

## ABSTRACT

Title of Document: **Center for Media Art and Technology**  
A cultural incubator for the new industrial city

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M.Arch, 2006

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The Digital Harbor initiative in Baltimore, Maryland, has recently been established as an attempt to re-invent the industrial city as a high-tech center. Initiatives and Task Forces have been created in order to encourage high-tech entrepreneurship while the recent attention to various educational centers marks a strong attempt to foster a digital education for the youth of the area. However, a digital culture and identity have not been established in the city.

This thesis deals with the phenomenon which occurs at the intersection of art, architecture and digital technology. By mixing the diverse aspects of artistic digital creation, a cultural intersection will form between education, performance, and display. As a fictional non-profit collaboration between local art institutes, universities, and cultural institutions, the center will provide a venue intended to establish a cultural identity a post industrial city poised to accept the challenges of the temporal environment of the digital age.

# CENTER FOR MEDIA ART AND TECHNOLOGY

A cultural incubator for the new industrial city

By

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Thesis submitted to the Faculty of the Graduate School of the  
University of Maryland, College Park, in partial fulfillment  
of the requirements for the degree of  
Master of Architecture  
2006

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## Dedication

This thesis is dedicated to Mason N. Marchant.

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## **Chapter 1: INTERSECTING RELATIONSHIPS**

Architecture has evolved over centuries as both an art form and a necessity of daily life. During the first century B.C., the theoretician Vitruvius postulated the three essential characteristics of architecture: Utilitas, Firmitas, and Venustas. The literal translation of these Latin words means commodity, firmness and delight. The ideas of built objects addressing the human needs for shelter and protection as well as achieving a certain expressive quality are as apparent today as they were in the Roman Empire.

In contrast, digital technology is a relatively recent development. The benefits of this technology are easily apparent as one looks at the proliferation of computers on society. Computers have been integrated into the daily aspects of our lives: from the PC in almost every household to automobiles, telephones, and entertainment devices.

However, the relationship between architecture and digital technology has not been manifested. As technology progresses, through the forms of architecture and digital media, this relation must be addressed. These two media collide at several critical point of intersection. In order to understand the implications of a building relating to both architecture and digital technology, these intersecting relationships must be understood.

## **THE RELATIONSHIP OF ARCHITECTURE TO DIGITAL TECHNOLOGY**

*“Architects of the twenty-first century will still shape, arrange and connect spaces (both real and virtual) to satisfy human needs. They will still care about the visual and ambient environments. They will seek commodity, firmness and delight. But commodity will be as much a matter of software functions and interface design as it is of floor plans and construction materials. Firmness will entail not only the physical integrity of structural systems, but also the logical integrity of computer systems. And delight? Delight will have unimagined dimensions.” (Mitchell, 1995, p.195)*

The effects of technology have changed the built environment.

Structural innovations in architecture have allow buildings to grow taller, to be built quicker, and to become more efficient with regards to both materials and cost (firmitas) as well as and living habits (utilitas). In addition, the expressive nature of architecture has evolved significantly with the development of technology. Digital applications in design have allowed architecture to reach unprecedented artistic qualities. These applications assist in understanding an implementing concepts that are evolve as fast as the technology around them. However, the role of such technology has not been explored as a key element of the artistic (venustas) aspects of built environment.

- ***Architectural Examples***

Digital technology has played an important role in changing the ideas of identity for a city and place.



Figure 1: Las Vegas, Nevada  
([www.gagfactory.com](http://www.gagfactory.com))



Figure 2: Times Square, NY  
[www.blogography.com/](http://www.blogography.com/)

Las Vegas is known for over the top extravagance. The clutter of electronic signage, all competing for attention, is un-artistically composed due to the lack of spatial context. On the other, the advertising impact on a defined space, as shown in Time Square, NYC, relates at a human scale to the observer.

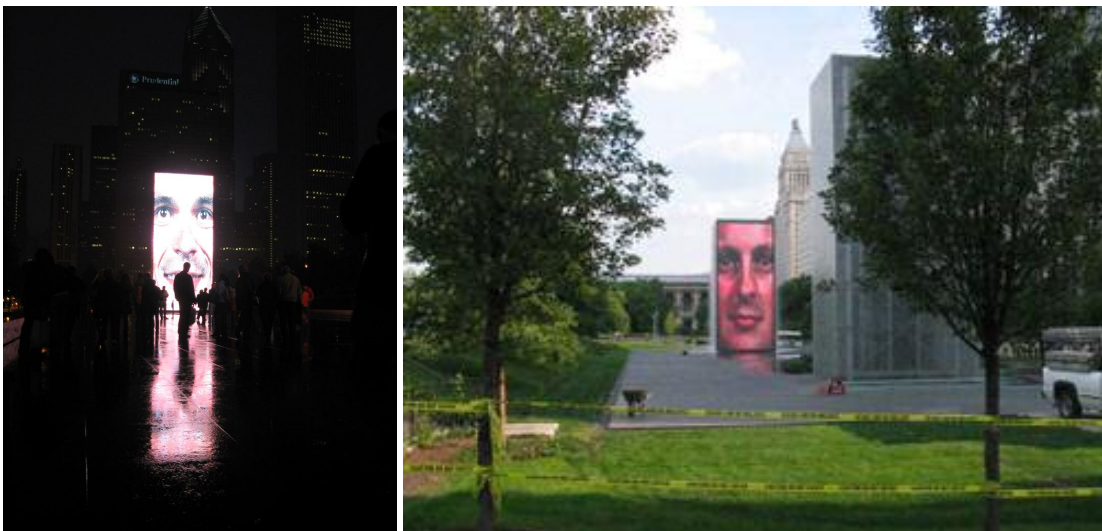


Figure 3: Millennium Park, Chicago  
Photos, left: author, right: [www.mmeiser.com](http://www.mmeiser.com)

In stark contrast, the simplicity of the Crown Fountain, by the artist, Jaume Plensa displays the power of space making elements comprised of digital sculpture. Once again, the defining element of success in these architectural experiences is defined space. Each of these places has an identity. However, visitors in each respective city visit places that result from designed space. Times Square and Millennium Park are destination in, and of themselves. However, tourists in Las Vegas enjoy and observe the busy strip but, ultimately, seek other destinations. With that said, digital art in the architectural world, relies on the same elements that make good architecture: space, form, and light.

### **POINT OF INTERSECTION: ART**

The definition of art is as follows:

- *“Human efforts to imitate, supplement, alter, or counteract the work of nature.*
- *The conscious production or arrangement of sounds, colors, forms, movements, or other elements in a manner that affects the sense of beauty, specifically the production of the beautiful in a graphic or plastic medium.” (Webster, p.105)*

Art has remained a stable cultural amenity for centuries. In addition, art relies on an experiential character. Sensory perception, movement, and time are all essential in the experience. However, art is a broad term defined only by a ‘specific human effort’ to alter nature. The implications of art and technology are manifested both in architecture and in digital technology.

- **Art and Architecture**

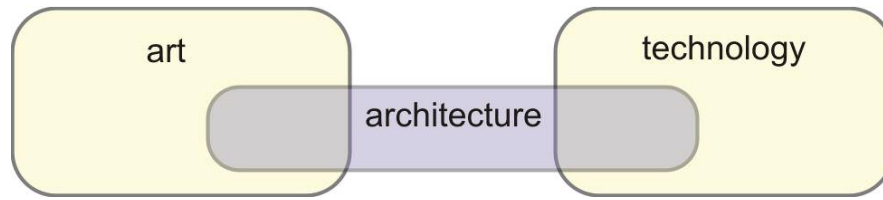


Figure 4: Architecture: the intersection of art and technology.

*“Architecture, more fully than other art forms, engages the immediacy of our sensory perceptions. The passage of time; light, shadow and transparency; color phenomena, texture, material and detail all participate in the complete experience of architecture.” (Holl, p.41)*

Architecture is a unique form of art which relies on a complex understanding of structural technology. Holl, in the quote above, alludes to a separation of architecture from other forms of art. The idea that the sensory experience creates uniqueness in artistic architecture, beyond the metaphors discussed in the previous section, displays an understanding of spatial structure. By including ‘the passage of time, light, shadow, and transparency’ as essential to experience, Holl places the same emphasis on space as on the built work. Where material and detail are haptic phenomena, these natural influences, fluid and intangible, become a concrete element in the building.

- **Art and Digital Media**

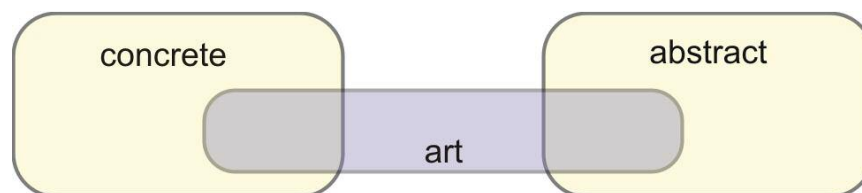


Figure 5: the intersection of concrete and abstract relies on art

Art has evolved over centuries as a valid cultural amenity. Over this time, styles, media, and attitudes have changed. The renaissance introduced perspectival representation into artistic compositions while the industrial revolution fostered ideas of futurism and abstraction. As times changed, the advances of each era raised concerns about the cultural and artistic impact of the corresponding technology. As 'mechanical reproduction' developed as an artistic media, concerns on the impact of art were voiced primarily by Walter Benjamin.

*"The uniqueness of a work of art is inseparable from its being embedded in the fabric of tradition. The tradition itself is thoroughly alive and extremely changeable. An ancient statue of Venus, for example, stood in a different traditional context with the Greeks, who made it an object of veneration, than with the clerics of the Middle Ages, who viewed it as an ominous idol. Both of them, however, were equally confronted with its uniqueness, its aura. Originally the contextual integration of art in tradition found its expression with the cult. We know that the earliest works originated in the service of a ritual – first the magical, then the religious kind. It is significant that the existence of the work of art with reference to its aura in never entirely separated from its ritual function...  
...for the first time in world history, mechanical reproduction emancipates the work of art from its parasitical dependence of ritual. To an ever greater degree the work of art reproduced becomes the work of art designed for reproducibility." (Benjamin, p 225-6)*

Benjamin recognizes a drastic change in the very idea of art. The issues he discusses, while dealing with different technology, is even more valid in the discussion of 'virtual space.' While the ritual has changed, the idea of art remains constant. The idea of mechanical reproduction has only been amplified by the evolution of technology. By distorting, manipulating, and assembling existing artwork with computer, new art can be formed in ways that Benjamin did not consider. However, the media, although new, still

requires an experiential ritual, perhaps even more structured than the urban artwork of the statue of Venus. The expressive nature of personalized art remains essential today as we move forward in an age of highly evolved and rapidly changing technology.

Digital technology has drastically changed the art world; artists are able to explore unprecedented means of expression. However, due the abundance and price of such technology, a resulting culture of isolation, darkness, and privacy threatens to stifle the artistic community. In his book, Digital Mantras, Steven Holtzman (p.211) discusses several of the implications of this technology on the art world:

*“In the unprecedented medium of virtual reality, we can expect unprecedented art, an art that is not only multidimensional but interactive. Our view of the artist will radically change, and our view of reality will also radically change. If art is the sharing of the artist’s consciousness of aspects of a reality, a certain view of a reality, cyberspace will be the future medium for communicating that consciousness.”*

The idea of experiencing art in a virtual world is intriguing. Interactive art, that which could be transformed, reconfigured and adapted to personal ‘profiles’, provide an experiential dimension never available in the past. While the display of art and sculpture, in a specific context, relies on the experience within space and time, the art of the digital world, relying on the flux of time, implies ideas of space to achieve a simulated experience. Like architecture, art relies on form to enhance space, but it is the space itself that gives art its very presence. An additional similarity of architecture and art is the reliance on light. This could not be truer in a medium such as digital art.

While the light of this medium is primarily emitted rather than absorbed, the spatial implications of this light, within architectural space, have not been applied to the fullest extent.

*“The artists of the future will sculpt using the materials from which virtual realities are made rather than clay. – that is, data, pure information. Within the computer, virtual reality is a pattern of information. Just as for language, music, and visual languages, the foundation for building these new worlds will be the explicit description of the structure of these worlds: the basic elements, the rules for combining and sequencing elements, deep structures, surface structures, as well as fractal representations.*

*The artist who will sculpt these new virtual realities are sometimes called “space makers.” In the traditions of centuries of art they could also be thought of as “reality makers.” They will create new worlds.” (Holtzman, p.210-11)*

## **POINT OF INTERSECTION: LIGHT**

- ***Light and the Architectural Experience***

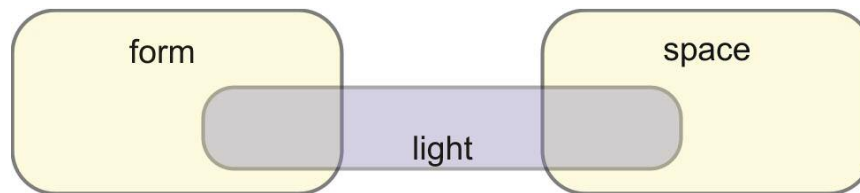


Figure 6: The intersection of form and space relies on light.

*“As we have seen, the notion of architecture as comprised of “space”, rather than of built elements like walls and columns, is a relatively modern one; it first emerged with any force at the end of the nineteenth century as a result of German psychological theories of ‘Raum’ – one thinks Schmarsow, Lipps, and their art historical followers Wolfflin, Riegl, Frankl, et al. Space, indeed, became one of the watchwords of modernist architecture from Adolf Loos to Le Corbusier and Frank Lloyd Wright, rapidly emerging as a primary critical term for the definition of what was modern. Space, more even than function, became a limit term for modernity, not least for its connection with time both before and after Einstein. Space moved; it*

*was fluid, open, filled with air and light; its very presence was a remedy for the impacted environments of the old city.” (Vidler, p143)*

Light is the very essence of the architectural experience. Form and space are only expressed by the presence or absence of light. While form is related directly to the tangible aspects of architecture (providing shelter, security or making a statement), space is unrelated and always present. Successful architecture encloses space in a poetic, comfortable way, using the visible aspects of form and light. By recognizing the presence of light, Vidler proposes space as the heart of the modern movement (specifically urban design) While he does not discuss ideas of form, the abstract notion of space must gain definition from physical boundaries (whether concrete or implied).

*“We must consider space, light, color, geometry, detail, and material as an experiential continuum. Though we can disassemble these elements and study them individually during the design process, they merge in the final condition, and ultimately we cannot readily break perception into a simple collection of geometries, activities, and sensations.”*

Steven Holl (p.45) includes the immaterial qualities of light with the tangible qualities of detail and material. Space and geometry (along with detail and material) are absolute results of built form, designed in a willful moment during the evolution of a building scheme. Light, on the other hand is omnipresent and not necessarily part of architectural design.

Architecture relies on the dimension of time. From an experiential standpoint, the passage of time during the experience of a built work is essential. Ideas of procession rely on the time it takes to move from one

space to the next. However, it is light that gives us the concept of time. As the quality and conditions of exterior light change, the spatial sequence is affected in a different manner for every individual. The contrast in the quality and amount of light is essential in creating a powerful and successful sequence. Holl recognizes the temporal qualities of light as necessary in the 'experiential continuum'; light must play an integral role in the architectural experience.

*"And the cloud that passes over gives the room a feeling of association with the person that is in it, knowing that there is life outside of the room, and it reflects the life-giving that a painting does because I think a work of art is a giver of life. So light, this great maker of presences can never be...brought forth by the single moment in light which the electric bulb has. And natural light has all the moods of the time of day, the seasons of the year, [which] year for year and day for day are different from the day proceeding"*  
(Johnson citing Kahn, p.18)

Architectural space is activated by the flux of natural light. The experience of inhabiting internal space benefits from a direct connection to space outside the confines of the building. By recognizing the temporal qualities of light, the change from day to day becomes as important in the experience as the architecture itself.

Throughout time, light has been regarded essential in conveying ideas of power, wealth, and stature through built form. Stonehenge gains its power and significance from the sun. The play of massive, tangible stone pylons against the ephemeral abstract qualities of light, create a profound expression of ancient knowledge and sophistication. The cavernous internal space of the Pantheon becomes dynamic due to a singular spot of light. The power of this

light is manifested only by the surrounding darkness and relates on a personal level to the observer. In more modern times, architects have embraced light and the power it yields to the expression of form and experience. Le Corbusier's Chapel of Notre Dame at Ronchamp is a prime example. The ideas of material efficiency, primitive worship, and experience are all evident due to a specific attitude towards light. In comparing the two buildings, Steven Holl writes:

*"Ronchamp's paradigm of light and space is nearly the inverse of the Pantheon. While one has a mysterious, asymmetrical rhythm in a concave, curvilinear space scattered with color (from the thick blue and yellow cast glass to the enameled steel door mural), the other is a symmetrical abyss, a hollow purity in black and white. In the Pantheon, the disk of white light is cast as the sun travel along its interior in slow, celestial rhythm. The discontinuous, curvilinear spaces of Ronchamp still seem to point in an optimistically new direction, while the authoritarian purity of the Pantheon remains sublimely ancient. If one refers to the future, the other speaks of time before time' an empty time or at least a prodigious stone instant that keeps questions of time open. In each building, thought and perception seemed balances; here phenomena felt equal to the power of ideas." (Holl, 1994 p.124)*

- **Light and Digital Technology**

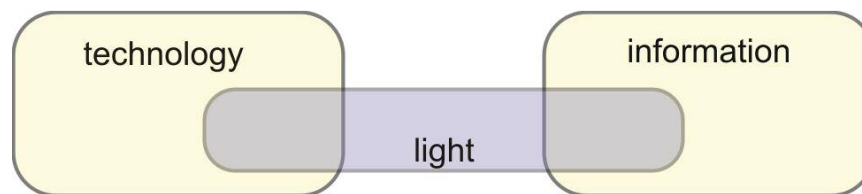


Figure 7: The intersection of technology and information

The mechanical representation of graphics by electronic devices is based on several simple concepts that rely on the manipulation of light via electronic controls. A series of individual small 'dots', or pixels, are grouped

together to form an image. The human brain processes these individual dots as part of a whole by abstracting and combining the individual parts into a coherent image.

Moving images are created by assembling still frames in rapid succession. In the same way as the human brain combines individual pixels to understand an image, this series of moving 'frames' is discerned as on screen motion.

