ALTRUISTIC CIVIC ARCHITECTURE THROUGH SELECTED FUNCTIONALIST THEORIES

AN ARCHITECTURAL THESIS BY BLAIK RITCHIE

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Texas Tech University
Architecture Library

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ABSTRACT

THESIS: The application of selected theories of the Functionalist movement of the early 1920's will produce a more altruistic civic architecture.

NO EXPLANATION

This program will try to identify the potential issues, solutions and procedure for the development of a mixed use library facility on the campus of Georgia Tech in Atlanta, Georgia.

Located in north downtown Atlanta, the immediate context consists of campus buildings, neighboring small business and student housing as well as a nearby low-income residential area.

The facility will be a 500,000 to 600,000 square foot library that will serve the local population while at the same time remaining a viable research facility for the students and academia of Georgia Tech. While devoting most of its efforts to being an electronically based facility with regard to volumes it will still house over two and one half million traditional books, tapes and videos for both public and academic use.

CHAPTER ONE:
THESIS RESEARCH

THESIS SYNTHESIS

What is Functionalism? Most associate Functionalism with the modern architecture movement of the early 1920's, the International Style and its credo "form follows function." Yet this philosophy is hardly a recent discovery.

Form has followed function from the paleolithic cave-dwellers to the noelithic lake-dwellers; it followed function in Roman forts and aqueducts, in medeival castles and the Great Wall of China, in 18th century English warehouses and in 20th century Manhattan office piles. Functionalism, in short, is as old as building itself.(Abrams, p.112) In its earliest form Functionalism was more often neccessity than an attempt at determining principles for a more rational architecture.

The earliest known efforts to devise such principles can be traced back to the French architect and theoretician Viollet-le-Duc who attempted to rationalize or "functionalize" the art of architecture into a logical system with rules. His teachings were extremely influential on the architects of the latter movement of the 1920's, most notably Le Corbusier and Frank Lloyd Wright. Some will argue that Wright has no tie with the Functionalists of the modern movement but that is not entirely true. His organic architecture was functionally driven but Wright did not strictly adhere to the use of sterile Functionalist forms, stark imagry and an over abundant use of steel and glass. This deviation from the rigid guidelines of Functionalism is only part of that which I propose will improve the effort put forth by the early modernists.

Functionalism was reawakened between the first and second world wars with the birth of the International Style and the new modernism. In general, early Functionalist architecture was characterized by abstract formal properties. "The elementary forms and strict principles of Functionalist architecture may be interpreted as a protest against what the architects considered to be the devalued motifs and academic compositions of historicism."(Norberg-Schultz, p. 87) The Functionalists felt that the historic motifs of architecture did not adequately express the increasing role of technology in the modern society. These outdated motifs and principles had in fact lost their meaning altogether. Some critics argue that the dissertion of historicism altogether led to a negative disruption of the natural progression of architecture. "All past solutions were believed bad and no longer useful. Thus, change was asserted without the necessary continuity which makes change less stressfull"(Koh, p. 78). The Functionalists were seeking an architecture based on absolutes applicable at a global scale. While this goal may have been somewhat overly ambitious the architects of the Functionalist movement did provide us with theories and ideals of great merit upon which we can easily expand.

Two main endeavors determined Functionalist articulation: the establishment of a unity of form and function, and the recovery of essential meanings. The first of these aims was achieved through the free plan and the second through elementary sterometric volumes and the avoidance of traditional motifs and ornament (Abrams, p. 200). This approach posed radically new problems in the area of articulation. "A normal corner, for instance, gives an impression of massiveness which is difficult to combine with the free plan."(Norberg-Schultz, p. 87).

The machine was the savior of the new technological era and it was glorified in the work of the Functionalists. Being the muse of these ~~of these~~ architects, machine forms became common vocabulary. The purity and simplicity of the machine forms as they responded to their needs was the aesthetic basis of the entire movement. In TOWARDS A NEW ARCHITECTURE Corbusier says "When a thing responds to a need it is beautiful." This aesthetic paradigm, while having validity, led to what critics call sterile form and stagnant urban development. Gropius' Siemensstadt in Berlin (1929) is usually quoted as proof of the failure of functionalist urbanism as, being excessively preoccupied with the relationship between sunlight and the spacing of buildings, Gropius creates a rather sterile urban pattern consisting of parallel rows of apartment buildings (Norberg-Schultz, p.188).

So what are the possible ramifications of these theories and principles and how can they best be applied to the realm of public architecture? Some say that since its conception, Functionalism has evolved into something less than it was. The idea that simply expressing each element of a building will automatically yield beautiful form has produced chaos in the name of Functionalism. It has become devoid of and true environmental quality(Abrams, p.112). This may be so of many projects of the past created in the name of Functionalism but I do not believe that this must necessarily be so.

Most critics see Functionalism as merely expressing building parts and minimalist use of materials. This is not the case in the works of Frank Lloyd Wright who taught us the possibilities of materials. Again, some may argue Wright's inclusion among functionalists yet the highly articulated use of technology, one of Functionalism's driving principles, is more apparant in

the works of Wright than in many if not all of his contemporaries. And again I would like to point out that the aim of this thesis is not to promote the rebirth of a past style but to extract the attributes of Functionalism and the contributions of some of it practitioners.

Critics also argue against the rigidity of the rational of Functionalism or positivism. "The enthusiastic embracing of science as a powerful means, perhaps the very best means, of understanding the world and everything in it, including human beings, was given the name positivism"(Stevens, p. 6). This approach is said to overlook the element of irrationality that is present in everyday life. It is not that it is overlooked in the accidental sense but that it is conciously removed in an attempt to create an order to which all people can respond. Critics like Jusuck Koh would have you believe that there are no universal perceptions and that all experience is subject to a personally subjective relativism. To an extent this may be true but if it were valid at the scale he proposes people would be unable to communicate due to semantics. Things that are considered to be subjective are not always so. If one were to put on a pair of slippers on a cold day one would say that the slippers were "warmer" than the wood floor from which they came. This is not so, obviously both the slippers and the floor are the same temperature it is just that the slippers are better insulators and therefore feel warmer. Most subjective experiences are based on rationally detectable sources. Are not musical notes created by very specific and measurable frequencies? For some reason artists seem to have an aversion for the rational when in actuality it is the basis for all artistic endeavor such as color theory or the syntax of poetry. Rationaliy and determinism are what lead to discovery and its resulting growth. "In the case of the currently fashionable Zen interpretation of quantum mechanincs, one would think that if the parallel

were valid and fruitful, physicists could throw away their notoriously expensive experimental equipment and simply meditate. It does not seem to have occured to the proponents of the Zen quantum mechanics parallel that, since they themselves insist that mysticism is essentially unlearnable, physics is a better route to mysticism than mysticism is to physics"(Stevens, p.51).

I have pointed out the many flaws of Functionalism in the area of formalism as well as its own inability to achieve the goals set for itself but this, I believe, can be rectified. "Early Functionalism, therefore, did not fully satisfy its dictum 'design for life.' This does not, however, justify the criticism that sees Functionalism as a failue and finds in it a 'sacrifice of architecture'..."(Norberg-Schultz, p.190). I hope to show a functionalism whose application is at once physical, biological, cultural and psychological.

I believe this can best be achieved through a more holistic approach in the application of some of the theories stated earlier. The building should not only function intorvertedly but extrovertedly as well. It should function within its context on many simultaneous levels. Does the building create disruptive wind or drainage conditions? How does it affect existing circulation patterns? Do newly created circulation patterns have a positive or negative impact? Is it environmentally responsive from an ecological as well economical perspective? These are just some of the issues that must be considered as carefully and as importantly as the simple demands of the interior. The building is not simply an autonomous entity unto itself but an intrinsic part of its context; a context, to which, it has an obligation to contribute.

With regards to issues of form and aesthetics the biggest problem with the Functionalist approach is undoubtedly the sterility of the resulting forms.

This is actually quite simple to remedy. The early Functionalists let the function of enclosure and the free plan override their approach to form to the extent of producing stark boxes on stilts. Expressing the function of the spaces through their unique relationships with the context as well as each other generates a unique building form with greater aesthetic merit. Also, expressing particular elements of a building makes for more interesting form such as Alvar Aalto's highly articulated stair on Harvard's Baker dormitory. Another approach is in the structure. Simply revealing structure can certainly show its function but why not emphasize the structure, play it up, even exaggerate its placement and use in the overall aesthetic.

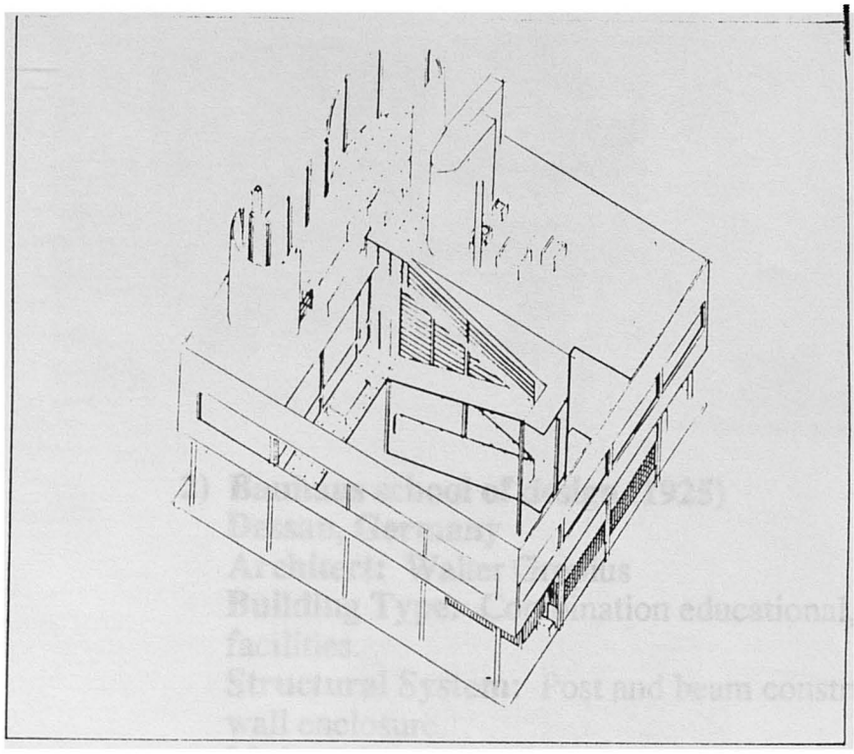
This approach will, in my opinion, create a vastly more interesting and engaging building form than the attempts put forth by the early Functionalists. It will eliminate the cookie cutter-like boxes created in the name of function. It will produce an architecture of higher altruistc value appealing to a larger, broader range of people. And finally, it will better serve its users which is the greatest responsibility of civic architecture.

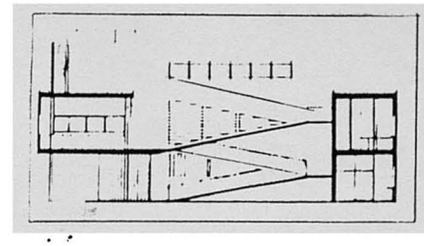
THESIS CASE STUDIES

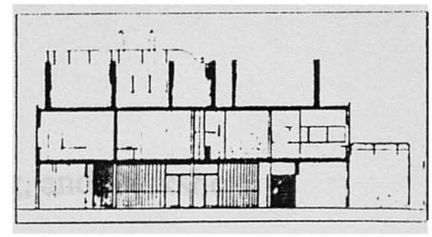
1) **Villa Savoye (1928)**
Poissy, France
Architect: Le Corbusier
Building Type: Private residence
Sturctural System: Post and beam construction utilizing the architect's pilotis ordering system.
Major Materials: Concrete foundation, steel, and stucco.
Analysis: The utilization of Corbusier's pilotis creates a free plan capable of being changed to accomodate the residents' changing needs while providing parking under neath. This could prove to be the best method of providing my facility with the flexibility it needs to accomodate a constantly expanding collection as well as the demand for public parking without infringing on a somewhat limited site.

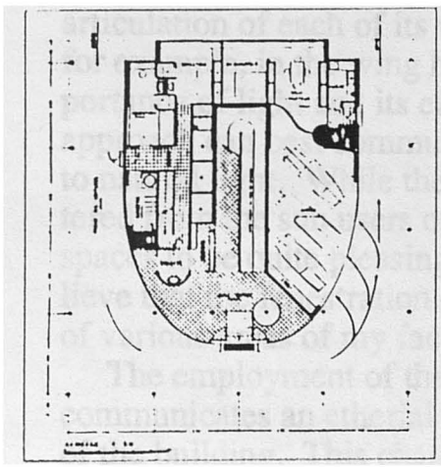
The villa helps to relieve the sterile tension of rather stark geometry by maximizing views thereby inviting nature into the spaces at every opportunity. While views will be limited in my facility due to the necessity to eliminate natural light in the interest of preserving the volumes, the concept of inviting nature into the spaces by other means will prove most effective in producing a friendlier, inviting sense of place.

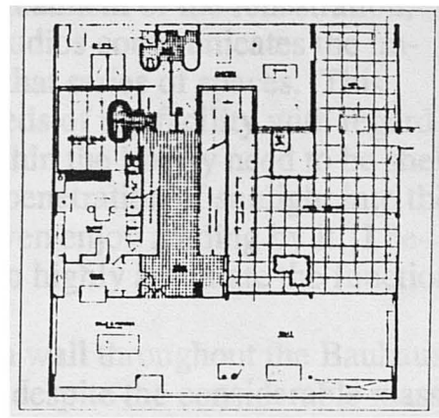
The villa's nemesis is "the box" like so many other Functionalists' works. The exploration of function driven forms through means other than that of the structural grid will yield a more positive aesthetic. The use of the free plan tends to dominate the expression of the building when it should, in fact, be used merely as a device to free up interior and exterior spaces for more creative allocation and definition.

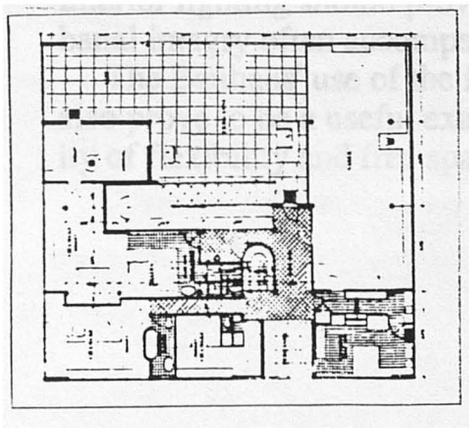


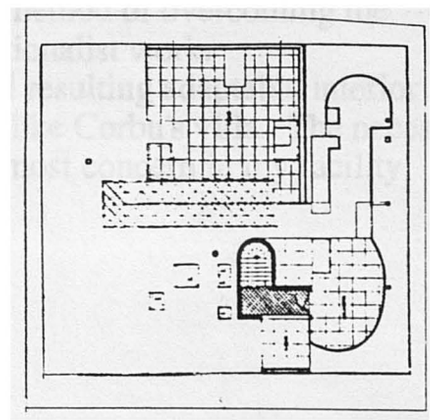








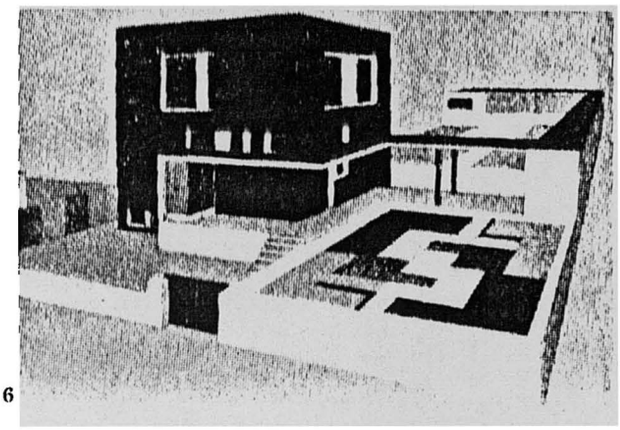




2) **Bauhaus school of design (1925)**
Dessau, Germany
Architect: Walter Gropius
Building Type: Combination educational, housing, and workshop facilities.
Structural System: Post and beam construction utilizing curtain wall enclosure.
Major Materials: Concrete foundation, steel columns, glass and concrete veneer.
Analysis: This building's functions are expressed in the individual articulation of each of its wings. The treatment of the fenestration, for example, in the wing housing the studios communicates the importance of light and its effects within that series of spaces. This approach can best communicate the needs of my facility with regard to natural light. While the volumes within the library need to be sheltered from the sun users often find the penetration of sunlight into the spaces to be quite pleasing and some even enjoy reading by it. I believe that the fenestration can be used to highly articulate the function of various areas of my facility.

The employment of the glass curtain wall throughout the Bauhaus communicates an etherial translucency despite the considerable mass of the building. This changes with regard to the amount of light throughout the day and then drastically at night when lit from within. This use of the fenestration again promises to serve my facility well. The changing perception of the building with regard to sunlight and interior lighting should prove to be one method of overcoming the banal imagry often accompanying Functionalist work.

