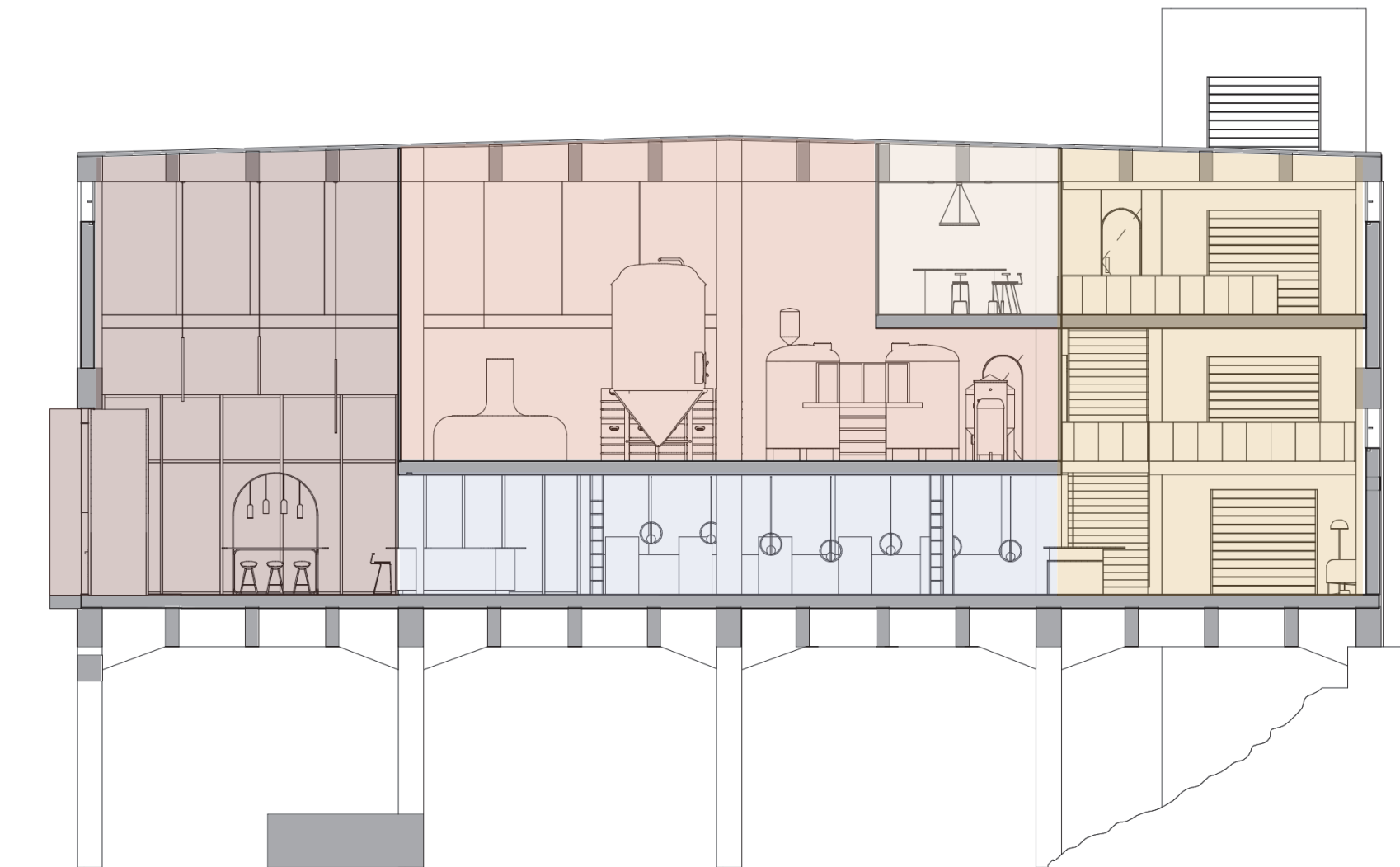
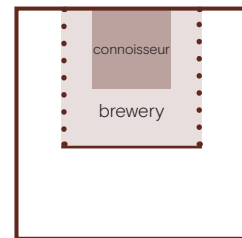
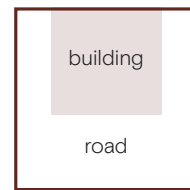


