Fall 2003

A Structure Defining Movement: Mediating Between the Past & Present

Laura Klock

A STRUCTURE DEFINING MOVEMENT:

MEDIATING BETWEEN THE PAST & PRESENT

The Erie Canal Aqueduct Rochester, NY

Re-Forming the Identity of a Historic Urban Artifact

Laura Klock Fall 2003
Committee:
R. Korman and N. Robertson

Structuring the movement through space, and thus the temporal experience of that place, can serve as a mnemonic device for the recollection of the past and the reinterpretation of a site's identity as a composite of the past and present.

Human experiences are inherently linked to the context of the place and time in which they occur. Likewise, time is an essential element of place, whether it is the duration of time experienced in that place, or the markings of a past time present as physical form, recorded history, or memory. Because the various modes of time are simultaneously linked to a place, the past and present are coexistent and simultaneously influential. The present is dependant on the past, and the past is reinterpreted in the present context. Given a site that has markings of the past hidden and forgotten in the present context, the intervention of a contemporary project can re-form the place and create a space for the reconciliation of the past and present. A museum is a common venue for the representation of the past, but to actively integrate the past and present through collective experiences, the museum needs to act as a dynamic, rather than static interface. Structuring the movement through space, and thus the temporal experience of that place, can serve as a mnemonic device for the recollection of the past and the reinterpretation of a site's identity as a composite of the past and present. The formal elements associated with movement across space, such as boundary, transition, path (sequence or lack thereof), and place (node), influence the experiences and memories formed in that space. Through the juxtaposition as well as integration of objects and events that reflect time, a sense of place can be formed that is at once contemporary and ingrained with its history.

ABSTRACT

The value of a context is its presence as an enriched field of potential themes. – Val Warke

The identity of a place is defined by the physical and historical conditions of its site as well as the cultural and individual perceptions associated with that context. When the idea of a contextualized architecture is explored, one must recognize both the limitations of considering the historic context, and the possibilities for a rediscovered and redefined identity. Within a city, a site's identity shifts over time based on changing uses, physical alterations, and altered perceptions. Therefore, the context of the past is seen through the filter of the present. Likewise, the present identity of a place is affected when the past is acknowledged in memory and physical form. Val Warke explains that "no word, no form is neutral; all words are inhabited by some other's voice from the past" (12). The non-tangible aspects of a place, both historic and current, provide a setting for the interpretation of physical form. History can thus be considered a dynamic element actively contributing to the context of a place, rather than a static condition of the past. A contextualized architecture reinterprets the history of an existing condition by serving as a filter, and thus creating a new identity rooted in the past, marking the present, and evolving in the future.

I propose to adoptively reuse a historic artifact in the City of Rochester to create a presence in the city of a currently unrecognized and forgotten past. By reforming the site with a contemporary program, the past can be recaptured and reinterpreted. The Erie Canal aqueduct, built over the Genesee River in 1842, is indicative of the industrial past of the Rochester because it was a crucial infrastructural element in the early industrial city. In 1920 however, the aqueduct was closed when the canal moved out of the city. Left with a ditch running through the center of the city, Rochester transformed the canal into a subway bed. A concrete superstructure was built on top of the existing aqueduct to contain the subway and create a vehicular bridge. The subway was subsequently abandoned in1956 when the need for a massive freeway system, linking Rochester to outlying areas, gained priority. A bridge without movement lacks function so I propose to reintroduce movement to the aqueduct. The bridge will once again become part of the infrastructural network of the city, but it will be reformed to contain a pedestrian path with places for public gathering. In addition to the formation of public space, I will design a transportation museum and cultural center for the aqueduct and adjacent building site.

For representations of history to be relevant to the public that views them, they need to be connected to contemporary life through use, interaction, and significant interpretations. I propose that the museum is more than a container for artifacts, but is an active cultural center with places for social interaction and individual reflection. The museum can be an interactive 'object' that serves as a bridge between history, memory, and contemporary life. It is a museum that presents rather than represents by providing a space for discovery and interpretation rather than displaying inert artifacts. Personal and collective memories are either recalled or newly formed from

the observed interaction of the past and present. Through the exhibits, the formal and material conditions of space, and the eperiential aspects of place, the museum can simultaneously present the historic and the contemporary.

I propose to create an 'open' museum so that access to and understanding of history is not limited to museum visitors, but is considered part of the public realm. The interveaving and overlapping of public and 'private' paths can blur the boundary between what is considered public space and what is seen as belonging to the institution of the musuem. This allows the context of history to inform the city and its social identity. A museum on the history of transportation is broad enough to expose people to a history that goes beyond the specific site, but since the site is pertinent to the transportation history of Rochester, it allows an identity of the place to be inseparable from its context. To connect the museum to the public realm, and bring the current transportation conditions into the museum, the public pedestrian path in the bridge will be intermixed with the museum sequence while a bus stop will link the building to the vehicular infrastructure of the city. Considering that the nature of the museum, as well as the site, is defined by movement, this project will explore the experiential conditions of a museum as it relates to the movement through the building and exhibits.

The language of the past, set in contrast to the present, and interpreted in the current cultural situation, will be the basis for giving a forgotten place a new presence in the city. The way in which people move through space, and the events that occur on that path can form the way that people understand a space, and the essence of a place. Encounters with distinct places and vistas, as well as the transitions, boundaries, and thresholds in an architectural procession can serve as the vehicle for introducing a new, or recalled context. One method for reforming the identity of the site will be the use of materials that reference industry and infrastructure, revealed through juxtapositions with new construction. Historically serving as both a source of power and a means of transportation, water is one element that can be reintroduced to the site. Furthermore, the stone foundation of an old flourmill which sits adjacent to the aqueduct can be represented as an industrial ruin. These foundations represent the essence of early Rochester as a booming mill town which drew on the resources of the Genesee River and the shipping opportunities of the Erie Canal. Stone, water, and steel (associated with the trolley) are materials that can be used in either a historic or contemporary language.

The site and program draw on a rich history, which will serve as a framework through which to explore a dynamic contextualism and temporal experiences. It is not simply a return to the past, but rather an interpretive recognition of context drawing on the interface between historic artifacts and contemporary form. The identity of a place emerges from a recollection of the past and a decoding in the present so that identity is re-formed, rather than simply reproduced.

1. Site Statement
2. Site Location
3. Historic Timeline
4. Tracing of the Historic Erie Canal
5. Tracing of the Subway Line
6. Sectional History
7. Speed Diagrams
8. Existing Conditions
9. Pictorial Site Description
10. City Analysis
11. Views Approaching Site

Rochester developed along the banks of the Genesee River since the potential for waterpower was quickly recognized and exploited. Rochester already had a thriving mill industry before the Erie Canal came into the city. However, after the Erie Canal was built and provided a quick means of transportation across the state, Rochester became one of the fastest growing cities of its time. The Erie Canal aqueduct, which carried the canal across the Genesee River, is indicative of the engineering marvels of the canal. It is one of the most recognizable elements of the canal still in existence. The canal was used from 1823 until 1920 when it was moved south of the city and converted into the Barge Canal. The abandoned canal left a gap running though the city that needed to be resolved. Given the continuing growth of Rochester as an industrial city, the proposal to convert the canal bed into a subway and vehicular street was well received. The trolley system ran through and under the streets of Rochester until it was abruptly abandoned in 1956 with the decision to build a superhighway connecting the city to outlying areas. Subsequently, the bridge was used intermittently by the Rochester Democrat and Chronicle newspaper as access to a loading dock further down the tunnel, but that too has closed. The structure of the bridge, aside from repairs has maintained its original from. The aqueduct today still serves as the Broad Street Bridge, but passers-by have no sense of the history that lies beneath the pavement.

The aqueduct sits in the heart of downtown Rochester. It is framed by important cultural buildings. To the west sits the Blue Cross Arena and historic Lawyer's Co-op Publishing house and to the east sits the Rochester Public Library and Riverside Convention Center. The library was built at the same time as the subway superstructure and actually rests above the trolley tracks and an underground cooling pool. Water for the cooling pool is fed by a millrace originally diverted from the Genesee to feed the Ely flourmill with waterpower. The race flows underneath the original floor of the aqueduct and into the basement of the mill still existing between the Convention Center and the aqueduct. A Rochester Gas & Electric substation currently sits on top of the foundations of the old mill but is being overtaken by a larger power plant down the river. The overlapping conditions of the Genesee River, the millrace, and the abandoned canal bed provides an interesting condition through which to reveal the importance of water to both the industrial and infrastructural histories.

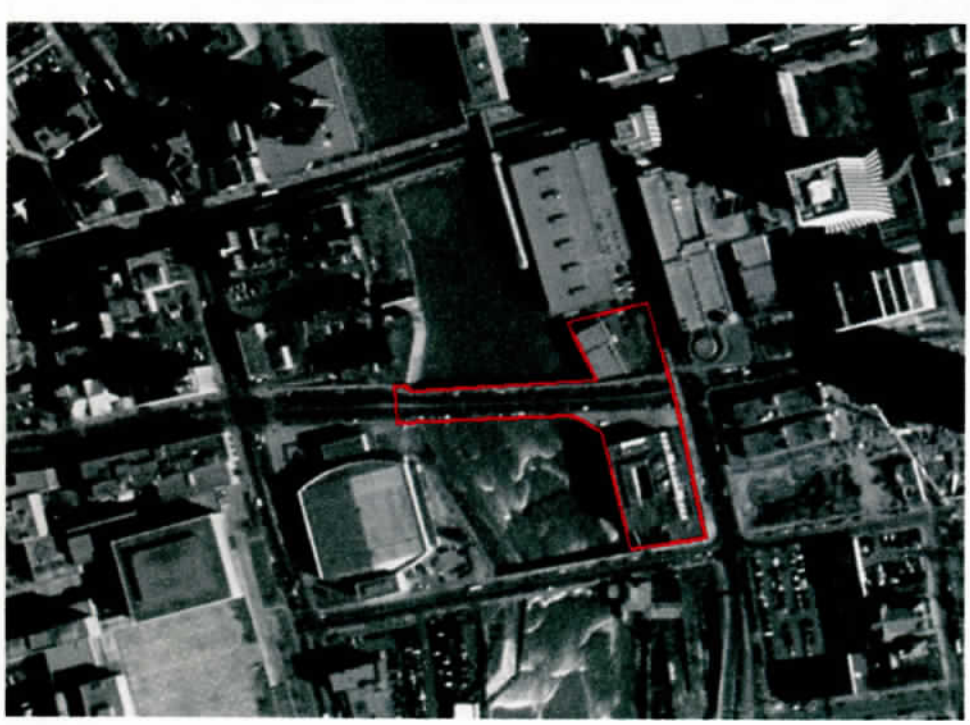
I propose an intervention into the existing structure of the aqueduct and subway addition, as well as a building on the site adjacent to the aqueduct which will integrate the mill building foundations. These historical artifacts provide a context through which to explore how the built form can recall history. It will be a study of a contextualism that draws on a historical as well as contemporary language since "a history is, of course, only one contextualizing operation; one utterance generated in a present" (Warke, 13).

The site at street level

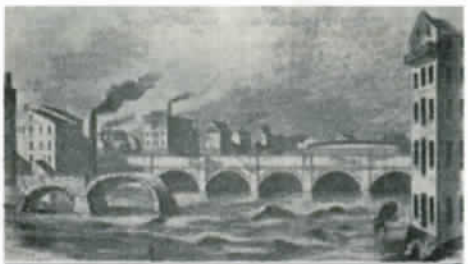
The actual building site, located on the northeast corner of Broad Street, will be the main place where the museum can have a visual presence in the city. This is also where the foundations of the old Ely flourmill sit. The other possible 'sites' will be used for public access to the subterranean pedestrian path. They will appear as pavilions, expressing the space that is below the street.

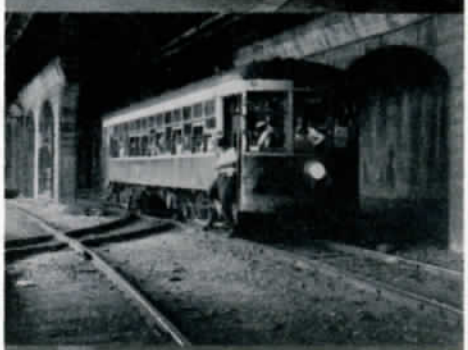
The space below street level

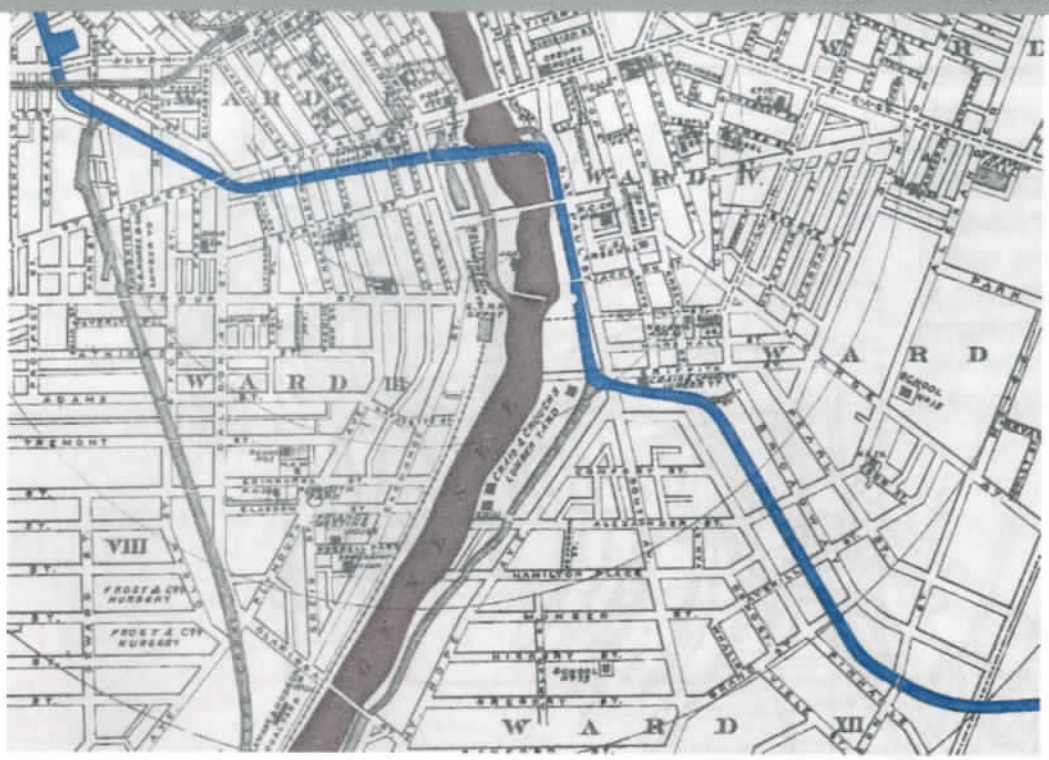
The bed of the old Erie canal, which was carried across the Genesee River by the aqueduct, sits well below the current street level. The proposed site includes the aqueduct as well as the space where the canal turned to follow the edge of the river. The structure for the subway follows the same curve of the canal, but a large space is enclosed under the Rundel Library to hold a cooling pool. This pool is what remains of the race that once fed the Ely Mill. Natural light comes into this space through openings under the library



1780's	Flour and lumber mills develop along the Genesee River
1812	Rochesterville becomes a permanent settlement
1817	Construction of the Erie Canal begins
1823-1823	The first Erie Canal Aqueduct is built to cross the Genesee River.
1825	Erie Canal opens state-wide
1834	City of Rochester chartered
1837-1842	The second Erie Canal Aqueduct is built to replace the deteriorating and inefficient first aqueduct.
1880-1940	Rochester experiences rapid growth in population, physical size, economic successes, and cultural achievement.
1890's	Debates arise about enlarging and rerouting the Erie Canal
1920	Enlarged canal (the Barge Canal) opens south of the city; The canal through Rochester and across the aqueduct is abandoned.
1922-1924	Concrete superstructure constructed on top of aqueduct to house a subway system along the old canal ditch. The superstructure is paved over for the vehicular Broad Street Bridge.
1923-1936	Rundel Library is constructed above the subway.
1940's	The subway experiences a boom in use during the war time limitations on automobile use
1956	The subway system is abandoned in favor of building an expressway connecting Rochester to the outlying areas
1972	Road surface of Broad Street Bridge is reconstructed out of a precast, prestressed concrete slab and the limestone superstructure is repaired. The original aqueduct structure remains in good condition.
1976	Broad Street Aqueduct is added to the National Register of Historic Places

