

Site Analysis Final Paper

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INTRODUCTION

When I first entered the Design School (as it was called then) as a freshman student a while back, I was informed that the journey that I was about to embark on was first and foremost about making artifacts; that this was the essential function of the designer. I've spent a good deal of my life studying art and artifacts, making them myself, moving them around for other people to view and taking care of them in order to preserve them for future generations. Increasingly what I am concerned with is the space in-between objects; what connects one thing to another and what of it?

The goal of this paper is to look on the range of significant design processes currently being utilized in the practice of landscape architecture and reflect on how they have impacted and altered my approach to analysis and design.

DESIGN VALUES

My core values as a designer are that any intervention on the land enhances sustainability, creates a more cohesive community and respects and augments the character of a place. Every site is unique and requires a thorough investigation of the physical, ecological and cultural attributes that interact to form the matrix of constraints and opportunities for a particular site and subsequent program (La Gro, p. ix).

METHODS OF ANALYSIS AND PLANNING

In the second edition of *Site Analysis: A Contextual Approach to Sustainable Land Planning and Site Design*, author James A. La Gro, Jr. promotes a "context-sensitive" approach to development that involves limiting inherent site problems and embracing assets of the site. By doing this, he says planners can

1. Reduce long-term maintenance needs;
2. Reduce risks to life a property from natural hazards; and
3. Create higher-quality built environments.

He advocates site analysis as a comprehensive overlay process that evaluates a broad array of characteristics based on each unique site and program (La Gro, pp. ix-x).

La Gro's approach expounds Ian McHarg's seminal book *Design with Nature* (1969), which proposed a system of analyzing the layers of a site in order to compile a complete understanding of the qualitative attributes of a place. McHarg would give every qualitative aspect of the site a layer, such as the history, hydrology, topography, vegetation, etc. The overlay of the various systems would reveal critical information that could be used to further inform design decisions. Thus, McHarg developed innovations in design process and method; defensible processes based on science, fact and data that centered on importance of ecology.

The overlay method was popularized by several of McHarg's students at the University of Pennsylvania School of Design, most notably Carl Steinitz and Nicholas Muhlenberg, and became the foundation of today's Geographic Information Systems (GIS) software.

Carl Steinitz in his 1979 book *Defensible Processes for Regional Design* establishes six design processes and ranks them by effectiveness. The first process is an internalized one, based only on the designer's personal experience and intuition. The second process is the Survey, Analysis, Design method (or SAD). The pitfall of this process is that while scientific data is gathered, it is often not connected to design decisions in a meaningful way. The third process is the one taught most frequently in design schools which is The Design Process and includes five stages: problem statement, data inventory, analysis, synthesis, evaluation. The fourth process is McHarg's overlay method to analyze site suitability.

At this point, Steinitz goes further to outline two more design processes. His fifth process includes the use of predictive models made possible by computer technology to simulate multiple outcomes. His sixth process establishes a clear pathway for project stakeholders to come together and through exploring alternative scenarios, arrive at solutions that reflect the core values of that particular community. The resulting design is thus tailored to that particular region. He points out that as projects become larger, it is beneficial to use both predictive models and public participation. These are the most defensible processes of analysis for Steinitz (Steinitz, pp. 14-22).

Colleagues of McHarg were extremely influential as landscape architects as well such as Lawrence Halprin, Laurie Olin, Robert Hanna (co-founded Hanna/Olin in 1976), Rolf and Leslie

Sauer (co-founded Andropogon Associates), and Colin and Carol Franklin (co-founded Andropogon Associates), among others.

Elizabeth Meyer, in her essay “Site Citations” from *Site Matters: Design Concepts, Histories, and Strategies* (Burns and Kahn), writes about how increasingly in the 1960s, landscape architectural practice shifted outside of the boundaries of art, likely due to large sites (suburban housing developments, shopping mall, corporate headquarters) and the shift towards ecological thinking. Site practices such as those outlined in Ian McHarg’s *Design with Nature* (1969) and Lawrence Halprin’s *RSVP Cycles* (1969) preferred systems to objects; they emphasized that every site is unique and intrinsically linked to its particular context and surrounding systems, solutions for the site reference everything in and around the site and cannot be transported elsewhere, site solutions are intimately connected to place (Meyer, pp. 117-8). This is particularly important to note the paradigm shift in thinking that embraces systems over formalism and object making, a core tenet of Modernism.

