Visualizing the Library of Today Through Multilayered Spaces

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The library program has experienced continued evolution of spatial conditions with respect to technological advancements and the changing needs of the general public. Recent precedents have begun to remove physical book stacks from the user experience in exchange for improved efficiency of space. There is value in maintaining the presence of book stacks because it is a gesture towards tradition and the “existence-well” of the program.

This thesis explores the organization of the three program components which define the ideal, modern library: archive, social, and digital media spaces. Considering modern libraries offer more communally charged programmatic spaces, maintaining the integration of archive spaces throughout the scheme can strengthen the gradient of public to private conditions. The collective balance of the archive, social, and digital media spaces gives communities the opportunity to come together for ideal intergenerational exchange and co-creation.
The library program has evolved over the years due to the needs of the general public. Modern libraries are removing physical books from the overall scheme in order to save space. However, this thesis takes the position of designating areas for books to preserve the “life” of the building program.

This thesis explores the organization of three types of spaces within the modern library: archive, social, and digital media. Libraries now offer more communally charged, social spaces and incorporating book stacks into the scheme can offer dual transitions between public and private conditions. The collective balance of the archive, social, and digital media spaces gives communities the opportunity to come together for intergenerational exchange and co-creation.
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Mom and dad, you have always stressed the importance of education and encouraged me to pursue my endeavors. All that I am, you helped me to be. My thesis is dedicated to you both.
When approaching my thesis, I had a fascination with the evolving nature of the library program throughout the course of time. The modern library was quite different than the libraries I had grown up with. My earliest memories of these spaces are from the summers of my childhood. My mother would take me to Milwood Branch each morning and we’d spend hours there. I found myself getting lost in the narrow aisles of the stacks and excited by the wealth of books available to me.

When I began doing research in the fall semester I was surprised to find newer library precedents omitting physical book stacks from their buildings. As I continued to develop my thesis I pursued keeping the physical book within the fabric of the program. Previous interests in promenade and the human experience helped sculpt my focus for the remainder of the year. I questioned what the sequence of library spaces could contribute to the user experience.

This thesis explores the intersectional arrangement of diverse, modern library program spaces. In order to create a user experience of discovery, through creating a meandering path may a person witness unintended moments than what initially brought them to the library.
BEGINNING
A QUESTION OF BEGINNINGS

“It is good for the mind to go back to the beginning because the beginning of any established activity of man is its most wonderful moment. For in it lies all its spirit and resourcefulness, from which we must constantly draw our inspirations of present needs. The essence of the existence will, is what the architect should convey in his design.”

- Louis Kahn

When considering the ideal precedent of a library, my mind always goes back to Philips Exeter Academy Library by Louis Kahn. Its concept follows a simple diagram. Book stacks are on each floor lining the central atrium. A student retrieves a book from these stacks and takes it to their designated study carrel along the building’s perimeter. The act of physically bringing a book to light creates a metonymy since it stands for enlightenment itself. This diagram achieves a great deal of meaning and possesses a timeless quality characteristic of Kahn’s work.

Kahn had a remarkable fascination with beginnings. He’d question “what does the building want to be?” Consideration for the deeply rooted ideas and components behind a building can allow one to discover the existence will. Uncovering this helps ensure the building fulfills its intended purpose and greater potential.
James B. Hunt Jr. Library

Snøhetta has served a considerable role in rethinking the modern programming of libraries since its inception. Some of their most notable works include the Alexandria Library in Egypt (1989-2001), James Hunt Jr. Library at N.C. State (2008-2013), and Calgary Central Library (2013-2018). While going through precedents in the early stages of research, the N.C. State Library stood out as an exemplary demonstration of the incorporating social and digital spaces within the scheme of the modern library.

A university setting requires a variety of study spaces suitable for the needs of all students. The architect offers a generous amount of square footage for different types of working environments. Open study spaces allow for more collaborative and social exchange, enclosed group study rooms are considered more private, and other portions of the building are designated as quiet study areas.

Stairs are highlighted with a signature yellow to provide easily recognizable means of wayfinding. Vertical circulation becomes an experience within this library, whether they double as a seated stair, or are partially enclosed volumes moving adaptive building. There is an element of excitement when ascending different stairs and uncovering new, open study spaces on each floor.