The Bauhaus' use of the free plan and resulting adaptable interior also prove to be a useful example much like Corbu's villa. The necessity of flexibility and free space are of utmost concern in my facility.



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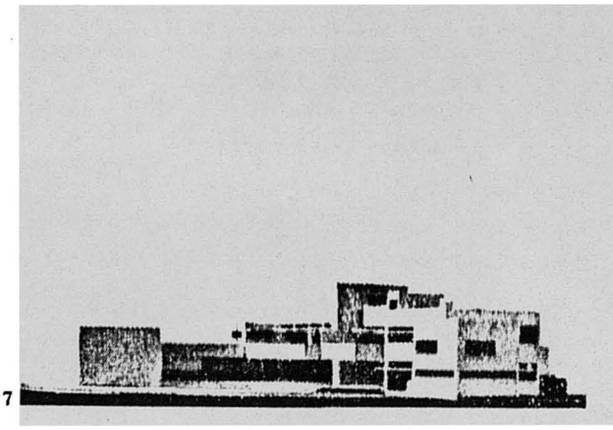

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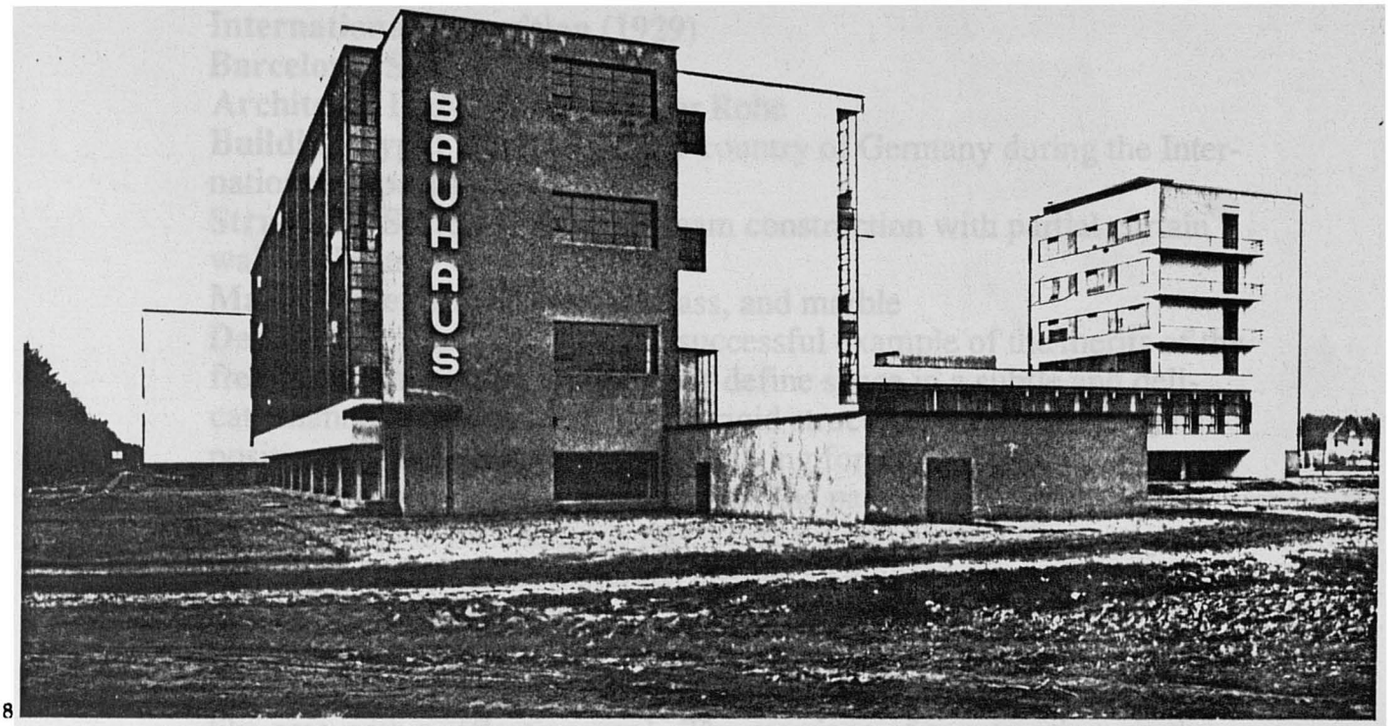

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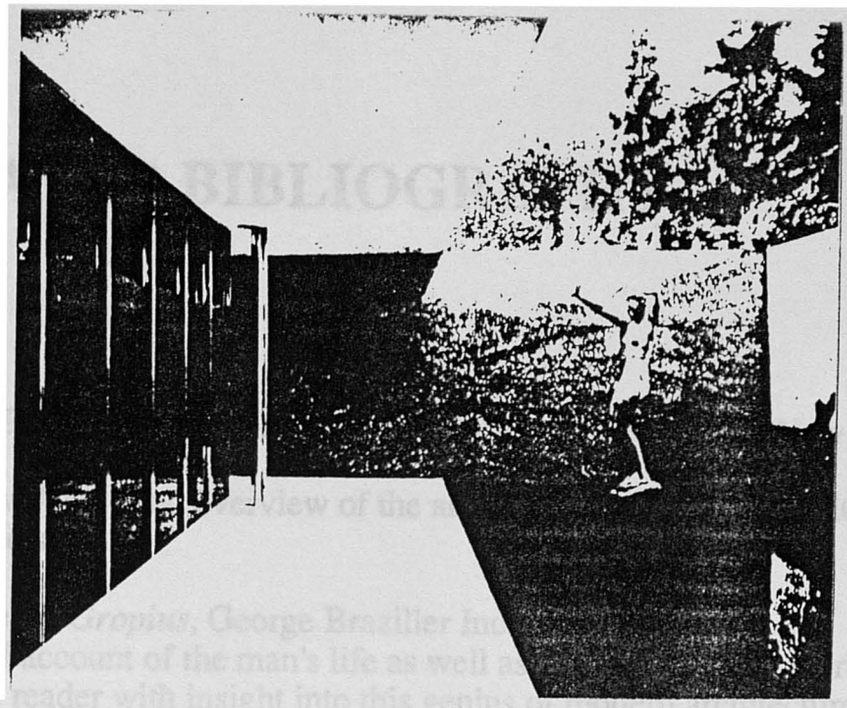
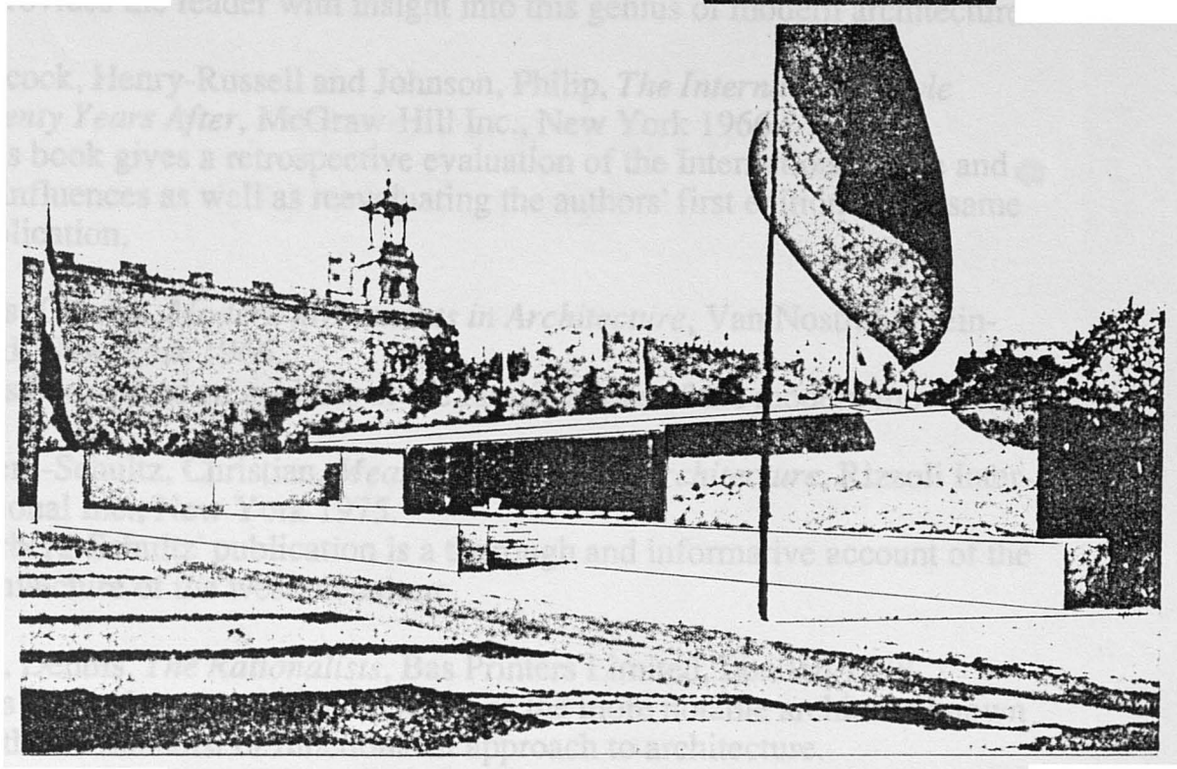
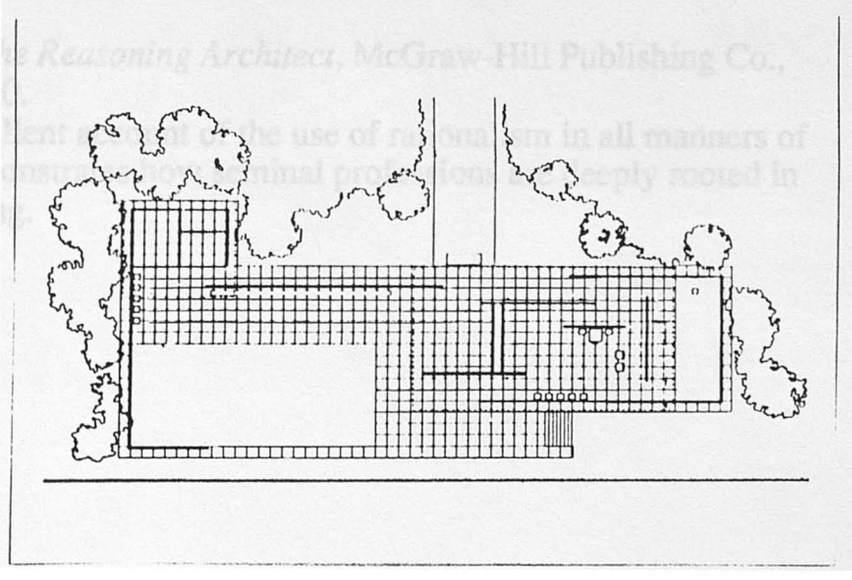
3) German pavilion
International Exposition (1929)
Barcelona, Spain
Architect: Ludwig Mies van der Rohe
Building Type: Pavilion for the country of Germany during the International Exposition of 1929.
Structural System: Post and beam construction with partial curtain wall enclosure.
Major Materials: Concrete, glass, and marble
Description: Perhaps the most successful example of the merits of the free plan. Inter-penetrating planes define space in a subtle and delicate manner made possible by the rigid structural skeleton. The juxtiposition of the planes, while not allowing for changing needs, does provide a flexible space nonetheless. The pavilion,of course, had no need to provide for changing needs since it was to be a temporary structure. Mies' use of materials creates an elegant atmosphere when the buildings forms could have easily fallen victim to the sterile articulation often associated with the Functionalists. Mies, like Corbusier, also incorporates nature into the design in the form of an open patio-like area with a reflecting pool. The marriage of construction, earth, water and sky help alleviate the potential negative aspects of the Functionalist aesthetic.







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CHAPTER TWO:
CONTEXT ISSUES

CULTURAL CONTEXT AND POTENTIALRESPONSE

Atlanta is quickly becoming a highly industrialized city of the south and as a result is gaining notability on an international scale. Future home to the 1996 Olympic Games, Atlanta is in a state of rapid growth and development. This growth and development is resulting in an influx of people and ergo diverse ethnicity.

Population, with regard to ethnicity, can be roughly broken down to 65% Afro-American, 15% Caucasian, and approximately 9% Asian and Latino with miscellaneous making up the remaining 11%. It is the opinion of at least one 20 year resident of the city, Pamela Garmon, that although great strides have been made in the area or racial equality there still exists an imbalance in favor of caucasians despite their relatively low numbers. According to Ms. Garmon, both women and "minorities" seem to reach the "glass ceiling" in a business environment dominated by caucasian males. Although I recognize this information to be solely based on opinion when discussing something as ambiguous as the cultural nuances of a human community opinion is often the only source of information.

The population and ethnicity of the immediate site and surrounding areas does not, however, fall into the aforementioned categories. Due to the fact that Georgia Tech is an internationally reknowned university the student population is extremely diverse in both ethnicity and age. Most of these students reside within what one would consider the immediate context of the university. Along with the immediate student population coexists a large number of low-income residents with whom the students will be sharing the

proposed facility. These are the users for whom the design process will be most challenging. Attracting this portion of the population will be among the primary concerns along with providing a viable research facility to the students.

A potential response could be some form of public plaza perhaps with payground facilities for neighborhood children. The creation of a children's area of the library with games and children's literature may also help attract public users responsible for some form of child care.

Offering free viewings of commercial movies as well as educational programs may also attract the public user with the idea being: regardless of how they're attracted, once there they will be more prone to using the library facilities as well.

Due to the cultural diversity of the area the architectural response should be one completely void of any identifiable cultural or ethnical influence. The forms should be platonic in nature and as universal in appeal as possible. Pure geometry tends to transcend cultural and sociological paradigms and should be the basis of formal generation and organization. Geometrical solutions to functions and/or demands will not only create unique form but also avoid association with any predefined cultural or ethnical design solutions.

PSYCHOLOGICAL CONTEXT AND POTENTIAL RESPONSE

The overall attitudes and psychologial makeup of the context are as diverse as the actual population. There does not seem to be any overriding attitude of culture or ethnicity other than the ever present tendancies of segregation. Students as well as the general public seem to segregate themselves into groups of their own kind. This ubiquitous sense of seperation is detrimental to the positive humanitarian advances and rewards possible through the interaction of a diverse population. It is the differences among people which provide the greatest opportunities for all. The way in which human beings of diverse backgrounds, cultures and beliefs compliment each other is the very basis of our strength as a species.

I propose that an architectural response involving the integration of as many people on as large a scale as possible will best promote the positive interaction resulting in the aforementioned benefits. Perhaps this could be achieved through some kind of large scale public area such as a plaza or park of some kind. Large public areas tend to negate a sense of seperation by their very nature. Another possibility would be the integration of the public and academic reading areas within the facility. Forcing the interaction of diverse groups will, in my opinion, facilitate the evolution of our often culturally restricted perceptions. It will force the users to reevaluate their perceptions of other groups and cultures and once again reinforce the altruistic nature and responsibility of civic architecture

BUILT CONTEXT AND POTENTIAL RESPONSE

The built context of the proposed facility consists primarily of the campus buildings and the immediate urban surroundings. There is a definite architectural distinction between the two and at times even within the campus architecture itself.

The campus consists largely of Georgian style buildings for both class and administration. These are characterized by red brick, traditional white trim, gable roofs and dormers with the average height being 4 storeys. This continuity is broken on the southwest corner of campus (the proposed site) by the introduction of several buildings of conflicting architectural nature. The student center, for example, is a Pompidou-like composition with exposed structure and HVAC and an abundance of glass.

The immediate urban environment has less continuity than the aforementioned area of campus. Fraternity and sorority lodges of the same Georgian style of campus are frequent immediately to the south. Continuing westward is a series of single story brick retail businesses culminating at the southwest corner of campus with the 25 story Coca-Cola Plaza showing the scars of post John Portman development. This building is a modern composition of pre-stressed concrete, steel and glass. On the west side of campus just north of the Coca-Cola Plaza is another modernist piece of stucco and glass. The combination of these elements provides for multiple stylistic design solutions in the absence of any rigid contextual paradigm.

Further south of the campus behind the greek lodges and retail businesses is a low-income housing development called Techwood Homes. It is from this community that a majority of the public users will come. Built during the Roosevelt administration Techwood Homes was the first low-income public housing development in the United States. The complex consists of blocks of 3 story buildings containg 6 small apartments. The population breaks down to approximately 55% afro-american, 40% caucasian with the remaining 5% mixed.

Perhaps the only architectural response would be to implement or compliment the geometry of the neighboring buildings but if attempted it should be minimized in keeping with the concept of avoiding association with any cultural or ethnical based form or influence. The building forms should strike a balance; however, between the more extreme modernist pieces and the older campus architecture.

Considering the diversity of the campus structures as well as the neighboring public buildings an almost ecclectic context provides one with a greater degree of creative license. The Georgian style should be intentionally avoided to give the library more of a neutral image to bridge the public and campus contexts.

NATURAL CONTEXT AND POTENTIAL RESPONSE

REGIONAL CHARACTERISTCS

Atlanta is located in the northcentral part of Georgia in Fulton County. The city is the state capitol and seat of the 523 square mile county.