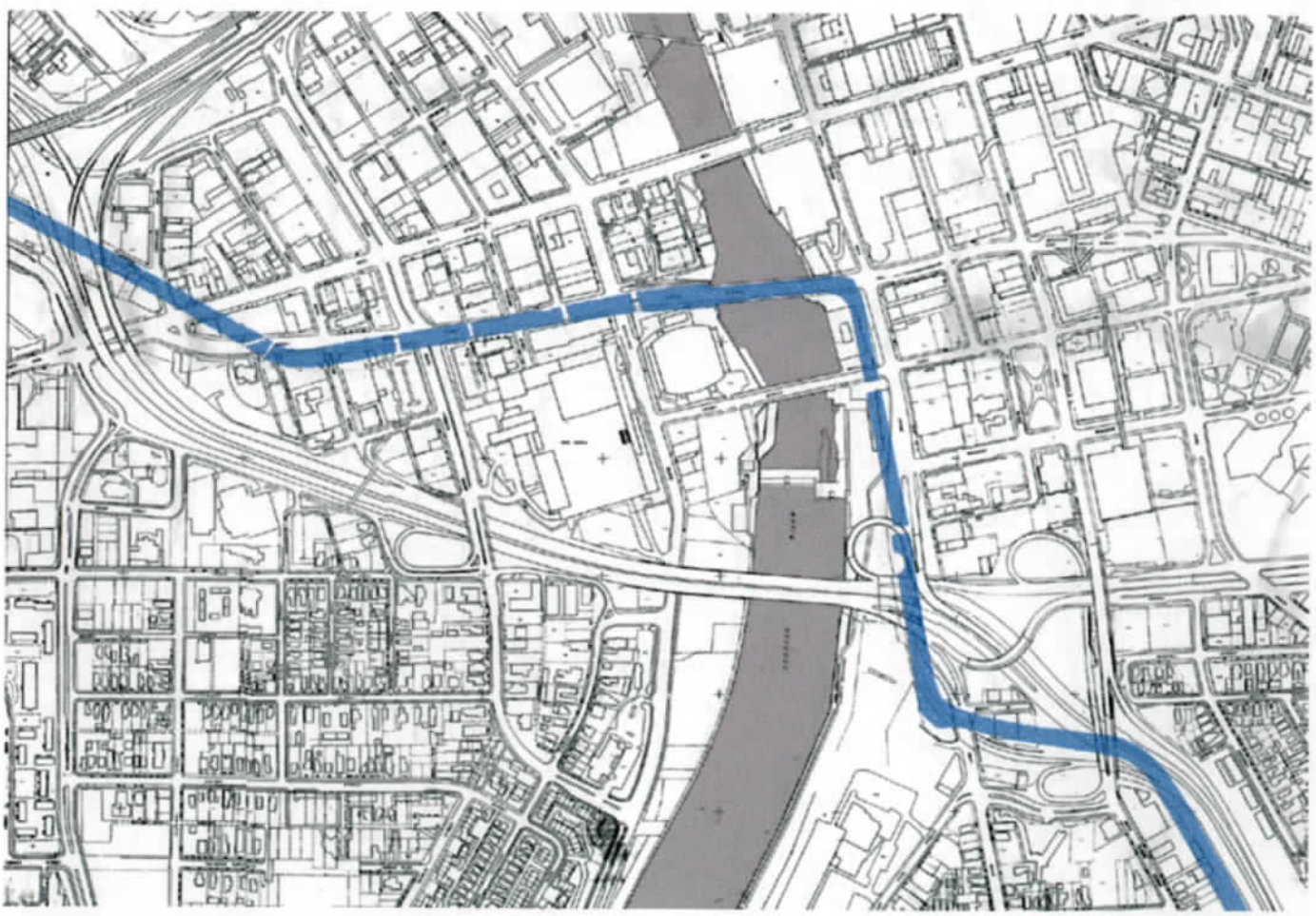






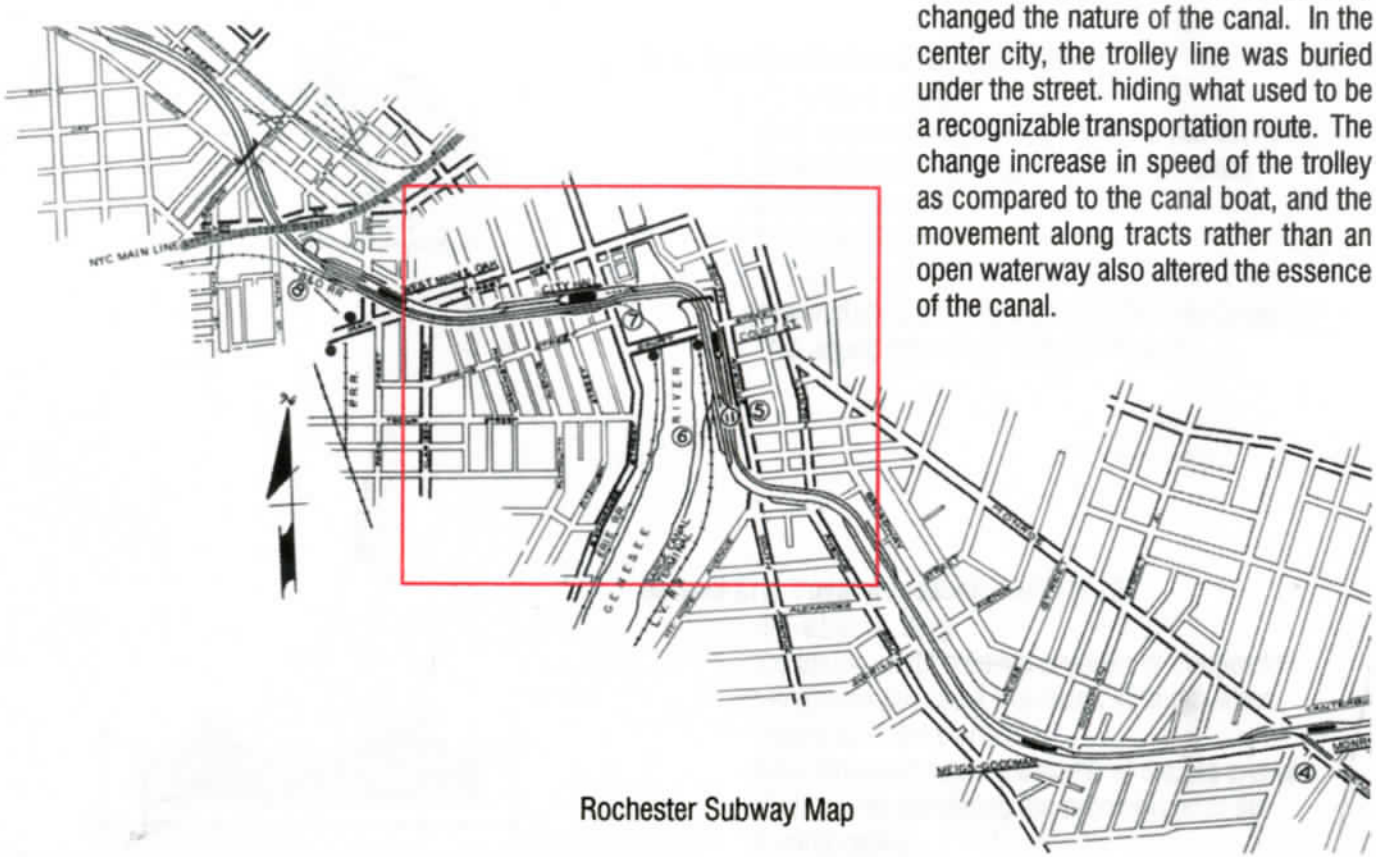
Location of the Erie Canal on a historic map

The presence of the Erie Canal is almost lost in the city today. The canal ditch has been covered over, filled in, and built on. The aqueduct is one of the only remnants of the canal left in Rochester. The aquduct is however one of the greatest engineering marvels of the Canal's history.

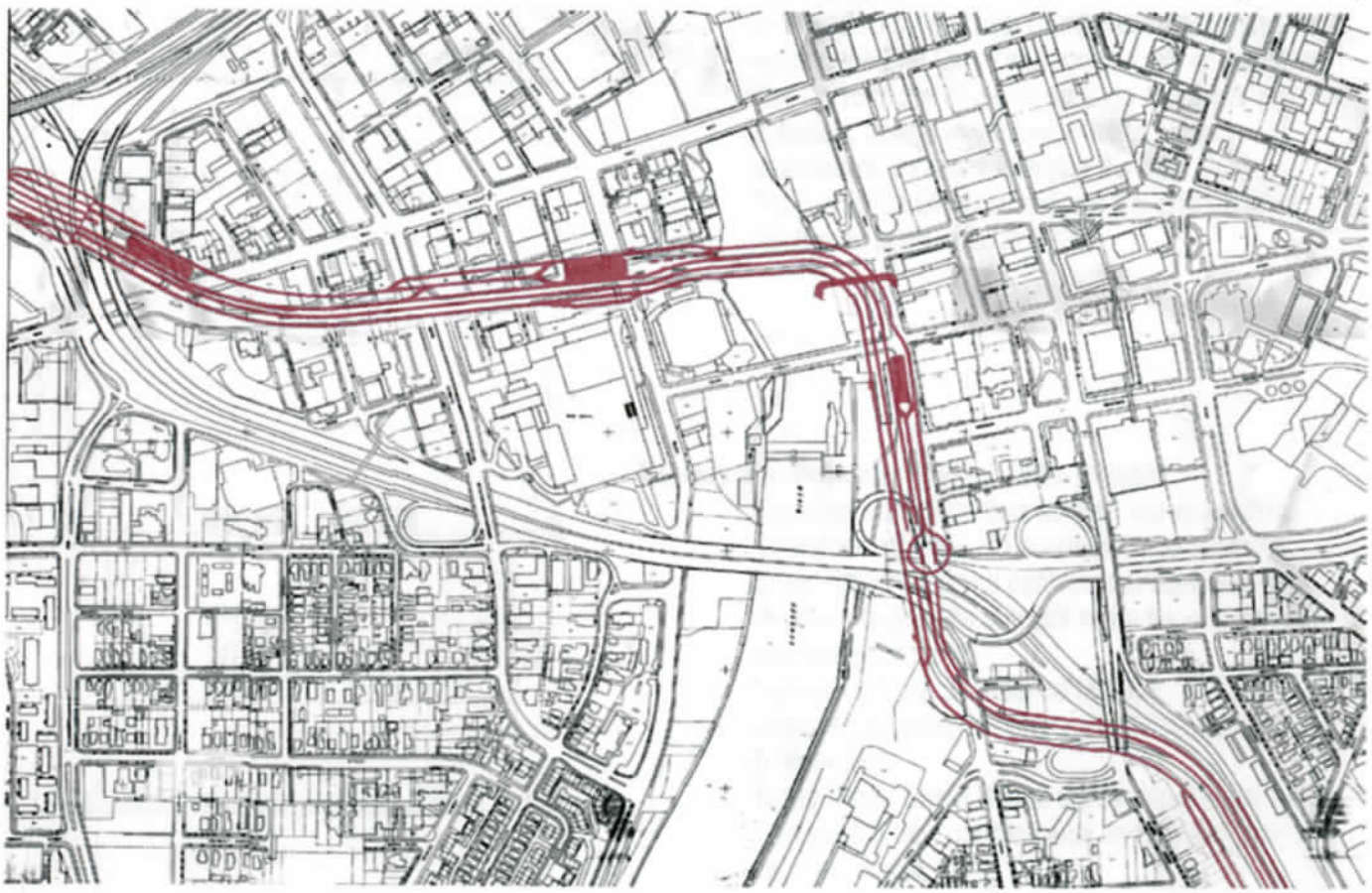


The imprint of the Erie Canal in Rochester today

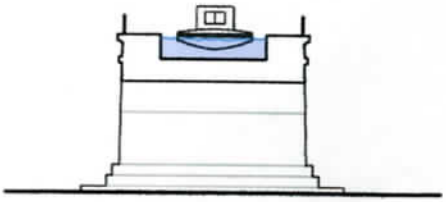
The subway followed the same path of the Erie Canal, but the it dramatically changed the nature of the canal. In the center city, the trolley line was buried under the street. hiding what used to be a recognizable transportation route. The change increase in speed of the trolley as compared to the canal boat, and the movement along tracts rather than an open waterway also altered the essence of the canal.



Rochester Subway Map

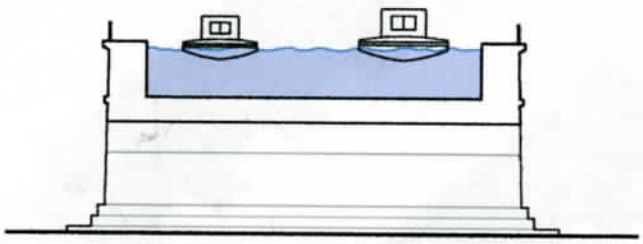


Imprint of the subway in the city today



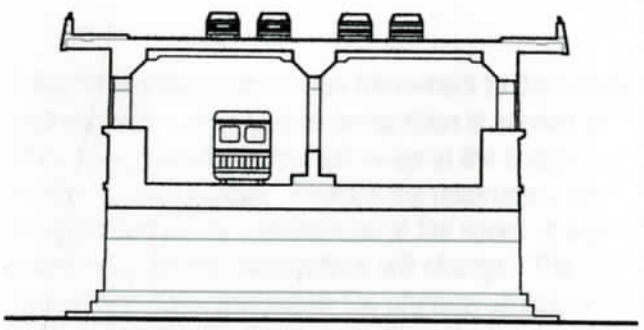
First Erie Canal Aqueduct: 1823-1842

-17' wide, 4' deep
- Only one-way traffic possible in the narrow width
- Sandstone structure quickly decayed when exposed to water
- Sharp right turn on the east side
- In 1838 the Canal Commission decided to set a new standard dimensions for the Erie Canal. This aqueduct proved to be inefficient



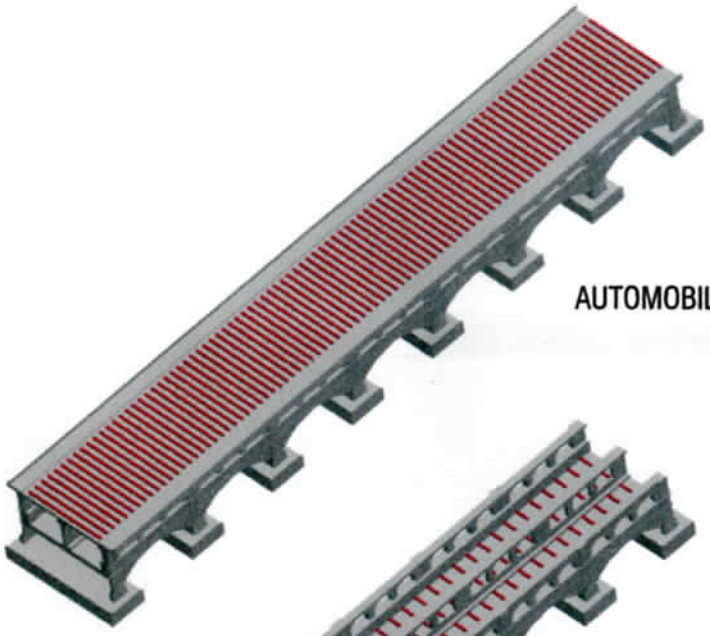
Second Erie Canal Aqueduct: 1842-1920

- 45' wide, 7' deep
- Expanded width relieves problem of congestion
- Limestone structure maintains strength when exposed to the elements
- New structure set to the south of the old and at slight angle, alleviating the problems with the turning radius
- In the 1890's the Canal Commission proposes to expand the Erie Canal and move it out of the cities. The Canal in the city was causing problems of pollution, delays in vehicular traffic, and unwelcome travelers invading the city.
- The Barge Canal is formed and the Erie Canal in Rochester is dried up in 1920