This leads to an equally significant paradigm shift that has happened since *Design with Nature* that has to do with what is considered the boundaries of a site. Kristina Hill in her essay “Shifting Sites,” also in *Site Matters: Design Concepts, Histories, and Strategies* (Burns and Kahn) explains that, “In the past, many designers in ecological planning and design sought to conserve the biological resources of a site by “defending” it against external influences — essentially treating valuable sites as fortresses to be walled off and protected from the influence of a hostile matrix . . . boundaries should not be treated as real biophysical phenomena, but rather, be stretched, shrunken, and re-envisioned across multiple landscape scales. Designers must come to treat these edge zones as dynamic, like weather patterns, and not as artifacts that deserve permanent memorialization simply because they once existed.” (Hill, pp. 144-5). It is this perspective with regard to the suspension of fixed boundaries of a site that continues to inform and enrich the work of contemporary landscape architectural practice and designers such as Michael Van Valkenburg, James Corner, Peter Walker, George Hargreaves and Peter Latz.

RELEVANT CASE STUDIES

Frederick Law Olmstead emphasized the role of public parks role as a democratic equalizer for the city. Like Olmstead, contemporary designers like Peter Latz and James Corner share in the understanding of the technical complexity of layering the constructed landscape upon the natural one and recognize the need for intertwined processes of critical assessment in order to create diverse and changing landscapes rather than singular compositions.

This perspective along with the restricted amount of land within urban cores in which to develop new parks has given rise to a new typology of park – the linear park. In her essay, “A New Kind of Park” in *Landscape Transformed*, Diane Balmori posits that the linear park has arisen in response to post-industrialization and the redevelopment of inherently linear connected spaces into parks, such as railroads and industrial corridors within a dense urban hub. The linear park affords connectivity as opposed to isolation and disconnection that she says characterizes many traditional urban parks. She writes that, “The linear park opens pathways to diverse neighborhoods and new recreational spaces and experiences of nature; it invites exploration of alternate modes of transport and of cultural resources. . . These trails mend the community fabric by drawing people together along a common way, as once town streets did before the automobile.” (Balmori pp. 45-46). The following case studies exemplify the how these connections can be made by connecting green spaces in a linear fashion.

Buffalo Bayou Promenade, Houston, TX

Landscape Architect: SWA Group

Client: City of Houston

Site Size: ± 23 Ac

Date: 2008



PPhotos: www.swagroup.com

Project Description

Buffalo Bayou Promenade is a large-scale project designed to revitalize the community and natural habitat along the 1.2-mile reach of Buffalo Bayou in downtown Houston. The resulting 23-acre recreation area has transformed a derelict urban wasteland, passed over by entangled freeways, into a thriving urban waterfront. Among the improvements it has put in place are extensive naturalized landscaping along the bayou’s gently sloping banks, continuous biking and hiking trails on both sides of the bayou, public art, canoe and kayak launch sites, dramatic outdoor lighting, wayfinding and interpretive signage, 12 new street-to-bayou entries, and an elegant steel-and-concrete pedestrian bridge that connects the north and south sides of the bayou in downtown for the first time. Wildlife—ducks, herons, turtles, and fish— have returned to this stretch of the bayou from Sabine to Bagby Streets. The new parks, now restored to ecological balance, enhance civic, recreational, and commercial settings and link key cultural and entertainment venues like the Hobby Center for the Performing Arts and Bayou Place. The revitalized waterfront has become the locale for many community events, such as concerts, festivals, boat tours, and family-oriented educational events. The success of the Sabine-to-Bagby Promenade offers a model of how to transform a neglected and run-down natural waterway into a vital public treasure. (Source: ULI Case Studies)

Promenade Plantée, Paris, France

Landscape Architect: Jacques Vergely

Architect: Philippe Mathieux

Client: City of Paris and SEMAEST,

Société d'Economie Mixte

d'Aménagement de l'Est Parisien

Site Size: 3 miles

Date: 1993



Photos: www.promenade-plantee.org

Project Description

Located in the 12th arrondissement of Paris is a park like no other in the world. Built in what is considered one of the older, working class neighborhoods of the city, the Promenade Plantée represents one piece of a continued park policy in Paris to create new public open spaces out of old infrastructure and industrial sites. In Paris new spaces are built to both connect to other green spaces and connect old/new and geographically disparate parts of the city with each other. In the development and construction of the Promenade Plantée, the city met not only their larger policy goals but also built the first ever elevated park in the world.

