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child

development
center

kangana
bhatnagar

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2008

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child development center

A thesis submitted in partial fulfillment of the requirements for the degree of
Master of Fine Arts in Design; Interior Environments at Virginia Commonwealth University

by

Kangana Bhatnagar

Post Graduation in Interior Design
Apeejay Institute of Design, India 2005

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Virginia Commonwealth University
Richmond, Virginia
July, 2008

“ We shall not cease from exploration and the end of all our exploring will be to arrive where we started... and know the place for the first time. “

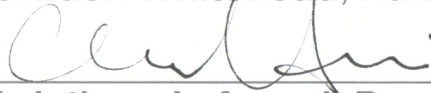
T.S. ELLIOT

**School of the Arts
Virginia Commonwealth University**

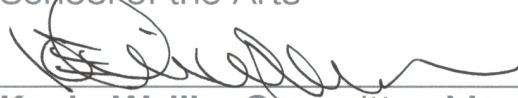
This is to certify that the thesis/creative project prepared by **Kangana Bhatnagar** entitled "**Healing, Learning and Play**" has been approved by her committee as satisfactory completion of the thesis requirement for the degree of Master of Fine Arts.



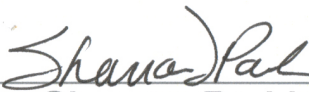
Camden Whitehead, Advisor, Department of Interior Design, School of the Arts



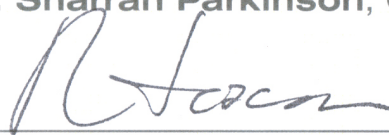
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APRIL 30, 2008

Date

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I am also grateful to Ali, who helped me throughout my thesis. From the rides to Fed ex Kinkos to helping me with model making. Without his support, help and encouragement this thesis would not have reached completion.

Special thanks also to all my classmates, for their constructive criticism and invaluable assistance. Not forgetting Gerardo, who gave me company for long hours in the library and for being there for me throughout. I know I have made a friend for life!

Finally, I wish to thank my family for their continuous love and encouragement, for always believing in me, and for never failing to provide all the support.

ABSTRACT

Research suggests that the first five years of life are critical for building the foundation for children's success throughout their schooling and life. Throughout these first years of life there are a number of essential windows of opportunity during which certain kinds of stimuli are needed to help the brain develop and maintain critical connections necessary for learning.

This project is a unification of a Child Development Center and a therapeutic center. This center includes children who suffer from bereavement; a broken home, death of a parent or child abuse. These children are provided with therapy by a specialist, and also given an opportunity to interact with other children as a form of therapy.

This thesis therefore explores the following questions. How can design create a place that enhances learning, healing and play through interaction and movement? How can design create a space for the special needs of children without having to bind them in a classroom? How to create movement in a building that itself is static in nature?

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DESIGN MANIFESTO

I believe in exploration, of places, people and their culture .I largely attribute my interest in the field of interior design and my growth as an interior designer with my fondness towards exploration of places, people and their culture as well as the perception of what is good design.

While keeping an open mind about what I would grow up to become, I was of a strong conviction that a potpourri of experiences would fulfill my intrinsic desire to explore and in some way, become a beacon to a career. But, it was an eight-month old who drove home the point and showed me this way.

On her first visit to my house, a little girl made it her mission to crawl into every nook and corner that we had either forgotten or carefully hidden away from prying eyes. A few minutes after her disappearance, she always returned with a glee on her face and unfailingly produced something she had explored on the location. No toys gave her the pleasure that uninterrupted crawling and exploration of something new in the most unexpected spaces did. My house was her toy and she wouldn't settle for anything less. For her, this new space, this new environment, invited her to explore to learn more. This crawling explorer introduced me to the joys of new and exciting environments.

What if these environments became my opportunity, exploration my inspiration, and design my tool.

I have been fortunate to have been brought up in a culturally rich country like India and travel through some of its most vibrant rural outposts. I have also had the opportunity to spend time in some of the most eclectic cities in Europe and soak in the comforts of modern day splendor and luxury in The United States of America. My travels and their associated explorations have opened new doors to my design sensibilities.

I believe design is all about exploration. "Good design" is a consequence of not only exploring technological advances in materials, surfaces and forms to create life efficient and appealing spaces, but also in exploring human nature and their associates beliefs. For some, aesthetics is synonymous to a lean and frugal design with the best blend of cost and space usage. For others it is the grandeur that makes a great design. Crystallizing such details is a challenging task but to me it lends immense pleasure to explore how to make each of these ideas into a seamless reality.

INTRODUCTION

Research suggests that the first five years of life are critical for building the foundation for children's success throughout their schooling and life. Throughout these first years of life there are a number of essential windows of opportunity during which certain kinds of stimuli are needed to help the brain develop and maintain critical connections necessary for learning. What is it that draws a child to a place? What is it that creates the magnetic energy that draws one into a space?

This energy stems from a symbiotic relationship, a flow of spaces that work together harmoniously. Symbiotic relationships change how groups and how individuals work together—causing a powerful connection between individuals and the spaces that they occupy. Ceppi and Zini (1998).

The concept is to design a space for children that enhances learning, healing and play through interaction and movement.

This project is a unification of a Child Development Center and a Therapeutic Center. Children who are emotionally disturbed and suffer from bereavement; a parent's death, a broken home or child abuse are given therapy by a specialist, and also given a chance to interact with other children as a form of therapy.

THE SITE



FIRST UNITARIAN CHURCH
1000, BLANTON AVENUE
RICHMOND,
VIRGINIA, 23221
ARCHITECT: ULRICH J. FRANZEN
BUILT IN: 1971
BUILDING TYPE: CHURCH
STYLE: MODERN
CONSTRUCTION: CONCRETE
BLOCKS
AREA: 18,000 SQ FT.

In 1971, when Franzen J Ulrich built the First Unitarian Church, he chose to respect the cornice lines of the neighborhood. The First Unitarian Church acts as a good neighbor by keeping itself as low as the surrounding houses, and by growing laterally instead. One cannot help but be impressed by its series of towers. The structure has staggered blocks of space, with towers and varied heights, and light admitted by clerestories and by slanted windows, that have something of a mansard effect.

The preconception, that the building is straightforward, honest and also complex is borne out by a look at the interior. The major areas are few enough, a long vestibule, the minister's study and a chapel meeting room at the end, along with the hall in which services are helped, and three teaching-meeting rooms at the other end. These elements are arranged so that they seem unexpected, and a hint of surprise is associated in moving from one to another.

Inside, the major textures are cool stone of the walls and light brown of the wood work, only a little warmer, but all of this is accented by the use of panels of bright colors, painted close to the skylights and arranged so that they are either seen as strong accents of primary color or as gentle, pastel shadows of color thrown off white walls.

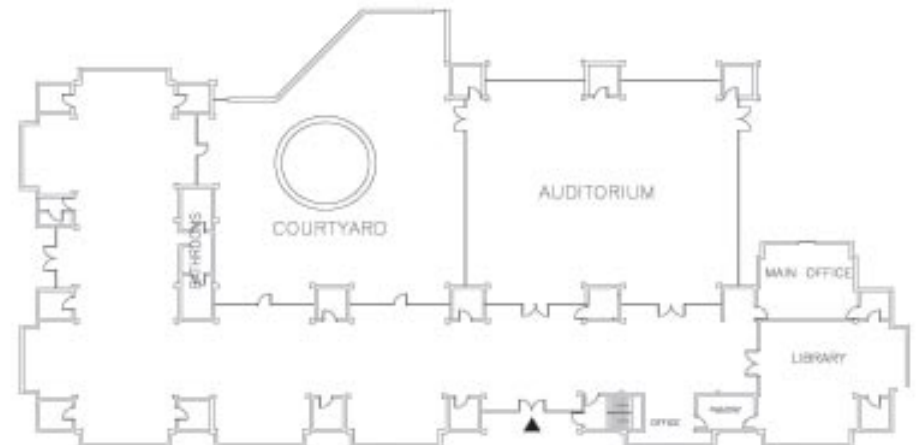


north elevation

A long vestibule, the minister's study and the auditorium form the core of this floor plan. These elements are arranged so that they seem unexpected, and a hint of surprise is associated in moving from one space to another. The structure has staggered blocks of space, with towers at varied heights, and light admitted by the slanted windows and clerestories have something of a mansard effect.



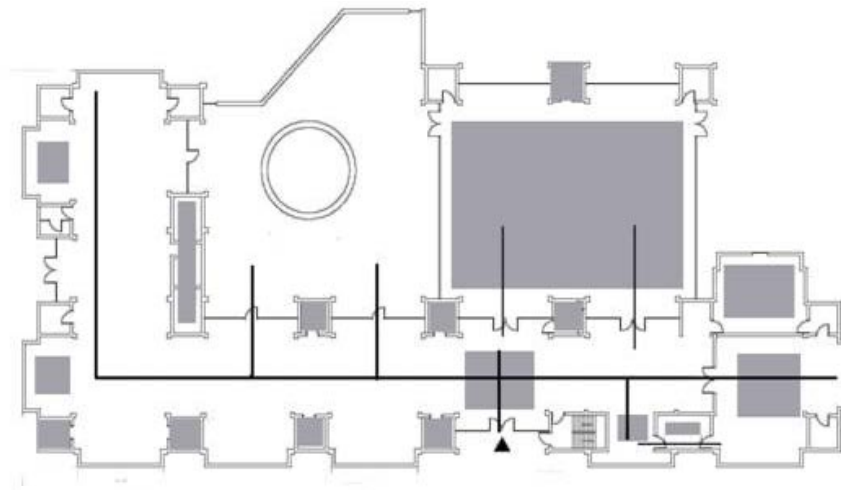
site map: first unitarian church, richmond, va



existing floor plan: first unitarian church, richmond, va

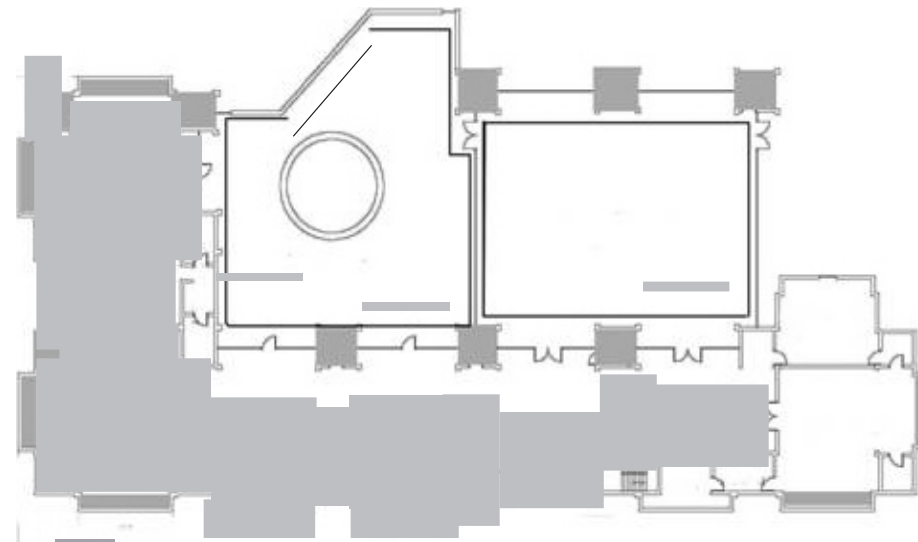


east elevation



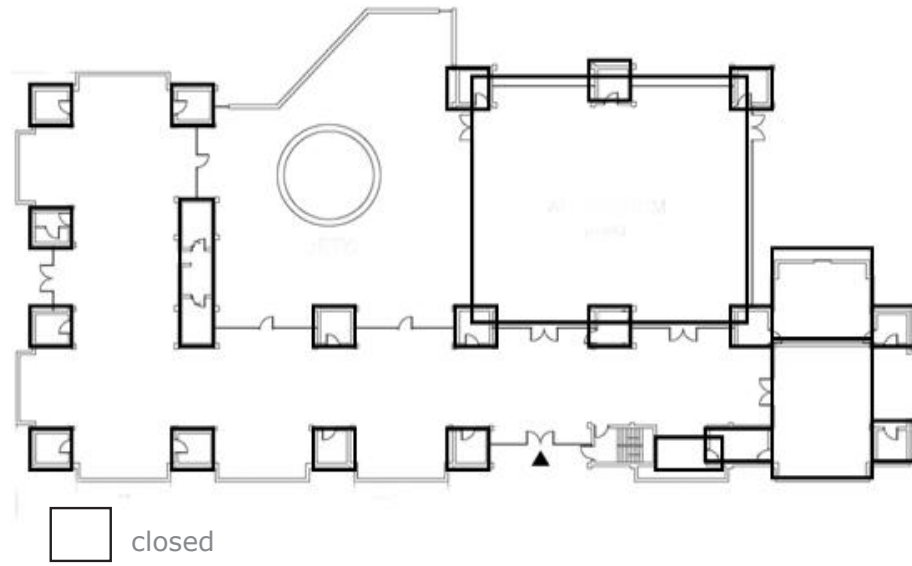
- used spaces
- major circulation path
- minor circulation path

circulation

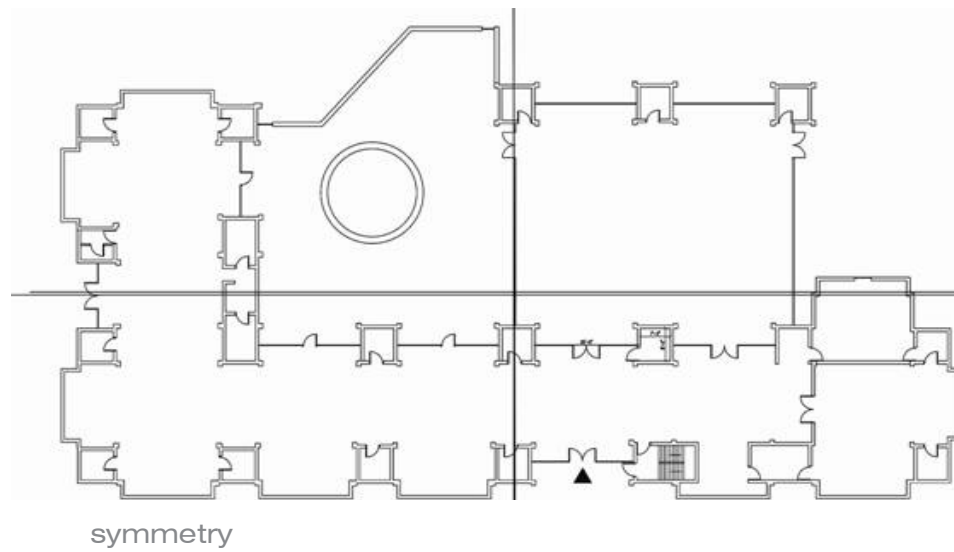


- repetitive
- unique

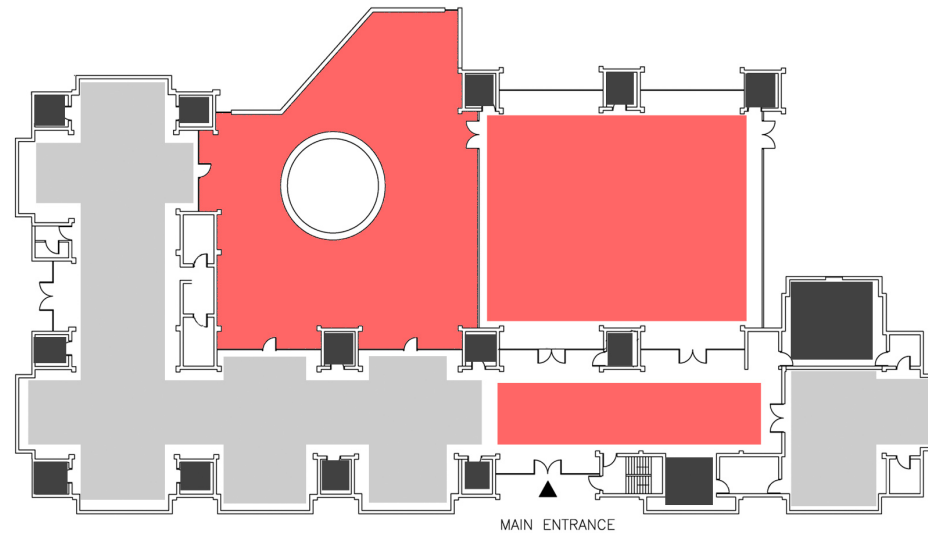
repetitive to unique



open to closed spaces

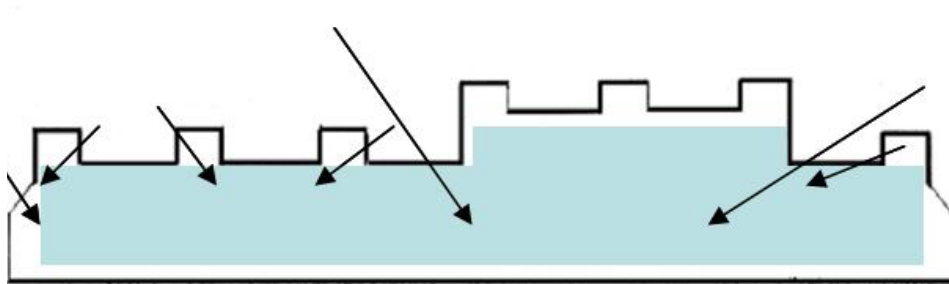


symmetry

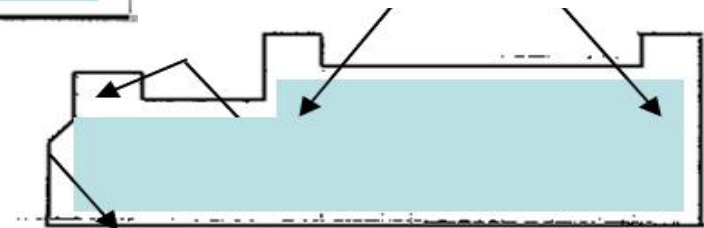


- public space
- classroom space
- admin space

public to private



natural light east section



natural light north section

natural light



existing site photographs

research documentation

GREAT BEGINNINGS EARLY EDUCATION CENTER

ARCHITECTURE FIRM: ACI/FRANKISER
HUTCHENS, INC

TYPE: SCHOOL, EARLY EDUCATION

GRADES: PRESCHOOL AND PARENTS AS
TEACHERS

SPACE: 34,200 SQ. FT

COMPLETION: JUNE 2005

CAPACITY: 276

This 34,200-square-foot facility serves about 300 preschool children with special needs or developmental delays. It is also home to the Parents As Teachers program, which serves nearly 3,000 children from birth through age five. The two programs are similar but have their own unique needs.

The first challenge was to design an entry that would be warm and inviting to children and families. The front office needed to have visibility for the secretaries of each program, yet enough privacy to not interrupt the inner workings of each program. The glassed off offices on either side of the front entry provides a noise barrier. The sliding window allows secretaries to work with parents without interrupting the work environment of other staff.

Many students come into the building for 30 minutes of speech services a day. The lobby needed to provide a waiting space for parents as well as a play area for children. This was accomplished by the slightly walled off play area at the back of the lobby. It serves as a structure to contain toys for children to play with while waiting as well as a visible barrier for busy preschool children and toddlers. The placement at the back of the lobby also keeps the noise level to a minimum for secretaries working in the front office.

The classrooms each have an observation window so observers do not have to enter the room and disrupt learning. Each window is a different shape and color to make them functional as well as educational. The floor tiles outside the classrooms have a colored shape inset.