Photograph by Ryan Heffron



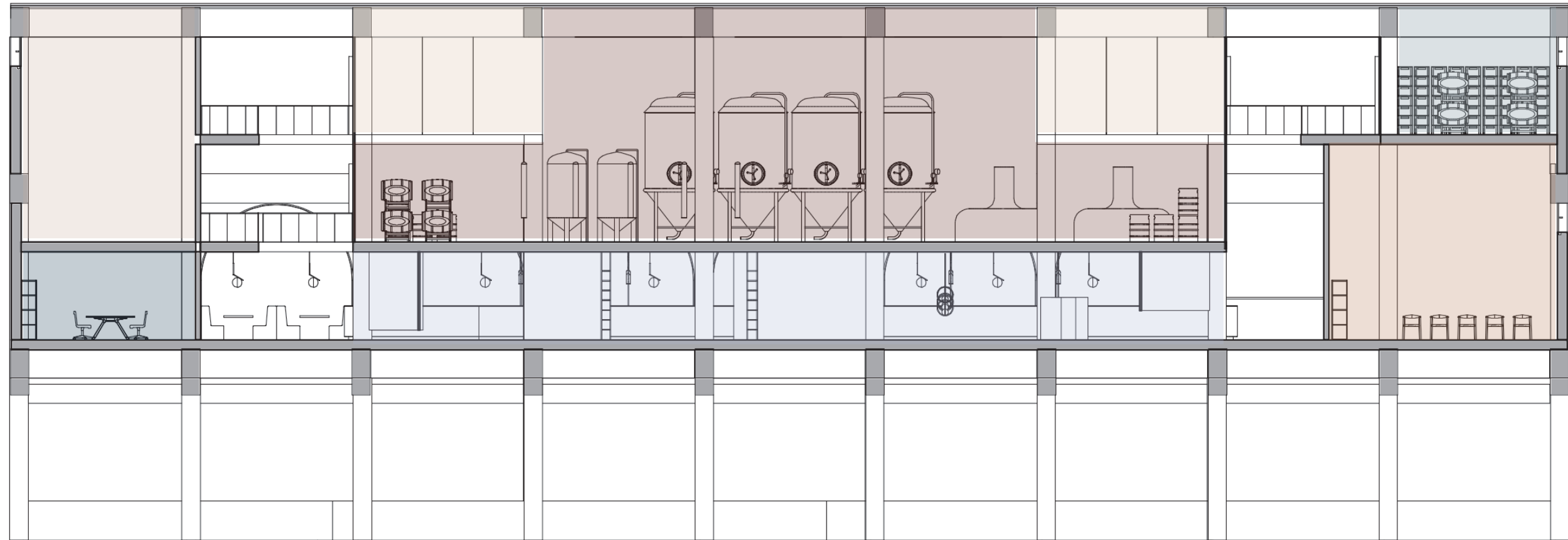


seccions



- reception
- beer academy
- taproom
- brewery
- connoisseur room

seccions



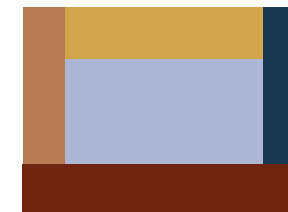
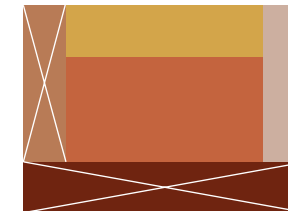
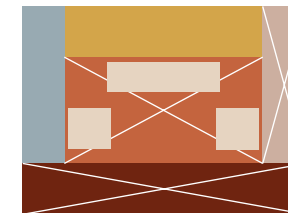
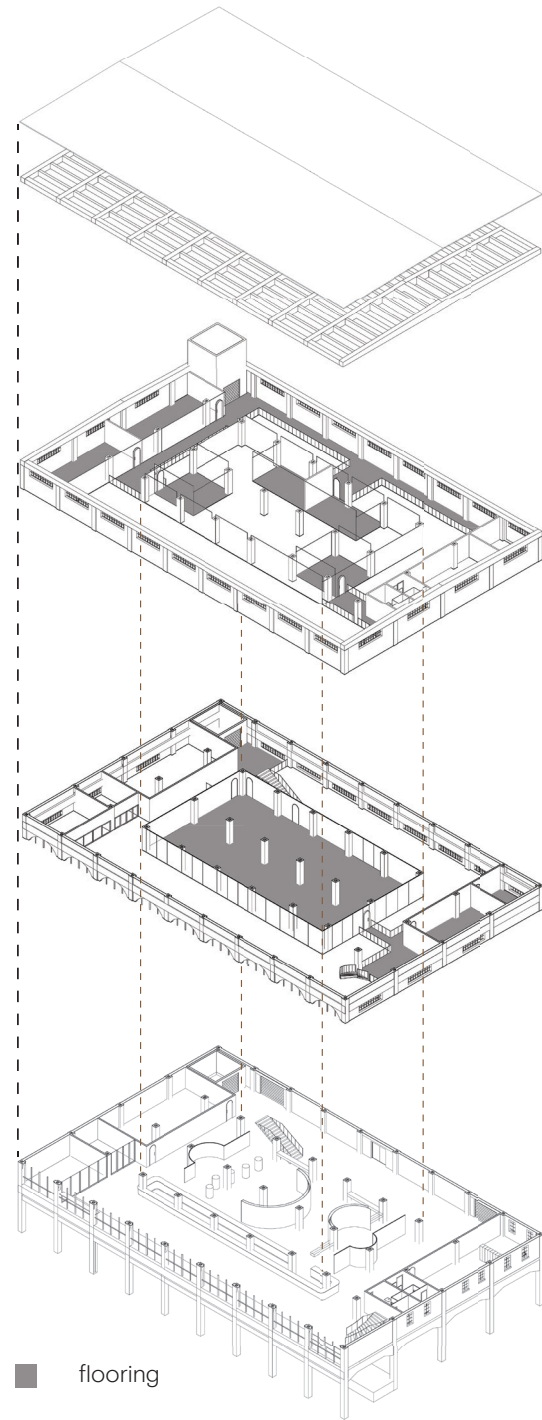
- beer academy
- brewery
- connoisseur room
- multi-purpose space
- packaging room
- administration office
- storage

