

Syracuse University

**SURFACE**

---

Architecture Senior Theses

School of Architecture Dissertations and  
Theses

---

Spring 2010

## **This Will Kill That: Building Agility / Maneuvering the Inevitable Trasition Between the Present Day Library of Paper Book and Digital Library of the Future**

Daniel Elmore  
*Syracuse University*

Follow this and additional works at: [https://surface.syr.edu/architecture\\_theses](https://surface.syr.edu/architecture_theses)



Part of the [Architecture Commons](#)

---

### **Recommended Citation**

Elmore, Daniel, "This Will Kill That: Building Agility / Maneuvering the Inevitable Trasition Between the Present Day Library of Paper Book and Digital Library of the Future" (2010). *Architecture Senior Theses*. 95.

[https://surface.syr.edu/architecture\\_theses/95](https://surface.syr.edu/architecture_theses/95)

This Thesis, Senior is brought to you for free and open access by the School of Architecture Dissertations and Theses at SURFACE. It has been accepted for inclusion in Architecture Senior Theses by an authorized administrator of SURFACE. For more information, please contact [surface@syr.edu](mailto:surface@syr.edu).





## TABLE OF CONTENTS

Part I: CONTENTION

Part II: PRECEDENT STUDIES

Part III: THE LIBRARY

Part IV: SITE

Part V: BUILDING PROPOSAL

Quote on cover by Victor Hugo

ARCHITECTURAL ISSUE

Designing Spaces for technological programs is inherently problematic as the rate of change of technology is hundreds of times quicker than the adaptive ability of architecture. In effect, these spaces become less efficient and irrelevant with time.



EXAMPLE

of architecture designed around technology...

Building Provides Mooring Masts for Zepp



CONTENTION

Through careful analysis of Movable and Fixed systems of architecture, I hope to show that a building can be produced who's relevance is no longer contingent upon ever-changing technology, but is able to evolve as needed. In the case of the Library, an intelligent combination of these systems will allow for flexible non-static spaces that anticipate continual change in technology; from paper-based books, to digital books and beyond.

Designing architecture around a current technology becomes problematic when said technology is updated. The space is now outdated and inefficient. We can create spaces that are flexible and customizable without being nondescript.

USE RENDERED

← DANGEROUS DUE TO HIGH WINDS, FUNCTION MADE IRRELEVANT BY THE AIRPLANE

Fixed vs Changeable Open vs Closed



Closed System- Components designed to result in, or building designed to be compatible with, one configuration or limited range of configurations of systems/ spaces.



Open System- Components or Spaces designed to be assembled into multiple configurations. Interchangeable components, spaces allow for interchangeable building systems.

Major Questions

1. What are the advantages of flexible spaces?
2. What components of architecture are open, or movable? What components are fixed?
3. What factors incite buildings to undergo change or be changeable?



*"Unfortunately, we have yet learned to cope with the phenomenon of accelerating change. Obsolete automobiles can be towed off to a clunker graveyard or compacted into a bundle of metal to be reprocessed into new industrial products, but obsolete buildings persist in standing intact to further technological progress. From the standpoint of a rapidly advancing industrial society, we have been building in too permanent a fashion."*

- Joseph Carreiro and Steven Mensch, Housing vs. Process, page 2

VARIABLES OF CHANGE

**What are the advantages of flexible spaces?**

**Variables of Architecture: Jenga vs. Tetris**

When designing architecture, there are a several key factors that must be addressed. These factors include...

- +Building Occupancy- referring to both the number of people who occupy a building or space, as well as the type of people who occupy a building or space
- +Environment- referring to the surrounding climate or other varying site conditions
- +Program-the primary function of the building or space
- +Technology- referring to technology that composes the building (HVAC, structure, etc.) as well as technology linked to the program of the building (computers, projectors, etc.)

All buildings are designed and constructed around these four basic factors- factors being a person or thing that actively contributes to the production of a result. These factors are calculated and weighed by the architect to yield a final building. However, these factors, and particularly in the case of Technology, are in a constant state of flux. In fact, according to Joseph Carreiro and Steven Mensch, authors of *Build Blocks*- the search for a flexible prefabricated typology- today "we can be sure of the future in only one sense: it will not only be a future of change, but [of] an ever-increasing rate of change" (Carreiro, 2). While architecture is often thought of as being the resultant combination of a series of set factors, we must begin to see these factors as variables, or conditions liable to change. In mathematics, every time the variables of a formula change, the outcome changes as well. Likewise in architecture, buildings should not be conceived of as final products, but should be as changeable and non-static as the variables with which it has been composed.

When fixed (inflexible) spaces are constructed based on variables, these spaces become outdated and eventually cease to be relevant. Metaphorically speaking, designing a building with fixed spaces is like designing a Jenga towers. Jenga is a game of physical and mental skill in which players create a tower of interlocking wooden blocks and take turns pulling out pieces of the tower and repositioning them at the top. Eventually, the tower grows taller and the structure of the tower becomes so compromised that it collapses. Similarly, when buildings are designed rigidly around a set of variables, a change in one of these variables has serious consequences on the the building's ability to function properly. Inflexible buildings may be functional at the beginning of their lifespans, but when forced to react to the changing nature of these variables, they eventually become irrelevant.

Metaphorically speaking, a better model for designing space is a Tetris Model. Like Jenga,

Building Occupancy



Environment



Program

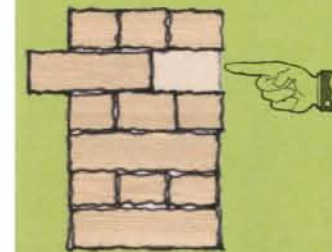


Technology

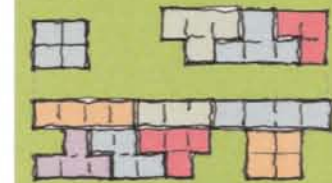


FIGURE 3

The Jenga model demonstrates inflexible spaces. They are composed of multiple factors, and are highly efficient at making one form and serving one function. However, when factors are changes or moved, the model has the possibility of toppling. When this type of building is faced with change, these buildings may become irrelevant.



The Tetris model demonstrates that flexible spaces are able to adapt to change. When a line of Tetris pieces disappears, the entire model readjusts itself to adapt to said change.



the object of the game is simply to last as long as possible. Players are given a never-ending stream of polygonal shapes which they are challenged to fit together in any way possible. When these shapes have been successfully stacked into a solid row, the row disappears and the player is awarded with more time and a higher score. When Jenga pieces are adjusted within the tower, the tower is unable to respond to that change and eventually becomes weaker, in Tetris however, when a row of blocks has been deleted, the entire structure will react by shifting down and readjust itself accordingly, hopefully aligning in the creation of a consecutive full row of pieces. Likewise in architecture, when the variables that comprise a building change, the building needs to be flexible enough to adjust to said change. By creating non-static spaces, we can insure that our buildings are "in the game" for the longest time possible.

## ORIGINS OF PERMANENCE

PG 5

CONTENTION



"Unfortunately, we have yet learned to cope with the phenomenon of accelerating change. Obsolete automobiles can be towed off to a clunker graveyard or compacted into a bundle of metal to be reprocessed into new industrial products, but obsolete buildings persist in standing intact to further technological progress. From the standpoint of a rapidly advancing industrial society, we have been building in too permanent a fashion."

- Joseph Carreiro and Steven Mensch, Housing vs. Process, page 2

PG 1

PG 1

## Origins of Permanence

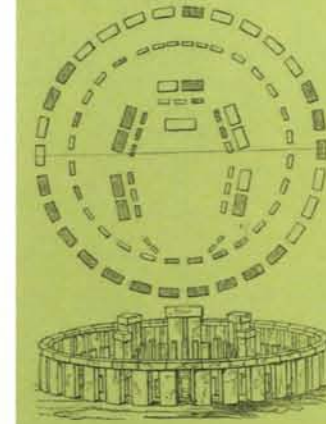
The idea of Permanence within architecture is explained in the article *Petrifying memories: architecture and the construction of identity* by Hilden Heynen. In the article, the Heynen describes how monumental architecture establishes identity through permanence- the inability of the building to change over time.

"...monuments [-that is monumental architecture-] contribute to people's sense of history and belonging. Newly built monuments corroborate the world's view of the dominant class, by carving in stone their interpretation of their historical and cultural identity. According to Donald Olsen, the nineteenth century had an extraordinary historic consciousness...This awareness is transformed into built form by turning major cities...into monumental works of art...thus leaving [an] imprint on the city that was to be inherited by the next generation."

-Petrifying Memories page 375

In this passage, Heynen shows us the origins of permanence within architecture. By constructing architecture out of stone, the architects of the past sought to immortalize the values and identity of the current culture, patron, or program. The idea of petrifying ones identity is easily demonstrated at Stone Henge, a prehistoric monument located in the English county of Wiltshire (Bluffton, 1). Although the function of Stonehenge can only be speculated, it nevertheless acts to preserve the memory of a past culture. Another example can be found in Egypt where Pharos sought to immortalize their memory by constructing enormous pyramids to house their remains. The very shape of the Pyramid is believed to be drawn from Egyptian Cultural beliefs about death and mans relationship with God.

A more recent example of Memory or Identity being "petrified" through architecture can be seen in Casa Del Fascio. The Casa Del Fascio, designed by Giuseppe Terragni and constructed in 1932-36, is a "landmark of modern European architecture. This building describes the creative spirit of Terragni within the context of the rationalist vocabulary." (Raeburn, 264). The Casa Del Fascio "petrifies" the ideals of its builders, not literally through stone, but through the programmatic and formalistic relationships of its spaces. The building is conceived of as a base of operations for the fascist party during the regime of Benito Mussolini. Its wartime agenda is represented in plan where a band of open space is left open on the ground floor to facilitate lines of soldiers marching through the building. A large public gathering space is provided in the front of the building where Benito Mussolini could address the citizens of Italy.



CONTENTION

PG 6

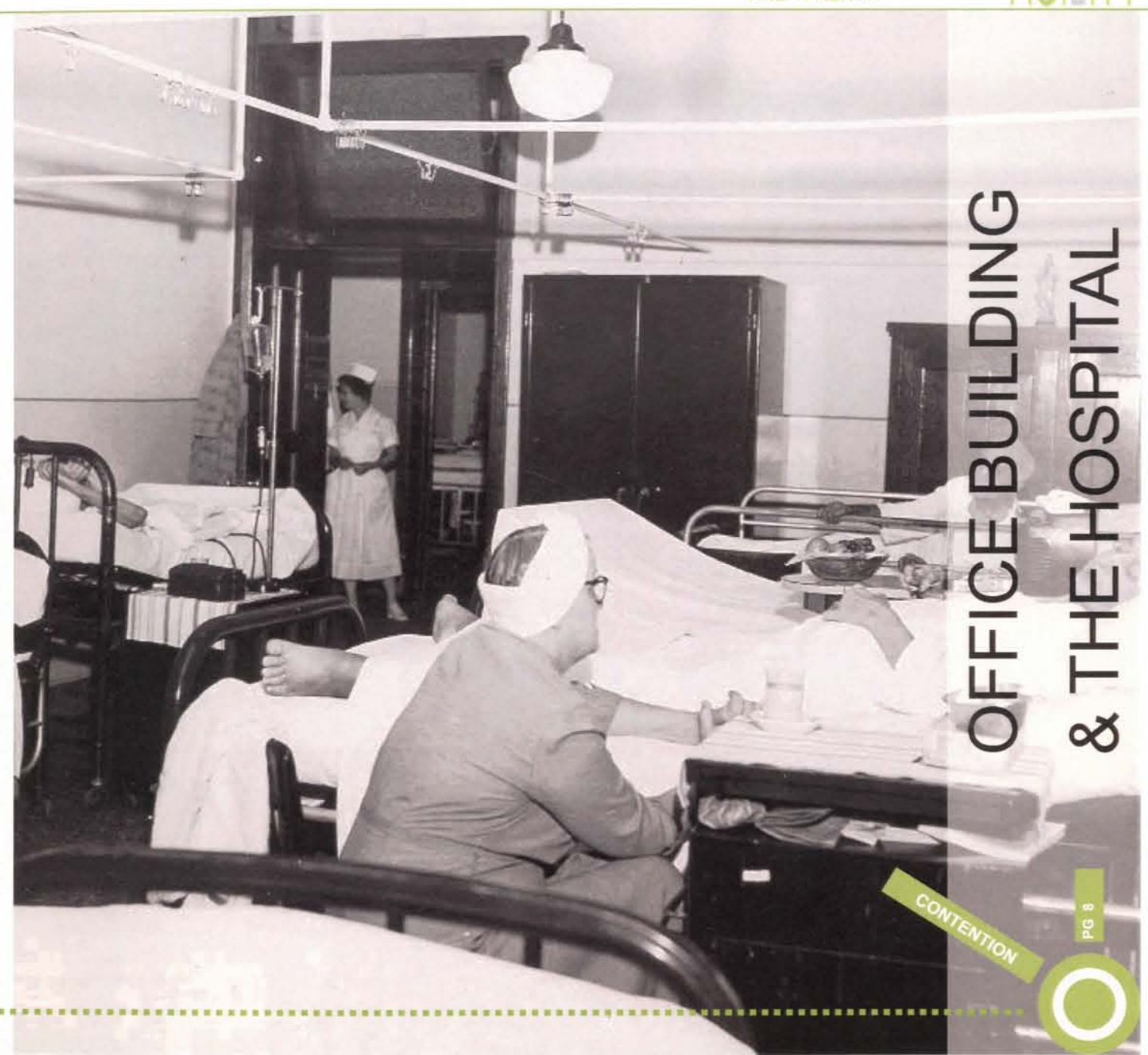
Benito Mussolini could address the town's people.

Heynen goes on to tell us that even though buildings were once able to be used as monuments, today buildings change too quickly, and the lifespan of buildings are too short to hold memories.

"The built environment is no longer the site of 'slowness', and therefore no longer the prime container of memory. Baudelaire already mourned the fact that 'the...shape of a city changes, alas, faster than the heart of a mortal'. Before the industrial revolution, people lived their lives in environments that changed only very slowly...Built environments of today are for the most part the result of very recent transformations. People now often live longer than buildings. The 'slowness' and 'memory' is now one's own body rather than one's house or one's town. The petrified memory [the building], once the major site of remembrance, now has its counterpart in individual archives...or [the] image archives of the media."

-Petrifying Memories page 376

In this paragraph we can see that indeed, buildings that continually change are unable to hold any true memory or identity. However, Hayden would argue that in modern society it is no longer necessary for buildings to preserve memories and cultural identity, since technology has taken over this task for us. As far as the building's ability to formally represent its program, if the building is using a *Tetris Model* of design, the form of the building will always reflect the variables that comprise it.



OFFICE BUILDING  
& THE HOSPITAL

### The Office Building & The Hospital

The article *Flexible Spaces, Building Health-Care Occupancies* by Alisa Wolf outlines the importance of having flexible spaces in the Health Care profession. The article uses the real life example of Chicago's Northwestern Memorial Hospital Addition. In the case of this building, the hospital had outgrown its old building, constructed in the late 1920's, when the nature of the medical field changed, the old building was simply unable to be adapted. The problem, explains Bud Vance, director of Facilities Management at NMH, "was that the old [buildings]... weren't functional anymore." He explains that the *occupation variable*-number of people using the building- played a large role in the need for an addition but that the central reason for the change was the *programmatic variable*- the functions that take place within the building. The way that medical buildings are used has changed since the construction of the original NMH building in the mid 20th century. The hospital as a building type has gone from being a primarily inpatient building to a primarily outpatient building. Vance points out that "10 years ago, two thirds of today's outpatient procedures were done in the hospital." Today as patients have begun to steer themselves through diagnostics, physical therapy, and rehabilitation, the need for space changed from a need for hospital beds to a need for lab spaces and waiting room spaces for loved ones and caretakers. The success of the Health Care Industry, points out Alisa Wolf, "is its ability to adapt to future changes in emerging technologies, shifts in demographics, new code requirements, and breaking trends in health-care research." (Wolf, 50)

In the article *The Workplace of the Future: Managing through Change*, by James T. Kohlhoff, we see the direct impact that the *technology variable* has played on the office building typology. In the 1990's the real-estate market saw a considerable drop in the demand for office space, due in large part to the increased utilization of technologies such as "faxes, mobile phones, and laptop computers [that give] employees greater flexibility in their work styles and locations." Kohlhoff points out that "the spatial and technological needs of tenants are shifting, and for property managers and building owners, remaining competitive requires a clear understanding of ability to adapt to those needs....flexibility is becoming the key to marketability." (Kohlhoff, 30)The need for the real-estate world to be able to provide flexible spaces is made evident as well. When office spaces are not flexible enough to accommodate changes in work teams and equipment, the company suffers a loss of productivity, translating in a loss of tenants for building owners. We can clearly see that providing office spaces that can change with corporate and technological trends should be the architect's utmost concern when designing office buildings.



PRECEDENT STUDIES



What components of architecture are open, or changeable?

- 1. Enclosure
- 2. HVAC
- 3. Primary Structure
- 4. Secondary
- 5. Furniture

What factors incite buildings to undergo change?

- 1. Occupancy
- 2. Environment
- 3. Program
- 4. Technology

Image

Info

What Changes?  
What is Flexible?

Why does it change?

This was the original Architect's intention



Rem Koolhaas  
Prada Store  
New York  
2001

Shigeru Ban  
Wall-less House  
Karuzawa Nagano,  
Japan  
1997

Smooth sloping floor has the ability to reconfigure into a flat stage area.

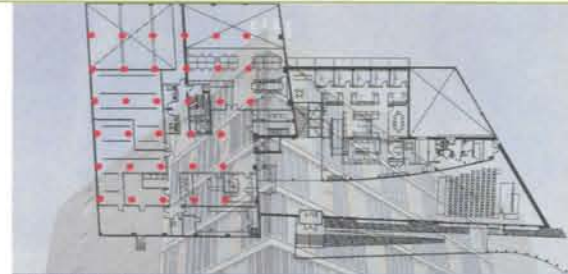
Sliding adjustable exterior walls

Sliding adjustable exterior glass panels used doors

If needed, the Prada Store can temporarily be transformed into a fashion runway, with what are typically stairs incline as seating for an audience.

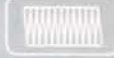
Occupants now have the option of adjusting the privacy and shape of interior spaces

Interior spaces can expand to the outdoors. Indoors and outdoor spaces become blurred.



Gluckman Mayner  
 Architects  
 S.U. Warehouse  
 Syracuse, NY  
 2006

This building was renovated from a warehouse storage facility to an architecture school. Today, the program has changed to house the school of Visual and Performing Arts.



Primary concrete structure (highlighted in red) is kept static during every program change. However gypsum partitions are built to define unique programs. Concrete material used for permanent structure. Gypsum is used for changeable structure.



Glass curtain wall applied to building to allow daylight into the building.



All changes in the building due to programmatic reasons.



Rapp & Rapp Arch  
 Michigan Theater  
 Michigan Detroit  
 Originally Constructed  
 1926  
 Converted 1978

This building was originally a theater. It changed ownership and programs several times. 1960- Used by television broadcasting company to show hockey games hosted at a nearby stadium. 1970- Night Club. 1978- Partially demolished.



Interior, secondary walls, gabled.



All changes in the building due to programmatic reasons.



Norman Foster  
 Hong Kong Shanghai Building  
 Hong Kong, China  
 1986



Primary Structure of the building is adjustable and allows the floors of the building to move up and down.



No internal supporting structure allows more freedom for customized arrangement of furniture and secondary structure.



Movable floors designed to anticipate company growth in number of workers.



Adjustability allows for anticipated changes in technology and space required to house said technology.



Le Corbusier  
 Heidi Webber Pavillion  
 Zurich, Switzerland  
 1965



Building designed as a kit-of-parts. All primary and secondary structure is modular and interchangeable. Building can be taken apart and rearranged in a variety of ways.



Modularity allows for an adjustable plan that can be customized to meet the needs of any program type.





Estudio Teddy Cruz  
Manufactured Sites  
Tijuana, Mexico

**Informal Settlements**  
The idea behind the architecture is to give formality to an already developed system/tradition of informal that takes place in Tijuana, Mexico.



The system strives to create a finite number of interchangeable primary and secondary building systems to facilitate the tradition of informal settlement.



These systems must be easy to build by the average person and able to adjust to a number of varying site conditions.



(<http://www.informalism.net/2008/11/estudio-teddy-cruz-manufactured-sites.html>)



Custom spaces are able to be constructed that conform to the desired programs, number of family members or occupants, and surrounding conditions or weather conditions of the site.



Junya  
Ishigami+Associates  
Kanagawa Institute of  
Technology  
2008



This building is a glass box with gridded structure. Program, secondary structure and furniture are given ability to move and change with ease.



All changes in the building due to programmatic reasons.



...The following precedents demonstrate buildings that are not Flexible. Spaces that are not flexible usually offer benefits that include ease of construction and lowered construction cost. However, these benefits do not take into consideration variable changes. In effect, their lifespans are usually is limited..

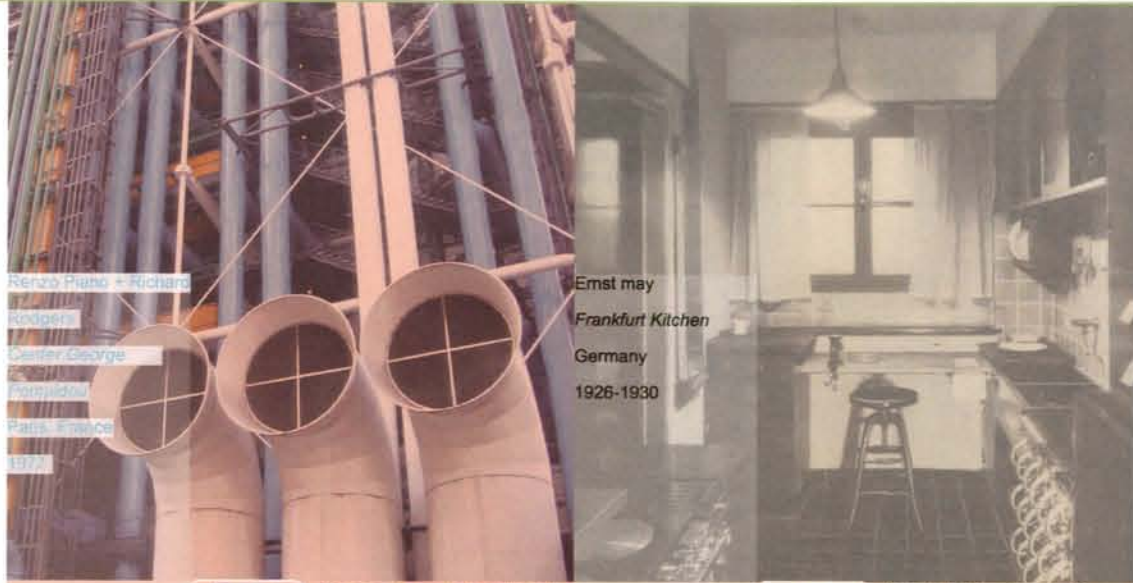


Werner Sobek  
House R 128  
Stuttgart, Germany  
2000



This building is a glass building perched on the side of a hill. It is designed to be as modular as possible. The Tectonics of the building are such that all systems are as simple and unified as possible. Most notably, the HVAC system is embedded into a modular panel flooring system. While convenient for construction, this limits the ability of the HVAC system to be updated without disrupting the floor and primary structural systems.