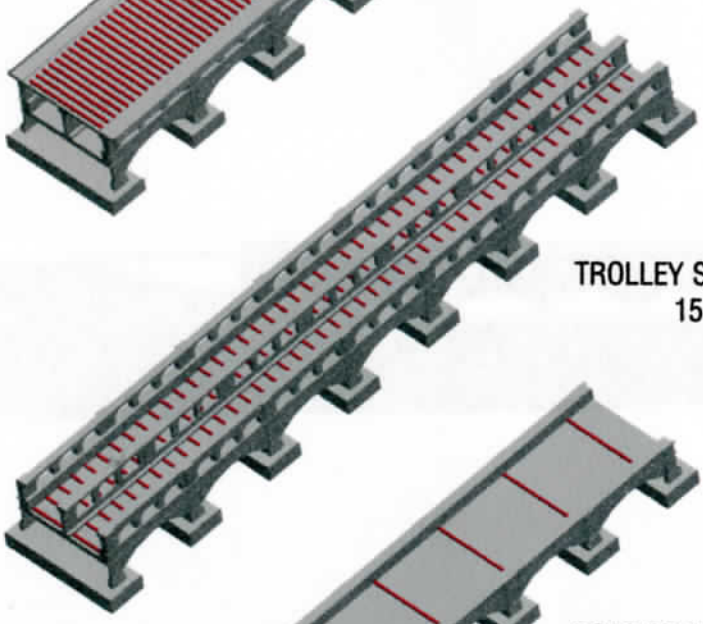


Subway and Vehicular Bridge: 1923-present

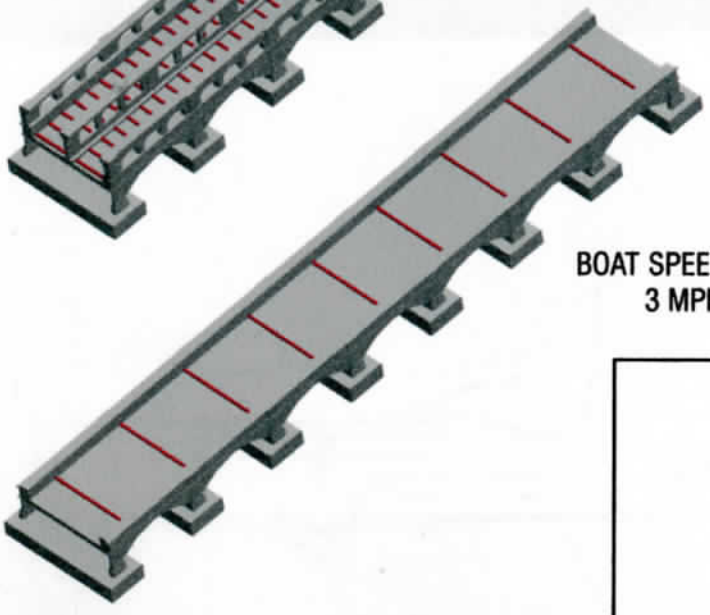
- Concrete superstructure built on top of existing limestone aqueduct to house subway system.
- Broad Street roadway cantilevered past aqueduct structure to provide efficient room for pedestrian and vehicular traffic.
- Subway system abandoned in 1956
- Concrete roadway is replaced in 1972 due to deterioration
- Today Broad Street Bridge serves as a major traffic route in the city, but the canal and subway bed remain vacant



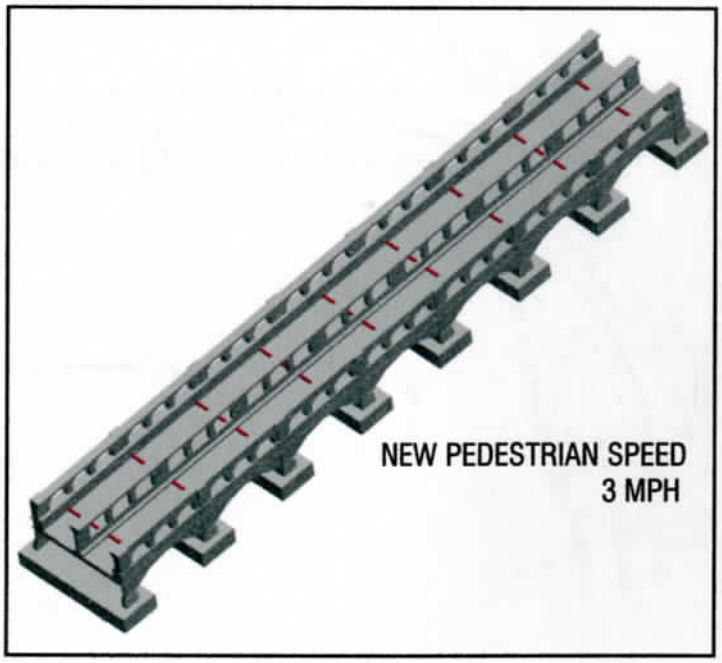
AUTOMOBILE SPEED
30 MPH



TROLLEY SPEED
15 MPH

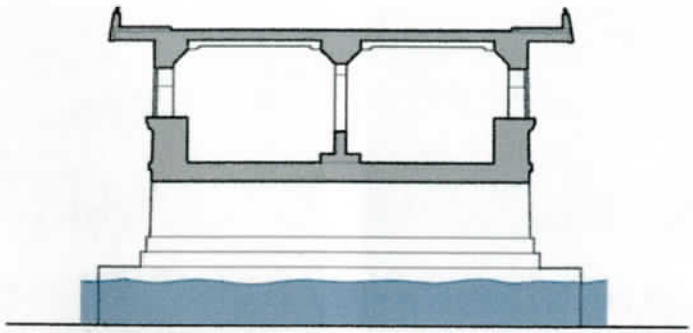


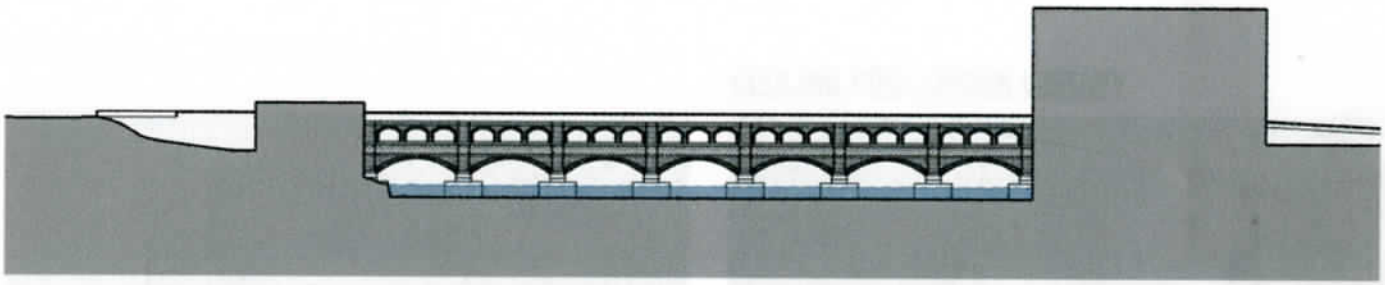
BOAT SPEED
3 MPH

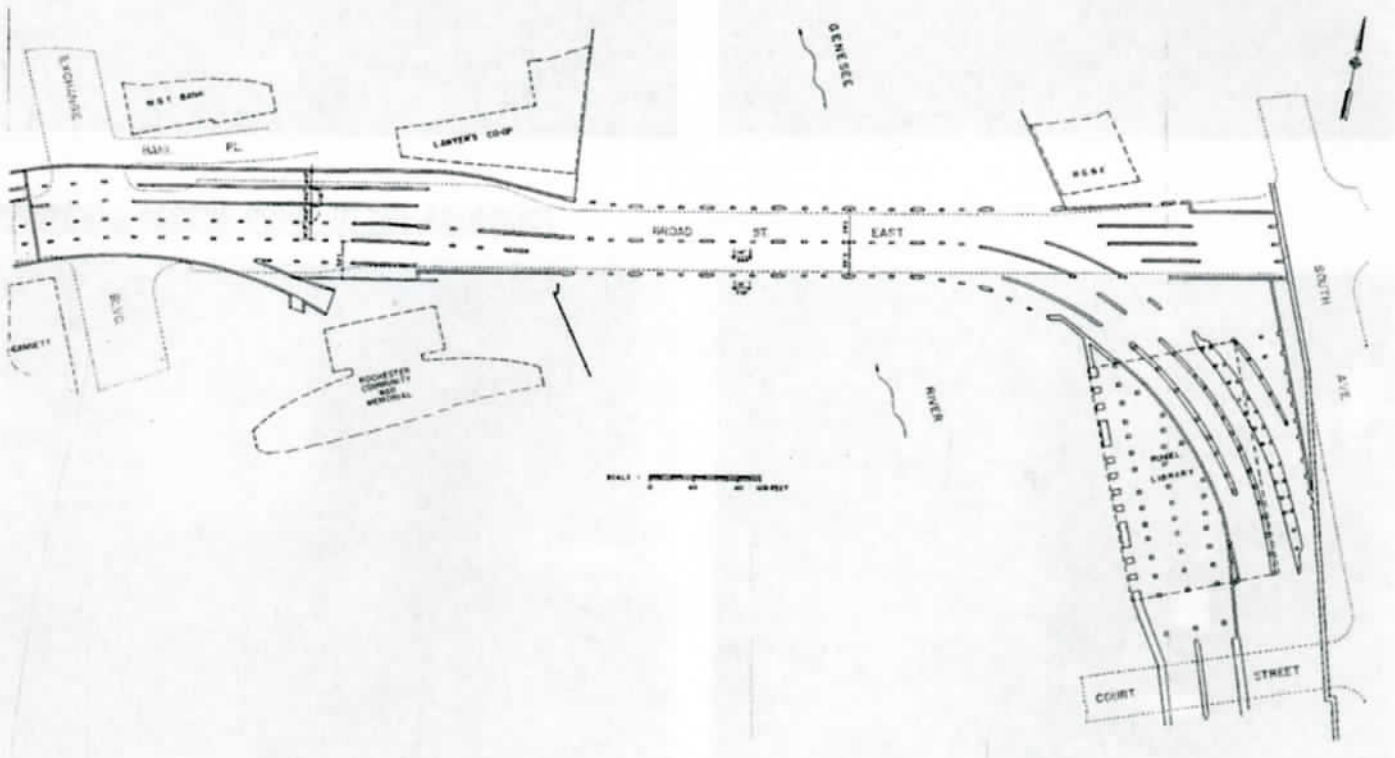


NEW PEDESTRIAN SPEED
3 MPH

• By introducing a pedestrian movement to the canal/ subway bed, a new type of occupation is applied to the bridge, becoming the next stage in the bridge's history of momentum. Through the pedestrian, the bridge will again be experienced at the speed of the canal boat, but the atmosphere will change. The movement willoccurs within the physical structure built on the aqueduct base as well as the layers of past motions and the vehicular movement above.






EXCHANGE
MAIN
PL.
LAWYER'S CO-OP
GENESEE
ROAD
ST.
EAST
BLVD.
SOUTH
AVE.
RIVER
COURT
STREET

THE BUILDING SITE

THE AQUEDUCT INTERIOR

COOLING POOL UNDER LIBRARY

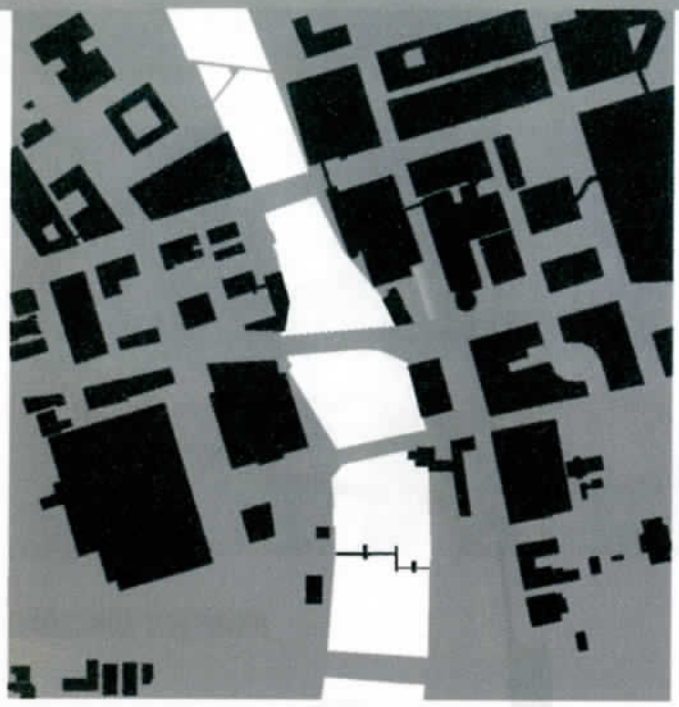
PROPOSED ACCESS POINT TO THE AQUEDUCT

VIEW FROM THE LIBRARY

VIEW FROM THE PARK ACROSS THE RIVER

VIEWS FROM THE BUILDING SITE

LIGHTING



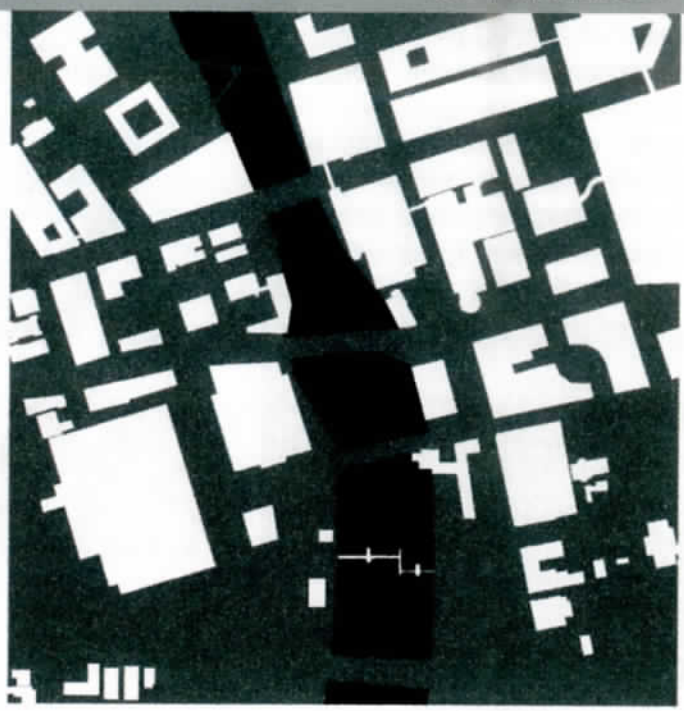
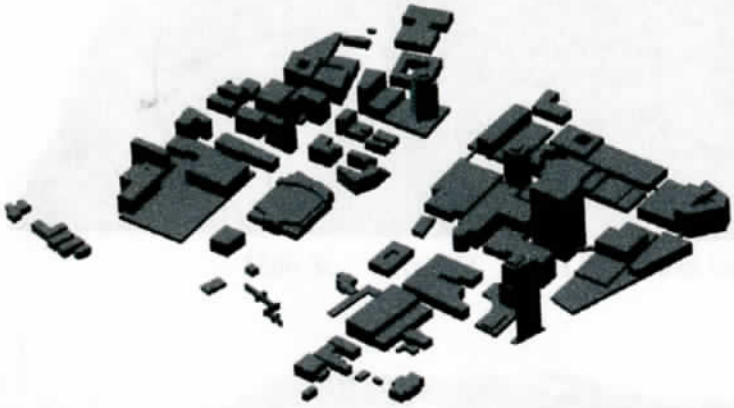
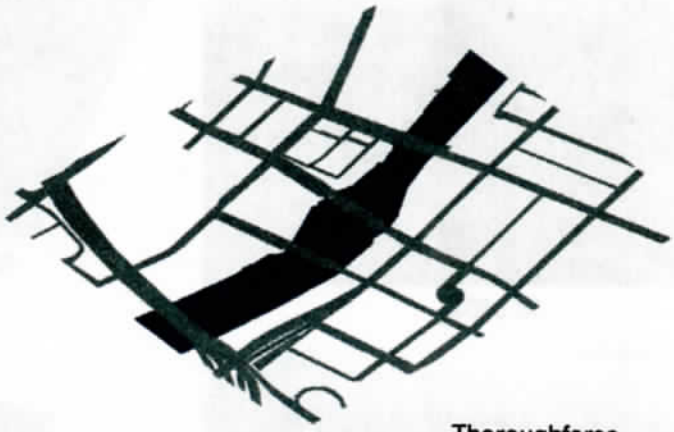