Immersive tech spaces are integrated heavily into the scheme of this library. There are a variety of digitally charged spaces like a visualization lab, media production room, immersion theater, and gaming lab. The purpose of these rooms ranges from study and learning to activity and pleasure. Students, as well as faculty, have the opportunity to check out these spaces to practice or give presentations as well as immerse themselves in virtual representations. This library is a valuable resource to its user community.
Snøhetta was able to utilize a major space-saving component to give a great amount of square footage for the library programming. The “bookBot” eliminated the need for housing a lot of book stacks in the scheme of the library. Through automated book retrieval, the user is able to look up a desired text, request it, and then pick it up at the circulation desk.

Although this impressive piece of technology made it possible for the architect to allocate more square footage to collaborative and digitally charged spaces, the experience of retrieving a book from the stacks is lost on the user. In the case of a university library geared more towards engineering students, these spaces do take priority over the book stacks. However, details of the modernization of programming, libraries overall should still consider the value of the human experience with the book.
Defining the Components of the Library

S.R. Ranganathan’s final law of his “Five Laws of Library Science” states that “a library is a growing organism.” The benefits a library has to offer are directly related to the needs and expectations of its community. Libraries have naturally developed alongside mankind. It is an active “third place” for the community because it’s not one’s home, work or school, but another place for people to come together.

The modern library has developed into having more social programming which allows interpersonal exchange. Today they capitalize on how people themselves are also a resource in their community because of this exchange. Open reading, group study spaces, and meeting rooms allow individuals to gather for public and privatized purposes. The buildings give opportunities to have co-working spaces as well as gatherings for local community organizations. Libraries are now social.

Digital media is made available in libraries much to the excitement of youth and young adults. Space is allocated for makerspaces and audiovisual recording studios. Users are able to check out laptops and tablets. Computer labs and small business centers help individuals apply for jobs and learn new skills. Libraries are now digital.

The three key components of modern library programming are archive, social, and digital media spaces. The collective balance of these three things ensures the proper mixture of what the communities need today.
The concept of the promenade has always been an intriguing aspect of architecture. It is an act of gaining familiarity with an object through one’s movement. All a building has to offer cannot be comprehended from one single point of reference. Movement through space dials into perceiving a stationary object through time; witnessing momentary qualities such as daylighting conditions and the framing of views.

Le Corbusier made the distinction of using the term “promenade” instead of merely “circulation” when he refers to moving through Villa Savoye because the sequence is so much more than circulative. To him, the architectural experience was not solely perfunctory, but a “sensory unfolding of events.”

When an architect makes deliberate design decisions for the sequence of spaces, only then does their work tap into an added depth of the human experience. Tailoring the user experience shapes their sense of place and the meaningful moments along their journey. A library can easily establish a sequence, whether it be walking down the narrow aisles of the book stacks or taking a simple turn around a corner. If there is the availability of these moments, then how can an arrangement or organization encourage a journey of discovery.

“A promenade architecturale; that is, a sequential ordering of a series of apprehensions in the experience of space. The time of an object and the time of its experience, and thus the subject’s understanding, were inextricably linked.”

—Peter Eisenman
“As one changes one’s viewpoint, a hidden part is revealed, and what has been visible can no longer be seen... A transparency of vision [generated] through the movement of the point of view, from part to complimentary part, from fragment to fragment, and distortion to distortion.”

–Hiromi Fujii

A notable text by Hiromi Fujii titled “Concatenated, Multilayered Space” describes the constructed nature of a Japanese garden. This particular garden has no “availability of an unobstructed view of the entire layout from any point.” Vision isn’t able to dominate the whole of the garden since there is an overlap of plant growth and rock placement. The visitor pieces together an understanding of the landscape as they walk through a series of overlapping “fragments.”

The remarkable means of understanding multilayered spaces values the importance of promenade, i.e., gaining insight into the composition of an environment by means of walking through it. There is no moment where one can understand their place within the whole, but only make sense of the momentary fragment in their culmination of understanding.

This thesis takes the position of providing no available vistas that create a full understanding of direct navigation through the building. By this, one’s journey will uncover moments of discovering the unexpected. With a dynamic variety of programming available, there is something for everyone and a day at the library will provide exposure to new things.
Weaving

THE ACT OF WEAVING

“She thought that the mixture and variety more agreeable and more gracious than the unity of a plan...”

- Photius

These early sketches were an intuitive exercise that later uncovered a strong thematic meaning. They exhibit an intriguing, variable quality of differing line weights and an intermittent presence of poché. These intuitive compositions have no definitive way of being read. They can be interpreted as either plan or section. One can imagine a user winding through the arrangement of lines and choosing different paths. This organization and movement began to be characterized as “weaving.”