Renzo Piano + Richard Rogers  
Center George  
1977

Ernst May  
Frankfurt Kitchen  
Germany  
1926-1930



This building is known for exhibiting the HVAC and primary structural systems on the outside of the building. By moving as many systems as possible to the outside, the building was able to achieve the clear floor plate needed for gallery exhibitions. Future adjustment or changes to the HVAC system, if possible, will be difficult due to the meticulous design of the HVAC and its interwoven relationship to the building's primary structure.

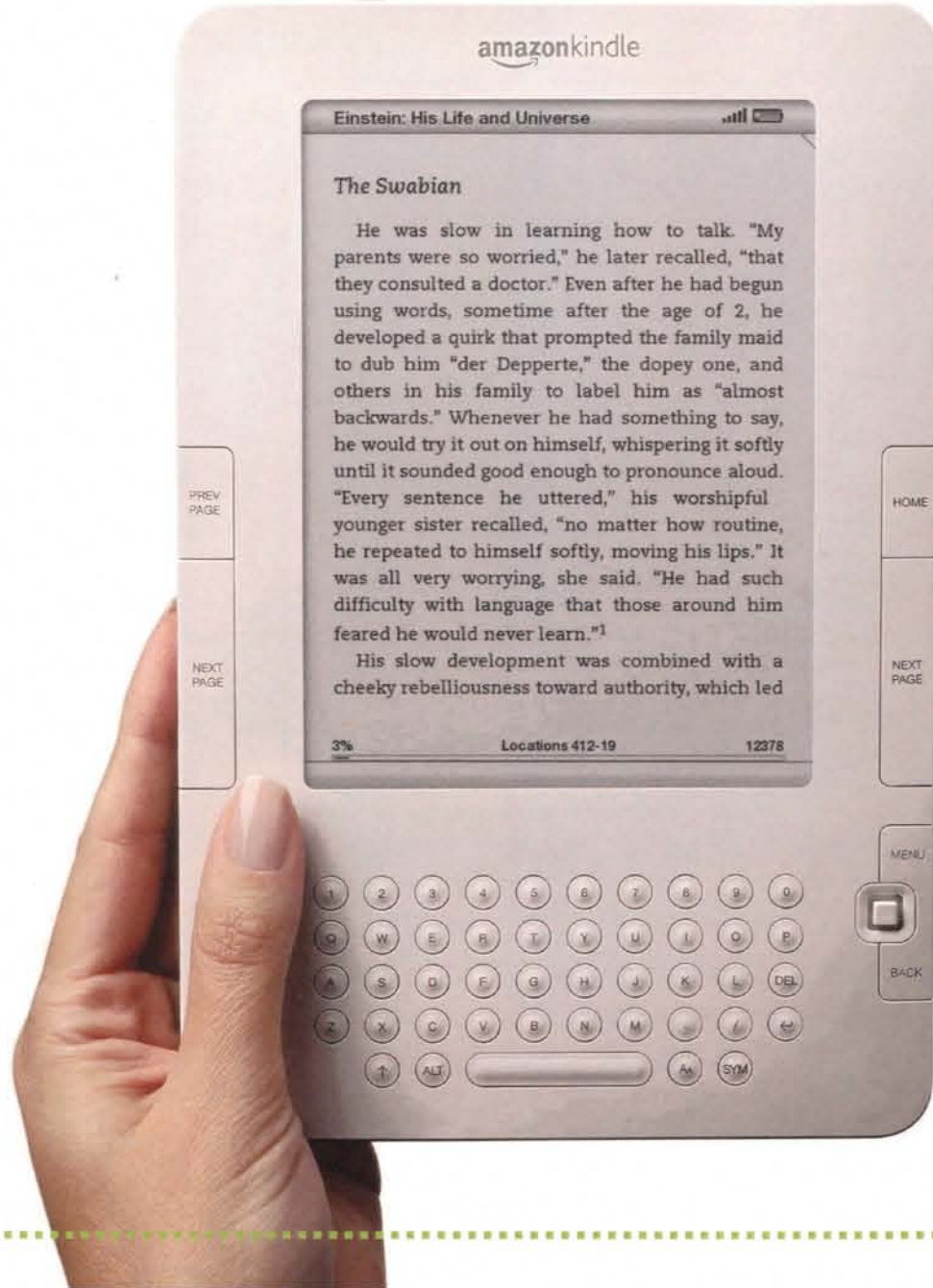


Based on the idea of a "scientific organization of space", the Frankfurt Kitchen was designed after World War II in response to a high level need for low income housing.

*"With an overriding motivation to save time and money, the principles of rational organization, standardized building units, and mechanized construction were applied not only to the design of settlements themselves, but also to the design of the Frankfurt Kitchen, versions of which were installed in 10,000 integrated housing units within a four-year period."*

-Minneapolis Institute of Art, page 1

Here we see any example of architecture designed not to adjustable. Adjustability for have made the kitchen more costly to build.



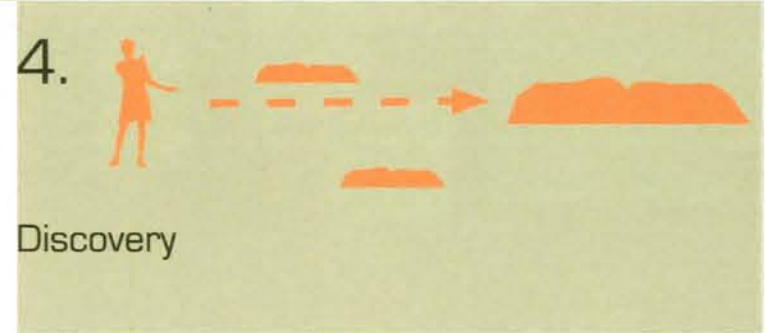
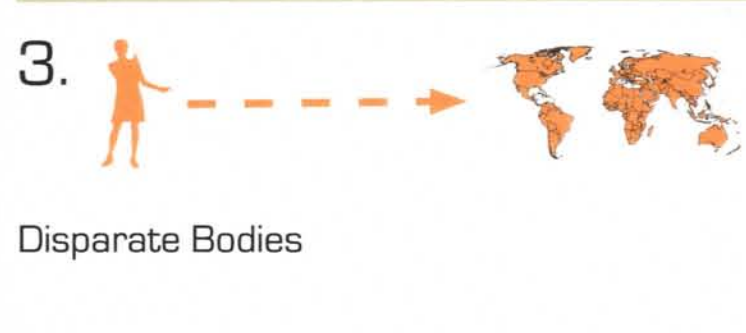
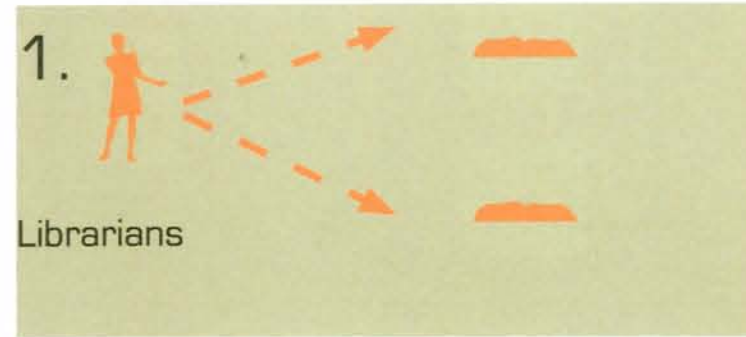
**Library**

The institution of Library reaches as far back as the Library of Cordoba in the 1000s. Representing the height of education during its time, the Library of Cordoba managed an unprecedented collection of knowledge in the form of clay tablets and papyrus roles. Since then, the library has undergone dramatic transformations in direct response to technological advancements. In the book Libraries and Electronics, Robert D. Stueart describes how the invention of "...movable type in 1456, challenged libraries to become purveyors of knowledge through the mass medium of written word in a print-on-paper format". (Stueart, 93) In the midst of recurring technological revolutions over the course of time, the library has continually been forced to evolve, while sustaining its primary objective "to bring together human beings and recorded knowledge in as fruitful a relationship as is humanly possible" (Gapen, 1).

Today however, the Public Library is facing an unavoidable wave of technological advancement which threatens to end the very existence of the Library as a physical place, and displaces the Library as the center of academia. Multiple experts on the library agree that this technological onslaught will manifest itself in a guaranteed transition from paper-based texts to digital texts. In the book Future Libraries by Robert Bloch, Allain Giffard, a designer of computer assisted work stations, insists that "Libraries...are the scene of a major technological transformation...characterized precisely in terms of the 'electronic book', or virtual library..." (Bloch,3) Robert D. Stueart more clearly spells out the death of the library, writing that "as electronic resources continue to gain importance,...the need for researchers to visit libraries will rapidly diminish...and the library as an institution will begin its inevitable decline." (Stueart, 93)

Even though these authors spell out an end to the Library as a physical destination. I assert that the Library must continue to take the form of a building. The Library as a place will continue to be important in order to provide advantages of research that neither a Paper based Library nor a Virtual/Completely Digital Library could provide. These advantages include:

1. Librarian expertise to direct users to information
2. Chance encounters with other people of shared interest
3. Communication with disparate or foreign bodies of knowledge
4. Chance discovery of new sources or new interests while searching through information





SITE

PG 21

SITE



FIGURE 1  
United States Location

SITE

PG 22

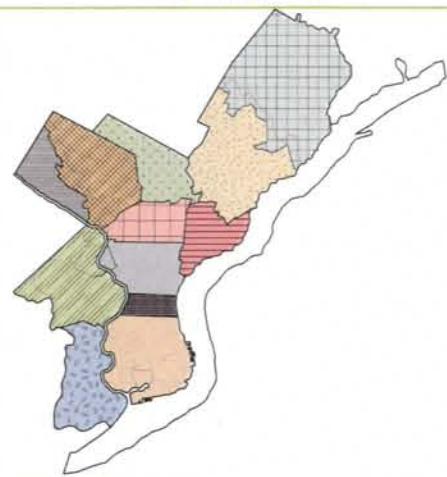


FIGURE 2  
Neighborhoods



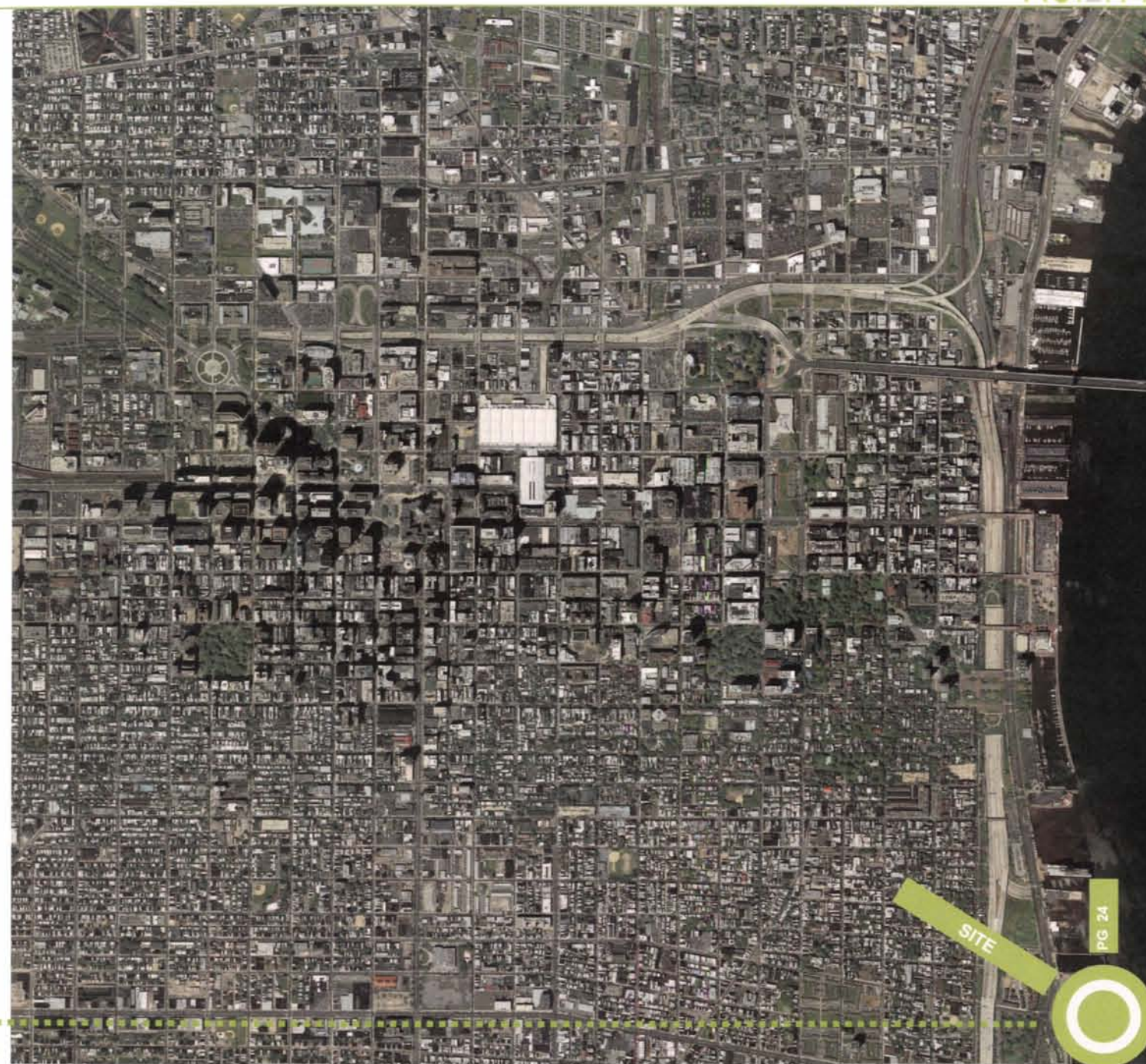
FIGURE 3  
Forest



FIGURE 3  
Free Library of Philadelphia Branches



FIGURE 4  
Center City Philadelphia



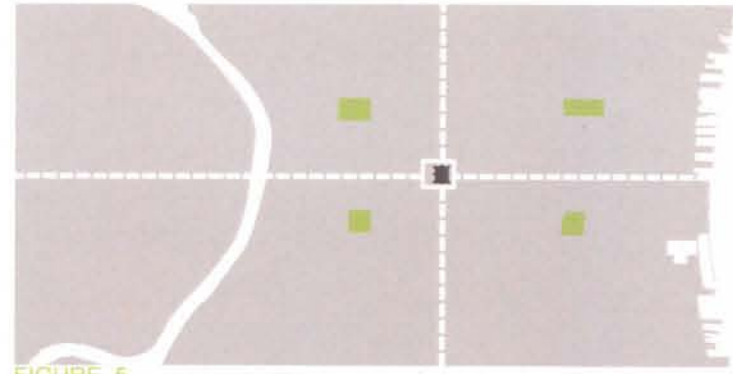


FIGURE 5  
City Park Diagram



FIGURE 6  
Original William Penn Plan



FIGURE 6  
City Plan before Benjamin Franklin Parkway

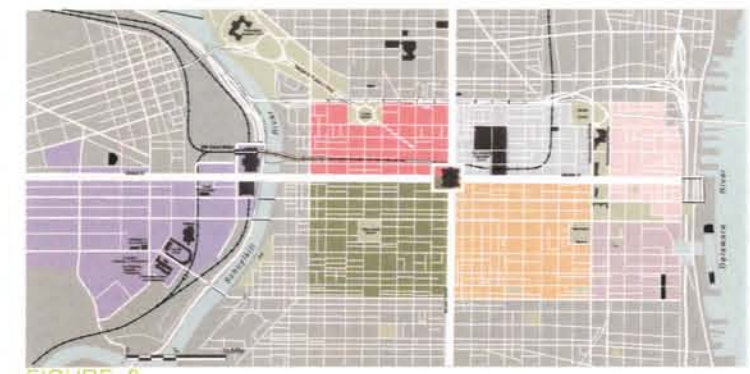


FIGURE 8  
Center City Districts



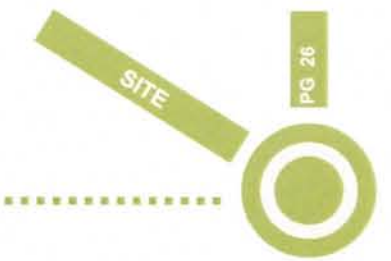
FIGURE 9  
Septa Routes



FIGURE 10  
Mural Locations



FIGURE 11  
Parade Routes







PG 27

SITE

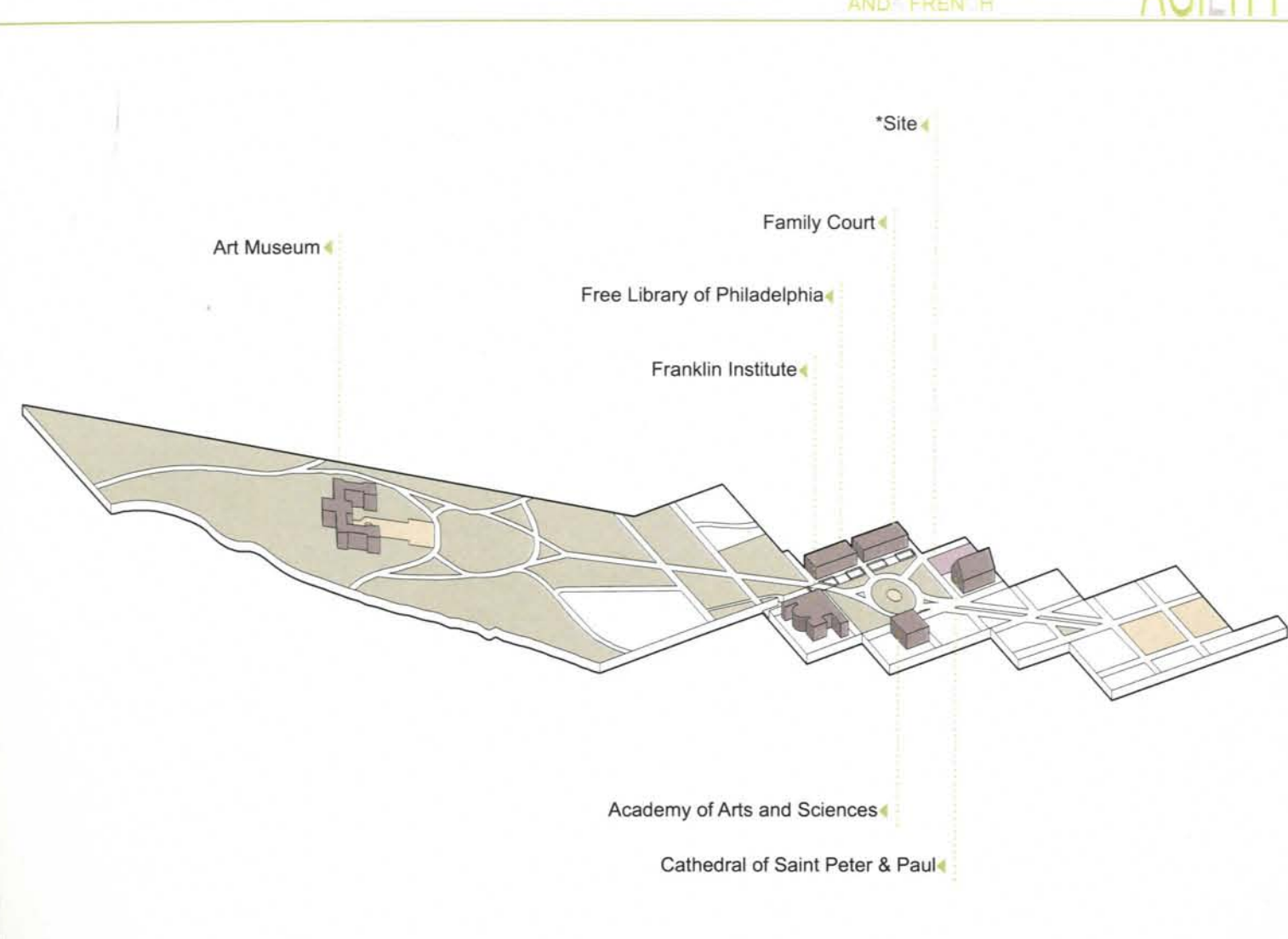
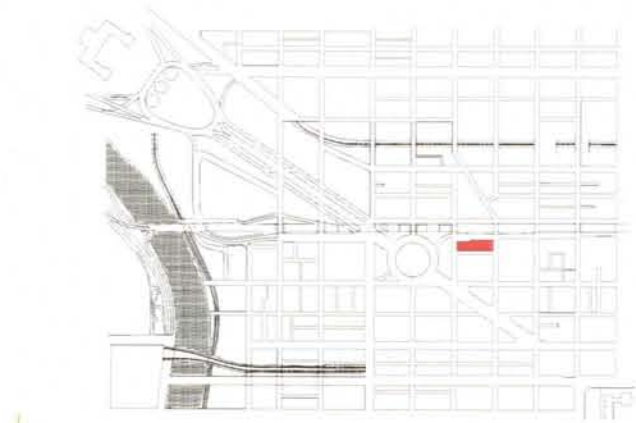


FIGURE 12  
3D Axon of Benjamin Franklin Parkway

SITE

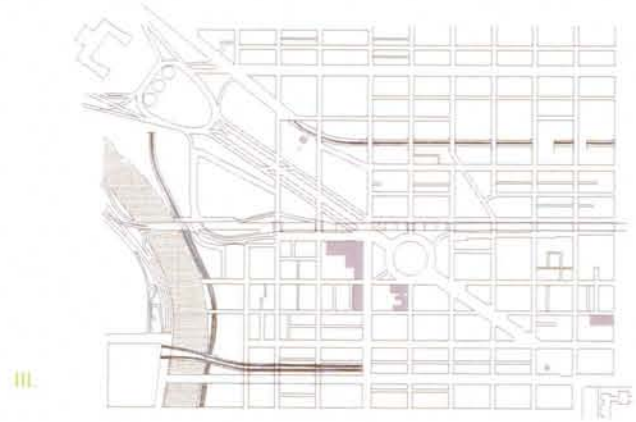
PG 28



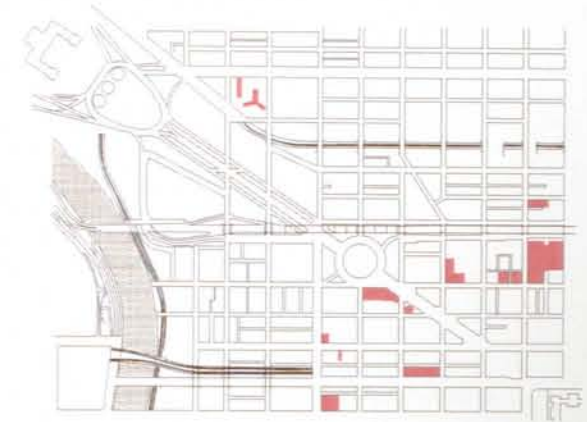
I.