Of even more significance to Paris is the way the Promenade Plantée revitalized a section of the city that had been considered somewhat hard-scrabble and unwelcoming. Through the incorporation of gardens, shops, paths, and links to neighborhoods and streets, the park has proven to be a huge draw to tourists and Parisians both. The area is considered to be safe, well-lit and patrolled, and well maintained. The commercial space for artists and shopkeepers has also led to the kind of small-scale, locally owned business development desired in the neighborhood (Clemmons, pp. 58-65).



The High Line, New York City

Landscape Architect: James Corner Field

Operations

Architect: Diller Scofidio + Renfro

Planting Designer: Piet Oudolf

Client: City of New York

Site Size: 1.5 miles

Date: 2009



Photo: www.thehighline.org

Project Description

The High Line is a linear park built on top of a derelict elevated train track along the west side of lower Manhattan. When all sections are complete, the High Line will be a mile-and-a-half-long elevated park, running through the West Side neighborhoods of the Meatpacking District, West Chelsea and Clinton/Hell's Kitchen.

Section One of the High Line, which opened to the public on June 9, runs from Gansevoort Street to 20th Street. Designed by James Corner, the High Line Park very effectively uses the existing infrastructure of the raised freight rail that once supplied the many industries that functioned along its route. Much like the industrial park transformations in Europe, such as Emscher Park in Germany's Ruhr Valley, the High Line also works as a community builder. It literally connects communities through an attractive and cleverly designed park system while paying homage to the area's industrial origins.



Photos: Laurel Falls

Duisburg Nord Landscape Park, Ruhr Valley, Germany

Landscape Architect: Latz + Partner

Client: Development Company of Nordrhein-Westfalen and the city of Duisburg

Site Size: ± over 200 hectares; Former industrial site - 20 hectares

Date: 1991-2000



Photos: www.arch.hku.hk

Project Description

The design of Duisburg Nord Landscape Park illustrates how it is possible to integrate parts of urban or ex-urban infrastructure such as new sewage plants and artificial wetlands. Latz and Partner preserved the remains of old industrial installations in Germany's Ruhr Valley as history and allow the structures to be used for public enjoyment. The contradictions between the vegetative interventions and industrial remains add to the park's overall effect.

Once one of the most polluted and environmentally devastated regions of the world, the Ruhr district has been reborn. With the "International Building Exhibition (IBA) at Emscher Park" initiated in 1989, the run-down industrial landmarks of the region have been transformed to serve new recreational uses while still preserving the area's rich history. The redevelopment has given the region a greener image, created a more cohesive community and maintained the area's identity. (www.sustainablecities.dk)