Atlanta lies wholly in the Piedmont Plateau. The Plateau is a part of the Piedmont province which is a major physiographic division of the United States and extends from New York to central Alabama. The Atlantic Plateau has a generally rolling surface which is characterized by moderate slopes. There are few areas of drastic relief.

Surface features are rolling to hilly with broad, smooth uplands. The rolling land has low ridges and rounded knobs, with deposits of colluvial-alluvial material in depressions and along drainageways.

The Chatahoochee River Flood Plain is level or nearly level and occurs near the river and many of its tributaries. The flood plain varies in width from just a few yards to nearly half a mile and is largest in the northern part where the river enters the county.

At the point where the Chatahoochee enters the county the elevation is 900 feet and where it leaves, 75 miles to the southwest, it is 700 feet. The river flows southwesterly and parallels the geologic formation of the county. In the southern part of Fulton County elevations extend as high as 1000 feet to 1050 feet.

The county drainage system is characterized by a branching drainage pattern. The pattern is developed throughout the uplands. Surface drainage is good to excessive throughout the county. Drainage is into the Gulf of

Mexico by way of the Chatahoochee and Little Rivers and by tributaries of the Flint River. About 35 miles, including part of southern Atlanta, is drained to the Atlantic Ocean by way of the South River.

CLIMATE

The climate is humid and warm. Winters are genreally mild, but are characterized by very changeable temperatures. Prevailing winter winds are northerly. Winter conditions cause frequent alteration of warm southerly winds and cold dry northerly winds.

The average winter temperature is 45.5 degrees Farenheit. It rises rapidly in March and April. The difference between the January average and the July average is 34.9 degrees. This amount is small compared to a difference of 60 degrees in more northern states. Generally, the climate has few extremes.

The summers are warm, but relatively free of oppressive heat. This is due to the altitude and latitude of Atlanta. The average summer temperature is 78.6 degrees Farenheit.

The average date of the last killing frost is March 29 and the average date of the first killing frost occurs November 8. The growing season lasts 224 days and is sufficient for most commonly grown plants.

Rainfall varies somewhat from year to year. Seasonal distribution is generally favorable. Serious droughts are not likely to occur more frequently then once every fifteen years.

Snowfall, when it occurs, is very light and generally remains on the ground for only a short time.

Rainfall reaches two peak periods: one in the winter, another in mid-summer. Fall is the driest season of the year. About half of the annual rainfall comes in quantities of one inch or more in a 24 hour period.

VEGETATION

The original oak-pine forest that covered the county was typical of a broad forested area extending eastward and southward from the Appalachian Mountains to the Coastal Plain. The present tree growth is similar to the original, but not as extensive.

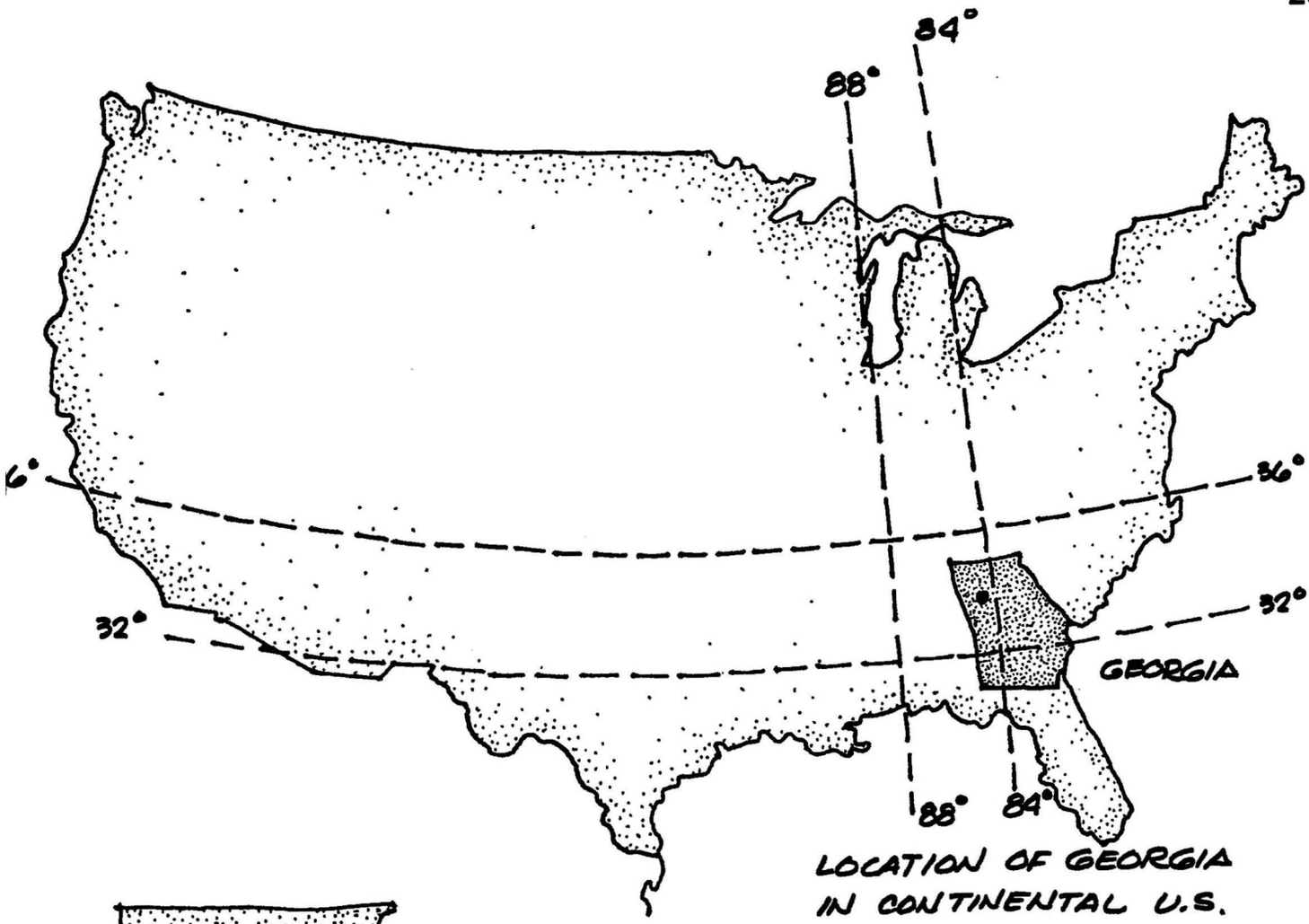
In forest areas the dominant oak species are white, common red, scarlet, black and blackjack. Shortleaf is the chief species of pine. Common plants in the undergrowth are flowering dogwood, greenbrier, wild rose and hackberry. Abandoned fields are covered with broomsedge of bermuda grass. Areas not burned are frequently overtaken by pine and scattered sassafras or oak.

Fulton County has a good system of fire control and unauthorized fires are, for the most part, kept to a minimum. The water supply is generally adequate for the area, except when shortages occur. Shortages are sometimes present during September, October, and November.

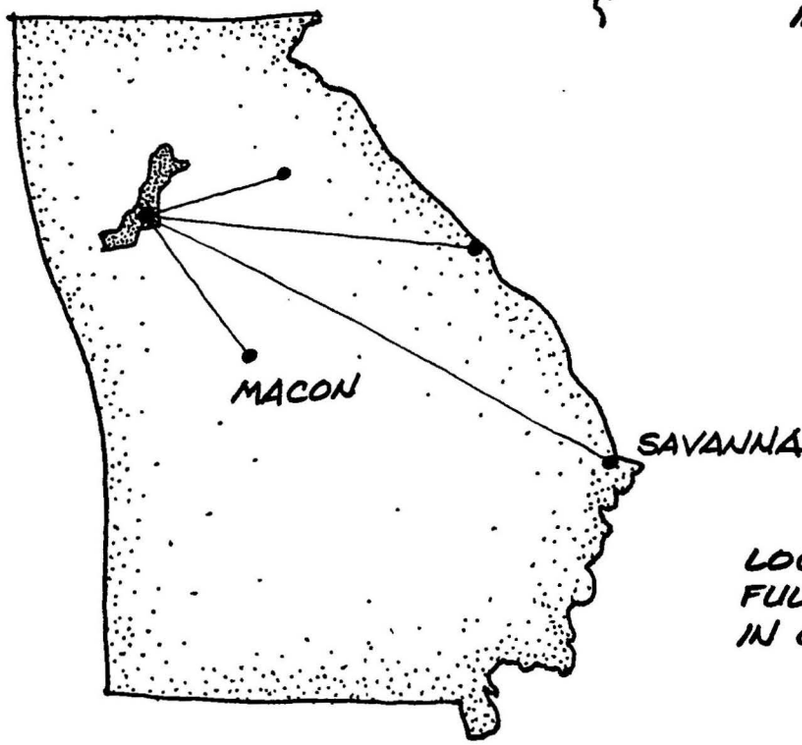
Due to the favorable climate the architectural response should be one that compliments nature and landscaping should be thoroughly explored. The ability to grow common house plants year round allows for the implementation of interior planters to maximize the presence of nature within the building.

Due to the delicate nature of the volumes within the stacks the north side of the site would seem to be the logical location for the stacks leaving the southern portion of the site for reading and social areas. Shading devices

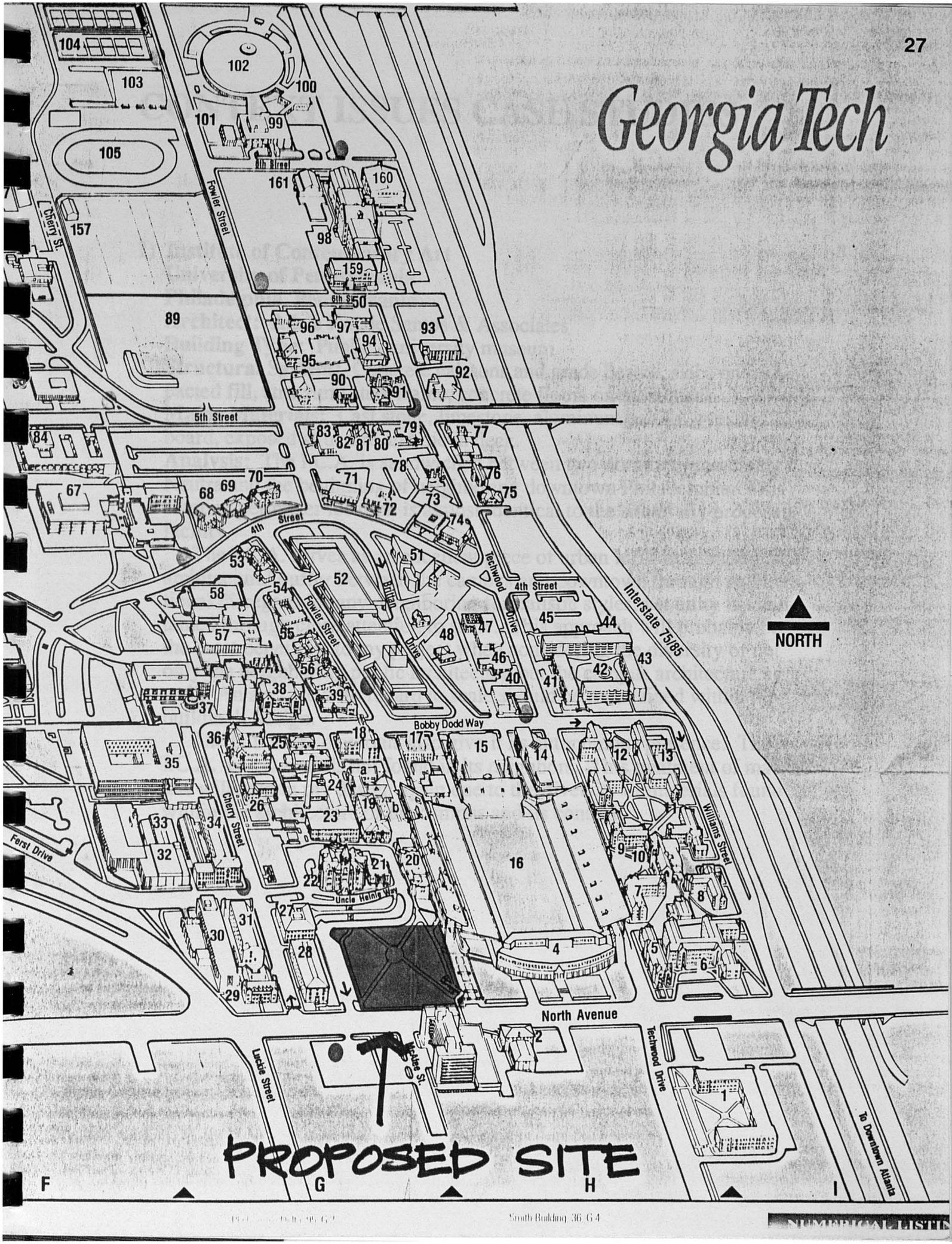
on the southern side of the building should allow for greater climate control through the use of passive solar design while simultaneously prohibiting excess sunlight and glare from entering the reading areas. The implementation of these shading devices could also allow light into more sensitive areas of the building without risking damage to any of the material stored therein. This could eliminate the tomb-like effect created within the stacks area of most libraries. The particular form of fenestrations will also prove to be helpful in these areas. Perhaps the use of wide, excessively flat windows could provide a certain degree of natural light to the stacks without harming the volumes.



LOCATION OF GEORGIA
IN CONTINENTAL U.S.



LOCATION OF
FULTON COUNTY
IN GEORGIA

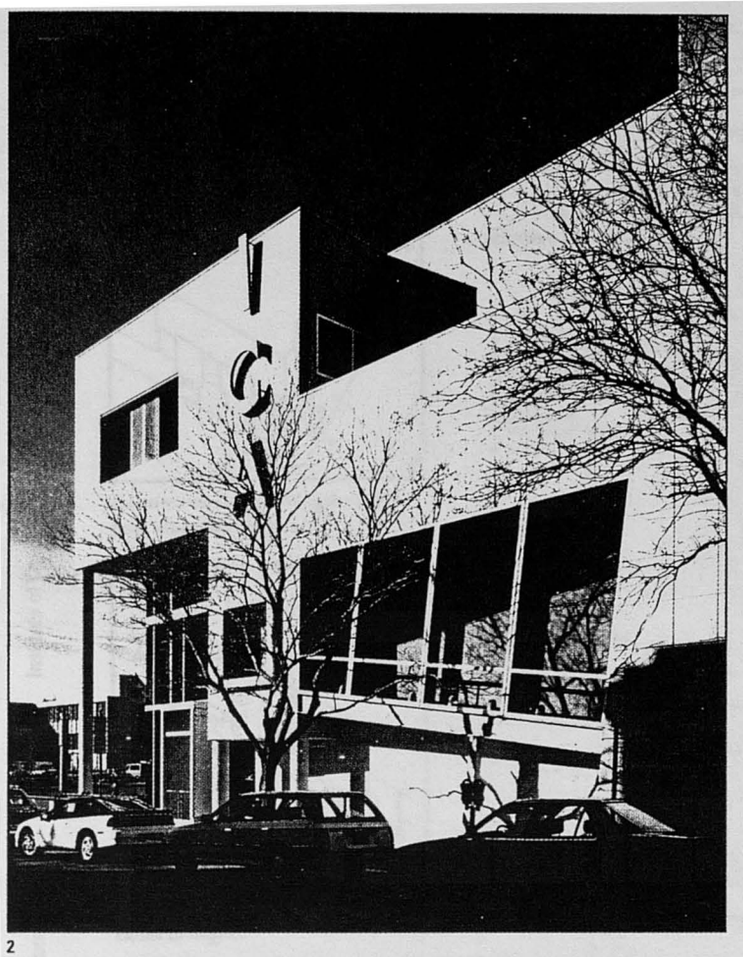

Georgia Tech
NORTH
PROPOSED SITE
Fowler Street
Cherry St.
5th Street
4th Street
6th St.
Bobby Dodd Way
Techwood Drive
Interstate 75/85
Williams Street
Cherry Street
Ferst Drive
Uncle Heinie Way
North Avenue
Luckie Street
Hubbard St.
To Downtown Atlanta
Britain Drive
F
G
H
I

CONTEXT ISSUES CASE STUDIES

1) **Institute of Contemporary Art**
University of Pennsylvania
Philadelphia, Pennsylvania
Architect: Adele Naude Santos & Associates
Building Type: Public / university museum
Structural System: Concrete caissons and grade beams, slabs on compacted fill, structural steel frame, concrete floors on metal deck.
Major Materials: Cast stone, limestone, aluminum panels, gypsum board, exposed structure and metal deck.
Analysis: The I.C.A. is sandwiched between two dormitory towers by Neutra and the beginning of neighboring downtown Philadelphia. This campus-perimeter location is almost identical to the site of my proposed facility.

The I.C.A. serves as an excellent piece of urban infill by creating an architectural buffer between the campus and downtown through an intentional disregard for any neighboring formalistic styles, yet unity is maintained through close attention to scale. This approach will probably be the most beneficial to my project when considering the diversity of not only the neighboring public architecture but the campus architecture as well. An average with regard to scale should be maintained within the building's design.