Selecting the term “weaving” led to the discovery of a text about Pamphilia, an ancient cataloguer from 1st century Greece. Her method of organizing text didn’t follow a typical, categorical structure, but was inspired by weaving. Photius of Constantinople wrote that “she thought that the mixture and variety were more pleasant and graceful than division by a single topic.”

A concept of combining components through an act of weaving translated as a feasible means of organizing program spaces in the scheme of a library. Composing a sequence that allows the user to meander through intertwined program encourages an experience of discovery throughout the building.
The city of El Paso is located in the westernmost corner of Texas at the border of the United States and Mexico. The Rio Grande is the natural boundary between these two countries. South of the border is the city of Juárez. A prominent geographical feature for the area is the Franklin Mountains in the northwestern part of El Paso.

El Paso is a city rich in culture and composed of hard-working individuals. If a library holds the purpose of being a resource for the community, this is definitely a community in need of it. A library doesn’t solely serve the people, but people act inversely as a resource as well. A modern resource hub like this would be a substantial impact on the area.

The site, Memorial Park, is located in the heart of central, historic El Paso. Two districts, Manhattan Heights and Five Points are within a half-mile radius of the park. On the north side of the railroad tracks, Manhattan Heights is primarily a residential area famous for its historic homes. On the southern side of the tracks, is the Five Points District which is now referred to as a business district. In recent years more businesses have developed along its major roads.
The presence of the railroad impacts southern access to the park. Pedestrian and automobile access are by three busy streets. Two of these instances are underpasses and the third is a railroad crossing. The most direct route to the park is at an underpass at Copia Street (pictured right). By taking into account these narrow sidewalk paths, as well as the short and damaged guardrail adjacent to the busy street, one can understand this method of access is not pedestrian-friendly. This environment discourages pedestrians from coming south of the tracks.

There is unbalanced accessibility for the nearby neighborhoods to source the amenities available at Memorial Park. Fewer people will be inclined to walk to the park if there are no improved means of pathways for southern residents.
Memorial Park is located in central, historic El Paso. It was established as a municipal park in the year 1920 and renamed in memory of World War I veterans. It is the city’s largest community park and definitely one of the more popular ones. The area is irrigated and well maintained, and has an abundance of trees to offer shade from the warm desert climate. The park has a great view of the Franklin Mountains which are in close proximity.

Due to the zoning regulations of El Paso, for every number of homes built a park and amenities are provided for the area. These amenities include a library branch. Memorial Park also has a senior citizen center, indoor swimming center, tennis courts, and baseball fields.
Park Overview

01. MAIN PARK SPACE
02. TENNIS COURTS
03. INDOOR SWIM CENTER
04. MUNICIPAL ROSE GARDEN
05. BASEBALL DIAMOND
06. SENIOR CITIZEN CENTER
07. UNDERPASS
08. CROCKETT ELEMENTARY SCHOOL
The new Memorial Park Library Branch is located at the intersection of Copia Street and Copper Avenue. This lot is adjacent to the stretch of the railroad tracks and has an edge alongside the busy stretch of Copia. With this location, the library will have significant access to the underpass.

In order to entrap the building well within its context, a diagrammatic decision was made to have three entrances. Each entrance will have a conditional gesture depending on its placement on the site. Upon entering each of these entrances, the user is then located in the active center of the massing. At this point, there is visible connectivity between the three centers. This establishes an awareness of where the user is in a massing and in relation to the other two.

The three massings are that of the community, neighborhood, and park. Naming conventions of the three massings are based on their scale of approach and intended visitor outreach. Their names are also characteristic of the entry conditions.
Recognition of the Diagram on Site

Adding Layers of Detail

The outline of the three forms can still be recognized in this bird’s eye view of the site. At the northern edge of the lot is the massing of the Community. It is a lifted object that provides an entry after passing beneath its overhang. This “porch” entry welcomes visitors to enter the library or reside beneath the overhang.

Adjacent to Copia Street is the eastern massing form of the Neighborhood. Entry into this building form is through a tunnelled underpass. This is a smaller entry in comparison to the other two entrances. Its condition of entry is almost more secretive than the others and is solely accessible by pedestrians. This entry serves as a gesture to visitors coming from south of the railroad tracks.

