2012

Youth Development and Cycling Center: Transforming Space to Create Places for Growth, Exploration and Community.

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William Poole
VCU Interior Environments
2012
Thanks.

A much appreciated thank you is extended to the professors and faculty who made my experience here both influential and enlightening, my studio-mates who have become dear friends, and finally to my patient, considerate, and supportive fiancée.
Advancement and reverence lend complexity to form. Form evolves over time, inspired by the precedents laid down before it. Form pays homage to history. Design, however, is also rebellious; it fights to break free from monotony. In the area where the two overlap, interact and struggle richness flourishes.

Cycling is a sport of opposites. The mechanisms that comprise a bicycle are beautifully simple and work in perfect harmony to produce a graceful and efficient means of transportation. Additionally, cycling is a rigorous form of full-body exercise that has a relatively low impact on the body’s bones and joints. Most importantly, cycling tears down boundaries; it forces the rider to notice his surroundings and be aware of those around him. Cycling builds community and allows for interactions, both between riders and between rider and place.

Jointly the simplicity of the bicycle and the complexity and corruption of the sport. In recent years, cycling has been marred by scandal, fraud, and greed. The sport, on an international scale, has shifted away from friendly competition and community building to racketeering and marketing.

In contrast to the wealth associated with the sport, stands the fact that participation in cycling can be prohibitively expensive. In an effort to overcome this obstacle, organizations like the Richmond Cycling Corps (RCC) are attempting to grow the popularity of the sport by introducing it to Richmond’s under served youth. The RCC is a non-profit organization whose chief goal is to increase exposure to the sport, help and to promote the development of healthy lifestyle choices for Richmond’s youth. Using the program and mission statement of the Richmond Cycling Corps as a starting point, this project seeks to develop a space that promotes emotional and physical growth using cycling as the method of delivery.

Few feelings compare to that of conquering a lonesome hill with its lazy fog lingering, fighting off those first few rays of morning sun. Alone, yet totally and perfectly in tune with the world around. Time no longer matters, you have escaped from reality. A time machine on two wheels.

Cycling is a powerful experience. From training wheels to endless summer days, most can recall fond memories of riding a bike. As we age, we no longer have the desire, time, or come up with countless other excuses and we stop riding. For others, however, the joy of riding was a privilege that they never had the opportunity to experience. The delight of riding with friends on one of the first long, light-bathed evenings of summer is an experience that no one should be forced to sacrifice. For this reason, cycling will be the vehicle to deliver my program.

The focus of this project is to create a youth development and community center to serve the Richmond area. The center’s mission will aid and facilitate in the growth of teens educationally, physically, and emotionally. Cycling can be a prohibitively expensive sport, and most underprivileged children simply do not have the means to participate in cycling. I intend to create a space where children can grow, play, and learn in a safe and nurturing environment. Additionally, this space will serve as a hub for weekend cycling excursions to Richmond’s less traveled roads. It will foster community by offering classes and weekly rides to the Richmond area as a whole.

Thesis Statement
Site: James Albert Building  
2201 E. Main St.  
Richmond, Virginia  

Current Use: Mixed-use office and medical treatment facility  
20,700 square feet split between three levels.  

History:  
1912 Richmond Broom Company  
1988 East End Dialysis Center  
2003 Davita Dialysis Center  

James River  
Interstate 95  

As-Built Drawings  
Northern Elevation  
Southern Elevation  
Western Elevation  
Eastern Elevation
The building is situated on a slope that drops 12’ in elevation from north to south. This enables ground floor access on two of the building’s floors. This however limits the number of windows on the basement floor.

In its present state, the building’s basement serves primarily as a parking lot for the employees of the dialysis center. This is primarily due to the large garage door located on the building’s eastern elevation.

Although the main entrance to the building is located at E. Main, the vast majority of the building’s users access it through the basement parking lot. Presently, the first floor serves primarily as the dialysis treatment facility. In addition to the treatment area, several offices are located in the northern portion of the space.
Although largely unoccupied at the time, the building’s second floor houses several office spaces. During the late 1980s and 1990s these office spaces served the dialysis center when it was operated by East End Dialysis.