axon

3rd floor

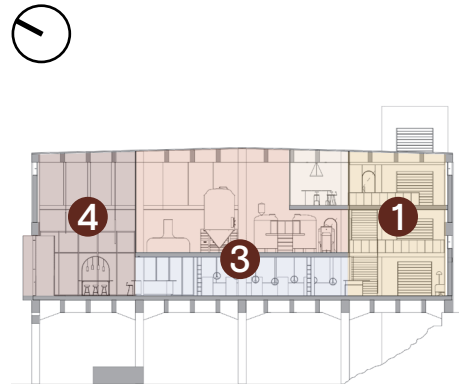
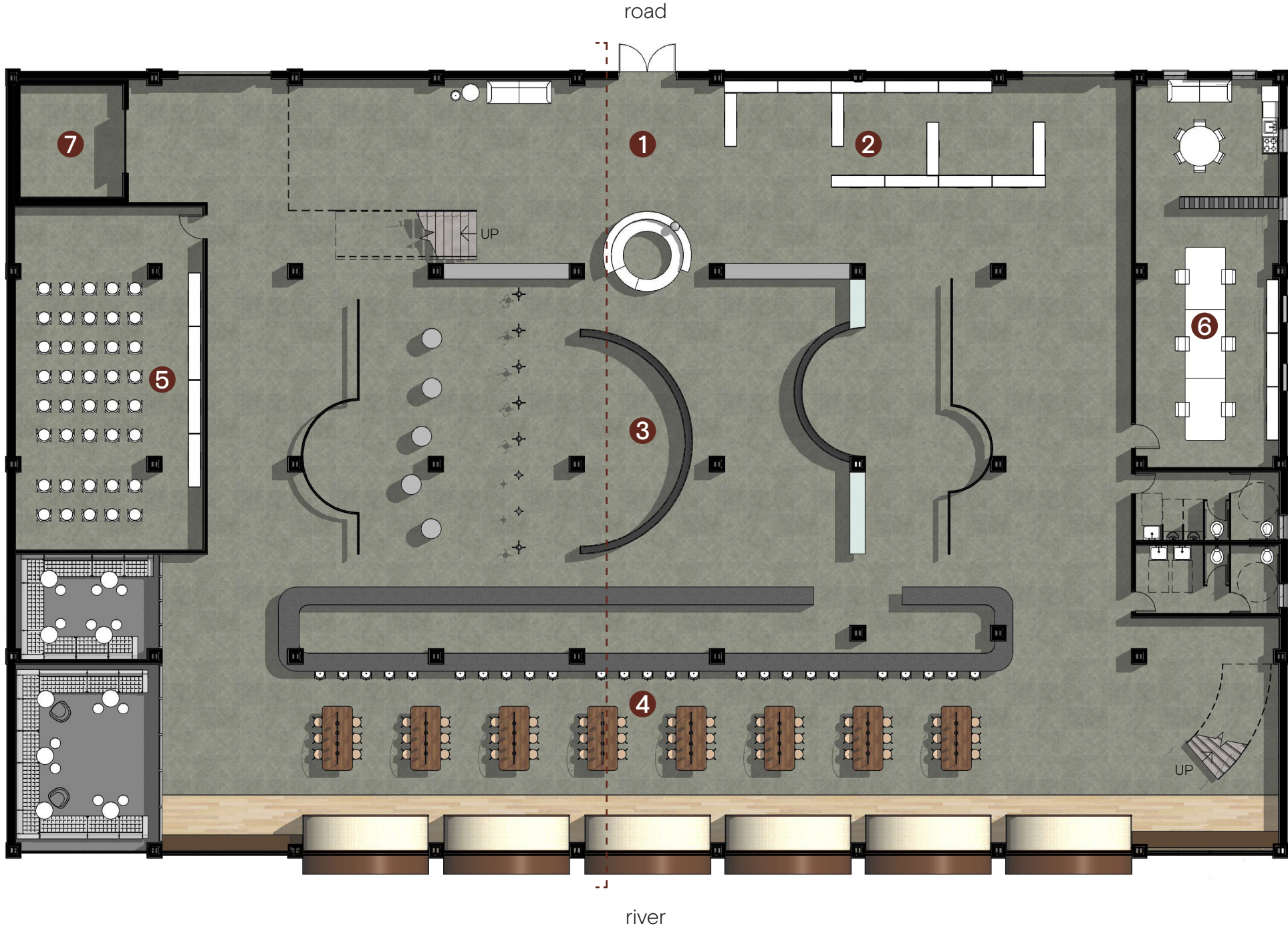
2nd floor