As technology progresses, the basic ideas of pixilation and movement remain constant. The mechanical means of representation have evolved significantly. Following are brief descriptions of this technology

- *LED Display Technology*

Light Emitting Diodes (LED) are essential small light bulbs arranged in an electric circuit. However, there is no filament. Light is created as an electric current passes through the diode. Color and intensity is created by varying the distance between a conductor band and the orbital of an electron (the size of the gap determines the frequency of the photon, the frequency of the photon relates directly to the emitted color)

- *Cathode Ray Tube Display Technology*

Most color television sets use a cathode ray tube to create a picture. In short, this tube produces a ray of electrons which are focused towards a screen

coated with colored phosphors. Red, green, and blue phosphors are arranged in adjacent groupings and shielded by a “shadow mask”. This mask helps direct three electron beams which are being projected concurrently by the cathode ray tube. By controlling the intensity and combinations of the three beams, colors are created as individual pixels which combine to create an image. This beam is rapidly “painted” on the screen in a rational manner: left to right and top to bottom.

- *Plasma Display Technology*

The technology involved in a Plasma Display is very different from the traditional, cathode ray TV. Two plates of glass sandwich the series of pixilated ‘cells’, address electrodes (behind the cells) and transparent display electrodes (in front of the cells). Each pixel in a Plasma display consists of three colored ‘cells’ (RGB). Similar to a fluorescent bulb, these ‘cells’ are filled with xenon and neon gasses that become excited when introduced to an electric current. This activity produces energy in the form of ultraviolet photons which interact with a colored phosphor coating on the walls of each cell and results in visible, colored light. By controlling the electric currents to each pixel, intensity and color combinations result in the desired rendering for each pixel.

- *LCD Display Technology*

Liquid Crystal Display (LCD) technology relies on the control of transmitted light rather than the emission of photons. Nematic phase liquid crystals consist of a patterned order of molecules that react to changes in heat or pressure. A LCD display relies on two layers of polarized glass and a grooved polymer coating (the grooves in the coating align with polarizing film on the glass). A layer of the liquid crystal is then applied to this coating. Like the previous display types discussed, a color LCD display relies on pixels, subdivided with red, green and blue filters. Electric currents are controlled by a matrix of circuits or transistors which control the location of an electric charge. By applying this electric current to the liquid crystal pixels, the transmission of light can be controlled.

- *Holographic Display Technology*

Holographic displays rely on bending and focusing light. By directing controlled light waves towards one another, interference occurs. This interference pattern, at the point where the wavelengths overlap, creates an ability to produce dark and light areas which can be controlled to result in an image. However, a holograph cannot exist without a 'light catching' medium. Glass, film, smoke and mist can serve as this medium. Because a hologram does not rely on a fixed screen or monitor, a medium such as smoke or mist

can create an image that appears to be free standing and three dimensional.

([www.electronicarts.com](http://www.electronicarts.com))

- *What Does The Future Hold?*

*“...If the motion tracking, registration, and superimposition techniques get to be good enough (no easy technological task, incidentally) , such systems will increasingly perform the traditional architectural function of overlaying textual and graphic information onto the human habitat. Ancient buildings simply accomplished this with inscriptions and murals. The Gothic Masters used stained glass. Las Vegas has favored neon lights. Product packagers plaster printed labels everywhere. Our own age has now contributed the possibility of virtual overlays created by microelectronics – perhaps a way to suck all that info-clutter of the surfaces that surrounds us and provide personalized information overlays whenever and wherever we need them. (Mitchell, 1999, p. 41)*

In the current age of high tech information systems, electronic data processing, and virtual communities, it is essential to establish a culture that ties social interactions with the technology that, ironically, promotes isolation. Virtual space exists as an imaginary world; the lights and colors of this ‘place’ are manipulated electronically. This space captivates a generation raised with video games, simulated reality, and instant visual gratification. The societal impacts of digital technology are highly visible through the success of internet business, education, communication, and entertainment. High Tech industries are continually seeking to improve, evolve, and adapt to the changing economic climate around them. The architectural must evolve concurrently with technology in order to remain a viable form of artistic and technological expression.

## POINT OF INTERSECTION: SPACE:

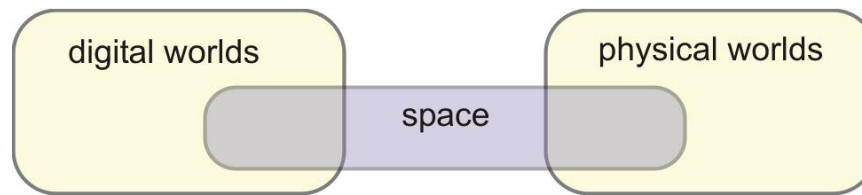


Figure 8 Spatial Connectors

*“In a world of proliferating screen space and speakers, smart surfaces, video-projected displays, virtual reality, and augmented reality, luminous digital information is ubiquitously overlaid on tangible, physical reality. As static tesserae were to Romans, active pixels are to us. Signs and labels are becoming dynamic, text is jumping off the page into three dimensional space, murals are being set into motion, and the immaterial is blending seamlessly with the material.*

*Architecture is no longer the play of masses in light. It now embraces the play of digital information in space.”*  
(Mitchell, 1999, p.41)

- **The Relationship of Space and Architecture**

*“Here space is everything, for time ceases to quicken memory. Memory – what a strange thing it is! – does not record concrete duration, in the Bergsonian sense of the word. We are unable to relive duration that has been destroyed. We can only think of it, in line of an abstract time that is deprived of all thickness. The finest specimens of fossilized duration concretized as a result of long sojourn, are to be found in and through space. The unconscious abides. Memories are motionless, and the more securely they are fixed in space, the sounder they are...For a knowledge of intimacy, localization in the spaces of our intimacy is more urgent than determination of dates.: (Bachelard, p.9)*

Over centuries, many architectural theoreticians have recognized the role of space in architecture. Bachelard recognizes the effects of a spatial experience on the memory. As human beings, the implications of a spatial environment serve to drive memory. Space is an essential part of our world.

Architecture, as an element that creates space, then is responsible for shaping memories and effecting lives.

In the quote below, Le Corbusier states his attitudes regarding the new architecture as a result of form and light:

*“Architecture is the skillful, accurate, and magnificent play of masses seen in light; and contours are also and exclusively the skillful, accurate, and magnificent play of volumes seen in light.”  
(Le Corbusier, p.202)*

By claiming that architecture is the play of form and light, Le Corbusier neglects the idea of a spatial experience in and around built form. The international style was an expressionistic and artistic statement challenging the roots and ideals of contemporary architecture. The ideas of simple form, pared to maximum efficiency, contrasted greatly to the lavish decorations of 19<sup>th</sup> century architecture and created a powerful statement. However, despite his idea of form, the architecture of Le Corbusier is rendered extremely rich by the skillful assembly of spatial sequences. The play of light and form in the Villa Savoye influences spatial movement and greatly enhances the experience of the architecture.

*“Not only do bodies move in space, but space itself does, approaching, receding, turning, dissolving and recrystallizing as it appears through the controlled locomotion and focusing of the camera...” (Vidler citing Kracauer p. 111)*

Space is not a tangible element. As a body moves through space, the space itself adapts, changes and evolves. In discussing the fluid nature of space within film, Kracauer recognizes the artist's requirement to control an element of space. From an architectural standpoint, the camera becomes the

eye of the viewer and the architect, the artist. The architect must compose space in order to create artistic architecture. So, while form is expressive, the play of light creates space that makes the architecture come to life.

- ***The Relationship of Space and Digital Technology.***

*“Artists create alternate views of realities. The fantastic worlds of Hieronymus Bosch and Brueghel are views of other realities. The imaginary worlds of Kandinsky, Klee, Ernst, and Miro with amoeba-like organisms, little animals scurrying about, doodled objects here and there, are views of other realities. The impressionist vision of the late nineteenth century represents a different way of seeing the world. And even the realistic images of Rembrandt and the Dutch school of portrait painters or the hyperrealists of recent years represent a view of the world. A view that is different from a direct view of the world. It is the world as envisaged by artists.” (Holtzman p.210)*

Digital worlds exist in an abstract space. However, the space of these worlds is as realistic as architectural space. This is because space itself is an abstract condition. Captured space, within both digital and architectural worlds, is plastic. Space is the medium that bridges the abstract and the concrete. The abstract reality that is art, relies on the spatial experience within an architectural setting. The digital world relies on the same space, whether created by architectural form or not, in order to be perceived.

*Cyberspace is a completely virtual world that is seen and experienced as if it were real. Individuals connect into this world with jacks that attach directly into the human neural system. They travel through this world and interact with other people in the form of virtual people, with computers that manifest themselves as virtual people, with data that takes visual form in this virtual world (Holtzman, p.208)*

Technological advances have achieved the implication of dimension in cyberspace. The gaming industry has exploded over years, relying on the allure of created space and a form of virtual reality. These spatial implications have not been explored to the maximum of their potential. As the technological world evolves, this form of space will become a stronger and more valid part of both culture and society.

## **Chapter 2: THE SITE**

### **LOCATION**

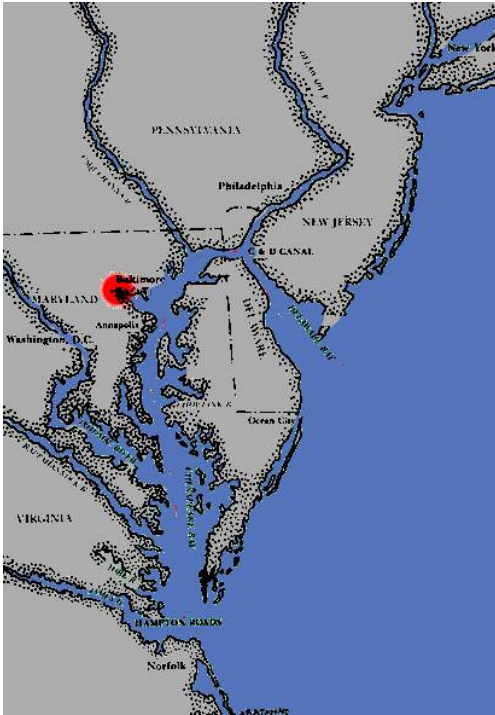


Figure 9: Location Map  
(Keith, p.13)

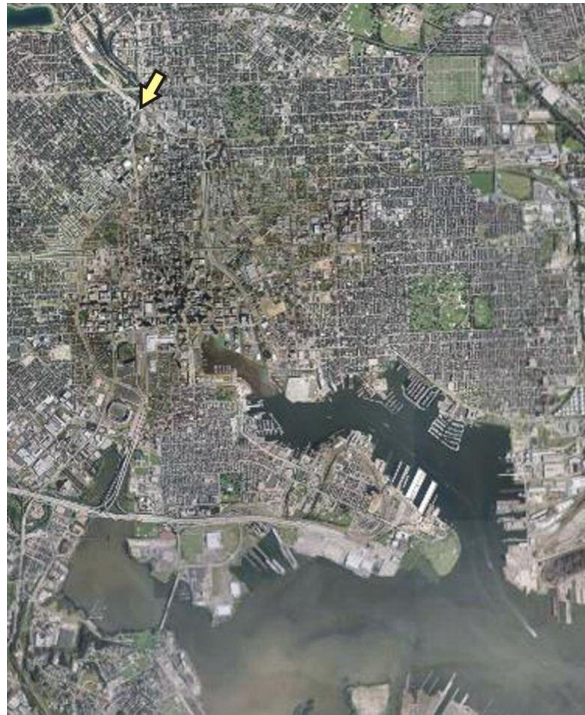


Figure 10: City of Baltimore Aerial View  
Google Earth, 2005)

Baltimore, Maryland is located on the Patapsco River, a tributary of the Chesapeake Bay. Because it's location on the western shore of the bay, the city was established as a hub for commercial shipping. From the city, the inland areas of Pennsylvania, Maryland, Delaware, as well as points further west, were well accessible and the city thrived.

The Center for Digital Arts is located in the northern area of the city, approximately 1.5 miles away of the Inner Harbor and the Central Business District in an area rich with cultural amenities and a rich housing stock.



Figure 11: Block Structure



Figure 12: Figure Ground

At this location, the strict north-south grid of the central city shifts 45 degrees west of north as it intersects with Martin Luther King Boulevard. There are many unique and irregular block conditions along the 'seam'. In addition, the high speed, divided Interstate 83 follows this shift in street pattern as it slices through the urban fabric. Several blocks are isolated by both the conditions of the super highway and the colliding grids. In general, most of these properties have become functional players in the urban stage. However, one particular site remains under-utilized in an amazingly rich area of the city. It is on this site that the new Center for Digital Technology will be located.

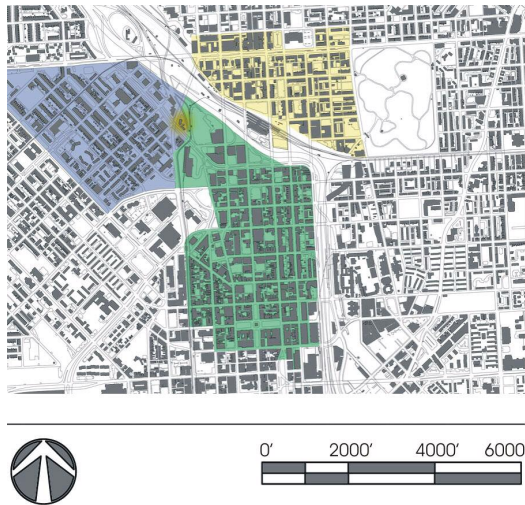


Figure 13: Neighborhoods

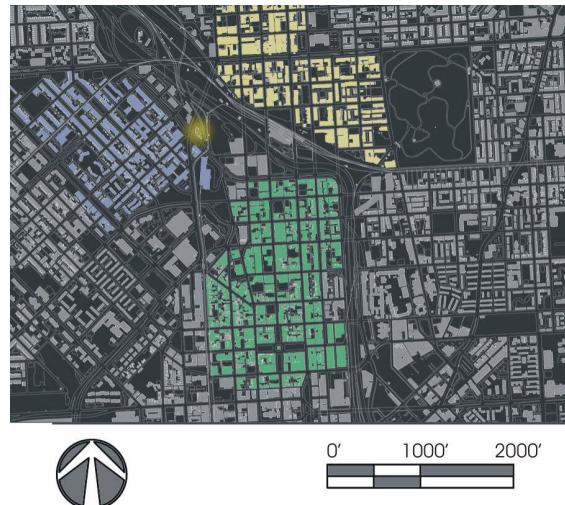


Figure 14: Historic Districts

Not only does this site fall at the intersection of the shifting city block patterns but also at the intersection of several of Baltimore's most unique and historic neighborhoods. To the west is the residential fabric of Bolton Hill (rendered in blue on the Neighborhood diagram). Bolton Hill is primarily residential with very few retail establishments. With a diverse mix of townhouses, apartment buildings, churches, and schools, this neighborhood is home to many young professionals, artists, and 'empty nesters'. The Mount Vernon Cultural District (green on the diagram above) is located directly to the south of this site. This residential fabric of this area is also made up of apartment buildings and row houses but is supplemented with a strong retail base, primarily along the Charles Street Corridor. In addition, this district is home to many art related establishments including museums, galleries and performance venues. The Cultural District centers on the Washington Monument but benefits greatly from a strong mixture of diversity throughout. To the west is the up-and-coming Station North Arts and

Entertainment District (shown in yellow above). The Charles Theater, an established destination in the entertainment circuits of the city at large anchors this neighborhood. This neighborhood suffers from the isolating effects of the interstate but maintains a vibrant art culture that can benefit from as well as supplement the program of the Center for Digital Art. The residential stock of Station North consists primarily of row houses. This area is seeing great efforts in revitalization but real estate values have remained lower than both Mt. Vernon and Bolton Hill. As a result, the population of Station North tends successfully integrate lower income families with students and artists

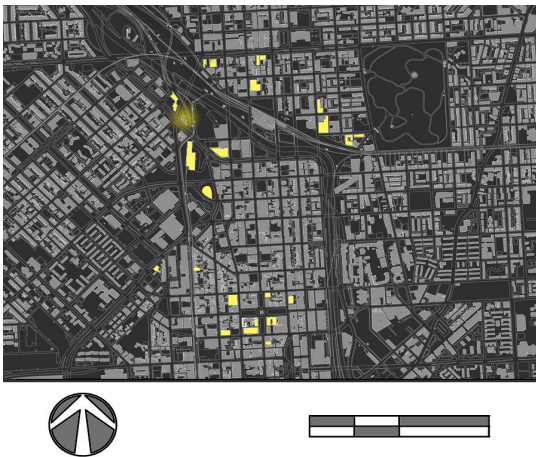


Figure 15: Artistic Institutions

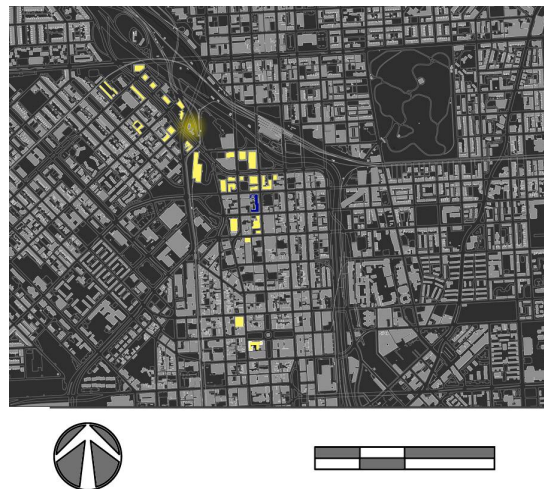


Figure 16: Educational Institutions

The site for the Center for Digital Art is surrounded by many institution, both educational and artistic alike (see diagrams above). Directly adjacent to the site is the campus of the Maryland Institute College of Art (MICA). To the south of the site is the Campus of the University of Baltimore.

A surface parking sharing the southern adjacency to this specific site is used by two schools as well as serving the Light Rail stop.



Figure 17: Train Route

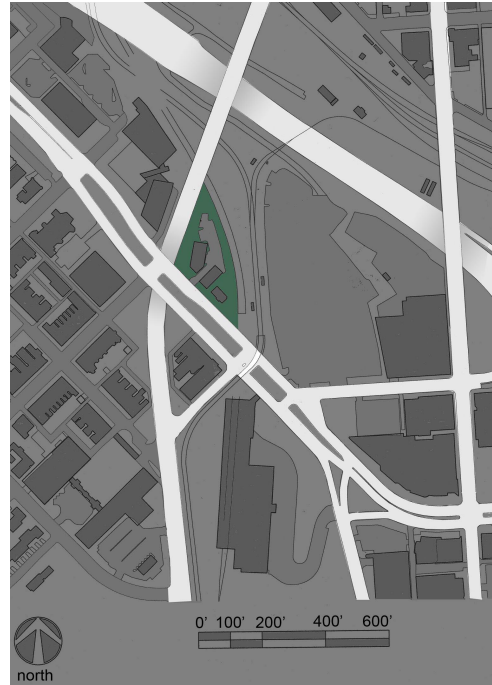


Figure 18: Automobile Routes

Transportation routes, which have isolated this site from the urban surroundings, ironically serve as a great amenity for this site. As shown in the 'Train Route' diagram, the Light Rail Transit (LRT) route currently stops at the southernmost tip of this triangular site. This train system connects the area to points in the northern suburbs of Baltimore as well as the Baltimore Washington Airport to the south. Mt. Royal Avenue, the northwest-southeast running boulevard, provides direct access to the site. High Speed traffic from I-83 is easily accessible but not overpowering due to the location of access points  $\frac{1}{4}$  mile to both the south and the north.