DESIGN PROCESS

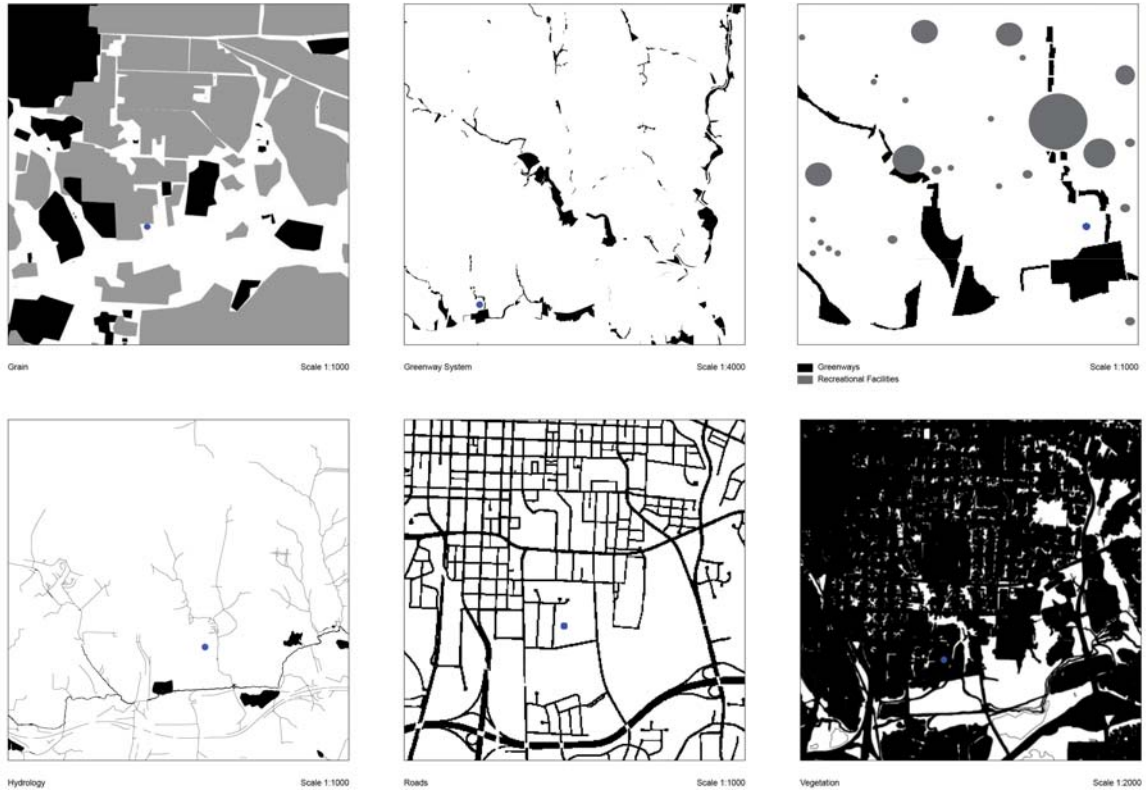
CONTEXT



This spring, as a part of my studies at the College of Design, our studio class looked at an area in Southeast Raleigh for potential re-development. The overall site included Martin Luther King Boulevard to the north, Garner Street to the west, Peterson Street to the south and State Street to the east. Within these boundaries are Fred J. Carnage Middle School, the Walnut Creek Wetland Center and the new extension of the Capitol Area Greenway System. Of note are several vacant parcels of land along Peterson Street to the west of Carnage Middle School. In the case of the Peterson Street Redevelopment Project, as we came to call it, there were several available sites for development within the project boundaries; it was up to each student to choose one or more locations and assign an appropriate program.

My design process followed the steps outlined by La Gro in *Site Analysis: A Contextual Approach to Sustainable Land Planning and Site Design* most closely, beginning with a phase of intense site immersion and data collection related to the physical, biological and cultural attributes of the site. Data on physical attributes included information from aerial maps, Raleigh planimetrics, topography, traffic data, field documentation and photographs. Biological data also came from maps and class analysis of hydrology, water quality, habitat, vegetation and riparian buffers. Cultural information was gathered from personal interaction with stakeholders: faculty and students at Carnage Middle School, community leaders, representatives from the Walnut Creek

Wetland Center, city planners and landscape architects who have proposed redevelopment plans in the immediate area.



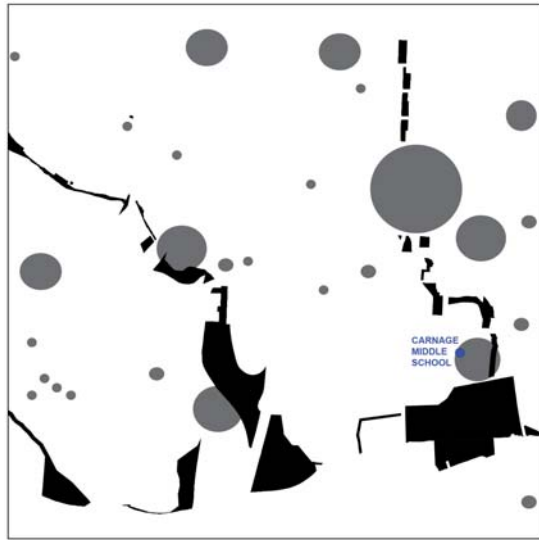
SITE ANALYSIS AND PLANNING EXAMPLES

The collected data was then synthesized and used to identify patterns for enhancement and adaptation, identify appropriate and developable areas, and identify opportunities for increased performance of eco-processes. (ASLA.org).