II.



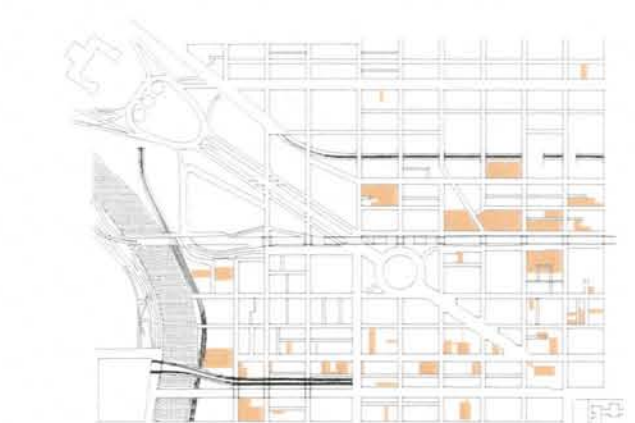
III.



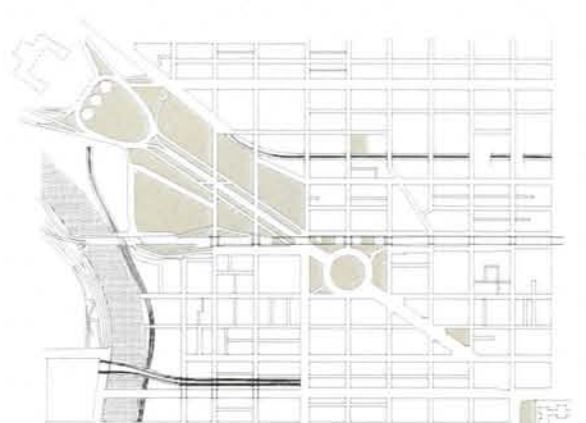
IV.

FIGURE 13

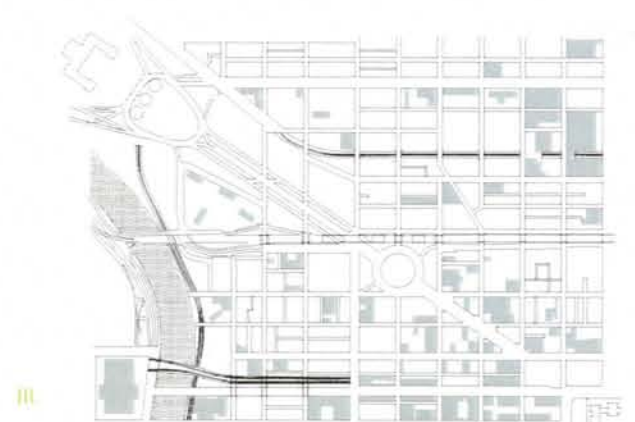
- I. Site location
- II. Overlapping of old city grid (green) on new city grid (blue)
- III. Popular destinations
- IV. Hotels



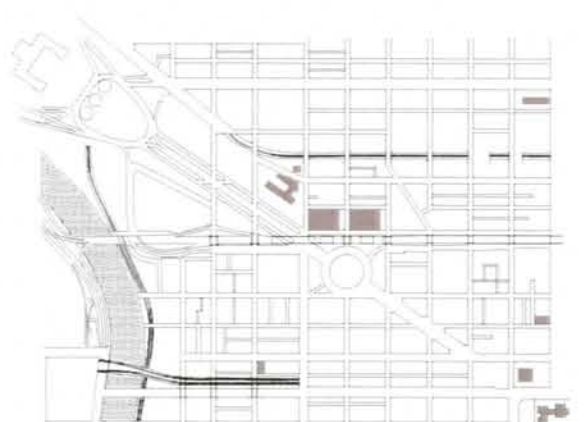
I.



II.



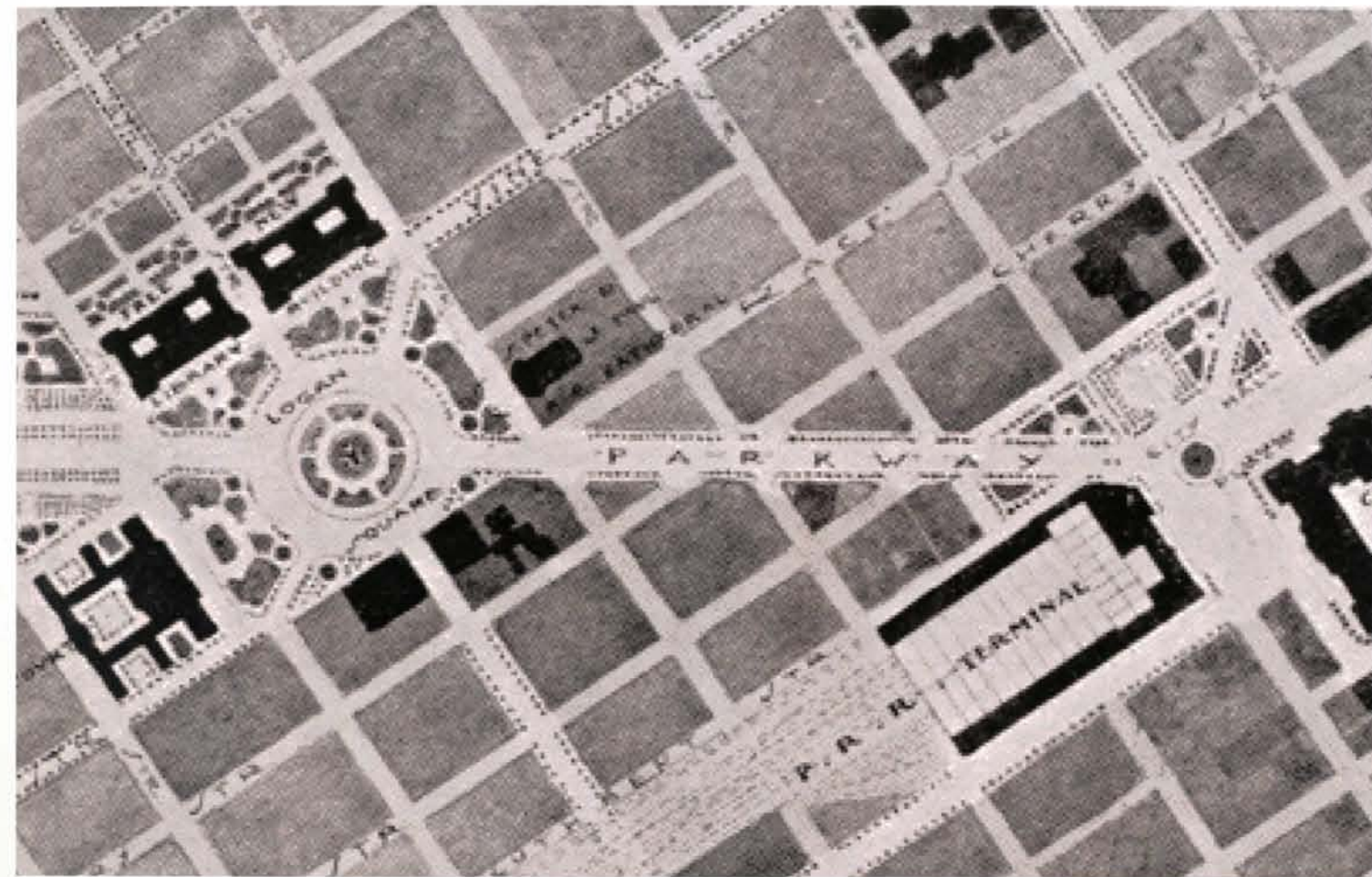
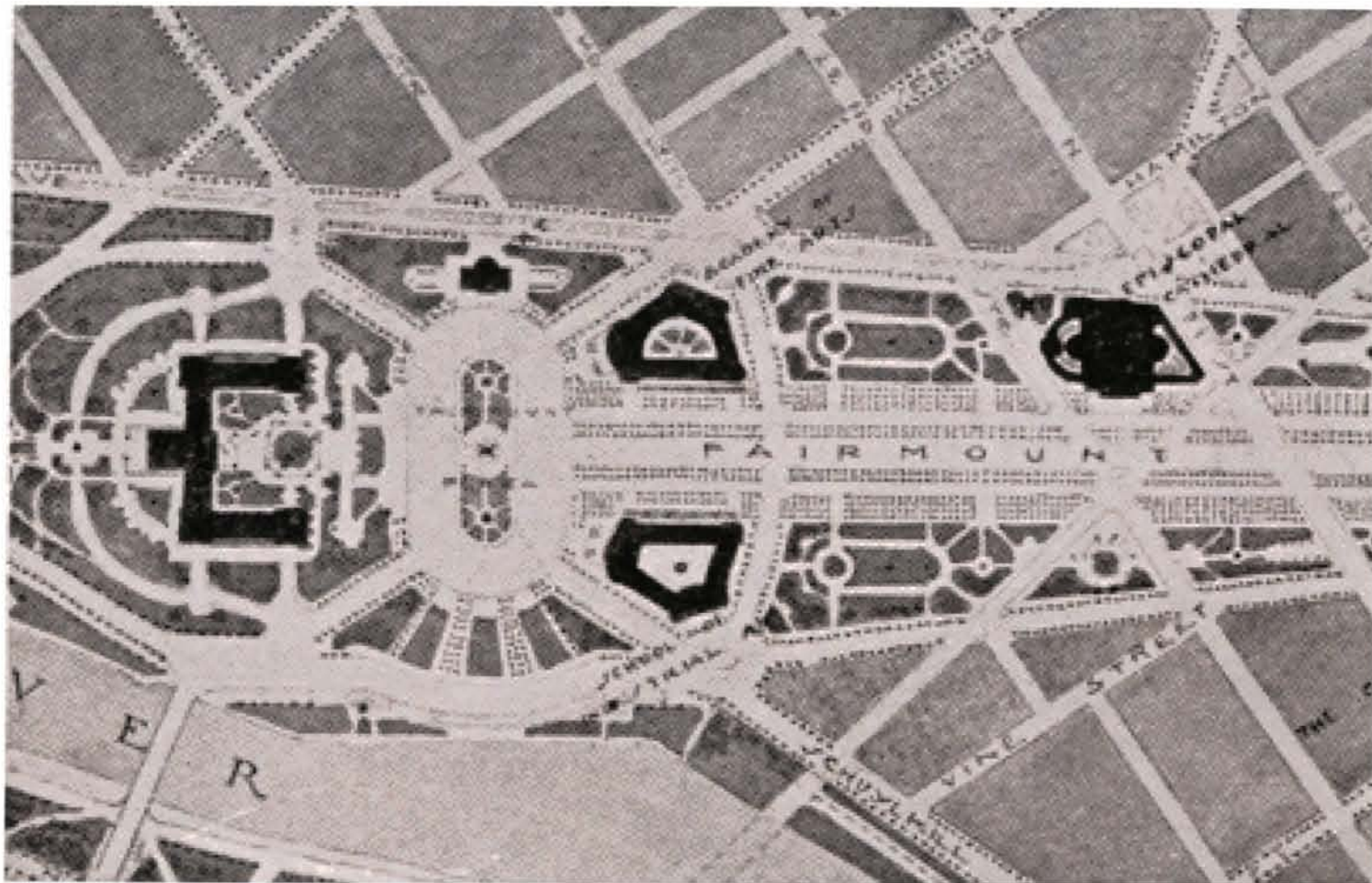
III.



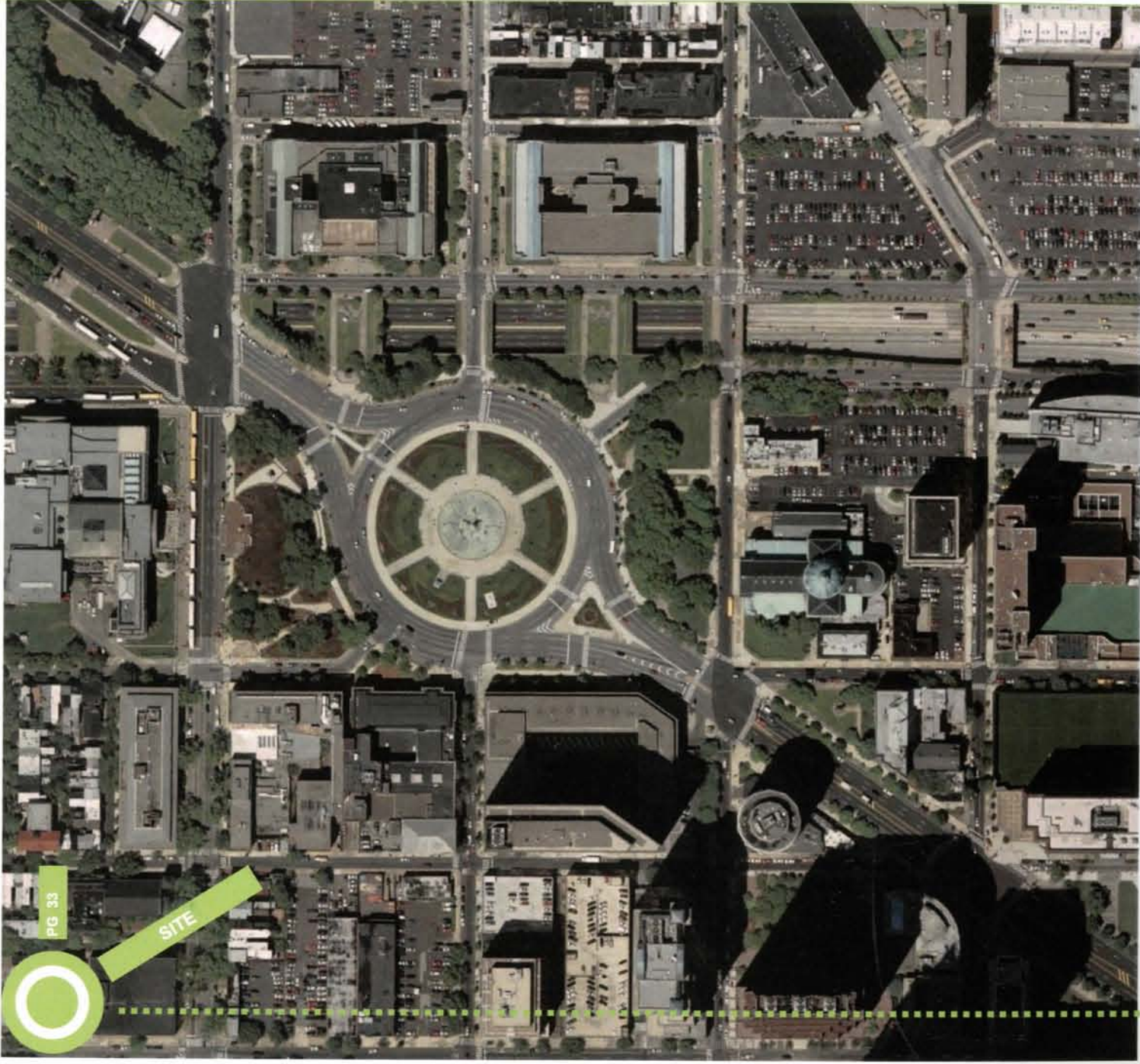
IV.

FIGURE 14

- I. Parking lots and garages
- II. Green Space
- III. Apartments and office buildings
- IV. Municipal buildings



The Parkway as represented by Jacques Greber for the commissioners of Fairmount Park in 1917. \*



PG 33

SITE



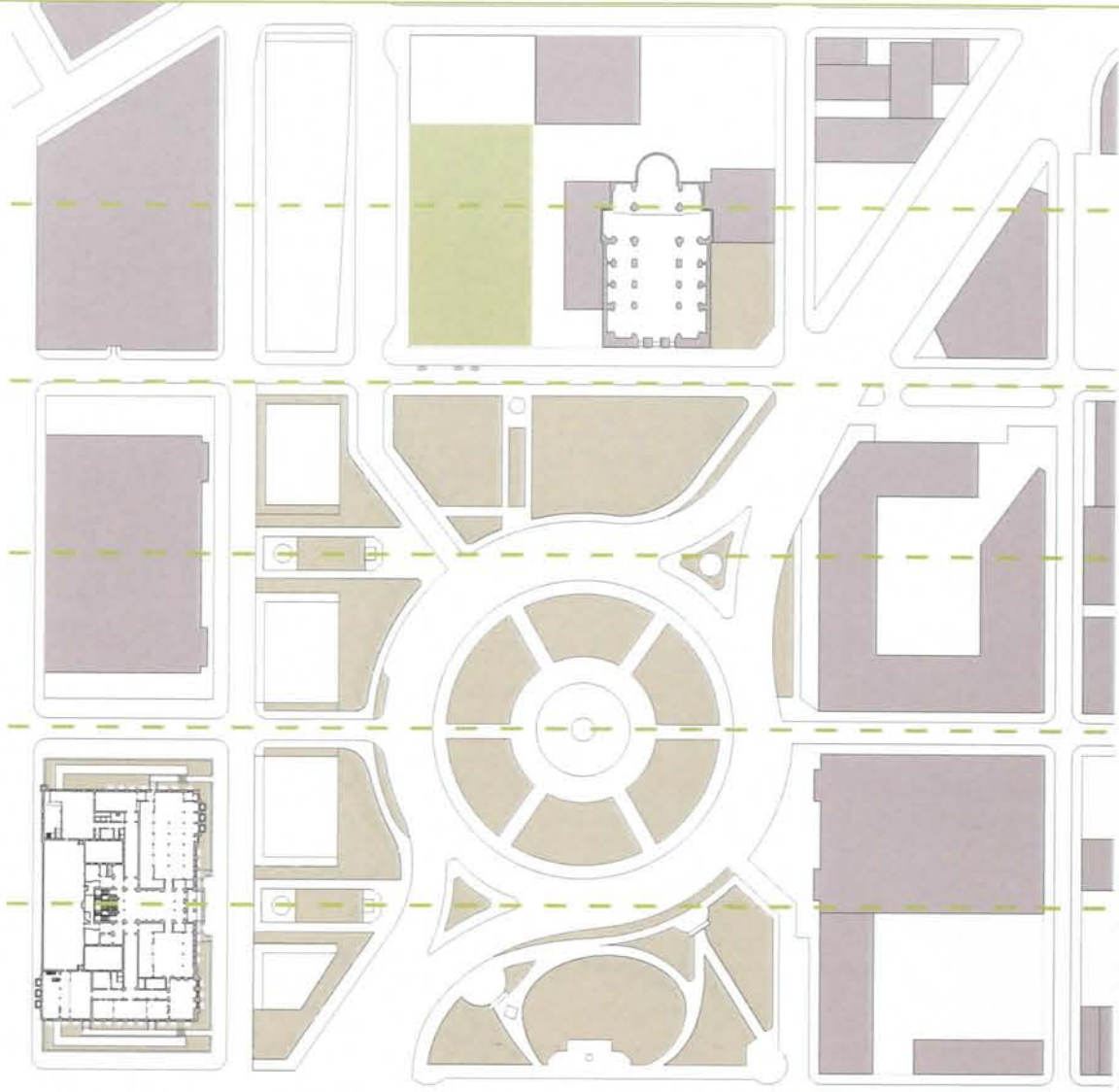
Logan Square 1929\*

SITE

PG 34



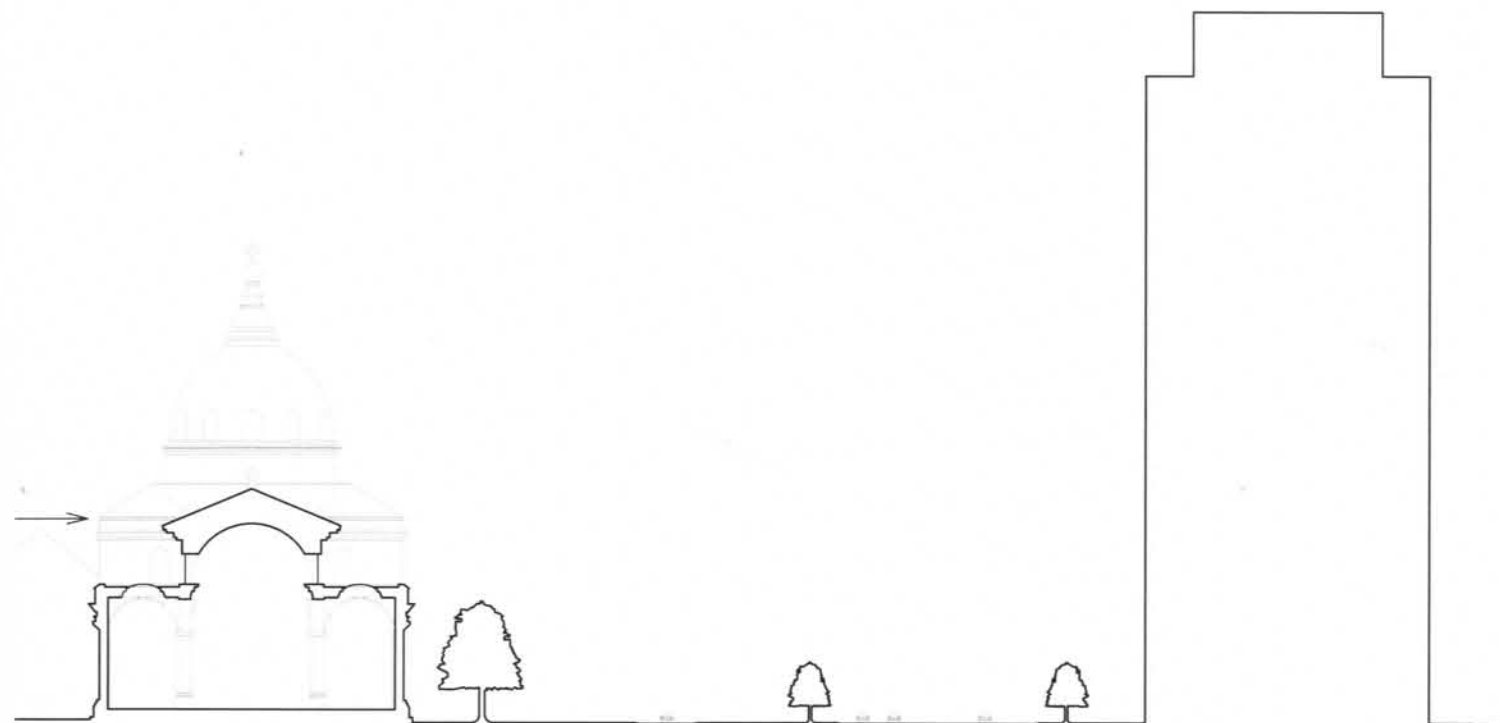
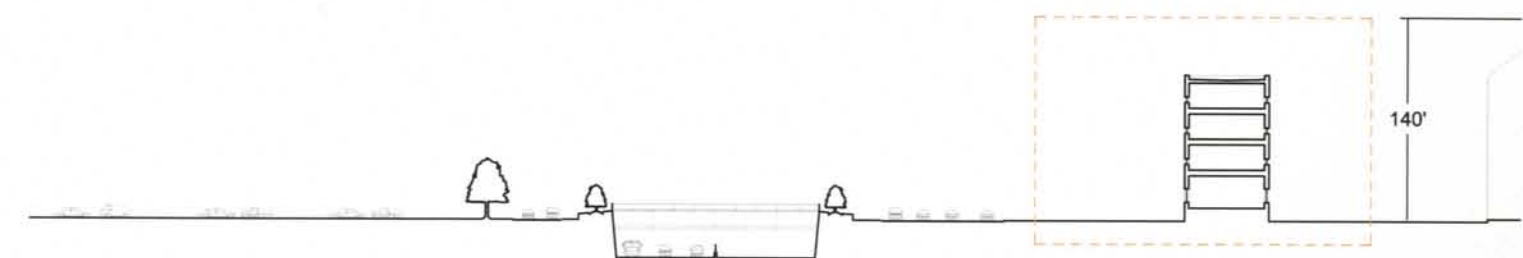




Site proportions. Site Dimensions are 648'x244'



1952 outdoor mass in Logan Square \*



Site Section

Orange rectangle indicates exact boundaries of site.