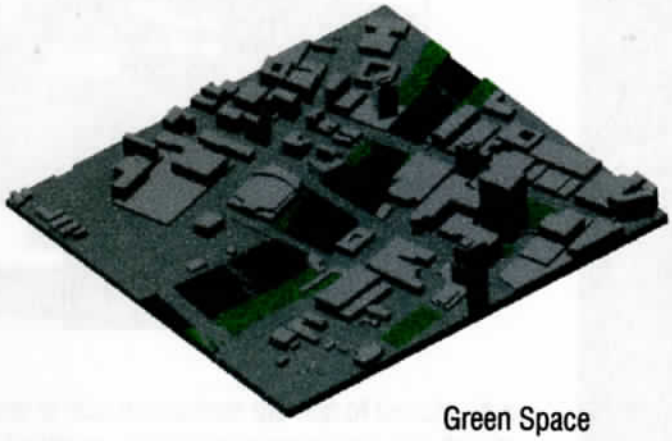
Figure Grounds



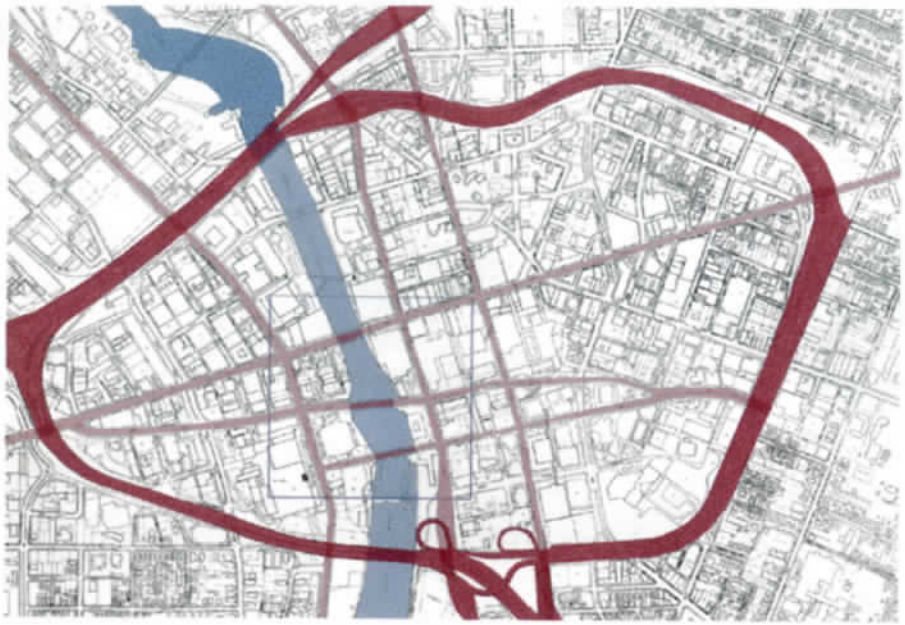
Buildings



Thoroughfares



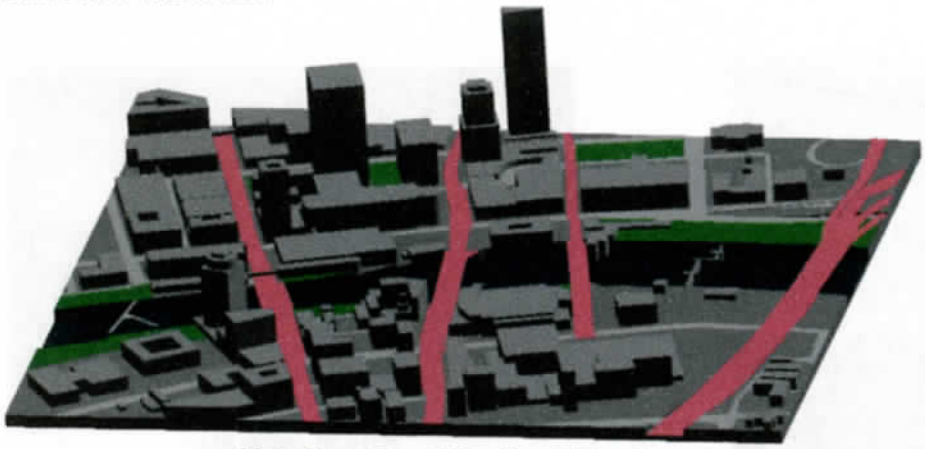
Green Space



MAJOR ROADWAYS

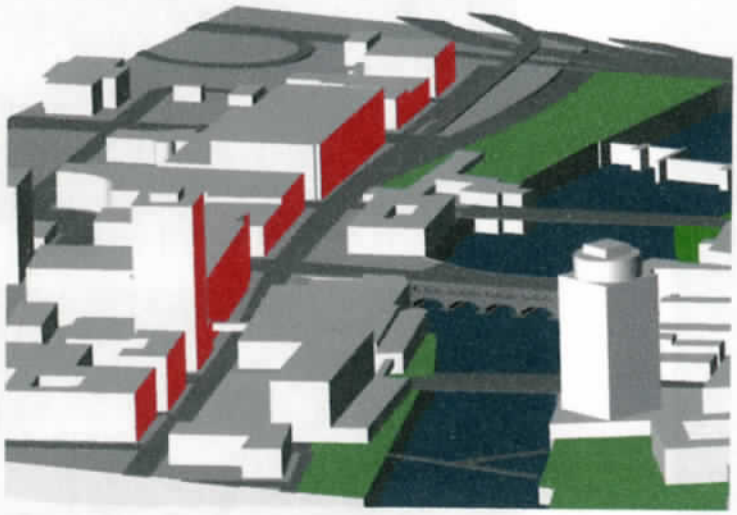
The inner loop encloses the center city, physically separating it from the rest of downtown. However, the expressway connects to the major roads, creating a direct route into downtown. The city grid is skewed, following the path of the Genesee River. Main street, one street north of Broad is the only straightstreet that cuts directly across the center of the city.

CROSSING THE RIVER



Main St. Broad St. Court St. Inner Loop

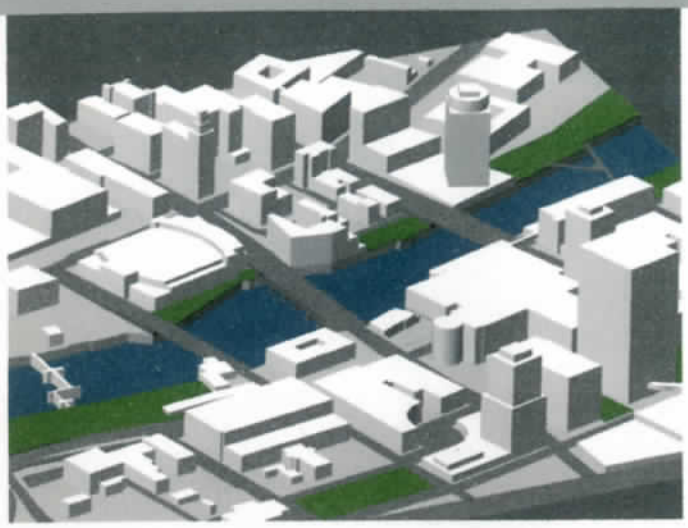
Broad St.



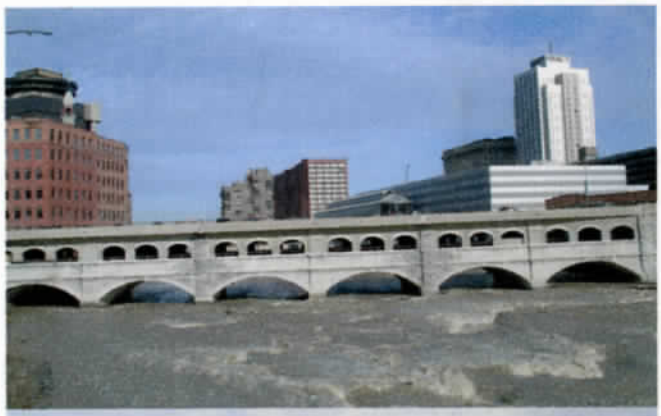
THE WATERFRONT

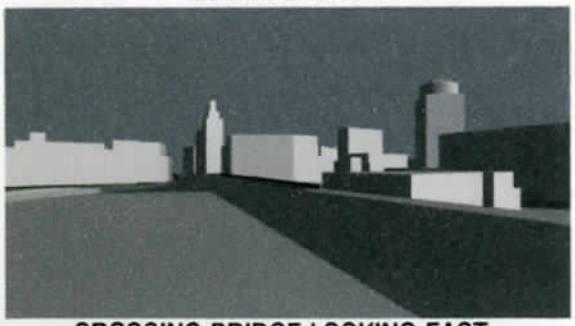
The waterfront of the Genesee river is less dense than the rest of the city. It is generally chracterized by shorter buildings, and more green space. The density of the city past the waterfront forms a wall a buildings, marking an edge.

South Ave

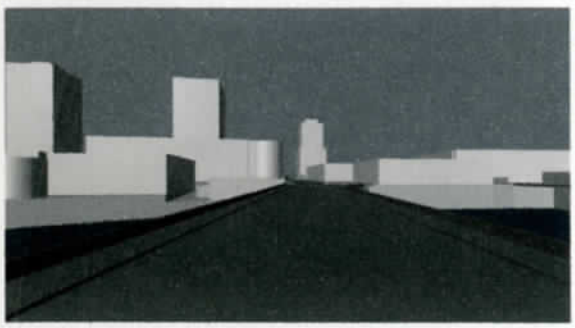


CROSSING THE COURT STREET BRIDGE
LOOKING NORTH





CROSSING BRIDGE LOOKING EAST



CROSSING BRIDGE LOOKING WEST

TRANSPORTATION MUSEUM AND CULTURAL CENTER

PART OF AN INFRASTRUCTURAL NETWORK

> *Places should be considered as spaces which are continually experiencing process which occur through time, processes which are not, and never have been static…It is this crucial contingency of the past on our daily experiences which must be articulated through the museum. (Walsh: 150)*

A museum records, and through interpretation, re-records the past. I will investigate how a museum, which typically reduces the past to an element in a display, can actively engage the history it is attempting to represent. It will play an integral role in restoring the Erie Canal aqueduct, and mill building as recognizable elements in the city. The museum should provide the means for a critical engagement with the past.

The Museum

The Transportation Museum is bifurcated into the general history of transportation that is accommodated in the building, and the sited history, which occurs along the path in the aqueduct.

The exhibits will include accurate reproductions, authentic artifacts, informative displays, and places for interactions with the historic conditions. Whether the interactions with exhibits are direct (participatory) or indirect (observed), the encounters occur within an architectural procession that stimulates a cumulative understanding of space and time. Due to the historical artifacts on the site, the museum can become a device that records time through its relationship to the past and present contexts of the site. The concentration will be on the experiential aspects of history possible in a museum so that memories are not only recalled, but can be newly formed through the realization of a sense of place for the museum.

The Infrastructure

The Erie Canal aqueduct is located in the center of downtown Rochester. It provides a sheltered passage connecting the Rochester Convention Center, the Blue Cross Arena, and the Rundel Library. On a larger scale, it connects the hotel district to the business district across the river. The aqueduct will fit into a larger pedestrian network in the city, reviving the movement through the bridge. Essentially, the pedestrian path is the next stage in the history of the aqueduct after waterway and subway. The path however should be more than a corridor; it should be a public space. To create a sense of place in something that people are meant to pass through, there needs to be the opportunity for a pause. This is where the public path will interact with the museum. Places for public gathering will also be allotted for in the bridge, drawing from its connection to major cultural centers in the city. The vertical connections to street level are also importation places along the path because they will give it a recognizable presence for pedestrians and vehicles that cross on top of the bridge. To further link the museum to the city, a bus stop will integrate an active transportation system with the historic. It will link the building to a larger vehicular network that extends beyond the immediate site.

Possible space available

Aqueduct	23, 000
Building Site	28, 000
Pavilion space next to library (street level)	8,000
Pavilion space next to Blue Cross Arena (street level)	5,000
Tunnel under library (alternate access to bridge)	67,000
	131,000

Public and educational spaces

Entrance	9,000
Conference entrance	1,000
Auditorium (and support space for 500 people)	5,200
Public movie theater (150 people)	3,000
Museum movie theater (80 people)	1,500
Cafeteria	2,500
Coffee Bar	900
Restaurant (2 @ 1,400)	2,800
Museum Shop	3,000
Library	6,000
Banquet Room (300 people)	4,000
Classrooms (4 @ 800 ea.)	3,200
Seminar rooms (2 @ 1,500 ea)	3,000
	45,100

Exhibition Spaces

Intimate galleries (8 @ 500 ea.)	4,000
Medium galleries (4 @ 1,500 ea.)	6,000
Large galleries (2 @ 3,000 ea.)	6,000
Small theaters (30 people: 2 @ 600 ea.)	1,200
Interactive children's gallery	1,200
	18,400

Subway station re-creation (alternate entrance to path) **15,000**

Large exhibits accommodated for in the galleries

Canal boat	800
Trolley	800
Automobile	200
Model of the city	500
View of mill 'ruins' and waterwheel	900
	3,200

Administration (non-public)

Conservation lab	2,000
Offices(6 @ 200 ea.)	1,200
Open office space	1,000
Conference rooms (2 @ 500 ea.)	1,000
Employee Lounge	700
Collection management room	800
Exhibition preparation workshop	2,500
Shipping and receiving	7,000
Storage	12,000
	28,200

Public Support Spaces

Information	300
Ticket Booth	200
Coatroom	700
Public restrooms	600
	1,800

Bus Stop	**1,500**
Parking	**6,000**
SUBTOTAL -	**84,100**
Circulation, Restrooms, and Mechanical spaces (20% of Total)	**16,800**
TOTAL -	**100,900**
Public path and open public space in aqueduct (approximately 50% of space available)	11,500

Exhibition Spaces

The exhibits of the museum occur in, but are not limited to, galleries. People will move through a sequence of galleries that vary in size and sensory quality. The exhibits will consist of informative and interactive displays, authentic artifacts, and accurate reproductions. However, a crucial part of the transportation museum will be the places from which people can view, and then occupy, the actual artifacts on the site. Through the exhibits and along the path, people will be able to interact with true scale reproductions so that they can form a perception of history from a present experience. For example, a canal boat and trolley will be reintroduced to the bridge so that the various histories are presented simultaneously. A water element will also be inserted in to the aqueduct to recall the experiential qualities of the canal through sound, sight, and touch. Under the Rundel Library a deteriorating stair is all that remains of the subway station. By re-creating the station and re-opening the connection to street level, a sense of the space that was once there can be experienced. It will serve as another access point to the pedestrian path, which is the next stage in the transportation history of the bridge.

Public and Educational Spaces

These are spaces enclosed within the building of the museum, but separated from the museum exhibits. They are open to the general public to provide the community with educational opportunities, entertainment facilities, and public meeting spaces.

Entrance

The entrance to the museum and some of the public spaces needs to be a large, organizing place. It should provide the visitor with a sense of orientation and clear circulation opportunities. The entrance contains the ticket and information services for the museum as well as a presentation of the current cultural activities available in the rest of the building. This will also be the first encounter with historic and contemporary architectural representations.

Conference Facilities

Spaces of varied size and form will be provided to hold temporary museum or public activities as well as private conferences and presentations. A separate, more private entrance needs to be provided for these spaces so that access to these facilities can be separated from the museum for use by private parties or use when the museum is not in operation.

Movie Theaters

Two theaters will be contained within the museum. One will be dedicated to showing old films, providing a program of entertainment value for the general public. The other theater will be used to show a museum orientation film, providing visitors with an audio and visual precursor to the exhibits.

Dining Facilities

Multiple dining facilities will be provided in both the museum and the bridge. In the bridge, a restaurant or café could provide a place to stop along the public path.

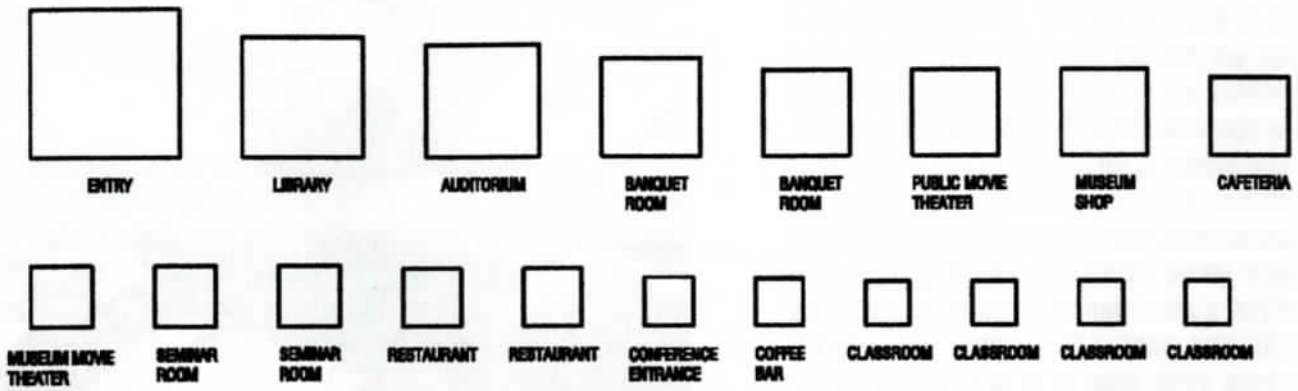
Library

The library will be open to the general public to house a collection dedicated on transportation and Rochester history. Study and a presentation space will be included in the library.