The building's materials also give it its autonomous presence. The I.C.A. uses materials not found in its neighbors. This treatment of materials will help in my design again due to the diversity of materials found within the architecture of the campus and its context.



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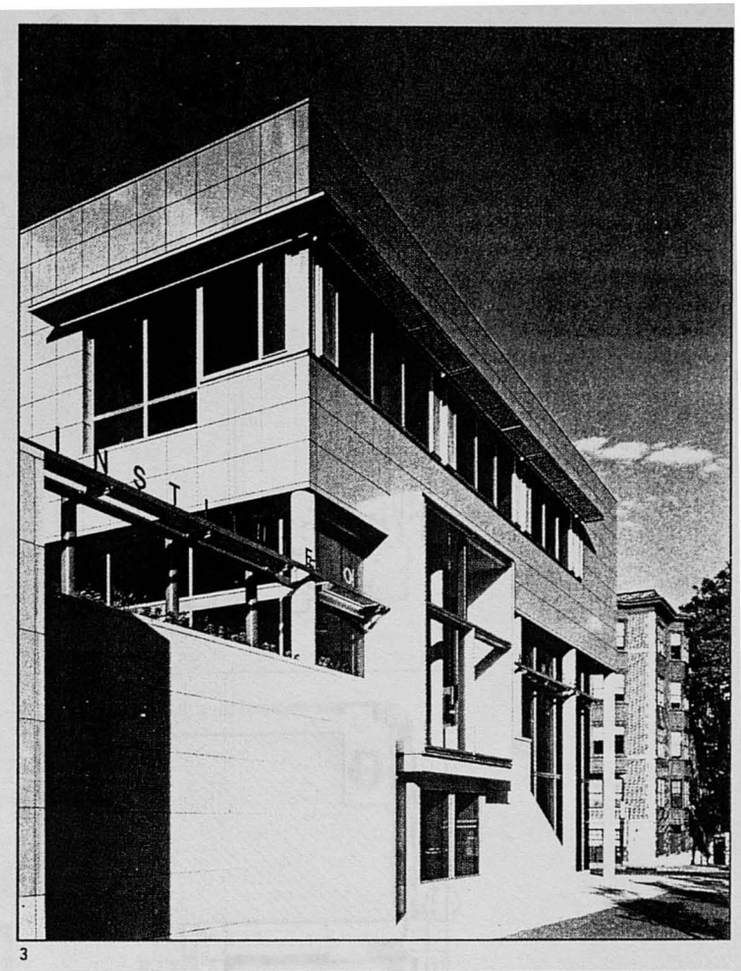

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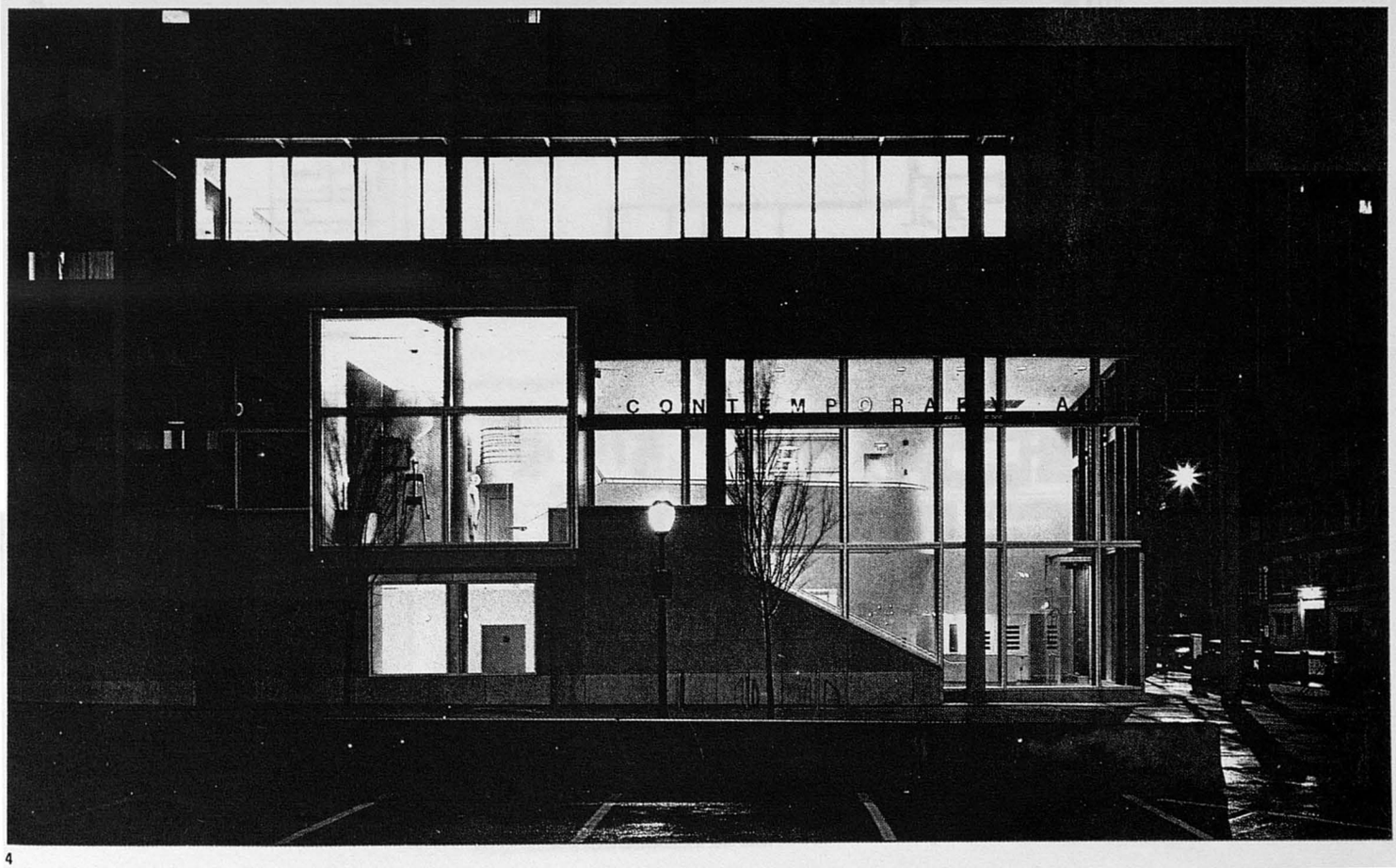

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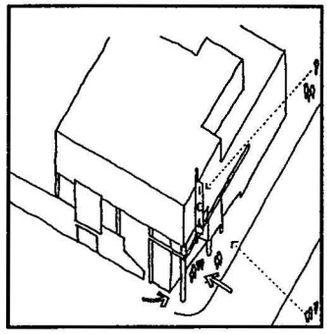
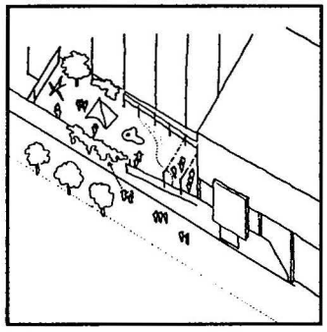
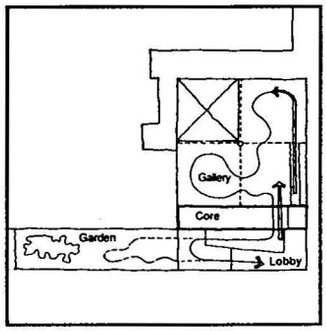
Design Sketches: Views and Sequences



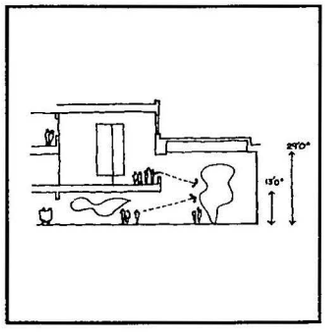
Entrance and proposed sign visible from multiple viewpoints.



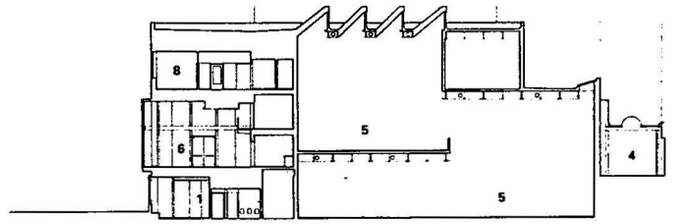
Sculpture terrace flanks street to be closed to traffic.



Ramp links galleries; mezzanine adjoins sculpture terrace.



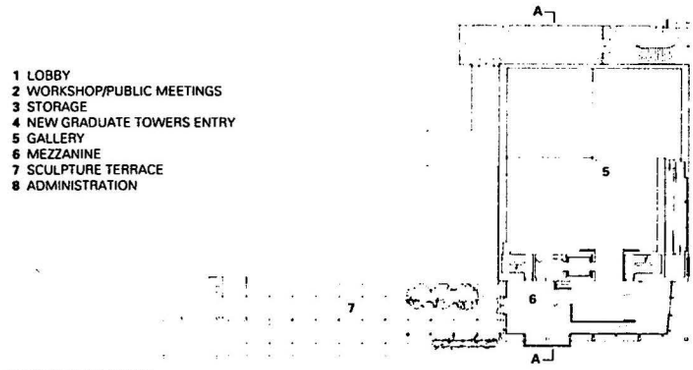
Open balconies accommodate large and small works of art.



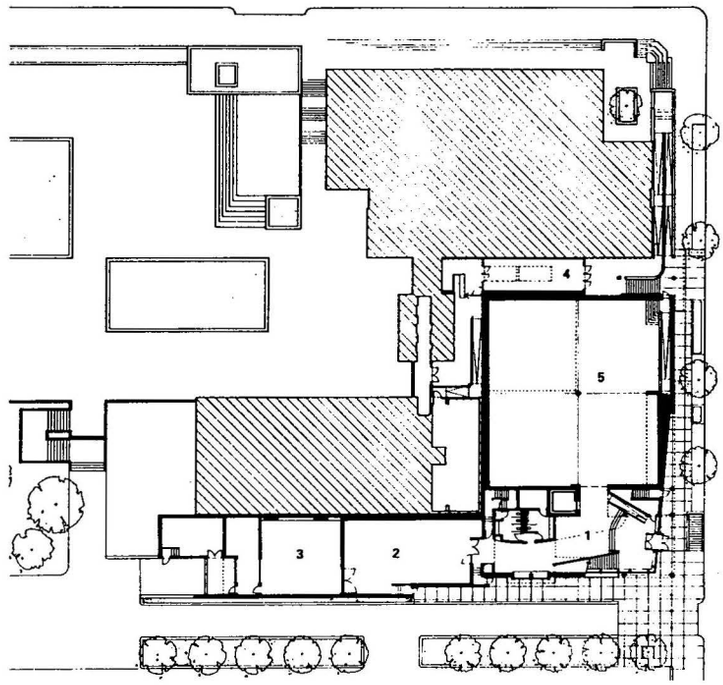
SECTION A A

40'/12m

1 LOBBY
2 WORKSHOP/PUBLIC MEETINGS
3 STORAGE
4 NEW GRADUATE TOWERS ENTRY
5 GALLERY
6 MEZZANINE
7 SCULPTURE TERRACE
8 ADMINISTRATION

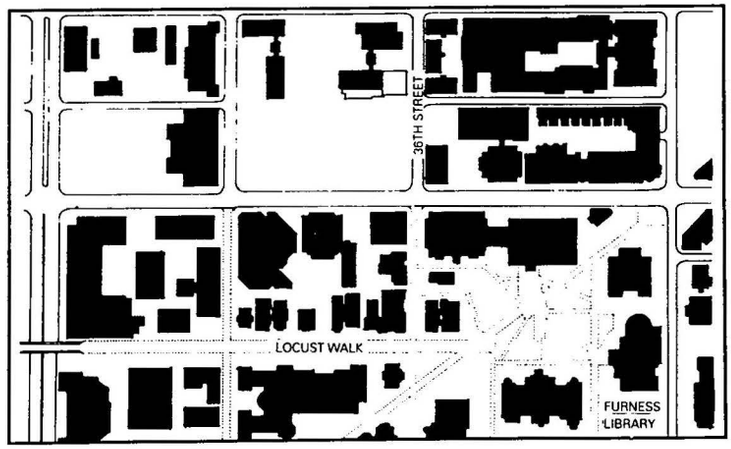


SECOND FLOOR PLAN



FIRST FLOOR PLAN

N ↑ 40'/12m



FIGURE/GROUND PLAN SHOWING ICA AND MAIN CAMPUS

N ↑ 400'/120m

The east façade's (2) bold sign the visible incline of the glazed inside are hints of the gallery's gram. By night, the letters are lighted and the ramp provides illuminated exhibit wall for pe Likewise, the glazed front wall becomes a picture frame for the when it glows at twilight. Seen obliquely, this side of the build reveals its multi-ply compositio a sculpture terrace set atop a r limestone retaining wall. The columns that support the sign double as interior bracing for curtain wall.

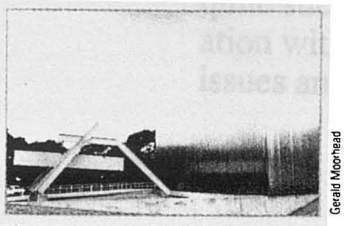
Curating the Avant-garde

Neither a museum nor a commercial gallery, the ICA is a *Kunsthalle*, an art institution without an archive or a profit motive. In the words of Patrick Murphy, Director of the ICA, this "art hall" is "an R&D facility of visual culture, or a magazine of art...the mission is propositional and exploratory, intended to raise questions, not to give answers."

Courtesy Whitechapel Art Gallery

Whitechapel Art Gallery, London, by Charles Harrison Townsend, 1901.

In Europe, if not in the United States, *Kunsthallen* like London's Whitechapel Gallery have a well-established position on the art scene. Houston's Contemporary Arts Museum (CAM) is an American counterpart – its name notwithstanding – a complement to the city's Museum of Fine Arts, where curatorship implies a more authoritative and conclusive voice in the arts, sustained by a focus on historical collections.



Gerald Moorhead

Contemporary Arts Museum, Houston, by Gunnar Birkerts, 1972.

As the façades of these contrastive *Kunsthallen* suggest, their program is not identified with any typological model. Charles Harrison Townsend blended the Whitechapel Gallery into London's urban fabric, while Gunnar Birkerts made the CAM an enigmatic trapezoid, with galvanized metal façades that hint of the stripped-down aesthetic within. Santos's ICA occupies a median between these extremes; it is both an object-building and an infill structure.

5

(continued from page 72)

works of art from a variety of viewpoints.

While the tiered spaces of the gallery are richer than the generic "black box" space that the ICA had expected, they are a compromise solution. In earlier schemes the lobby was open to three tiers of galleries with an auditorium. But caissons for the dormitory towers and the flanking subway tunnels impinged on the site, and a simpler strategy was executed. As built, the transition from lobby to gallery is rather abrupt, and the ramp, part of a one-way circulation loop through both floors, is more tunnel-like than inviting. It is little used; most visitors reach the upper gallery via the lobby steps.

The exterior of the ICA is forthrightly Modern. It sports no fragments culled from famous buildings of the past, and bespeaks Santos's determination to steer clear of anything that might look "trendy" in a few years. One might best describe the ICA's building as a vessel, a serviceable container for delivering an array of art works to the public. Le Corbusier's "Five Points of a New Architecture" seem to be Santos's primary reference, given the ICA's ribbon windows, *pilotis*, and aluminum cladding that implies curtain wall construction (in fact, the façades and structure are integral, because of budgetary and space constraints). Santos adapted Le Corbusier's formulas as the site mandated: a large bay window marks a shifted center on the main façade, and the *pilotis*' cladding matches the staggered limestone walls that flank the ICA. These provide a base that Neutra's complex lacked, and render the ICA a sibling (with a more accessible persona) to its older brothers next door.

The ICA's façades do double duty: they add a note of urbanity to a once-ignored corner, while insulating the warehouse-like gallery space within. Santos chose not to make the galleries legible on the façades, a strategy that contravenes the Kahnian "served and service" paradigm popular with many museum architects. Instead, Santos presents the ICA as a place of congregation, with the lobby its focal point. Her strategy is well chosen – it provides the university with one of its few buildings that opens to the city, rather than to the introverted campus. The ICA could become a threshold between academia and the city, its lobby a front room shared by students and Philadelphians alike.

Philip Arcidi ■

2) **Frederick R. Weisman Art & Teaching Museum**
University of Minnesota
Minneapolis, Minnesota
Architect: Frank O. Gehry & Associates
Building Type: Museum
Analysis: Though a theoretical project, Ghery still implements ideas in its design that might prove to be beneficial to my project. This study also occupies a perimeter site on the campus; however, the "public" side faces the Mississippi River before encountering the city. The campus side faces several academic buildings of rather conservative brick construction. Ghery handles this by creating two facades. The campus side offers a similarly brick clad wall to its neighbors while the side facing the river is a typical collage of Ghery's atypical forms. While this approach does not particularly lend itself to my facility it does demonstrate the extremes to which one might go to give a cohesive quality to a building in conflicting contexts.