PG 39

SITE

PG 40

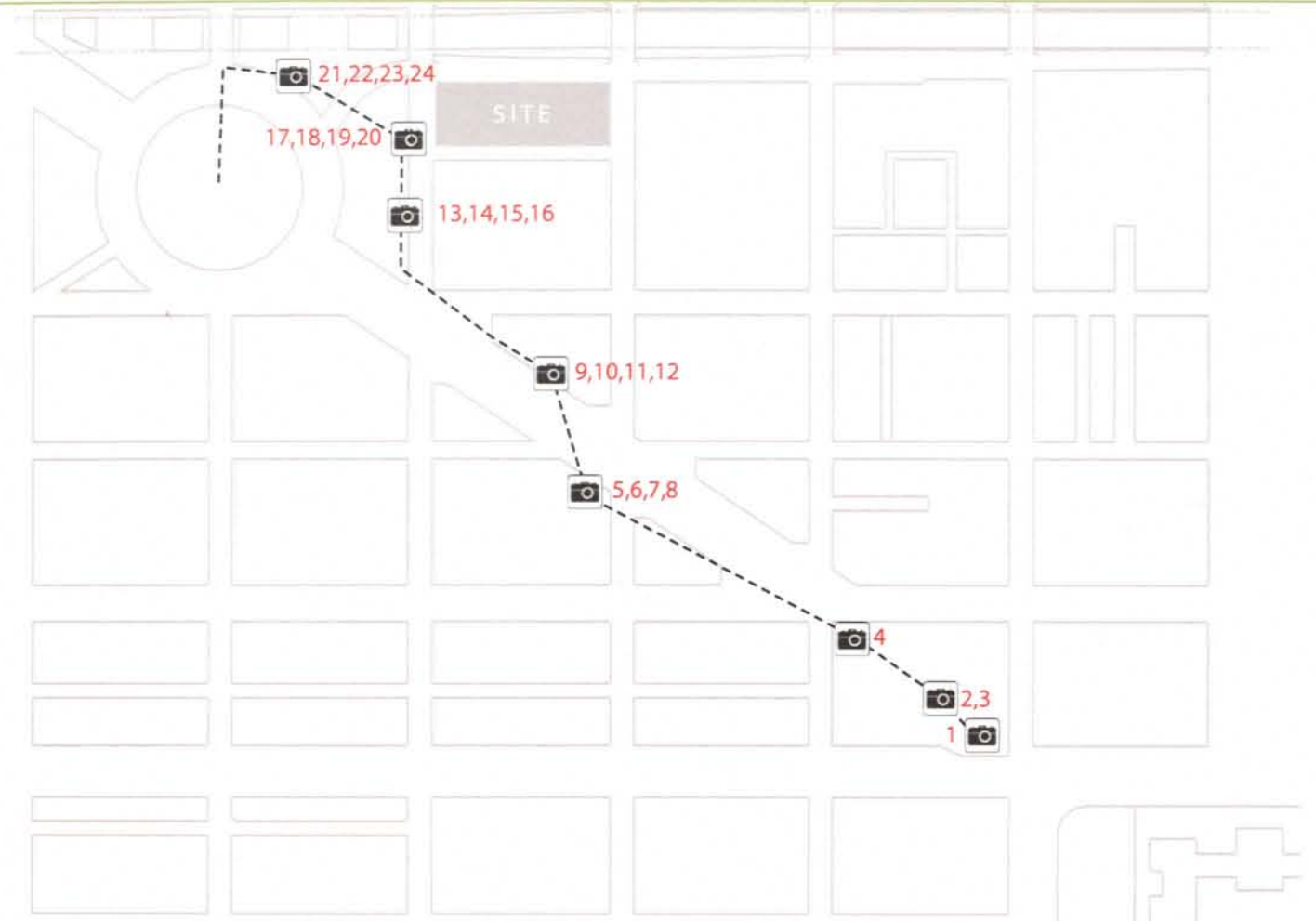
SITE

SITE EXPERIENCE



PG 41

SITE



Picture #

SITE

PG 42









17



18



19



20



21



22



23



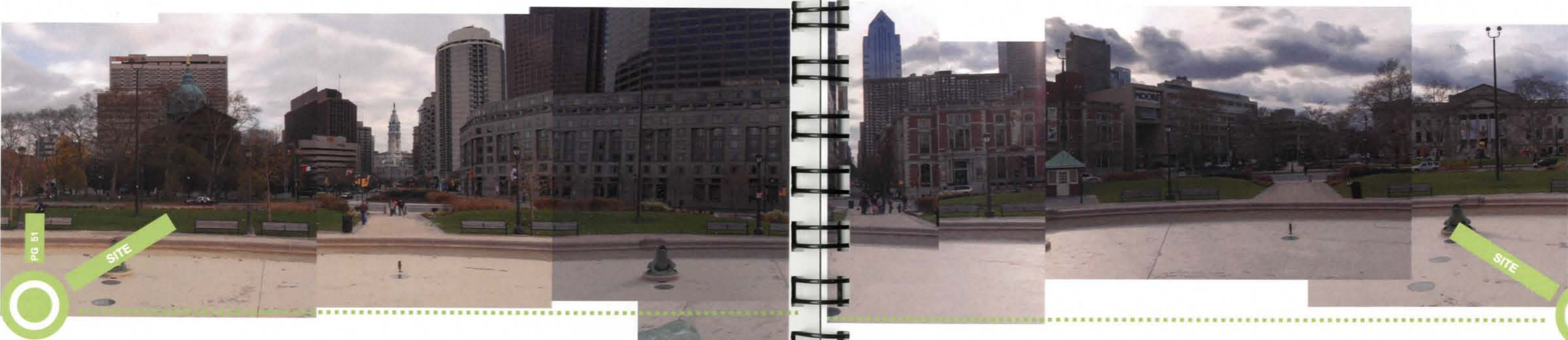
24



Logan Square Fountain



FLP Eastern (Front) Facade





Free Library of Philadelphia



Philadelphia Family Court





PG 57

SITE



FREE LIBRARY OF  
PHILADELPHIA

FLP

PG 58



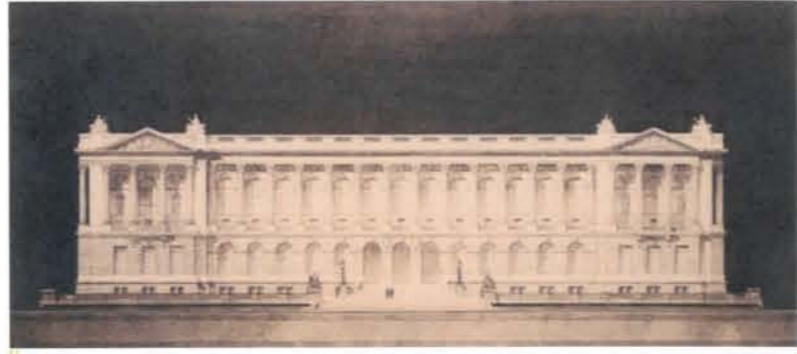
## Free Public Library Mission Statement

The Mission of The Free Library of Philadelphia is to provide to all segments of Philadelphia's diverse population a comprehensive collection of recorded knowledge, ideas, artistic expression, and information in a variety of media, including current technology; to assure ease of access to these materials; and to provide programs to stimulate the awareness and use of these resources. The Free Library will create a welcoming and inspiring environment for learning and will promote individual enlightenment, community enrichment, and economic vitality throughout the region.

The Free Library has four primary roles: It will provide current materials of high interest in a variety of formats for persons of all ages. It will provide timely, accurate information, and reference services employing a highly qualified staff who provide the link between the Library materials and users in a congenial and professional manner. It will support the educational goals of Philadelphians by providing materials and programs for children, as well as for their parents and caregivers.

The Free Library of Philadelphia will uphold the public's freedom of access to knowledge. It will recognize its responsibility as the Public Library for the City of Philadelphia, as a District Library Center for Philadelphia County, and as a Statewide Resource Center for the Commonwealth of Pennsylvania. (<http://www.library.phila.gov/>)

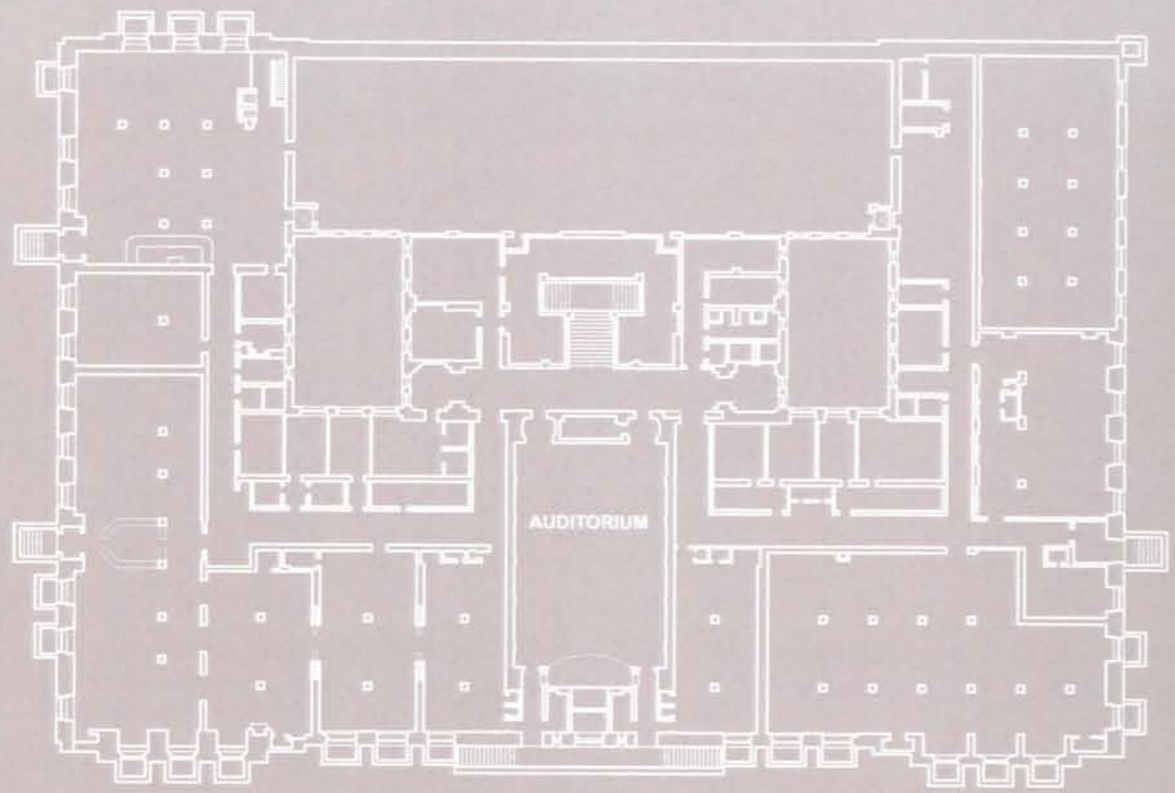
	FY 2007	FY 2008
<b>Program Statistics</b>		
Number of Adult Programs	8,633	10,521
Attendance at Adult Programs	170,852	208,793
Number of Children's Programs	12,878	13,591
Attendance at Children's Programs	259,310	283,645
LEAP Attendance	284,360	277,792
<b>Service Statistics</b>		
Library Visits	6,422,857	6,648,998
Reference Questions Handled	3,067,723	3,217,169
Registered Borrowers	497,427	504,561
Materials Borrowed System-Wide	6,328,706	7,037,694
Inter-Library Loan Requests Processed	30,786	24,240
<b>Collections Statistics</b>		
Catalogued Books—Adult	2,326,108	2,297,017
Catalogued Books—Juvenile	1,128,534	1,264,040
Audio Materials	1,114,588	1,078,470
Government Documents	1,117,308	1,115,872
Microforms	1,995,627	1,775,985
DVDs	98,160	154,241
Journal, Magazine, and Newspaper Titles	3,077	2,874



- \* I. Historical image Eastern (East) Facade
- II. Architectural Rendering Eastern (Front) Facade
- III. Historical image of Library Lobby
- IV. Historical image of Library Lobby