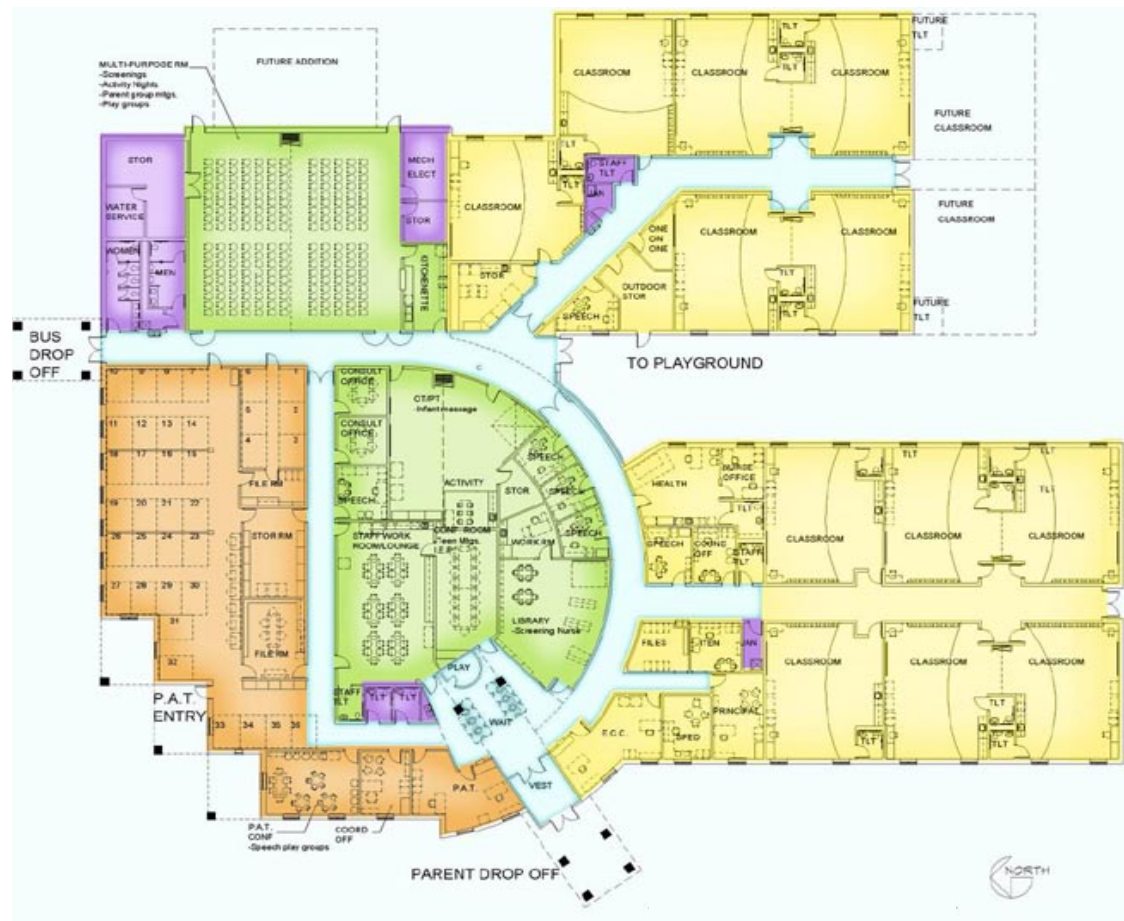


FIG 1: FLOOR PLAN



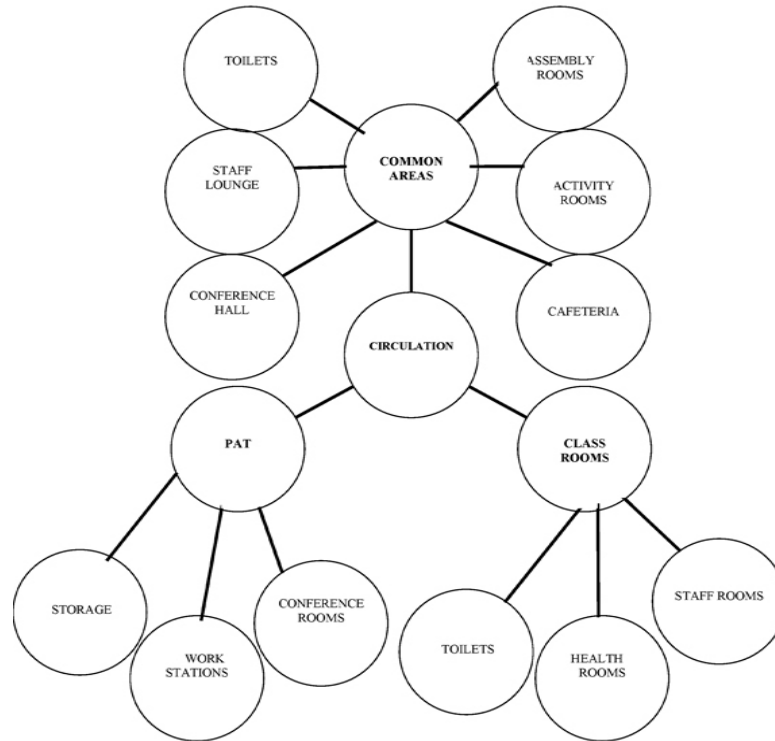


FIG 2: Adjacencies at Great Beginnings early education

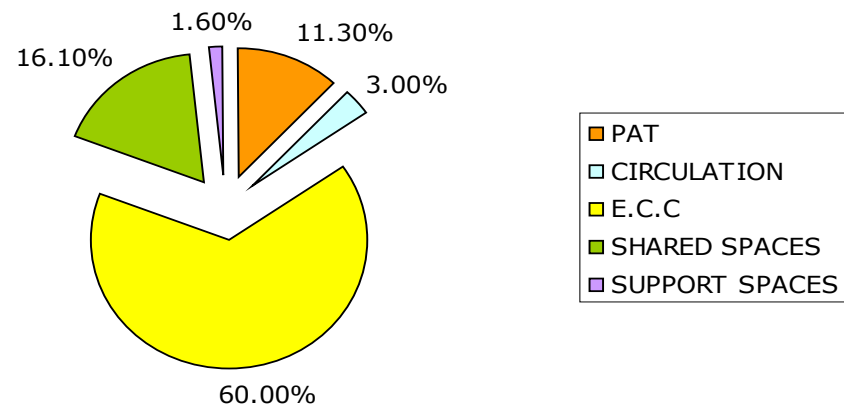


FIG 3: Allocation of spaces in percentage at Great Beginnings early education

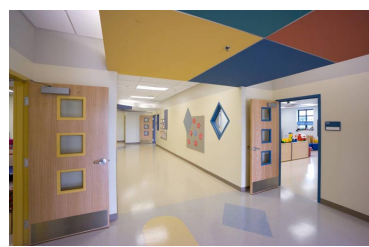
The health room is a very open area for students and includes a smaller office for the RN on staff. The room is open for parents and staff to fit comfortably with students. A curtain can be pulled to provide privacy around the cot as needed.

The multipurpose room is a shared space for both programs. The theme of shapes and colors is carried out in this room by mounted pallets of shapes which also provide a sound barrier.

The kitchen is off this area, so students can eat breakfast and lunch at the collapsible tables to maximize the use of the room. The workroom and large and small conference rooms are shared spaces. They were included to provide privacy for meetings and a work and lunch area for staff.

The therapy room has a special floor to provide a better fall surface as well as a warmer space for infants to lie on for infant massage class.

The building allows for the two programs to function separately as well as together when needed. Space is maximized by providing rooms that can be used for different purposes. Both programs are extremely pleased with the design and functionality of the building. If we could change anything, it would be to enlarge the multipurpose room for our larger parent meetings or provide more closet space for rotation of toys



GARRISON CENTER FOR EARLY CHILDHOOD EDUCATION

ARCHITECTURE FIRM: BARGMANN HENDRIE + ARCHETYPE, INC

TYPE: SCHOOL, EARLY EDUCATION

GRADES: PRE-KINDERGARTEN

SPACE: 5,200 SQ. FT.

COMPLETION: SEPTEMBER 2006

CAPACITY: 40

The Early Childhood Education Center is a uniquely designed facility that incorporates a Childcare Center, Laboratory/Observation Classroom and the Institute for Child Health & Safety. These programs are integrated and synergistic, sharing the resources in a small but animated building.

The Childcare Center consists of two model classrooms serving a maximum of forty children, 2.9 to 5 years of age; two child-size bathrooms; a kitchen; director's office; and a room designed to accommodate as many as seven infants on an on-demand basis.

In addition to the classrooms, a Laboratory/Observation classroom serves as a training site for Community College students preparing to enter the field of Early Childhood Education. Students in the Early Childhood Education Program are afforded the opportunity to connect educational theory to practice during lecture sessions, lab hours, and student teaching experiences under the supervision of college professors.

The building presents a home-like image in a campus dominated by a large pre-cast concrete academic building. This diminutive but welcoming structure has New England architectural elements, yet it also has large windows and clean lines that make it contemporary and inviting. The building is sited in a small grove of trees creating a dark green background that frames and highlights the small white building.

The childcare facility has its own entry on the west side of the library. Its lobby has a large display wall with built-in benches, where entering children transition into school. One classroom offers views of the thick stand of trees while the other overlooks the main campus and the busy student walkways.

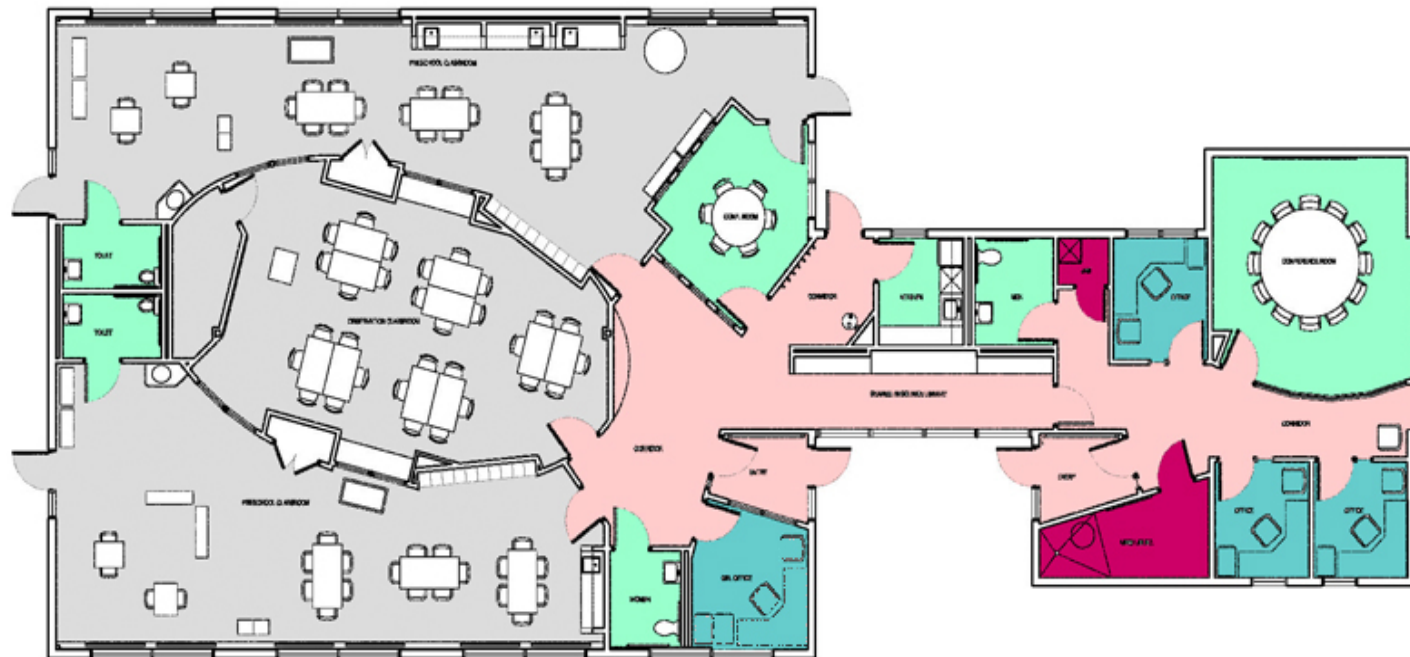


FIG 4: FLOOR PLAN

CLASS ROOMS	
SHARED SPACES	
STAFF OFFICES	
SUPPORT SPACES	
CIRCULATION	

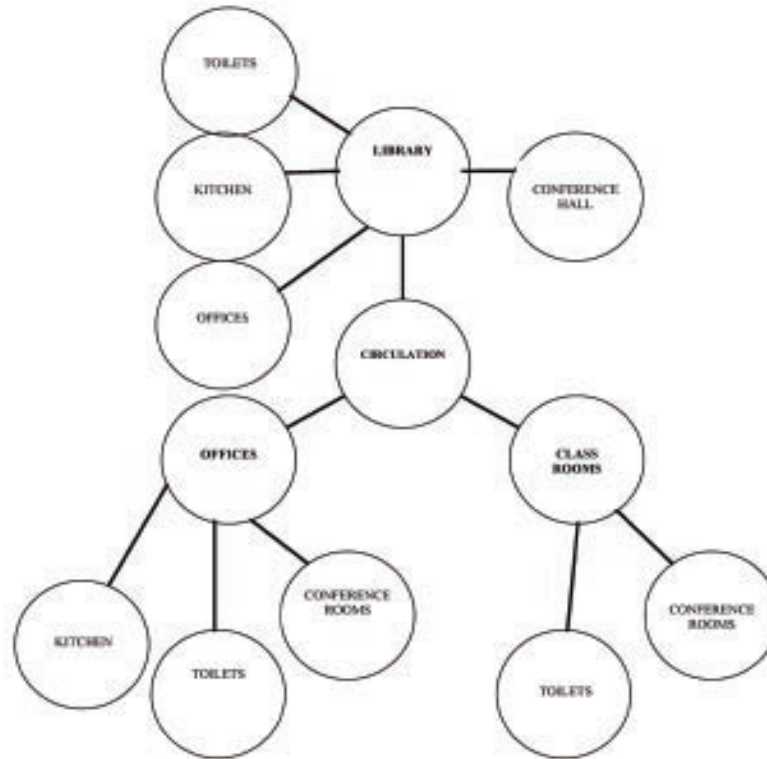


FIG 5: Adjacencies at Garrison center for early education

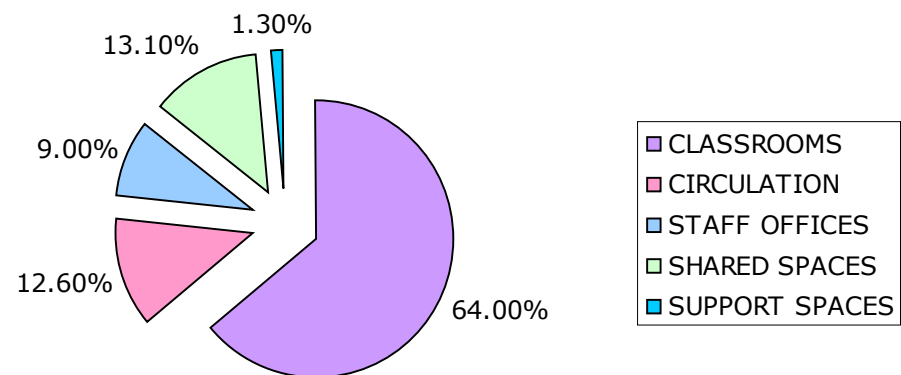


FIG 6: Allocation of spaces in percentage at Garrison center for early education

An elliptical shaped room is located in between the two classrooms. This room serves as an observation room for the students of the early childhood curriculum. This room has one-way, mirrored glass in various windows into the children's classrooms. From the child's perspective these are reflective mirrors inviting self-exploration.

On the east side of the library is an institute for child safety. This space consists of three offices, and a state-of-the-art conference room. There is a large glass window on the east side of the conference room and a glass wall into the corridor offering views of the adjacent children's playground



EDISTO BEACH ELEMENTARY/COMMUNITY CENTER

ARCHITECTURE FIRM: LIOLLIO ARCHITECTURE

TYPE: ELEMENTARY AND COMMUNITY CENTER

GRADES: K-6

SPACE: 12,600 SQ FT.

COMPLETION: 2003

CAPACITY: 45

Sited on a low, wooded 2-acre site, this 12,600 square foot facility ramps and decks above the ground. Metal roof planes are designed to de-emphasize the building's size. Many of the classrooms open to large overhangs and deep porches.

The goal of this Education Civic Center is to provide a facility that serves a dual role for the small unique rural community of Edisto Beach. During the school day the facility functions as an educational environment for approximately 45 students in from four year-old Kindergarten through sixth grade. After school hours and during the summer the facility provides an auditorium for the local theater company to present plays; meeting rooms and a computer lab with Internet access for small conventions or business meetings; and space for community meetings, weddings, receptions and other similar social functions.

The educational environment includes five classrooms and a computer lab. The auditorium functions as the school cafeteria where lunch is catered by an outside business. The Elementary School always has first priority when scheduling events in the facility.

The civic center portion is primarily the auditorium and kitchen section; however, access to the computer lab and a meeting room is possible through arrangements made with the facility manager. The auditorium has a large stage with curtains, a motorized projection screen, and electrical outlets to accommodate a variety of needs.

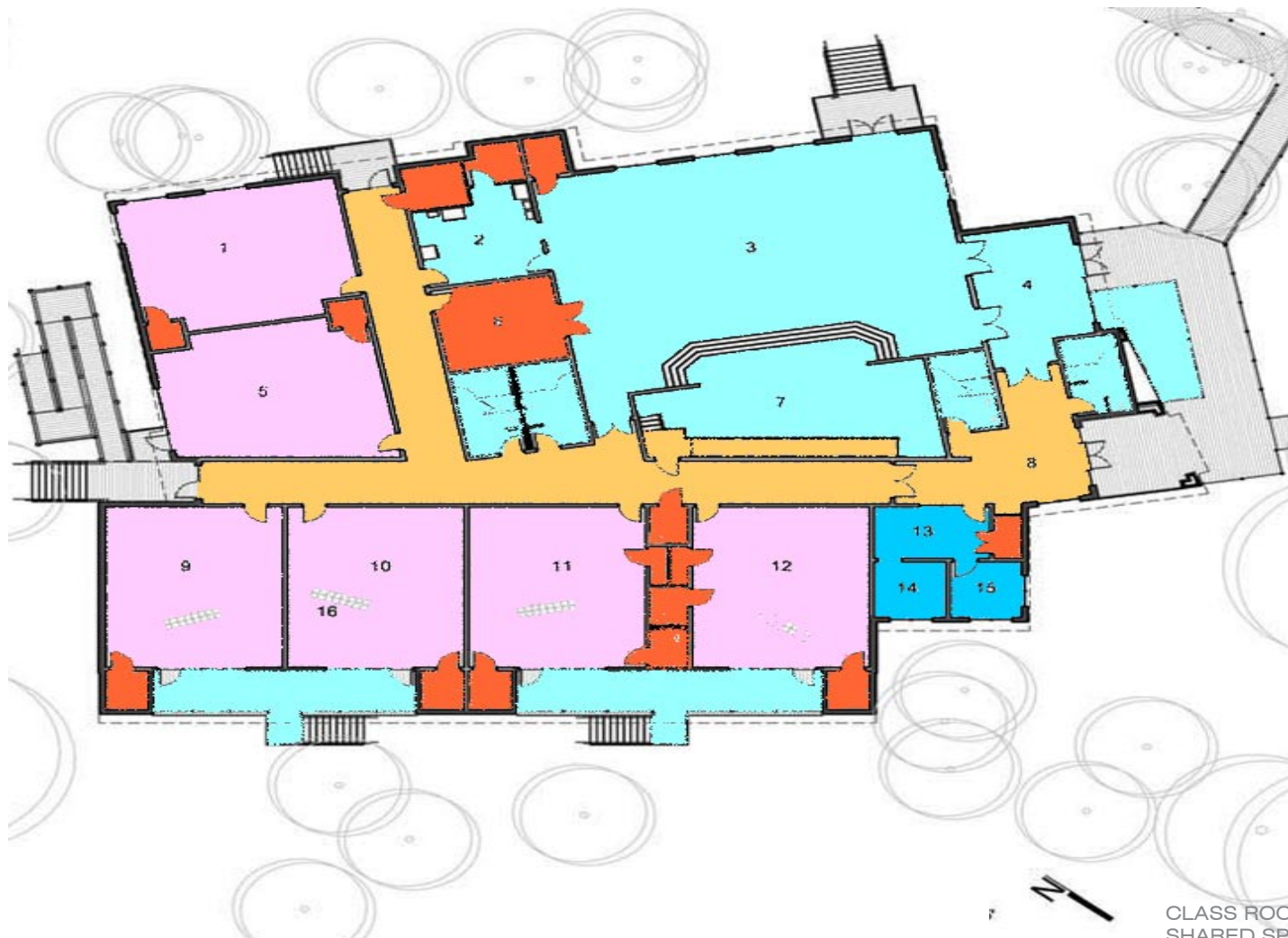


FIG 7: FLOOR PLAN

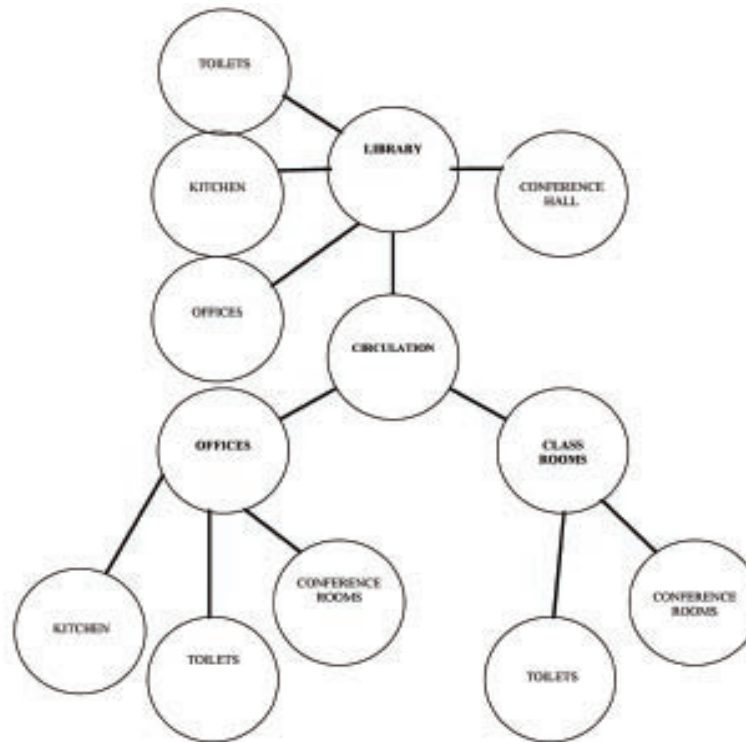


FIG 8: Adjacencies at Garrison center for early education

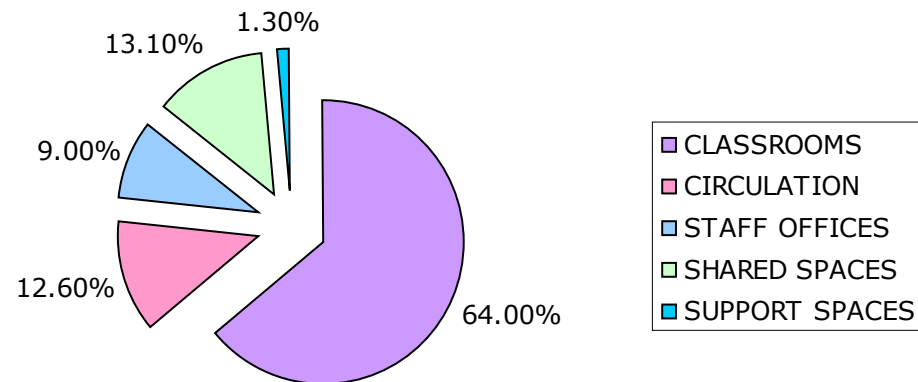


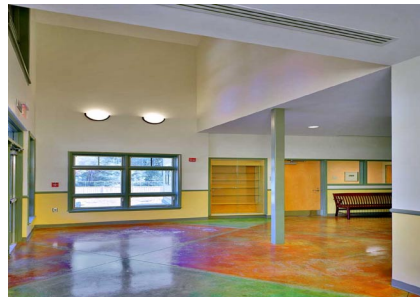
FIG 9: Allocation of spaces in percentage at Garrison center for early education

Adding to its unique design is the fact that this is the only facility in South Carolina that combines a schoolhouse and community center. This dual use presents wonderful opportunities bringing together civic and educational leaders.