1st floor



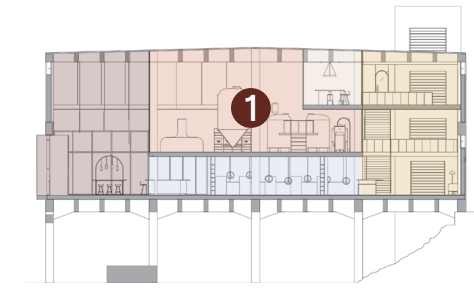
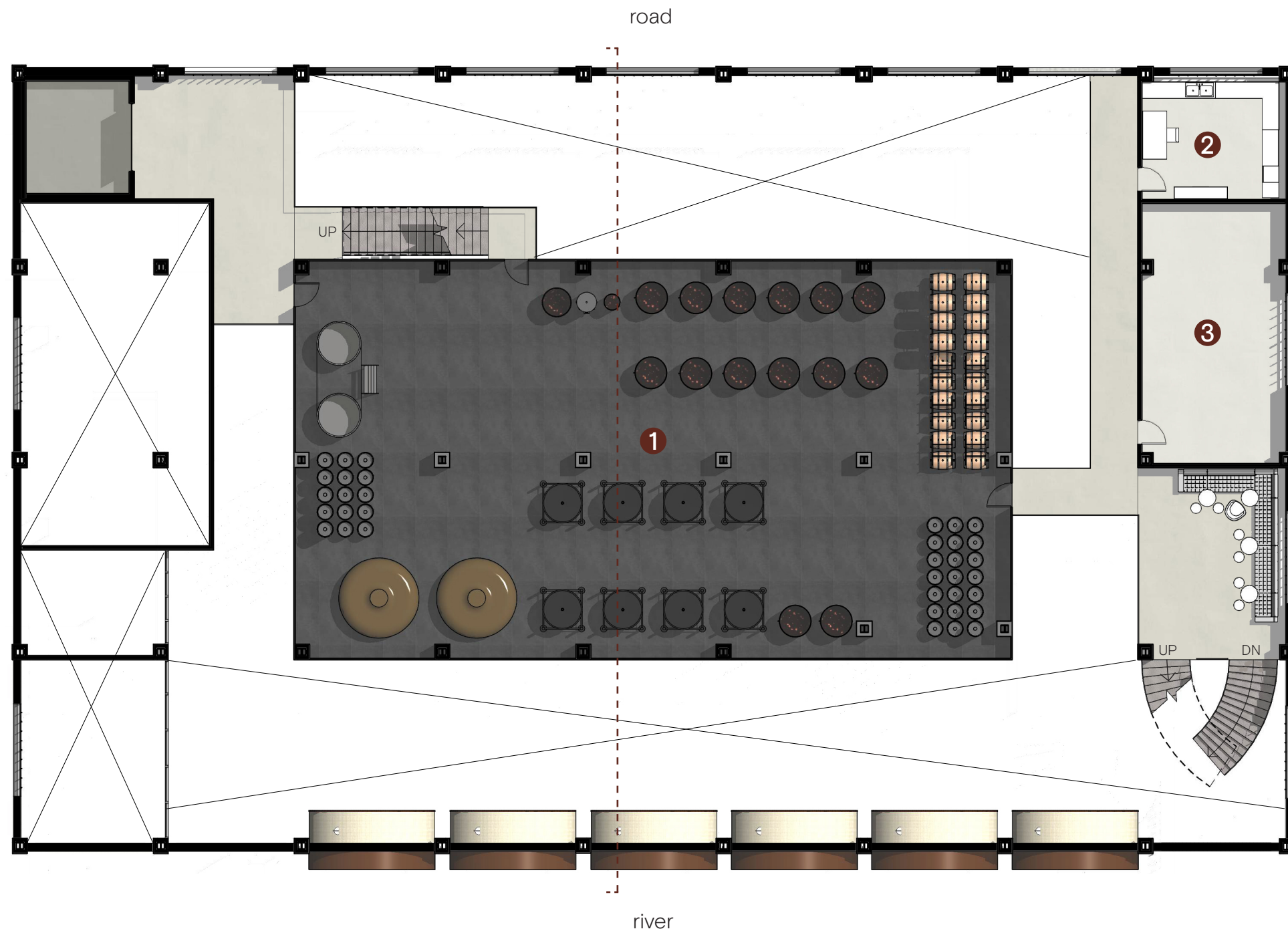
- ⊠ open to below
- reception
- beer academy
- taproom
- brewery
- connoisseur room
- multi-purpose space
- packaging room
- administration office
- storage