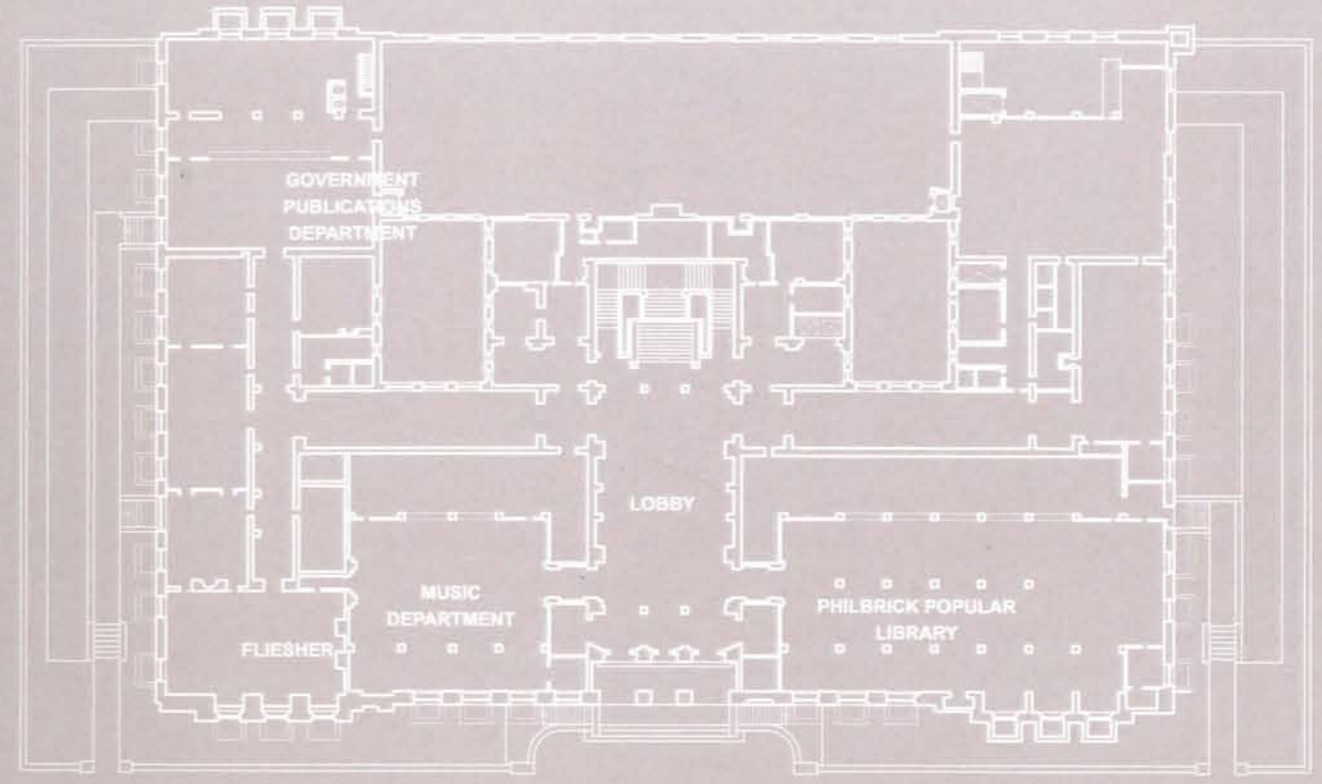
Historical image of Book Stack



⊖ GROUND FLOOR PLAN

PG 63

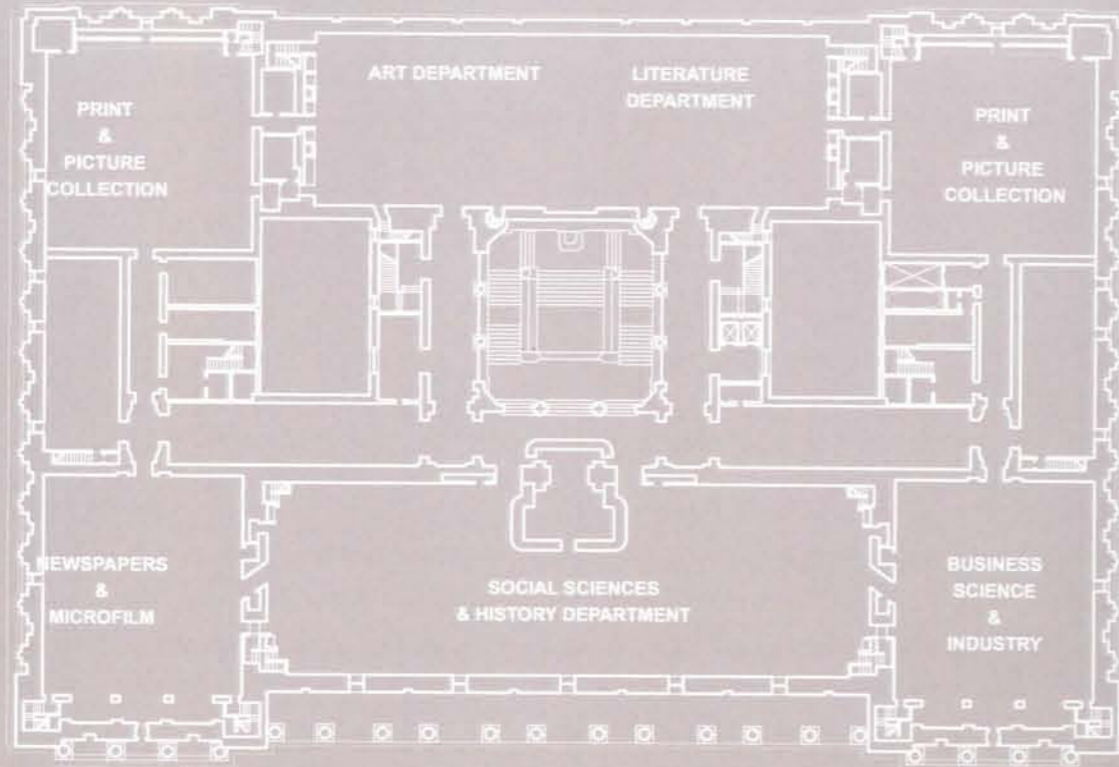
FLP



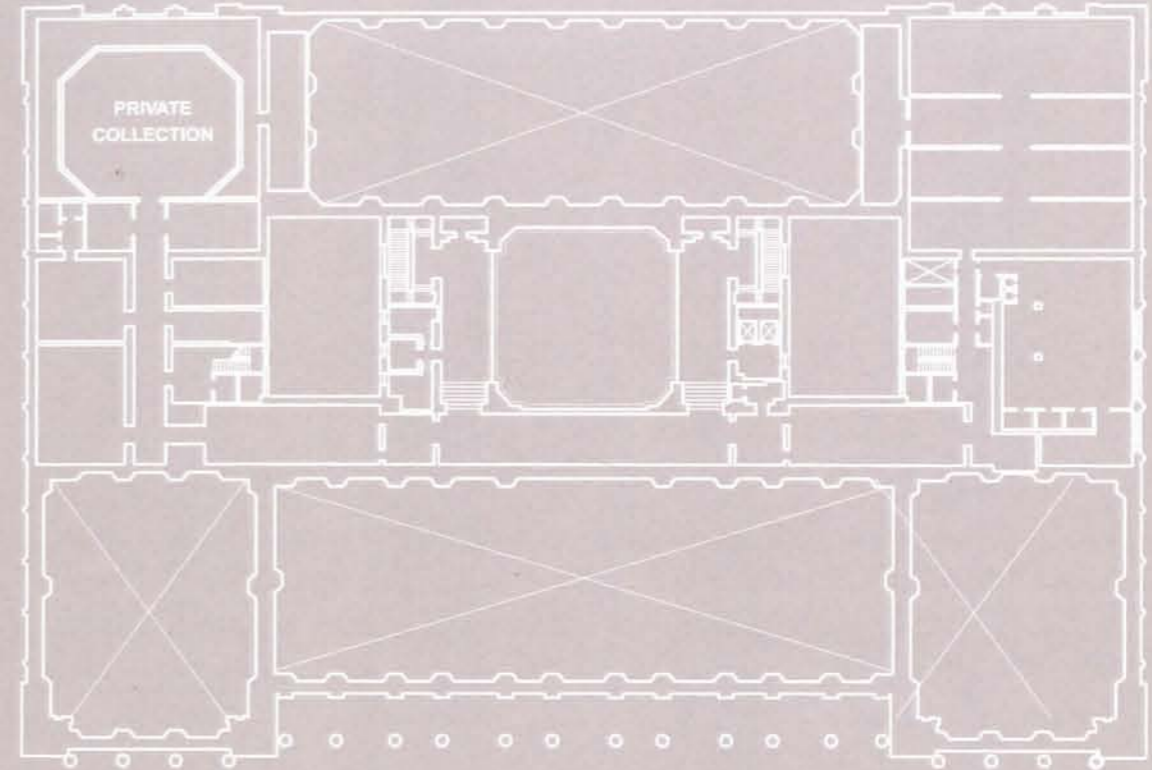
⊖ FIRST FLOOR PLAN

PG 64

FLP

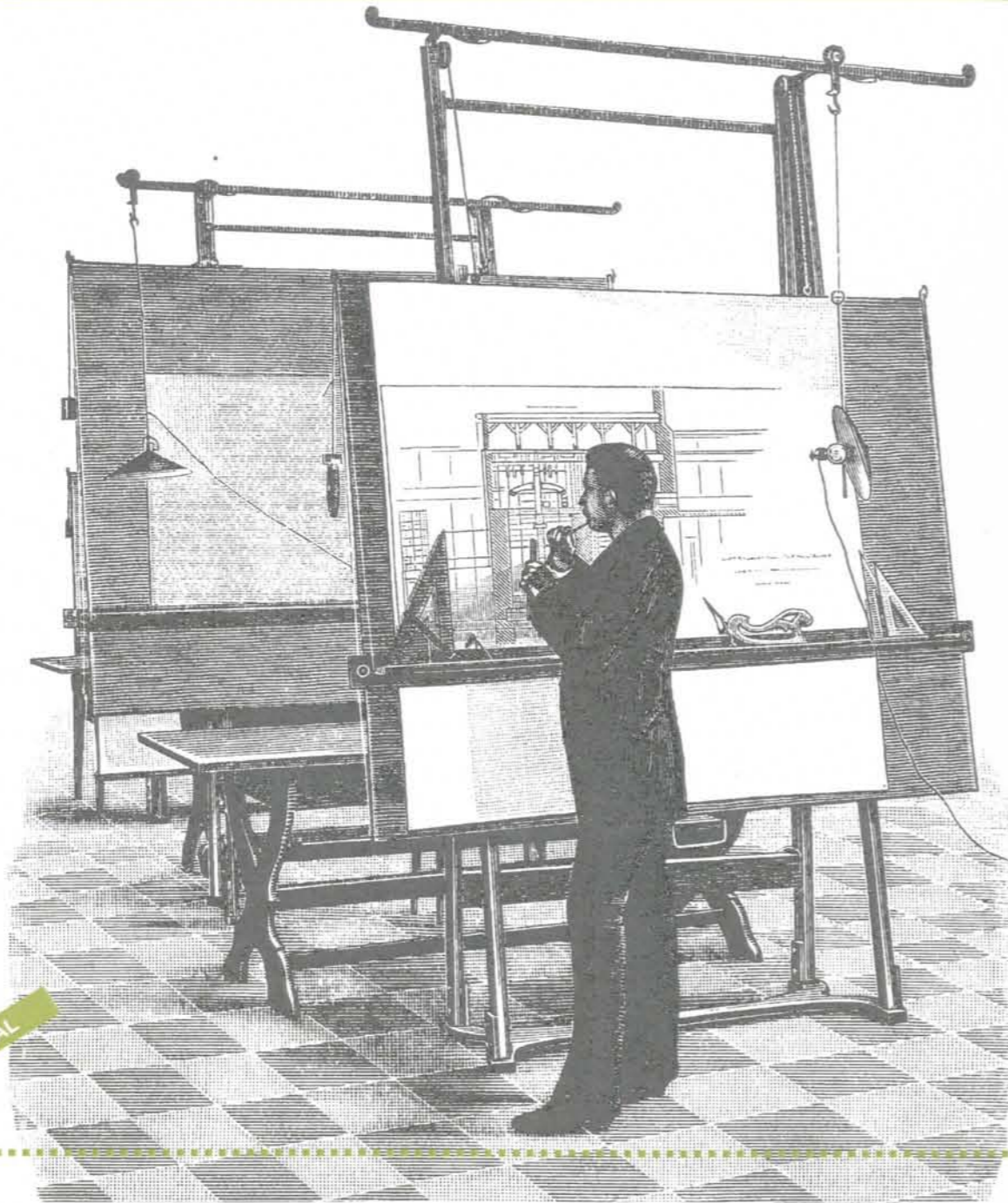


SECOND FLOOR PLAN



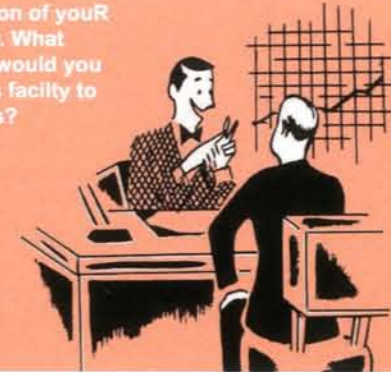
THIRD FLOOR PLAN

BUILDING PROPOSAL



MR. AGILITY

Architect:  
 Hello Mr. Director  
 of the Free Library  
 of Philadelphia.  
 It's an honor to be  
 chosen to design  
 the new  
 extension of your  
 Library. What  
 issues would you  
 like this facility to  
 address?



Client:  
 Well the current  
 building we have is  
 beautiful, but I feel  
 that it severely  
 impedes the  
 functions of the  
 Library. The Library  
 is currently filled to  
 capacity, meaning  
 that there is no room  
 to expand any of our  
 collections other  
 than to move old  
 books to offsite  
 storage...

...We have already gotten a number of complaints from users complaining that the books they need are not readily accessible. We also need more space for computers, and are forced to choose between designating space for computers and designating space for books...

Gasp!  
 Where's  
 our  
 book  
 Darling?

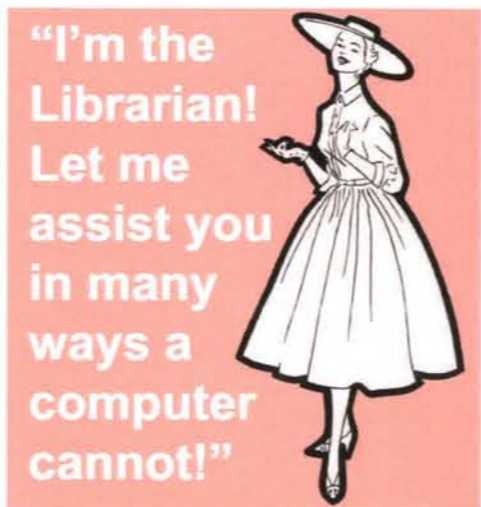


I'm quite  
 outraged  
 as well  
 Chipmunk!

... In addition to not having enough space, I am also concerned about the future of the library as we enter the digital age. The Library as it exists to day is being seriously threatened by digital technology. Already, a lot of the functions of the Library have been taken over by the computer. I would like to see the Library continue to exist as a physical space because there are a number of interactions that happen in the physical realm, that cannot happen in the virtual realm, that are fundamental to research. These include:

- 1) Librarian Assistance
- 2) Chance Encounters with people of similar interests
- 3) Unintentional discovery of new resources and interests.

I am embracing the fact that books may become completely digital one day but there needs to be a way to combine the advantages of the physical library with those of the virtual library; a building that can mediate between the two.



Architect:  
I have an Idea! I will design you a building that can ...

1. not only house the complete collection of books that you have now, but the walls and floors of the building will be adjustable such that they can accomadate the expansion of your collections, as well as the manner in which they are arranged, whether by dui-decimal system or by subject matter.
2. I will design a building that anticipates a change in technology from paper books to a completely digital interface. The Digital Library will no longer be merely a place to house objects, it will be purely a gathering space within which librarian or professional research assistance, chance encounters, and unintentional discovery of new research interest take place. The building will be a collection of assymby spaces who sizes are dependant of the amount of research interest in that topic. Everything from a large gatherng space that can hold thousands, to the smallest individual study carol. The building will constantly be able to readjust itself to adapt to resaearch and programatic needs.
3. Should the nature of the Library change again, all of the building's systems are replacable, interchangeable, and re-arrangeable to allow for maximum flexibility.



# Fin

SERVICES OFFERED



"Hi! I'm Bob, Chief Director of the world's first semi-digital library, a branch of the Free Library of Philadelphia housing the library's digital media collection. I'm here to tell about the exciting new services that our revolutionary new library will offer."

Custom Searching!

"The entire collection of digital books can be rearranged to suit your personal search preferences."



Digital Homing!

"Just say the word and the building will direct you to the book you desire, or bring the book to you if you prefer. We can even direct you to the bathroom if you need."



Librarian Assistance!

"Our Librarians can give you one-on-one assistance to help you maximize your search results. That beats clicking the help button on your computer any day."

Skype!

"We will arrange real-time meetings with Internationally renowned experts in whatever topic you're interested in."



Real-time Interlibrary Loans!

"No more ordering and then waiting a week. We'll get you the book you need in jiffy and even print you a version if you'd like."



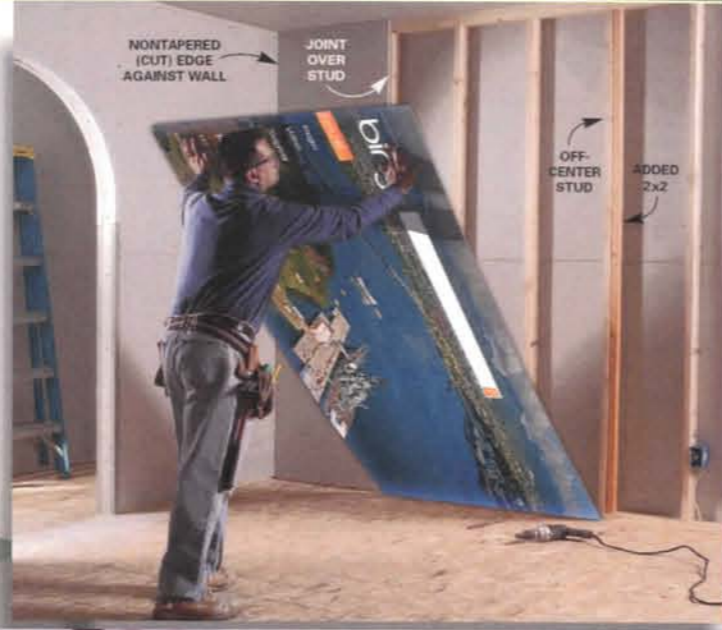
Meeting Spaces; We know that the way people meet and interact in person is always changing, so we've provide spaces for a variety of meeting types.



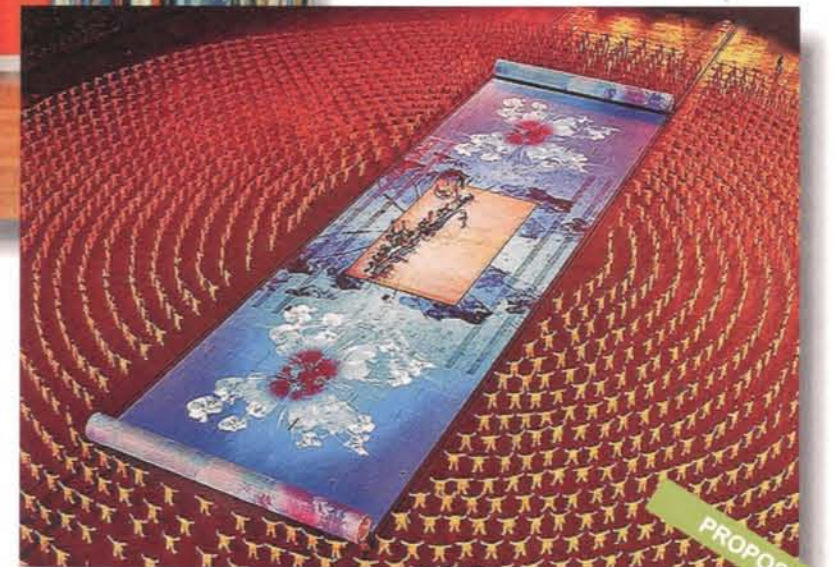
...and these are just **SOME** of the services our semi-digital library will offer!

### BUILDING'S RELATIONSHIP TO TECHNOLOGY

Technology should be an applique, rather than being embedded into the building. The building has a more intimate relationship with technology, and technology can be replaced just as easily as one can change wall paper or kitchen tiling. No major demolition required.



2008 Summer Olympics Opening Ceremony;  
Pliable digital screen.





ORGANIZATION OF INFORMATION WITHIN THE BUILDING

Information in the building can be organized in a variety of ways. At the push of a button, the entire library collection can be rearranged according to the old Dewy Decimal

System, Authors, or topics of interest. There is never one set way that the collection is organized. If a group of architects would like to use the library for example, the entire library can be reorganized to only contain books of architectural interest. If an elementary school has a field trip to the library, the entire library can be reorganized so that all of the books on display are on their reading level. The Library ritual will still be the same as in the traditional library. (1) Users will begin their research by searching topics on the computer. (2)The computer will direct you to the book based on the configuration of the library at that time. (3)During one's procession to the book, users can browse the collection displayed and discover potential topics of interest. In addition, the building will direct users towards books and people of with similar

research interests.