Figure 19: Pedestrian Routes



Figure 20: Walkability

Many destinations are within easy walking distance from this site. As shown in the Walkability Diagram, points of interest such as Penn Station (the central rail hub of Baltimore), MICA, The University of Baltimore, and the three adjacent neighborhoods can be reached within a 10-minute.

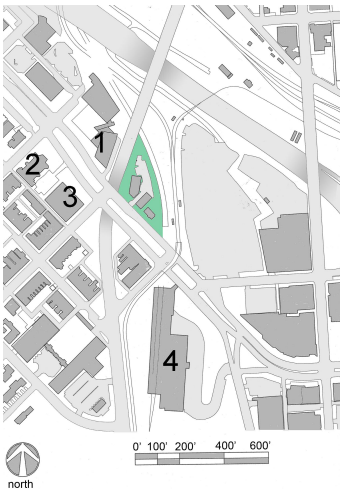


Figure 21: Building Key Plan



Figure 22: MICA Main Bldg & Corpus Christi Church.

(See 2 & 3 on Key Plan)



Figure 23: The Brown Center @ MICA  
(Key Plan 1)



Figure 24:4. The train station, MICA  
(Key Plan 4)

The immediate context includes four signature buildings belonging to the Campus. The most prominent is the Brown Center, located directly across Howard Street to the north. This building, a large canted glass trapezoid, houses the digital curriculum for MICA. The green fritted glass of this building glows at night and establishes an iconographic presence for the cutting edge attitude of the institute. To the Northwest, across Mt. Royal Avenue, is the main building for MICA. This Beaux Arts building, the original icon of the school, references the traditional nature of higher education. Immediately north of this building is a the Corpus Christi Church. While not affiliated with MICA, this building is an established icon of both religion and community in the Bolton Hill Neighborhood. An old train station to the southwest houses both digital and traditional studios and displays another interesting aspect of the university, The adaptive reuse of this building once again displays the ideas of a juxtaposition of past and future in regards to art education.

## **PHYSICAL DESCRIPTION**

The current site consists of three individual parcels of land bounded by Howard street to the North, Mount Vernon Avenue to the West, and, below a severe retaining wall, the CSX Railroad Line to the South. Two small brick ranch-type buildings and one low rise building, all functioning as offices, occupy the site. existing buildings occupy 7434 square feet (16% coverage) and paved surface parking occupying 9690 square Feet (20% coverage). Surface parking along the rear of the site is very inefficient and accounts for 30 cars.

To the South of the site properties results in an area measuring 6.75 acres. Of this area, 5.1 acres (76% coverage) is surface parking with the single building measuring only 49,197square feet or 1.12 acres (16% coverage).



Figure 25: Site Plan

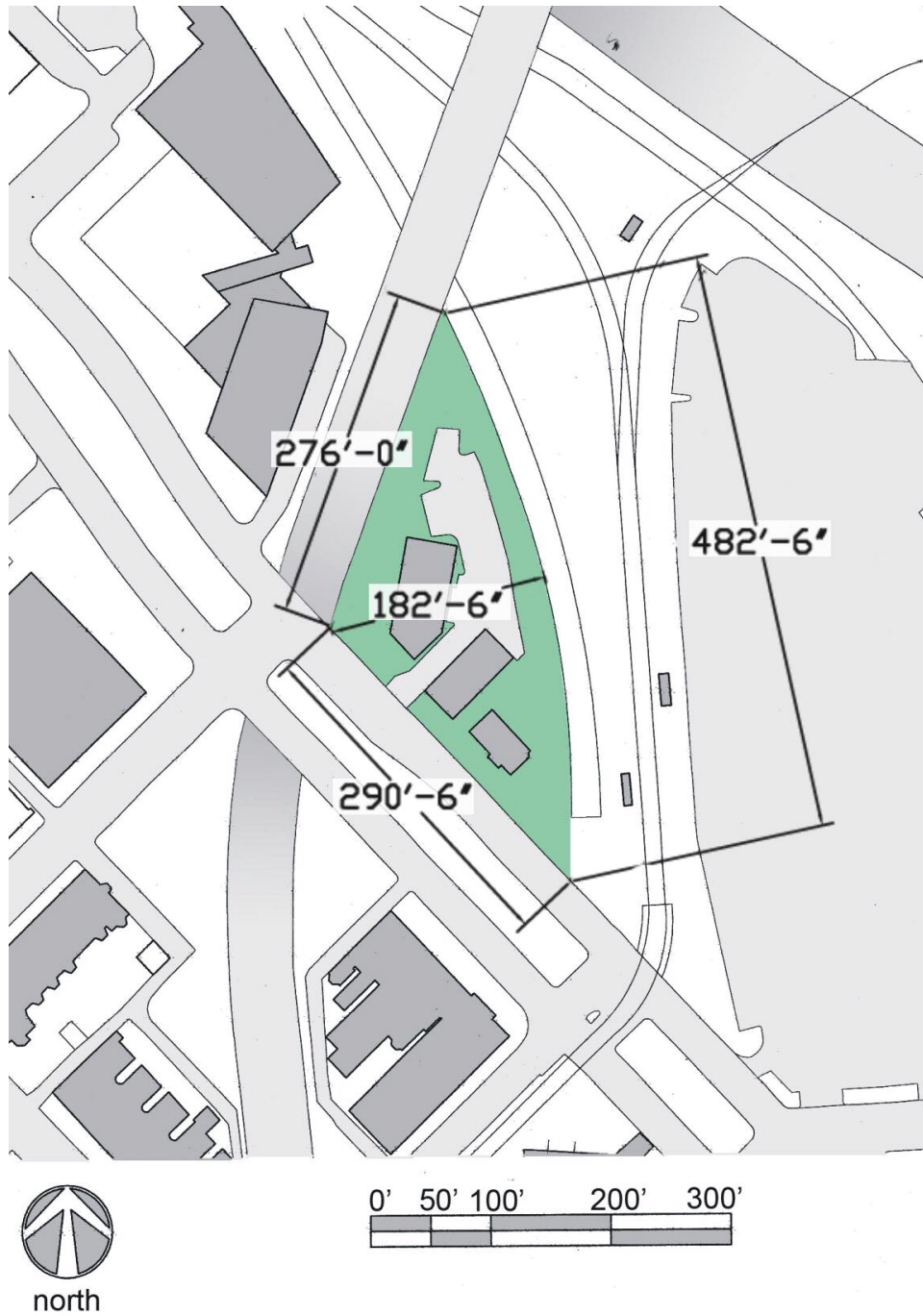


Figure 26: Site Dimensions

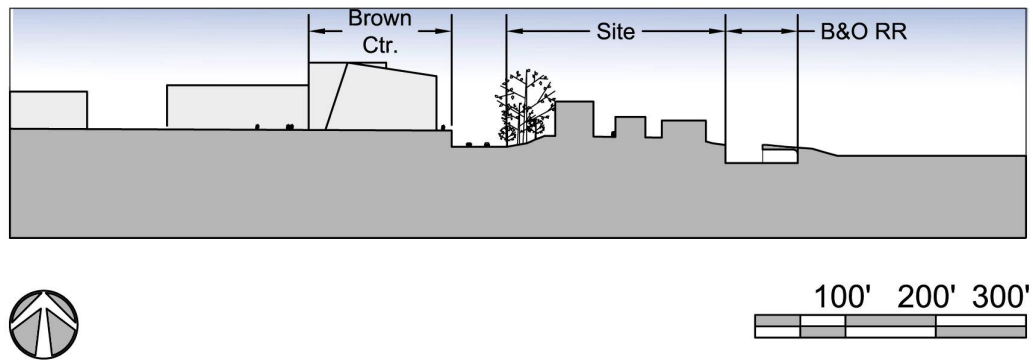


Figure 27: Section A-A

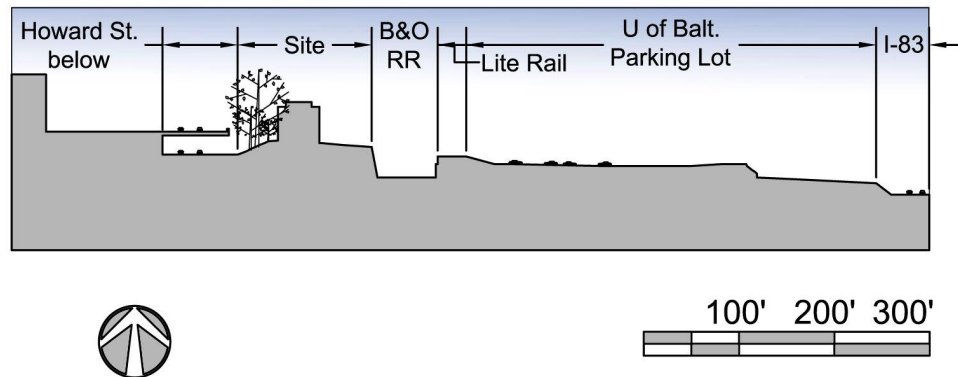


Figure 28: Section B-B

The sectional characteristics of this site further the notion of isolation. The depressed transportation systems of the B&O Railway as well as Howard Street result in street accessible frontage occurring only along Mount Royal Avenue

- ***Edge Conditions***

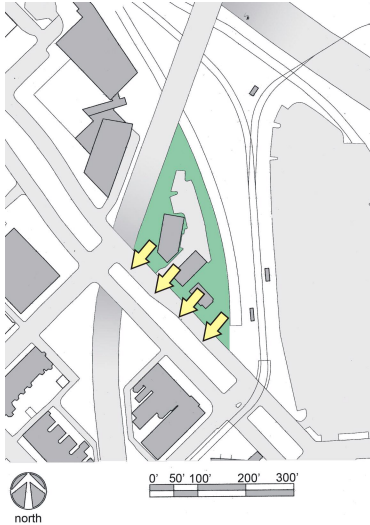


Figure 29: W. Mt Royal Avenue Street Frontage

The street front land use along this stretch of Mt. Royal Avenue is underutilized and furthers the separation of this site from the neighborhoods to the north and south. By activating this street, the connection between districts, people, and cultures will be encouraged.

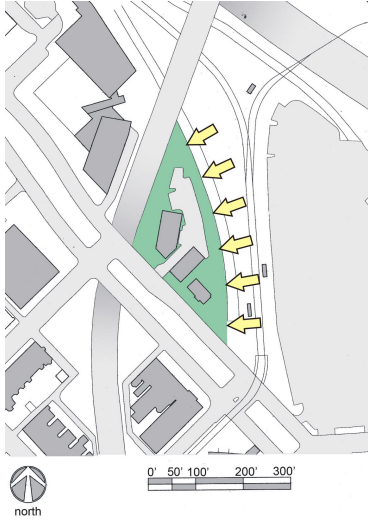


Figure 30 Eastern Edge

The severe retaining wall and sunken B&O rail line create a unique condition on the southern edge.

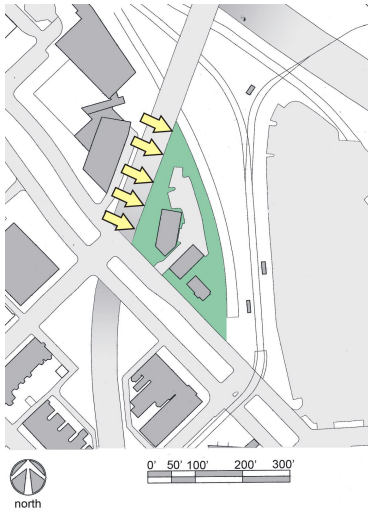


Figure 31: Howard Street Edge

The edge along Howard Street (left side of the photo above) is overgrown and slopes up approximately 10 feet. Howard Street is a high flow, medium speed connector street and has very little street activity around this site.

- **Views**

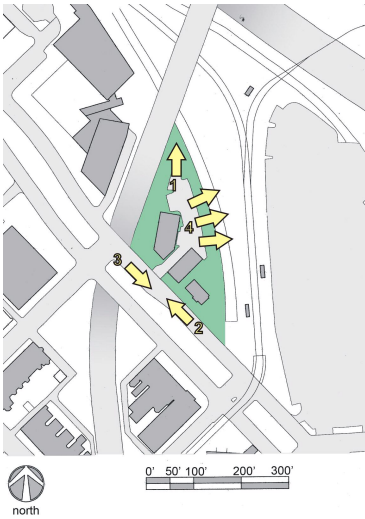


Figure 32: Views from Site



Figure 33: View looking north (See 1 on Key Plan)



Figure 34: Views looking east (See 4 on Key Map)

Views from the site are generally open and panoramic due to the elevational situation. The views east benefit greatly from the retaining wall and sunken rail lines. Street views reinforce the location at the intersection of cultural districts. Landmarks such as the Brown Center, The Train Station, The Lyric Opera House, and the Belvedere Hotel, the Myerhoff Symphony Hall as well as the bridges over I-83 are easily visible and contribute greatly to the uniqueness of the site.



Figure 35: View north up Mt. Royal Ave.  
(See 2 on Key Map)



Figure 36: View south down Mt. Royal Ave  
(See 3 on Key Map)

The approach to this site adds to this character. Similar to the physical isolation, the site is visibly isolated due to the small building masses, vegetation, as well as being overshadowed by eye catching architectural icons.

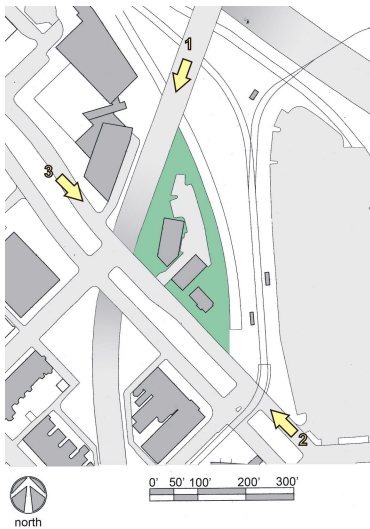


Figure 37: Approach Views



Figure 38: Approach along Howard St.  
(See 1. on Key map)



Figure 39: Approach from South along Mt. Royal Ave.

(See 2. on Key map)



Figure 40: Approach from North

(See 3. on Key map)

## **ZONING REGULATIONS**

The following zoning requirements have selected from the zoning ordinance of Baltimore City (2000) for the three lots, with the addresses of: 1223-5 W. Mt. Royal Ave, 1227-29 W. Mt. Royal Ave, and 1230-33 W. Mt. Royal Ave (see Baltimore City Revised code, Title 5 in appendix-1):

***Zoning District:*** Office- Residence district 2 (O-R-2)

***Permitted Uses:*** Permitted uses in this district include non profit or publicly owned educational and cultural institutions such as colleges, universities, libraries, art galleries, and museums.

***Set Backs:***

- Front: 10'-0" minimum
- Interior side: not required - 10'-0" minimum if included

- Street corner side: 10'-0" minimum
- Rear: 10'-0" minimum

***Floor Area Ratio:***

- May not exceed 3.0

***Off Street Parking:*** For libraries, art galleries, museums, the parking requirement is one for each four employees plus one for each 4000 square feet of floor area.

***Accessory uses:*** No exterior advertising sign is allowed, except (1) non-illuminated or indirectly illuminated identification sign that:

- is limited to the name or description of the use;
- does not exceed 3 square feet;
- is no more than 12 feet high; and
- does not project more than 8 inches from the building.

***Proposed Exceptions:***

This thesis proposes to combine these three individual properties and create one lot measuring 46,572 square feet (1.07 acres). By combining these lots and reducing the amount of side yard setbacks, a building of 139,716 square feet could be built within the 3.0 F.A.R. regulation.

However, the nature of an urban art center relies on some form of external graphics. The study of the effects of digital technology on architecture cannot be restricted to interior space. With that in mind, the exterior signage regulations will be waived. As discussed, this site is isolated

from the context so an exception to this regulation will not be as detrimental to the surroundings as a typical urban lot.

## **HISTORY**

Baltimore was founded in 1730 as a commercial shipping port for the export of tobacco and import of goods, mainly from the West Indies. The city grew around the Inner Harbor and enjoyed tremendous success. Enterprise flourished, resulting in a dense urban core at ion close proximity to the waterfront. In the early 1900's a major fire destroyed 140 acres of downtown Baltimore. However, because of the economic activity happening, the city was rapidly rebuilt and continued to function both as a port and an industrial center. However, as shipping quantities, deep water ports farther down the bay become increasingly financially efficient and the Inner Harbor quickly deteriorated. By the mid 1900's suburban flight has decimated the city, leaving it desolate and crime ridden. Major revitalization efforts included the development of the Inner Harbor to a entertainment and tourist destination. Large scale residential developments were built downtown and city life began to become vibrant once again.

The Maryland Institute College of Art has been a important element of the city since 1825. The original buildings of the institute were located downtown until the Great Fire. In 1905, the Main Building was opened on a piece of landed donated to the school along Mt. Royal Avenue. Since then the school has expanded both its campus and its curriculum. In 1966 MICA purchased the Mt. Royal Train Station. This building, along with the Main

Building and the Brown Center (opened in 1993) serve as the emblems of the MICA campus.

### **LOCATION AS DRIVER FOR PROGRAM**

- ***Synopsis on: ‘Bridging the Digital Divide: Building the Digital Harbor’***

The industrial metropolis of the early 1900’s has lost its vibrancy due to the relocation of the industrial basis of the city. Over the past decades, the loss of over 50,000 jobs contributed directly to decreased population and economy. As a result, a task force has been established by Mayor Martin O’Malley in an attempt to create awareness, and promote the need of high tech industry in Baltimore. The first strategy that this task force identified as necessary to foster such growth were to provide flexible, contemporary office space, to create urban neighborhoods for active lifestyles, and to promote higher, technically savvy, educational institutions ([www.ci.baltimore.md.us](http://www.ci.baltimore.md.us), 2005). By providing financial incentives and marketing these initiatives, the Task Force aims to place Baltimore in the forefront of high tech industry. The smart growth agenda in Maryland already is nationally recognized. By encouraging the growth of urban industry, the city will further display the ideas of living close to work and promote both local and statewide goals.