floor plans



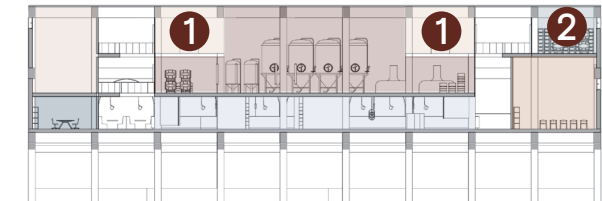
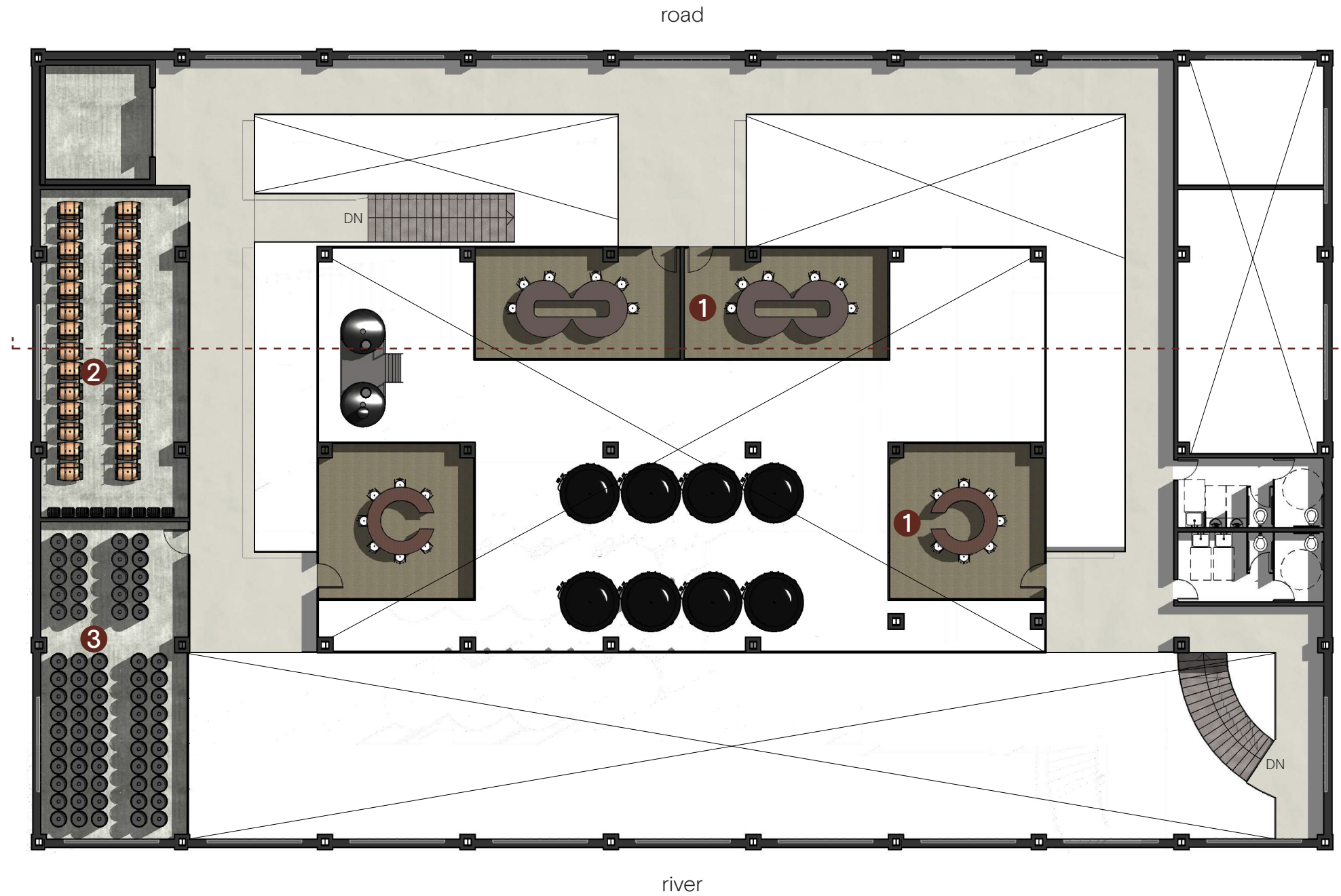
1st floor