Ghery also uses the contexts as inspiration for their respective facades taking looser, fluid forms from the river and the rigid brick wall from the academic buildings. This approach may lend itself to my facility a little more than the one mentioned earlier. Drawing inspiration from the context with respect to the building's individual facades could prove to be quite successful though care should be taken to avoid any strict association with any one piece of the context as I mentioned in the context issues and potential response.

Architectural Design
[redacted]iation

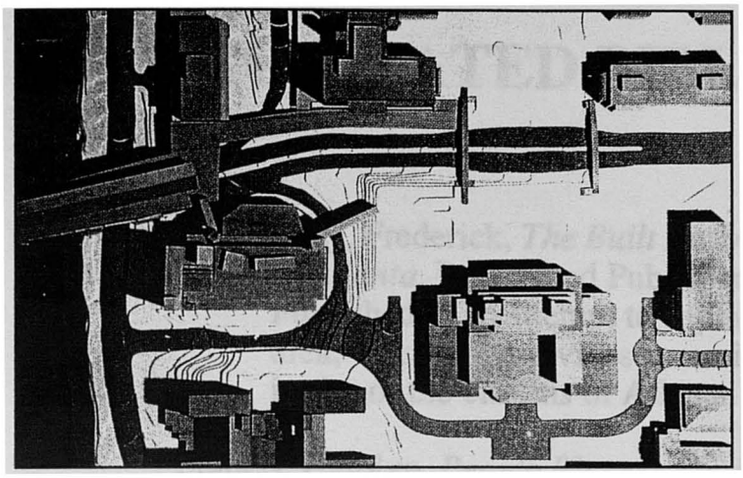
University of Minnesota Art Museum

[redacted]nk O. Gehry & Associates

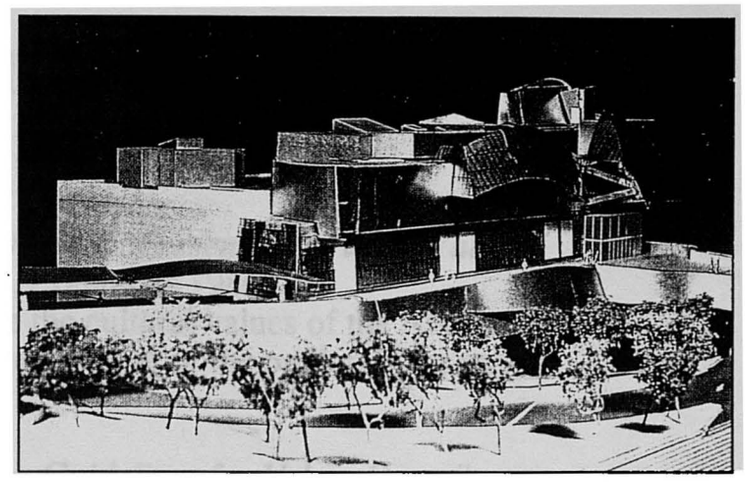
Project: Frederick R. Weisman Art & [redacted]aching Museum, University of [redacted]nnesota, Minneapolis.
Site: a riverside campus lot, bounded by a bridge, a plaza, a street, and an [redacted]ademic building, with a vista of the [redacted]ssissippi and the city skyline.
Program: galleries for permanent and temporary exhibits, archival and [redacted]ministrative space, a seminar room, [redacted]d a black box auditorium in a 41,000-square-foot building.
Solution: The Museum is a junction [redacted]r campus life, by virtue of its pro-[redacted]am and design. It presents an understated brick façade to neighboring academic structures, while the [redacted]posite façade (overlooking the riv-[redacted]) and the entrance façade (flanked by a bridge) are animated assemblages clad in sandblasted stainless [redacted]el. On these public sides the [redacted]useum looks like a gleaming sculpture whose contours evoke the flow of the river below.
[redacted] This steel "mask" encloses a lobby [redacted]at wraps around the galleries, seminar room, and auditorium. Administrative offices occupy the top floor of [redacted]e Museum, where three free-form [redacted]ht wells illuminate the orthogonal galleries. Archives and carpentry shops occupy the lowest level, [redacted]neath two tiers of parking for 120 [redacted]tomobiles.

Design Architects: *Frank O. Gehry & [redacted]sociates, Santa Monica, California [redacted]rank O. Gehry, design principal; Robert G. Hale, Jr., managing principal; Edwin Chan, project designer; Victoria Jenkins, [redacted]oject architect; Bruce Biesman-Simons, [redacted]vid Gastrau, Matt Fineout, Richard Rosa, project team).*
Executive Architects: *Meyer, Scherer & [redacted]ckcastle, Minneapolis, (Jeffrey Scherer, [redacted]oject manager; John Cook, project architect; Greg Abnet, Joan Soranno, David Zenk, Pat Fitzgerald, Tim Carlson, Kelly [redacted]emhildt, Jim Larson, project team).*
[redacted]ent: *University of Minnesota Art & Teaching Museum.*
Consultants: *Ericksen, Ellison & [redacted]sociates, mechanical/electrical (Leif*

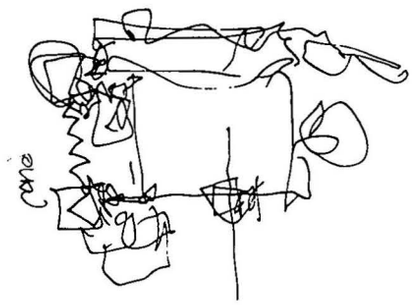
MODEL SHOWING WEST ELEVATION OF MUSEUM WITH MISSISSIPPI RIVER IN FOREGROUND



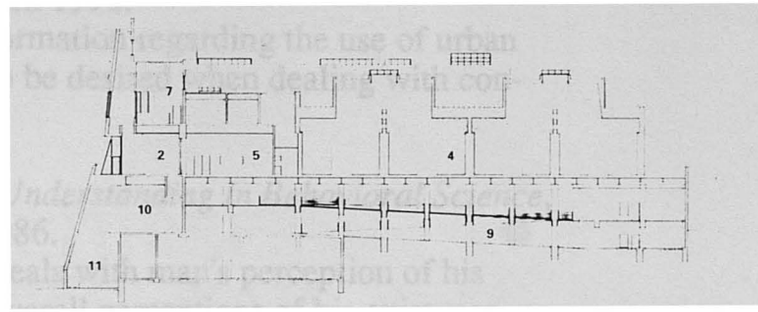
SITE MODEL; PEDESTRIAN BRIDGES LINK PLAZA AND BRIDGE TO MUSEUM ENTRANCE ON NORTH FAÇADE



MODEL WITH VIEW OF THE MUSEUM FROM UNIVERSITY GROUNDS; ENTRANCE IS TO RIGHT



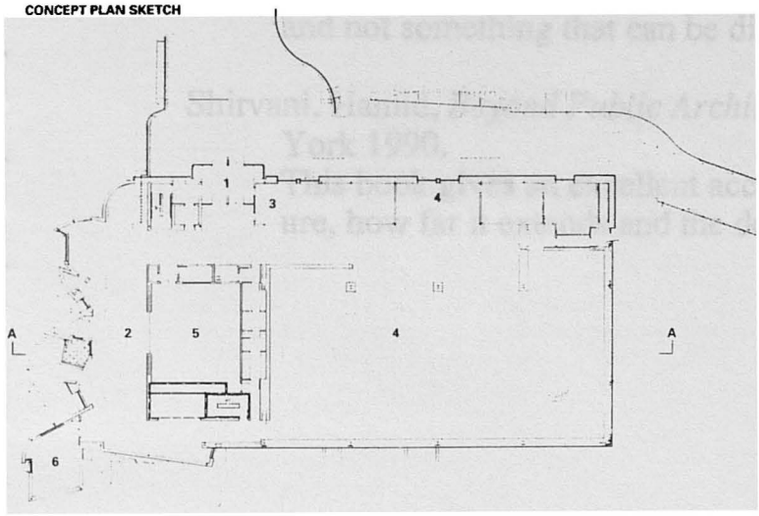
CONCEPT PLAN SKETCH



SECTION A A

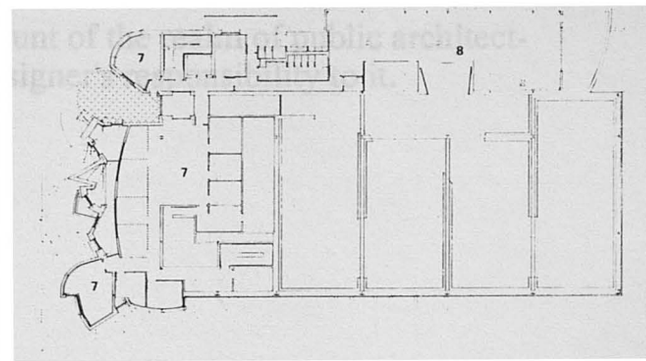
40'/12m

1 ENTRANCE
2 LOBBY
3 SALES/RENTAL
4 GALLERY
5 AUDITORIUM
6 SEMINAR
7 ADMINISTRATION
8 MECHANICAL
9 PARKING
10 CARPENTRY SHOP
11 LOADING



FLOOR PLAN, MAIN (GALLERY) LEVEL

N ↑ 40'/12m



FLOOR PLAN, UPPER (ADMINISTRATIVE) LEVEL

Ericksen, Jim Art, Tim Rabbitts, Greg Neva); Meyer, Borgman & Johnson, structural (Rollie Johnson, Bob Kurtz); Progressive Consulting Engineers, civil (Naeem Qureshi, Dan Allmaras); Damon Farber & Associates, landscape architects (Damon Farber, Joan MacLeod); Strgar-Roscoe-Fausch, transportation/ parking; Ted Jage & Associates, costs; Jack Lindeman, specifications.

Costs: *$9,500,000.*

Model Photographer: *Joshua White.*

Jury Comments

Saitowitz: It's a shed, which I think is a good shape for a museum.

Holl: The main expression of the façade really ends up being not around the museum space but around the reception. This is wonderful, but the building is in a way backwards; it would be wonderful if all the architecture, which is hanging towards the river, somehow settled to the experiential part of the building. The key elevation is facing the Mississippi River.

Saitowitz: The actual museum is simply a loft that's lit to create a neutralized gallery space. There is a lot of demand from museum curators for that kind of a space. It just has one wall which starts with the river and kind of pulls the water around one edge and decorates the shape, and that's the way it brings you to the building. I think the designer's reduction of elements in this manner of architecture is a quite clear step. The museum is a warehouse with a decorated wall – a waterfall that came from the river and wrecked the building. The interior is beautiful in the way the skylights carve up the shape.

Prix: It's beautiful to see how a loft mutates into a mask.

Holl: This is an exploration where the program is not divided into different elements and crashed together, but instead something is explored in the relation of fluid space to the wall.

ANNOTATED BIBLIOGRAPHY

Bonkovsky, Frederick, *The Built Environment: Present and Future Values of Atlanta*, Brentwood Publishers, Columbus 1986.
Published in an attempt to capture the cultural values of the Atlanta area, This book provides a succinct account of the predominant attitudes of the citizens of Atlanta.

Francis, Carolyn, *People Places: Design Guidelines for Urban Open Space*, Van Nostrand Reinhold, New York 1990.
This book provides excellent information regarding the use of urban public spaces but leaves a little to be desired when dealing with conflicting contexts.

Rosnow, Ralph L., *Contextualism and Understanding in Behavioral Science*, Praeger Publishers, New York 1986.
More of a psychological text, it deals with man's perception of his context as being intrinsic in his overall perceptions of his existence and not something that can be divorced from that overall perception.

Shirvani, Hamid, *Beyond Public Architecture*, Van Nostrand Reinhold, New York 1990.
This book gives an excellent account of the realm of public architecture, how far it extends and the designer's responsibility to it.

CHAPTER THREE:
FACILITY PROGRAM

ANALYSIS OF ACTIVITIES

OVERVIEW

PRIMARY ACTIVITIES AND PARTICIPANTS

* Shelving and retrieving of volumes and other materials (librarians).
* Checking out volumes and other materials (users).
* Exchange of information between librarian and users (librarians and users).
* Reading and research
* Administration activities (library personnel).
    - Accounting: writing of payroll, expenses, etc.
    - Personnel: interviewing prospective personnel, transferring personnel, etc.
    - Director: signing of documents, communicating with other library facilities, ordering of additional volumes.
    - Public research librarian: research services provided for a fee to public users.

SECONDARY ACTIVITIES AND PARTICIPANTS

* Accessing catalog (users and librarians).
* Circulation through stacks (users and librarians).
* Recreation activities (users and librarians).
    - Playing
    - Eating
* Electronic exchange of documents with other facilities (librarians).
* Cataloging new volumes (librarians).
* Custodial and maintenance activities (custodians).
* Social interaction (users and librarians).
* Child recreational and entertainment activities (children of users).
* Viewing of fims, lectures, etc (users and librarians).
* Retrieving restricted volumes (librarians).
* Listening to audio tapes (users).
* Locating volumes (users and librarians).

PRIMARY ACTIVITIES AND PARTICIPANTS

SHELVING AND RETRIEVING OF VOLUMES

DESCRIPTION: This activity involves the placement and removing of books, recordings, and documents into and out of storage facilities or stacks.

PARTICIPANTS: Staff, students and public users

DURATION: Anywhere from several minutes to several hours depending on volume of material to be shelved.

PHYSICAL SUPPORT: Storage equipment, lighting, cart for conveying volumes to and from facilities.

RESPONSE: This activity generates the need for ample circulation through the stacks and considerable storage area with appropriate artificial lighting. Natural lighting should be avoided on this portion of the interior due to the fragile nature of some volumes.

CHECKING OUT VOLUMES

DESCRIPTION: This activity involves the expedient recording of the volume being checked out and the duration of the loan. This can also include the processing of new public and student accounts.

PARTICIPANTS: Librarians, students and public users.

DURATION: Two to three minutes.

PHYSICAL SUPPORT: Computer with identifier for magnetized cards, lighting, counter space, and immediate storage facilities for supplies.

RESPONSE: This activity requires plenty of room and multiple computer terminals to facilitate a large number of people. Adequate lighting (average interior lumination) of both natural and artificial sources may be utilized.

READING AND RESEARCH

DESCRIPTION: This activity involves the locating and referencing of volumes within the facility. This includes writing and perhaps creating of hardcopies of volumes for the researcher's personal use.

PARTICIPANTS: Students and public users

DURATION: Anywhere from a few minutes to several days even months.

PHYSICAL SUPPORT: Lighting, tables, chairs and computer catalog.

RESPONSE: This activity could be the single most important acitvity within the facility and requires the most attention. Noise reduction and acoustics are of utmost importance in producing an environment conducive to study and/or research. Adequate lighting is essential and the use of natural illumination should be limited again due to the fragile nature of the volumes.

ADMINISTRATION - ACCOUNTING

DESCRIPTION: This activity involves the management of the facility's business and budget affairs. Payroll is also handled by this department as well as payment for acquisitions, etc.

PARTICIPANTS: Employed C.P.A.

DURATION: This activity could take a few minutes for simply cutting a check or several days for an entire audit.

PHYSICAL SUPPORT: Computer, telephone, lighting, desk, chair, file cabinet or similar.

RESPONSE: This activity requires a good deal of privacy and should be somewhat isolated from the public areas of the facility. Location among the other office oriented activities is advisable. Adequate lighting for office duties is required and can natural.

ACCOUNTING - PERSONNEL

DESCRIPTION: This activity involves the interviewing of prospective personnel as well as meetings with existing personnel and the execution of daily personnel concerns.

PARTICIPANTS: Director of personnel for the facility.

DURATION: Undeterminable

PHYSICAL SUPPORT: Desk, chairs, lighting, file cabinet or similar, telephone.

RESPONSE: This activity requires the same degree of privacy as the rest of the administrative activities as well as comparable lighting, acoustics, etc.

RESEARCH DONE AS COMMERCIAL SERVICE

DESCRIPTION: This activity involves referencing of volumes, writing , reading and computer use in the process of researching specific topics for a customer.

PARTICIPANTS: Librarian

DURATION: Anywhere from several minutes to several months.

PHYSICAL SUPPORT: Computer, desk, telephone, lighting, file cabinet or similar, typewriter or computer printer.

RESPONSE: This is another acitvity that should follow the aforementioned response for the related administrative activities.

SECONDARY ACTIVITIES AND PARTICIPANTS

ACCESSING OF COMPUTER CATALOG

DESCRIPTION: This activity involves the accessing and retrieving of information from the facility database regarding status of volumes and location of peripheral resource sources.

PARTICIPANTS: Librarians, students and public users

DURATION: Anywhere from several seconds to several minutes.

PHYSICAL SUPPORT: Computer terminals, lighting, desk or table, chair.

RESPONSE: This activity requires the location of the terminals to be approximate to the stacks and other sources as well as being centrally located within the facility.

CIRCULATION THROUGH STACKS

DESCRIPTION: The physical movement of human beings through the storage facilities called the stacks when pulling or returning a volume.