The southwestern massing of the Park has an entry which acts as a collector for the main park space. Its concave, folded face allows this entrance to gather people visiting from the direction of the park. Alongside this face is a courtyard that has a paved extension to the remainder of Memorial Park.
WALKTHROUGH
The massing of the community faces the northern edge of the site. Despite its large, raised presence, this massing isn’t read as a heavy object. There is a lightness to the form because of its materiality. Its envelope is a curtainwall with a layered screening system of perforated panels that allows some visible transparency. Formally, this lighter object is anchored to the more grounded, solid massing of the neighborhood.

Hierarchically, the raised nature of this form creates an iconic presence of the massing at the street corner. Upon approaching the building from the North, visitors have a look into the library’s inner workings due to the subtle transparency of the envelope. This inward-outward connection of visibility creates a preview of the interior experience and draws people in.

Beneath the overhang is the community porch. Visitors may pass through this covered area or rest under its shade with a good book. This concept of a large, shaded porch characterizes the welcoming nature of this entry. The raised massing acts like a “drawn curtain” of a performance hall and viewers are intrigued to witness the events taking place beyond it. From there the visitor comes to the yielded face beneath the lifted form and may gain access to the building.

Program spaces within this mass are mainly related to the archive and social components. This space characteristically contains the weaving of several prominent stairs for access between floors of the massing.
Introduction to this walkthrough begins with understanding the narrative of a mother and daughter’s visit to the library following a school day. A sectional perspective allows one to visibly follow the pair on their journey through several levels of this part of the building. This longitudinal section runs north-south through the building and faces west.
Approaching north from Crockett Elementary, the pair finds themselves facing the front of the building. They can visibly recognize some of the levels inside the library already through the perforated panels. After stepping up to the porch of the community, they are greeted by individuals seated beneath the library’s overhang. Observe in section, how the attached screen system extends past the slab to reiterate the nature of a stage’s “drawn curtain.” This decision adds to the welcoming nature of residing or passing through the porch of the community.

Following entry at the storefront, the pair arrives at the entrance lobby and are confronted with the view of the first grand staircase. It’s a means of vertical circulation that already draws them to the second level. Directly to their right is the primary circulation desk of the library and to their left is an elevator core. Ahead of them is a gap separation from the massing of the park. This gap is an atrium with a connecting view to the lower level.
Entrance Lobby
Community Sequence
After ascending the staircase, the mother and daughter find themselves on the second level. Here, there is a shorter ceiling contrary to the tall space of the entrance lobby. At the top of the stairs, they have a view below to the ground level of the park massing. On this floor, they are first introduced to the archive spaces of the library. This floor contains the non-fiction section. Taking a right around the handrail, they pass rows of book stacks and rise a couple of feet in elevation by traveling up a long ramp.
Second Level
Community Sequence
The pair arrive at the northern end of the massing to a large, open reading room. Here they are in a double-height space of a more social reading area. Two more staircases are made available to them in this room.

An iconic stair with seating runs along the western edge of the massing. There is a great view of the park from this side of the building. Another staircase, leading west through the building is encased in thick walls. The volume of this staircase fills a large presence within the mass and can be characterized as a portal leading to the mezzanine level.
Open Reading
Community Sequence
After taking the portal staircase up to the mezzanine level, the mother and daughter may take a right towards the reference and periodicals section or make their way out to the rooftop patio. However, they notice the atrium cutout above them which gives them a peek to the third level. They decide to make their way up the corner stair and continue to the children’s section.

It’s important to recognize the long skylight which punctures the top of this massing. The north-south orientation of this feature mimics the axial movement the visitor experiences during moments in this portion of the library. Slab cutouts between levels offer small inlets of visibility to this significant opening. One isn’t able to witness the whole skylight until they reach the top level.
At the southeastern corner of the lot, the building meets the railroad tracks and has an entry at the underpass. This decision allowed the regulating linework of this library to define additional carving into the landscape. At the scale of the pedestrian, the former pathway of walking at the underpass is widened for a safer experience. A wide strip of raised landscaping is placed in between the sidewalk and busy Copia Street. Improvements to the sidewalk encourage more visitors to visit the library from the southside and have safer accessibility to Memorial Park.

The wall materiality of the neighborhood massing is board-formed concrete and creates a rigid, grounded presence to the object on site. This material choice also has an appearance characteristic of the desert area. The overall geometry of this massing is based on the offset from Copia street and brings a contrast of regulating linework to the remainder of the library.

This entry for the massing of the neighborhood is of a smaller scale in comparison to the other two entrances. Its intended outreach is solely pedestrian-based, and primarily directed towards southern residents. A small stretch of tunnel extends from the massing and reaches beneath the railroad. Beneath the tracks, the threshold of an entry is revealed. The condition of this entrance passage is more secretive considering one driving by cannot easily see the entry to the tunnel. Passersby, unaware of its existence will assume it to be a continuation of the bearing wall alongside the pedestrian pathway.