Patterns for Enhancement and Adaptation:

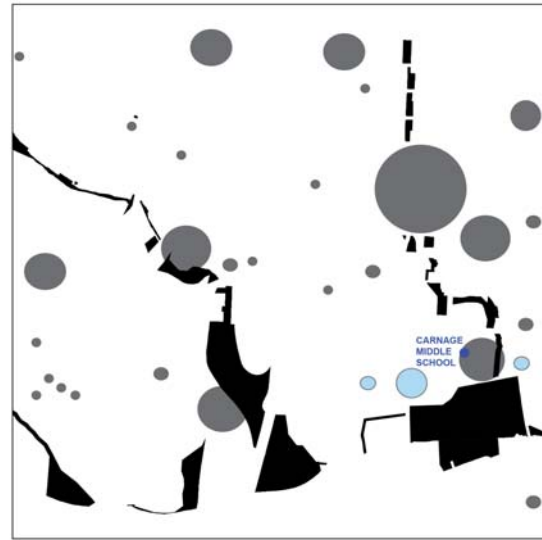
Instead of focusing on the constraints of the area, I chose to embrace the educational aspect of the wetland and potential to expand and connect parcels of land into a larger linear park and recreation area for Raleigh with unique programming that would continue to transform the area into a destination. One of the drivers for this decision was the lack of community parks and recreation areas in the immediate vicinity.

ANALYSIS: AREA PARKS AND RECREATION FACILITIES



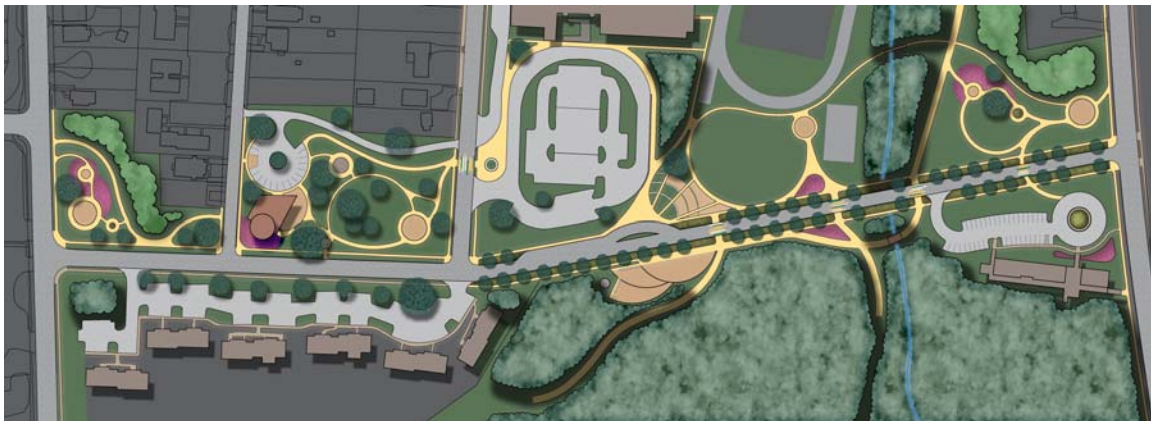
■ Greenways
■ Recreational Facilities

Scale 1:1000



■ Greenways
■ Recreational Facilities
■ Proposed Recreational Facilities

Scale 1:1000



Proposed Master Plan with Spine of Recreation Areas

Appropriate and Developable Areas:

The vacant parcels of land along Peterson Street, if transformed into green connective tissue, have the potential to activate the street as a corridor for recreation, leisure and education. The area directly across from the Walnut Creek Wetland Center could function as a “front door” for the Center and further connect the expanded greenway the Center and Wetlands. Additionally, if the two parcels of land on the southeast corner of State and Peterson Street and the parcels of land on the southwest corner of Garner and Peterson Streets were developed into park area as well, these green spaces would serve as markers on either end of the Peterson Street corridor that would indicate to the passerby that this was a special place.

ANALYSIS: DEVELOPABLE AREA



LEGEND

INSTITUTIONAL	OPEN SPACE	VACANT / POTENTIAL
RESIDENTIAL	PROTECTED	COMMERCIAL



One of the ideas to come out of the analysis was the importance of allowing for permeable boundaries to alleviate isolated functions and areas. For example, Carnage Middle School is largely fenced off from the surrounding community and the wetland across the street. Where physical fences are not present, the large expanse of Peterson Road behaves as a barrier, as does the immense parking lot on the southeast corner of the property. Students waiting for buses and car pickup are corralled into a very small and rather undesirable area close to the heart of the school.