PARTICIPANTS: Librarians, students and public users

DURATION: Anywhere from a few minutes to several hours depending on quantity of volumes.

PHYSICAL SUPPORT: Lighting, storage facilities.

RESPONSE: The activity calls for adequate space between the stacks to facilitate the movement of human beings, taking into account the handicapped as well.

PLAYING

DESCRIPTION: The simple frolicing or merriment of children and some times even adults. Running, sliding, swinging on swings...you know, that sort of thing.

PARTICIPANTS: Mostly the children of students and public users.

DURATION: Anywhere from a few seconds to several hours.

PHYSICAL SUPPORT: Playground type equipment, enclosure of some kind be it a covered play area or just some form of enclosing wall.

RESPONSE: This activity is more important than it may seem as it is this feature of the facility that will enable some of the student and public users to use the facility by having someplace to entertain their children while they are locating a needed volume. This activity needs to be positioned far from the more silence demanding areas of the facility.

EATING

DESCRIPTION: The consumption of food or drink.

PARTICIPANTS: Librarians, staff, students, public users, their children as well as the general public.

DURATION: Fifteen minutes to and hour

PHYSICAL SUPPORT: Seating and tables

RESPONSE: This activity requires a setting in which people can eat, rest and be casual and comfortable.

ELECTRONIC EXCHANGE OF VOLUMES

DESCRIPTION: This activity involves the electronic exchange of printed work via a computer and modem. Exchanges such as this are the main means of acquiring volumes for most modern libraries.

PARTICIPANTS: Librarian in charge of acquisitions and library director.

DURATION: Fifteen minutes to several hours depending on quantity of volumes being exchanged and if any volumes are being sent as well.

PHYSICAL SUPPORT: Computer, modem, software, hardware, desk, chair(s), lighting, telephone.

RESPONSE: This activity is among the administrative activities and will be handled similarly.

CATALOGING OF NEWLY ACQUIRED VOLUMES

DESCRIPTION: This activity includes the use of a computer terminal to record the acquisition of new volumes and add them to the database.

PARTICIPANTS: Librarians and other personnel involved in acquisitions

DURATION: Anywhere from several minutes to several hours or days depending on the amount of volumes being added.

PHYSICAL SUPPORT: Lighting, a computer, chairs, a desk, and a printer.

RESPONSE: This activity would also follow the quidelines for the majority of administrative activities.

CUSTODIAL / MAINTENANCE

DESCRIPTION: This is actually a series of activities such as vaccumming, sweeping, mopping, removing trash, cleaming glass, cleaning toilets and all around interior maintenance.

PARTICIPANTS: Custodial staff

DURATION: Anywhere from five minutes to several hours depending on the job or number of jobs.

PHYSICAL SUPPORT: Lighting, a work sink, cleaning equipment and storage.

RESPONSE: The custodial activities should be placed out of the main circulation areas of more important activities. Several areas should be designated for this activity to allow for more flexibility with regard to movement of cleaning supplies and equipment.

FACILITY MAINTENANCE / GROUNDSKEEPING

DESCRIPTION: This activity involves the maintainimg of the grounds as well as the exterior of the facility itself.

PARTICIPANTS: Maintenance and groundskeeping staff.

DURATION: Anywhere from several minutes to several hours depending on the job or jobs.

PHYSICAL SUPPORT: Storage, groundskeeping equipment.

RESPONSE: This activity should be incorporated with the interior maintenance activities as closely as possible.

GENERAL SOCIAL INTERACTION

DESCRIPTION: Leisure conversation between acquaintances or exchange between study group or groups.

PARTICIPANTS: Librarians, staff, students or public users.

DURATION: Anywhere from a few seconds to several hours.

PHYSICAL SUPPORT: Lighting, chairs, tables

RESPONSE: This activity is extremely important but can be a problem in itself. Consideration must be taken to keep an area facilitating this activity located away from the area for reading and research.

VIEWING VIDEO VOLUMES

DESCRIPTION: This activity involves the viewing of certain video volumes of the collection for the purpose of cataloging as well as research.

PARTICIPANTS: Librarians, students and public users

DURATION: Anywhere from a few minutes to several hours.

PHYSICAL SUPPORT: Video recorder/player, television, lighting, chairs tables.

RESPONSE: This area should not only be isolated from outside noise but should make a special effort to isolate the noise that will be created in the area itself. Location with regard to more sensitive areas of the facility should be considered.

RETRIEVING OF RESTRICTED VOLUMES

DESCRIPTION: This activity involves the librarian going to a special area and pulling volumes that are not available to the average user.

PARTICIPANTS: Librarian

DURATION: A few minutes

PHYSICAL SUPPORT: Isolated storage facilities

RESPONSE: This activity will require facilities close to the librarian to reduce the amount of time devoted this rare service. These facilities must remain out of the main circulation of the users.

LISTENING TO AUDIO VOLUMES

DESCRIPTION: This activity involves the listening of audio volumes of the facility's collection for both cataloging and research purposes.

PARTICIPANTS: Librarians. students and public users.

DURATION: Anywhere from a few minutes to several hours.

PHYSICAL SUPPORT: Lighting, tables, chairs, phonographs, cassette players, compact disk players, miscellaneous hardware.

RESPONSE: This activity requires that special attention be paid to the acoustics of the area. As with the video area this area will have to attempt to isolate the noise created within the area.

LOCATING BOOKS

DESCRIPTION: This activity involves accessing the computerized catalog to find the location of the volume then physically going and pulling the volume.

PARTICIPANTS: Librarians, students and public users.

DURATION: Any where from a few minutes to several hours depending on the quantity of volumes being located.

PHYSICAL SUPPORT: Lighting, computer and storage facilities.

RESPONSE: This activity is similar to circulation throughout the stacks and should handled similarly.

READING

DESCRIPTION: This activity involves the reading of various forms of research materials.

PARTICIPANTS: Librarians, students, and publick users.

DURATION: Anywhere from a few minutes to a few hours.

PHYSICAL SUPPORT: Chairs, tables, lighting.

RESPONSE: This activity requires silence therefore consideration must be given to the acoustics of the area as well as the location of the area with regard to the noisier areas of the facilities. Natural lighting is invited as well as other attempts at creating a friendly, comfortable area.

ANALYSIS OF SPACES

COURTYARD / PLAZA

AREA: Undetermined

QUALITY: The courtyard should provide pleaseant eating and relaxation areas as well as providing areas for play and other forms of recreation such as outdoor performances.

EQUIPMENT: Playground type equipment, seating and stage or performance area.

AREAS: Play , performance and relaxation.

SYSTEMS PERFORMANCE CRITERIA: Acoustics are not as important in this space as providing some form of barrier between the space and some of the more sensitive areas of the interior. Fenestraton can enhance this by keeping openings to a minimum.

ENTRY / FOYER

AREA: 600 sq. ft.

QUALITY: The entry should facilitate ingress and egress and should serve as a dual purpose space by providing space for exhibition and display of selected works as well as upcoming events, films, etc.

EQUIPMENT: Lighting, seating, tables, display cases.

AREAS: Sitting, reading, display.

SYSTEMS PERFORMANCE CRITERIA: Fenestration can expose interior to natural lighting due to the absence of fragile materials. Acoustics are not as essential but noise from entry should not be allowed to affect other areas of the facility.

LOBBY

AREA: 5000 sq. ft.t.

QUALITY: The lobby should be lit with a combination of artificial and natural light. This space should be inviting and friendly. Acoustics are not as important but should still be considered.

EQUIPMENT: Lighting, display stands, seating, tables.

AREAS: Entry, reading, socializing, and display.

SYSTEMS PERFORMANCE CRITERIA: While acoustics are not the governing concern of the space an attempt should be made to minimalize the amount of noise capable of reaching other spaces. Fenestration may allow exposure of interior to natural lighting at designer's descretion.

STACKS

AREA: 2,600,000 volumes = 175,000 sf x 2 (for expansion) = 350,000 sf

QUALITY: The stacks should provide easy access and circulation available through the use of the free plan without creating a labyrinth effect. Appropriate lighting to prevent cave-like atmosphere.

EQUIPMENT: Storage equipment, lighting.

AREAS: Circulation and storage.

SYSTEMS PERFORMANCE CRITERIA: As with most spaces within this facility acoustics is very important and should strive to reduce ambient noise to a minimum. Lighting should be adjustable. Fenestration should miinmize exposure of volumes to an abundance of natural lighting.

DIRECTOR'S OFFICE

AREA: 250 sq. ft.

QUALITY: The director's office should provide a comfortable environment in which to carry out the duties of the average day. The use of natural lighting may help create this effect and is allowable due to the lack of any fragile volumes. Avoid creating an isolated feeling to the offices due to their placement because of privacy considerations.

EQUIPMENT: Desk, telephone, lighting, chairs, computer, filing cabinet or similar.

AREAS: Work

SYSTEMS PERFORMANCE CRITERIA: Artificial lighting should be adjustable and adequate for office work. Personal HVAC controls should be considered to insure individual comfort.

ASSOCIATE DIRECTOR'S OFFICE

AREA: 200 sq. ft.

QUALITY: The Associate Director's office should meet the requirements set forth earlier in the Director's office. All offices shall provide comparable environments.

EQUIPMENT: Lighting, desk, chairs, computer, telephone, filing cabinet or similar.

AREAS: Work

SYSTEMS PERFORMANCE CRITERIA: As with the Director's office, systems should strive to produce the most friendly environment conducive to work.

DIRECTOR OF DOCUMENT'S OFFICE

AREA: 150 sq. ft.

QUALITY: The Director of document's office should be readily accessible to the documents area of the facility and should be oriented so that users may readily locate it.

EQUIPMENT: Same as aforementioned offices.

AREAS: Work

SYSTEMS PERFORMANCE CRITERIA: Same as aforementioned offices.

DIRECTOR OR PERIODICALS' OFFICE

AREA: 150 sq. ft.

QUALITY: The director of periodicals' office should be located within the periodicals section of the facility and should be able to be readily located by users.

EQUIPMENT: Same as aforementioned offices.

AREAS: Work

SYSTEMS PERFORMANCE CRITERIA: Same as aforementioned offices.

DIRECTOR OF CIRCULATION'S OFFICE

AREA: 150 sq. ft.

QUALITY: Director of circulation's office should be located within the circulation area and should be able to be readily located by users.

EQUIPMENT: Same as aforementioned offices.

AREAS: Work

SYSTEMS PERFORMANCE CRITERIA: Same as aforementioned offices.

ACCOUNTING OFFICE

AREA: 150 sq. ft.

QUALITY: The Accounting office should be adjacent to the rest of administrative offices while still being isolated from major public circulation areas of the facility.

EQUIPMENT: Same as aforementioned offices.

AREAS: Work

SYSTEMS PERFORMANCE CRITERIA: Same as aforementioned offices.

PERSONNEL OFFICE

AREA: 150 sq. ft.

QUALITY: The personnel office should be adjacent to the rest of the administrative offices while remaining isolate from the public circulation of the rest of the facility.

EQUIPMENT: Same as aforementioned offices.

AREAS: Work

SYSTEMS PERFORMANCE CRITERIA: Same as aforementioned offices.

PUBLIC STUDY AREA

AREA: 1500 sq. ft.

QUALITY: The public study area should be a focus of the main or concourse level depending on the design. This space should receive a considerable amount of natural light in at least part of it with the rest being perhaps a bit more subdued. Areas for meeting should be provided but not at the expense of intolerable noise levels. Adjustable artificial lighting should be provided throughout with areas for more private studying as well.

EQUIPMENT: Tables, chairs, sofas, lighting, computer terminals.

AREAS: Meeting, studying, and computer usage.

SYSTEMS PERFORMANCE CRITERIA: Again, acoustics will be a major concern with this space. Maintaining acceptable noise levels while inviting interaction will prove challenging. Adjustable lighting will provide individuals with adequate illumination when needed.

CONFERENCE AREAS

AREA: 300 sq. ft.

QUALITY: The conference areas should provide privacy for groups of five to ten people as well as comfortable meeting space. The lighting can be a mixture of natural and artificial depending on the demands of the design evolution.

EQUIPMENT: Tables, chairs, chalk or marker boards.

AREAS: Meeting

SYSTEMS PERFORMANCE CRITERIA: Privacy and accessability must be maintained and balanced. The acoustics of the space is not as much of a concern as simply isolating the space from exterior noise.

AUDITORIUM

AREA: 3000 sq. ft.

QUALITY: The auditorium should be able to accomodate approximately 150 to 200 people. Due to the low number of seats the auditorium will have larger seating with a more spacious feeling.

EQUIPMENT: Seating, lighting, sound system with speakers, projector, screen, and signage.

AREAS: Projection, viewing and behind the screen.

SYSTEMS PERFORMANCE CRITERIA: This space poses both the problems of interior acoustics and exterior noise due to the performance within. Fenestration can allow no exposure of space to natural lighting.

PRIVATE STUDY AREAS:

AREA: 20 sq. ft.

QUALITY: The private study areas should provide the utmost privacy and the utmost insulation from exterior noise. The lighting should be adjustable in both direction and intensity.

EQUIPMENT: Adjustable lighting, table, chair, trash can and A/C outlet.

AREAS: Study

SYSTEMS PERFORMANCE CRITERIA: Materials of immediate enclosure should provide extreme insulation from exterior noise. HVAC will have to provide for each micro environment.

DATA PROCESSING

AREA: 2500 sq. ft.

QUALITY: The data processing area should be broken up so that it does not mimic the stagnate grid of the computer chip itself. Arrangement of terminals in a clever yet pragmatic pattern should provide an otherwise dead environment with more dynamic flow.

EQUIPMENT: Computer terminals, psuedo floor for conduit, lighting, tables, chairs.

AREAS: Software check-in / check-out, data processing and printing

SYSTEMS PERFORMANCE CRITERIA: The psuedo floor will provide the neccessary area for the many conduits and interfaces required to run so many peripherals. The open plan will be exploited for its flexability in an attempt to provide a more dynamic arrangement of terminal clusters.

CIRCULATION AREA

AREA: 500 sq. ft.

QUALITY: The circulation space should be large enough to accomodate many users attempting to check out volumes. The space should be friendly while still maintaining seperation between the staff and the users.

EQUIPMENT: Computer, telephone, desks, chairs, printer(s), lighting.

AREAS: Information, returning, checking out, processing of returns.

SYSTEMS PERFORMANCE CRITERIA: The structural acoustics of this space are relatively inconsequential. As long as no excess noise is contributed to other, more vital areas no particular acoustic considerations need be given. The performance of the multiple terminals that will be utilized will be the key to the efficiency of the space.

CHILDREN'S AREA

AREA: 1000 sq. ft.

QUALITY: The childrens area should be fun. It should capture the childs attention and then hold it. It should be both colorful and tactile. It should have activities to keep the children entertained while also educating them.

EQUIPMENT: Chairs, sofas, tables, toys, lighting.

AREAS: Playing, reading

SYSTEMS PERFORMANCE CRITERIA: This space must be both isolated and visually adjacent to areas where the parents will be. This suggests the possibility of glass or glass block as a partition material.

PUBLIC RESTROOMS

AREA: 400 sq. ft.

QUALITY: The public restrooms should be less institutional than most restrooms in public architecture. They should be a little more like residential restrooms with obvious exceptions.

EQUIPMENT: Lighting, toilets and urinals, sinks, mirrors, towel and soap dispensers, and shelves.

AREAS: Cosmetic/sitting and other.

SYSTEMS PERFORMANCE CRITERIA: Lighting, ventilation and obvious plumbing considerations are the only real concerns of the space.

PRIVATE RESTROOMS

AREA: 75 sq. ft.

QUALITY: Small and comfortable.

EQUIPMENT: Toilets, lighting, sinks, mirrors, soap and towel dispensers.

AREAS:

SYSTEMS PERFORMANCE CRITERIA: Plumbing and ventilation are the only systems concerns for this space.

CUSTODIAL / MAINTENANCE AREAS

AREA: 200 sq. ft.

QUALITY: The custodial spaces should be functional, accomodating areas and not cluttered, dirty catch-alls for excess debris.

EQUIPMENT: Large sink, racks for supplies, lighting, closets for supplies.

AREAS: disposal and storage.

SYSTEMS PERFORMANCE CRITERIA: Drainage and ventilation will be the primary systems concerns. Keeping the space free of any unneccessary debris, fluids or fumes will provide for a more accomodating, pleasant space.

SUPPORT SPACE FOR COMPUTERS

AREA: 2500 sq. ft.

QUALITY: This room will have no real use by people and therefore does not demand as much consideration other than designing it to serve its purpose as well as possible.

EQUIPMENT: Mainframe computer and all neccessary power supplies.

AREAS: Storage for computer

SYSTEMS PERFORMANCE CRITERIA: This space requires the use of the psuedo floor to accomodate the neccessary conduits etc. of the mainframe. Temperature should be kept low in this space. HVAC will be adjusted appropriately.

MECHANICAL AREA

AREA: 5000 sq. ft.

QUALITY: This is another space in which little human activity ever takes place and therefore has no real architectural considerations other than serving its purpose.