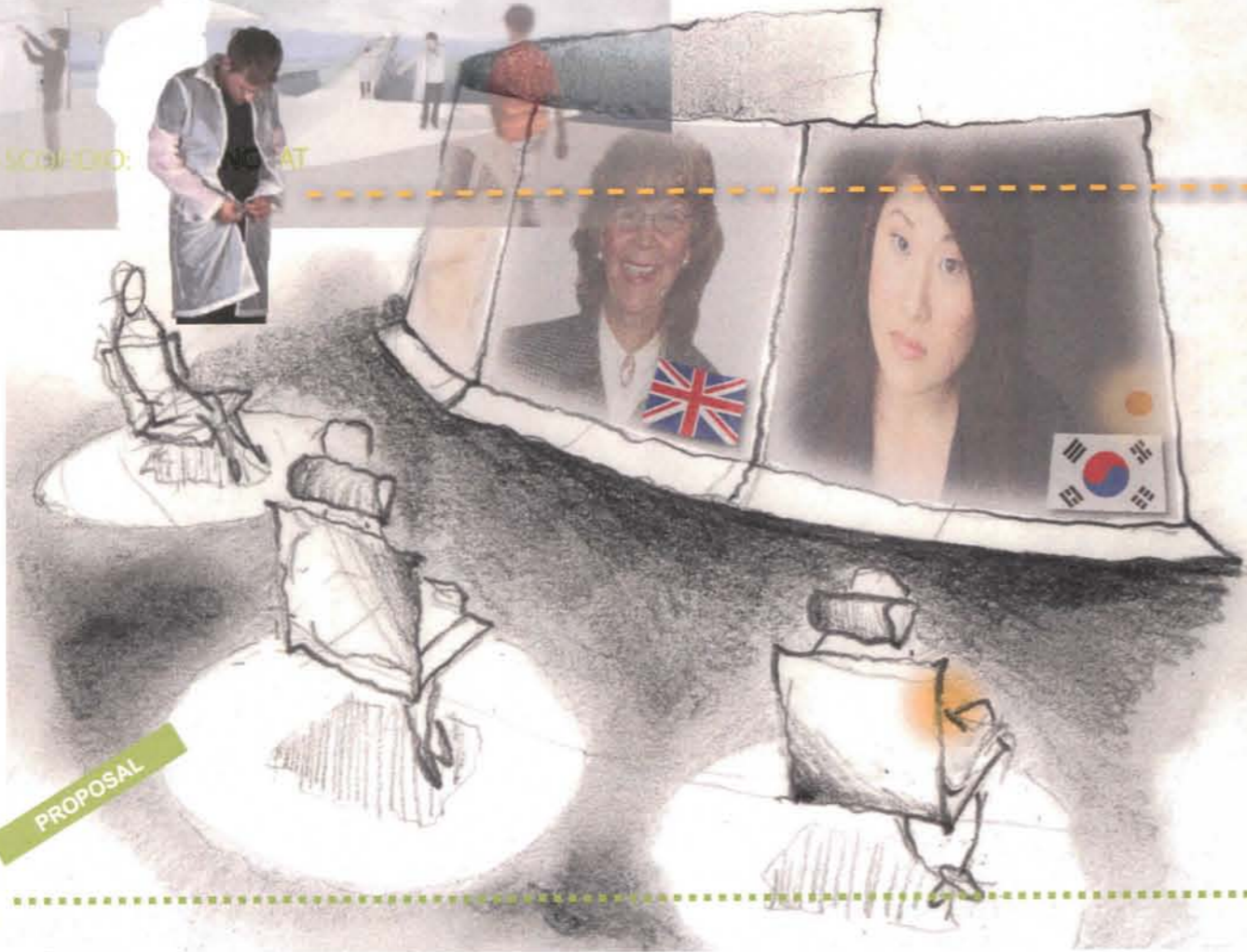
STRUCTURES

Zaha Hadid

ORGANIZATION OF INFORMATION WITHIN THE BUILDING

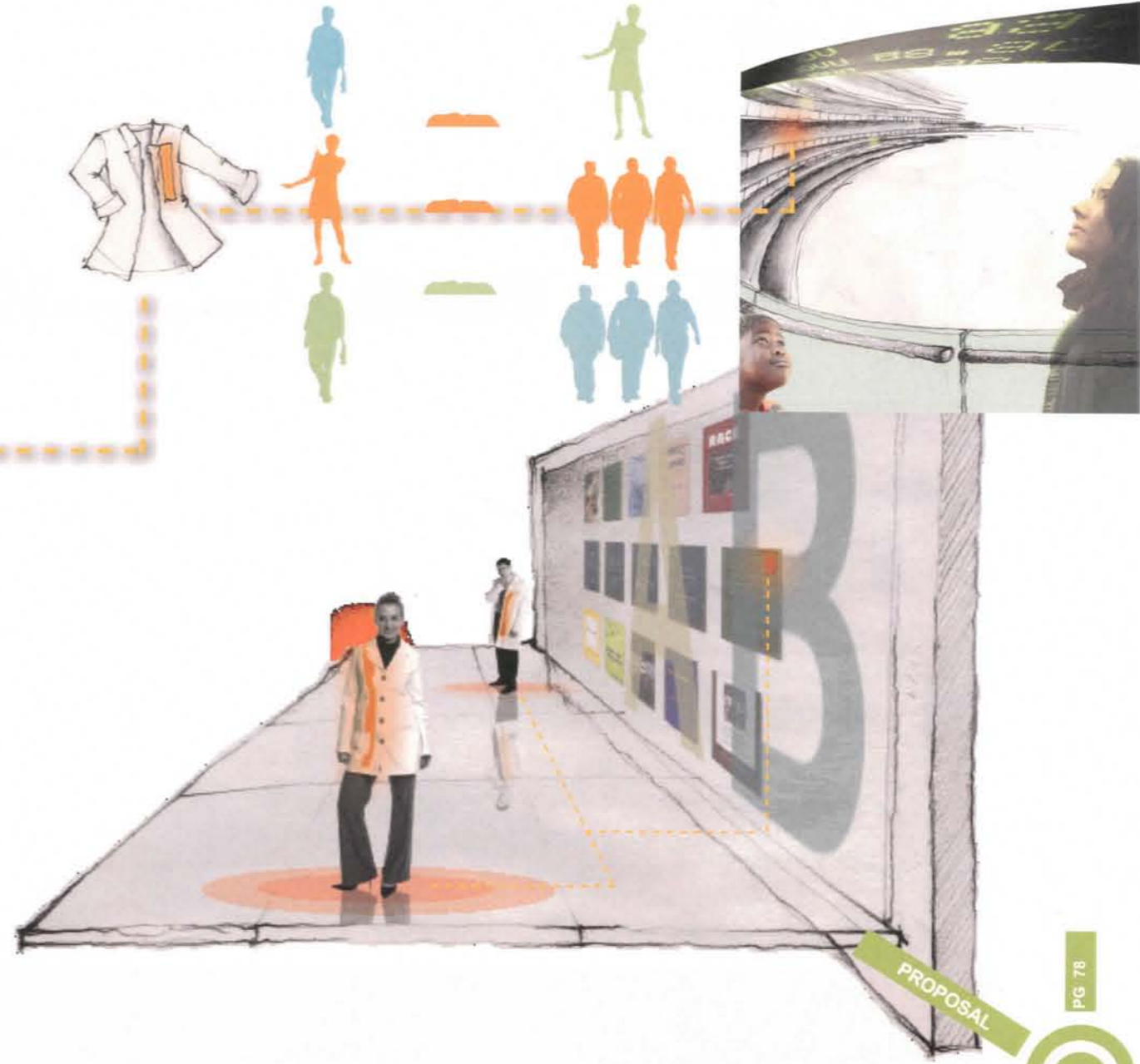


DILLER+SCOFIELD: ... AT



PROPOSAL

PG 77



PROPOSAL

PG 78



FINAL PRESENTATION

PG 79

FINAL PRESENTATION

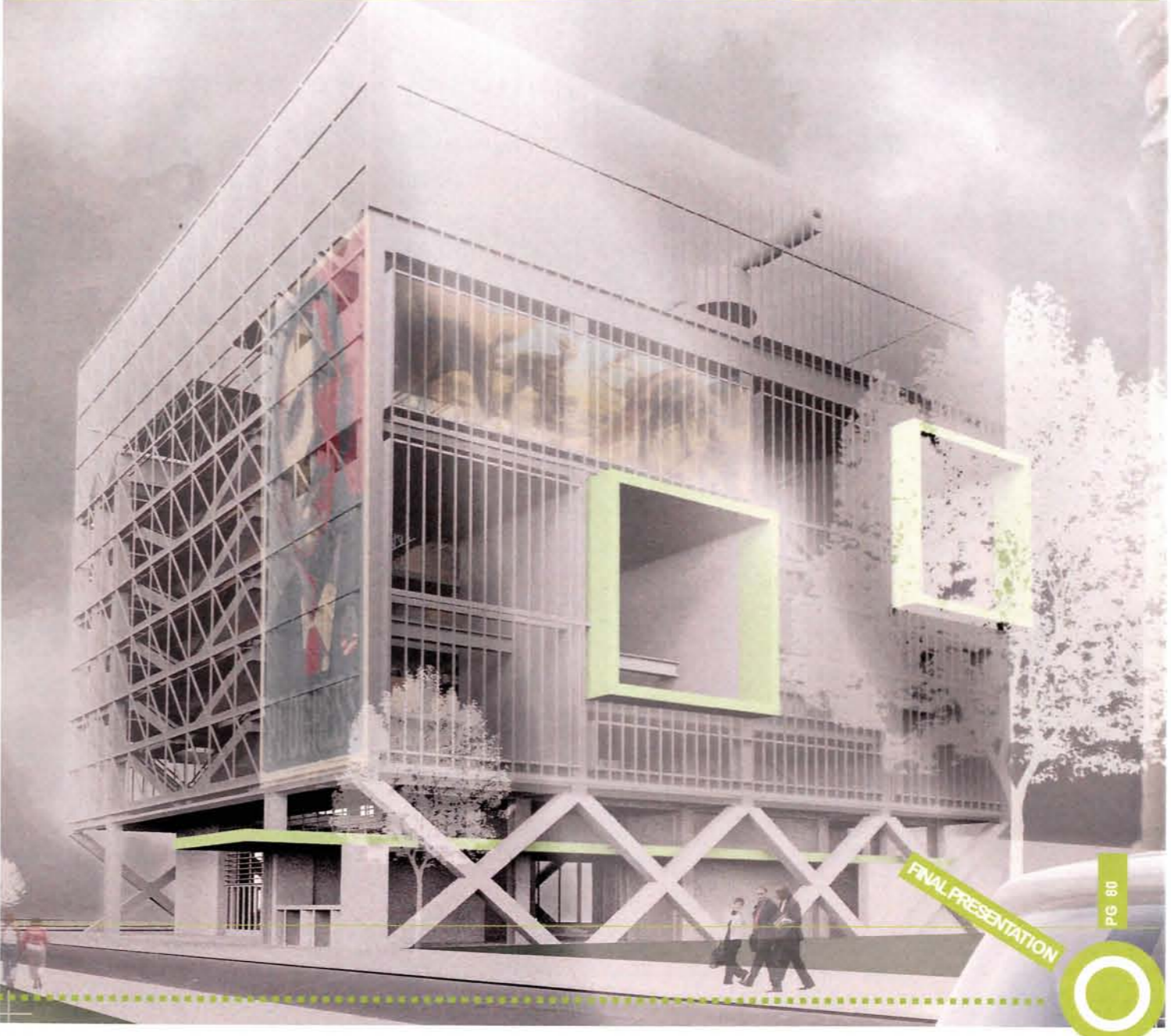


TITLE SHEET



PG 80

FINAL PRESENTATION





BUILDING FLEXIBILITY / ADAPTABILITY = BUILDING LONGEVITY

**Building Occupancy**  
Relating to both the number of people who occupy a building or space, as well as the type of people who occupy a building or space.

**ADAPTING TO WHAT?**

**Environment**  
Relating to the surrounding climate or other varying site conditions.

**Technology**  
Relating to the use of technology that enhances the building's performance, such as lighting, computer, or other systems.

Architecture cannot be analyzed against a single spectrum of changeability because there is a varying types of changeability/adaptability. Architecture can be ranked or within these "Types" of Adaptability, each ranking being unique.

THREE OF MANY TYPES OF ADAPTABILITY >>> LEAST MOST

**1 RESPONSE TO VARYING COMBINATIONS OF VARIABLES**

**2 VARYING TIME FRAMES OF ADAPTABILITY**

**3 VARYING SCALES OF ADAPTABILITY**

TEST PROGRAM >>> DIGITAL LIBRARY

**FOR**  
"There is a real sense of mission, the mission to build a library on campus, the mission to have a building that is not just a building, but a building that is a part of the campus. And we need to make sure that we have a building that is a part of the campus. And we need to make sure that we have a building that is a part of the campus."

**AGAINST**  
"I don't think it's a good idea to have a building that is a part of the campus. I don't think it's a good idea to have a building that is a part of the campus. I don't think it's a good idea to have a building that is a part of the campus."

**SERVICES OFFERED IN THE DIGITAL LIBRARY**

- 24/7 Access: "The library is open 24/7, so you can access the library at any time." "The library is open 24/7, so you can access the library at any time." "The library is open 24/7, so you can access the library at any time."
- Remote Access: "You can access the library from anywhere, anytime." "You can access the library from anywhere, anytime." "You can access the library from anywhere, anytime."
- Virtual Reality: "You can experience the library in a virtual reality environment." "You can experience the library in a virtual reality environment." "You can experience the library in a virtual reality environment."
- Personalized Learning: "The library offers personalized learning experiences." "The library offers personalized learning experiences." "The library offers personalized learning experiences."
- Collaborative Learning: "The library provides collaborative learning spaces." "The library provides collaborative learning spaces." "The library provides collaborative learning spaces."
- Research Support: "The library offers research support services." "The library offers research support services." "The library offers research support services."
- Community Engagement: "The library is a community hub." "The library is a community hub." "The library is a community hub."



BUILDING OBJECTIVE

This building is an addition to the Free Public Library of Philadelphia designed to maneuver the inevitable transition between the present day library of paper books and digital library of the future.



**MR. AGILITY**

Architect: "I'm excited about the future of the library as it exists today in a physical space because there are a number of interactions that happen in the physical realm, that cannot happen in the virtual realm. That are fundamental to research. These include:

- 1) Librarian Assistance
- 2) Chance Encounters with people of similar interests
- 3) Unintentional discovery of new resources and interests.

I am embracing the fact that books may become completely digital one day but there needs to be a way to combine the advantages of the physical library with those of the virtual library; a building that can mediate between the two.

Client: "We're excited about the future of the library as it exists today in a physical space because there are a number of interactions that happen in the physical realm, that cannot happen in the virtual realm. That are fundamental to research. These include:

- 1) Librarian Assistance
- 2) Chance Encounters with people of similar interests
- 3) Unintentional discovery of new resources and interests.

I am embracing the fact that books may become completely digital one day but there needs to be a way to combine the advantages of the physical library with those of the virtual library; a building that can mediate between the two.

Architect: "I'm excited about the future of the library as it exists today in a physical space because there are a number of interactions that happen in the physical realm, that cannot happen in the virtual realm. That are fundamental to research. These include:

- 1) Librarian Assistance
- 2) Chance Encounters with people of similar interests
- 3) Unintentional discovery of new resources and interests.

I am embracing the fact that books may become completely digital one day but there needs to be a way to combine the advantages of the physical library with those of the virtual library; a building that can mediate between the two.

Client: "We're excited about the future of the library as it exists today in a physical space because there are a number of interactions that happen in the physical realm, that cannot happen in the virtual realm. That are fundamental to research. These include:

- 1) Librarian Assistance
- 2) Chance Encounters with people of similar interests
- 3) Unintentional discovery of new resources and interests.

I am embracing the fact that books may become completely digital one day but there needs to be a way to combine the advantages of the physical library with those of the virtual library; a building that can mediate between the two.

Architect: "I'm excited about the future of the library as it exists today in a physical space because there are a number of interactions that happen in the physical realm, that cannot happen in the virtual realm. That are fundamental to research. These include:

- 1) Librarian Assistance
- 2) Chance Encounters with people of similar interests
- 3) Unintentional discovery of new resources and interests.

I am embracing the fact that books may become completely digital one day but there needs to be a way to combine the advantages of the physical library with those of the virtual library; a building that can mediate between the two.

Client: "We're excited about the future of the library as it exists today in a physical space because there are a number of interactions that happen in the physical realm, that cannot happen in the virtual realm. That are fundamental to research. These include:

- 1) Librarian Assistance
- 2) Chance Encounters with people of similar interests
- 3) Unintentional discovery of new resources and interests.

I am embracing the fact that books may become completely digital one day but there needs to be a way to combine the advantages of the physical library with those of the virtual library; a building that can mediate between the two.

"Wow I'm seeing things I would never have thought to look for!"

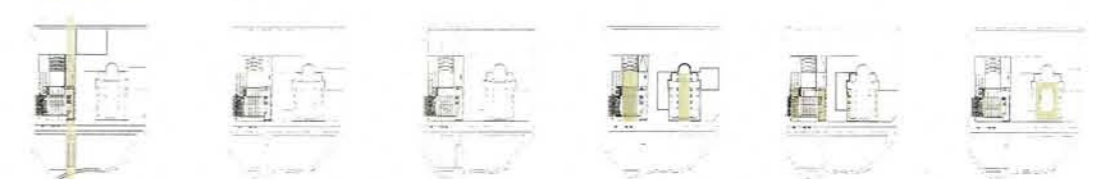
"I'm the Librarian! Let me assist you in many ways a computer cannot!"

"Gasp! Where's our book Darling?"

"I'm quite outraged as well Chipmunk!"

"Yay!"

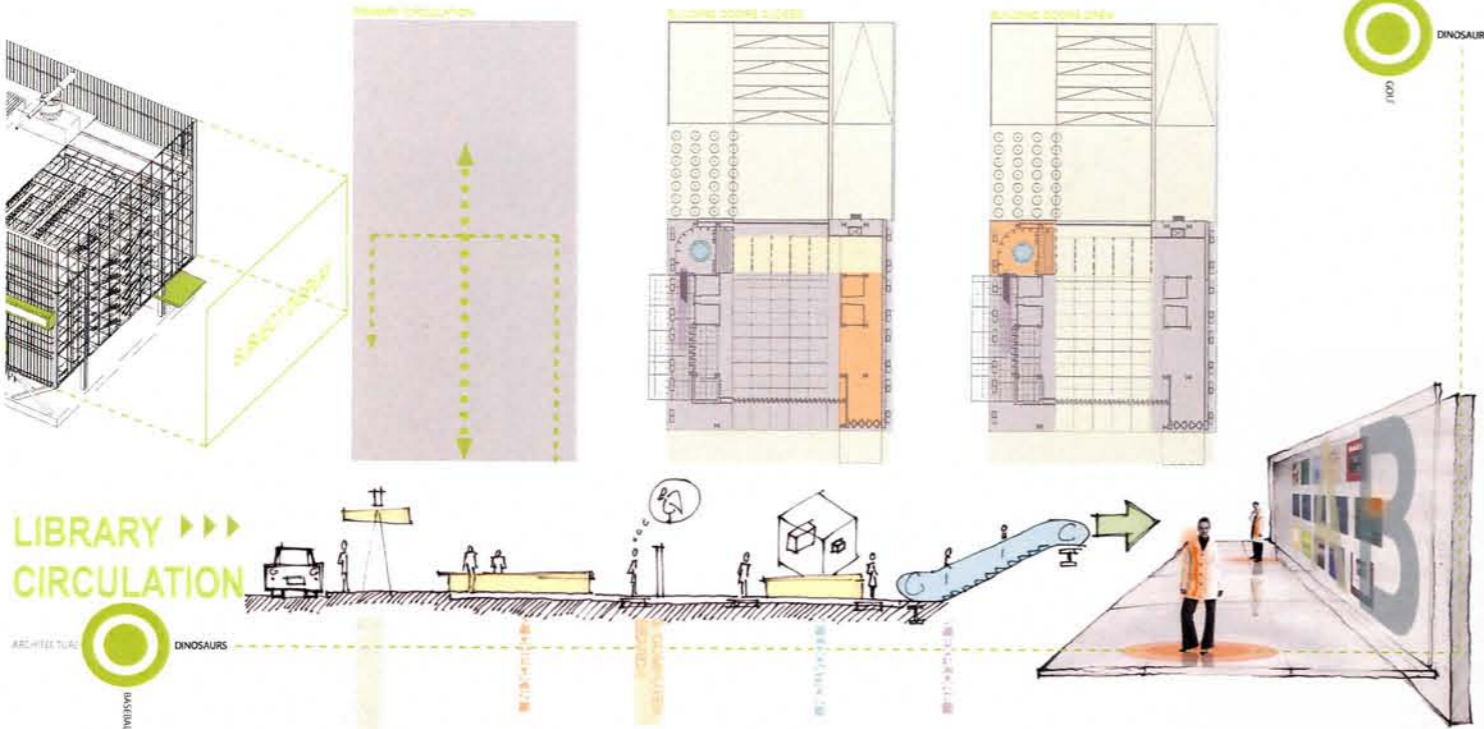
READINGS



# BUILDING AGILITY

DA. BELANDI E  
TR. 88  
TRAD. SEQUINHE CITY  
BRU. EDD. ENNA  
AND. FREN. H

## DIGITAL LIBRARY



### LIBRARY CIRCULATION

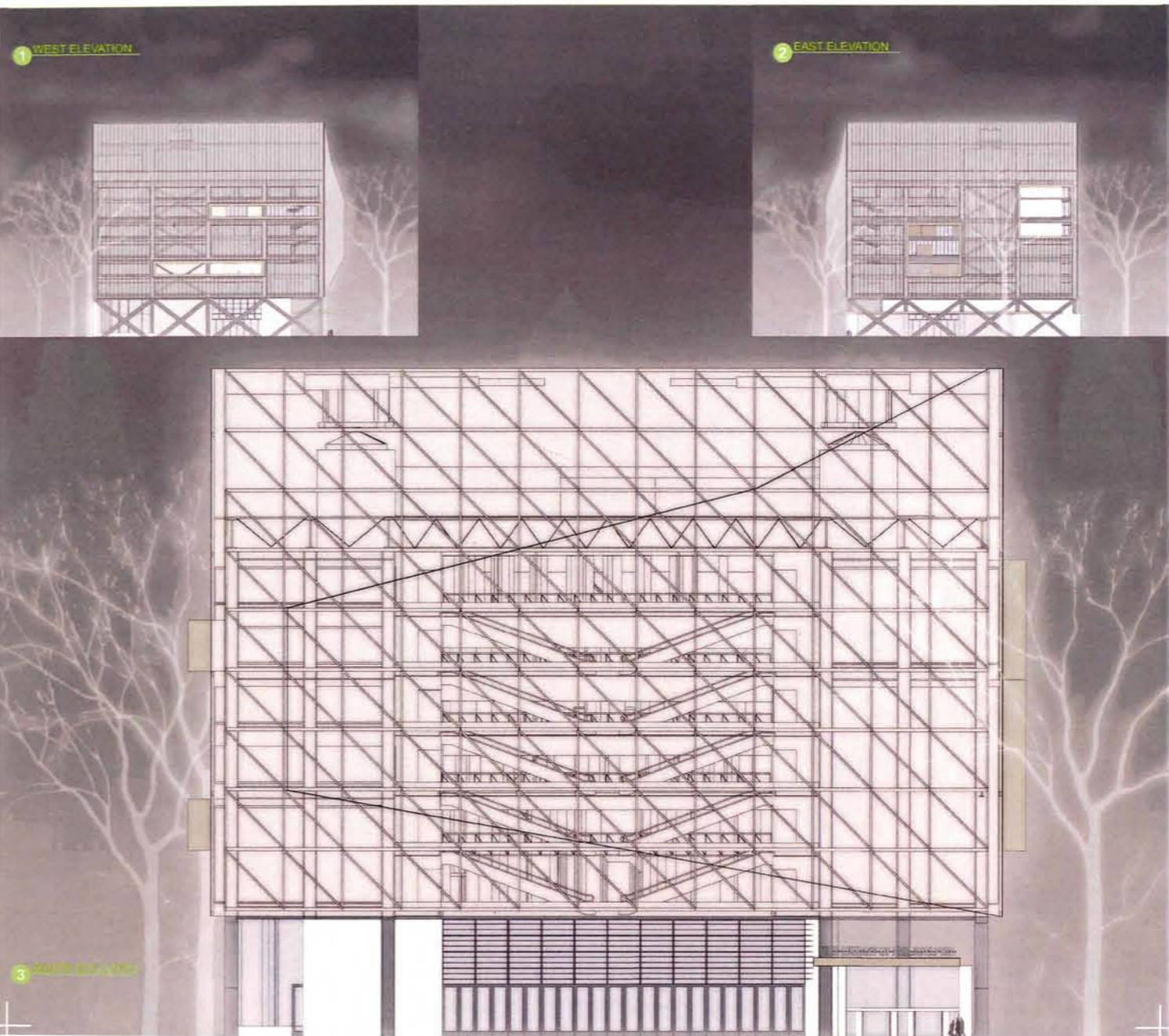


### EVOLUTION

# BUILDING AGILITY

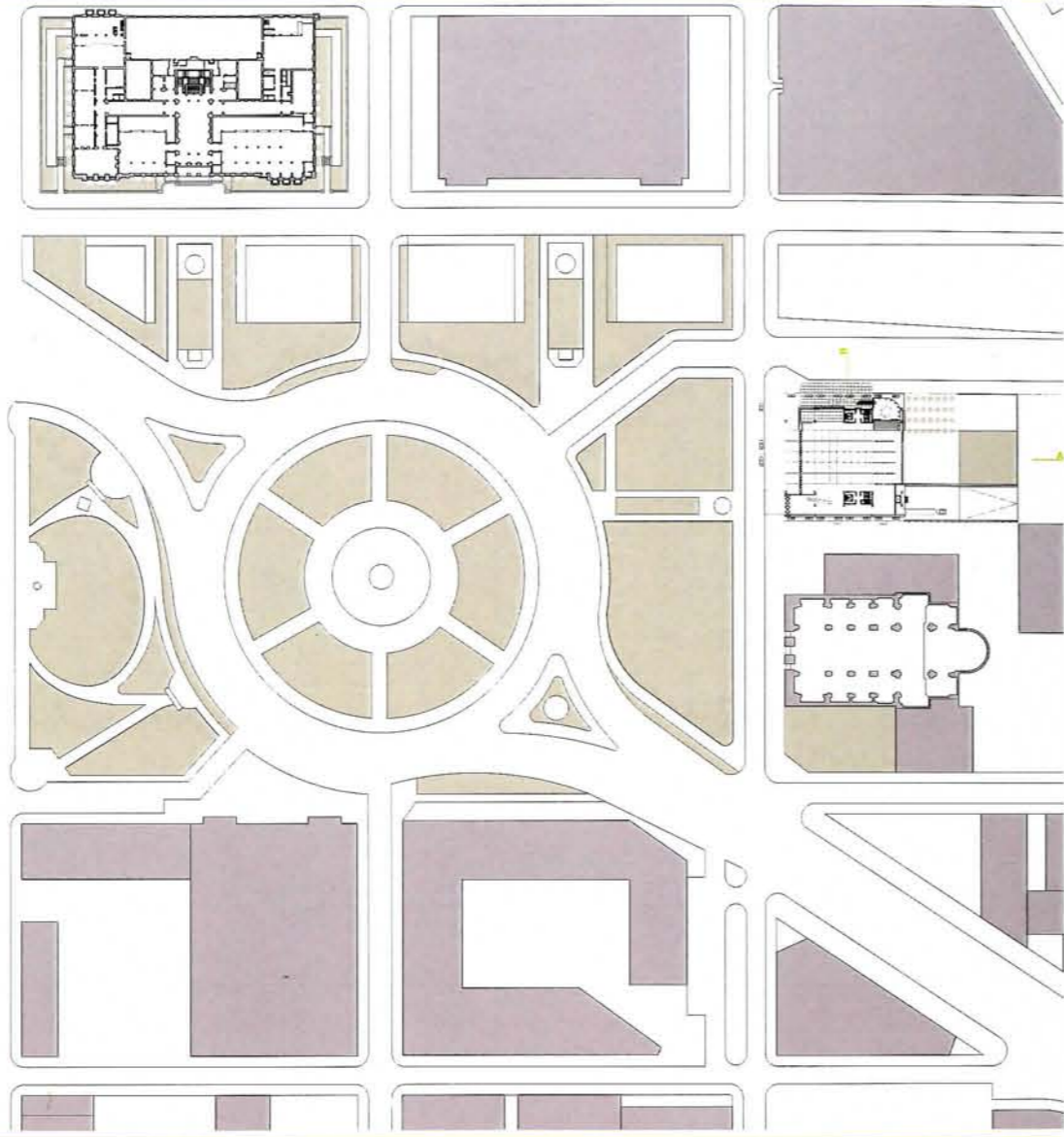
DA. BELANDI E  
TR. 88  
TRAD. SEQUINHE CITY  
BRU. EDD. ENNA  
AND. FREN. H