Classrooms feature bright primary colors, with flooring and fixtures suitable for elementary school students. One classroom has state-of-the-art computer cabling. Public and educational spaces overlap. Offices and a gallery leading into the multipurpose room can be found in the entry lobby. The multi-purpose room features a raised stage and has the capacity to seat 150 people. This public portion of the building can be sectioned off from the facility's classrooms.

A kitchenette, used for school meals and catered events is located adjacent to the multi-purpose room. Additionally, the multipurpose room features a gym-quality floor that provides a warm environment, but can stand up to the rigors of physical education classes.

Colors of nature dominate this shared area with warm-colored floors and a deep green proscenium curtain. Varying ceiling heights and tiered windows create an open, airy atmosphere throughout the building.



FIRST UNITARIAN CHURCH, ROCHESTER, NY

ARCHITECT: LOUIS KAHN

BUILT IN : 1959 TO 1967

BUILDING TYPE: CHURCH

STYLE: MODERN

CONSTRUCTION SYSTEM: BRICK,
CONCRETE BLOCK, CAST-IN-PLACE
REINFORCED CONCRETE

The concept of monolithic building sculpture can be used to describe the First Unitarian Church. Everything seems to form an integrated whole.

The evolution of the Unitarian Church was in three distinct phases. In the first design solution, the sanctuary was set at the center of a lower, square building with a tower at each corner. The towers consisted of the library, a chapel, and offices. Classrooms were distributed throughout the remaining space. The client did not accept this design because it was rigid, with unequal room sizes.

The second design solution abandoned the circular and octagonal aspects and adopted a right angled scheme. This scheme had more flexibility than his previous one. The building committee however still felt that this new scheme failed to satisfy their needs and budget.

For the third design solution, the client recommended Louis Kahn to consider designing a two-building complex. Kahn thus eliminated the corner towers of the first design. He introduced a more longitudinal emphasis. He also modified his ideal of a centralized plan to a significant degree.

Kahn introduced a new roofing system, which was made up of concrete caps, each being a shallow pyramid topped by a raised cross shape whose open ends formed four “dormer” windows. Each roof dome was twenty two feet, and weighed thirty three tones. This roofing system was however rejected, which forced Kahn to modify the roof, with addition to light towers. By January 1961, Kahn had finally arrived at his final design. He had completely tightened the floor plan, and its overall dimensions had almost completely returned to a square shape.

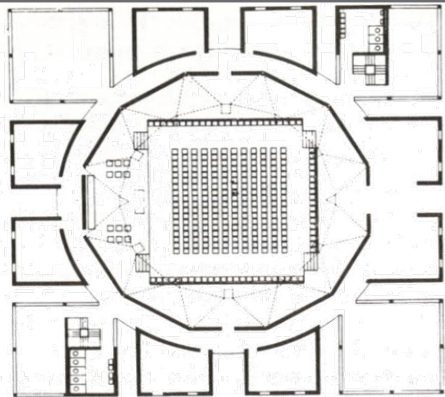


FIG 10: Design Solution 1

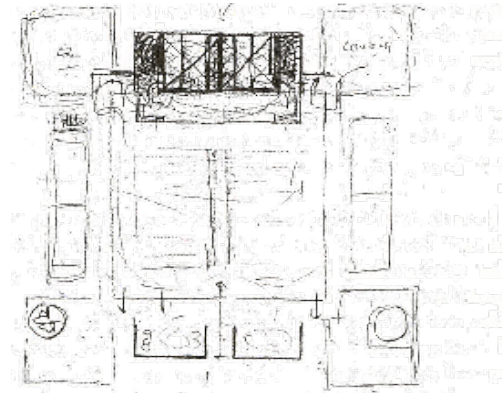
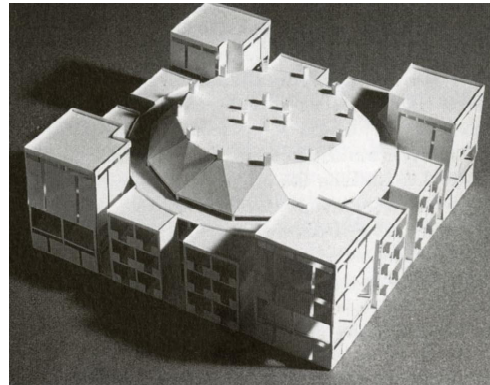


FIG 11: Design Solution 2

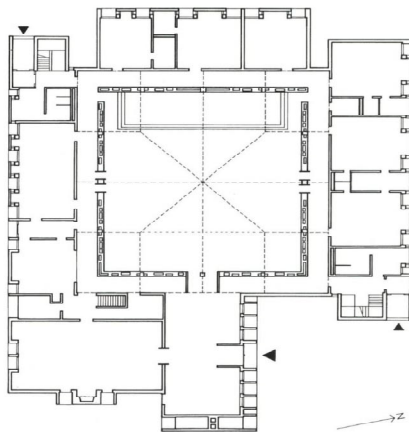


FIG 12: Design Solution 3

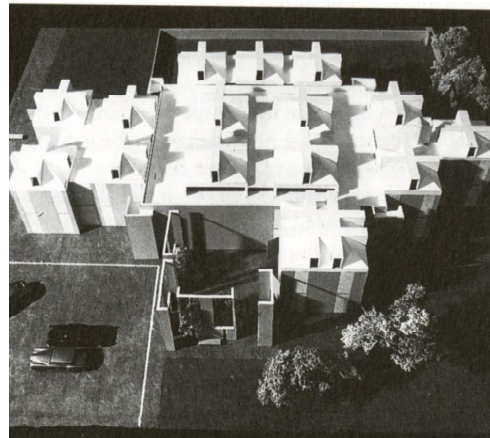




FIG 13: Final Floor Plan

In 1965, Kahn was approached again to provide additional meeting rooms and classroom spaces. He housed them in an adjoining block into which the volume of the original porch could be extended and which continues the surface and the vertical emphasis of the first building. The concept was, a core room as the centre, with the functional areas i.e. Community rooms, a kindergarten and offices surrounding it.

An important factor according to Kahn when describing the physical appearance of the church is the discovery of light as a shaping medium. This helps in creating volumes through the penetrating effect.

“All spaces need natural light. That is because the moods which are created by the time of day and seasons of the year are constantly helping you in evoking what a space can be if it has natural light and can’t be if it doesn’t. Artificial light is a single tiny static moment in light and can never equal the nuances of mood created by the time of day and the wonder of the seasons.”

He devised a series of tall, thin windows which enabled to admit hooded daylight, without any risk of glare. This gives a Light Shade Component to the façade’.

This use of natural light furthered into the central interior space with four tower-like corner skylights as light bodies. These skylights were called the “mystical corners” by Kahn. Just as the interior draws life from the light bodies at the corners and the dark cross of the ceiling, the surrounding façade’ of the building acquires its appearance from light surfaces and dark shaded openings. This gives the interiors a subdued light similar to shaded light.

The shadows cast on the multi layered façade of the Unitarian Church is built up by the alternating protrusion and indentation in its two external planes, which blend into each other, producing positive and negative, in other words, solid and hollow bodies.

In the analysis of the building, it is evident that while designing the First Unitarian Church at Rochester, New York, Kahn started from the centre. The beginning of the design process is in the centre of the church room. This reveals his thoughts about using precise geometrical proportional relations to symbolize primeval beginnings from the middle.

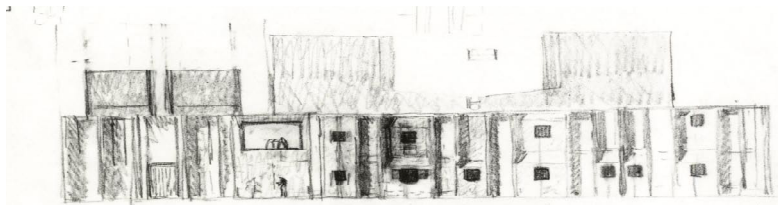


FIG 14 a)



FIG 14 b)

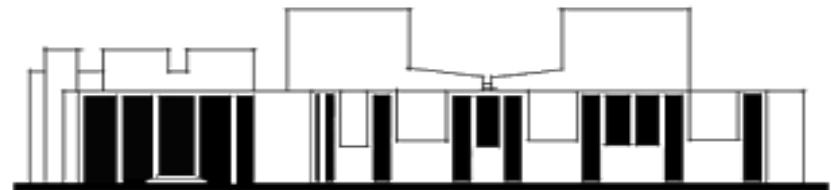


FIG 14 c)

FIG 14 a),b),c) : ELEVATIONS EXPLAINING THE NEGATIVE AND POSITIVE SPACES CREATED



UNITY TEMPLE OAK PARK, ILLINOIS

ARCHITECT: FRANK LLOYD WRIGHT

BUILT IN : 1906

BUILDING TYPE: CHURCH AND PARISH HOUSE

STYLE: EARLY MODERN

CONSTRUCTION SYSTEM: SITE CAST CONCRETE

The Unity Temple can be described as, It is ordered on a rigorous system of proportions, with the interior and exterior spaces determined by the measurements of the central interior sanctuary space. It is made of interlocking spaces.

The original Unity Church, built in Oak Park in 1872. It was a wood-frame building with a tall steeple over the front entrance, a pitched roof. This building was struck by lightning and got completely destroyed by fire. Wright, who was the client's friend, was offered the commission for building a new church. The budget however, was very tight, which was about 35,000.

Wright began designing the Unity Temple starting with the sanctuary. For Wright, the design of the building should be developed from within. *"Let the room inside be the architecture outside"*. The square-the dominant module of the church housed the temple, the smaller one housed the secular rooms of the church.

In a narrative in his Autobiography, Wright presented his design process for the Unity Temple as being defined by the search of constructive logic, a way of making that depends on the materials and methods of construction. His extensive studies of nature had led him to the realization that the simplicity, inevitability and perfection of natural forms, resulted from the coherence of their composition and construction

With this, Wright's principle of integrity, called for the building to be the "thoroughbred". By thoroughbred he meant, built with the same material. Here, reinforced concrete was the only material possible. For it could be used throughout to make walls, floors, stairs and the roof. Infilled only by wood and glass for the window frames, doors and skylights. This allowed the building to look alike throughout the four sides. *"It was, in its simplest form, meant a building square in plan."*

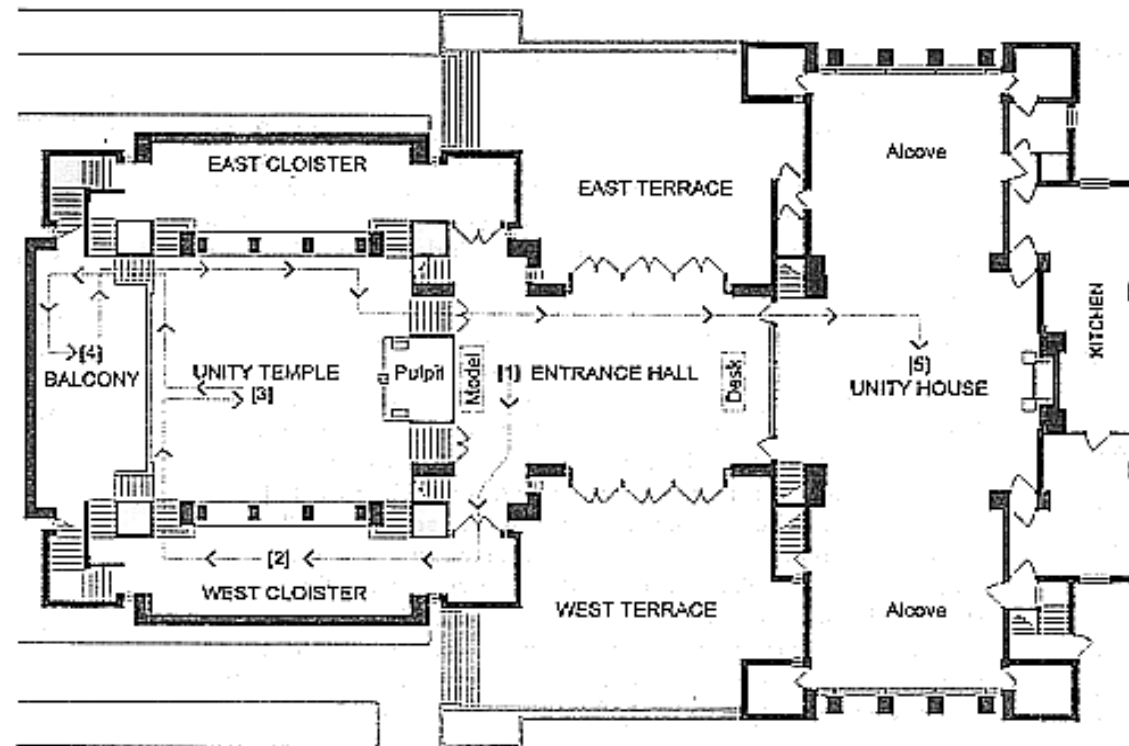


FIG 15: Floor Plan, Unity Temple

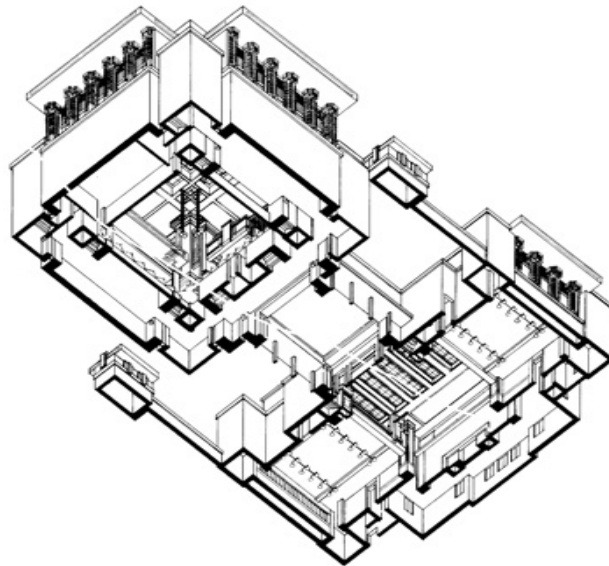
Every surface in the Unity Temple is rigorously proportioned, folding and unfolding from the square and cube, so that geometry seems to come alive within this space.

Wright wrote in 1912 “ Even the smallest ornamental pieces such as the leaded glass windows, are generated as variations on the theme of the floor plan- a square intersected by a cruciform. From the scale of the entire room to the hanging of the lamps, the whole to the parts, we are everywhere aware of square and cubic volumes of all sizes, actual and implied, nested one within the other in a dynamic order, smaller asymmetries, interlocking in rich spatial forms as they interpenetrate with larger symmetrical volumes.”

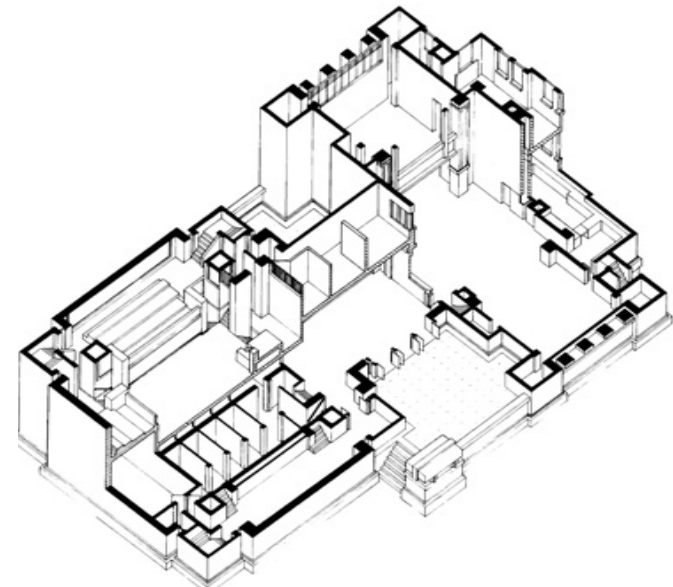
The entrance of the temple is from the West Terrace, which furthers you into the Entrance Hall, which is used for the Sunday services or for any social and educational events. One arrives here from the street by a series of right angled turns that emphasize the protective nature of the construction of the sanctuary space. The continuity of the outside with the inside is developed through transparent glass art windows, that Wright calls “light screens”.

At the four corners of the building, the short blocks, contain the stairs, where as the walls between the stairways, support windows and ornamented columns, that make an otherwise simple facade an extravagance.

On the left side of then Entrance Hall is the Unity Temple, which Wright calls his “jewel house”. The shafts of light and the pattern of the art glass windows from the narrow openings and the skylights break the quiet darkness of the interior.



a) Axonometric view up towards ceiling. With Virtually all light into the interiors coming from above, the ceiling is given for greater articulation than the floor



b) Axonometric view down towards the floor, Partial view of entrance cloister and cloakroom below floor of sanctuary.

FIG 16: Axonometric views of the Unity Temple



SCHOOL IN MORBIO INFERIORE, SWITZERLAND

ARCHITECT: MARIO BOTTA

BUILT IN : 1972 TO 1977

BUILDING TYPE: SCHOOL

STYLE: MODERN

CONSTRUCTION SYSTEM: MASONRY

The school, which was one of the first public buildings designed by Mario Botta, extends gracefully in linear form within a rural landscape, at the foot of a hill side close to the towns of Chiasso and Balerna. It is not simply placed in the site, but actually transforms the site. It gives a new meaning to the landscape. It covers a total of about 15000 sq meters, that is broken into separate units.

It is a highly controlled design that clearly delineates the edge of the town against the hillside. Three sections compose the complex: the school proper, the gymnasium, and a small house for the custodian. The gym and small building form the entry to the complex. Both are organized to provide a diagonal view of the school building, which is rotated thirty degrees to the orthogonal grid of the street and gym.

The school is based on a repetitive module. Each module is based on a nine-square grid. A central spine runs longitudinally between the modules, while the classrooms and other primary spaces are positioned facing east and west. Giant rooftops monitors bring daylight to the circulation spine, while upper floor light shelves and deep recesses below provide some measure of sun control to the classrooms.