Some of the building’s more interesting features include remnants of the Richmond Broom Company’s manufacturing equipment as well as 12’ 6” ceilings on both the building’s first and second floors.

In the building’s present configuration, natural light comes at a premium. Private offices line the perimeter of the building, blocking any available daylight from penetrating into the space.

This study diagrams all of the potential sources of natural light and provides insight as to how the interior of the space may be organized to better harness the potential of bringing much more light into the space.
In order to better understand the organization of my building, how it was constructed, and the systems present within my building, I conducted a series of structural studies. The studies seek to locate and identify the main structural elements of the space, the principal egress paths, and the major mechanical systems in the building.

One of the most important, however obvious, elements identified as a result of this study was the irregularity of the column grid in the basement. After completing this study and reviewing the original building documents it was discovered that several columns were removed during the building’s renovation in the late 1980s.

The structure and general layout of the first and second floors are essentially mirror images of one another. The principal difference is located in the northern portion of the plan. The second floor has two windows that have been bricked-in that remain open on the building’s first floor.

Unlike the columns in the basement level, the first and second floor feature a complete and regular column grid.
Designed in 1960 and built in several stages, the Montessori school at Delft presented a flexible space that could evolve to fit the needs of the user. The layout of the space allows for multiple activities to take place simultaneously without disturbing each other. This is accomplished principally through the use of L-shaped classrooms. The shape of the classroom allows for the creation of three different zones. Each zone has a specific function or type of activity. Zone one is an elevated platform designed to house more individualized learning. Zone two houses small group work, and zone three houses class-sized activities. Despite the specificity of each zone, the room as a whole can be rearranged to suit the needs of the user.
In addition to the L-shaped classrooms, Hertzberger sought to create a sort-of interior street that would serve as the backbone of the building as a whole. This interior street, with the classrooms branching off of it, creates places for gathering, resting, community, and activity along the way. Thus, the hallway then becomes an extension of the classroom.

In order to better understand the organization of the space as a whole, I categorized each space within the Montessori school in terms of its function. I established three areas of use: community space, where interactions between different groups of people occur; individual space, which includes areas such as classrooms, and service spaces, storage and janitorial closets.
In an attempt to better understand my own building, I applied the same method of categorizing space that I used on Hertzberger’s Montessori School at Delft. I located and identified the three zones on each of my building’s three levels.

By identifying the different zones found throughout my building I began to understand more clearly the patterns of use that had been established as well as how my building is presently organized.
After completing this study I was able to more clearly identify the relationships present between the various floors of the building. The basement is largely unused. The first floor serves as the building's main community space, and the second floor is the building's main individual space. This organization indicates a vertical movement from public to private.
Program Case Study
Orange Memorial Park
Recreation Center
South San Francisco, CA
Marcy Wong Todd Logan Architects

Built in 2008, the recreation center at Orange Memorial Park functions as a cultural, recreational, celebratory, and educational hub. The building was designed with careful consideration to its environmental impact, taking into account the structure’s situation on the site and using locally sourced materials.

The primary community space is located in the southern portion of the building known as the "activity pavilion." Service spaces, including a kitchen, rest rooms, storage and office spaces are located in the northern portion of the structure.

All drawings by Marcy Wong Todd Logan Architects
The site analysis of the recreation center was documented and several key areas were identified. The light green spaces denote pathways through the site. Purple spaces represent communal areas, and the yellow space represents service spaces.

The site was further simplified and isolated from the rest of the park's context. The recreation center as a whole was identified as a communal space. The predominantly East-West axis was identified and denoted in green, while the predominantly North-South axis was identified in blue.

The basic geometry of the site was abstracted, and the major axes were again identified. The point at which the axes intersect was identified with purple as a communal space. The predominant geometry of the space was described with a circle. Secondary points of access were denoted with arrows.
The same organization that was found within the recreation center was applied to my thesis building. Similarly to the previous studies, the main geometrical axes were identified.