*“Investing in the Digital Harbor offers the opportunity to once more put Baltimore on the map by creating a platform for the growth of a whole new industry that can transform the City and the region and serve as a model example of Smart Growth on a national scale. This strategy is Smart Growth because it builds on existing assets - Infrastructure, Architecture and Neighborhoods, the Intellectual Power of Local Universities and the*

*local workforce and Baltimore's image as a dynamic American city. It's smart because it uses existing streets and public transportation to get workers to their jobs. It's smart because it helps create the environment and quality of life - with a completed 7-mile continuous waterfront promenade at its core - necessary to compete with Seattle, Washington, DC, and Boston to attract and retain qualified employees. It's smart because it's clear that the more people who work in the city, the more people will live in the City, helping to revitalize neighborhoods. It's smart because technology companies want what Smart Growth areas have to offer - affordable office space in "funky" buildings (new and old), diverse 24-hour neighborhoods with restaurants, parks and active street life, and transportation access. State support will further the success of Smart Growth, allowing Baltimore's people to live, work and play in a city that can serve as a national model for redevelopment."*  
(<http://www.digitalharbor.com>, 2005)

- **Successful Projects**

The first implementation of the initiative was the establishment of the Emerging Technology Centers. Three locations, Canton, Locust Point, and Johns Hopkins, were selected as ideal for establishing a center aimed at fostering digitally oriented entrepreneurs. Leaseable space, at below market rates, in large office settings, benefit young companies by sharing facilities such as restrooms, break rooms, and conference rooms, as well as technical services. In addition, the incubator environment is intended to foster collaboration, increase productivity and profit. The location of these centers is a key issue in the Smart Growth ideas of the Digital Harbor. Neighborhoods in near proximity provide opportunities to live near work. These incubators have proved enormously successful, reaching almost full capacity to date. The Digital Harbor Task force identified a need for high tech education in the city. The Southern High School in south Baltimore has recently been remodeled to specialize in technical education. Renamed the Digital Harbor

high School, this school was modeled after Silicon Valley High Tech high School in California. The Francis Scott Key Elementary/Middle School was earmarked as a magnet school. This allows students from Baltimore the option of attending a school with a curriculum targeted towards integrating digital technology with traditional.

- ***Why a Center for Digital Art?***

These recent developments and initiatives have aggressively established a basis for digital technology in Baltimore. However, there are no cultural benefits or institutions that serve to address the public outside of those immediately associated with the E.T.C. or the technology education Programs. This thesis recognized the importance in culture as a tool to aid in the reinvention of yesteryear's industrial city. If the city is to be seen as a cutting edge destination for high tech industry, the public must be made aware of the cultural benefits. By providing space to encourage creative endeavors, display artistic products, and interact with technology on a cultural level, this institution will benefit the larger image of the city at large.

### **REASON FOR SITE SELECTION**

- ***The Cultural District***

This site lies in an area of Baltimore rich with museums, performing arts venues, art theaters, educational facilities as well as a vibrant housing stock. The site is easily accessible by both automobile and public transportation. By choosing this site, as opposed to the tourist oriented areas

of the Inner Harbor and Downtown, a cultural institution directed towards the people of Baltimore, will establish a visible aspect of the digital culture that is lacking in the current business initiatives. A center intended for the resident population will encourage interest and interaction with a digital media that is not currently being explored as a cultural media.

### **The Maryland Institute College of Art**

MICA is an established institution in the Bolton Hill neighborhood of Baltimore with a very strong attitude towards developing students at the cutting edge of art and design. The Institution offers both undergraduate and graduate programs in both traditional and contemporary fields of art, design, and teaching. Following is a list of degrees dealing with digital media:

#### **Undergraduate Degree Programs (BFA)**

- Experimental Animation
- Interactive Media
- Photography
- Video
- Animation
- Interactive Media
- Photography
- Printmaking
- Video
- BFA and Master of Arts in Digital Arts (BFA/MA) (dual degree)

#### **Graduate Degree Programs**

- MFA in Photography and Digital Imaging
- MA in Digital Arts

#### **Post-Baccalaureate Certificates**

- Certificate in Creative Entrepreneurship

In addition to the attitude of developing students as front runners in the job market, MICA has a strong vision of its impact on the urban context.

Following is an expert from the institute's website describing this vision:

*"A Transformed Campus*

*In creating a comprehensive, fully integrated campus that meets the needs of our students, the College has developed a Campus Master Plan as a component of the Plan for the 21st Century. The Campus Master Plan engaged members of the College community, as well as neighbors and community leaders in a process out of which grew the following goals for ongoing development of the MICA campus:*

- *Strengthen the visibility of the MICA campus, clarify campus boundaries, and create a sense of arrival at campus "gateways."*
- *Improve the pedestrian experience along and crossing Mount Royal Avenue.*
- *Investigate future opportunities for growth by identifying building sites on MICA's campus and opportunities for future property acquisition.*
- *Create quality outdoor gathering spaces to enhance the sense of community.*
- *Reinforce connections between the campus and the Bolton Hill neighborhood."*

*The Plan for the 21st Century will guide the College in building the resources to educate artists for the challenges and opportunities they will face in the coming decades. The plan maintains our traditional strengths in art and design education while ensuring that graduates are prepared to thrive in an art and design environment that is multidisciplinary, intellectually challenging, and technologically complex."*  
([www.mica.edu](http://www.mica.edu), 2005)

The adjacency to MICA is ideal. This location, directly across Howard street from the Brown Center, the digital lab building for many of MICA's digital art degree programs, will serve as a showplace, a meeting space, and

an entertainment destination for many of the students as well as the general public. A venue such as this will provide public visibility for the cutting edge artist endeavors occurring inside the black box labs of the Brown Center. In addition, as a collaborative venture with the Institute, the digital art center will address key issues identified in the vision statement. The visibility of the campus will be strengthened by this building. A visual gateway will be established between this building and the Brown Center as the visitor enters Bolton hill from the east. By locating a singular institution along a stretch of Mt. Royal Avenue that is currently three separated sites, pedestrian connections and street activity will enhance the visibility and viability of the existing campus. By creating both indoor and outdoor public space, gathering places that unite the university and the community at large will prove beneficial in furthering the agenda of both MICA and the new center.

- **Access to Light**

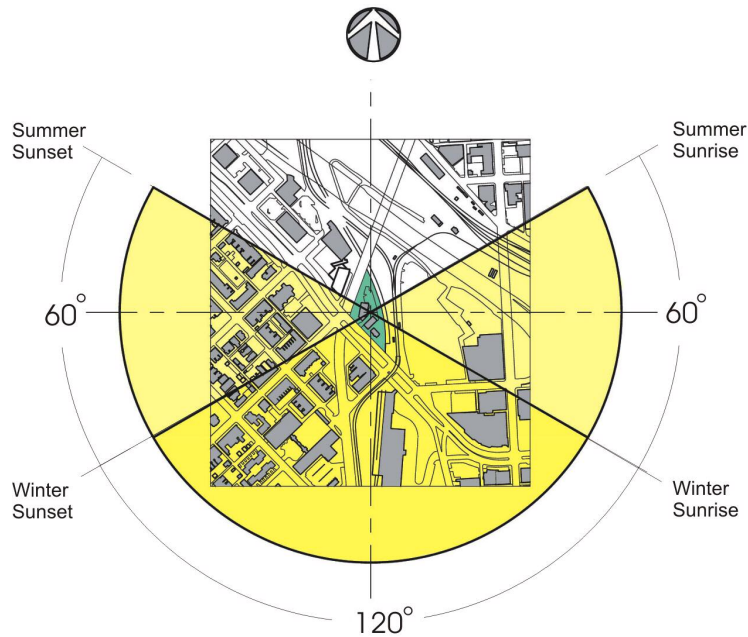
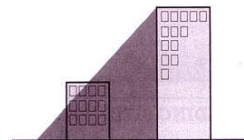
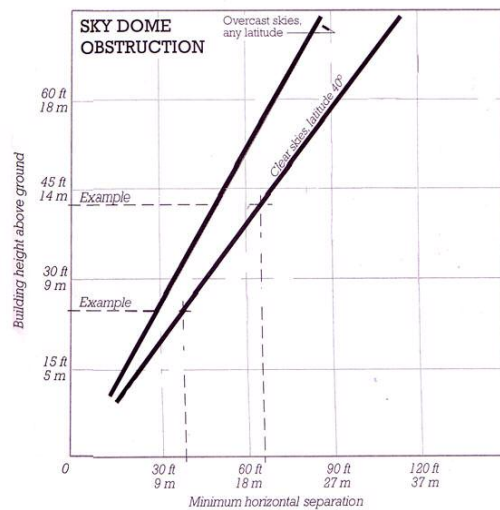


Figure 41: Solar Access Diagram

The corresponding solar issues are as follows:

- Summer Solstice: 14 hours of daylight 74 degrees: Altitude of Noon Sun
- Winter Solstice: 9 hours of daylight 28 degrees: Altitude of Noon Sun



This chart is for determining daylight obstruction between buildings.

■ To ensure full access to daylight for your building, read the chart using the height of adjacent buildings or structures. Locate your building so that it is at least as far from each of these structures as indicated on the chart.

■ To ensure that your building does not obstruct access to daylight for adjacent structures, read the chart using the height of your building and locate your building at least as far away from the adjacent structures as indicated.

Figure 42: Sky Dome Obstruction Diagram

(Allen & Iano, p.229)

The location, orientation, and topography of this site are integral to this thesis. The Southern side of the site lies approximately 13 degrees east of south with the western most point located at the corner of Howard Street and Mount Royal Avenue. The irregular geometry of this site adapts itself very well to issues of solar design. By turning a corner towards the west, the negative aspects of the harsh afternoon sun can easily be screened while still being used as a key element in the architecture. The angle of the southern façade, slightly east of west, provides plentiful access to light while achieving an ability to utilize the potential of passive solar heat gain. A traditional museum benefits greatly from access to northern light. While this site does not have a northern exposure, the Howard Street façade is approximately 21 degrees east of due north.

Because of the sunken B&O railroad to the south, the section of this site results in an area that appears 'perched' above the surrounding buildings of the proposed masterplan. The right of way of both the B&O and the Light Rail tracks ensure access to natural light and allow taller buildings in the master plan of the adjacent lots. Because this thesis explores light as a material essential in the design of architecture, a site with this type of access to the desired light.

## **Chapter 4: DESIGN GOALS AND STRATEGIES**

### **URBAN INTENTIONS**

The new Center for Digital Art will be located on a site which requires great attention to the effects of the building on the urban surroundings. Although the site has only one useable street frontage, the center must respond to the urban context in 360 degrees. The frontage along Mount Royal Avenue requires an engagement of street life. By placing retail and entertainment facilities in close proximity with pedestrian activities, caused by both the Light Rail stop and the location between institutions and residential, street life will be encouraged and ensure the success of the institution. To the north, the Brown Center has an entirely different impact on the design. With Howard Street below first floor level, the relationship is visual. The iconographic nature of this building portrays the embrace MICA places on the future and technology. establishment cannot overshadow or detract from the imageability of this building. Instead, the design must relate to and respect the institution as a contributing member to the both the neighborhood and the center. In order for an institution of this nature to be fully effective, it must have a discernable image. This thesis will explore designed relationships between iconographic buildings and result in complimentary aesthetics. To the south and east, the building will be highly visible. The isolation caused by the rail lines and the topography will expose this façade. Design effort is placed on making a connection as an expressive component of the architecture. This Digital Art Center will be a key player in the urban activities

that take place in and around it. As a component in the urban context, an object building must achieve more than objectivity. It must contribute to the culture of the city at large. This building, intended to expose a digital culture, will only be successful by engaging the urban experience.

### **THE CENTER FOR DIGITAL ART**

This thesis seeks to give a venue to display such art. As a cultural destination, this center will act as an incubator for ideas of the cultural aspects of digital technology. Art, music, and theater will serve as a medium to elevate the awareness of culture.

This thesis proposes an institution that embraces the simulated space of digital technology and the space created as a result of built architectural form. Space enhanced by the interaction of tactile material with natural light will compliment the art forms sculpted in simulated reality. The inclusion of the natural world into built form relates to the juxtaposition of natural light and digital media; light is the bridge between the physical world and the virtual world.

## **Chapter 5: PROGRAM**

### **PROGRAMMATIC INTENTIONS FOR DEVELOPED SITE**

- **Structured Parking**

Because the need to replace parking is self-evident, a major focus will be placed providing around 500 parking spaces in structured parking. However, these structures will be wrapped with functional program and be used to isolate the noisy conditions of the surrounding transportation modes.

- **Train Station**

A boarding station for the LRT line will play a key role in this redesign. The connection to the greater city via public transportation is essential and will be stressed.

- **Public Open Space**

Artscape is an important existing annual event held on this site. Public Open Space will be created with the intentions of maintaining this activity as well as serving as an amenity for the neighborhood. The presence of the Digital Art Center in this neighborhood will be exploited for functions such as Outdoor cinema, performances, and installations. The buildings of both developments will be explored as projectors and receptors of digitally created art.

## **PROGRAMMATIC INTENTIONS FOR THE CENTER**

By mixing programmatic functions of the traditional museum with artist studios and labs, as well as educational facilities, the Center for Digital Art will seek to educate and inform the public and display the wealth of the cultural aspects of digital technology. In addition, by including restaurant, retail and theater space, the institution will become an active destination for cultural events. The contents of the center are focused on digital technology. However, the displayed subjects will range from monitor display to traditional wall art and sculpture. State of the art technology will be employed throughout the building, but the architecture will rely on the age old qualities of natural light

## **PROGRAMMATIC SIZES AND ADJACENCIES**

- ***Program Breakdown***

### **EXHIBITION**

Area:

- |                                |        |        |
|--------------------------------|--------|--------|
| • Galleries:                   | 30,000 | Sq.Ft. |
| • Conservatory / Preparations: | 3,000  | Sq.Ft. |

### **EDUCATION**

- |                   |       |        |
|-------------------|-------|--------|
| • (3) Classrooms: | 3,000 | Sq.Ft. |
| • Lounge:         | 500   | Sq.Ft. |
| • Screening Room: | 1,000 | Sq.Ft. |
| • Seminar Room:   | 1,000 | Sq.Ft. |
| • Computer Labs:  | 1,000 | Sq.Ft. |

### **PRODUCTION**

- |                            |       |        |
|----------------------------|-------|--------|
| • Sound/ Performance Labs: | 1,000 | Sq.Ft. |
| • Paint Shop:              | 800   | Sq.Ft. |
| • Wood Shop:               | 1,000 | Sq.Ft. |
| • Metal/Machine Shop:      | 1,000 | Sq.Ft. |

• Gaming Division:	1,000	Sq.Ft.
• Print Studio/ Dark Room:	800	Sq.Ft.
• Moving Image Lab:	800	Sq.Ft.
• Artist in Residence:	800	Sq.Ft.

## **THEATER**

• Black Box:	4,000	Sq.Ft.
• Green Room:	800	Sq.Ft.
• Dressing Room:	800	Sq.Ft.
• Storage:	600	Sq.Ft.
• Restrooms:	800	Sq.Ft.
• Lobby:	600	Sq.Ft.
• Rehearsal:	1,000	Sq.Ft.
• Outdoor Cinema:	6,000	Sq.Ft.

## **LIBRARY**

• Library:	4,500	Sq.Ft.
• Archives:	1,500	Sq.Ft.

## **OFFICES**

• Director' Office:	500	Sq.Ft.
• (2) Curator's Office:	2,000	Sq.Ft.
• Administration Offices:	500	Sq.Ft.
• Educator's Office:	500	Sq.Ft.
• Conference Room:	500	Sq.Ft.
• Lounge/Kitchen:	500	Sq.Ft.

## **RETAIL**

• Bookstore:	1,500	Sq.Ft.
• Museum Store:	2,000	Sq.Ft.

## **RESTAURANT**

• Bar:	1,500	Sq.Ft.
• Restaurant:	4,000	Sq.Ft.
• Kitchen:	1,000	Sq.Ft.
• Restrooms:	1,000	Sq.Ft.

## **ENTRANCE**

• Lobby:	2,000	Sq.Ft.
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• Coat Check:	300	Sq.Ft.
• Restrooms:	600	Sq.Ft.

## **SUPPORT**

• Server Room:	600	Sq.Ft.
• Tech Support:	600	Sq.Ft.
• Custodial:	500	Sq.Ft.
• Loading:	500	Sq.Ft.
• Storage:	3,000	Sq.Ft.

<b>Sub Total:</b>	90,900	Sq.Ft.
-------------------	--------	--------

• Circ. (20%):	18,180	Sq.Ft.
• Mechanical (10%):	9,090	Sq.Ft.

<b>GRAND TOTAL:</b>	<b>118,170</b>	<b>SQ.FT.</b>
---------------------	----------------	---------------

- ***Program Description***

The intentions of the program of the Center for Digital Art are as follows:

- **Exhibition**

Galleries will include space for electronic as wells as traditional art forms.

Two-dimensional installations will be treated in both traditional and inventive ways. Space and structure will be also designed to accommodate large three-dimensional installations.

- **Education**

Education is an important issue, particularly when dealing with a somewhat un-explored medium. The Center for Digital art will include classroom space intended to supplement MICA as well as publicly available classes, seminars, and workshops.

- **Production**

Studios dealing with various aspects of the digital production of art will be included in order to expose the visitor to process as well as product.

- **Theater**

Performance space will include indoor and outdoor spaces to establish the museum as an integral part of a citywide artist community. These activities will include film, music, and theater.

- **Library**

A library will be treated as both a paper and a electronic facility for the Digital art Center as well as MICA.

- **Offices**

The administrative aspects of running a collaborative venture will be housed within the Center.

- **Retail**

A museum novelty store and a bookstore are included in the program of the Center. Special attention will be paid in the location of these functions with regards to street front activity and the urban implications of this building.

- **Restaurant**

The Center for Digital Art will have an in-house, privately operated bar and museum. These elements are included in an effort to enhance this building as a cultural destination place.