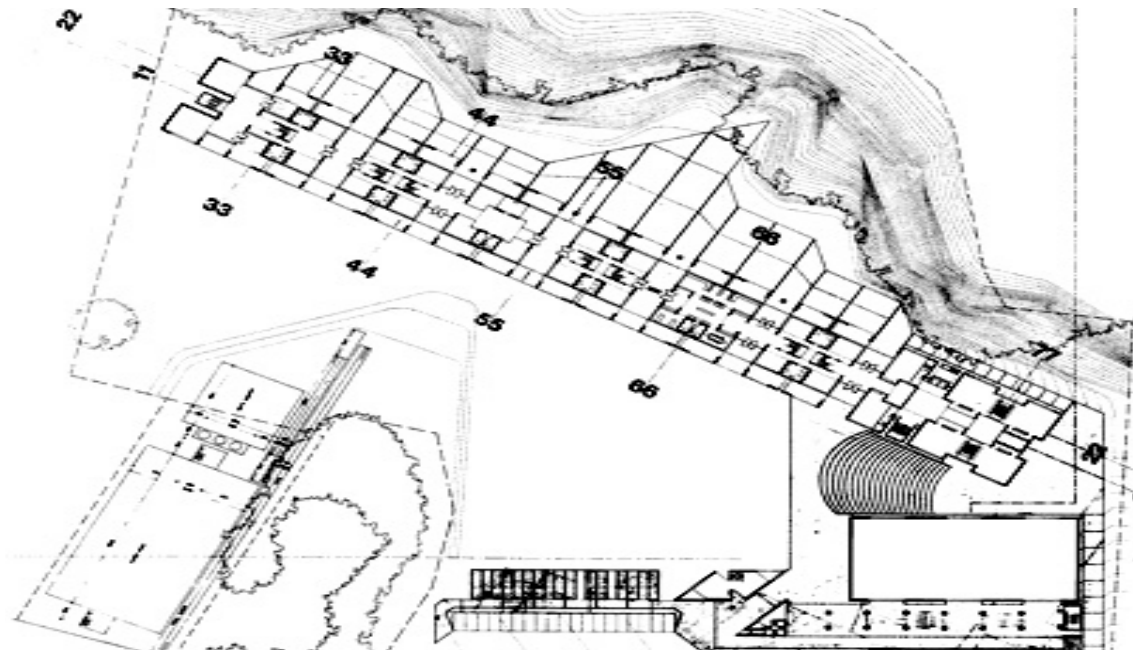


FIG 17: Floor Plan, Morbio Inferiore

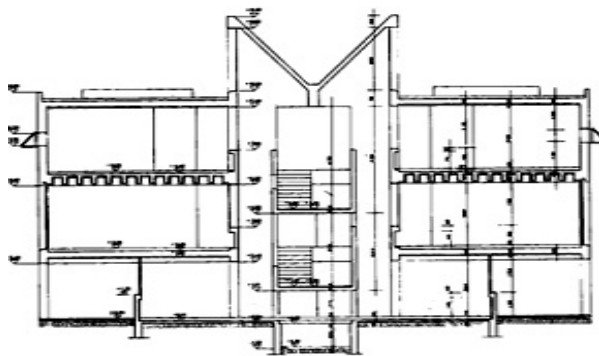


FIG 18: Elevation, Morbio Inferiore

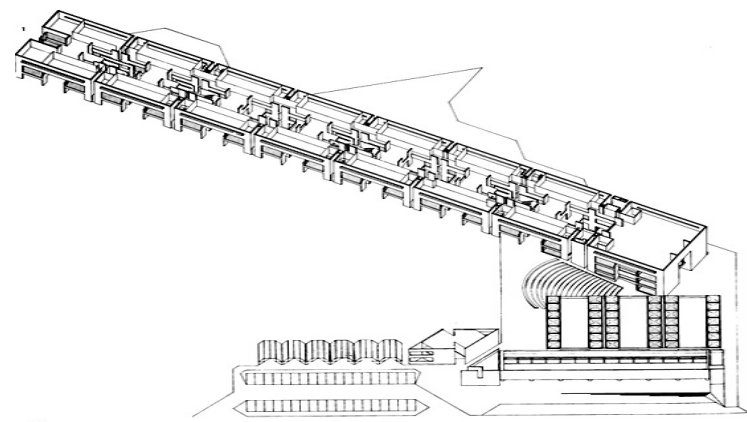


FIG 19: Axonometric, Morbio Inferiore

This is not a building with centrality. The interior walkway constitutes a long corridor with classrooms on each side and forms the main route for circulation, which is brightly illuminated with skylights on the roof. This “backbone” in the building, which forms a linear core, gathers public activity and offers views of all three floors through the use of voids, staircases and open corridors.

The Skylights create a series of triangular forms, which in their rhythmic repetition become the fundamental elements of the building. There is play with the negative and internal voids and light, just like Louis Kahn’s First Unitarian Church in Rochester, NY.

Color is used on the concrete of some of the interior walls. A stone figure by sculptor Giuseppe Selmoni lies gracefully on the grass and creates an element of surprise. Almost like a man swimming in grass. A small open amphitheater, the entrance building, and the rectangle of the gymnasium complete the composition

Clarity of geometry, massiveness of form, careful emptying out of the primary volume, linearity of the volume and the subtle breaking of it, as well as the use of light, become powerful elements in its composition. By constructing a sire through its form, the building can communicate its relationship with the landscape.

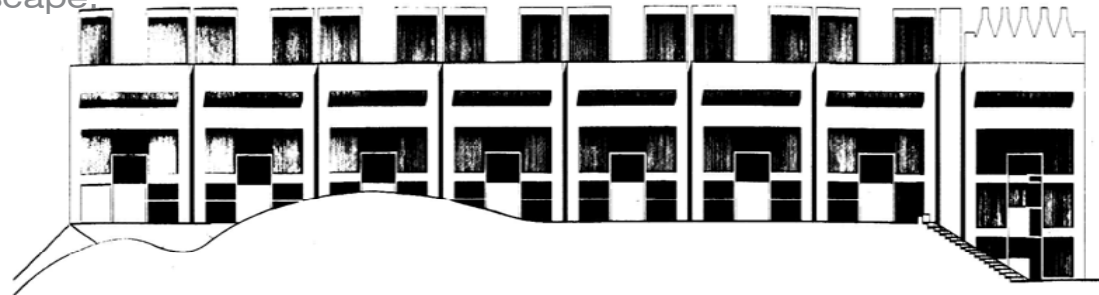


FIG 20: West Elevation, Morbio Inferiore

Thin protruding window strips indicate the presence of the laboratory areas on the top floor. These are illuminated by overhead light by a series of abat-jours on the roof.

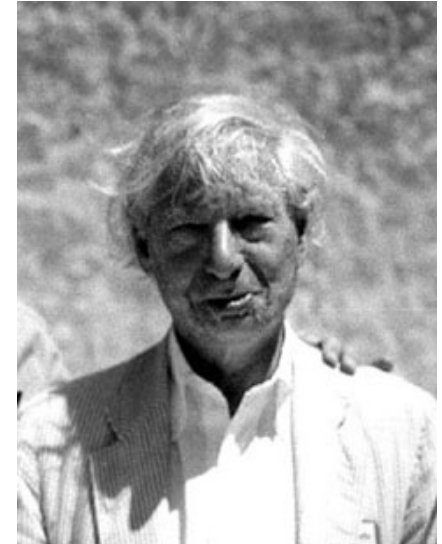


LOUIS KAHN

TIME LINE

All dates refer to the year work commenced

- 1935 - Jersey Homesteads Cooperative Development, Hightstown, NJ
- 1940 - Oser House, Melrose Park, PA
- 1947 - Roche House, Conshohocken, PA
- 1951 - Yale University Art Gallery, New Haven, CT
- 1952 - City Tower Project, Philadelphia, PA (unbuilt)
- 1954 - Jewish Community Center, Ewing, NJ (aka the Trenton Bath House)
- 1957 - Richards Medical Research Laboratories, Philadelphia, PA
- 1959 - Esherick House, Chestnut Hill, PA
- 1959 - Salk Institute for Biological Studies, La Jolla, CA
- 1959 - First Unitarian Church, Rochester, NY
- 1960 - Eleanor Donnelley Erdman Hall, Bryn Mawr, PA
- 1960 - Norman Fisher House, Hatboro, PA
- 1962 - Indian Institute of Management, Ahmedabad, India
- 1962 - National Assembly Building, Dhaka, Bangladesh
- 1963 - President's Estate, Islamabad, Pakistan (unbuilt)
- 1965 - Phillips Exeter Academy Library, Exeter, NH
- 1966 - Kimbell Art Museum, Fort Worth, TX
- 1969 - Yale Center for British Art, New Haven, CT
- 1972 - Franklin D. Roosevelt Memorial, Four Freedoms Park, New York City, NY (unbuilt)[10]



Louis Kahn was born in 1901 on the Baltic fringe of imperial Russia, in Estonia. Kahn spent four years at the University of Pennsylvania, earning his bachelor's degree in Architecture. He excelled in watercolor and freehand drawings.

Louis Isadore Kahn's work represents a turning point in the 20th century architecture. Functionalist, Modernism and historical principles for finding architecture form meet in his designs. Kahn's work is obviously dominated by geometrical structures, which leads one to question their complexity. The key is to search for an inherent "order" as a "system" that drives the designs and thus his architecture as a whole.

By and large, what Kahn thought to be of primary importance-the past and the innate characteristics of materials, color, water, light, and nature itself- were of secondary importance for his contemporaries, who would probably have demurred at his contention that monumentality in architecture is derived from its "spiritual quality", meaning that all architecture was potentially monumental.

Trained in the Beaux-Arts he took the concept of hierarchical, centralized spatial organization and the priority of plan. This allowed the program to suggest a general theme by arranging philosophical and material essentials in what he came to call a "Form-drawing" from which elevations and facade compositions would eventually emerge.

From modernism, Kahn learned about materials, like reinforced concrete and technologies like truss-framing, about decorative minimalism, about the visual clarity of simple forms, and basic geometries. Perhaps most significantly, Kahn took from modernism, the concept of interpenetrating spaces, not of the so called "free plan" that risked devolving into a single room housing, but by developing an interdependency of hierarchically arranged "servant" and "served" spaces, in which functions of lesser and greater importance, though sharing a common space, were nonetheless distinguishable by variations in scale, lighting, floor level or material.

What he was searching for, is difficult to say-perfection, truth, essence, order, harmony, serenity, perhaps more or less than these. But ultimately his search was more metaphysical, more psychological or existential, that it was architectural.

The ways he top lit the First Unitarian Church (1959-69) in Rochester, NY, the Phillips Exeter Academy Library (1965-72) in Exeter, New Hampshire, the Temple Beth-El Synagogue (1966-72) in Chappaqua, NY, and the Yale Center for British Art (1969-74) in New Haven, Connecticut, were variations on a system of his own invention for guiding light to its proper destination. The perforated walls at the Indian Institute of Management and the Sher-e- Bangla Nagar were variations on another of his systems, this one for preventing harsh light from entering at all.

My analysis of the process of Louis Kahn is based Architectural thought and vocabulary:

1) The Sense of Composition : Kahn's sense of the integrity of building is a meeting point for many of his philosophical considerations. Kahn's concept of composition is a distinction between the "servant" and the "served". This helps in clarifying the characteristics of each spatial element that makes up a plan. The integration of structure and space was already present at the Yale University Art Gallery, which actually preceded the Trenton Bath House. Here the structure itself became the servant space. For this, Kahn invented a system of slab construction, which also carried within itself all utilities. But at Yale, this integration had not been consciously thought out. Kahn became aware of his desire for integration after the Trenton project

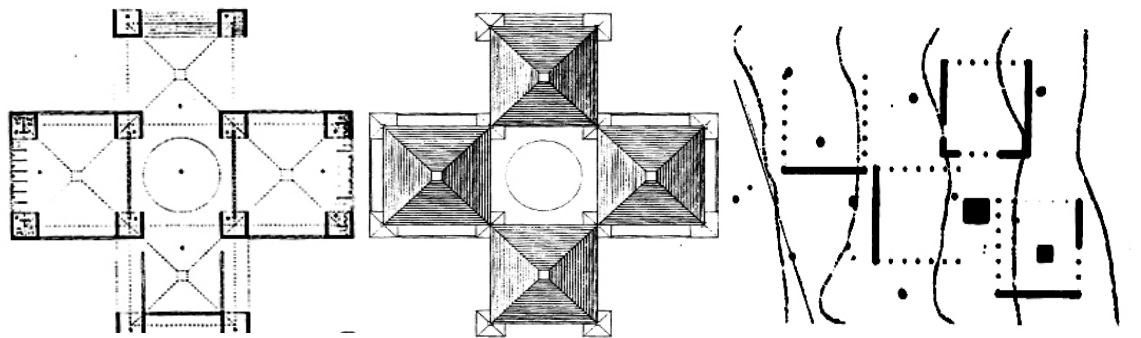
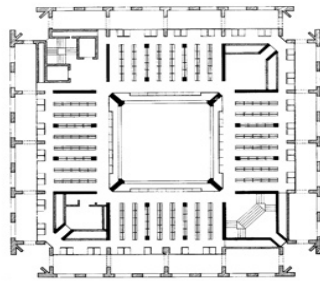


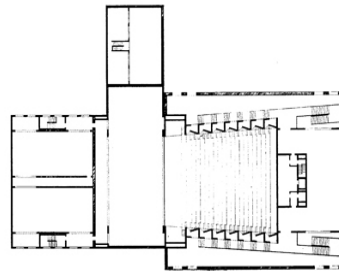
FIG 21 a), b) & c): THE BATH HOUSE (Giurgola, Mehta, 1975, Architecture, pg.181)

2) Reverence of Material

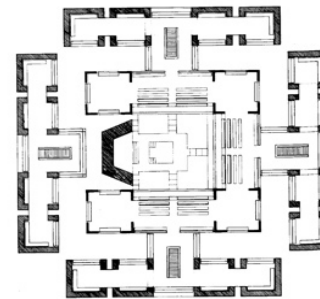
The second constant in Kahn's work, his reverence for material. His purpose was not so much to experiment with new materials, but to re-establish the relationship between man and nature through a diligent use of her materials. He never concealed his materials beneath other materials. His work in India and Bangladesh brought him the opportunity to use brick. In the hands of Kahn, this traditional material has suddenly come alive as it were a brand new material. It is blended with concrete in its true compositional sense, establishing and exploiting new potentials of brick as well as strengthening its weaknesses with concrete. Further, in the Library at Philip Exeter Academy, in the theatre of fort Wayne, and later in the Hurva synagogue in Jerusalem, the concept was to compose the building into two zones, the inner zone requiring large span with greater load carrying capacity, which was given to concrete, while the outer zone was made of brick.



a) Library at Philip Exeter Academy



b) Theatre at Fort Wayne



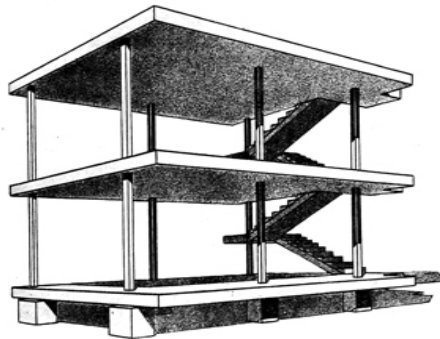
c) Hurva Synagogue in Jerusalem

FIG 22 a), b) & c): (Giurgola, Mehta, 1975, Architecture, pg.186)

3) Sense of room

When Kahn suggested, a “sense of room” he was talking about composition of spatial elements. If the plan is a composition of spatial elements, “Room” is its unity, often with an existence independent of the plan form. But for Kahn, this unit is not an abstract entity. For Kahn, a room where two persons can communicate was fundamentally different from one where there is a gathering of many. “The difference is simply that of being an event and the other, a performance”

A plan then is a recognition of the very rhythm of life. Kahn rejects the plastic continuity of space as an expression of the multiplicity of life in favor of the identity and appropriateness of each spatial element. This, however is not easy, since it requires an integration between structure and spatial units, a principle that was rejected by modern architecture since Le Corbusier's declaration in 1915 of a functional independence between skeleton and wall.



Le Corbusier's principle about independence between skeleton and wall.

FIG 23:(Giurgola, Mehta, 1975, Architecture, pg.188)

4) Light as a maker of structure

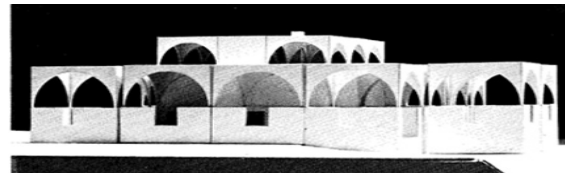
For Louis Kahn, Natural Light determines the identity of a room. **It is the plan that indicates where the light is, and where it is not.** Kahn made a sketch of the Parthenon to illustrate this point. It shows the plan and section with only the elements that obstruct light drawn in black. These elements, the walls and the columns, are also the structural elements of the building. There is nothing that is not needed.

Puncturing a hole through a wall to make a window must be quite usual for him. At Weiss House, the walls are made with vertically movable panels that change positions, depending upon the need for light. At the Fleisher house, and later at the tribune review building, the shape of the opening itself was determined by the light.

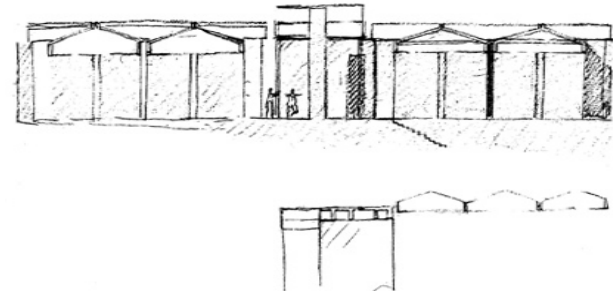
In one of his more recent projects, the rebuilding of a city building in Houston, Kahn devised a “plan-form” with a series of rooms whose identification with activities is determined by the intensity of the structures. One does not have to essentially name the room, it earns its own, the determining factor being the amount of light that enters it.



a) The Weiss House



b) The Fleisher House



c) The Tribune Review Building

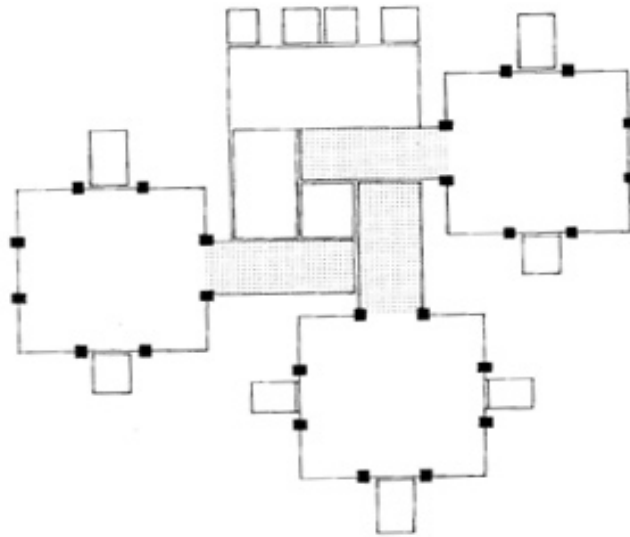
FIG 24 a), b) & c): (Giurgola, Mehta, 1975, Architecture, pg.186)

5) Architecture of Connection

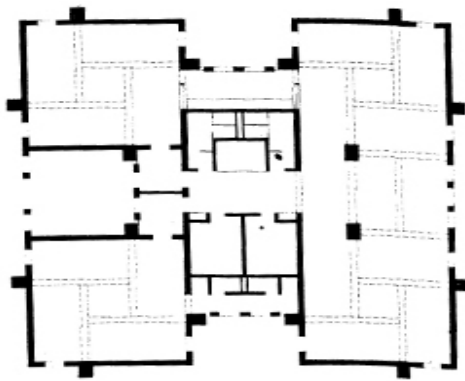
The “Architecture of Connection” is an obvious extension of composition. The problem of connecting the various elements of composition have either been axial, picturesque or geometrical.

Kahn realized the need to define connection as an element of composition. Here again, the structure generates connection. The arbitrariness of making an opening to connect one room with the other, or the use of an additional element, such as a corridor, is avoided by organizing the structure itself in such a way that the opening between two supporting elements automatically provides connection. Thus, at both the Adler house and the DeVore house, rooms are shifted slightly out of exit so that obvious places for doors are “found”. A similar method was found door the Richard’s Medical towers and the Mill Creek Community building.

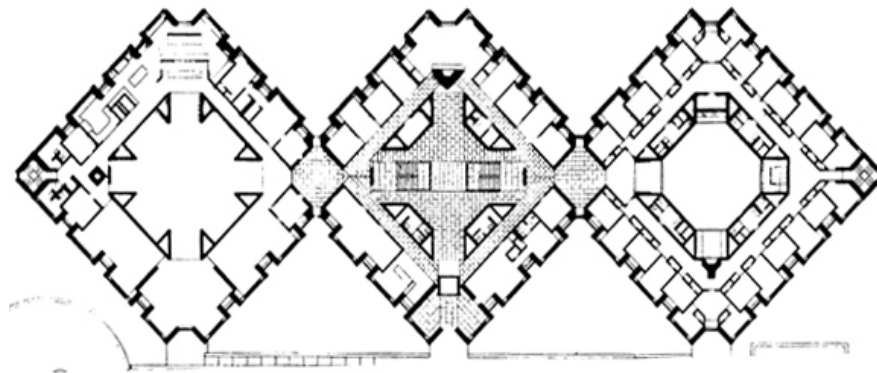
At the Bryn Mawr that problem of connection was tackled with imagination. The three squares with their corners overlapping allowed Kahn the most obvious and inevitable location for entry.



a) Richards Medical Towers



b) Mill Creek Community Building



c) Bryn Mawr

FIG 25 a), b) & c):(Giurgola & Mehta, 1975, Architecture, pg. 190)

LEWIS TSURUMAKI LEWIS



Lewis. Tsurumaki. Lewis (LTL) is an innovative, award winning architecture partnership founded in 1997 by Pail Lewis, Marc Tsurumaki and David J. Lewis, located in New York City. They actively pursue a diverse range of work, from large scale academic and cultural buildings to interior architecture, to competitions.

Some of their Projects are:

- | | | |
|--------------------------------------|-------------------------------|----------------------------|
| 1. The Art house at the Jones Center | 12. Nazareth House | 22. UES Townhouse |
| 2. Bornhuetter Hall | 13. New Subarbnism | 23. Van Alen Institute |
| 3. Building 82% | 14. NYU SAPD | 24. Vegas 888 spa and skin |
| 4. Dash Dogs | 15. Parallel Lines Collection | 25. West Avenue |
| 5. Display Devices | 16. Parking Sections | 26. Wooster House |
| 6. Fluff Bakery | 17. Park Tower | 27. Xing Restaurant |
| 7. Four exhibitions | 18. Rotare Pendant | |
| 8. Geltner Loft | 19. Tides Restaurant | |
| 9. Glenmore Gardens | 20. Tourbus Hotel | |
| 10. Ini Ani Coffee Shop | 21. Upside House | |

One of the key questions they put forward in their publication “ Opportunistic architecture”, was “ What if the constraints and limitation of Architecture became the catalyst for design invention? The answer to this lies to “opportunistic architecture” which is a design philosophy that transforms the typically restrictive conditions of practice, like tight budgets, awkward spaces, strict zoning-into generators of architectural innovation.