EQUIPMENT: HVAC, plumbing and water equipment as well as special electrical considerations.

AREAS: HVAC, plumbing, and electrical

SYSTEMS PERFORMANCE CRITERIA: This space will require far less architectural consideration and far more systems considerations than the rest of the facility's spaces. This space will be completely systems driven.

DOCUMENTS DEPARTMENT

AREA: 2000 sq. ft.

QUALITY: This space should provide both open areas for the use of groups as well as private areas for more individual study.

EQUIPMENT: Lighting, micro fiche machines, tables, chairs, storage facilities, computer terminal and telephone.

AREAS: Catalog accessing, storage and study.

SYSTEMS PERFORMANCE CRITERIA: No particular acoustic considerations. HVAC should be able to controlled to limit amount of humidity in air.

PERIODICALS DEPARTMENT

AREA: 4000 sq. ft.

QUALITY: This space should be organized due to the incredible number of periodical volumes accumulated by the facility. Large areas of storage space should be arranged in a logical yet decorative manner.

EQUIPMENT: Lighting, micro fiche machines, computer terminals, desks, chairs, and tables.

AREAS: Storage, computer accessing, and study.

SYSTEMS PERFORMANCE CRITERIA: This space should provide for the storage facilities in the best possible manner while also allowing for some creativity in the arrangement. HVAC should be able to be regulated in an effort to control humidity.

TYPICAL REQUIREMENTS AND CHARACTERISTICS

STRUCTURE:

The overall structure of the facility will provide for moveable, partition walls. These will be typical of most spaces including offices, specialty departments, community and private study areas, computer facilities as well as conference areas.

LIGHTING:

Typical lighting for most areas will include a combination of natural and artificial illumination.

The levels of artificial illumination will be consistent throughout the entire facility. All spaces deal with reading of some form and should provide appropriate illumination.

Typically, natural lighting should be kept at low levels to reduce the occurance of glare that is nonconducive to reading.

ENVIRONMENTAL CONTROL:

Nearly all areas of the facility will require the same degree of artificial air induction. All offices, reading areas, specialty departments, and any other spaces accomodating human activity will be heated and cooled appropriately.

FENESTRATION:

The size of interior doors will be uniform throughout the facility with the exception of a very few spaces. All typical interior doors will be 6 foot 8 inches.

There will be no typical windows as their size will be determined by their orientation to the sun and their placement within the facility.

CEILING HEIGHTS:

Interior ceiling heights for all offices, specialty departments, reading and studying areas, conference areas, computer facilities, etc. will be either identical to that of the stacks (8 foot 9 inches) or double that of the stacks to create floors that are coterminous with the stacks floors.

UNIQUE REQUIREMENTS AND CHARACTERISTICS

STRUCTURE:

Unique structural requirements will be present in the basement with regard to foundation.

Areas such as bathrooms and acoustically dependant areas will require unique means of separation. The typical partition wall will not be sufficient for these areas therefore some kind of heavier construction will be required.

LIGHTING:

Unique lighting requirements will be present in the stacks areas. While neccessary to provide adequate illumination, all superfluous lighting should be avoided especially with regard to natural illumination.

The entry / foyer has been designated as being an area capable of accomodating some kind of large atrium space where unique natural illumination will be present.

ENVIRONMENTAL CONTROL:

The areas housing both the mainframe and the individual terminals will require unique temperature control due to the delicate nature of the circuits and the heat generated by excessive use of computers.

Any atrium area may require greater temperature control due to excessive penetration of sunlight.

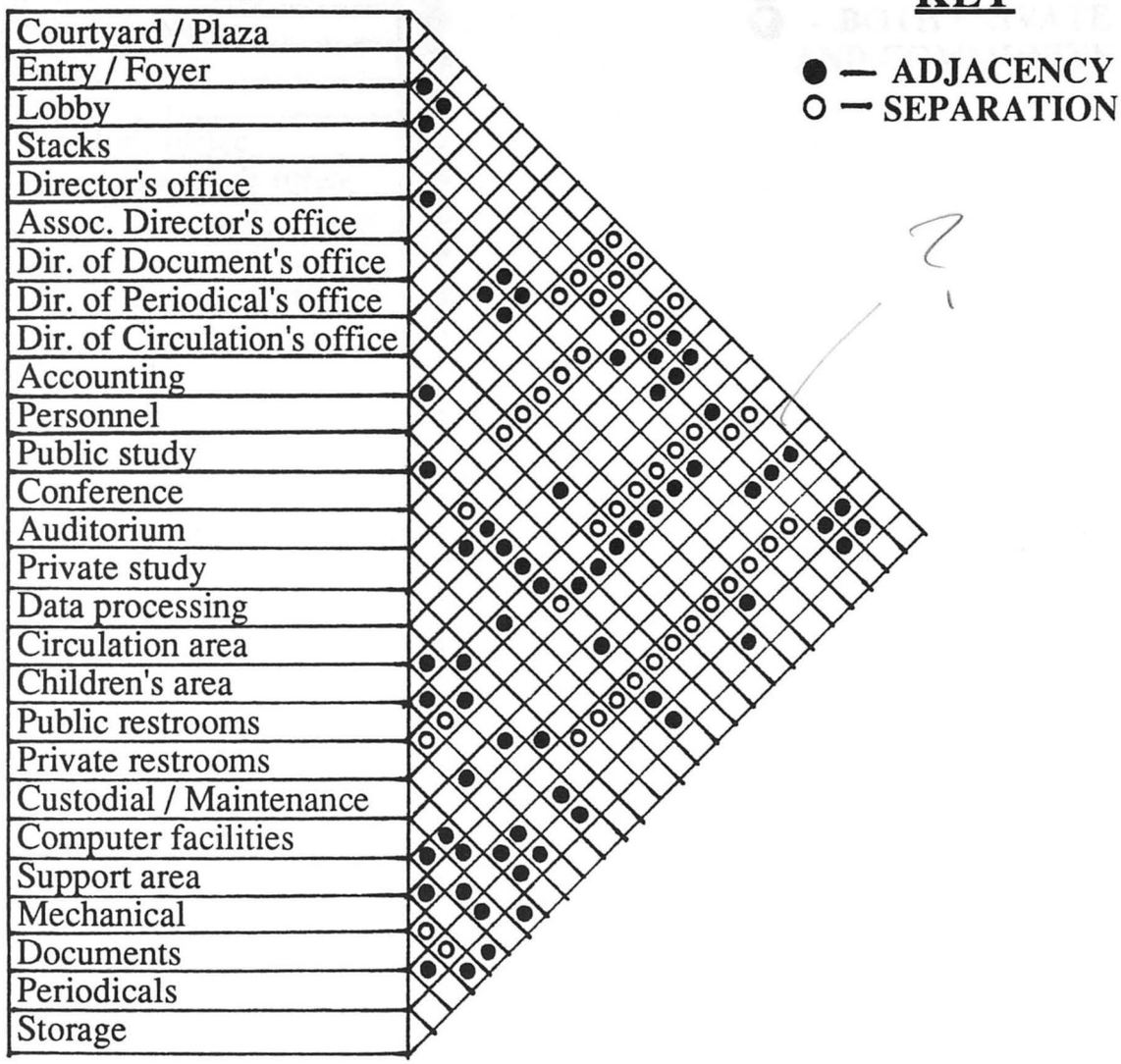
FENESTRATION:

Unique door sizes will be required in areas such as maintenance and computer support areas where the movement of large equipment is involved as well as the stacks area depending on the type of storage devices utilized.

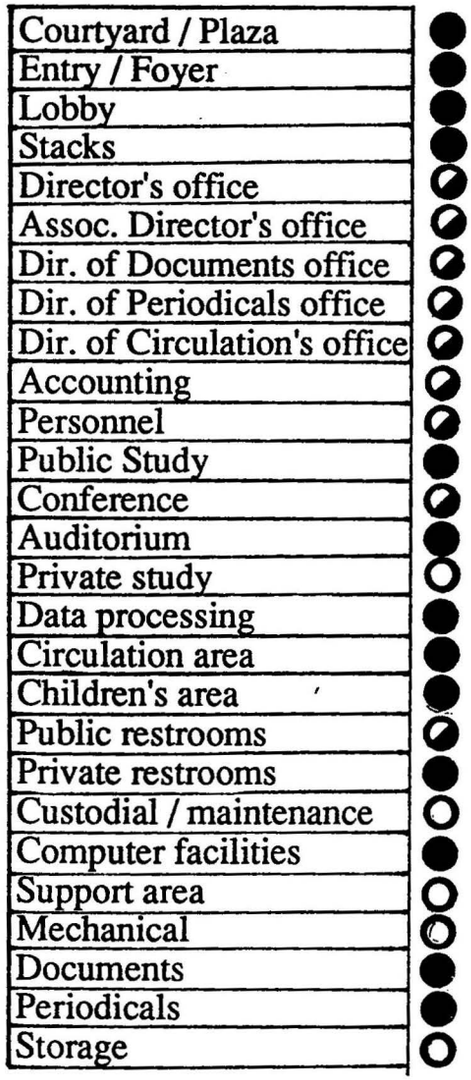
CEILING HEIGHTS:

The implementation of an atrium and/or large study and reading area may introduce a unique ceiling height if it doesn't interfere with the floors of the stacks and other floors from coterminating.

ADJACENCY / SEPERATION



COMMUNITY / PRIVATE



KEY

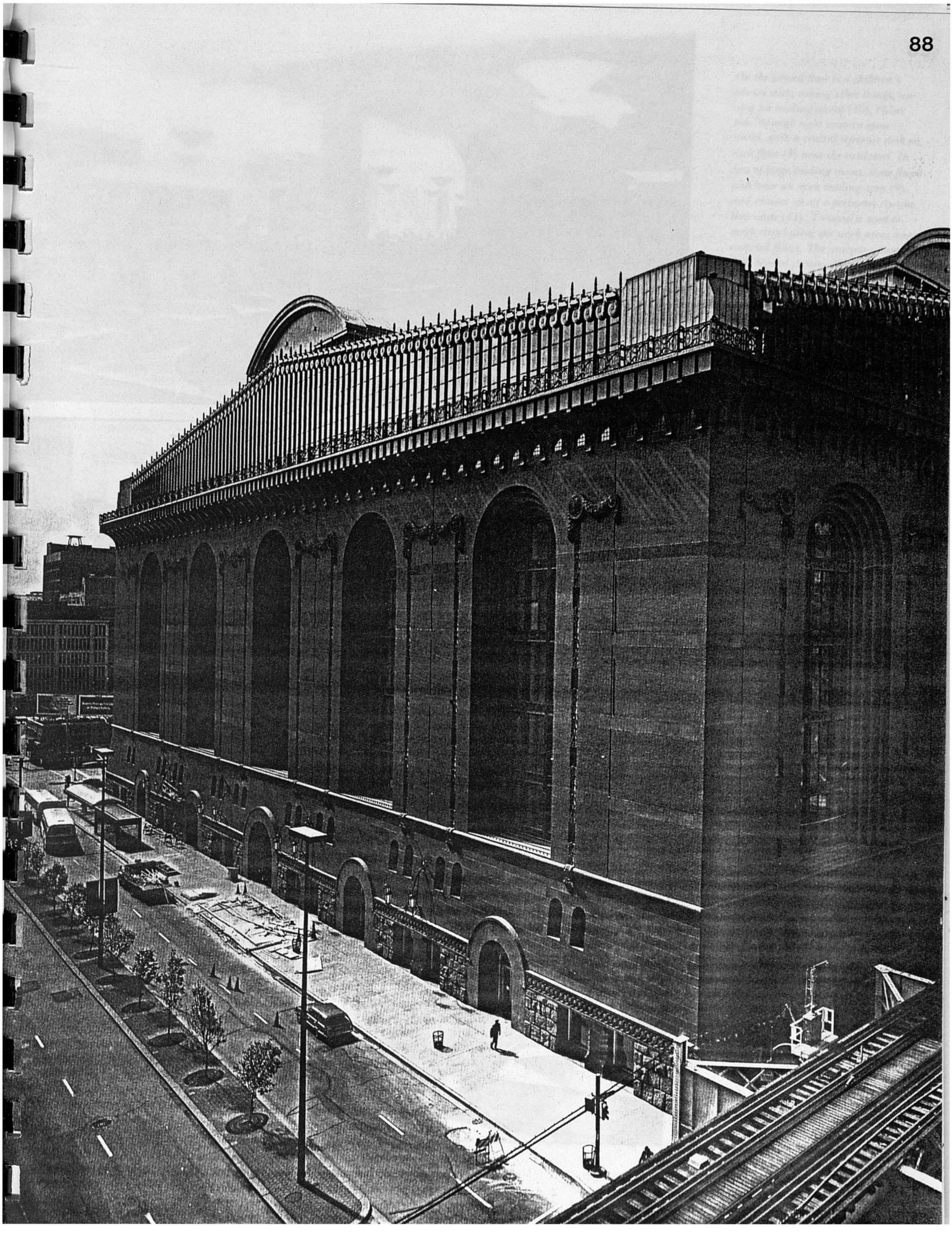
- **PRIVATE**
- **COMMUNITY**
- **BOTH PRIVATE AND COMMUNITY**

FACILITY TYPE CASE STUDIES

1) **Harold Washington Library**
Chicago, Illinois
Architects: Hammond, Beeby & Babka
Building Type: Public library
Structural System: Caisson foundation, fat slab and cast-in-place concrete; steel frame with composite slab construction.
Major Materials: Reinforced concrete, steel frame, aluminum roof, brick, granite and glass.
Description: Contained within one full block at the low-rent south end of the Chicago loop, the Washington Library shares site characteristics with my proposed library for Atlanta in that they are both located in urban areas and have limited space.

The library's most significant feature is the flexible planning of its working floors. Using massive perimeter walls for features such as fire stairs, reading alcoves and circulation allowed for large uninterrupted spaces within a 21 foot column grid. The building is designed much like a classical column with the lobby and bottom floors being the base, the six middle floors, housing the bulk of the collection, being the shaft with the top being the winter garden and administrative offices.

This case serves as a programming and functionalist study and not as a formalist one due to the library's obvious historicist approach and classical facades.



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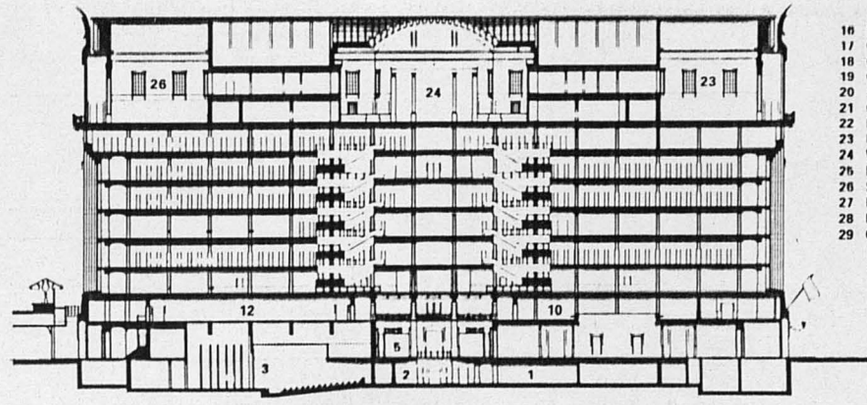
On the second floor is a children's library with, among other things, an apse for reading aloud (10). Floors four through eight contain open stacks, with a central reference desk on each floor (8) near the escalators. In lieu of large reading rooms, these floors also have an open reading area (9), and alcoves set off a perimeter circulation route (11). Terrazzo is used to mark circulation; the stack areas have carpeted floors. The concrete columns with beveled corners (9) are cast in place. The cool interior color palette was selected to achieve higher light levels with less artificial lighting.