Both the floor plan and the axes were simplified in this iteration in an effort to bring this diagram to its most essential elements.
A series of charcoal diagrams were made using the as-built drawings to analyze the relationships between spaces as well as the relationship between open/public and closed/private. In these diagrams, darker spaces indicate more closed and private spaces. Lighter areas indicate more public and open spaces.

In addition to analyzing the relationships between spaces within the building, these studies helped to understand how the space should be organized and, along with the programming, became the basis for the initial space planning of the site.

In an effort to bring more natural light into the space, the large light area in the center of the second floor plan would be removed and left open to below.
Initial Space Planning Diagrams

This diagram is one of the initial block planning ideas for the space. It features an initial circulation diagram, indicated by heavy black lines, through the space.

A more developed space plan of both the first and second floors. These drawings drew on the information generated from the program to designate and allocate space proportionately.

This organization of space allocates the vast majority of the first floor to the youth development center, while the second floor is dedicated almost entirely to the administrative wing of the center.
The diagrams on this page as well as the three previous sparked some of the most influential developments in my project. The first two pages of diagrams studied how paths through space could create places along the way. Several paths were drawn through space and I diagramed all of the various places that could be created as a result of the space carved out by the path.

After completing the study of the paths, I selected a single shape of path to study further. I chose the path that resembled an oval. I was inspired to pick the oval by cycling’s most iconic element; the velodrome, an elliptical race track.

The second set of studies, featured on these two pages, sought to identify how an ellipse could be situated in space. Like the study of paths before it, this study also examined how space could be shaped around an imposed feature, in this case the ellipse. The first study, to the left, examined how the ellipse could be organized on a centered axis. The second, to the right, examined how the ellipse could be organized on a shifted axis.

From these studies I was able to determine that, for my space, the most efficient organization featured an ellipse organized along a centered axis. This became a driving factor for all future space planning.
Following the paths and ellipse studies, I began to apply the elliptical shape more directly to the overall geometry of the building. This sketch study shows how the ellipse interacts with the building geometry when it is situated on a central axis as well as an off-centered axis.

Process Work

A more developed space plan is beginning to appear. It was helpful to begin to plan in section simultaneously to see how the decisions made in plan view interact with the space vertically.
This model illustrates the path taken by a cyclist on a winding, carefree ride, taking every opportunity to explore and even to get lost.
This model sought to build upon the knowledge gained from the previous bike ride model. Specifically, it explored how volume and void could be created using the same method of construction.
This model built upon the prior two and sought to explore one method in which a circular shape can organize space. Similarly to the previous models, the same method of construction was used.
This model drew its inspiration from the iconic elliptical shape of a velodrome or cycling track. Similarly to the previous model, this model seeks to examine how space can be organized around a non-rectilinear form.
This model built upon the previous one, specifically by more thoroughly developing the elliptical shape as well as the slope of the individual components of the ellipse.

Additionally, this model begins to examine how the center of the ellipse is accessed. The center of the ellipse could potentially serve as a hub for activities if a similar method is applied to the overall design of the space.
The next several pages feature drawings from the preliminary critique. After completing the initial space planning and design development by hand, the final space planning and designing were completed digitally.

This drawing features a view of the reception desk with the waiting area beyond. I wanted this area to remain quite open to maintain sight-lines to the rest of the first floor.

The late 1980s renovation of the building featured a large amount of corrugated metal; in this design the metal is reclaimed and then reused throughout the space.

This view begins with the large group table and features the elliptical stair and seating area beyond. In the distance several small group tables are visible.

6”x6” glue-lam beams vary the ceiling height, compressing the volume in more private areas and opening it in more public areas. The use of glue-lams was inspired by the building’s heavy timber construction. It signifies a relationship without being identical to the larger, more massive timber columns.
This view features the elliptical stair and seating area. This area plays host to the large group activity space. The elliptical seating area functions like amphitheater seating and is an ideal location for guest speakers and the center’s weekly cycling classes.