Their principles include:

1. **Applied Curiosity**, which helps them in establishing a charged relationship between the specifics of the project at hand, and broader cultural, economic, and political issues. Throughout the projects, questions are continually asked, “What if the conditions that are typically thought to restrict practice are conceptually transformed to become the generators for architectural exploration?”

2. **Catalyzing Constraints**, works with inverting the value of constraints, by recasting the limitations of a project as the trigger for design invention. One means to come to terms with constraints is to selectively apply principles of efficiency or order to discover relationships through which the project can be pursued in various ways. Efficiency is always considered economic. “ Maximizing profit for minimum of cost”. However, there are other efficiencies to be kept in mind, like “ structural efficiency to maximize stability with minimum material obligation”, “spatial efficiency to maximize utility with a minimal amount of square footage”.

One such example is the Xing Restaurant, where the site consisted of predetermined space within an existing building. Due to this restriction, the plan, was determined to maximize seating, and accommodate adequate circulation.

XING RESTAURANT

This 2000 sq. Foot Chinese restaurant occupies a floor plan typical of New York City residential buildings. There are light wells located on each side of the building, given it a dogbone shape.

Here, the constraint was the shape. Instead of hiding this distinctive narrowed section, between the front and back, LTL enhanced the unique nature of each of these spaces. They derived the logic from the Surrealist game, the Exquisite corpse: It is a method by which a collection of words, or images are collectively assembled, the result being known as the exquisite corpse.

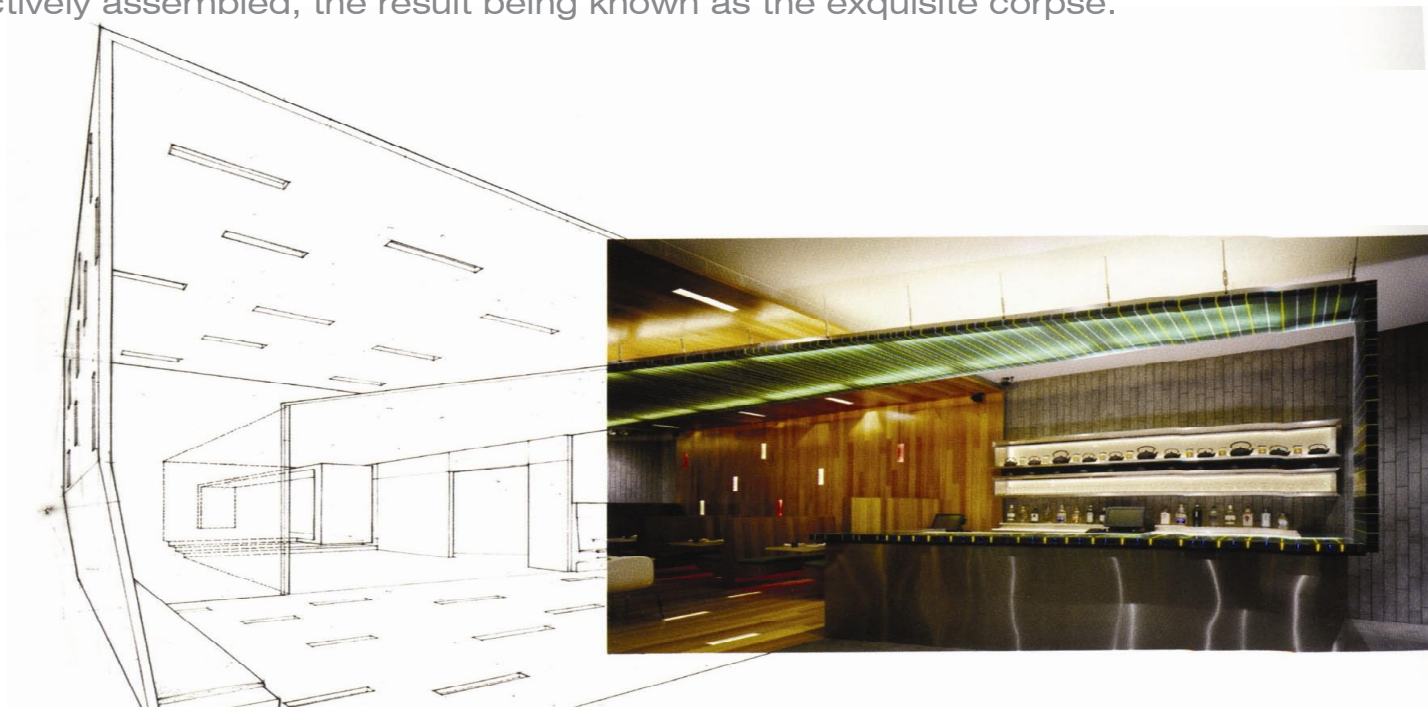


FIG 26: XING RESTAURANT (Lewis, P., et, al. 2008, Xing Restaurant, pg. 160)

Each area is defined by a contrasting material that shift from hard at the most public, to soft at the most private. Stone marks the front bar area adjacent to the public entry. The bar counter is made from individual strips of translucent colored acrylic stacked on the edge. This material extends up to serve as light canopy, and extends to the front of the dining area. The dining area is composed entirely of bamboo planks. The next zone, which consists of the bathrooms and the waiting station are lined in the same stacked colored acrylic strips. The private dining room is enveloped by red velvet panels.

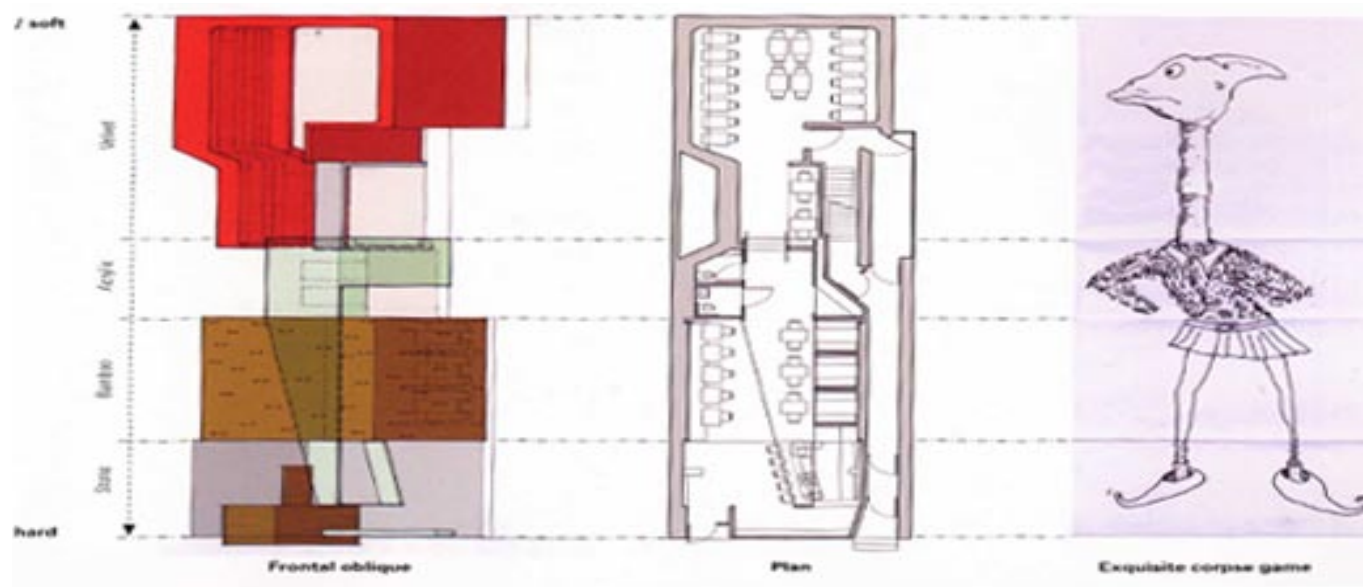


FIG 27: XING RESTAURANT (Lewis, P., et, al. 2008, Xing Restaurant, pg. 161)

Throughout the restaurant, lights are embedded in the materials, rather than designed as fixtures. Lights are placed within slots of the width of the bamboo strips in the walls, ceiling and floors. Dimmable linear incandescent lights line both sides of the acrylic walls and ceiling to glow at different intensities

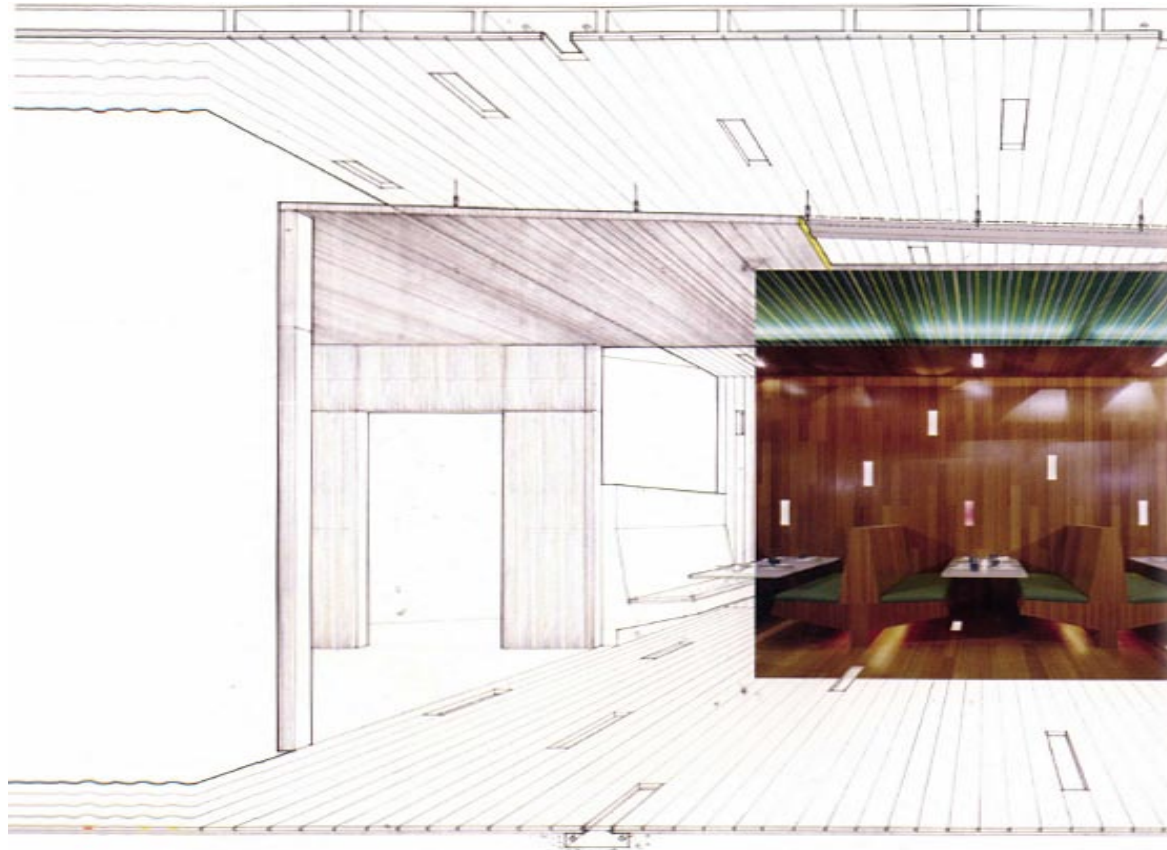


FIG 28: XING RESTAURANT (Lewis, P., et, al. 2008, Xing Restaurant, pg. 163)

3. Restricted Play: Play for them is not a frivolous act. But a way of creatively working with perpetual critique and inquiry. It, however, is impossible to play without rules. In architecture, there are many rules, political (codes, licenses, regulations etc), technical (labor, skill, craft, technique), cultural (precedents, conventions of use, desires etc), formal (typologies, proportional systems etc) and material (gravity, raw resources, ecology etc).

4. Multivalent Performance: Leads to the maximization of functional possibilities of given component, that supersedes any single logic or function. For eg. the 3/4” thick walls of the fluff bakery synthesizes the requirements for sound absorption, padded seating, mechanical space, lighting, storage, display and spatial enclosures, to produce a visually seductive surface composed of inexpensive materials.



FLUFF BAKERY, NY

5. INVENTION SPRAWL: The invention sprawl, unlike other methods of research, requires a more fluid process of research, where close examination of a subject opens new areas for investigation, which in turn set forth a logic of inquiry, again opening areas and so on. The result would thus be cumulative knowledge that cannot be anticipated by the starting point.

6. PARADOXICAL PLEASURES: Rather than seeking a seamless resolution of complex and often contradictory conditions, the projects should amplify the paradoxical and often absurd conditions that architecture holds a check on.

The Xing Restaurant again, is a prime example of such paradoxical pleasures. Like in the game, the exquisite corpse, a single sheet of paper is folded into four segments, each corresponding to one portion of the body, the Xing restaurant exemplifies this technique, revealing how the logic of the exquisite corpse intensifies local differences in the service to a more productive whole.

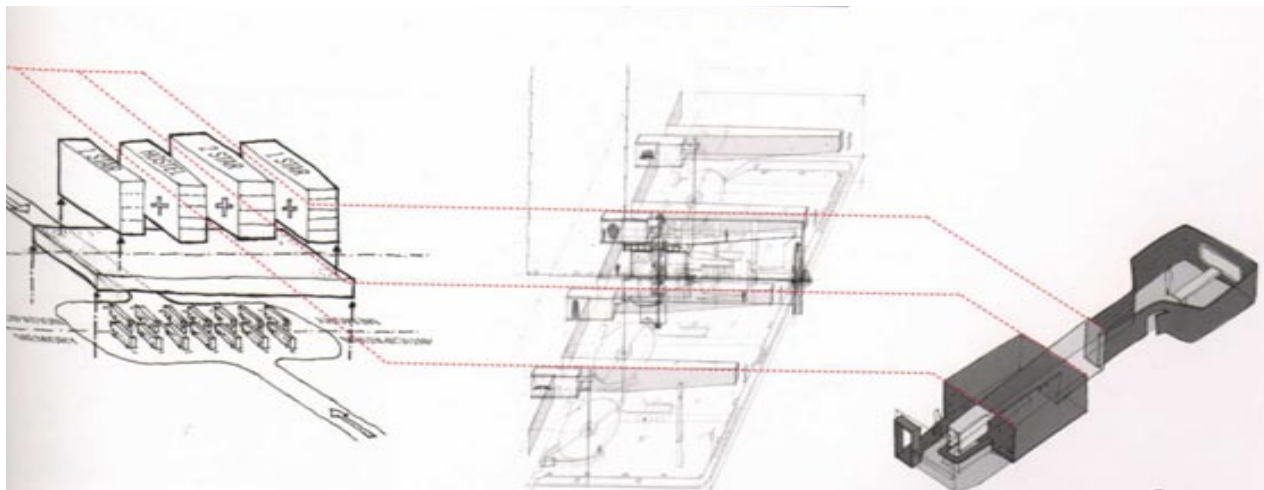


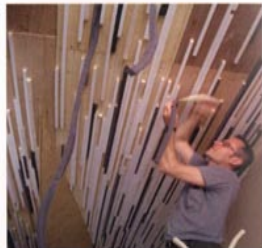
FIG 50: XING RESTAURANT (Lewis, P., et. al. 2008, Tactics, pg. 173)

ALCHEMICAL ASSEMBLIES: A common technique used in comedies, is repetition. A carefully repeated phrase can transform material from the banal to delightful. For example, in the Fluff Bakery, inexpensive and readily available materials are aggregated to produce a complex composite surface. Miles of felt and plywood strips induce both sensations of speed and stasis in the Fluff bakery.

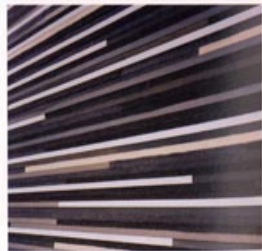


18,500 linear feet of felt and plywood strips

18,500 LINEAR FEET OF FELT AND PLYWOOD STRIPS



ASSEMBLY



SURFACE



SPACE

FRANK LLOYD WRIGHT

1889

Designs his own home in Oak Park, IL (on the web)

1890

Begins working with Adler and Sullivan (on the web)

Designs the Wainwright Building, Chicago, IL

1891

Designs the Charnley House, Chicago, IL (on the web)

1893

Designs house for Walter Gale, Oak Park, IL (on the web)

Designs house and stables for William H. Winslow, River Forest, IL

Designs Japanese Temple for World's Columbian Exhibition, Chicago, IL (on the web)

1894

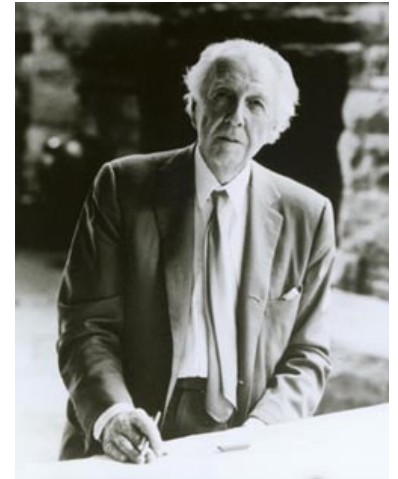
First exhibition of Wright's work is held at the Chicago Architectural Club (on the web)

1895

Designs Francis Apartments for Terre Haute Trust Company, Chicago, IL

1896

Designs house for Isidore Heller, Chicago, IL



1905

Designs Unity Temple, Oak Park, IL

Designs Lawrence Memorial Library, Dana House, Springfield, IL (on the web)

1907

The Art Institute of Chicago

1908

Designs house for Isabel Roberts, River Forest, IL

Designs house for Frederick C. Robie, Chicago, IL (on the web)

Designs house for Dr. G.C. Stockman, Mason City, IA

1911

Wright begins building a new home and studio near Spring Green, WI, calling the complex “Taliesin” (on the web)

1913

Designs Midway Gardens, Chicago, IL

1916

Wright begins work on the Imperial Hotel

Begins design of the Hollyhock House for Aline Barnsdall, Los Angeles, CA

1923

Designs Lake Tahoe Resort, Lake Tahoe, CA

1928

Wright and apprentices begin construction of a scale model of a section of Broadacre City

1934

Designs “Fallingwater” House for Edgar J. Kaufmann, Bear Run, PA

1935

Construction of the Broadacre City model continues at “La Hacienda” in Chandler, AZ

1936

Designs house for Herbert Jacobs, Madison, WI

Designs the S.C. Johnson & Son Co. Administration Building (Johnson Wax), Racine, WI

1939

Designs house for George Sturges, Brentwood Heights, Los Angeles, CA

Designs house for Kathrine Winckler and Alma Goetsch, Okemos, MI

1943

Designs Solar Hemicycle House for Herbert Jacobs, Middleton, WI

1944

Designs S.C. Johnson & Son Co. Research Tower (Johnson Wax), Racine, WI

1953

Designs the Price Tower for the H.C. Price Company, Bartlesville, OK

Designs the Riverview Terrace Restaurant, Spring Green, WI

1954

Designs Beth Sholom Synagogue, Elkins Park, PA

1956

The Guggenheim Museum has a final plan, New York, NY

1957

Wright is asked to design a cultural center to include an opera house, two museums, plus a post office and telecommunications building in Baghdad

Frank Lloyd Wright was born on June 8, 1867 in Richland Center, Wisconsin. The young architect's first work was nominally a Silsbee commission --the Hillside Home School built for his aunts in 1888 near Spring Green, Wisconsin.

Wright evolved a new concept of interior space in architecture. Rejecting the existing view of rooms as single-function boxes, Wright created overlapping and interpenetrating rooms with shared spaces. He designated use areas with screening devices and subtle changes in ceiling heights and created the idea of defined space as opposed to enclosed space.

While Investigating Frank Lloyd Wright's Architecture, it seems best to divide his works into:

1. The Horizontal
2. Roof, Cantilever and Rift
3. "A new sense of building entirely"
4. The Countenance of Principle

THE HORIZONTAL

“A greater triumph will be man’s when he triumphs through the nature of matter over the superstition that separates him from the spirit” - new book, page 1.

For Wright, an Architect should train himself to see that every material possesses a poetry of its own. Nature for Wright, had nothing to do with fashion, but always attained style.

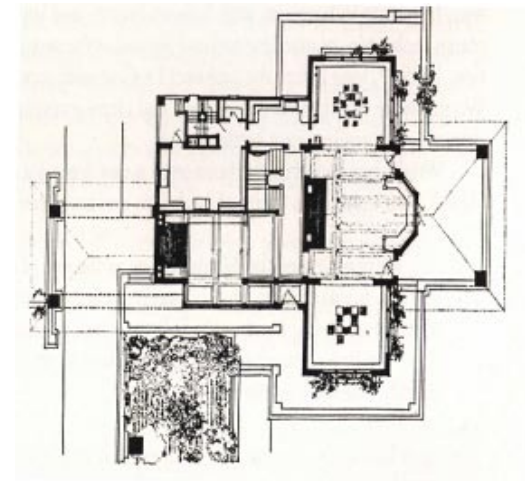
“Any house, should appear to be a part of its site, and not a foreign element set up box wise on edge to the utter humiliation of every natural thing in site”, he said in 1984.