- **Topological Diagram**

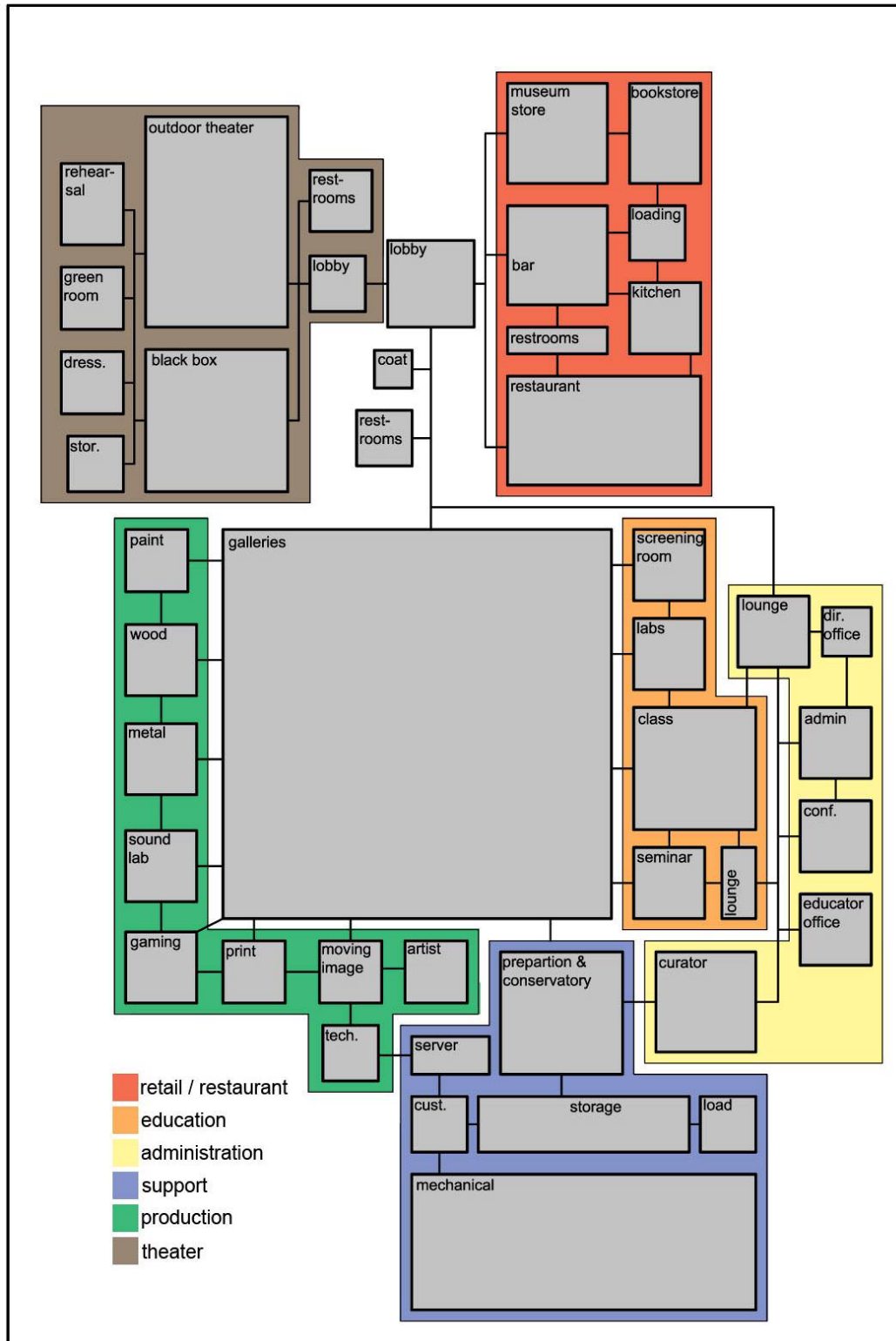


Figure 43: Topological Diagram

## Chapter 6: PRECEDENTS

### EYEBEAM MUSEUM OF NEW MEDIA, DILLER + SCOFIDIO

The Mission of the Eyebeam Museum of New Media:

“Eyebeam engages cultural dialogue at the intersection of the arts and sciences. Its goal is to forge an understanding of the relatedness of these practices, which are becoming increasingly significant engines of cultural production. Eyebeam amplifies the flux and hybridity of the art/science intersection by openly fostering the parallel strands of EDUCATION, RESEARCH, PRODUCTION, EXHIBITION with its public and peers. It implements this mission by:

- Providing educational programming and access to cultural resources to the community.
- Facilitating research and development of innovation in cultural production and technology.
- Enabling artistic creation by providing access to technological and cultural resources.
- Expanding and informing the critical perception of art, culture and media through exhibitions and public programs.”  
([www.eyebeam.org](http://www.eyebeam.org). 2005)

The Eyebeam Museum for New Media is an un-built project designed by Diller + Scofidio of New York, NY. An existing organization, currently using space in Chelsea, hosted a competition open to 30 architects for the design of a new facility. The Diller + Scofidio scheme was selected and is scheduled to open in 2007. This project was analyzed mainly because of the program but also the creative way uses are mixed throughout the building.

## **ESTIMATED PROGRAM**

### **EXHIBITION**

- Gallery: 28,500 Sq. Ft.
- Conservation / Preparation: 2,000 Sq. Ft.
- Outdoor Terrace: 2,500 Sq. Ft.

#### **Total Exhibition:**

**33,000 Sq. Ft.**

### **EDUCATION**

- Classroom: 2,500 Sq.Ft.
- Lounge: (Shared): 200 Sq. Ft.
- Tech Support: 1,000 Sq. Ft.
- Screening Room: 1,000 Sq. Ft.
- Seminar Room: 1,000 Sq. Ft.
- Computer Lab (Shared): 800 Sq. Ft.
- Outdoor Terrace: 1,500 Sq. Ft.

#### **Total Education:**

**7,000 Sq. Ft.**

### **PRODUCTION**

- Sound / Performance Labs: 1,000 Sq. Ft.
- Paint Shop: 800 Sq. Ft.
- Wood Shop: 600 Sq. Ft.
- Metal / Machine Shop: 600 Sq. Ft.
- Gaming Division: 600 Sq. Ft.
- Print Studio / Darkroom: 600 Sq. Ft.
- Moving Image Lab: 600 Sq. Ft.
- Outdoor Terrace: 1,000 Sq. Ft.
- Artist in Residence: 800 Sq. Ft.

#### **Total Production:**

**6,600 Sq. Ft.**

### **THEATER**

- Black Box: 4,000 Sq.Ft.
- Green Room: 600 Sq.Ft.
- Dressing Rooms: 600 Sq.Ft.
- Storage: 200 Sq.Ft.
- Restrooms: 1,000 Sq.Ft.
- Lobby: 600 Sq.Ft.
- Rehearsal: 1,000 Sq.Ft.
- Outdoor Cinema: 5,000 Sq. Ft.

**Total Theater: 13,000 Sq. Ft.**

**LIBRARY**

- Library: 4,500 Sq.Ft.
- Archives: 1,500 Sq.Ft.

**Total Library: 6,000 Sq. Ft.**

**OFFICES**

- Curators Office: 2,000 Sq. Ft
- Admin Offices: 1,000 Sq. Ft.
- Education Offices 1,000 Sq. Ft.

**Total Offices: 4,000 Sq. Ft.**

**RETAIL**

- Bookstore: 2,000 Sq. Ft.

**Total Retail: 2,000 Sq. Ft.**

**RESTAURANT**

- Bar: 2,000Sq.Ft.
- Restaurant: 4,000 Sq. Ft.
- Kitchen 1,000 Sq. Ft.
- Restrooms 1,000 Sq. Ft.
- Outdoor Dining Terrace: 2,000 Sq. Ft.

**Total Restaurant: 10,000 Sq. Ft.**

**CIRCULATION**

- Main Lobby: 2,000 Sq.Ft.
- Stairs, Elevators, Lobbies 10,000 Sq. Ft.

**Total Circulation: 12,000 Sq. Ft.**

**MECHANICAL**

- Equipment Room: 6,000 Sq. Ft.
- Custodial: 300 Sq. Ft.
- Loading Dock 100 Sq. Ft.

**Total Mechanical: 6,400 Sq. Ft.**

**GRAND TOTAL: 100,000 Sq.Ft.**



Figure 44: Urban Context

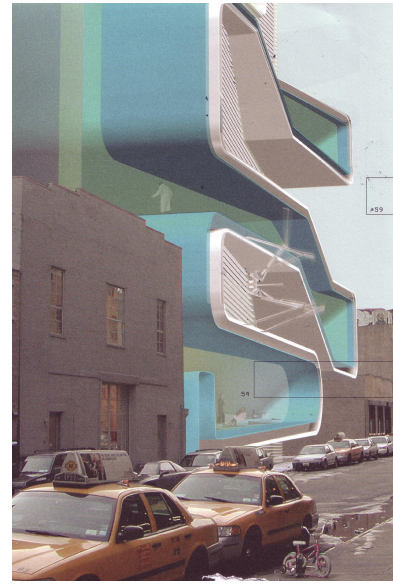


Figure 45: Street View

Exterior perspectives showing the iconographic Museum in an urban context. The surrounding buildings are older industrial buildings with fairly low roof heights. The design of the building is based on the idea that these buildings will be demolished in the near future and replaced with taller buildings. Therefore, it is the responsibility of the building to anticipate the future in order to guarantee success. (photos: Bell, p.16)

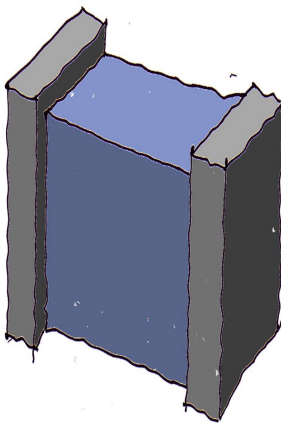


Figure 46: Eyebeam Parti Diagram

The parti of the Eyebeam Museum of New Media is simply two vertical bars containing circulation and services with open “floor plates” between. All the functional spaces occur in the center zone which is free of columns.

Right: Floor Plan Use Diagram  
 Blue: Presentation Functions  
 Grey: Production Functions

The zoning of each floor show varying degrees of separation between production and presentation.

In the areas of the gallery space, production space is separated from presentation space by liquid crystal filled glass walls that can become opaque when desired. By mixing the uses, the production activities become an integral part of the museum experience.

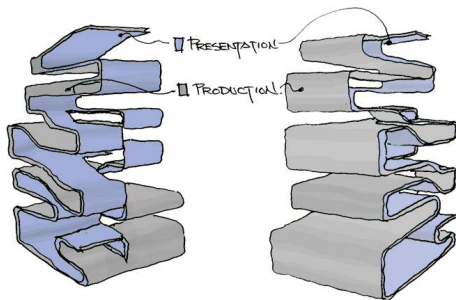


Figure 47: Ribbon Diagram

The basic organization of this museum is based on undulating ribbons that separate production and presentation. The overlap of functions mentioned above occurs where the ribbons are split.  
 (Diagram: author citing Bell, p.13)

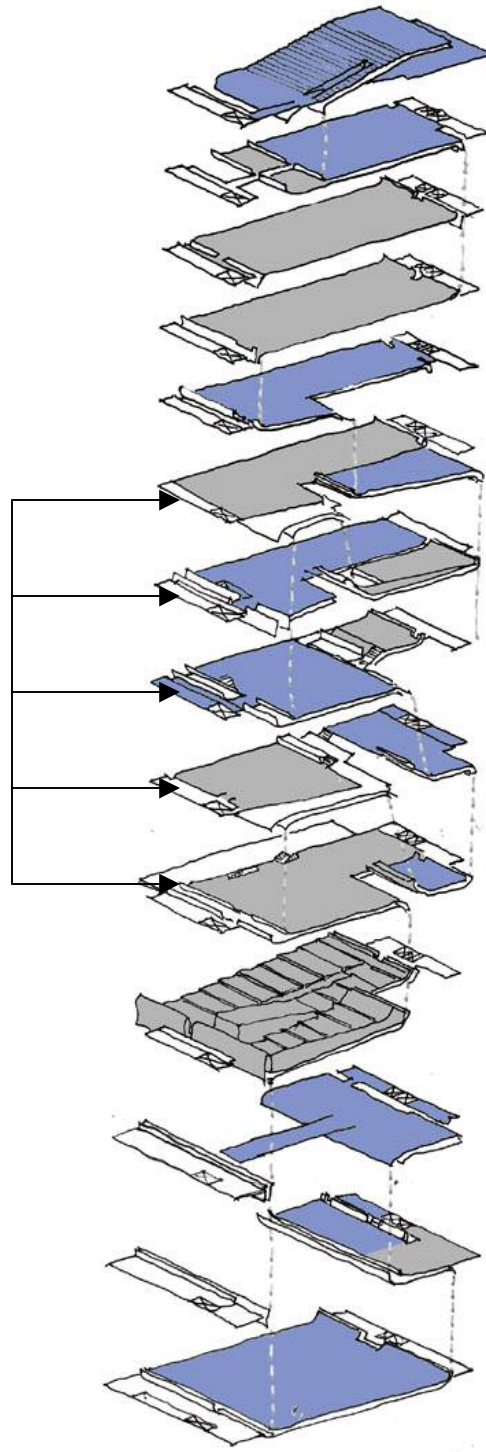


Figure 48: Plan Use Diagram

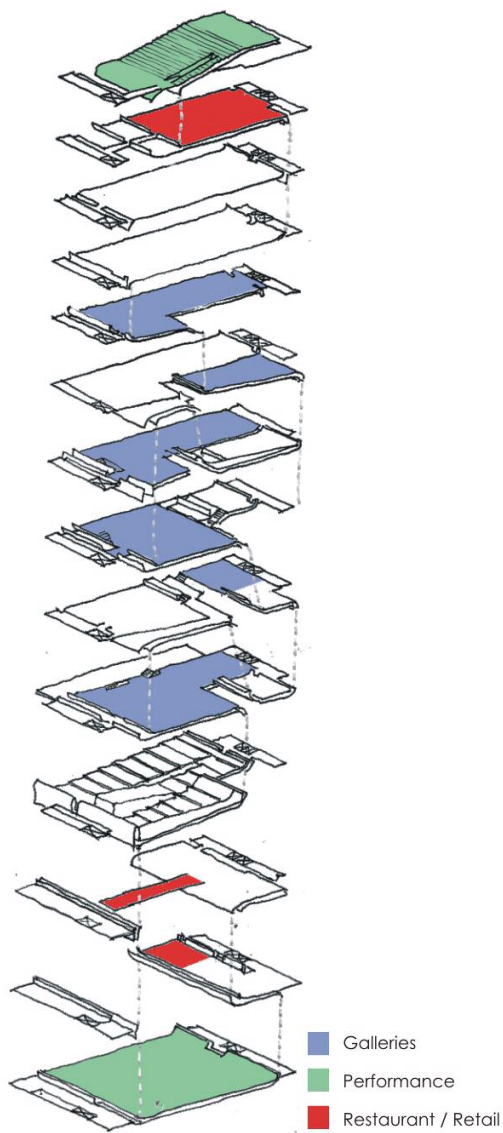


Figure 49: Distribution of Program: Presentation Spaces

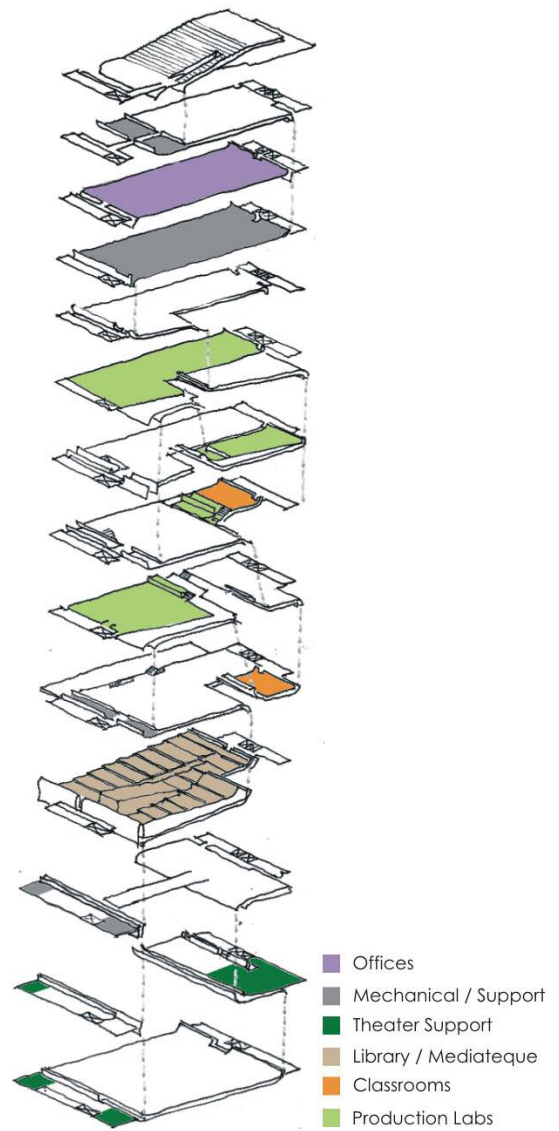


Figure 50: Distribution of Program: Production Spaces

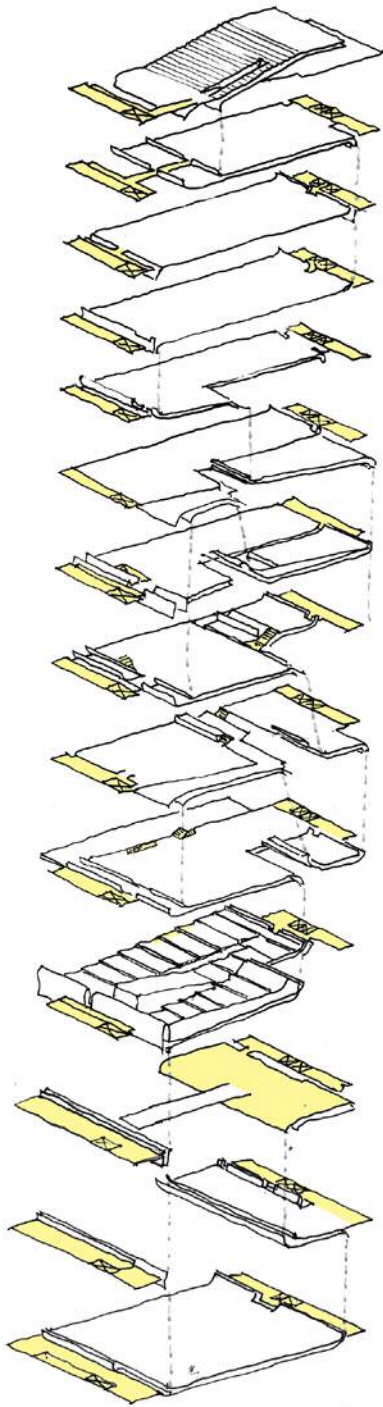


Figure 51: Circulation

Most of the circulation happens in the two bars that flank central functional spaces. In the gallery floors, the ribbons split and some alternate circulation is created between floors