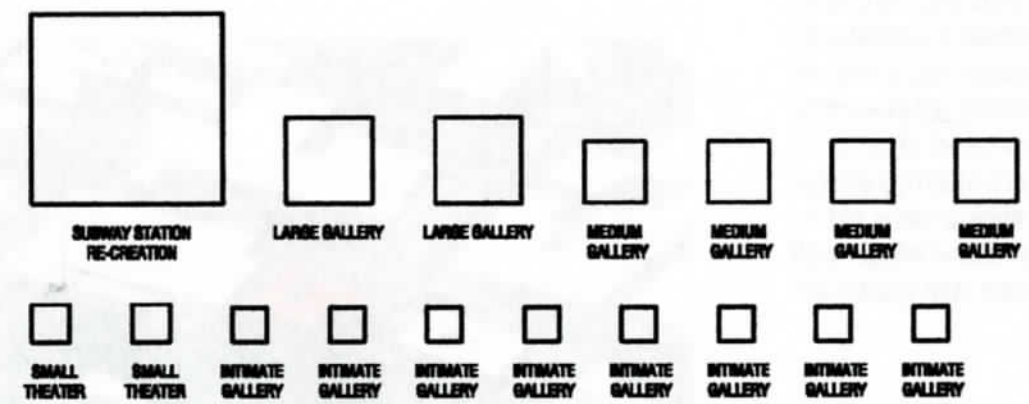
Public Infrastructure

A new bus stop on the South Ave. side of the site will link the museum to the infrastructural network already working in the city and, by bringing the buses into the building, active contemporary transportation will be integrated with the museum. The public pedestrian path in the bridge, consisting of a series of open public spaces, will link to another mode, and speed, of travel.

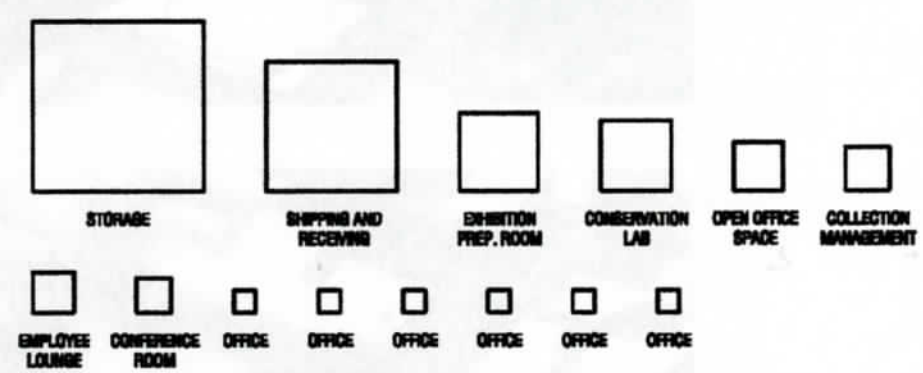
PUBLIC AND EDUCATIONAL SPACES



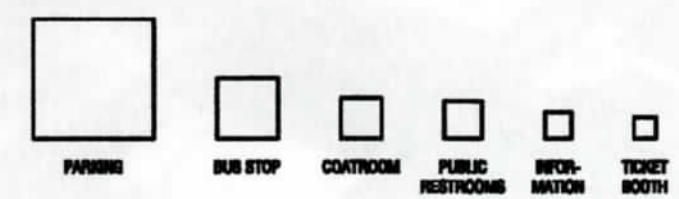
EXHIBITION SPACE

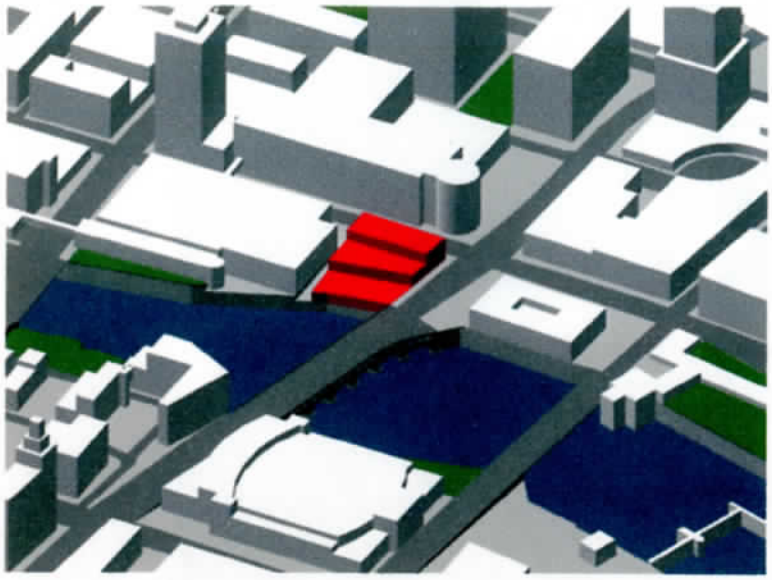


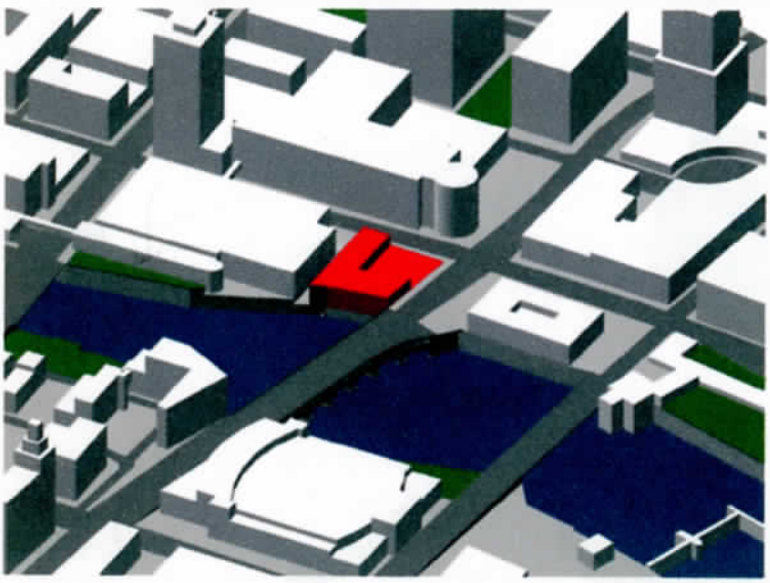
ADMINISTRATION

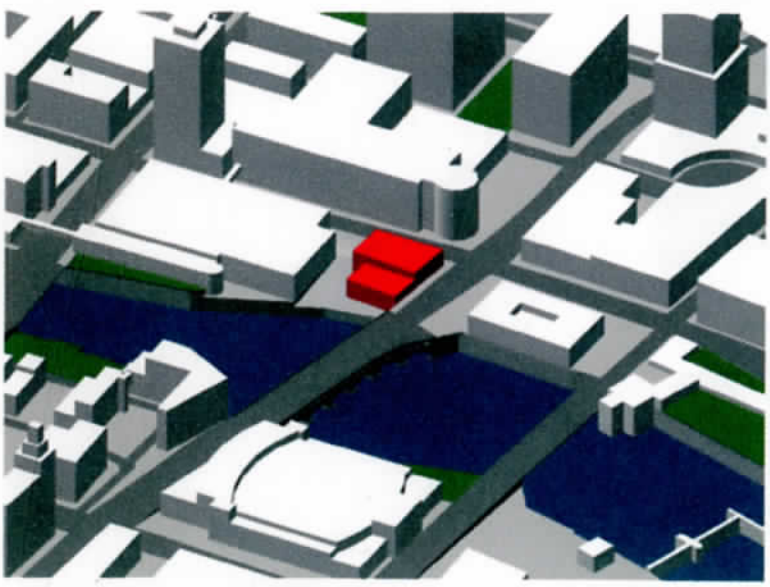


PUBLIC SUPPORT SPACE

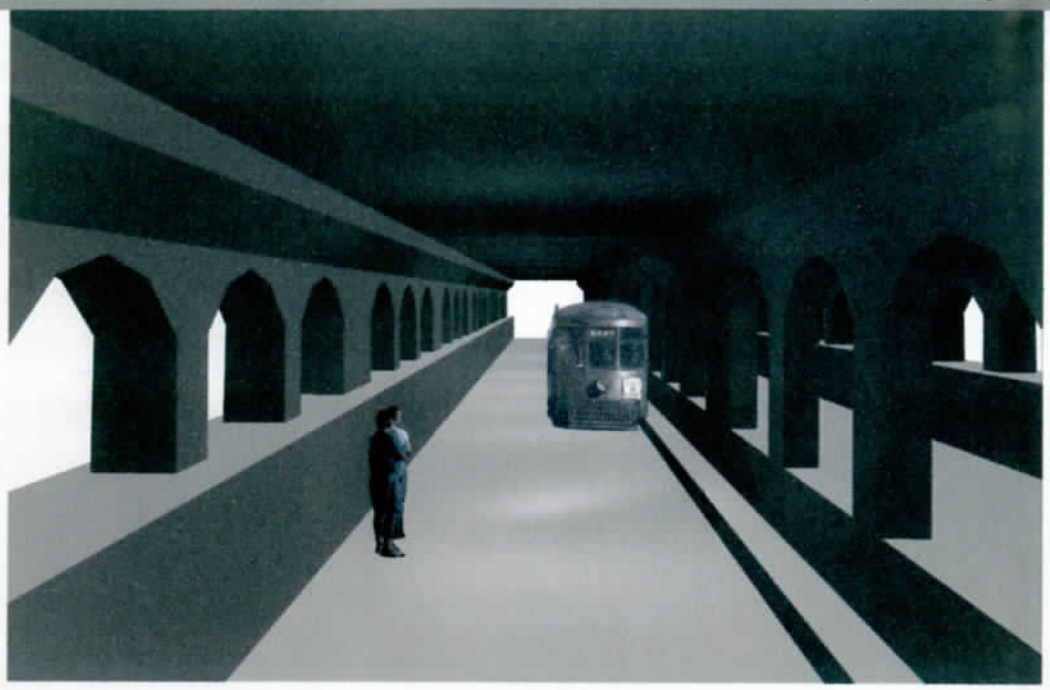






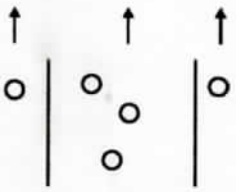


These studies are based on 65,000 SQFT. of the program being housed in the actual building. The volumes were determined based on the nature of the site. The sunken level of the land, the industrial ruins on the site, the waterfront condition, and the existing building heights all influenced the building envelope assessments. The site called for a building several stories high to be above street level so the museum could have a presence in the city. The existing RG&E substation barely rises above the street and therefore lacks a face to the city. The historic mill building was taller so a museum that is at least three stories above grade will recall the past condition. Due to the size of the basement level, and the necessity of integrating the building with the mill foundations, it seemed reasonable to provide an open public space level with the street and on the roof the basement level. This was studied in two of the schemes. Furthermore, these studies compare a building that has a tall side on the water's edge to a building that steps down to the water, reflecting on the decreasing density near the waterfront.



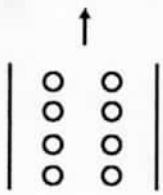
CANAL

3 MPH



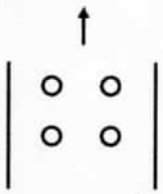
SUBWAY

15 MPH



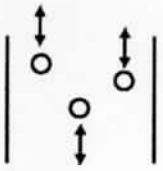
STREET

30 MPH



PATH

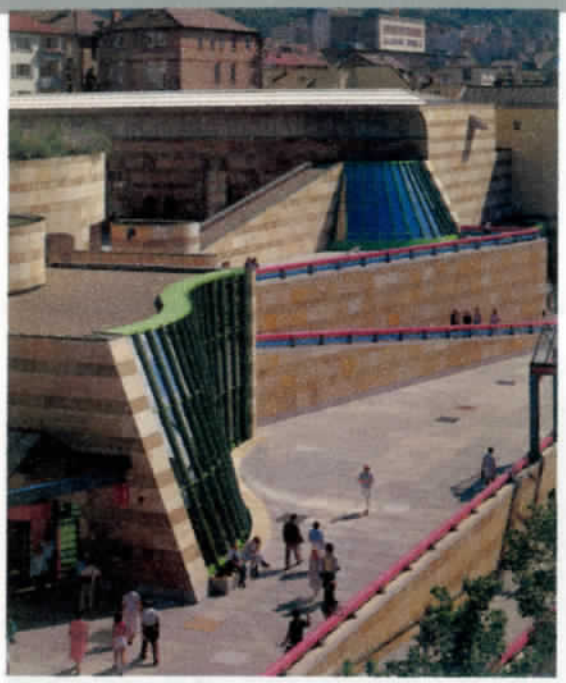
3 MPH



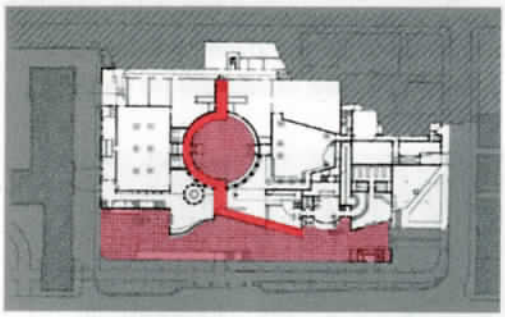
1. Neue Staatsgalerie - James Stirling
2. National Museum of Roman Art - Rafael Moneo
3. Okanayama Graphic Art Museum - Arata Isozaki
4. National Gallery in the Palazzo della Pilotta - Guido Canali
5. The American Folk Art Museum - Tod Williams and Billie Tsien
6. The J. Paul Getty Museum - Richard Meier
7. National Air and Space Museum - Hellmuth, Obata, and Kassabaun
8. Precedents Juxtaposing the Past and Present in Museums
9. Bridge as Building Precedents

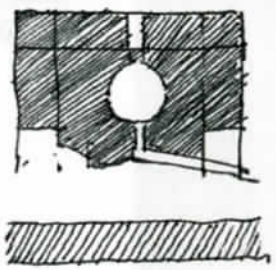
Neue Staatsgalerie

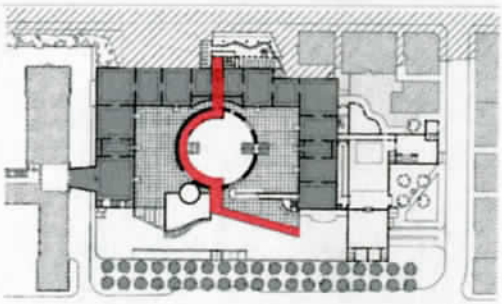
James Stirling and Michael Wilford
Stuttgart, Germany; 1977-1982



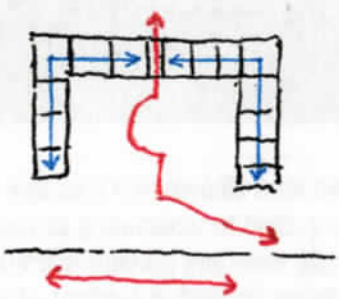
• Void as Center: Stirling questions the institution of the museum by creating an open urban space in the center of the building. It is a "decentralized center" taking the 'pantheon' form at the center of the Altes museum and turning it into a void in the Staatsgalerie. This is a play on the ideas of inside/outside, public/ private, and solid/void.



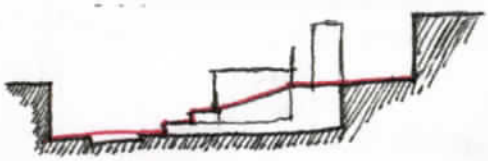


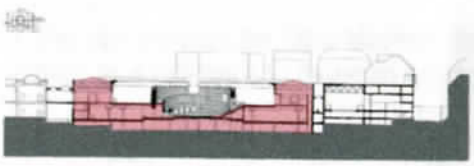


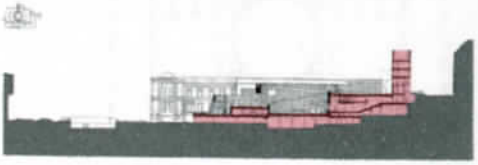
• The plan is essentially axial, but is often compromised by the circulation path. As people move through the building, they are constantly taken on and off axis so that, along the path of ordered spaces, the building is understood as both monumental and incidental.