Through experimentation, Wright developed the idea of the prairie house - a long, low building with hovering planes and horizontal emphasis. He developed these houses around the basic crucifix, L or T shape and utilized a basic unit system of organization. He integrated simple materials such as brick, wood, and plaster into the designs.

The exterior of the Prairie house recognized the influence of the prairie, with low terraces, broad eaves, thus accentuated the harmonious relationship of each element.



Above: a) A project for “A home in a Prairie Town”



Right: b) “A home in a prairie town”

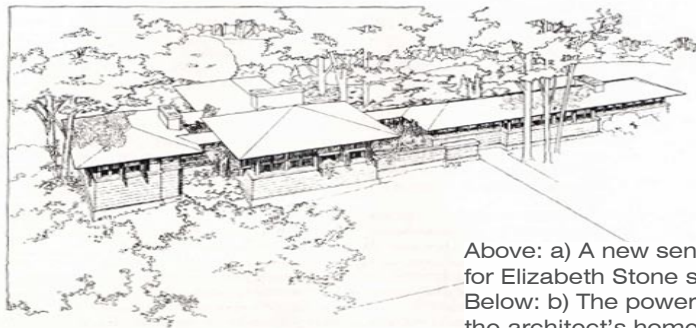
FIG 52 a) & b):
(Hoffman, D., 1995, The Romance of the Horizontal, pg. 9.)

ROOF, CANTILEVER AND RIFT

Frank Lloyd Wright often said that his buildings were like plants that grew from within and came up from the ground into light. **His work developed from the outside in and from the top down.** He wished to bring the building to harmony with the land, and hence he had every reason to begin his reforms in the outward look of the building. For him, the ground plan were merely the actual projection of a carefully considered whole. His idea was to get the house down in the horizontal to appropriate proportions with the prairie.

The roof and eaves of the building, always gave the first sure sign, that it was Wright's building. Wright almost invariably exaggerated the eaves. They excluded the sun from the upper rooms during the hotter hours of a summer day, and provided shade for the first 5-6 months of the year. Their soffits provided diffused light. This however was only one effect of his roof.

Wright lowered the roof, lengthened it, and brought it closer to the ground.



Above: a) A new sense of the roof. Project for Elizabeth Stone summer cottage, Illinois.
Below: b) The power of the roof, Taliesin, the architect's home and studio near Spring Green, WI



FIG 53 a) & b):
(Hoffman, D., 1995, Roof Cantilever and Rift, pg. 13.)

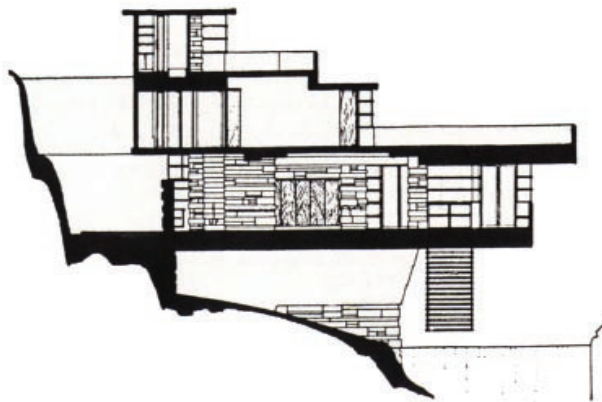
A NEW SENSE OF BUILDING ENTIRELY

Frank Lloyd Wright pushed the post and lintel structure beyond its traditional boundaries, and towards what he describes as “ a new sense of building entirely”. This difference came from the fundamental shaping principles. He found the architecture of his time to be a failed architecture, and an insult to the landscape. He advanced his own work only when he turned to an idea of the land and to aesthetic standards established by the nature’s organized form. He however, pursued the poetry of the Horizontal.

The language of Wright’s building continued to change, but the logic did not. Once he had grasped the principles, his work no longer evolved. The simple the principles, the more beautiful and varied the ultimate result. Each good architecture have a simple method of covering space. The lintel (Greek), the round arch (Roman, and the gable (Gothic). The lintel degenerated during the Renaissance into effeminacy, it remained a principle. It persistently remained as an abiding basis of construction.

By the time Wright was working for Adler & Sullivan, the skyscraper transformed post and lintel construction into a fully integrated three dimensional metal frame of slender skeletal members. At that time, the skyscraper construction called on the cantilever for two special functions. To capture the space for lease above the public sidewalks, below ground to protect the foundations of older buildings.

For Wright, all form, was a matter of structure and the consequence of principle. The arch, the gable and the lintel produced closed forms, opposed to the spirit of sunlight and open air. “Architecture could be something else entirely. If its reason for being was shelter, and its elementary content being the conflict between gravity and rigidity, then purpose and theme become one, and the manifestation of the equilibrium and load and support takes place as a union of shelter with freedom”.



The Cantilever in architecture. Kaufmann house, section.

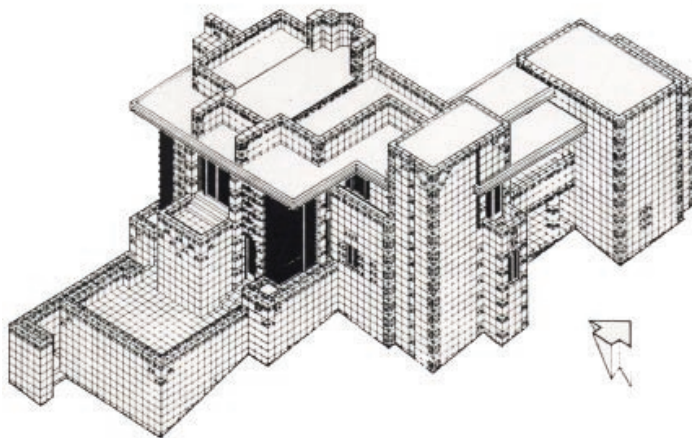
FIG 56:

(Hoffman, D., 1995, A New Sense of Building Entirely, pg. 65.)

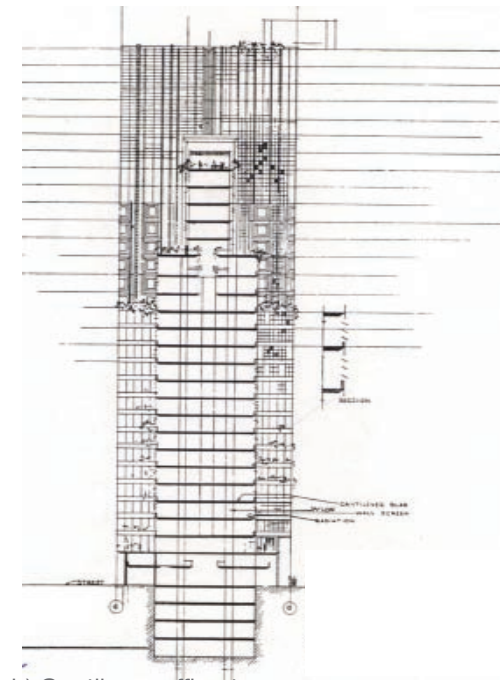
THE COUNTENANCE OF PRINCIPLE

Once the form-logic of Frank Lloyd Wright's architecture is understood, and recognized as a constant, it casts a new light on his buildings and projects. They can be judged by definite criteria of clarity, inventiveness, strength, harmony and grace.

After the Priori years, Wright faced other landscapes, other climates and ways of life. In the California houses he built of concrete blocks cast from special molds. He sometimes perforated the walls in abstract patterns, which changed the wall to a sun-screen. They emulated living creatures with muscles and skin formed alike of cellular tissue. He also proposed a cantilever glass office tower, which was balanced as the body on legs, the walls hanging as the arms from the shoulder. The outer wall screen, formed glass within a matrix of sheet copper, and became a colossal light screen.



a) Cellular structure of the Freeman House



b) Cantilever office tower

FIG 57 a) & b):
(Hoffman, D., 1995,
The Countenance of Principle,
pg. 78,79.)

thesis project

PROGRAM

Child Development and Therapy Center

includes children who are psychologically unfit and suffer from bereavement of any sort. These children are provided with therapy, and are given a chance to interact with other children as a healing process.

The design effort is sensitive to the differences in space attributes for children and those for adults as well as the differences in space usage by the children in different age groups.

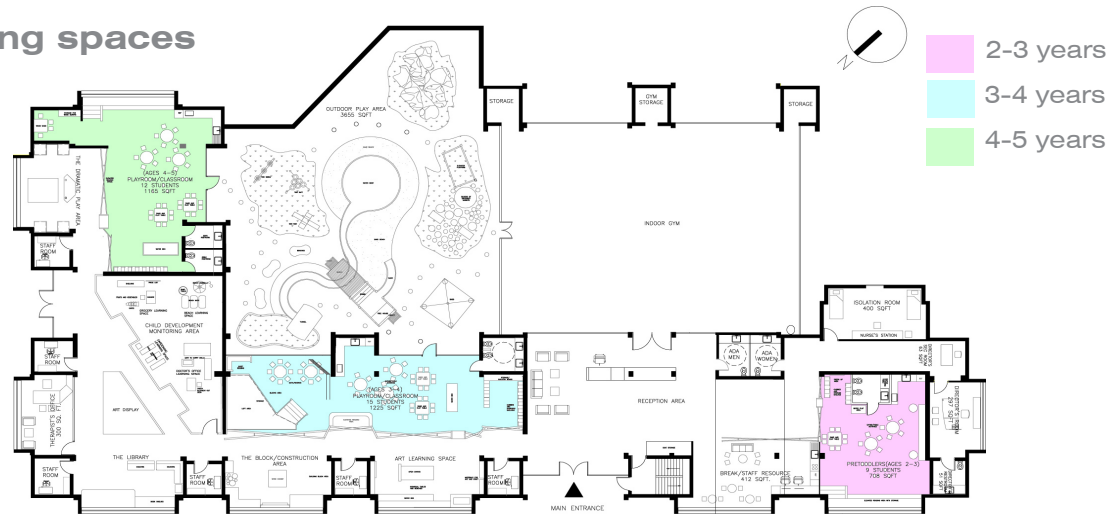
According to the program requirements for the therapeutic center

- The Therapist must work 6 or more hours per week in the class rooms. One and a half hours a day, four days a week.
- Teachers must meet the therapist everyday to share observations and communications
- Therapist meets parents individually once a month
- The child's attention span is less than 50 minutes per session.
- Sometime individual meetings with children are taken up. These are usually done in a room with suitable materials for the expression of a child's fantasies in his play. Many a times, a teacher, or a parent at such a meeting may provide extra information.
- The teachers play the role of a receptor, and an educator. The Therapist spends only about 40 minutes per child a week. The teacher however notices actions, and plays of the children, and summarizes them for the therapist once a week. The teachers meet the parents of the children, to learn more about the family and the living pattern, and relate the same to the therapist, to help his deeper understanding.

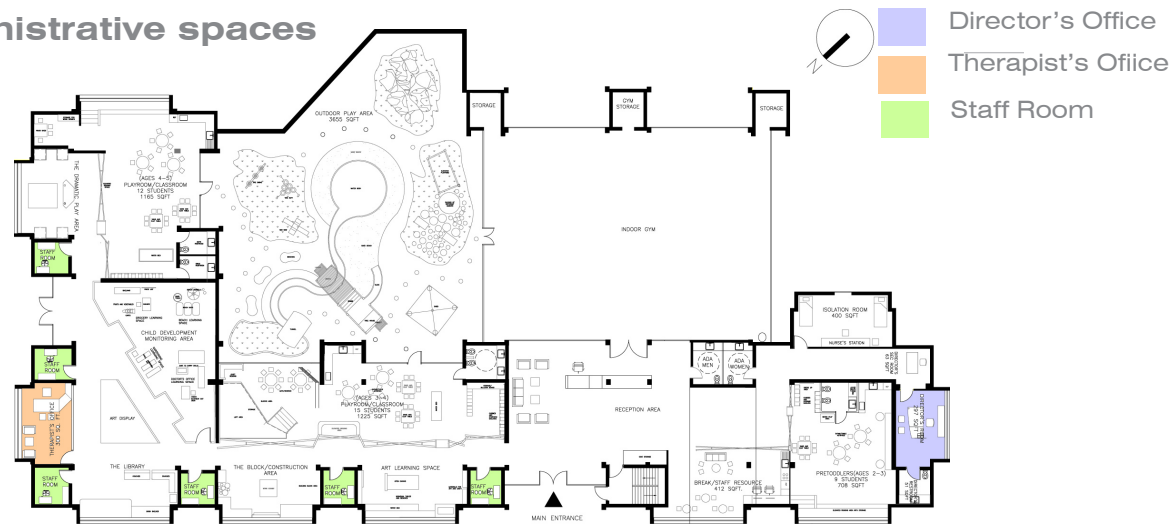
program requirements

Entrance Lobby	400 Sq ft
Reception	520 Sq. ft.
Admin offices	450 Sq. ft.
Isolation Health Room	160 Sq ft.
Isolation toilet	35 Sq ft.
Break Room	300 Sq ft.
Staff/ Public Toilet	200 Sq ft.
Pre-toddlers	91 Sq ft/ child
Toddlers	65 Sq ft/ child
Preschooler	58.5 Sq ft/ child
Outdoor Play Area	50 Sq ft/child
Observation Room	400-450 Sq ft
Therapist's room	300 Sq ft
Director's room	300-400 Sq ft.

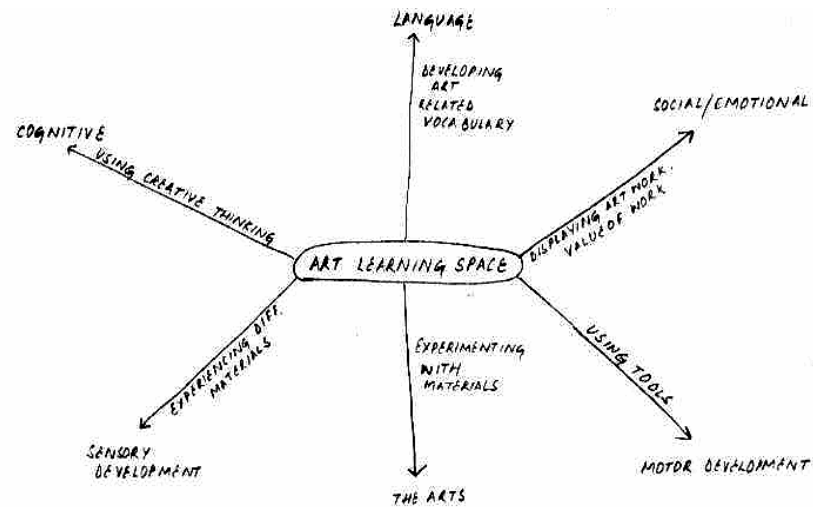
learning spaces



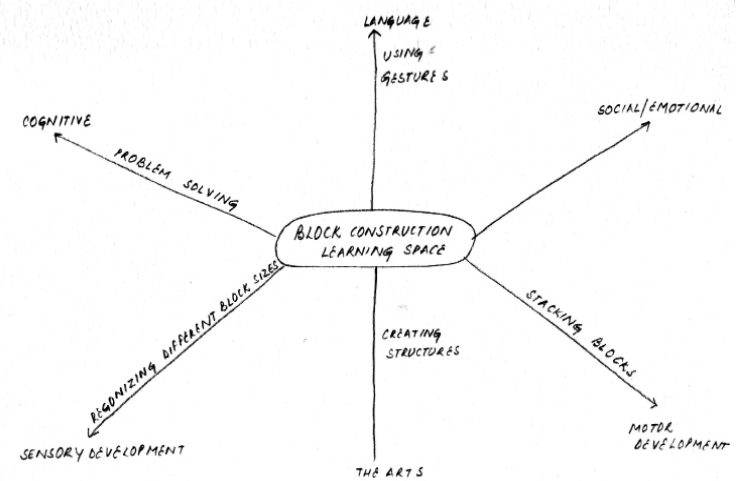
administrative spaces



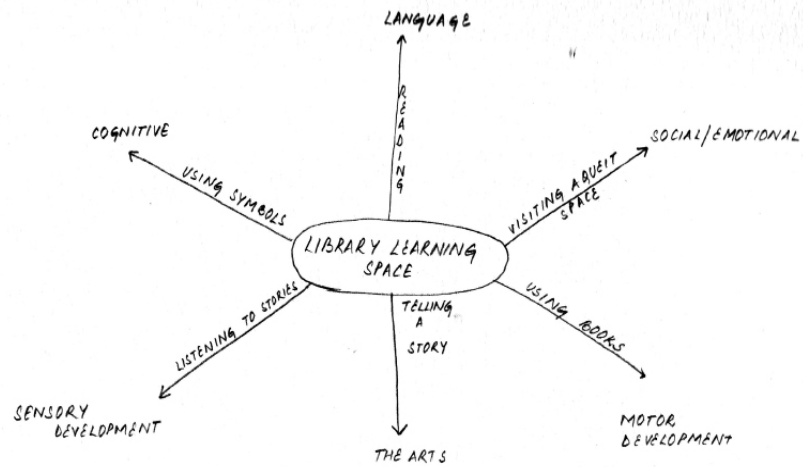
program development



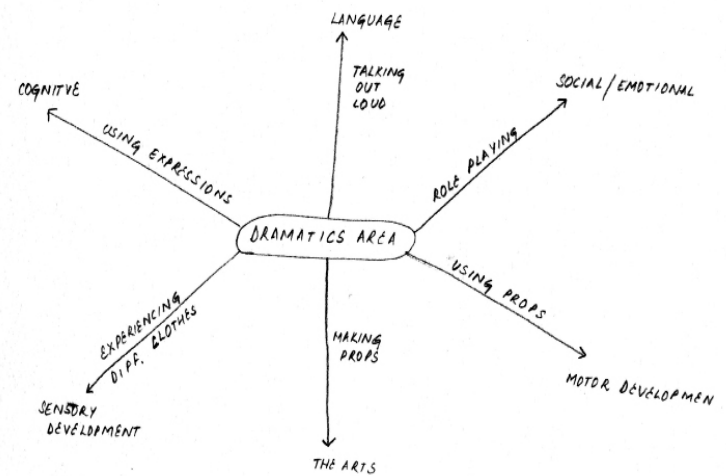
art learning space



block construction area



library space

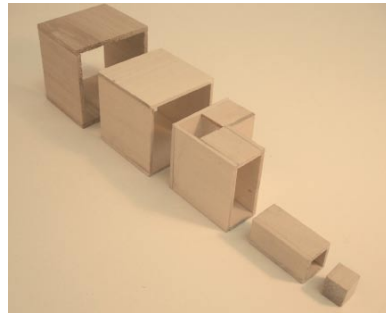


dramatics area

CONCEPT DEVELOPMENT



This concept model represents the interaction and integration of different spaces. Each element in this model represents a specific function in my program. Since the functions vary, so does the shape.

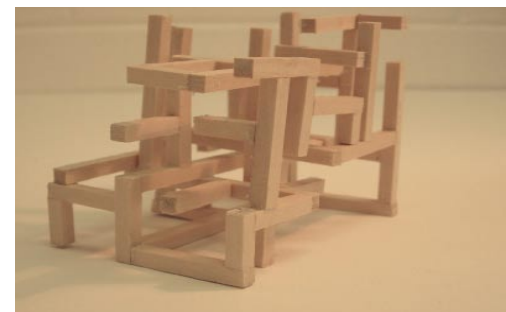


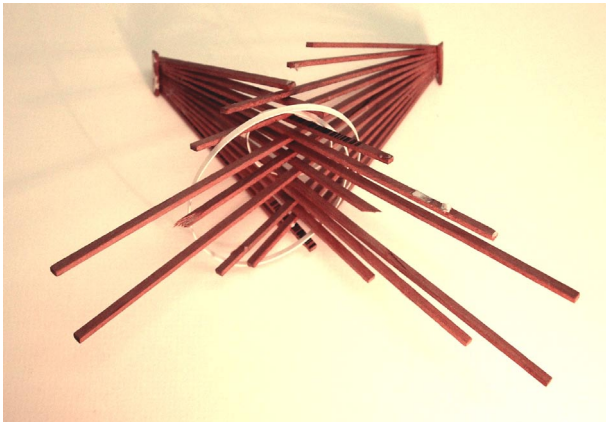
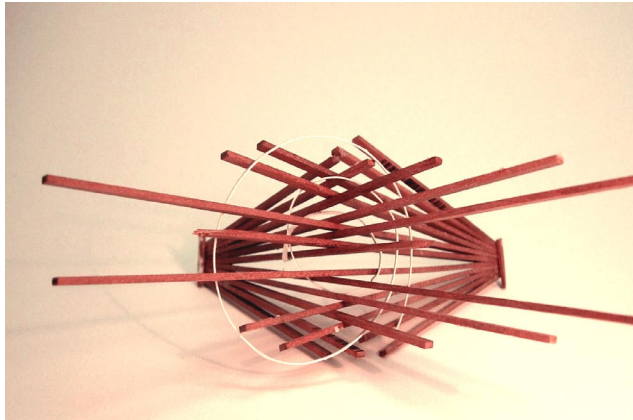
This model also represents how various functions integrate and interaction within each other to create a uniform whole.