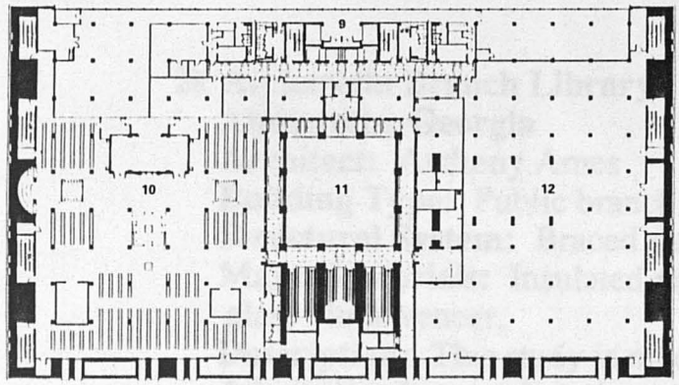
1 EXHIBIT HALL
2 LOWER LOBBY
3 AUDITORIUM
4 VIDEO THEATER
5 MAIN LOBBY
6 FILM/VIDEO CENTER
7 GIFT SHOP
8 BOOKSTORE
9 STAFF CORRIDOR
10 CHILDREN'S LIBRARY
11 OPEN TO BELOW
12 COMPACT SHELVING
13 MICROFORM
14 GENERAL OFFICE
15 MEETING ROOMS



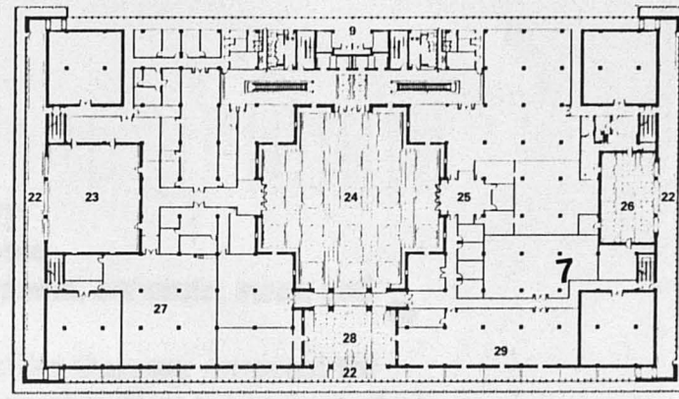
16 REFERENCE DESK
17 CHECKOUT
18 ORIENTATION THEATER
19 CIRCULATING STACKS
20 TWO STORY READING ALCOVE
21 ONE STORY READING ALCOVE
22 PUBLIC CORRIDOR
23 PUBLIC RESTAURANT
24 WINTER GARDEN
25 HAROLD WASHINGTON ARCHIVES
26 STAFF LUNCHROOM
27 PROFESSIONAL LIBRARY
28 FORECOURT
29 CONSERVATION LABORATORY

SECTION A-A

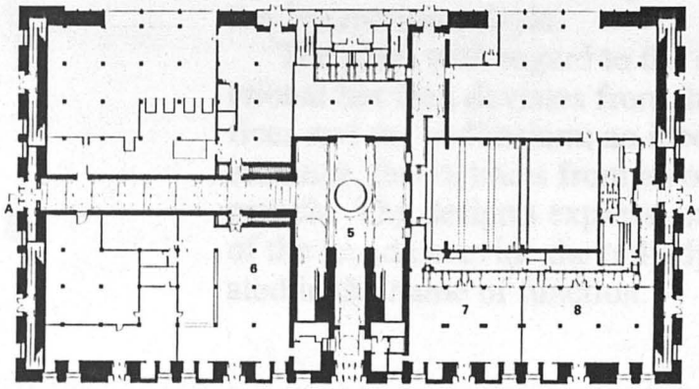
40'/12m



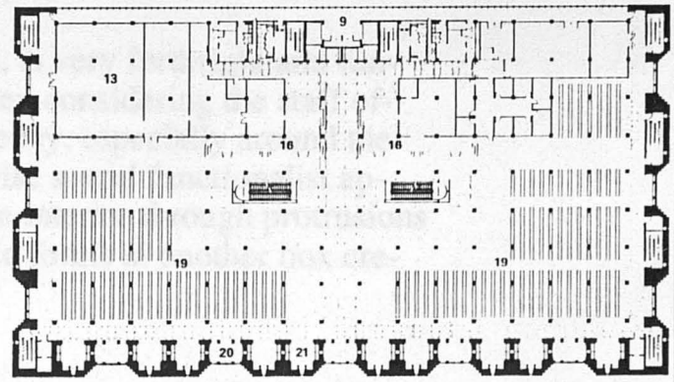
SECOND FLOOR PLAN



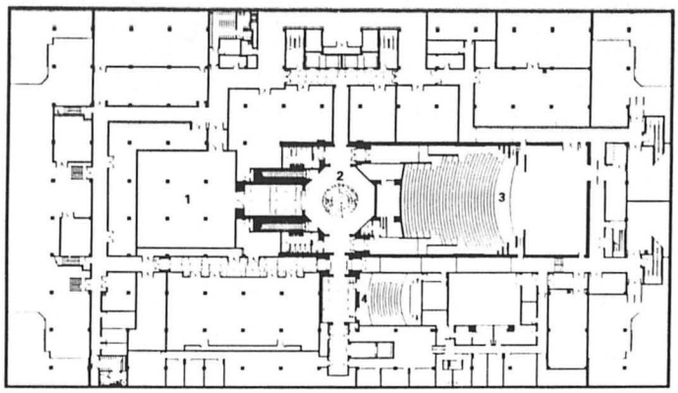
NINTH FLOOR PLAN



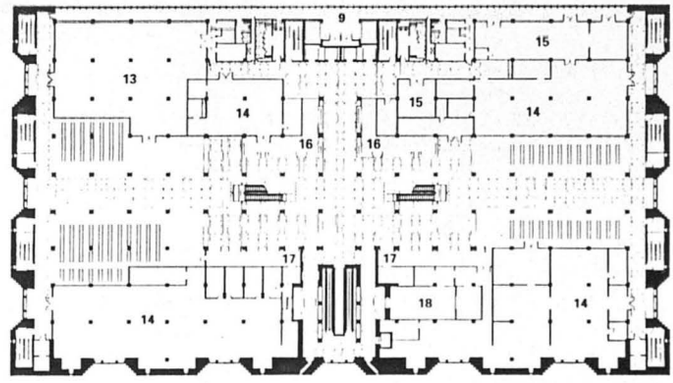
FIRST FLOOR PLAN



FOURTH FLOOR PLAN



LOWER LEVEL PLAN



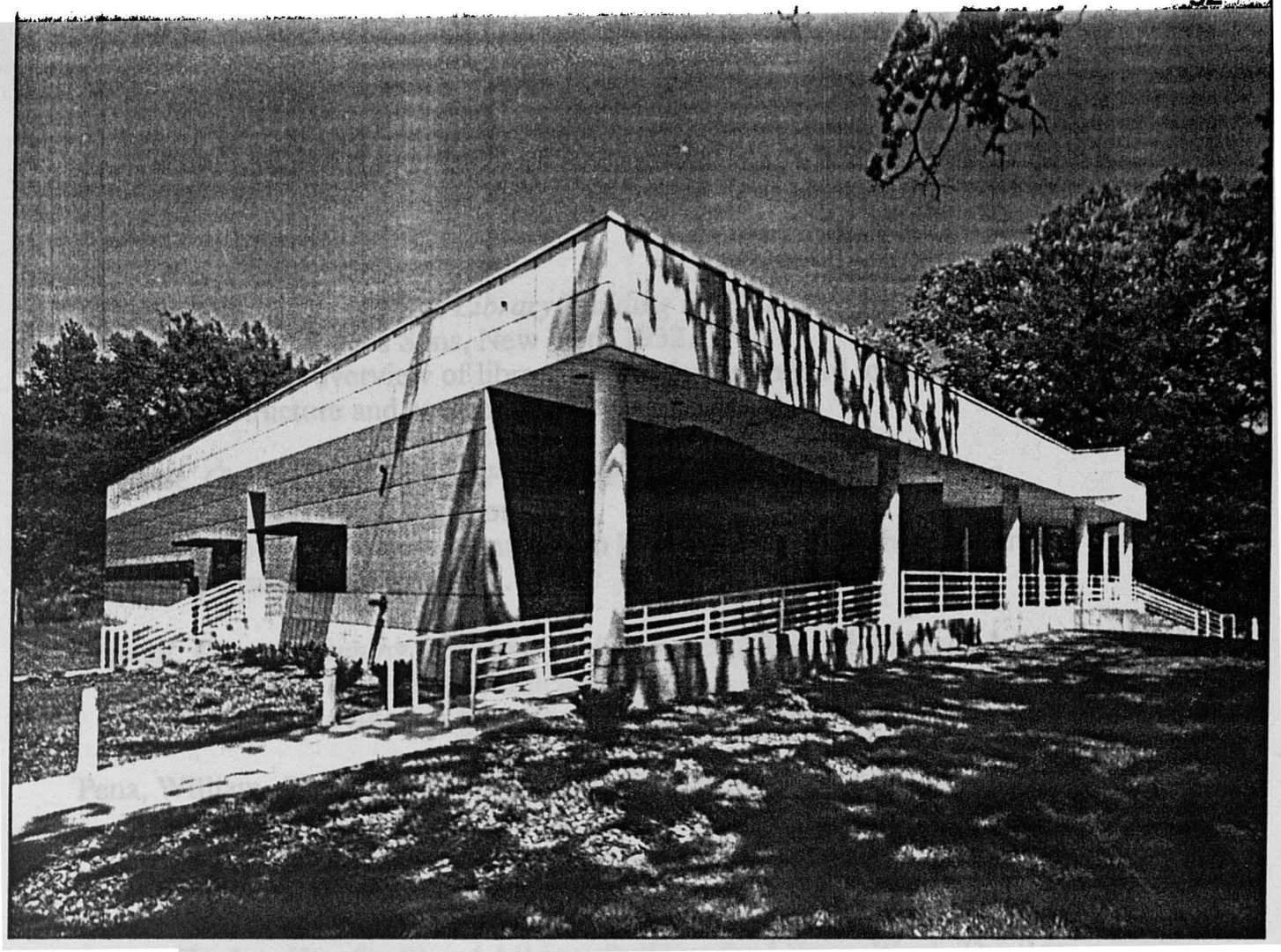
THIRD FLOOR PLAN

N

40'/12

2) **Alpharetta Branch Library**
Alpharetta, Georgia
Architect: Anthony Ames
Building Type: Public branch library
Structural System: Braced steel frame
Major Materials: Insulated metal panels, concrete, steel, and glass block veneer.
Description: This study is much smaller than my proposal for Atlanta but does explore the use of Functionalism or, at least, the vocabulary often associated with Functionalism and the modernists. The exterior adheres quite closely to Corbusier's version of the International Style.

The plan, with regard to the stacks, is very forthright and functional but then deviates from this when considering the staff offices and the auditorium; an inconsistency, especially around the entrance, that detracts from an otherwise sound functionalist approach. The design's expression of the interior through protrusions of the facade provide the only dynamic forms in another box created in the name of function.



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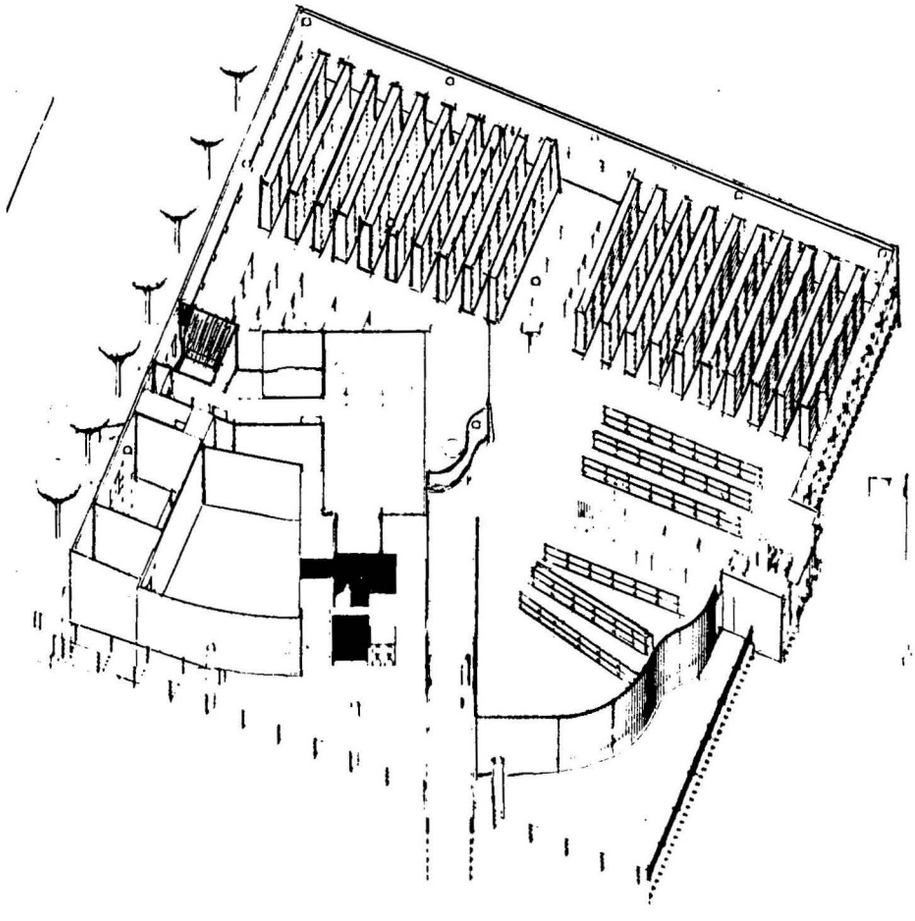

Project: *Alpharetta Branch Library, Alpharetta, Georgia.*
Architect: *Anthony Ames, Atlanta.*
Client: *Fulton County (James Brooks).*
Site: *corner site between residential and commercial areas.*
Program: *10,000 square feet.*
Structural: *braced steel frame.*
Major materials: *see Building Materials, p. 175.*
Mechanical: *multizone rooftop units.*
Consultants: *Jack Lynch & Associates, structural; Jones, Nall & Davis, mechanical.*
General contractor: *Frontier Contracting Company.*
Costs: *$750,000 ($75/sq ft).*
Photos: *Michael Portman.*

The library's entry, angled toward the corner of the site (1), leads to a skewing of the staff areas within the square plan

ANNOTATED BIBLIOGRAPHY

Gerould, James, *The College Library Building Its Planning and Equipment*, Charles Scribner's Sons, New York 1932.
A thorough overview of library standards with regard to space planning, structure and equipment.

McClure, Charles, *Information For Academic Library Decision Making*, Greenwood Press, Westport 1980.
This book provides information on library standards with a greater emphasis on programming.

Metcalf, Keyes, *Planning Academic and Research Library Buildings,* American Library Association, Chicage 1986.
This book provides an overview of standards and their applications.

Pena, William, *Problem Seeking: An Architectural Programming Primer*, Cahners Books International Inc., Boston 1977.
A great "get started" book for anyone making their first venture into the process of programming.

Soule, Charles, *How To Plan A Library Building for Library Work*, The Boston Book Company, Boston 1912.
Though somewhat dated, this book gives useable information on library standards and applications.

CHAPTER FOUR: SUMMARY OF SPACES AND RELATIONSHIPS

SUMMARY OF SPACES

REQUIRED SPACES:	(NET X 1.3 X 1.2) NET	USUABLE	GROSS	NO. OF USERS	PAGE REF. NO.
* Courtyard / Plaza	undetermined				58
* Entry / Foyer	600 sf	780 sf	936 sf		59
* Lobby	5000 sf	6500 sf	7860 sf		60
* Stacks	350,000 sf	455,000 sf	546,400 sf		61
* Offices:					
Library Director	250 sf	325 sf	390 sf	1	62
Associate Director	200 sf	260 sf	312 sf	1	63
Director of documents	150 sf	195 sf	234 sf	1	64
Director of periodicals	150 sf	195 sf	234 sf	1	65
Director of circulation	150 sf	195 sf	234 sf	1	66
Accounting	150 sf	195 sf	234 sf	1	67
Personnel	150 sf	195 sf	234 sf	1-2	68
* Public study area	7000 sf	9100 sf	11830 sf	700-850	69
* Conference areas (5)	300 sf	390 sf	468 sf	8-10	70
* Auditorium	2000 sf	2600 sf	3120 sf	200-300	71
* Private study areas	20 sf	26 sf	32 sf	1	72
* Data processing	2500 sf	3250 sf	3900 sf	150-200	73
* Circulation area	500 sf	650 sf	780 sf	10-15	74
* Children's area	1000 sf	1300 sf	1560 sf	15-20	75
* Public restrooms	400 sf	520 sf	624 sf	10-15	76
* Private restrooms (2)	75 sf	98 sf	118 sf	1-2	77

* Custodial	200 sf	260 sf	312 sf	3-5	**78**
* Computer facilities	2500 sf	3250 sf	3900 sf	100-150	**79**
* Computer support	2500 sf	3250 sf	3900 sf		**80**
* Mechanical	5000 sf	6500 sf	7800 sf		**81**
* Documents	2000 sf	2600 sf	3120 sf	100-150	**82**
* Periodicals	4000 sf	5200 sf	6240 sf	200-300	**83**
* Storage / basement	7500 sf	9750 sf	11700 sf		**84**
TOTAL	370,750 sf	491,975 sf	610,370 sf		

* NOTE: ALL FIGURES ARE TAKEN FROM STANDARD REFERENCE MATERIALS MENTIONED IN SECTION 08.

CHAPTER FIVE:
ECONOMIC ANALYSIS

ECONOMIC ANALYSIS

PROJECT INCOME:

According to local real estate agents in the Atlanta area, the average rental rate for building space in the northern downtown area of Atlanta is approximately $18 / sq. ft.

PROJECT COST:

Building Cost: According to cost data gathered from Means, average building cost per square foot for a library facility is approximately $37 / sq. ft.

Land Value: Land value in the northern downtown area of Atlanta averages $42 / sq. ft.

Construction Loan Cost: 11% of building cost = $1,350,000

Contingency Cost: 5% of building cost = $600,000

METHOD AND JUSTIFICATION:

Payback = Project Cost / Project Income
= $41,450,000 / $9,000,000
= 5 years (rounded up) payback period

Theoretically, this is a very favorable return on the investment.