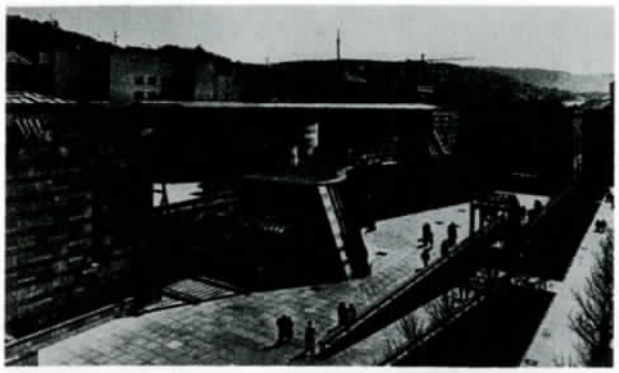


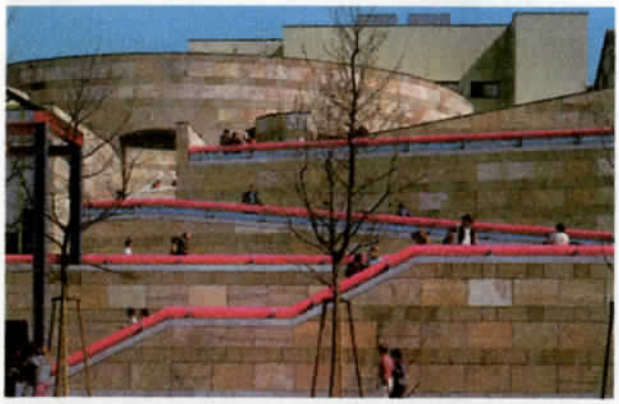
• Stirling connects two levels of the city, mediating a change in grade, by bringing the public path through the museum.



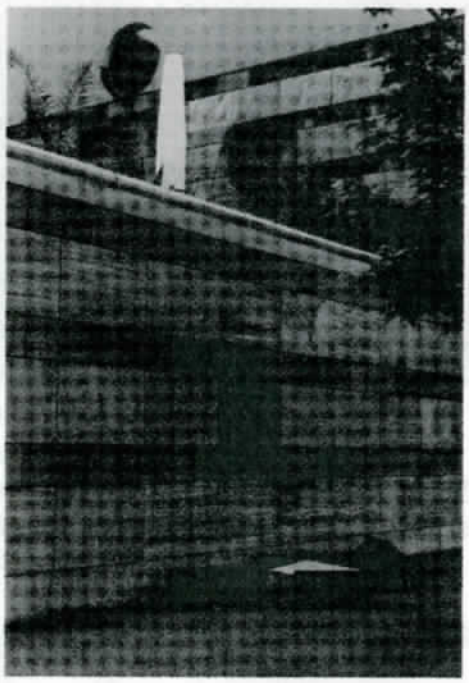








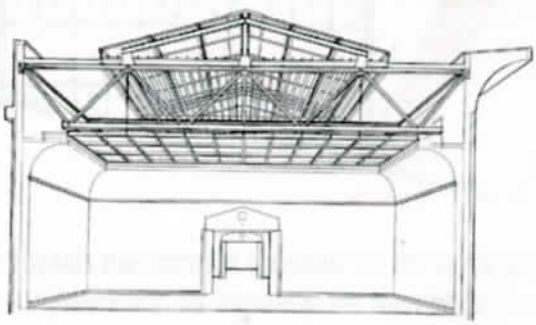
• A circulation network is established, creating platforms on the path to see and be seen.



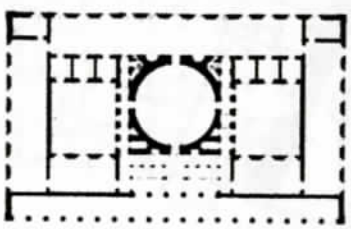
• The wall as a ruin reveals both the idea of museum as a container of history and the new construction method that uses stone as a thin veneer in contrast to historic construction techniques. The only real stone in the wall are those resting on the ground.

• Much like the existing museum, the Neue Staatsgalerie lacks a facade. Rather, it is a landscape of volumes opening up to the street and the park beyond. The 'facade' of the building can therefore be understood as the row of trees between the street and the building or even the building facade across the street.

• The form of Stirling's extension to the museum copies the U-shaped layout of the existing museum, keeping the same circulation system of the enfilade galleries.



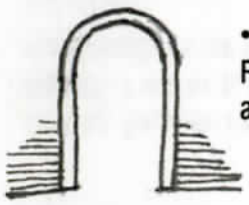
• The plan imitates the Altes Museum by Schinkel (1843) as a reference to museum typology.



National Museum of Roman Art

Rafael Moneo
Merida, Spain
1985

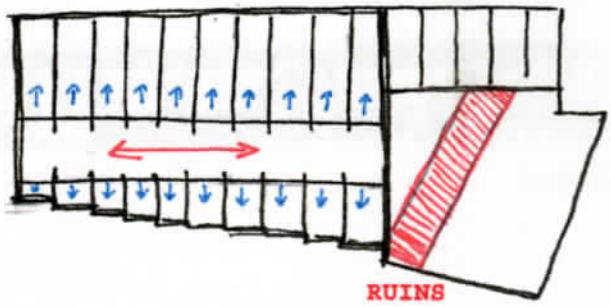
• Formally, a 'nave' space, defined by a series of Roman arches in the heavy bearing walls cuts through the building as a void. Cross aisles intersect the nave forming exhibit spaces off the main axis and an overall organizing grid.



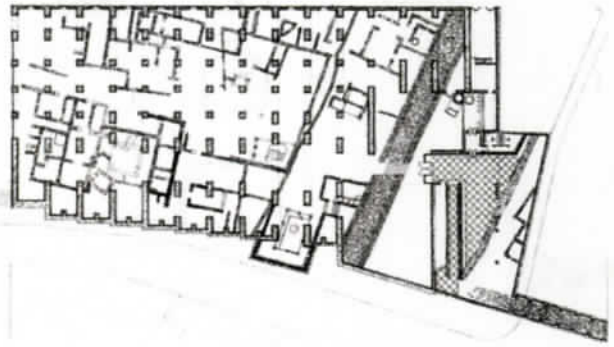
• Recalls the past with icons of Roman construction: The Roman arch and Roman bricks

• Circulation cuts perpendicularly through the bearing walls made of Roman brick so that there is constant interaction with the building.

• The museum becomes an artifact itself, rather than a neutral container, by turning history and context into form.

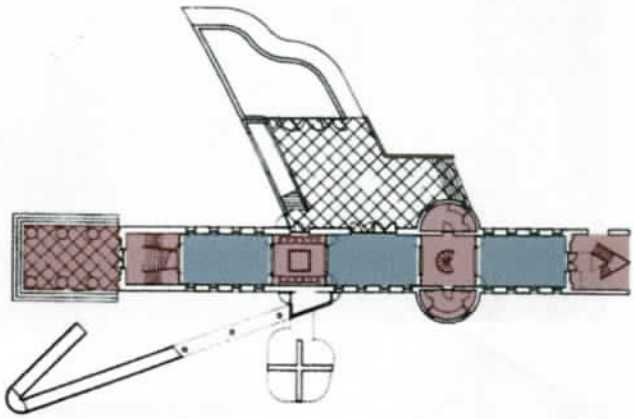


• It reveals the contrast between the old ruins and the new construction by imposing the skewed grid of the new city over the grid of the Roman city, creating a backdrop for the ruins.

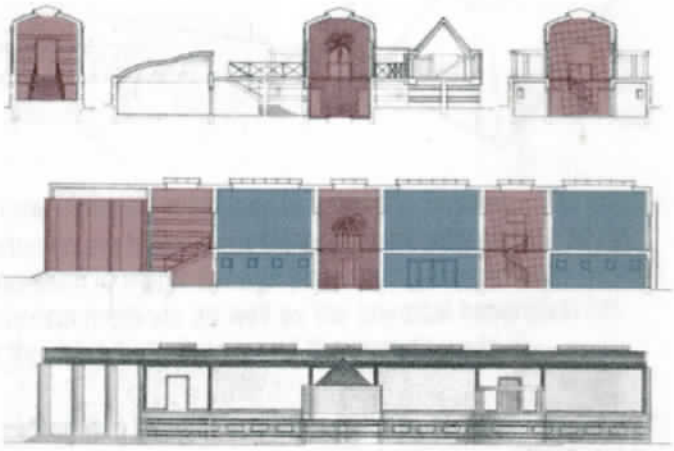


Okanayama Graphic Art Museum

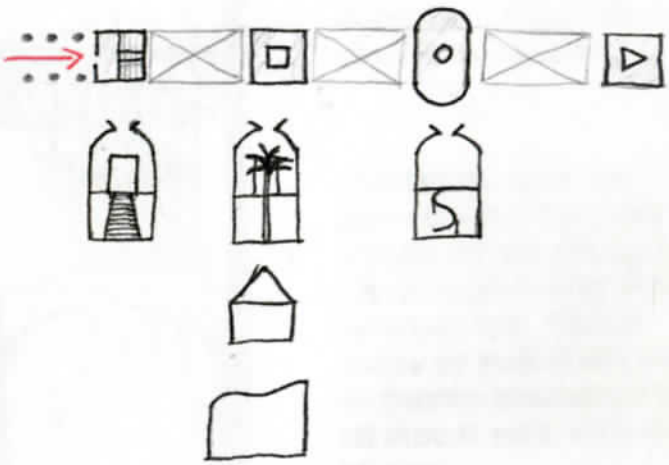
Arata Isozaki
Nishiwaki, Japan
1985



Plan



Sections



Diagram

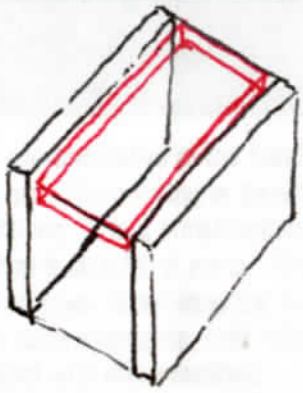
- The museum is composed of a series of figurative spaces. The halls take on the form of the exhibits' themes while the galleries themselves are neutral containers. The alternating spaces create a formal architectural procession.

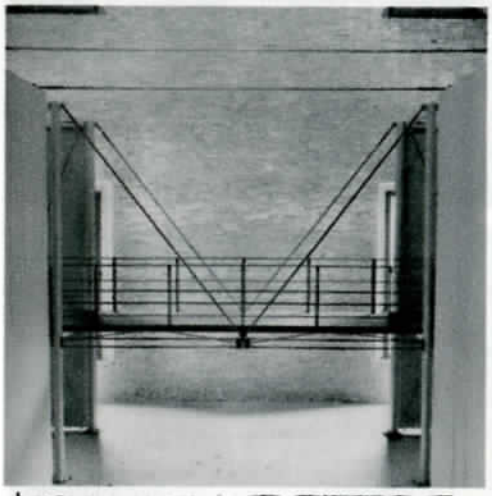
- The image of the building is a metaphor that imitates a series of railroad cars. It implies that new 'wagon' galleries can be added in the future.

- It is designed for a permanent collection rather than temporary exhibit.

National Gallery in the Palazzo della Pilotta

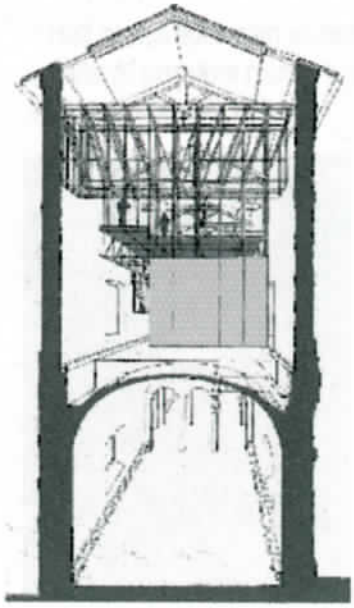
Guido Canali : Parma, Italy : 1970-1986

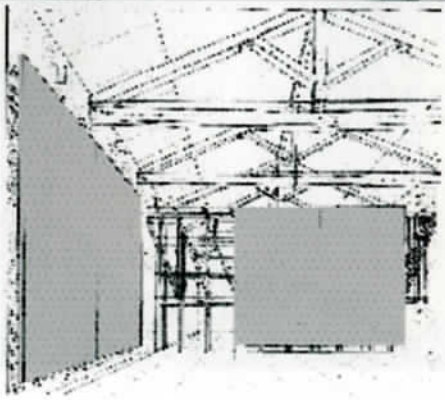




• The new museum is housed in a historic building. The separation between the historic container and the intervention of the new museum is made through juxtaposing the past and present construction methods as well as the physical separation between the exhibit structures and the historic walls.

• The ceiling has been filled with a metallic structure to support the exhibits separately from the original structure. The new structure, museum collections, and historic building are contrasted so that each is exposed as a distinct element critical to the museum.

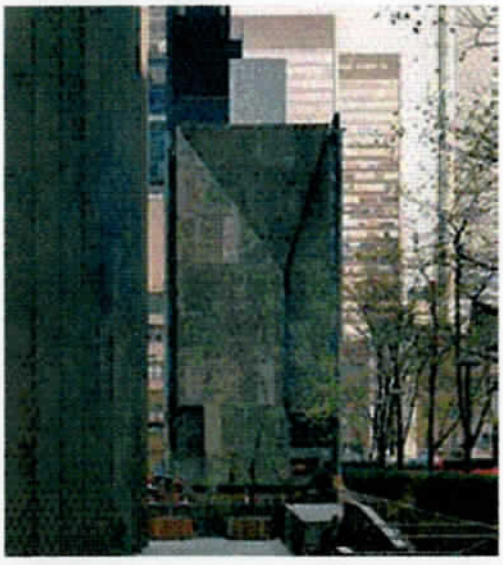




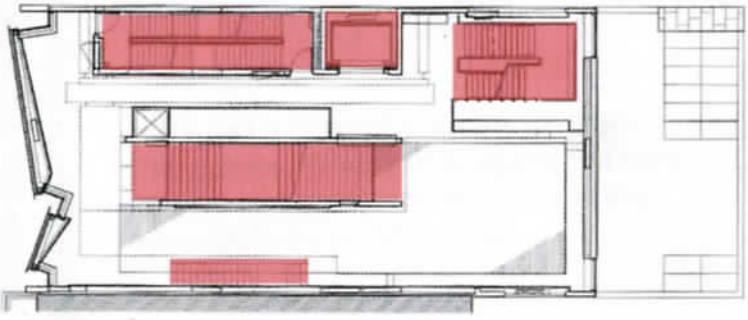
• Footbridges, ramps and platforms were constructed to articulate the path and separate the museum visitor from the historic floor. The footbridges are made of steel and are therefore juxtaposed to the old museum walls, which are left alone.

The American Folk Art Museum

Tod Williams and Billie Tsien
New York, New York : 1997



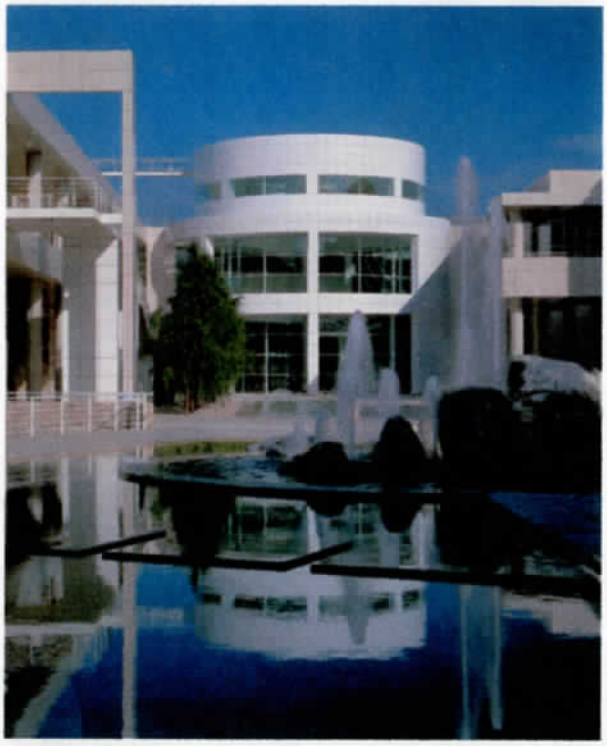
• The materials of construction are representative of the hand-made process associated with folk art. The building is therefore a formal expression of the art it contains. It is a construction based on uniquely made pieces rather than a kit of parts. The facade is made of individually molded steel panels and the floors are made of polished concrete with large aggregate, both taking advantage of the originality associated with imperfections.



• Half of the floor plan is dedicated to vertical circulation. The variety of possible routes allows for unimpeded movement and a series of diverse paths.