This concept model was developed while trying to figure out a best possible way to create movement in my space. Since my space has a longitudinal character, creating a constant level of movement and interaction in the space is a challenge. This model got me to realize that a constant material can help in unifying the space.

After working on my first model, I realized that there is a need to get out of the mode of creating a “solid”. Continuing with the “cube” I created interaction by gluing sticks of different sizes together. Each size representing a different function in my space. All sticks interact with each other at some point or the other





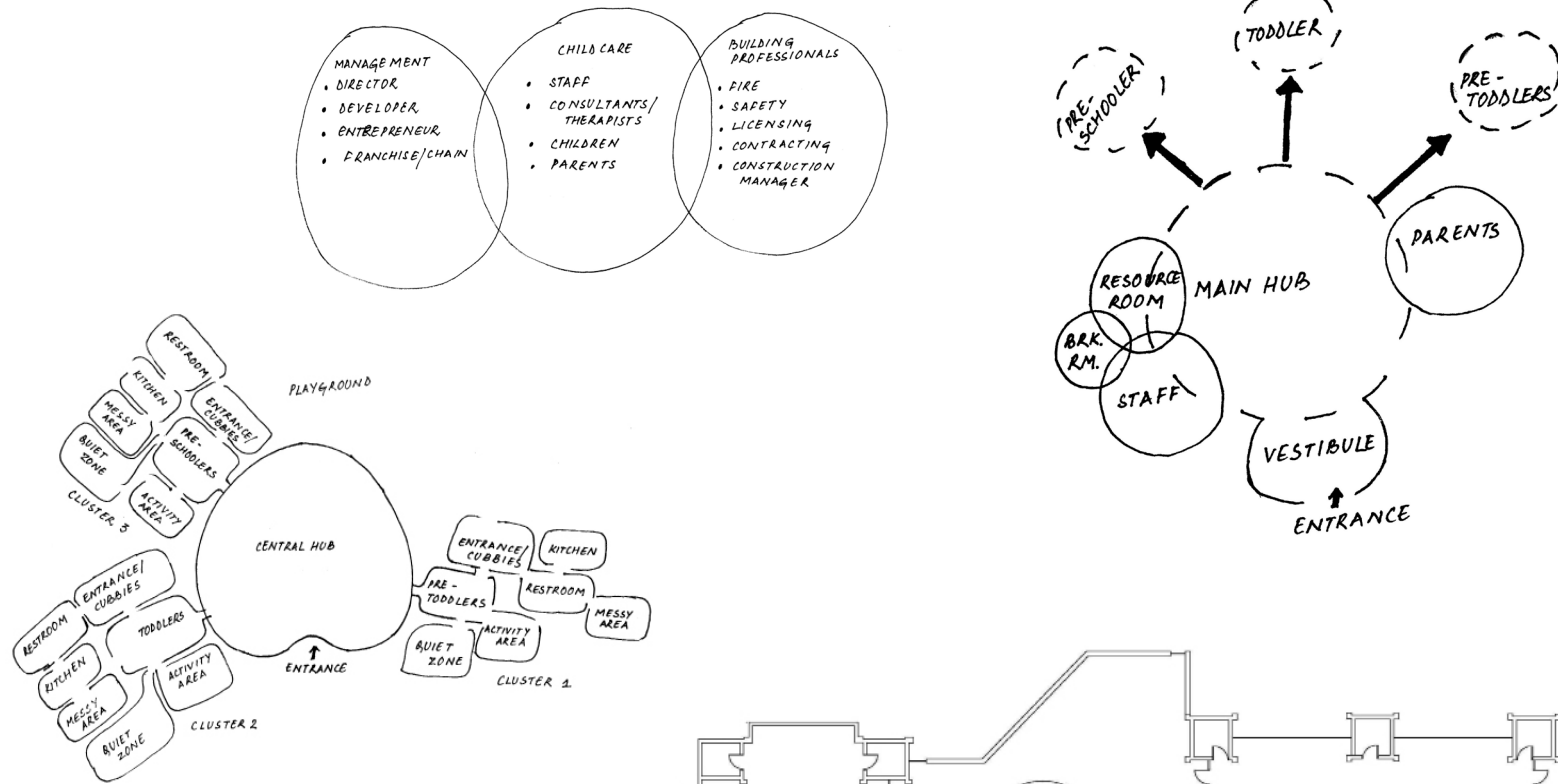
This model represents the concept of interaction and movement. The cherry wood represent interaction of various spaces. Each space having its own intrinsic function. The helix made of bristol board represents movement. This helix also acts to bind the various spaces, creating a unified whole.

SCHEMATIC

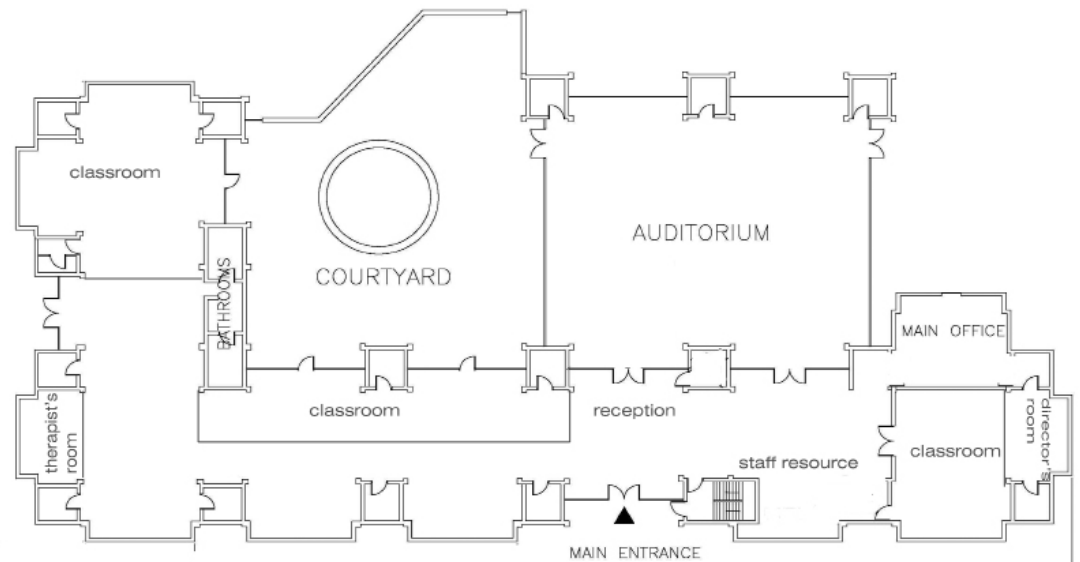
S.no	Room type	Sq. Ft.	Adjacencies	Public Access	Natural Light	Privacy	Street Adjacencies	Noise	Plumbing	Special Considerations
1	Reception	520	2,3,5	H	H	L	H	M	L	
2	Director's	400	1	L	M	H	L	L	L	
3	room									
4	Isolation	160	1	L	M	H	L	L	L	
5	room									
6	Staff	450	9,5	M	M	M	M	M	L	
7	resource									
8	room									
9	ADA	200	1,4	M	L	L	M	M	H	
10	restrooms									
11	Classroom	700	9,13	H	M	M	L	M	H	
12	2-3 yrs									
13	Classrooms	1225	9,13	H	M	M	L	M	H	
14	3-4 yrs									
15	Classrooms	1165	9,13	H	M	M	L	M	H	
16	4-5 yrs									
17	Staff rooms	450	4,6,7,8	L	L	L	M	L	L	
18	Special									
19	Areas	200	6,7,8	H	H	L	M	M	L	
20	Therapist's									
21	room	300	12	M	M	H	L	L	L	
22	Observation									
23	room	450	11	M	M	M	L	M	M	
24	Outdoor									
25	playground	3000	6,7,8	H	H	L	H	H	H	

adjacency matrix: first floor

Room type	Sq. Ft. per room activity area	No. of rooms	Total square footage
Young Toddler			
Storage Closet	15	1	30
Cubbies	9	1	28
Food prep	10	1	20
Teacher's workstation	10	1	20
Changing Station	40	1	80
Toddler			
Storage Closet	15	1	45
Cot Storage	15	1	45
Cubbies	9	1	27
Food prep	10	1	30
Teacher's workstation	10	1	30
Toilet/changing	30	1	90
Pre-Schooler			
Storage Closet	15	1	45
Cot Storage	20	1	60
Cubbies	8	1	28
Food prep	10	1	30
Teacher's workstation	10	1	30
Toilet/changing	28	1	78



The originally floor plan of the First Unitarian Church shows a major problem of movement throughout the space. The first floor was configured keeping in mind that all functions, whether administrative or classrooms should be distributed throughout the floor plan.



first floor configuration

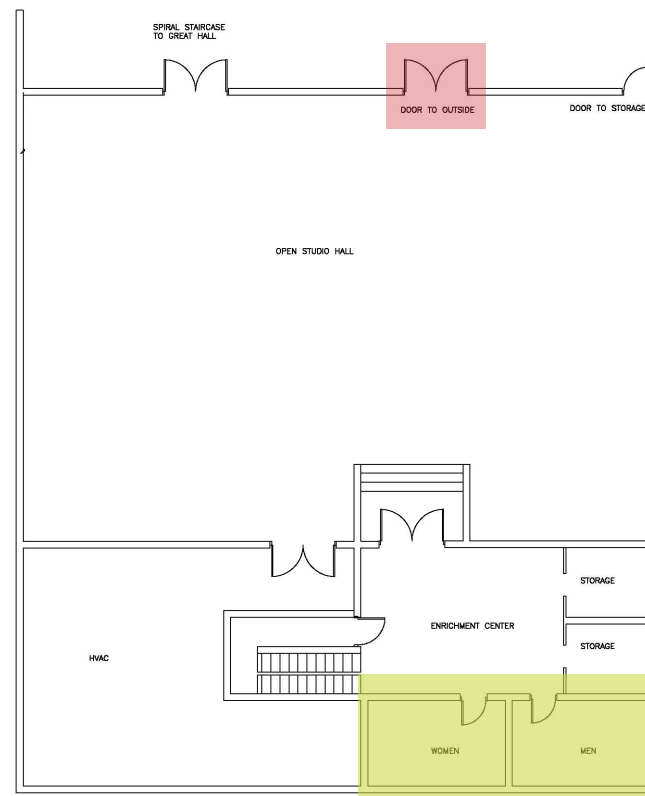
CODE OVERLAY

Code Overlay: Basement

USE GROUP: E
SQUARE FT: 5000
USABLE SQUARE FT.: 4000
SQ FT./PERSON: 150
OCCUPANCY LOAD: 15

WATER CLOSETS: 4
SINKS: 2
WATER FOUNTAINS: 2
MEANS OF EGRESS: 2

ELEVATOR: 0
ADA RESTROOMS: 2



fire exit
accessible restrooms

USE GROUP: E
SQUARE FT: 13,000
USABLE SQUARE FT.: 12,000
SQ FT./PERSON: 171
OCCUPANCY LOAD: 76

SQUARE FT: 13,000

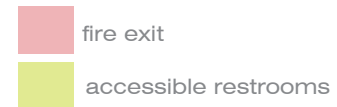
SQ FT./PERSON: 171

OCCUPANCY LOAD: 76

SINKS: 8

MEANS OF EGRESS: 4

ADA RESTROOMS: 4

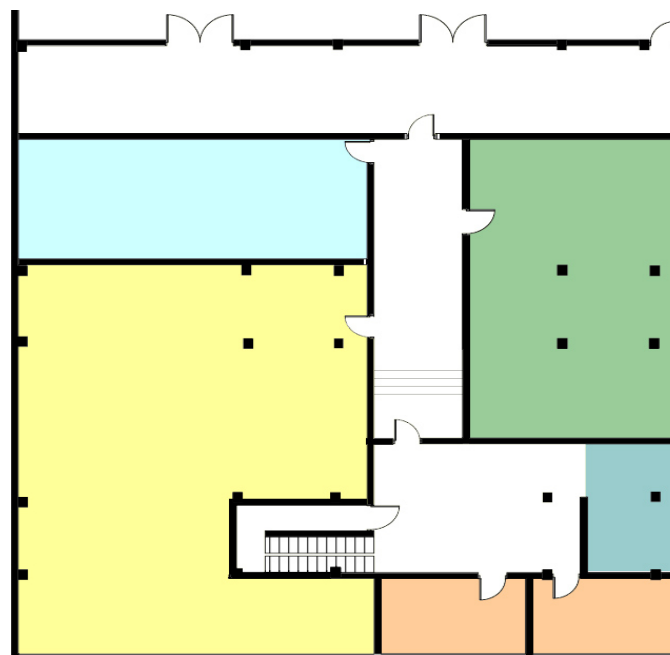


DESIGN

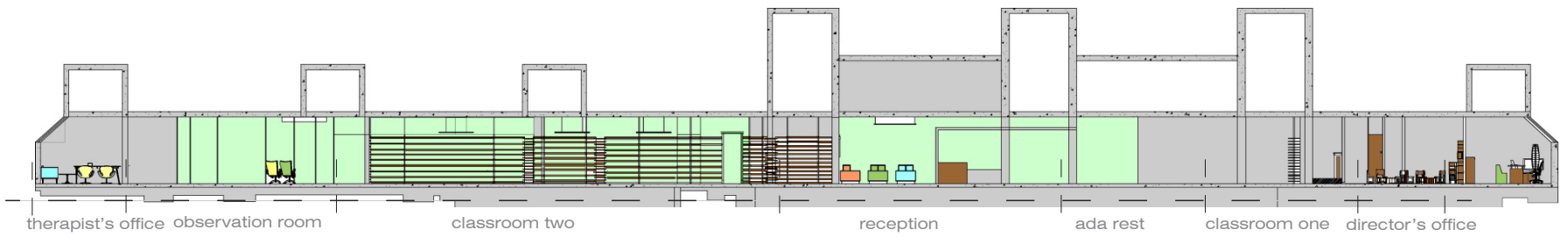


floor plan: first floor

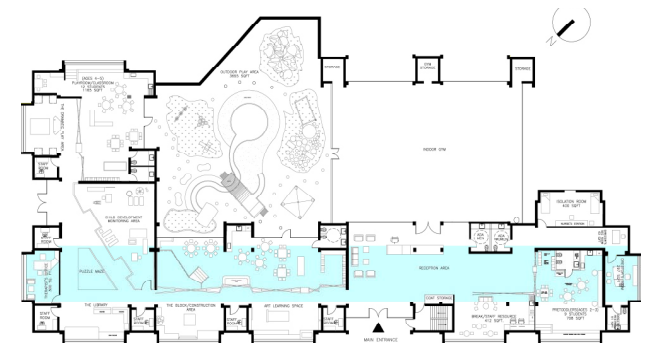
- hvac
- laundry
- rest rooms
- mechanical
- common area



floor plan: basement



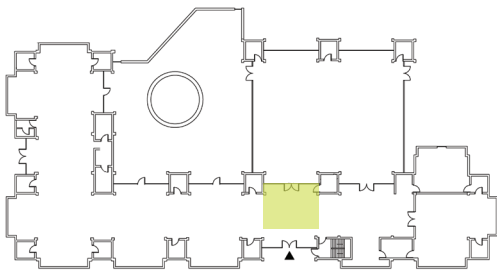
section 1



reception



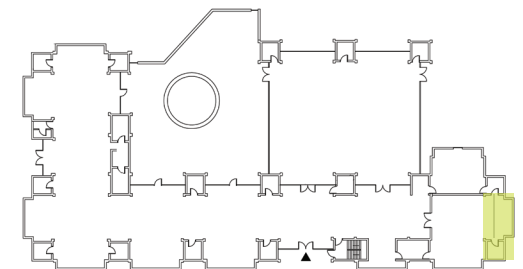
The reception table is made with wood and concrete. The idea behind it, was to create a connection with the existing concrete columns.



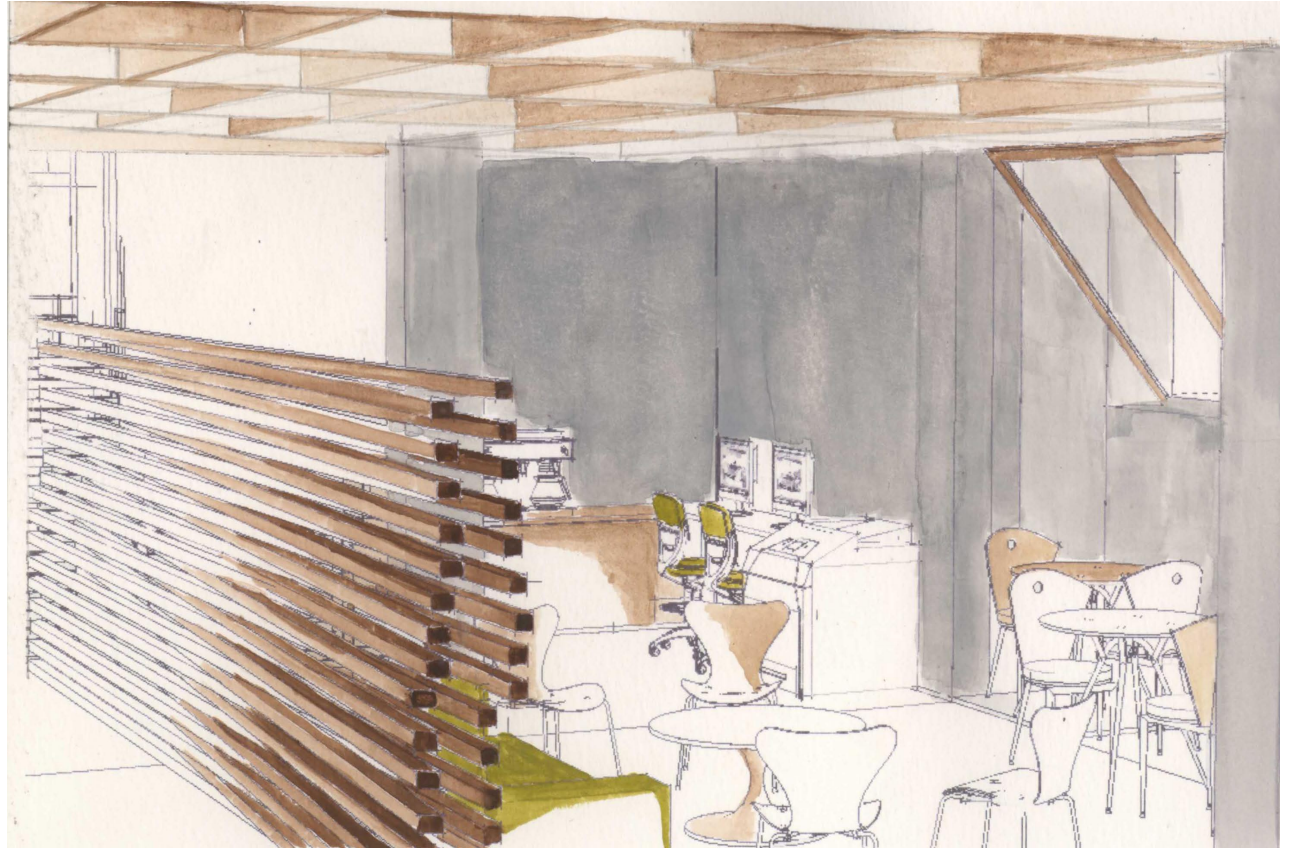


director's office

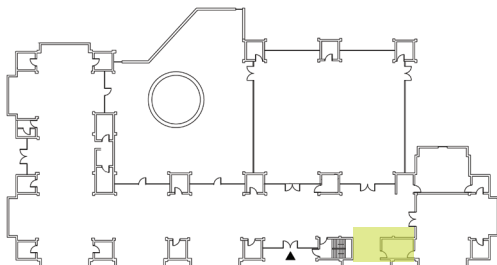
The director's office is adjacent to the reception. It is visually separated from the rest of the space for private meetings with parents and the therapist.



staff break/resource room



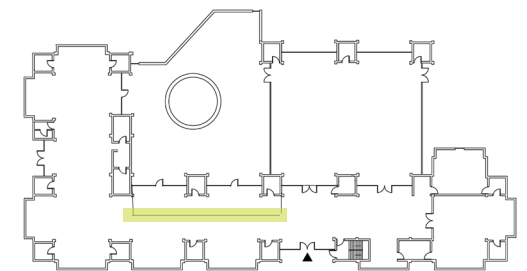
The staff break/resource room, is also divided by the wooden partition. This provides adequate privacy, and does not isolate the resource room from the rest of the space. A small kitchenette, tables to eat, couches to relax and a workstation with computers, a copier and a printer is provided for the staff.