Student Waiting Area for Buses

ANALYSIS: ROADS



Roads SAWYER ROAD: 24 ft.
CARNAGE DRIVE: 32 ft + ROW PETERSON STREET B/N GARNER AND CARNAGE DRIVE: 32 ft. + ROW
PETERSON STREET B/N CARNAGE AND STATE STREET: 40 ft. + 20 ft. ROW Scale 1:100



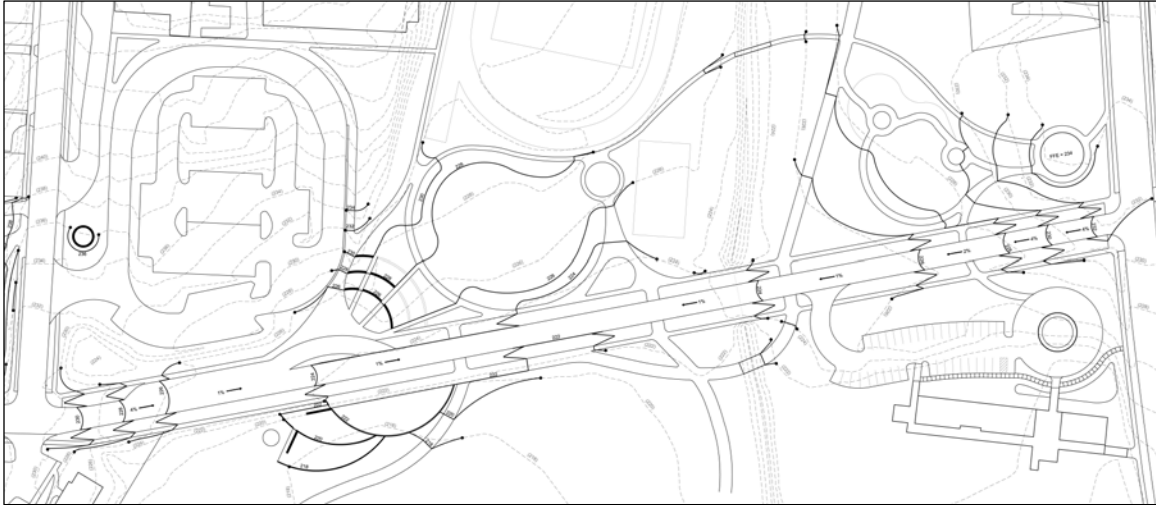
PETERSON STREET LOOKING EAST TOWARDS STATE STREET AND WALNUT CREEK WETLAND CENTER

There is potential along the south edge of Carnage Middle School to allow for an additional car pickup/drop off area and waiting area for students. Additionally, the soil from the cuts in the grade to create this area can be used as fill across Peterson Street to allow for a series of shallow plaza areas that step down into the wetland, providing an additional gathering and event area and an extended outdoor classroom space closer to the Wetland Center and wetland itself.



Opportunities for Increased Performance of Eco-processes:

The wetlands represent one of the lowest-lying areas topographically in Raleigh, subject to flooding. There are issues with stormwater runoff from the buildings and massive parking lot that serves Carnage Middle School. By shrinking Peterson Street, re-grading adjacent areas that tend to collect standing water and incorporating stormwater BMPs such as bioswales, runoff can be dispersed and filtered before it enters the wetland.



Grading Plan



Section looking east

REFLECTION

During the course of conducting research for this paper into the variety of design processes and how they have augmented the nature of landscape architecture as a profession, I ran across a new term that I am very interested in investigating, Pattern-Assisted Design. This term was mentioned in connection with the work process of landscape architect Kathryn Gustafson, who is known to move between diagramming, sketching and model making, particularly by sculpting clay

in order to resolve her designs. I am very interested in learning how to layer the information that is gathered during the site inventory phase in a way that informs design. I think I started to make some of these connections during this project, but did not go far enough.

The most valuable processes for me in the course of working on this project were creating diagrams based on patterns that emerged from layering information and building a digital model of the one of the key areas in my design. Both of these methods allowed me to quickly identify deficiencies and opportunities that I had overlooked. Using both of these techniques earlier in the process, combined with generating sections and perspectives would help to create stronger design possibilities.

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