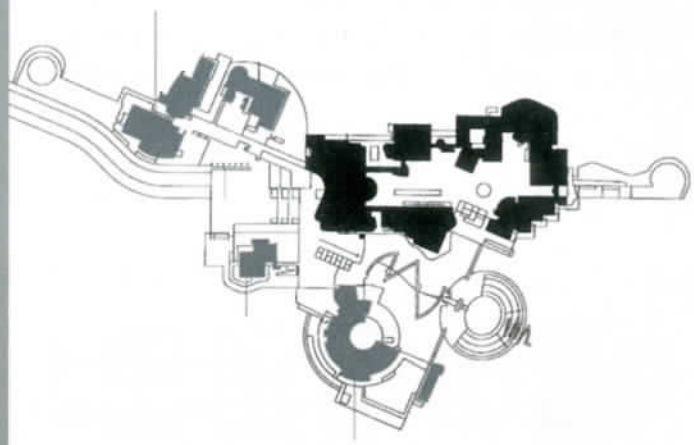
The J. Paul Getty Museum at the Getty Center

Richard Meier
Los Angeles, California
1997

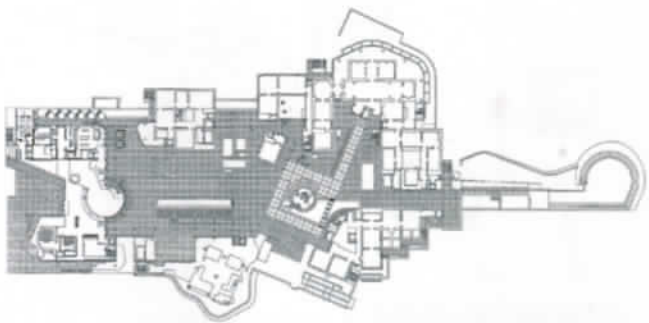


• The circular lobby provides visual orientation for the building.

• Distinct experiences are created with varied light quality, spatial forms, and framed views.

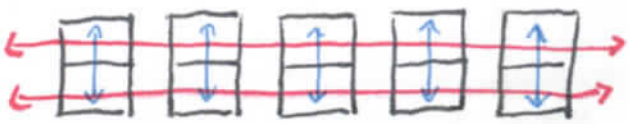


• The building is tied to the rest of the complex through major site lines.

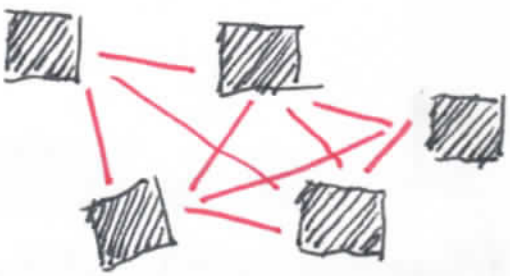


• The plan is based on a modular dimension. The galleries can contract or expand, and stand alone or be grouped together as long as they occur within the grid established.

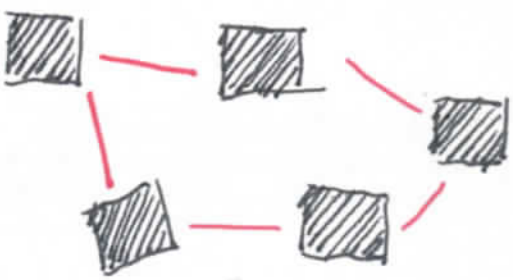
• The plan is made of five, two-story pavilions with movement possible horizontally, between the pavilions, or vertically, within a single pavilion. The circulation system is therefore based on an informal procession. Varied routes of travel create a museum full of surprise and discovery.



• Vertical circulation



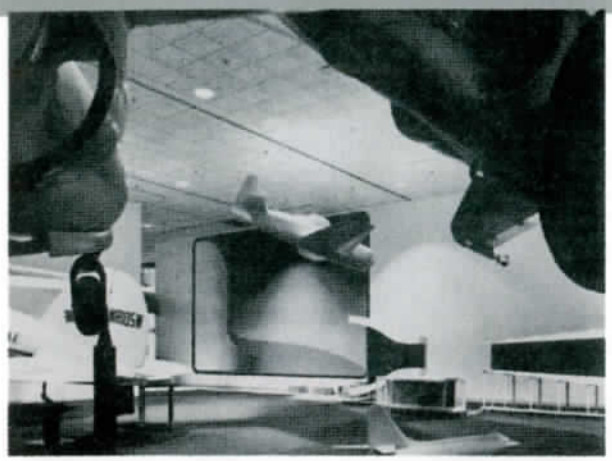
• Unrestricted circulation



• Peripheral circulation

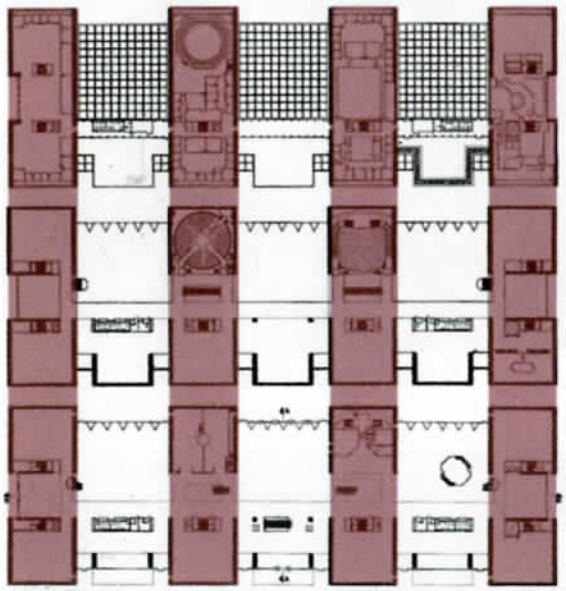
National Air and Space Museum

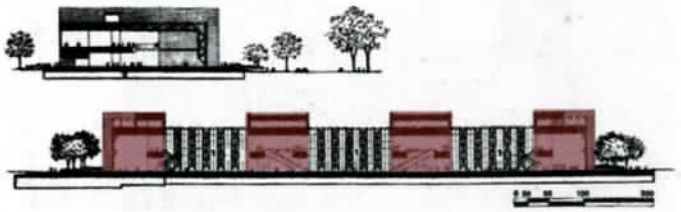
Hellmuth, Obata, and Kassabaun
Washington, DC : 1975

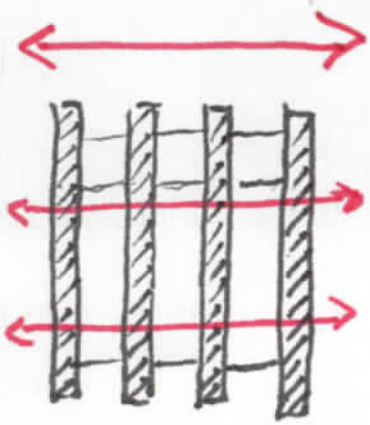


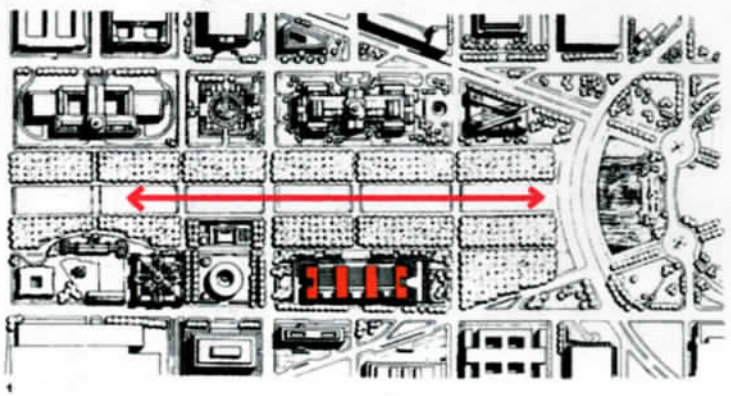
• This museum is an example of how to house large artifacts in a building without creating one large warehouse.

• The building is a formal study of solid/void with the volume of the museum alternating between solid, opaque bars and transparent walls enclosing the voids between the bars.

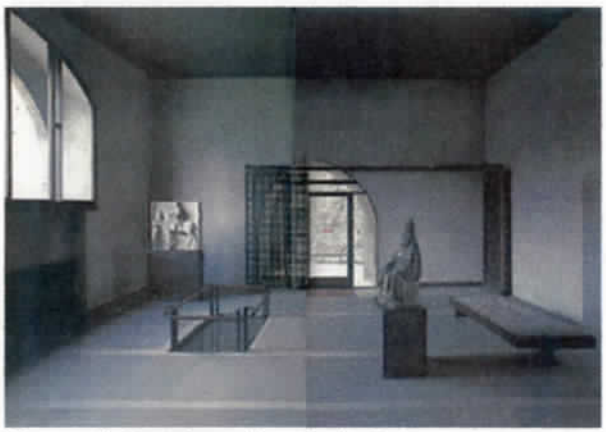








German Postal Museum, Gunter Behnisch
Frankfurt, Germany : 1990



Museo di Castelvecchio, Carlo Scarpa
Verona, Italy : 1956

Pyramide du Louvre
Paris, France : 1989
I.M. Pei

Sackler Wing of the Metropolitan Museum of Art
New York : Kevin Roche and John Dinkeloo

Fargo-Moorhead Cultural Bridge
Michale Graves

Pulteney Bridge
Bath, England

Ponte Vecchio
Florence, Italy

Le Viaduc Des Arts
Paris, France

Rialto Bridge
Venice, Italy

Analogy of Representation and Reproduction

Based on a description in "The Work of Art in the Age of Mechanical Reproduction" by Walter Benjamin, I found it possible to make an analogy between the film making process as an act of reproduction and the museum as a venue for representations. Both the camera and the museum are tools for the presentation of something through a filter, whether that filter is the camera lens or the contemporary building.

A film presents a completely controlled viewpoint that can expose the spectator to an experience which is separated from a specific time and place. It is a composite of many times and places put together as scenes in a movie, or in the case of a museum, as exhibits. Scenes in a movie are fragmented and disjunctive, much like a person's memory. It is the job of the editor to put the scenes in a comprehensible order and it is the job of the museum to present history as an understandable whole.

The camera allows concepts of place to open up and even be disregarded. The camera is an *intervention* that reveals only part of the story depending on how the scene is shot. By zooming in or out, accelerating or decelerating, interrupting or keeping time and space consistent, and focusing or un-focusing, the camera controls how the scene is experienced by the viewer. It should be the job of the museum to focus the visitors experience and understanding of the past through the present context.

(Section XIII)

■ History and Memory

- Memories can either be recalled from a personal experience, or formed based on the representation of another's experience. This alludes to the difference between a personal memory and a collective memory because a **collective memory** is the memory formed from personal experiences, recorded histories, and cultural conceptions.
- The use of boundary, path, and place can give meaning to time in space by producing **events that spark memory**
- History is an **ever-changing continuum**...Memories are snapshots of discreet moments in the past, but even memory cannot be static.

■ Movement Through Space

- A path is a journey of **encounters**, and **interruptions** that reveals a narrative of time, **disjunctive** in nature
- Planned procession vs. the act of meandering - Explore how the difference in the experience of movement can alter how history is discovered/revealed.:
- **Circumstantial** vs. **Planned** act of remembering
- Movement (time) vs. Distance covered (space) - The journey (experience) is anchored in a space/time context
- Paths mix and become blurred which leads to a questioning of space/time, **inside/outside**, and **public/ private**.
- Bridge as transition: Study of how a path/sequence works in both directions: A series of discreet moments to form a whole.
- A sense of place must be established in the bridge which is defined by the movement through it
- A **bridge without motion lacks function** = use the museum to **reintroduce movement**

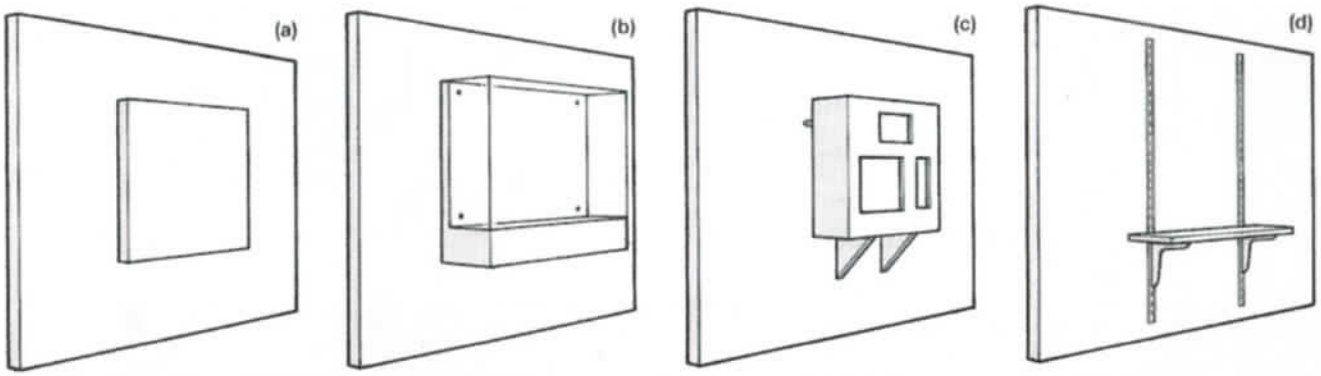
■ "Memory is context dependent" - *Gaynor Kavanagh*

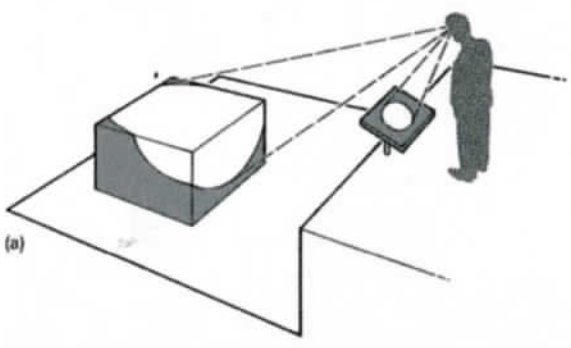
- *Palimpsest (n.) an object, place, or area that reflects its history (markings left as residue)* - multiple **layers of memories** connected to a place (old and new)
- A space for memory provides a place for individual and collective memories to mix
- Allow the present context to fill in the blanks and make the histories relevant

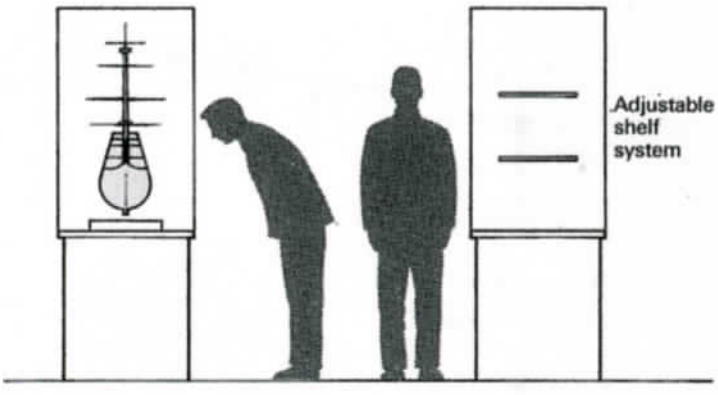
- **Space and time**
  - Space is a **field** for **marking** time
  - The **compression** and **expansion** of space, as well as of time, can reveal conditions otherwise hidden or forgotten
  - **Juxtapositions in time and space** allow surprise associations for the recollection of memories
  - Making histories visible through both **exposure and obscurity**

- **History and Museums**
  - "…a case for history in museums has to be developed from an awareness that history museums are one of the means through which people engage with issues and ideas about themselves and their past." -Gaynor Kavanagh
  - Museum as a connection between the formal, given history and the personal and collective memories or experiences associated with that history
  - The collective 'memory' may be formed in the present through collective interactions with the given history…a **collective interpretation** of that history

- **The Museum as a Place for People** (not just artifacts)
  - "A preoccupation with objects leads inevitable to acceptance of a sedentary role for the city museum because their survival (accidental), and their selection (passive or subjective…), only allows us to go so far." (Walsh, p134)
  - It collects the "**debris of human experience**" and grounds it in the context of site and time to give it **meaning** beyond the collection of random artifacts
  - The typical museum is related to the **decay of displaced items**, but I want to link the past to the present through personal and collective experiences with **sited artifacts**, **accurate reproductions**, **interactive exhibits**, and **views**.
  - Situate the past in the present as a place for **temporal experience**







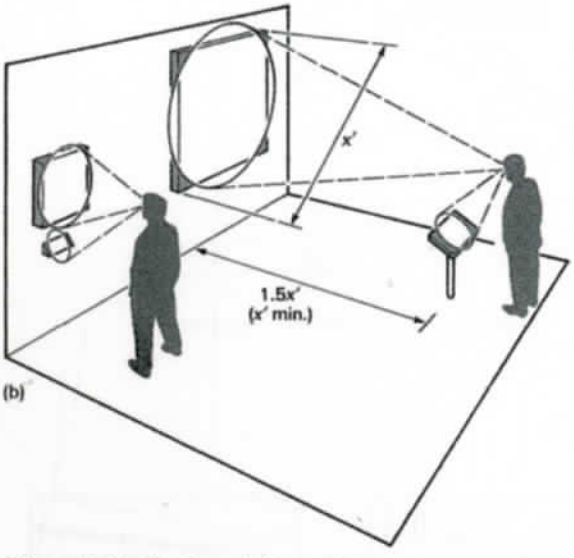


Figure 7.14 *Viewing exhibits and interpretive material – reading distances: (a) Visual size of exhibit and interpretive image/ illustration to promote clear communication. (b) Reading works of art and interpretive information*