All program spaces of the neighborhood are located on the lower level and relate to the digital and social components of the library.
This walkthrough is from the perspective of three boys after baseball practice. While waiting for their guardians to come pick them up, they decide to go explore the library. A cross-section through the massing of the neighborhood gives insight to their path of weaving through the lower level.
The three boys walk along Copia street and reach the mouth of the tunnelled entry. After passing through the entrance vestibule they continue through the narrow hallway. At the end of this passage, they enter a tall space, over three times the ceiling height of how they entered. They find themselves in the active center of the neighborhood massing. At this location, they are in a cradled spot with interesting views upward to the floors above. Surrounding the open seating area are concentrated program spaces with lower ceiling heights. For instance, the tech checkout and computer lab are beneath the form of the auditorium.
From this perspective, the arrangement of staircases and walkways that surround the open seating area draw one’s eye line southwest through the neighborhood massing. The angled wall of the neighborhood is now recognized as a large truss structure running through the interior of the building. Paneling fills some of the structure’s openings and allows views into the other two massings.
The group of boys are drawn towards the southwestern end of the neighborhood massing. To their right is the makerspace and the three boys decide to pass through this dynamic program space. The large truss becomes a threshold of access to the remainder of the lower level.
After walking through the makerspace, the three boys find themselves making their way through a winding hallway. This corridor has access to other spaces such as a large music room, small recording studio, gaming room, and finally, the teen space.

Low Ceiling Area

Neighborhood Sequence
The southwestern massing of the library acts as a collection zone for the park. A courtyard extends its paving across the lot towards the remainder of Memorial Park. In addition to this, the surface lot for the library is closest to this massing’s entry. As visitors walk towards the building, they gather in the courtyard space adjacent to the library. The concave placement of this entry’s folded face brings people into the building.

Unlike the other two massings, the internal organization of program spaces for this area of the building mainly houses an entrance lobby, main office, restrooms, small café, and back-of-house rooms. Upon entry, visitors gain insight into what the other two massings have to offer and can later filter into these other parts of the building.
Visitors take a paved pathway towards the library from the remainder of the park. A large courtyard is adjacent to the folded face of the building's western entry. After entering the building through a set of double doors, visitors find themselves in a large exhibition space and lobby. Here, local artists have the opportunity to showcase their work for the community.
A large wall is the back boundary of the exhibition space. The visitor takes a turn about either side of the wall and finds themselves at the open, small café, here is the active center for the Park massing. At this point, the user has visual connectivity to the lobby of the community and views below to the lower level. The three active centers of each massing are aware of each other.
GROUND LEVEL

01 PORCH
02 ENTRY LOBBY
03 CIRCULATION DESK
04 SMALL AUDITORIUM
05 SELF CHECKOUT AREA
06 COURTYARD
07 LOBBY + EXHIBITION SPACE
08 FRONT OFFICE
09 SMALL CAFÉ
10 MEETING ROOMS
11 STAFF AREA
12 LOADING ZONE
The library has been a significant program for society throughout the course of history. It possesses an ever-evolving definition of how it serves as a resource for its user community. Architects need to question how program spaces reflect the needs of the context they are serving.

An ideal, modern library is composed of the archive, social, and digital program spaces. This position maintains the traditional incorporation of book stacks despite the current trends. The collective balance of these three components gives privilege to the physical book alongside two newer ideas for library programming, the social and digital. There is a diverse provision of spatial experiences in the library, whether a user desires to visit the makerspace, have a collaborative study session, or find a book within the stacks - there is something for everyone.

The means of organizing these components within the building is characterized as weaving. This verb developed into a form of establishing relationships between numerous aspects of the building at different scales. For instance, the building became ingrained into the fabric of central El Paso, entrances drew in different types of people from the community and staircases acted as the warp and weft of leading users to different levels. The act of intertwining different components allowed simultaneous coexistence that encourages ideal intergenerational exchange.

Additionally, interior spaces offer more to the human experience of the library than solely their functional definition. There is a range of lighting conditions, means of enclosure, amount of social activity, and user demographics. Added layers of detail impact an overall experience of moving through the library.

The experience of the modern library is an amalgamation of diverse spatial moments. The implementation of this dynamic infrastructure in an area can serve as a catalyst within a community and improve the human condition.