## ELEVATIONS

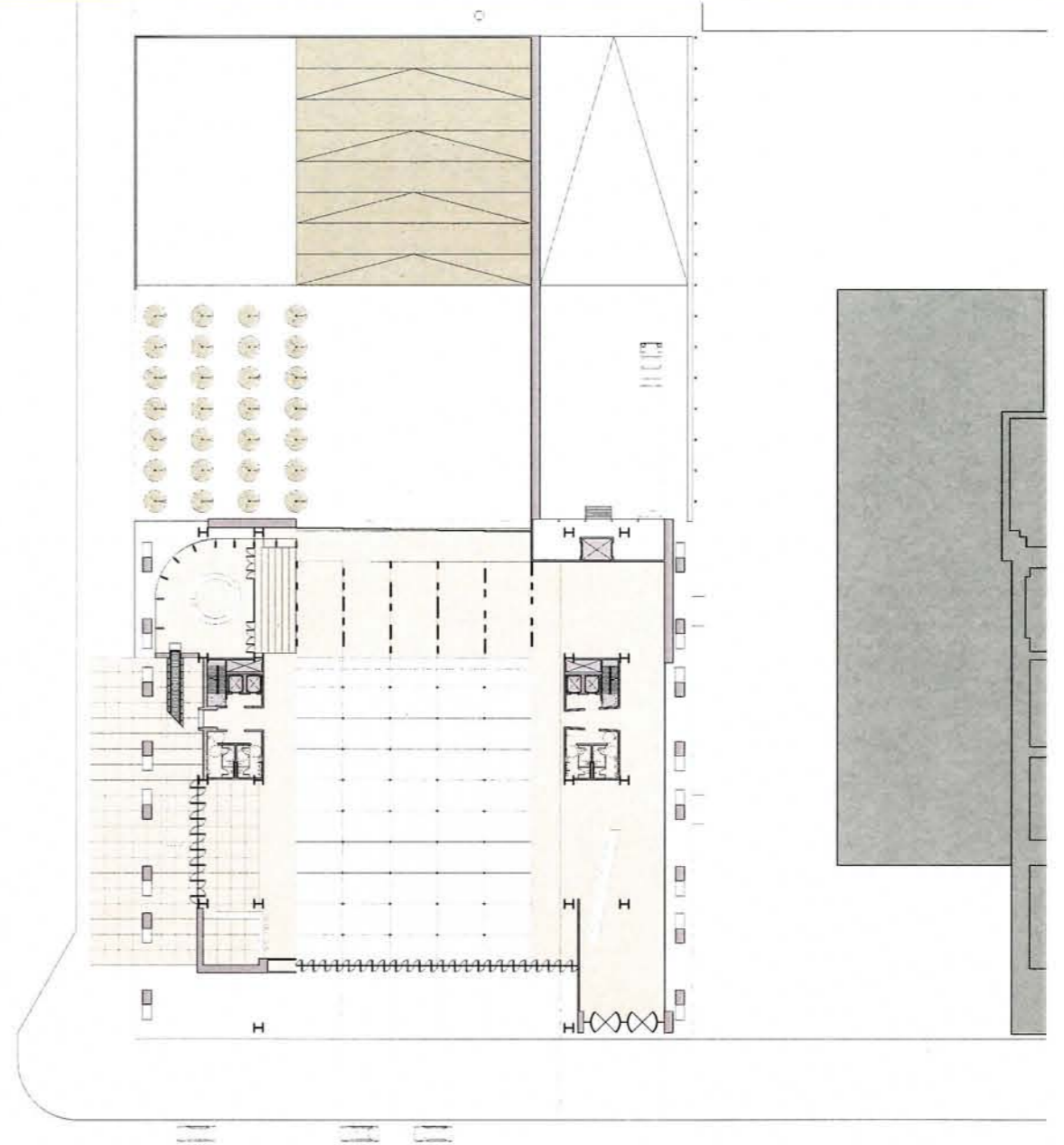


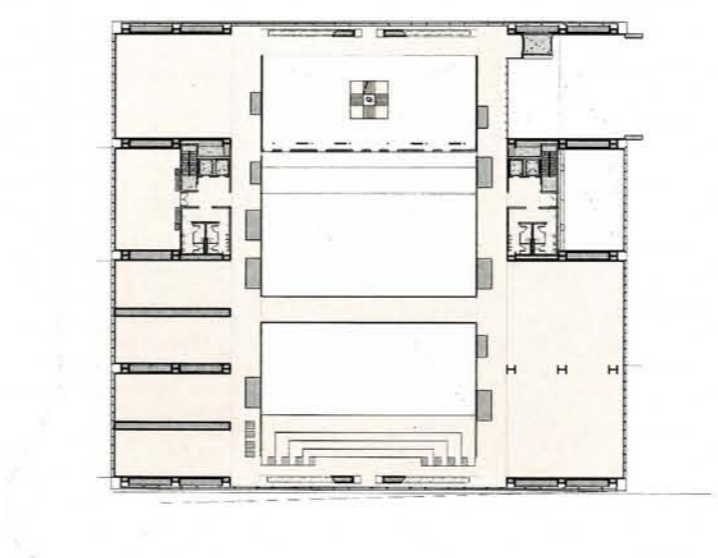
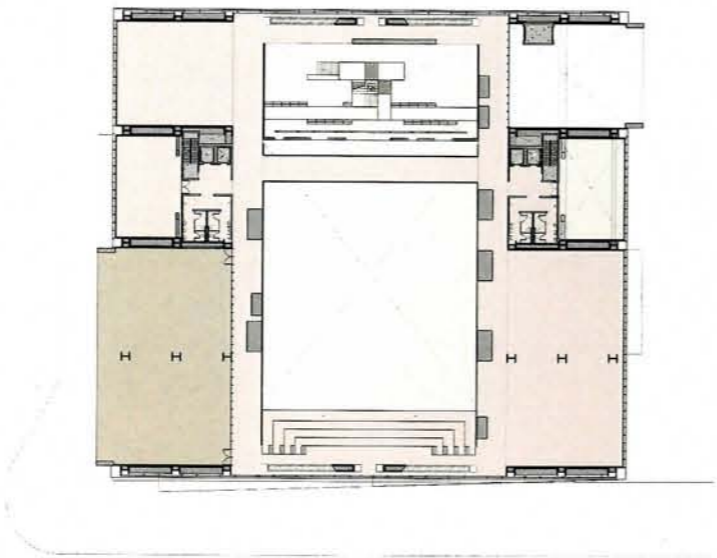
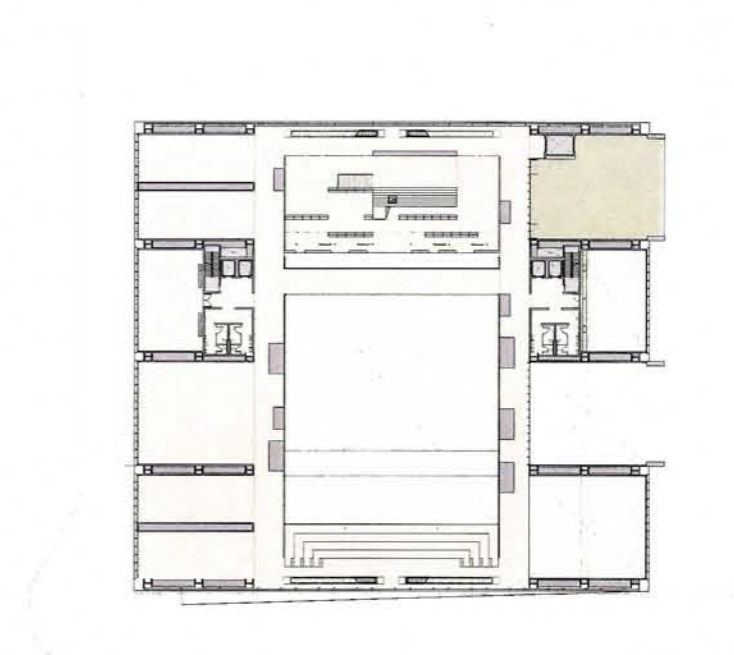
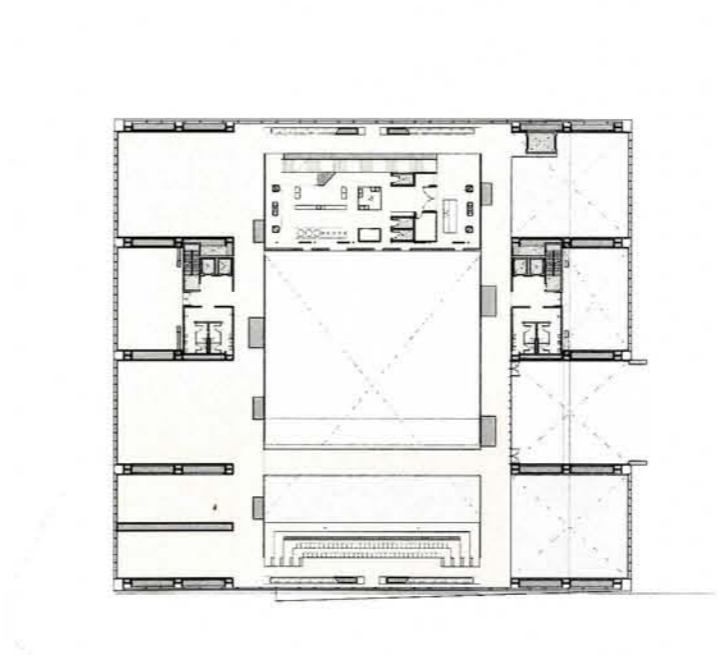
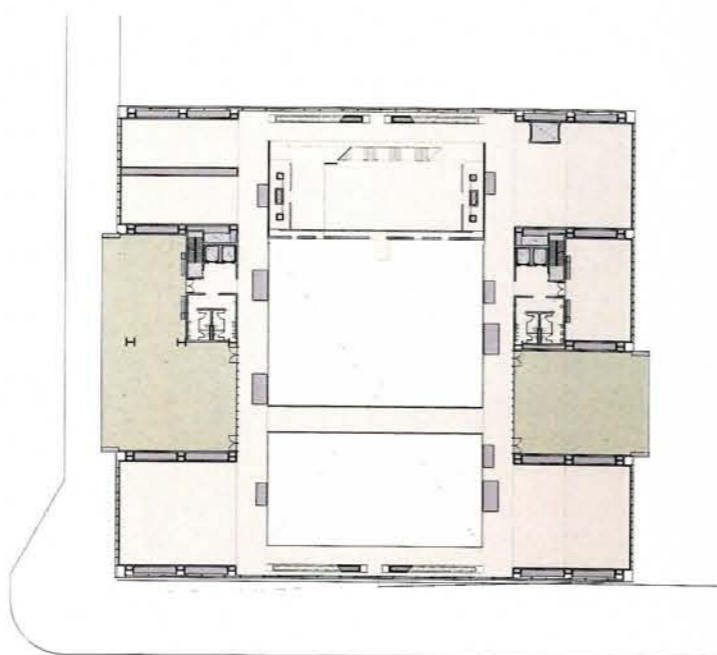
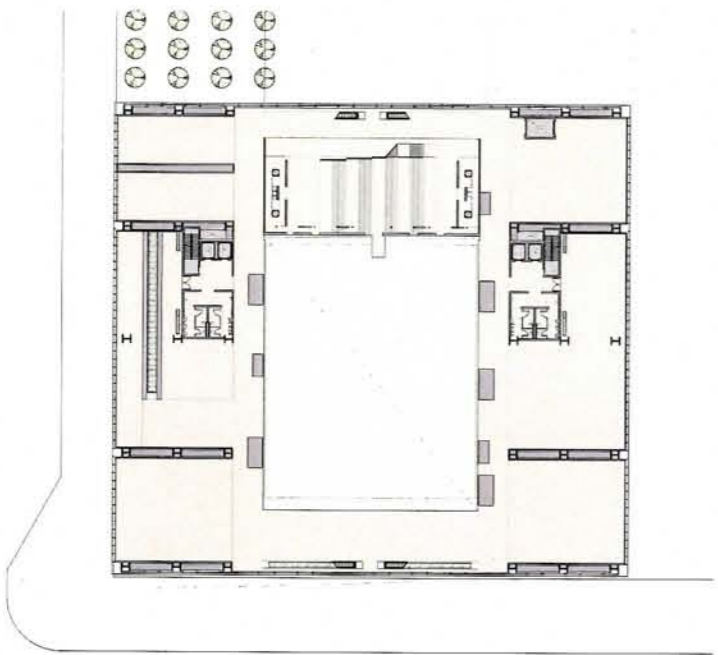