This original design features the stair running through the center of the ellipse, taking advantage of otherwise wasted space behind the building’s massive columns.
The basement features the center’s revenue generating wing, the bike shop, located in close proximity to the large garage door, making entry and exit with bike in tow quite easy. The bike shop is also a community gathering space. Cyclists can gather and share stories of their latest ride, receive advice about new products and maintenance, as well as have their bike serviced.

Beyond the bike shop is the staging area where individuals gather before group rides.
The second floor functions primarily as the center’s administrative wing. When the staff members are not actively engaging with the youth they need a place to research grant and other funding opportunities, prepare lessons and activities for the community.

This drawing features the conference and private offices. In the background an individual work station is visible. Several small group tables are located in the foreground, taking advantage of the view created by the elliptical seating and stair.
1 Vertical Bike Storage
2 Male Rest Room
3 Female Rest Room
4 Lockers
5 Staging Area
6 Bike Shop
7 Storage
The design for the basement bike shop remained largely the same. The rear wall of the shop was opened up to provide a sight line to the staging area.

The changing area was enhanced by increasing its overall size and increasing the amount of storage space associated with the locker room.
1. Entry
2. Reception
3. Waiting Area
4. Large Group Tables
5. Bar-height Study Area
6. Large Group Area
7. Elliptical Seating and Stair
8. Small Group Study Area
9. Classroom Pods
10. ADA Rest Room
11. Rest Room
12. Small Group Area
13. Conversation Pit
The principal change to the elliptical seating area was shifting the stair associated with the ellipse off center. This was done in an attempt to create a more dynamic space. By shifting the stair off center, both a large and small group area were created within the ellipse. The large group area takes up the vast majority of the elliptical seating area, and the small group area is located to the right of the stair. The smaller area creates a more personal and secluded area without being too far away from the large group area.
In an attempt to unify the three levels connected by the ellipses, a large elliptical ceiling feature was introduced to the second floor ceiling. The ceiling feature houses a large oculus at its center to bring in additional natural light. Additionally, the oculus calls attention to the large group area by shining its light directly on it's center.
Cycling is a sport of opposites. The mechanisms that comprise a bicycle are beautifully simple and work in perfect harmony to produce a graceful and efficient means of transportation. Additionally, cycling is a rigorous form of full-body exercise that has relatively low-impact on the body's bones and joints. Most importantly, cycling tears down boundaries; it forces the rider to notice his surroundings and be aware of those around him. Cycling builds community and allows for interactions, both between riders and between rider and place.

Juxtaposed against the simplicity and elegance of the bicycle is the complexity and corruption of the sport. In recent years, cycling has been marred by scandal, fraud, and greed. The sport, on an international scale, has shifted away from friendly competition and community building to racketeering and marketing.

In contrast to the wealth associated with the sport stands the fact that participation in cycling can be prohibitively expensive. In an effort to overcome this obstacle, organizations like the Richmond Cycling Corps (RCC) are attempting to grow the popularity of the sport by introducing it to Richmond's under-served youth. The RCC is a non-profit organization whose chief goal is to increase exposure to the sport in an effort to promote the development of healthy lifestyle choices for Richmond's youth. By doing so, the RCC strives to build stronger, more connected communities. Using the program and mission statement of the Richmond Cycling Corps as a starting point, this project seeks to develop a space that promotes emotional and physical growth using cycling as the method of delivery.

Community + Development
Transforming space to create places for growth, exploration, and community.

Site: James Albert Building
2201 Duke St
Richmond, Virginia
19,305 Square Feet

Located at the intersection of E. Main St. and 22nd St., the James Albert building is just a few minutes from the heart of Downtown Richmond. It is also a short ride to some of the East End's winding roads, making it an ideal location to serve as a hub for weekend cycling expeditions.

Design Development
The design concept is rooted in the themes of growth, exploration, and community. The space is designed to encourage interaction and foster a sense of belonging. The organic shape of the structure is a metaphor for the fluidity and adaptability of the community it serves. The building is designed to be a focal point for the community, a place where people can come together to learn, grow, and explore.

Conceptual drawing of the building.