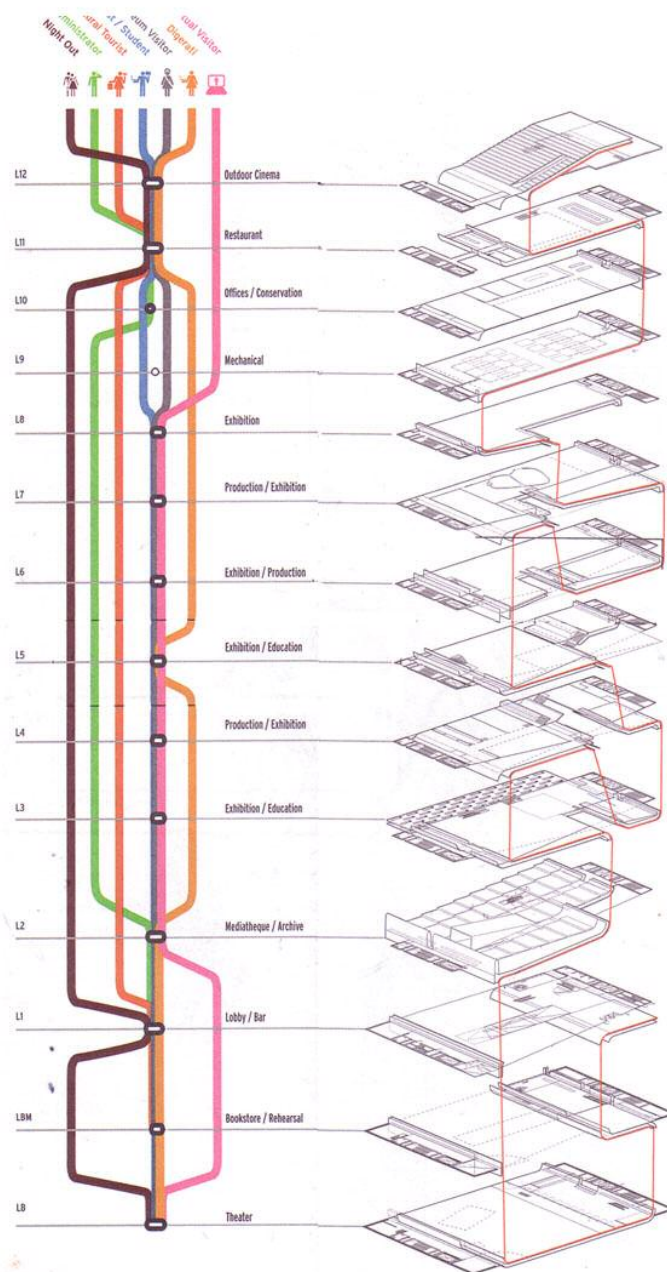


Figure 52: Floor Use Matrix:

The mix of production and presentation spaces creates a rich diversity of visitors on many floors of the museum. It is essential to achieve this type of visibility in order to fully communicate the culture of digital art. (Diagram: Bell, p.9)

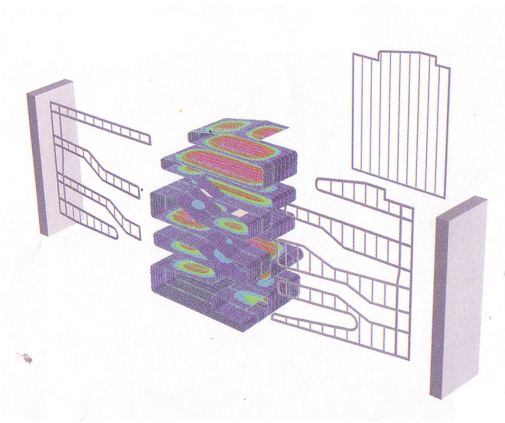


Figure 53: Structure Diagram

Structure is treated as an integral element in the experience of this museum. The Vierendale truss allows for the structural support of heavy sculpture while creating display spaces free of columns. (Diagram: Bell, p.146)

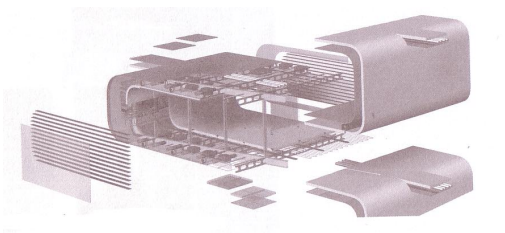


Figure 54: Mechanical Diagram

Mechanical systems are incorporated with special attention towards future development. Additionally, an electronic wireless system allows the visitor to create a profile that is able to create personalized experiences throughout the museum. (Diagram: Bell, p.52)

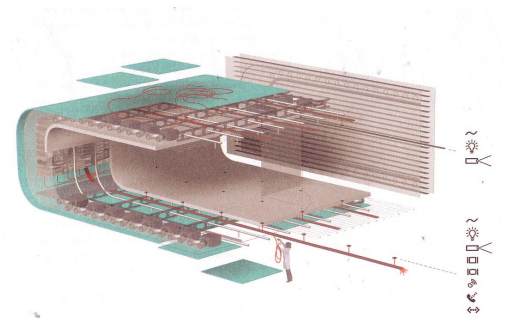


Figure 55: Systems Diagram

A uniform grid of electronic jacks allows for flexibility in installations. The panelized system additionally allows for ease of interchangeability and adaptation as technology evolves. (Diagram: Bell, p.28)

## **KIASMA MUSEUM OF CONTEMPORARY ART, STEVEN HOLL**

This museum was analyzed because of the design attitude towards light. In addition, the site has many similarities to the Bolton Hill site for the new Museum of Art and Technology. Located in Helsinki, Finland, this museum was a result of a competition held in 1992. This scheme, designed by Steven Holl was selected because of watercolor renderings depicting the indoor quality of space and how it was enhance by natural light.



Figure 56: Exterior View

This museum is an object building that is located in an awkward urban site that is defined by the street. The language of the building is obviously modern but and portrays the contemporary nature of the contents. (Holl, 2000 p.40-1)

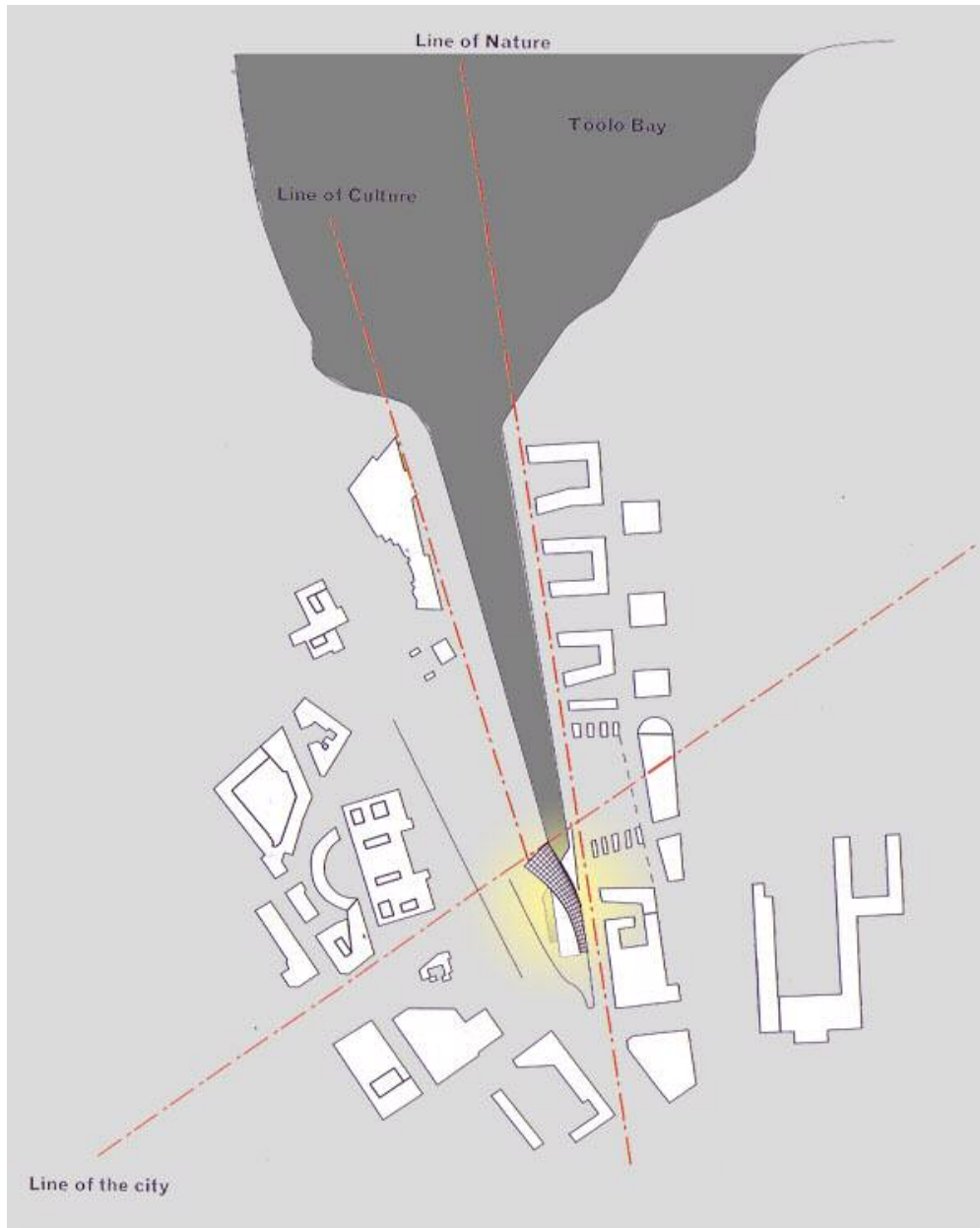


Figure 57: Kiasma Site Plan

The building is located in a triangular piece of land resulting from a view corridor created in a masterplan by Alvar Aalto. Holl solves the issues of site geometry by locating an entry plaza on the southern portion of the site and creating intersecting regulating lines relating to the urban context. The line of culture relates the museum to Aalto's Town Hall while a line relating to the grid of the city crosses at an angle. A third line relating to the Toolo Bay defines the eastern side. The ideas of the urban experience influenced by this building are that of many views, revealing themselves as one moves around the curved walls of the façade.

(Author enhancement from Futagawa, p.96)

Below: Utilizing the unique properties of natural light in a 60° north latitude, the primary curvature of the building forms a reversal of the sun path.

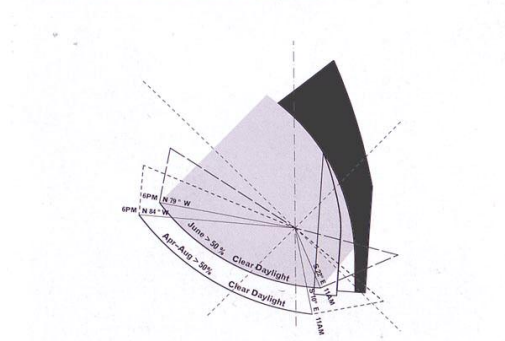


Figure 58: Light as design consideration.

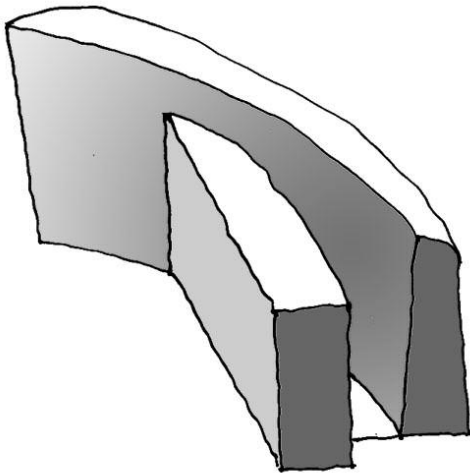


Figure 59: Parti

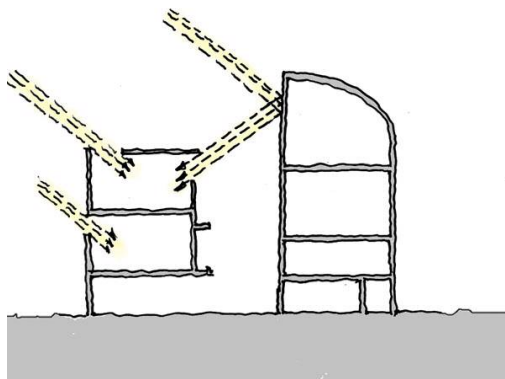


Figure 60: Light Catching Section

A specific attitude towards natural light is present in the Kiasma Museum of Contemporary Art. Holl creates a bar that not only responds to the urban surroundings but also responds directly to the path of the sun (Futagawa, p.96)

The basic massing of this museum is a smaller rectilinear bar intersecting with a larger curvilinear bar. By opening these two pieces to the south, Holl creates an entry 'atrium' that, through its orientation, is able to distribute natural light to all (25) galleries. This atrium, with its glass skylight, is flooded with light. In contrast, the galleries that flank the atrium have controlled light sources, allowing specific interpretations of spatial volumes as the visitor moves through the sequence of galleries. (Diagram: Author)

Through section, the massing of the museum is used as a 'light scoop' (Author enhancement, Futagawa, p.96)



**Figure 61: Atrium View**

As a void between the two splayed galleries bars, the lobby is flooded with light through the glazed roof  
(All Pictures this page: ([www.kiasma.fi](http://www.kiasma.fi), 2005))



**Figure 62: Gallery View 1**

Direct and indirect light is treated in a variety of ways allowing each gallery to receive natural light in a unique way



**Figure 63: Gallery View 2**



**Figure 64: Gallery View 3**



**Figure 65: Skylight View**

In several galleries, ambient and direct light compliment each other while still allowing gallery spaces to be gently lit.

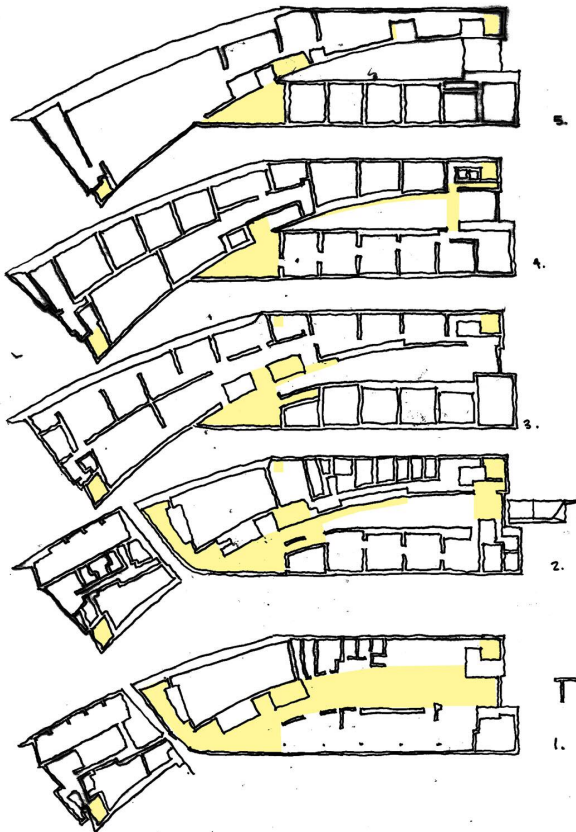


Figure 66: Circulation Zones

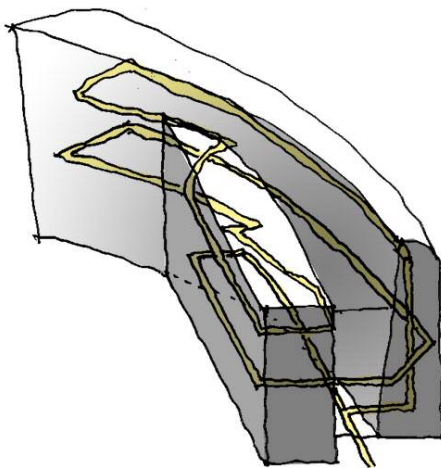


Figure 67: Circulation Axon

Diagram: Author Enhancement,  
Futagawa, p.96)

## CIRCULATION

Another successful aspect of this museum is the way in which circulation is handled. While there is no scripted sequence, the visitor is allowed to explore the galleries while still following a spiral pattern. By arranging the galleries as part of the spiral sequence, Holl creates a sequence that engages the visitor with both the architecture of the museum as well as the art it houses. In addition, several ramps in the atrium space compliment stairs and elevators at the one end and a figural spiral stair that occurs in the intersection of the two bars.

The sculptural stair at the intersection of the bars is effected the play of light and form.  
(Picture Below [www.kiasma.fi](http://www.kiasma.fi), 2005



Figure 68: Looking up through main stair



Figure 69: Presentation Spaces

The spiraling gallery sequence begins on the second floor. As the sequence moves towards the top of the buildings, the visitor moves from one bar, through the atrium space by a series of bridges and ramps, to the bar of galleries on the opposite side. The staggering of gallery space is ideal for both the sequence through and the controlling of natural light.

An auditorium is located on the first floor. By placing the passage through the building, Holl is able to create an auditorium lobby that can be accessed separately from the museum and allow non-museum functions to take place without compromising the security of museum.

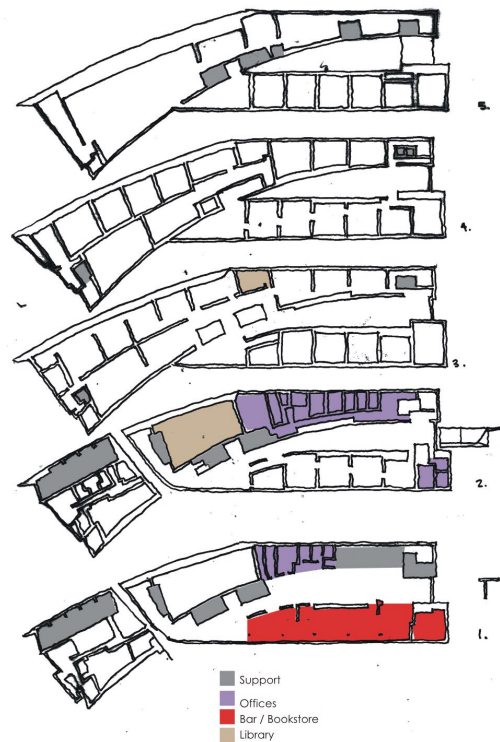


Figure 70: Support Spaces

Located on the lower level, a museum store and café/bar serve not only the museum visitors but the public. The directorial and curatorial offices are located on the first and second floors with mechanical rooms being separated from the public view by opening a passage through the building at the lower two floors. By placing the support spaces on the lower northern portion of the museum, Holl allows the gallery spaces to have a much higher level of exposure to natural light. (Diagram: Author)

## **KIMBALL ART MUSEUM**

The Kimball Art Museum was opened in 1972 in Fort Worth, Texas. Designed by Louis Kahn, the building is predicated on a strong attitude towards light. The basic organization of sixteen narrow vaulted concrete elements results in a dynamic museum that is enhanced by manipulated light washing the sides of every vault. This precedent was analyzed because of the simplicity of form and material and the complex interaction with natural light. The use of the brutal concrete is complemented with smooth travertine infill walls. The heavy masonry structure is in turn, contrasted by thinness of the porticos that frame the points of entry.