- 1 reception
- 2 retail area
- 3 beer academy
- 4 taproom
- 5 multi-purpose space
- 6 administration office
- 7 elevator



**2nd floor**

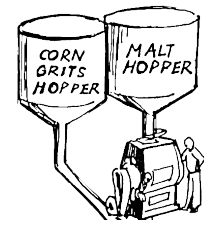
- ① brewery
- ② quality assurance lab
- ③ packaging room



**3rd floor**

- 1** connoisseur room
- 2** dry storage
- 3** clod storage

reception



**milling**

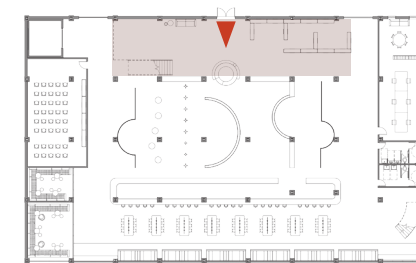
The milling in beermaking informs the design of the reception area. As the first step, it is about the processing of ingredients. In the space, the curves used in the interior remind people of the twisting wheat. The space is wide, warm and welcoming, making people feel as if they are in the wheat field.



inspiration image



view from entrance





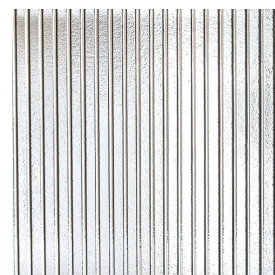
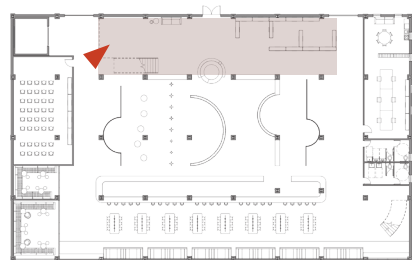




malt wallpaper

The wallpaper made from malt and exudes the aroma of malt, which encourage people to touch.

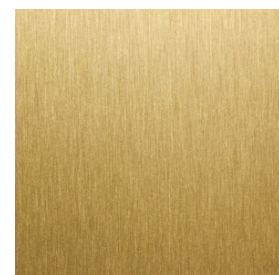
view from elevator side



texture glass



ceramic tile



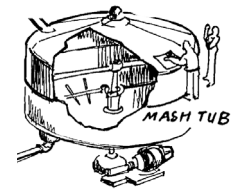
brass



soundsoak baffles from armstrong



beer academy



**mashing**

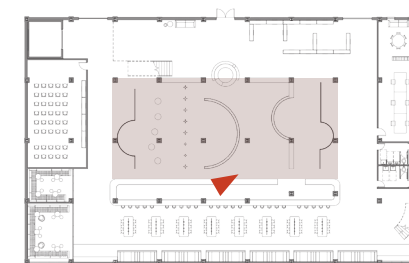
Mashing is to mix malt with hot water to form wort. A new chemical reaction occurred. Many sensory interaction devices are placed in this space. Reflective materials are used to express a sense of future and technology.



inspiration image



view from bar







**beer wall**

Arrayed by hue in clear glass bottles, the wall serves as a colorful reminder of the vast continuum of beer. It's like an alcoholic swatch.