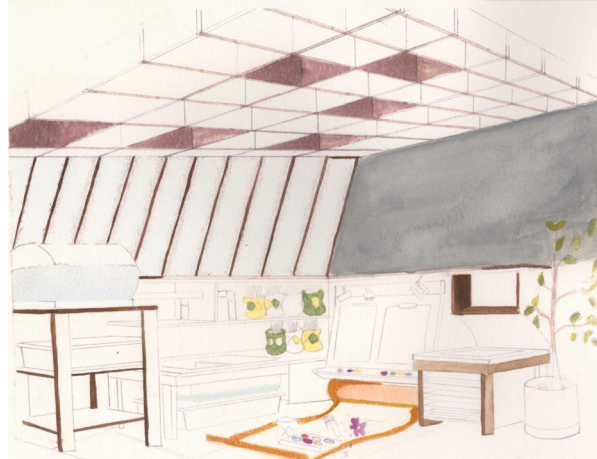


corridor

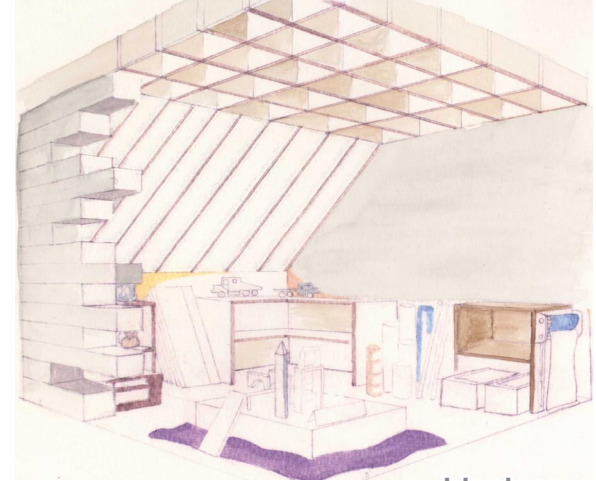
This wood partition divides the classroom from the rest of the space. Although it acts as a visual barrier, it does not restrict interaction. It provides movement to the static corridor. Benches are constructed into this partition under the clerestories, thus making them special spaces to pause and interact.



special areas



arts area



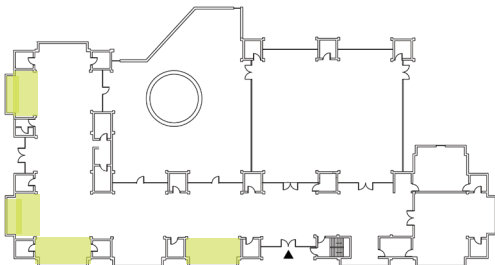
block area

The areas near the slanted windows, that provide beautiful natural light are a special feature of this site. The special nature of these spaces are also carried out in the program.

Each of these spaces are allotted a unique function. The Arts area, The Block construction area, The Library and The

Dramatics area allow the children to move beyond their classrooms, thus enhancing interaction and movement in the space.

The Library, Block construction area and Dramatics area is carpeted, whereas, the arts area, being messy is laid with marmoleum.

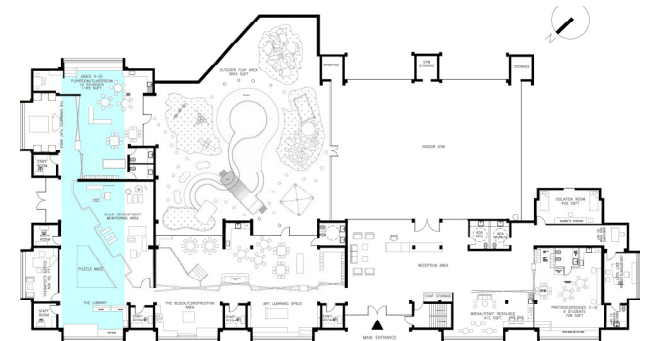
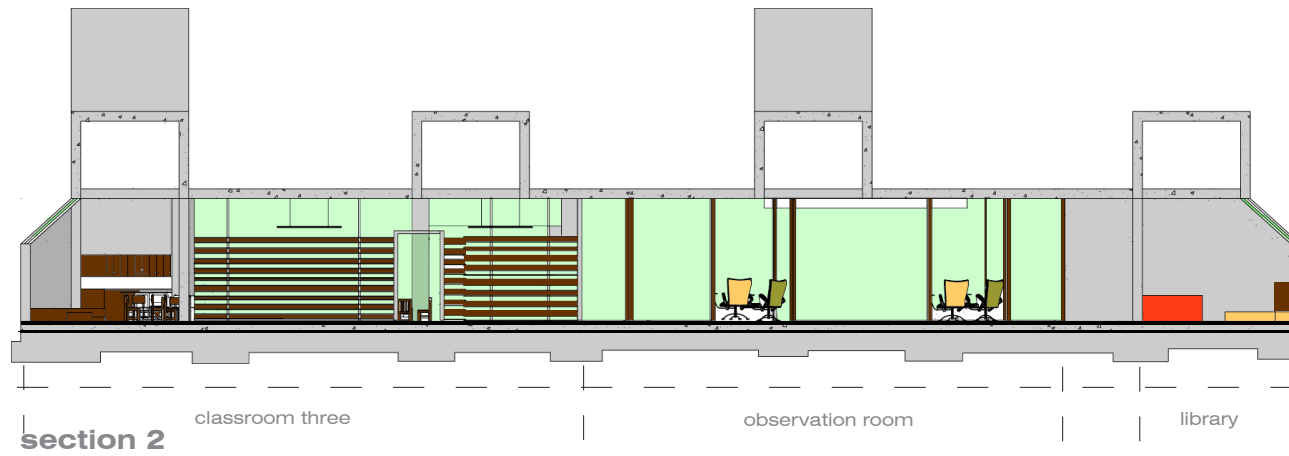


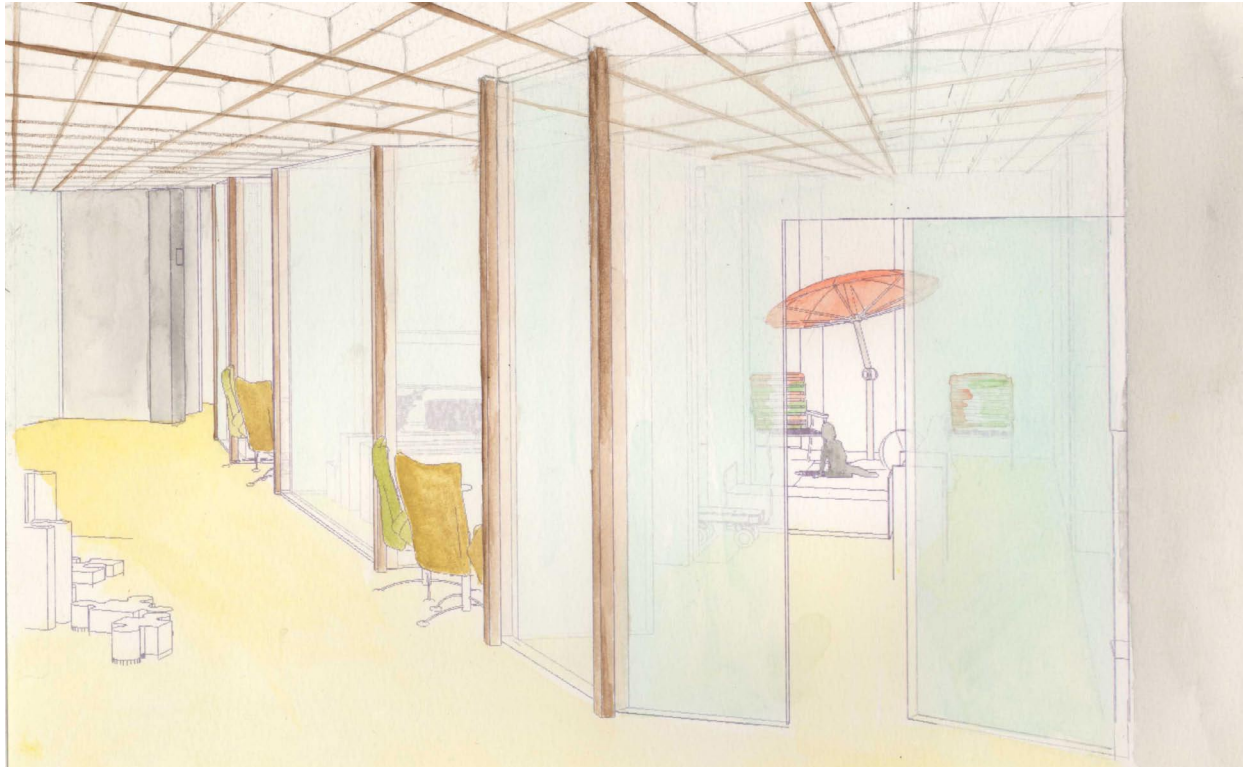
dramatics area

ARTS AND CRAFTS
SAND
CLAY
WATER PLAY
KITCHEN
REST ROOM
WOOD WORK



Each classroom is divided into an active or a messy zone, and a quiet zone. The flooring in the active zone is marmoleum for easy cleaning, whereas, the quiet zone is laid with carpet. The classrooms are divided from the rest of the space with the partition discussed above, and have a direct interaction with the outside playground and the special areas. The classroom for ages 2-3 yrs, is isolated because of its program requirements. The classrooms programmatically include a kitchenette, rest rooms, tables eating and art work, tables for math and science, elevated seating for reading hours, and lofts for play and storage. Each classroom also includes cubbies for each child.

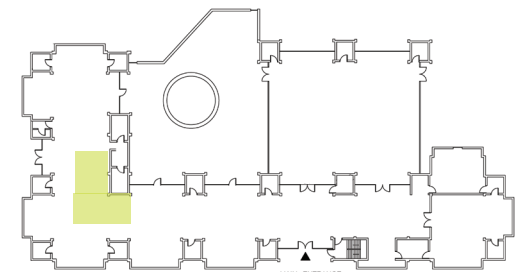




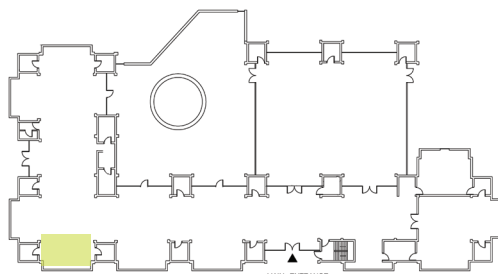
observation room

The observation room located near the therapist's office, consists of various activities for kids under one roof. It has the grocery store leaning space, the doctor's space, the beach area and the gardening area. These activities help the children in relating to props and materials in the real world. They begin to imitate behaviors, and roles. They start recognizing words and spellings that relate to each space.

This space has a glass, that is mirrored on the inside allowing the therapist to observe each child without the child getting conscious about his actions. Seating is provided for the therapist and a parent to sit, observe and take notes



library

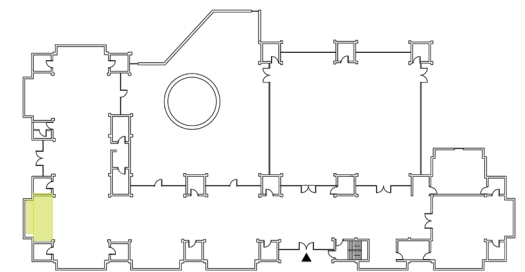


Older toddlers and preschoolers have positive experiences with books, and are very interested in reading and looking at the pictures in books. This space is designed in a way that the children are able to manipulate books for themselves. It is also a space where a story can be read or told by an adult. This space helps in developing auditory abilities, and also helps them to start participating in literacy activities.

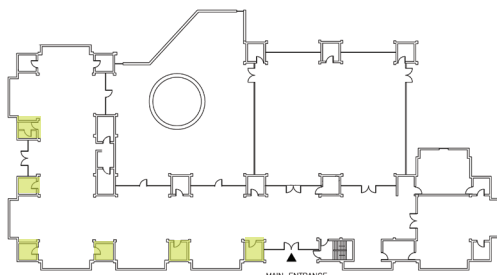


therapist's room

The Therapist works with children who are emotional disturbed. He must work 6 or more hours per week in the class room. One and a half hours a day, four days a week. His office allows private conversations with the teachers and parents . The Therapist meets with the parents once every month. His room works well for children who do not feel comfortable expressing themselves in front of the class, and like talking privately.



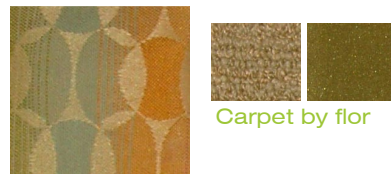
staff room



There are 6 staff members in this facility. Each staff member is provided with a staff room. This provides a private space for conversations with parents, other faculty members and the therapist about the progress of a child. There is adequate storage for filing.

MATERIALS SELECTION

reception

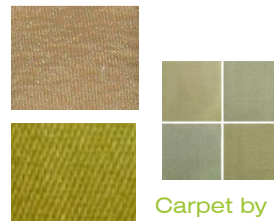


Carpet by flor



Upholstery by Designtex

staff resource room



Carpet by flor

Upholstery by Designtex

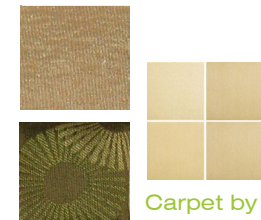
therapist's room



Carpet by flor

Upholstery by Designtex

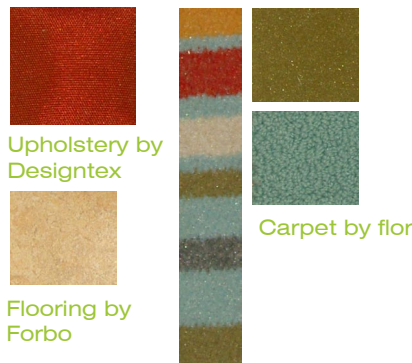
director's room



Carpet by flor

Upholstery by Designtex

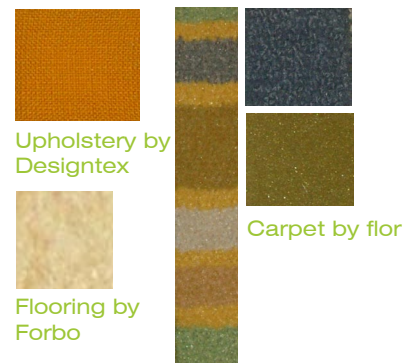
classrooms



Upholstery by Designtex

Carpet by flor

Flooring by Forbo



Upholstery by Designtex

Carpet by flor

Flooring by Forbo



Upholstery by Designtex

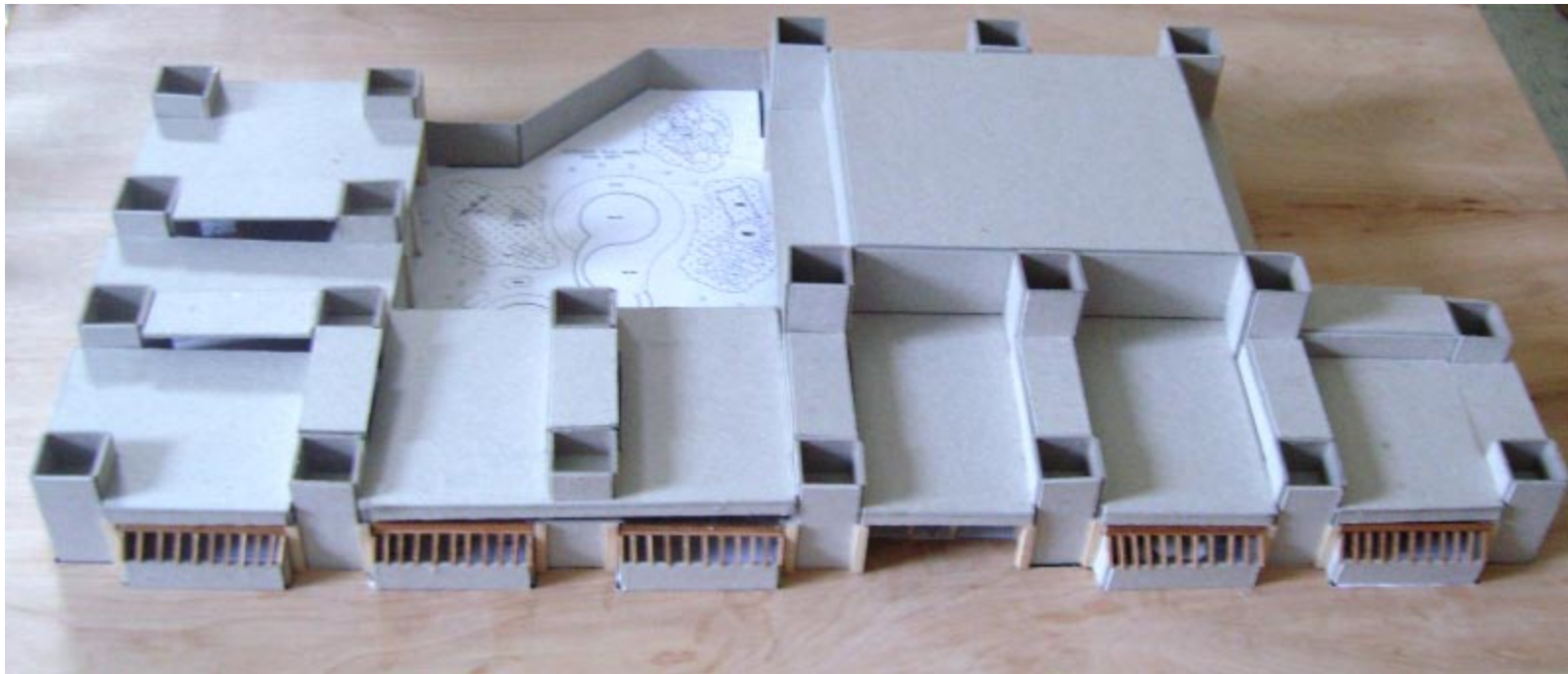
Carpet by flor

Flooring by Forbo

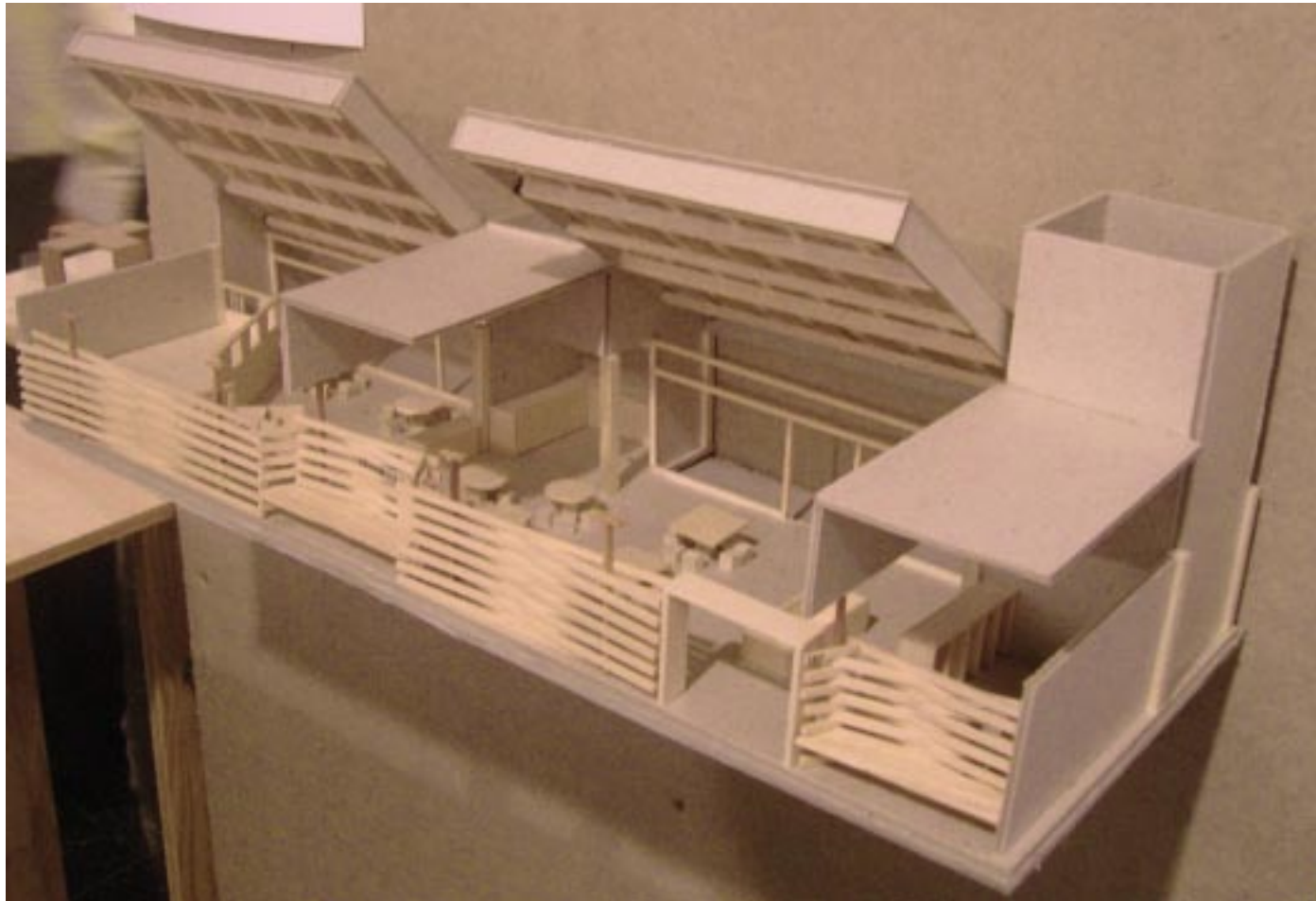
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main model of the First Unitarian Church, Richmond, VA



model representing typical classroom layout

BIOGRAPHY

Kangana was born in Nigeria and has been fortunate to have been brought up in a culturally rich country like India. She has also had the opportunity to seek her Masters in Interior Design in a new culture with new lifestyle in United States of America. After two and a half years of hard work, she is ready to graduate and enter the design industry with a big bang!