Figure 71: Exterior view showing the simplicity of formal language

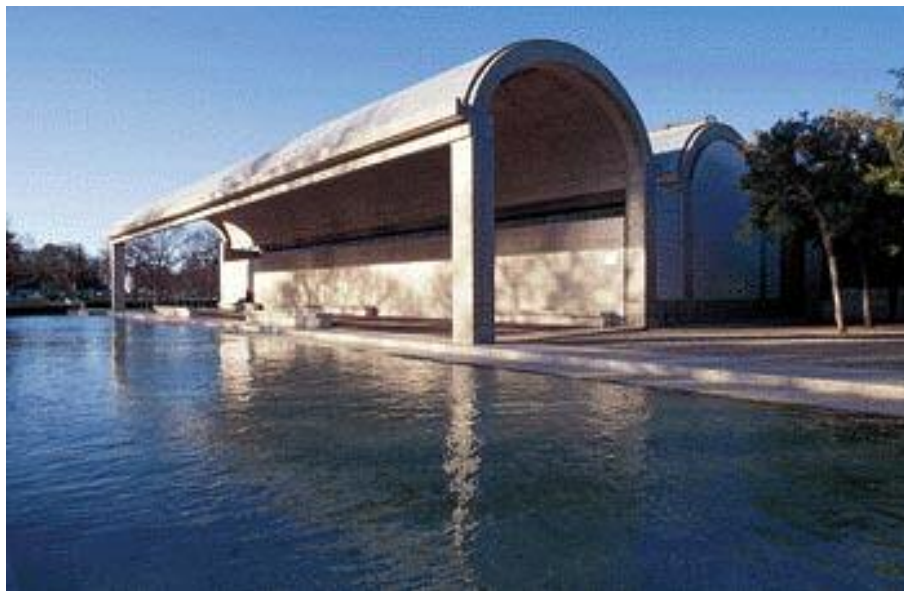


Figure 72: Exterior View showing the application of masonry materials.

(All pictures this page: [www.kimballart.org](http://www.kimballart.org), 2005)

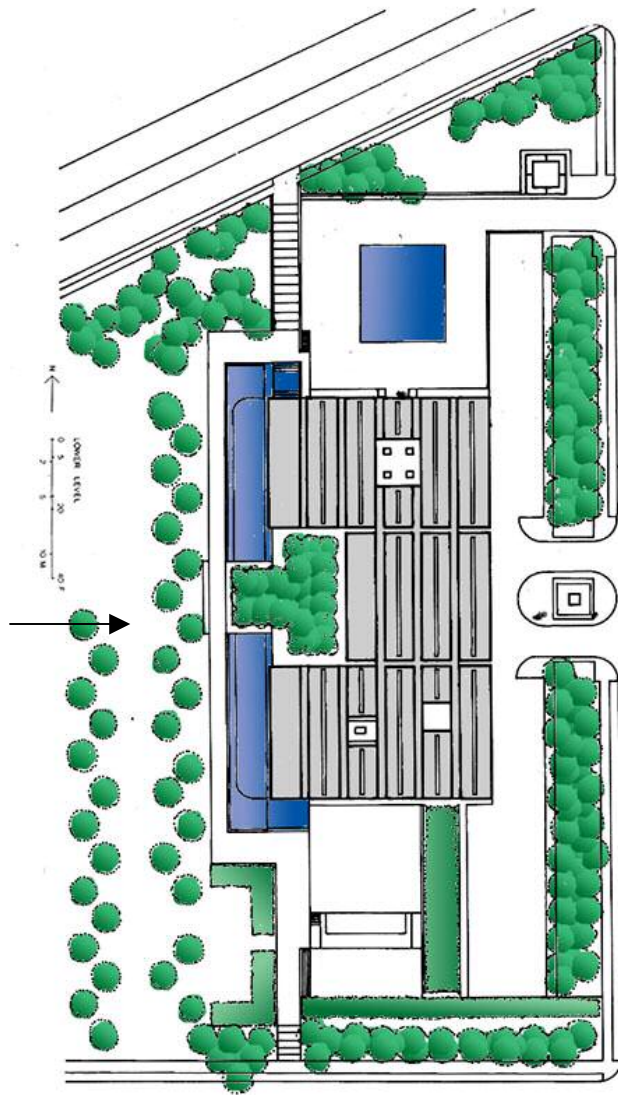


Figure 73: Site Plan:  
(Diagram: Author enhancement,  
Johnson, p.66)

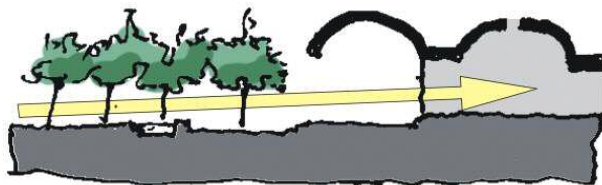


Figure 74: Approach Sequence

## SITE APPROACH

The attitude towards light begins from outside the site. By approaching from the west, afternoon sun illuminates the building from behind the viewer and creates a theatrical image of the buildings. In addition, the open portico vaults create deep shadows on the façade, enhancing the idea of entry. As the visitor passes through the court, a transition from bright sun to the darker interior is created by passing under shade tree canopies, into the entry portico, and ultimately into the Museum Lobby.

Figure 75: Entry Portico

Western light enters the front porch making entry into the building a significant moment in the museum experience ([www.kimballart.org](http://www.kimballart.org), 2005)



*“A great American poet once asked the architect. ‘What slice of the sun does your building have? What light enters your room?’ – as if to say the sun never knew how great it is until it struck the side of a building.” (Johnson citing Kahn, p.12)*

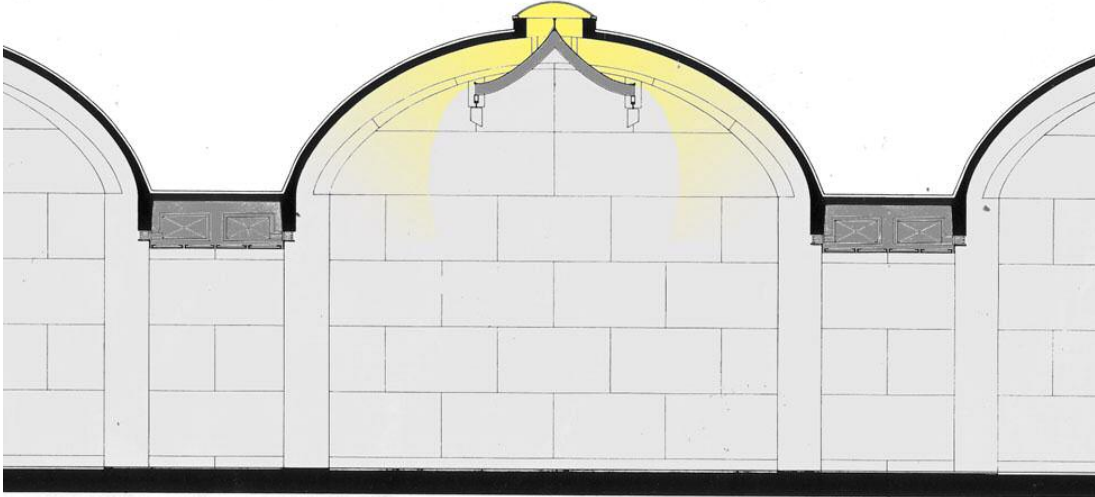


Figure 76: Light Catching Section



Figure 77: Gallery View

Perforated metal fixtures divert direct sunlight and cause light to wash the sides of the concrete vaults. The rough concrete vaults overhead appear refined by the light, while the smooth travertine infill walls interact at the tactile level of the visitor.

(Diagram: Author citing Johnson p.31. Photo: UMD VRC)



Figure 78: Light Well 1

Natural light is introduced to sub grade levels. Although this is mainly support space, Kahn recognizes the effects of natural light in interior space. Pictures: [www.kimballart.org](http://www.kimballart.org), 2005)

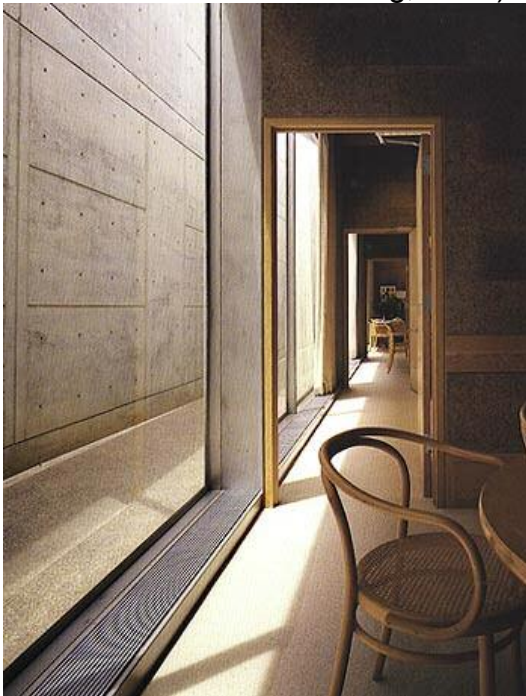


Figure 79: Light Well 2

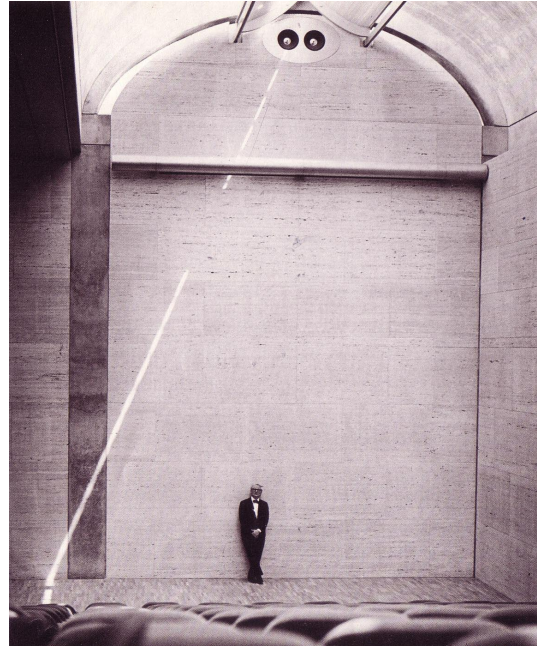


Figure 80: The simple power of light

The simple power of light is evident in the dynamics of this auditorium view. One can imagine watching the slit of light move across the room as the sun moves across the sky.

In the words of Louis Kahn:

*"When a man says that he believes that natural light is something we are born out of, he cannot accept a school which has no natural light. He cannot even accept a movie house, you might say, which must be in darkness, without sensing that there must be a crack somewhere in the construction which allows enough natural light to come in to tell how dark it is. Now he may demand it actually, but he demands it in his mind to be that important."*  
(Picture & Quote: Johnson, p.38)

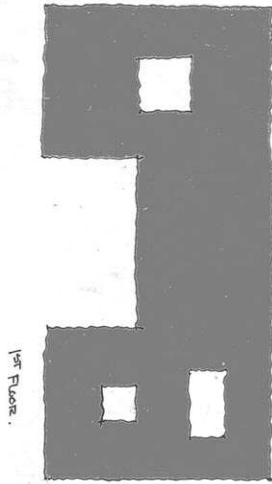


Figure 81: Solid Void relationship  
Kahn inserts three courts in the field of vaults to allow light to reach to inner areas of the plan. This creates hierarchy in the plan while not compromising any exterior wall space.

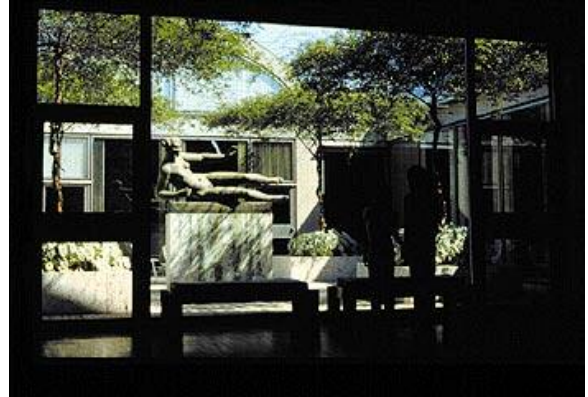


Figure 83: View of Sculpture Court.  
Plantings soften the harsh Texas Sun while allowing 'dappled' light into the museum.  
(Picture: UMD - VRC)

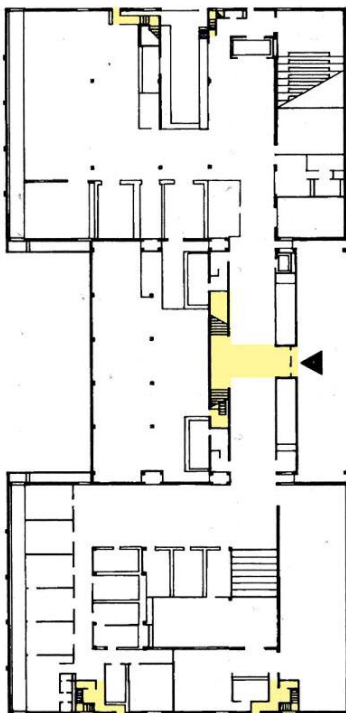


Figure 82: Circulation - Lower Floor

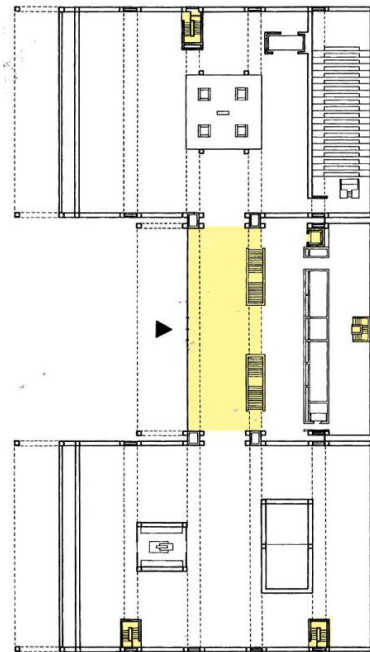


Figure 84: Circulation - Upper Floor  
Service stairwells connect the offices and support spaces directly to the galleries



Figure 85: Presentation Space

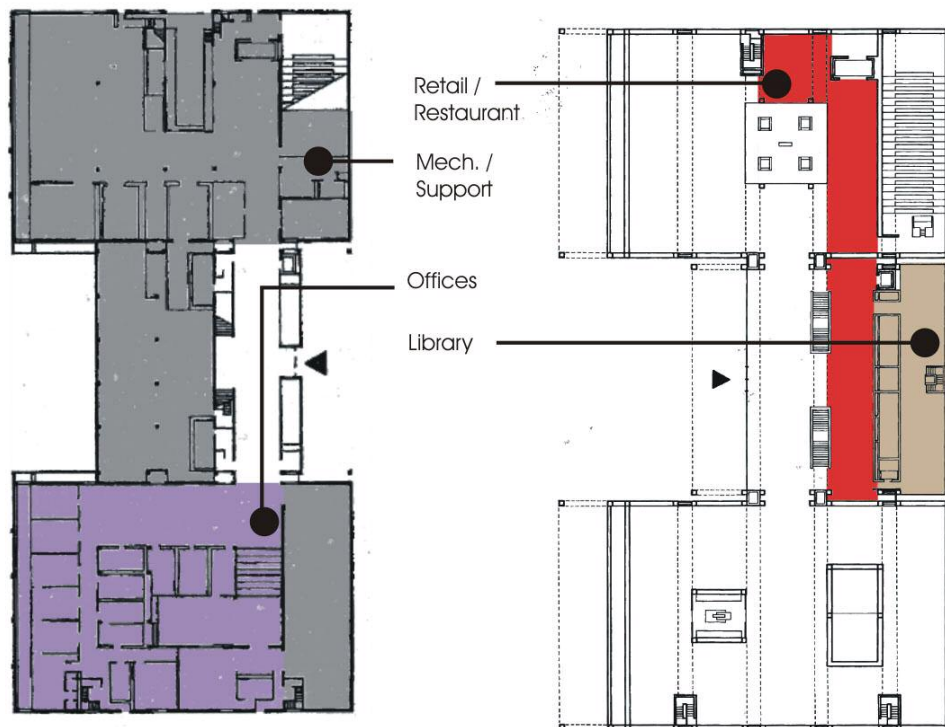


Figure 86: Support Spaces

## **THE BROWN CENTER @ MICA: ZIGER/SNEAD**

The Brown Center at the Maryland Institute College of Art is located directly across Howard Street from the new Center for Digital Art. The building houses digital production labs and classrooms, as well as faculty offices and an auditorium. This project was analyzed because of the attitude toward the program. While this is an iconic building, especially at night when the green fritted glass glows, the interior is purely utilitarian. All the interior spaces except large circulation lobbies and mezzanine occur within 'black box' rooms. The new center will compliment this building by recognizing the iconography and the exceptional degree programs of the institute housed within. However, the new building will embrace light as an essential part of the architecture in order to expose technology as a cultural amenity for the city at large.