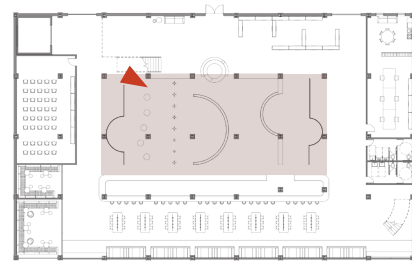
**beer speaker**

People can pick up the ball on the device to smell and listen. Each one emits a scent of beer and also plays music inspired by different types of beer.

**beer fountain**

The water mist of beer is emitted from the device. People can taste the flavor of different beer with their tongues.

view from front stair



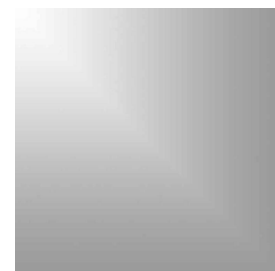
stainless steel



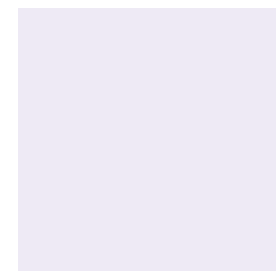
ceramic tile



concrete

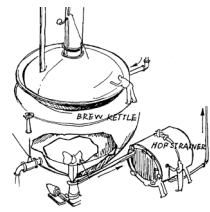


mirror



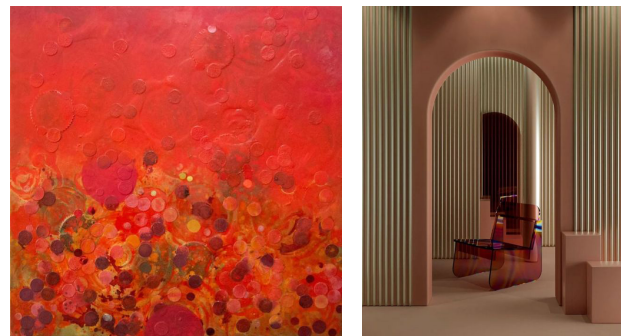
paint

**taproom**



**boiling**

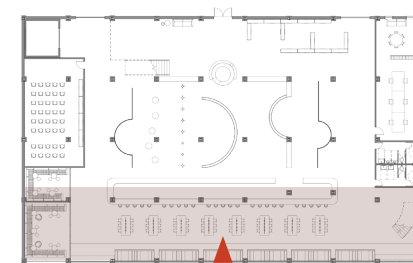
Boiling is revealed in airy, exuberant zones, like the taproom. It is a very intense process. The intense taste and smell experience people have in the busy and lively tasting room echoes the boiling in beermaking.



inspiration image



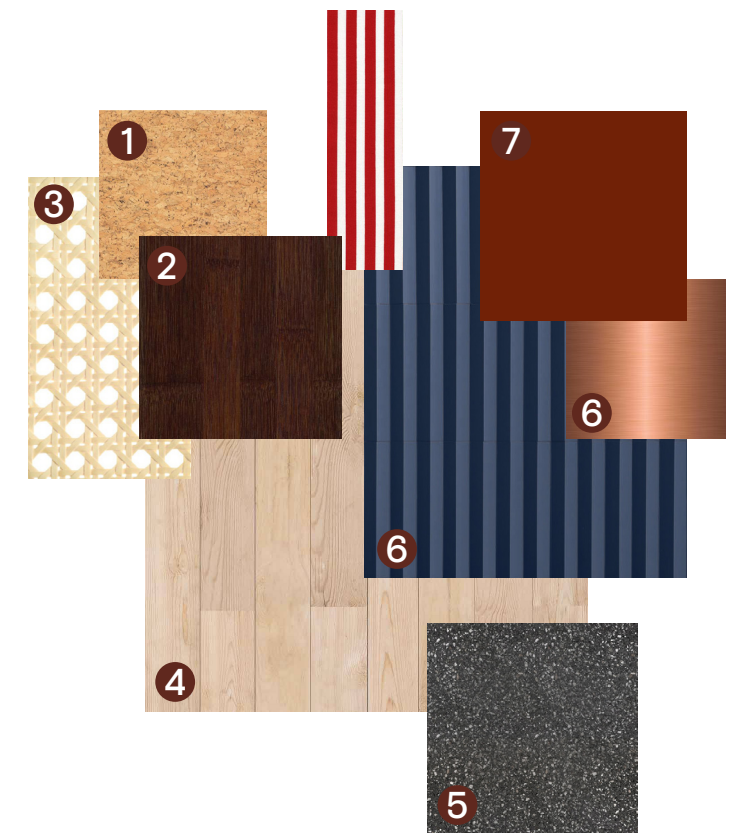
view from booth







custom booth



- 1 cork
- 2 bamboo
- 3 beer academy
- 4 wood flooring
- 5 stone
- 6 painted wood
- 7 wall paint