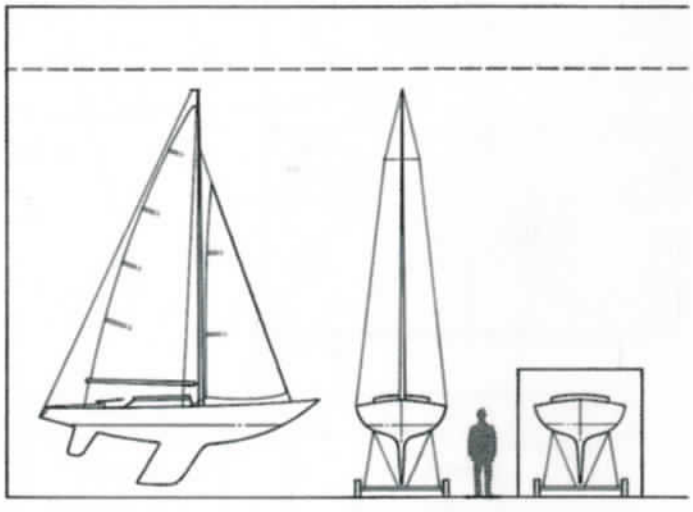
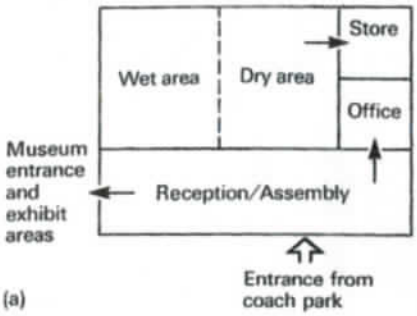


Figure 7.17 *Wall/ceiling height and access size allowing for suspended services/ceiling and handling equipment*



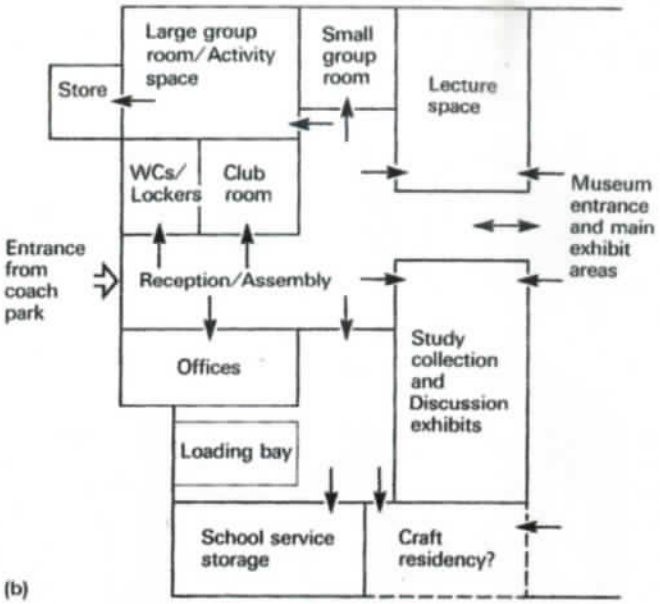
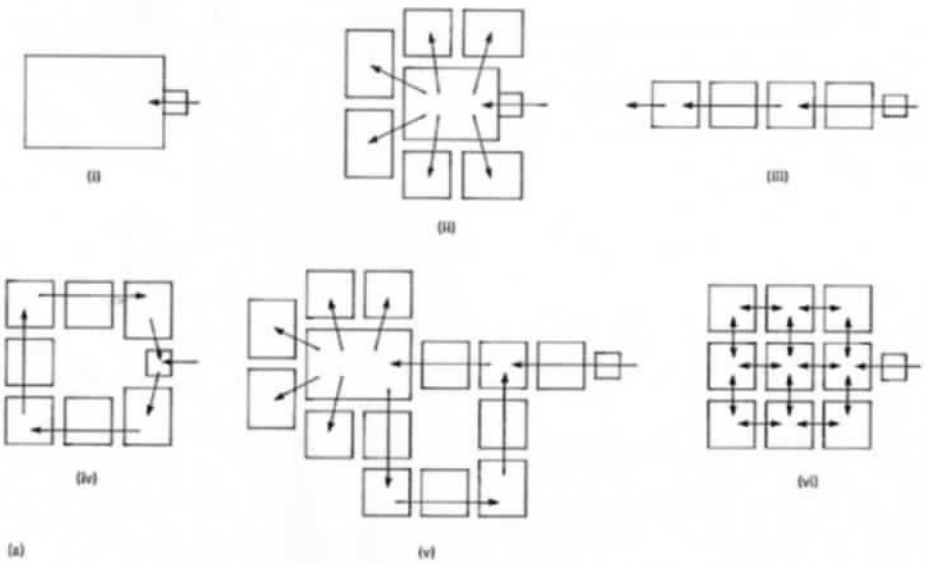
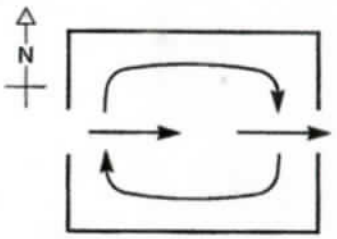
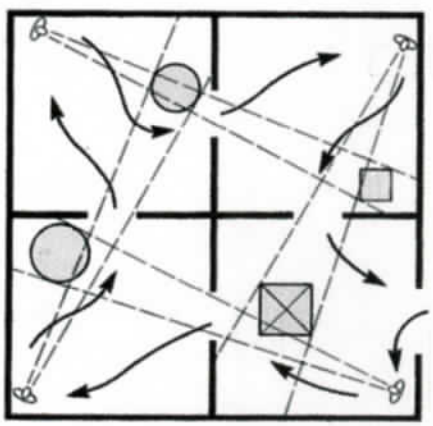


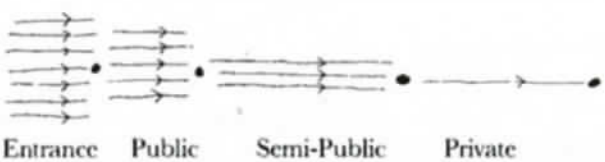
Figure 7.33 *Simplified diagrams of some possible layouts for museum educational facilities: (a) Small museum – centred on a large, general-purpose room. (b) Large museum – several specialized spaces*

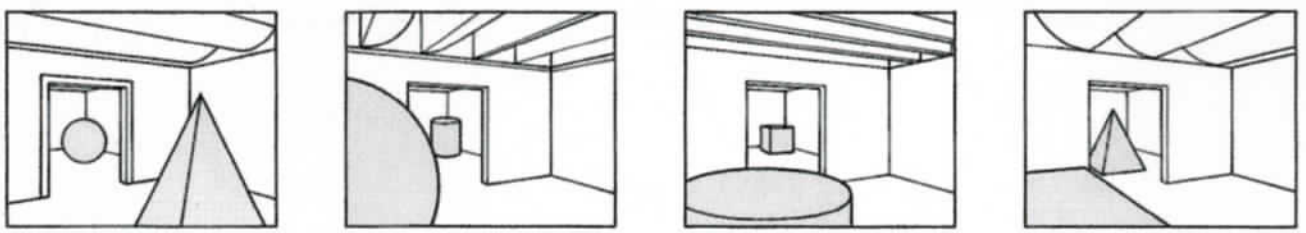


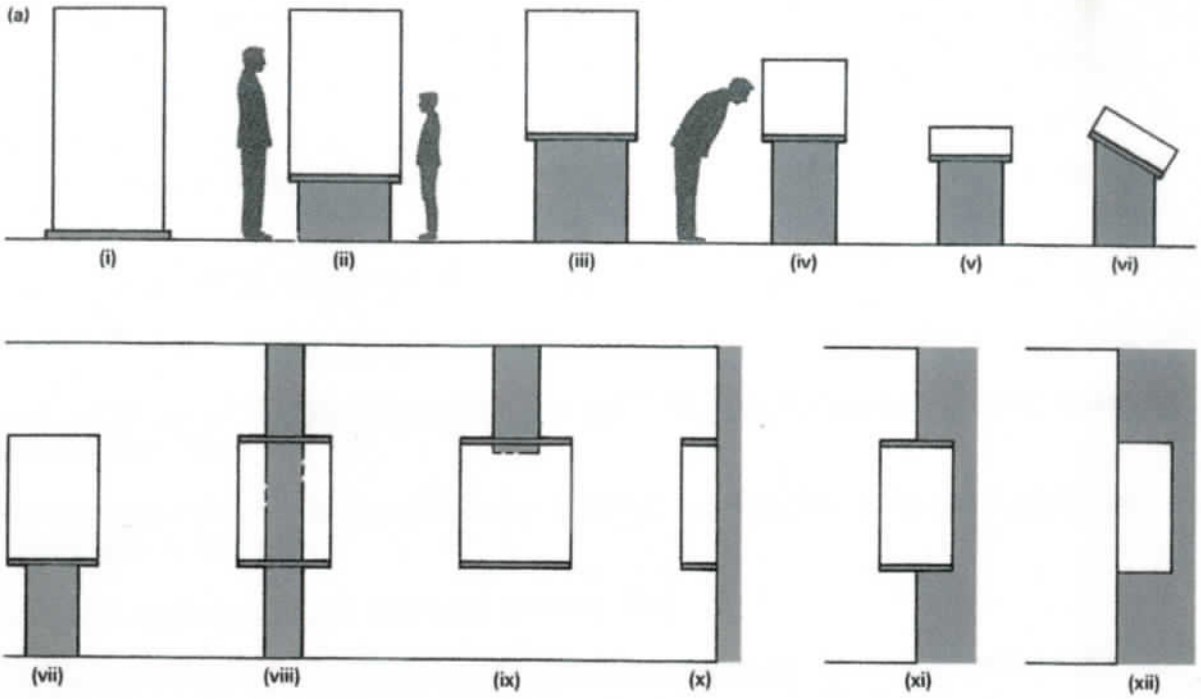


Gallery Layouts








(a)
(i)
(ii)
(iii)
(iv)
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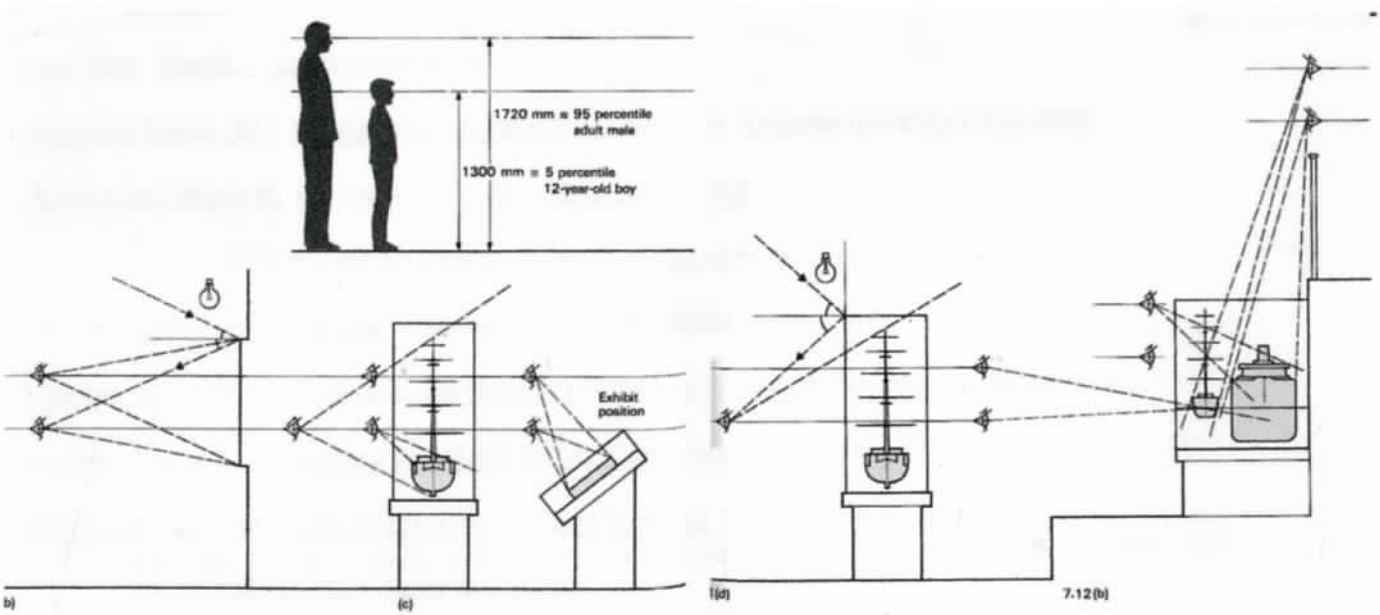
(vi)
(vii)
(viii)
(ix)
(x)
(xi)
(xii)


1720 mm = 95 percentile
adult male
1300 mm = 5 percentile
12-year-old boy
Exhibit
position
b)
(c)
(d)

7.12(b)

Barnes, Joseph W. "Historic Broad Street Bridge and the Erie Canal Sesquicentennial: 1825-1975." Rochester History. July 1975.

Benjamin, Walter. "The Work of Art in the Age of Mechanical Reproduction." Illuminations. New York: Schocken Books, 1968.

Bray, Paul M. "The New Urbanism: Celebrating the City." Places. Summer 1993: 56-67.

Brolin, Brent C. Architecture in Context; Fitting New Buildings with Old. New York: Van Nostrand Reinhold Company, 1980.

Canter, David, and Linda Groat. Readings in Environmental Psychology: Giving Places Meaning. New York: Academic Press Limited, 1995.

Crang, Mike, and Penny S Travlou. "The City and Topologies of Memory." Environment and Planning D: Society and Space. 2001, v. 19: p161-177.

Crimp, Douglas. On the Museum's Ruins. Cambridge: MIT Press, 1993.

Darragh, Joan and James S. Snyder. Museum Design; Planning and Building for Art. New York: Oxford University Press, 1993.

DeChira, Joseph. Time Saver Standards for Building Types. New York: McGraw-Hill, 1973.

Eggener, Keith L. "Placing Resistance: A Critique of Critical Regionalism." Journal of Architectural Education May 2002: 228-237.

Findley, Lisa. "Paths: The Nature of Linear Public Space." Places. Summer 1993: 72-75

Frampton, Kenneth. "Towards a Critical Regionalism: Six Points for an Architecture of Resistance." The Anti-Aesthetic: Essays on Postmodern Culture. Seattle: Bay Press, 1983.

Hack, Tom. Interview. September 24, 2003.

Kavanagh, Gaynor (ed.) Making Histories in Museums. New York: Leicester University Press: 1996.

Lampugnani, Vittorio M., and Angeli Sachs (ed.) Museums for a New Millennium. New York: Prestel, 1999.

Matthews, Geoff. Museums and Art Galleries, A Design and Development Guide. Oxford: Butterworth Architecture, 1991.

Montaner, Josep. New Museums. New York: Princeton Architectural Press, 1990.

Montaner, Josep and Jordi Oliveras. The Museum's of the Last Generation. New York: St. Martin's Press, 1986.

Ramsey, Charles G. Architectural Graphic Standards, Student Edition. New York: John Wiley & Sons, Inc., 2000.

Rep. Louise Slaughter Pledges Support for Erie Canal Aqueduct. Congresswoman Louise M. Slaughter. August 12, 2003. < http://www.slaughter.house.gov/NR/exeres/B3CF8475-28CD-4ABC-9EC7-68C01E06BA93.htm> September 9, 2003.

Rochester 2010: The Renaissance. [Online] Available < http://www.ci.rochester.ny.us/2010/about.htm> September 13, 2003.

Steele, James (ed.) Museum Builders. London: Academy Editions, 1994.

Walsh, Kevin. The Representation of the Past: Museums and Heritage in the Post-modern World. New York: Routledge, 1992.

Wampler, Jan. "The Space Between." Places. Summer 1993: 68-71.

Warke, Val K. "Prolegomena to a Rethinking of Context in Architecture." The Cornell Journal of Architecture. 1996: 8-15

William Rawn Associates, Architects, Inc., LaBella Associates, P.C., and Real Estate Enterprises, Inc. "Reuse Feasibility Study for the Broad Street Aqueduct." September 1994.