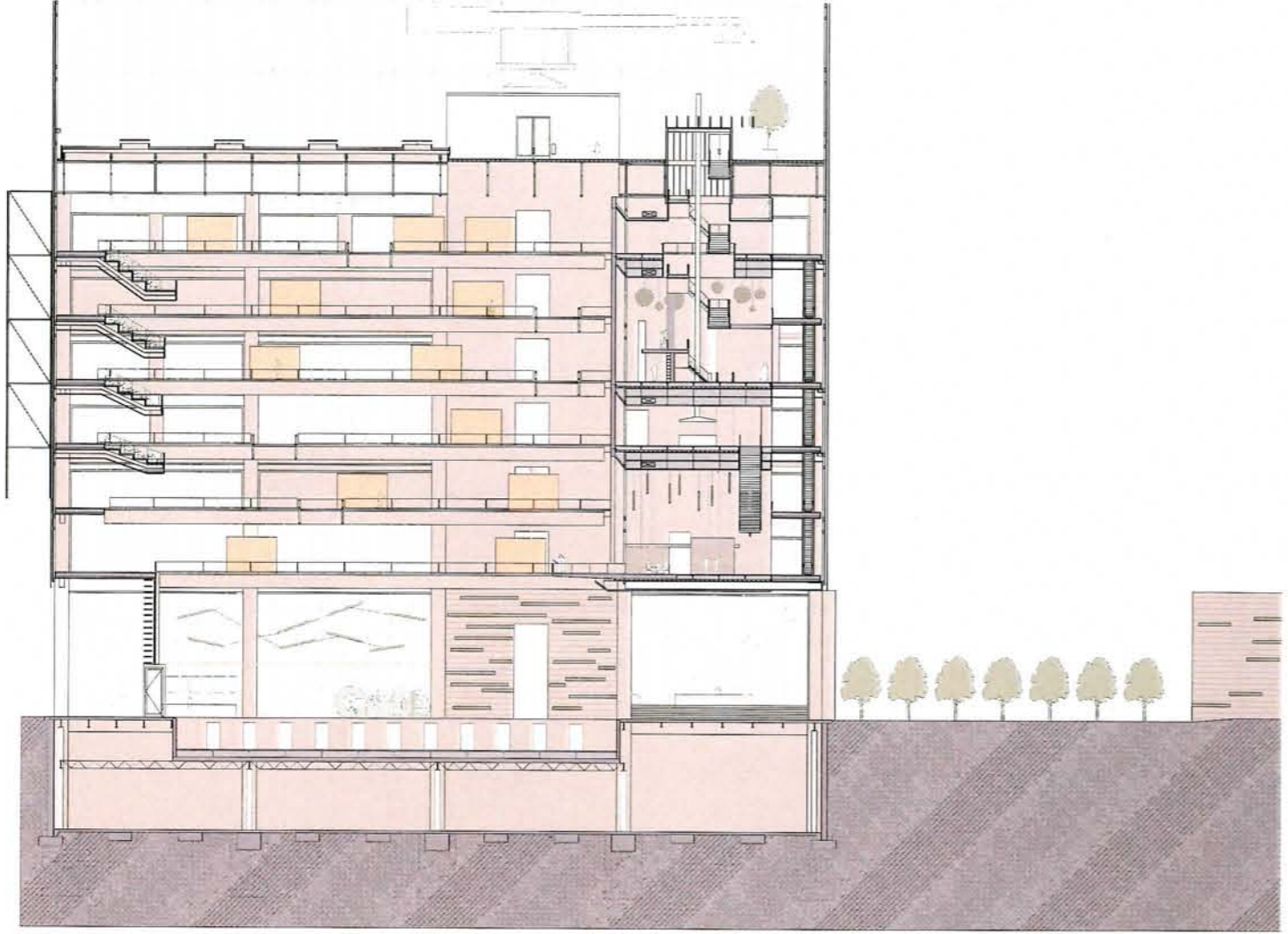
SITE PLAN 64TH SCALE



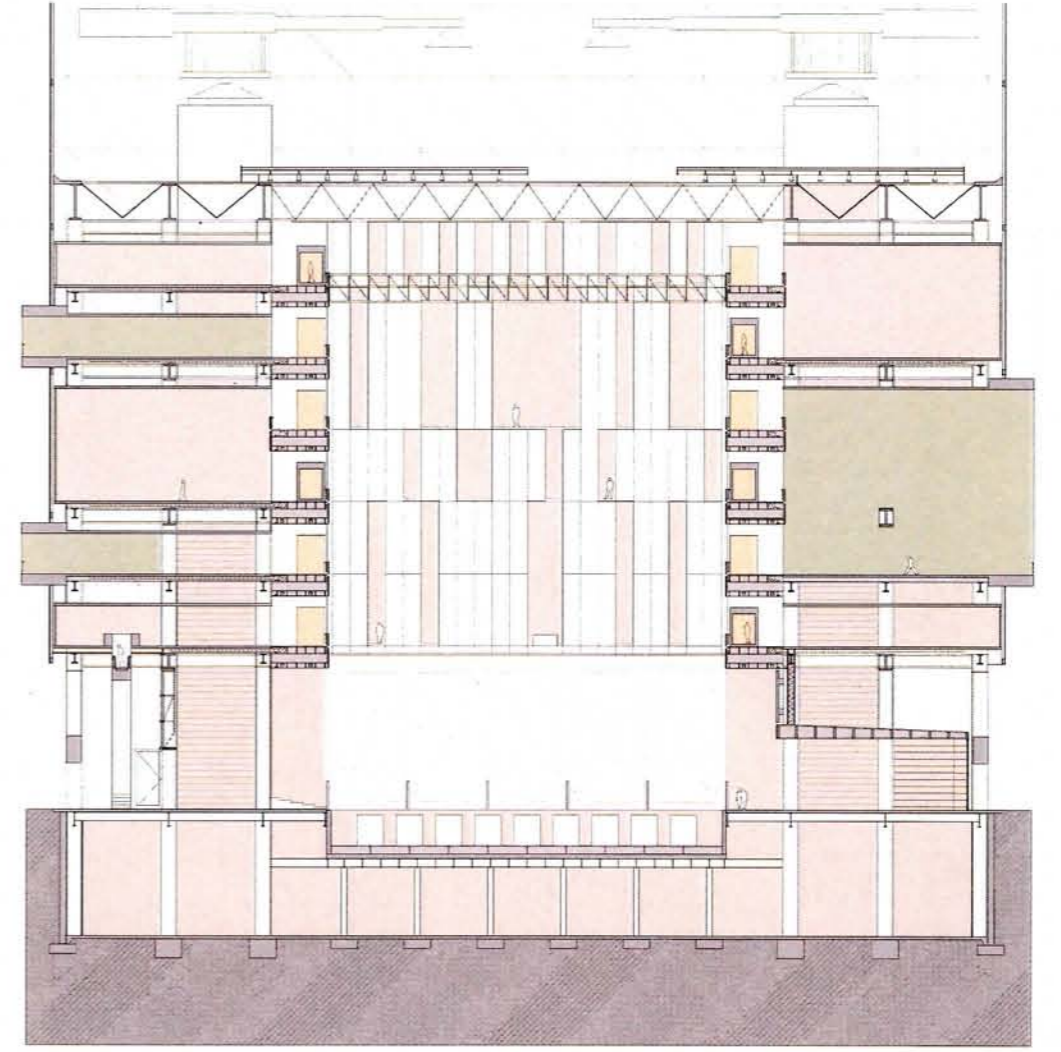
GROUND FLOOR PLAN 16TH SCALE





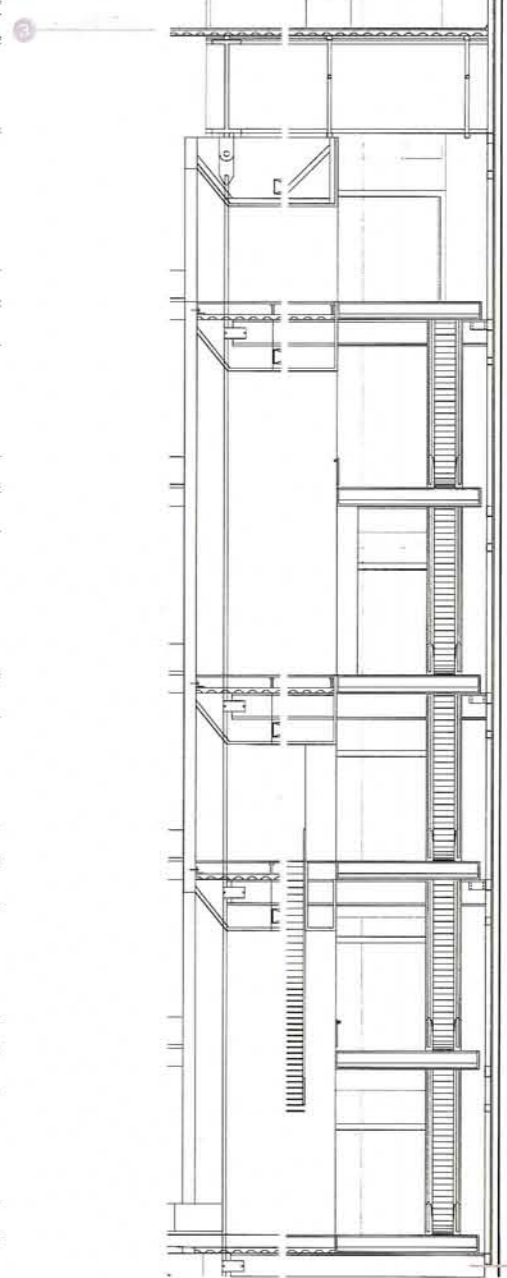
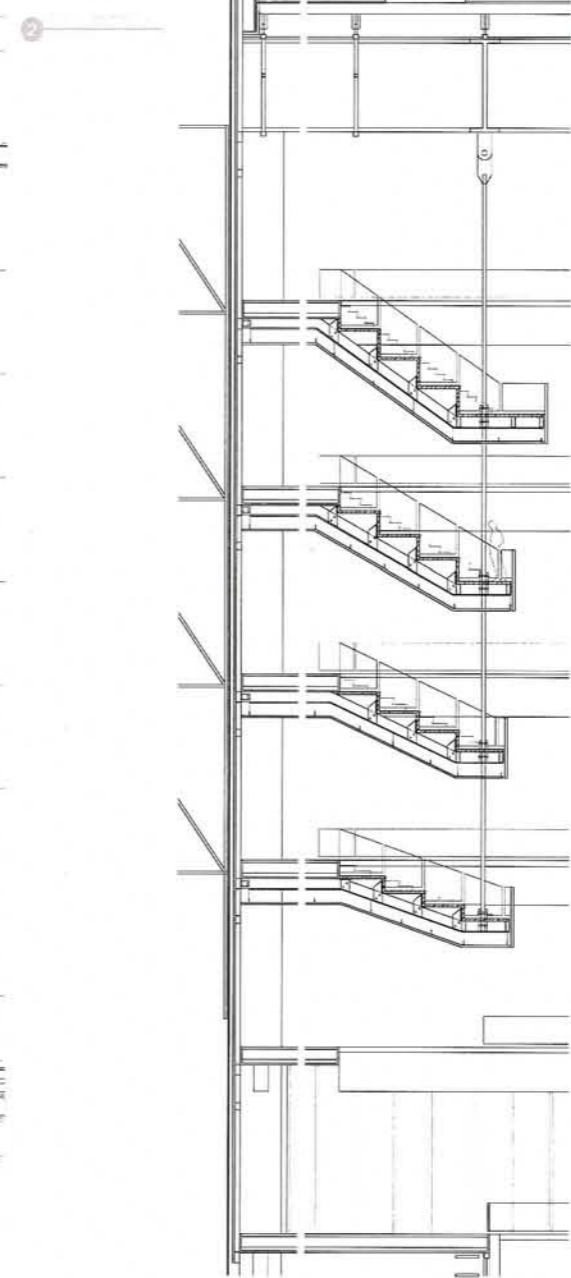
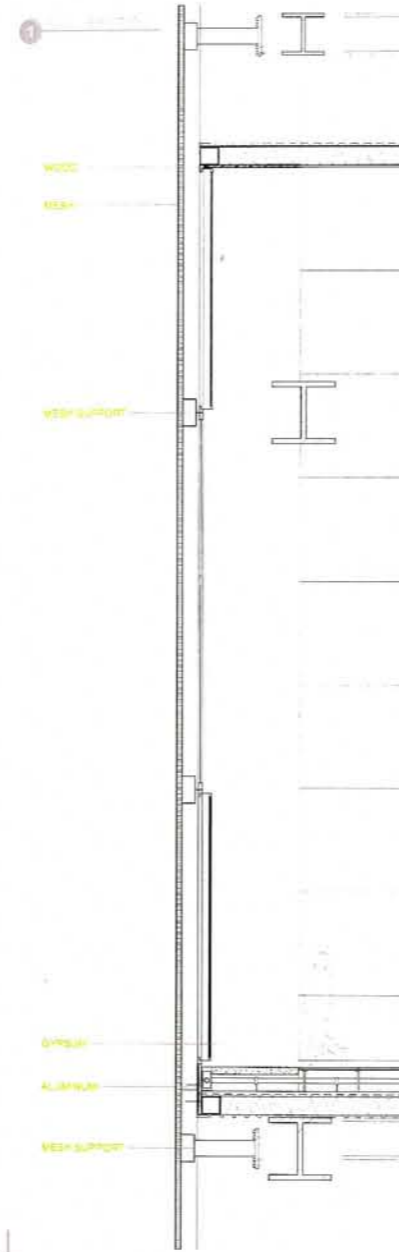
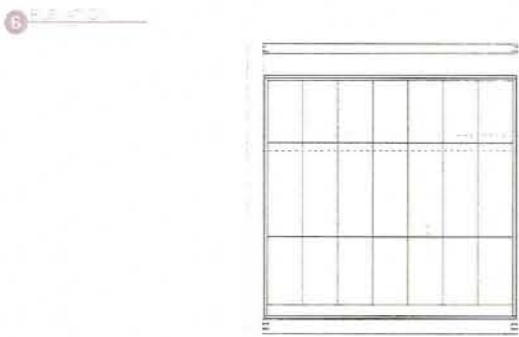
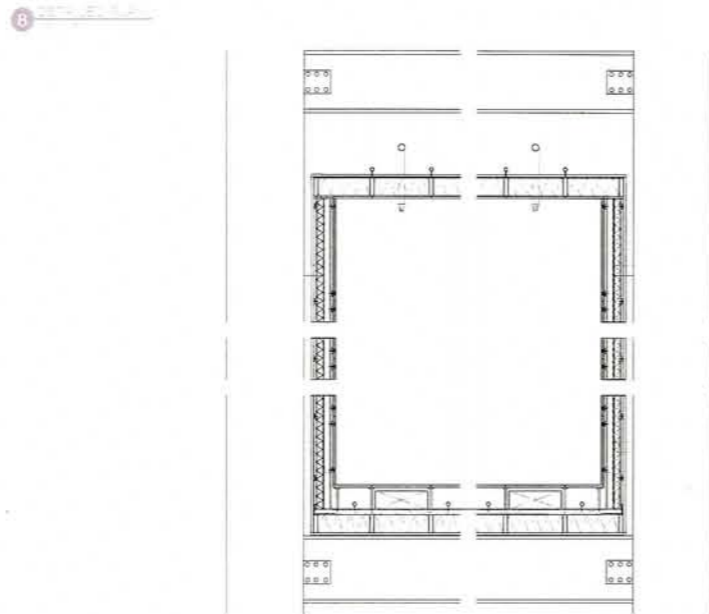
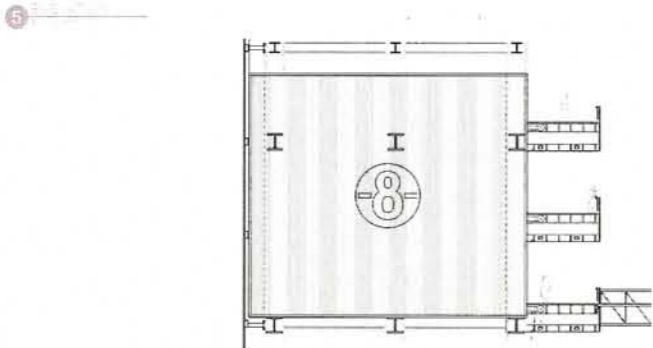
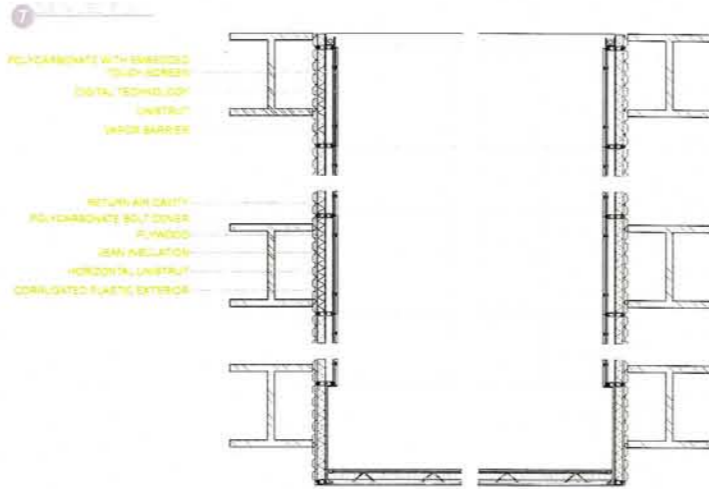
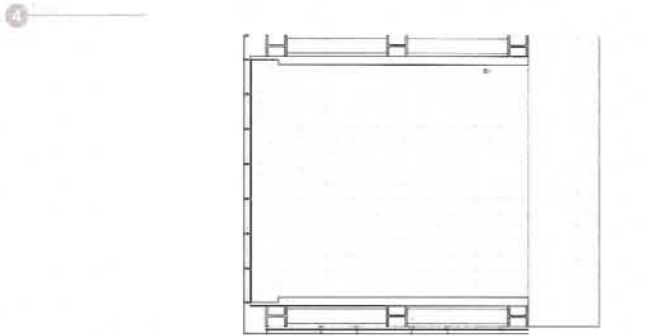


SECTION A

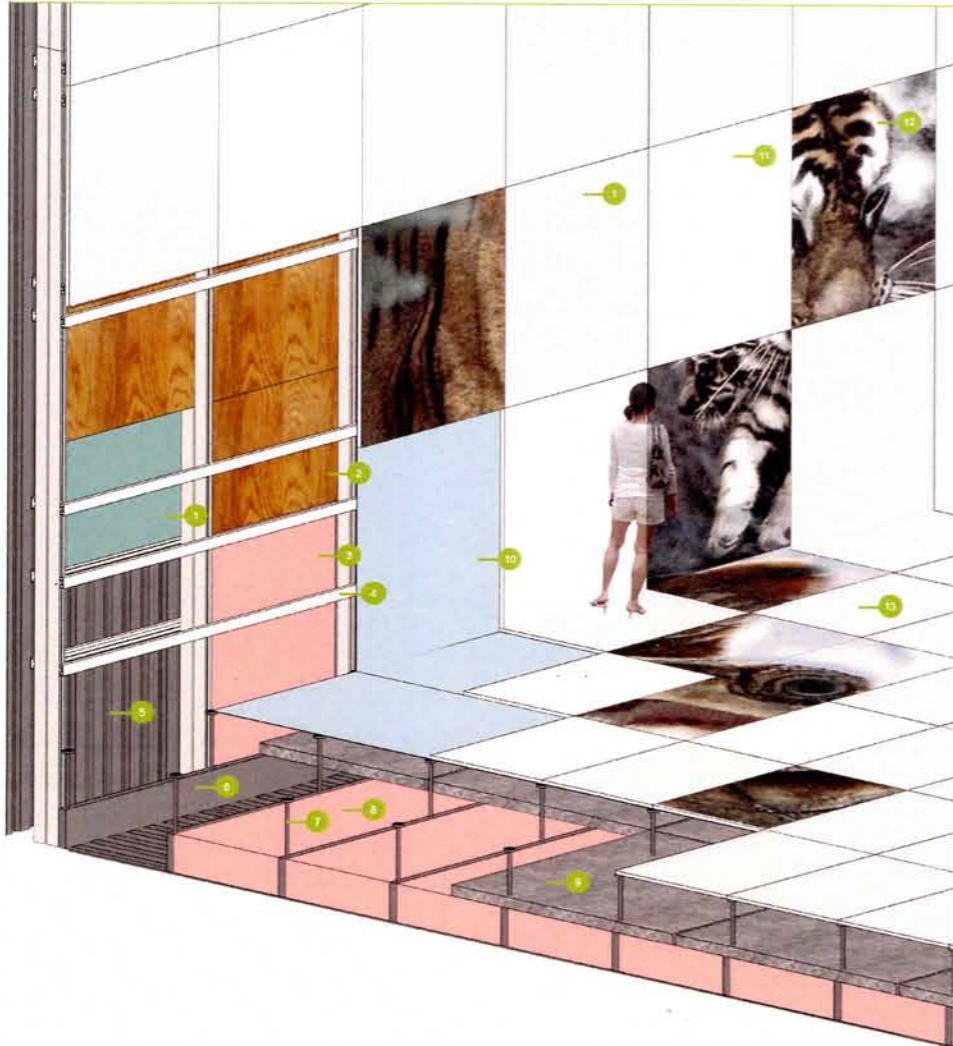


SECTION B







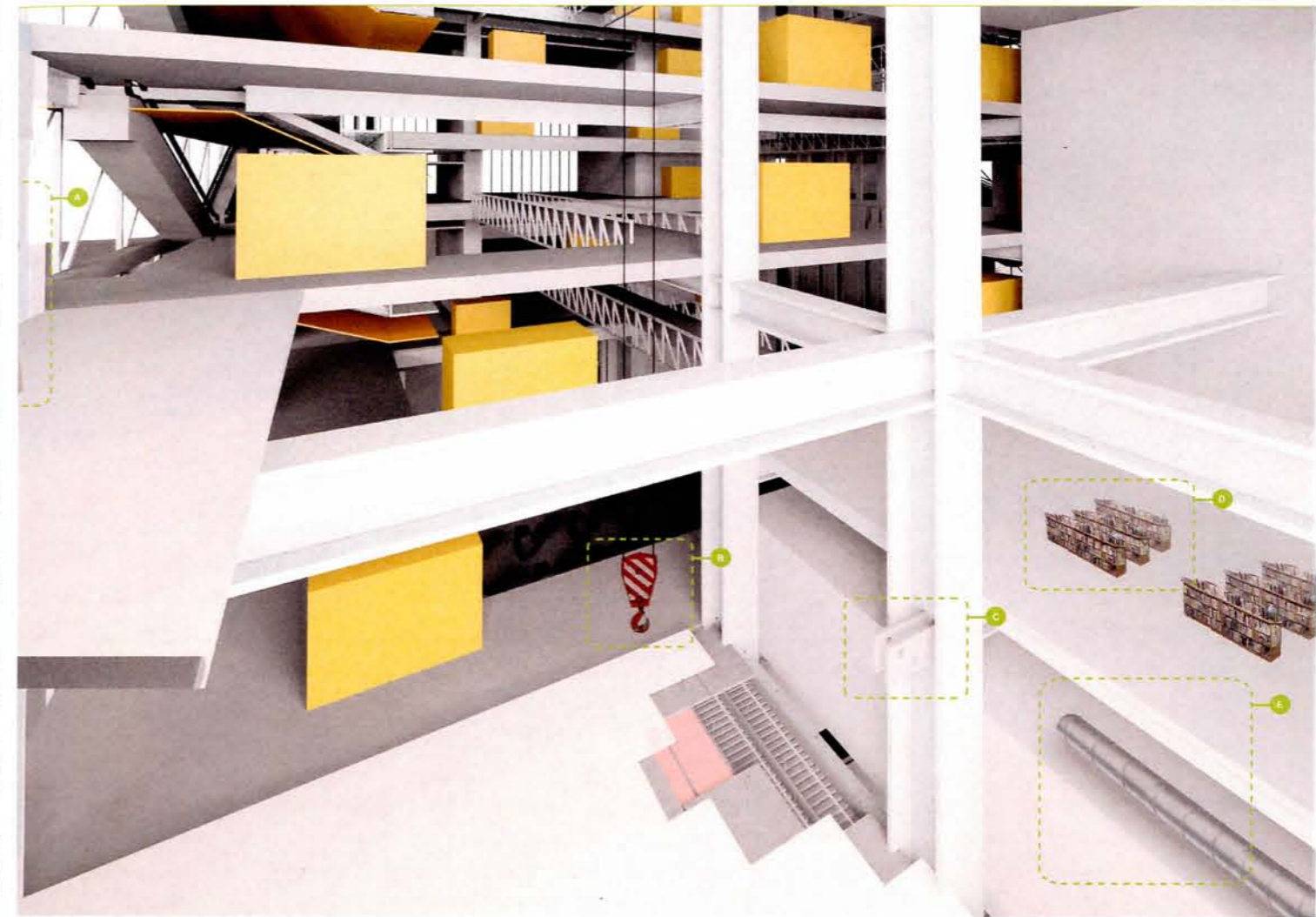


- 1 WOODCORE BARRIER
- 2 PLY WOOD
- 3 INSULATION
- 4 JOIST
- 5 CORRUGATED STEEL
- 6 STEEL JOIST
- 7 RAISED ACCESS FLOOR SYSTEM
- 8 INSULATION
- 9 PRECAST CONCRETE PANEL
- 10 PRECAST CONCRETE PANEL
- 11 EMBEDDED TECHNOLOGY
- 12 GYPSUM WALL BOARD
- 13 INTERACTIVE WALL SYSTEM
- 14 INTERACTIVE FLOOR SYSTEM



- 9 SMALL SCALE CHANGEABILITY
- CHANGEABILITY ON THE SMALL SCALE OF THE USER, THE LIBRARIAN CAN ADAPT THE SPACE HOWEVER THEY LIKE WITH RELATIVE EASE. THE SCALE OF CHANGEABILITY CAN TAKE PLACE ON A DAILY BASIS.
- 10 BUILDING FRAME
- LARGE SCALE CHANGEABILITY THE FLOORS ARE DESIGNED TO BE EASILY MOVED UP AND

AGILE ASSEMBLY



- DOWN HOWEVER CONSTRUCTION CREW SHOULD FACILITATE THE SCALE OF CHANGEABILITY TAKES PLACE SEVERAL TIMES THROUGHOUT THE YEAR TO KEEP UP WITH PROGRAMATIC DEMANDS.
- C W/BEAM SUPPORT
- PERFORATED SUPPORT ALLOWS BEAMS TO BE EASILY ADJUSTED AND SECURED IN THE FUTURE.
- D BOOK SHELVES
- BOOK SHELVES ARE SHOWN IN SITUATION TO THE DIGITAL LIBRARY ASSEMBLY TO SHOW TRANSITION FROM PAPER LIBRARY TO DIGITAL LIBRARY.
- E HANG
- HANG AND OTHER SYSTEMS PLACED IN CAVITY BETWEEN CHAT ROOMS. E FLEXIBILITY ALLOWS FOR EASY ACCESSIBILITY SHOULD SYSTEMS NEED MAINTENANCE OR NEED TO BE CHANGED.

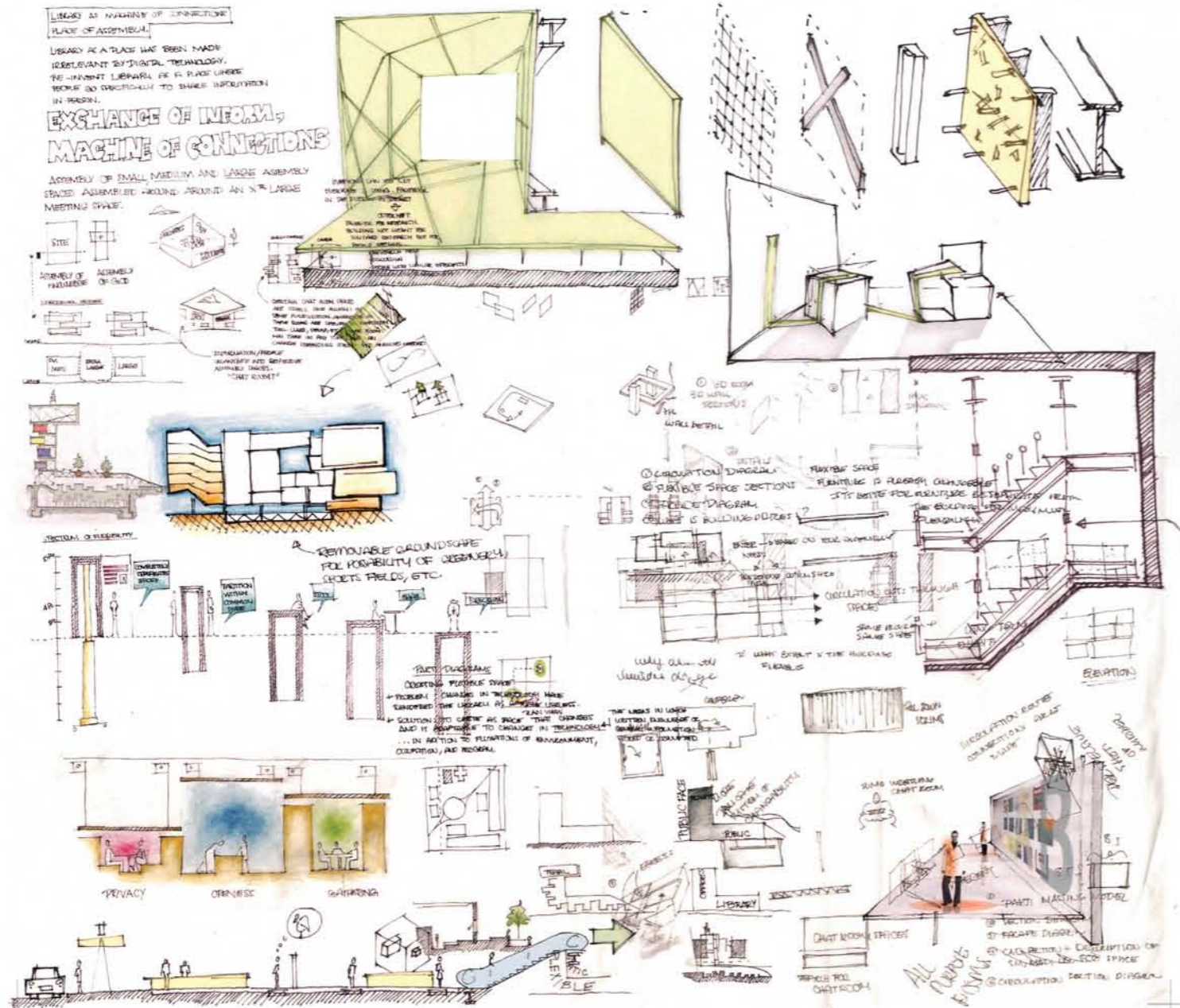


LIBRARY AS MACHINERY OF CONNECTION  
PLACE OF ASSEMBLY

LIBRARY AS A PLACE HAS BEEN MADE  
IRRELEVANT BY DIGITAL TECHNOLOGY.  
THE LIBRARY LIBRARY AS A PLACE WHERE  
PEOPLE GO TOGETHER TO SHARE INFORMATION  
IN PERSON.

EXCHANGE OF INFORM.,  
MACHINE OF CONNECTIONS

ASSEMBLY OF SMALL MEDIUM AND LARGE ASSEMBLY  
SPACES ASSEMBLED AROUND A LARGE  
MEETING SPACE.



## GLOSSARY OF TERMS

**Building Occupancy** Number or type of people utilizing the building

**Environment** Natural outdoors environment, weather

**Program** The function of the building or the function of individual spaces within the building.

**Technology** Any form of instrument ranging from books, to computers, to HVAC systems.

**Semi-virtual Library** General term meaning that the library is experienced partly through technological means and partly through sensual interaction.

### Works Cited

Noam, Eli. "Electronics and the Decline of Books: The Transformation of the classroom." 79-80. Print.

Pettifor, Philip. "The Decline of the Public Library." Spiked. 2 Sept. 2005. Web. 22 Sept. 2009.

Bloch, Howard, and Carla Hesse. Future Libraries. Los Angeles: University of California, 1993. Print.

Books, libraries, and electronics essays on the future of written communication. White Plains, N.Y: Knowledge Industry Publications, 1982. Print.

Crawford, Walt. Future libraries dreams, madness & reality. Chicago: American Library Association, 1995. Print.

Heynen, Hilde. "Petrifying memories: architecture and the construction on identity." Journal of Architecture: 369-90. Print.

"Images of Stonehenge, Stonehenge, England, c. 3100-1550 BCE. Digital Imaging Project: Art historical images of European and North American architecture and sculpture from classical Greek to Post-modern. Scanned from slides taken on site by Mary Ann Sullivan, Bluffton College." Bluffton University. Web. 14 Dec. 2009. <<http://www.bluffton.edu/~sullivanm/stonehenge/stonehenge.html>>.

Joseph, Carreiro. Building blocks : design potentials and constraints. Ithaca: Cornell Universoty, 1971. Print.

Kohlhoff, James T. "The workplace of the future: Managing through change." Journal of Property Management (1994): 30-33. Print.

Raeburn, Michael. Architecture of the Western world. New York: Rizzoli, 1980. Print.

Unified design. Chichester, Eng: John Wiley & Sons, 2008. Print.

Virtual library visions and realities. Westport, CT: Meckler, 1993. Print.

Wolf, Alisa. "Flexible Spaces." NFPA Journal 94.2 (2000): 48-53. Print.

\*

Image obtained from <http://libwww.freelibrary.org/75th/history.htm?page=his>