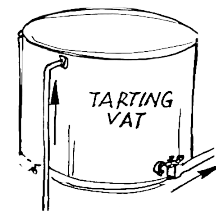


custom tasting table



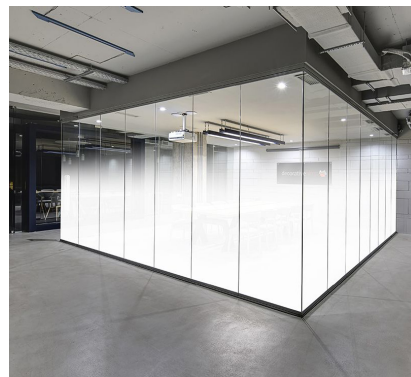
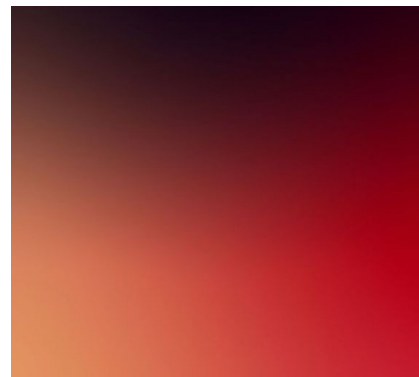


brewery



fermentation

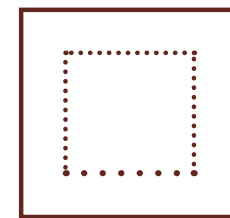
Fermentation is a slow, gradual process. Brewery space is a visible but enclosed space. One wall facing the taproom is transparent glass, and the other walls are translucent. People can see the activities inside the brewery more and more clearly when walking from entrance to taproom.



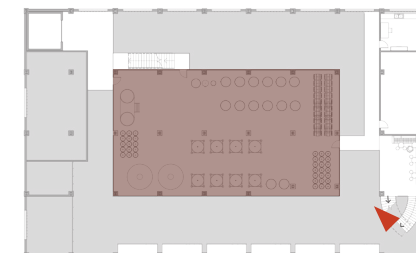
inspiration image



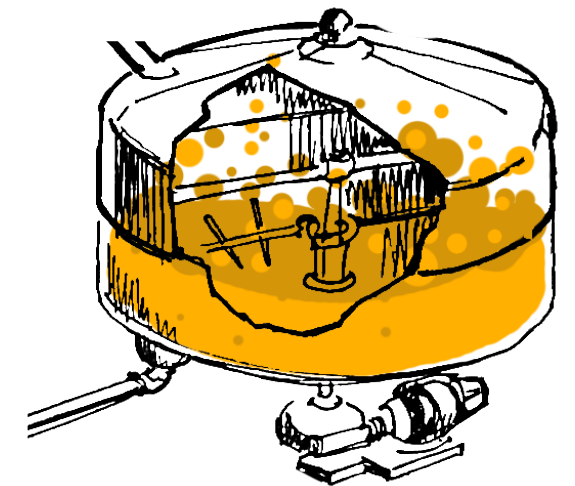
view from back stair



transparency





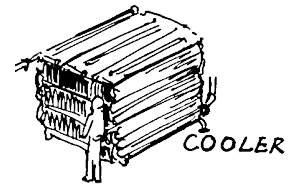


**transparent material**

People can see how the beer is generated in tanks.



connoisseur room



cooling

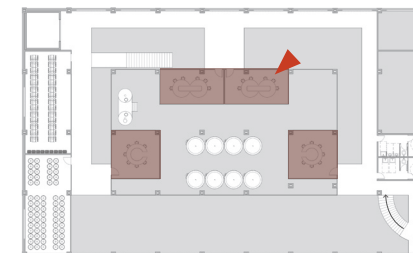
Cooling is revealed in enclosed, intimate spaces, like the connoisseur room. Hot water needs to be cooled with ice. Similarly, dark colors can be lightened by mixing with light colors. The light-colored glass covers the dark glass to express the cooling in beermaking.



inspiration image



north connoisseur room







east connoisseur room



- ① leather
- ② paint
- ③ carpet
- ④ wood panel
- ⑤ marble
- ⑥ cooper







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