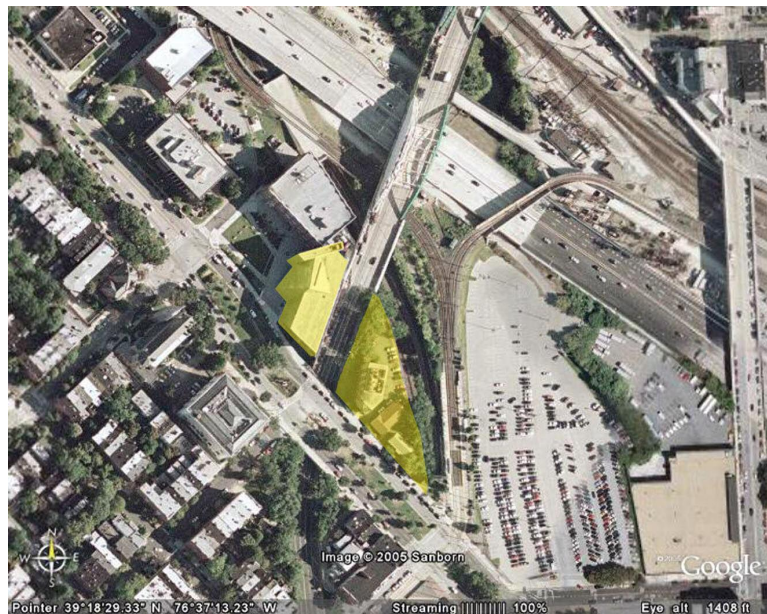


Figure 87: Aerial View.

showing both the proposed site and the Brown Center (Photo: Google Earth, Author)

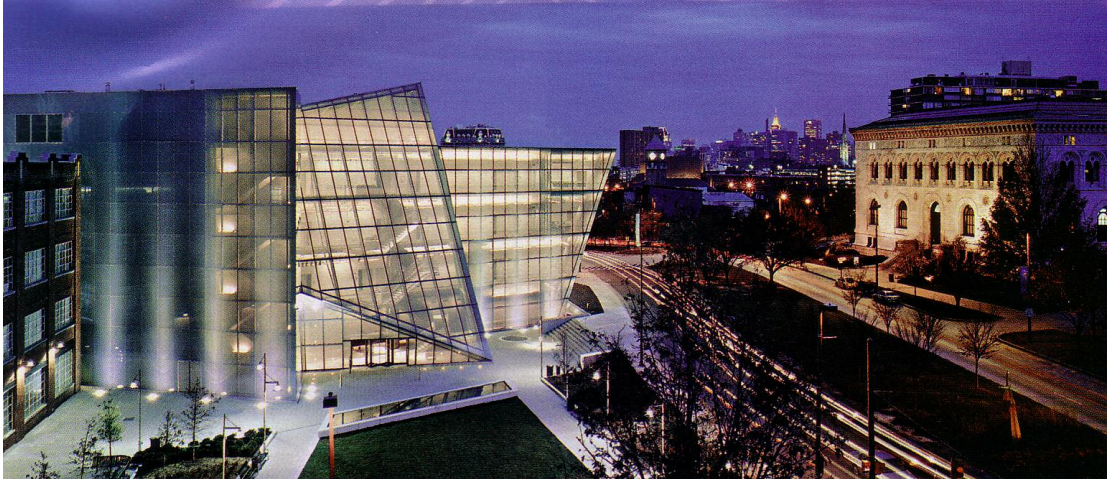


Figure 88: Exterior Night View

The angular glass volume of the Brown Center is illuminated from within at night. The iconic presence that this building creates communicates the cutting edge attitude of the Maryland Institute College of Art. (Photo: Snoonian, p.128)

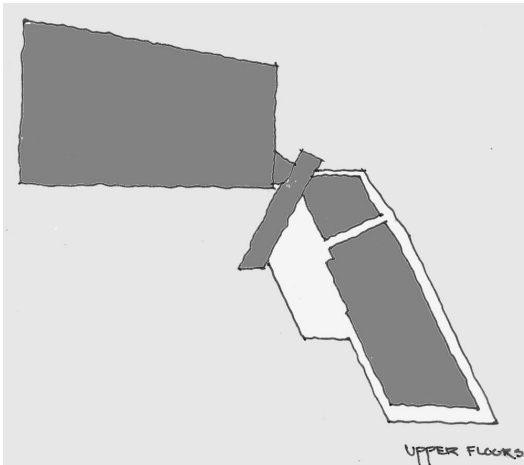


Figure 89: Upper Floor

The Figure-Ground of the floor plans and section displays the attitude of the interior to natural light. The western lobby receives natural light while the only break in the 'poche' of the black box rooms is at the stairs to the auditorium. Sunlight and the views through this break are not significant.

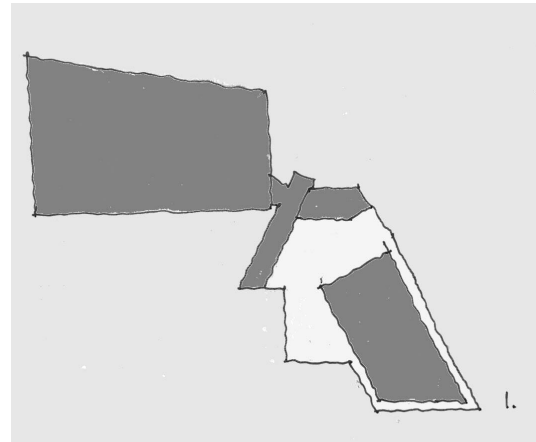


Figure 90: Ground Floor

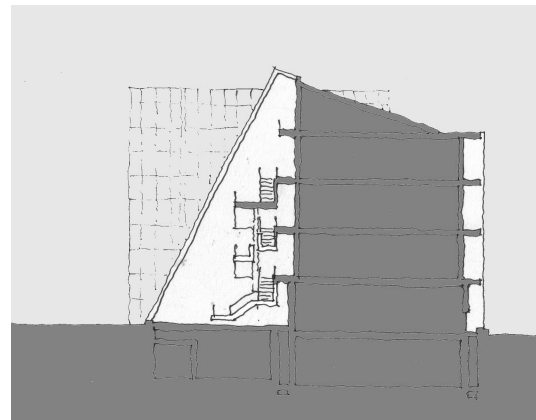


Figure 91: Transverse Section

## Chapter 7: CONCEPTUAL SCHEMES

### COURTYARD SCHEME

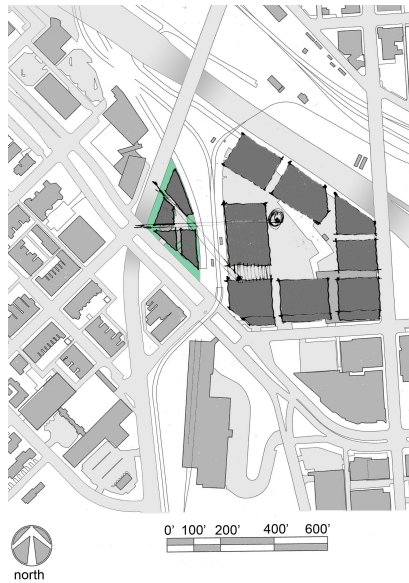


Figure 92: Courtyard Scheme Plan

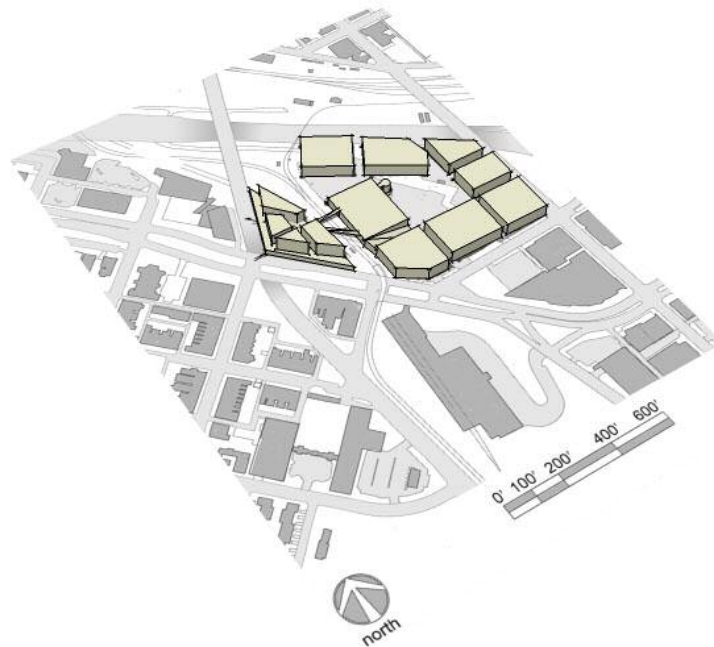


Figure 93: Courtyard Scheme Axon

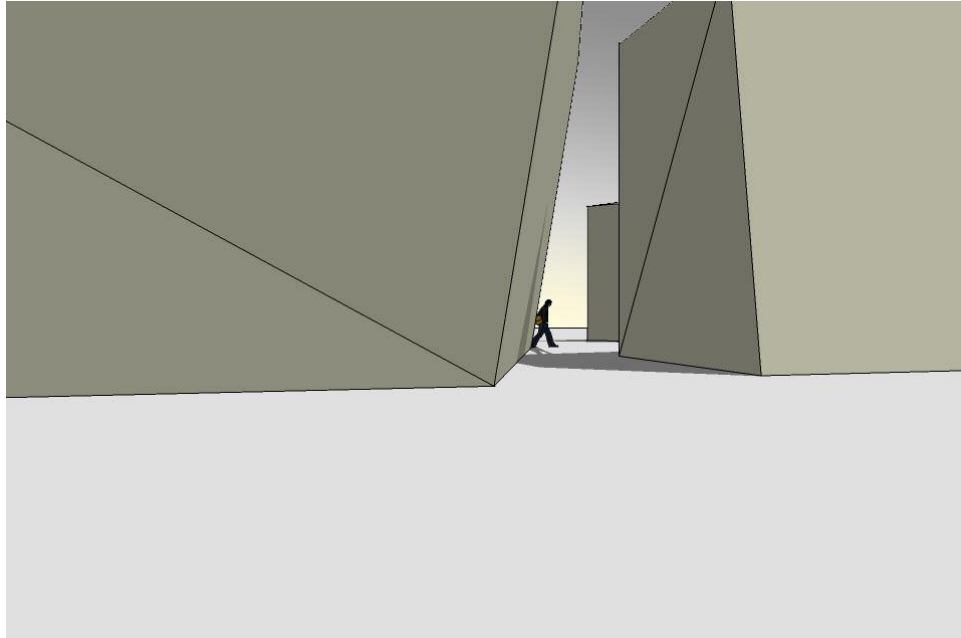


Figure 94: Perspective View

This concept is based on an idea of spatial connections. The physical connections of experience to both architecture and the urban context will be exploited in order to enhance the connection to digitally created, virtual space.

## **RIBBON SCHEME**



Figure 95: Ribbon Scheme Plan

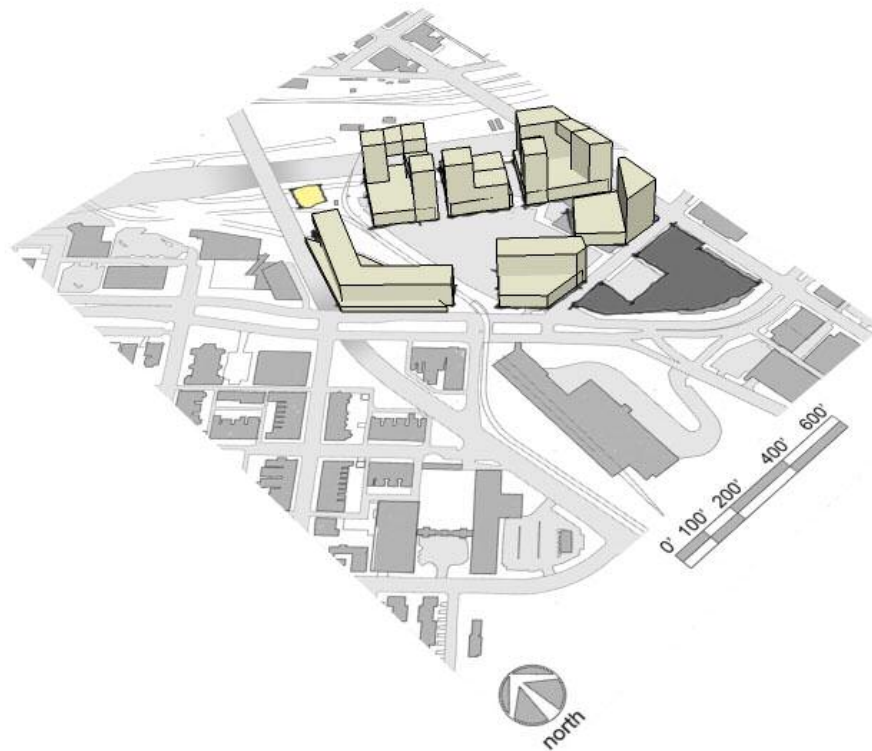


Figure 96: Ribbon Scheme Axon

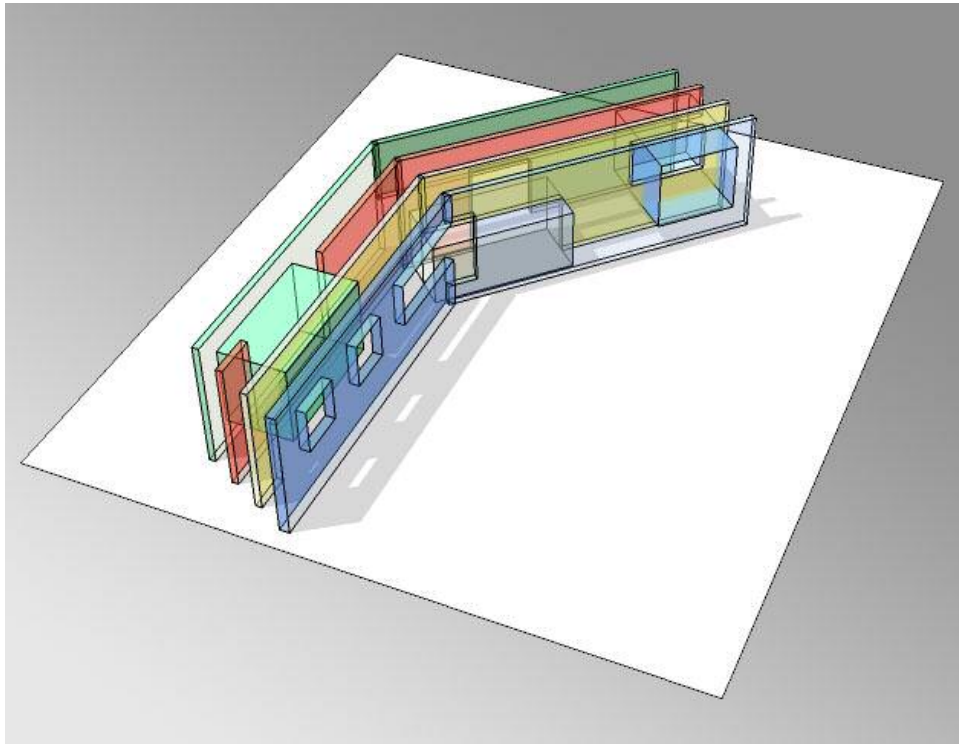


Figure 97: Screen Concept

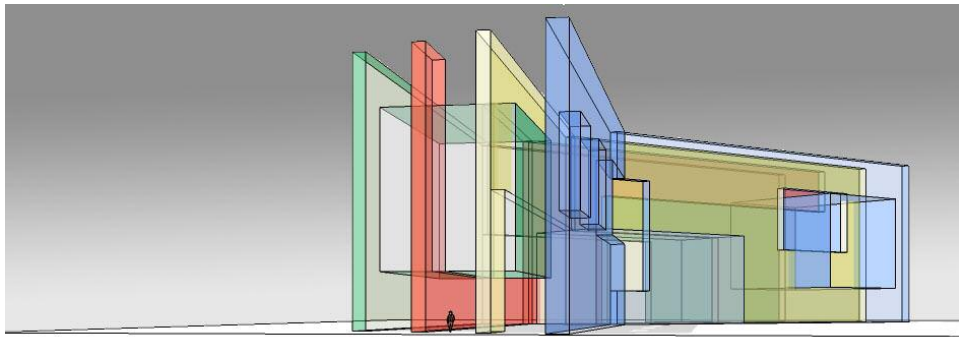


Figure 98: Perspective

This concept was created with the ideas of screens and transparency. As the visitor moves through the building, these screens interact as wall and surface.

## **BAR SCHEME**

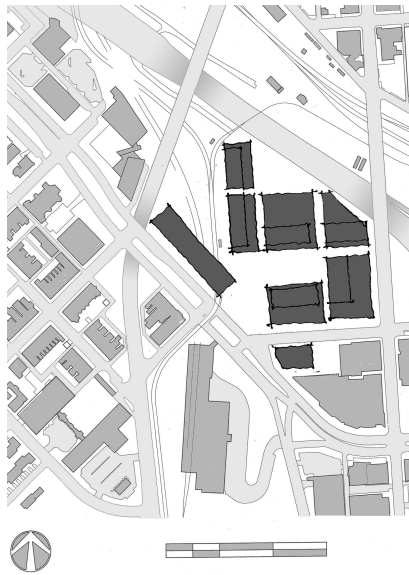


Figure 99: Bar Scheme Plan

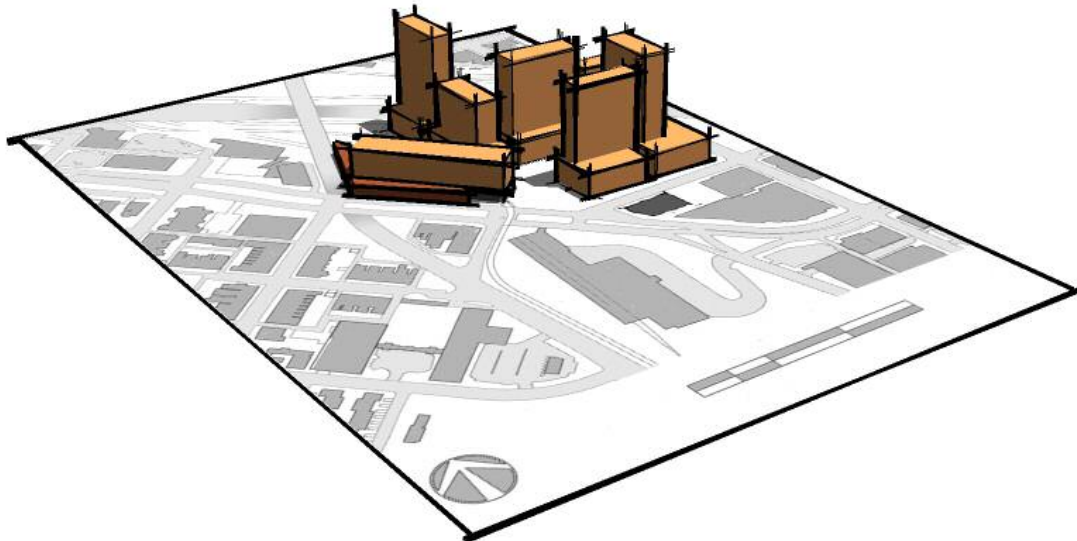


Figure 100: Bar Scheme Axon.

## VILLAGE SCHEME



Figure 101: Village Scheme Plan

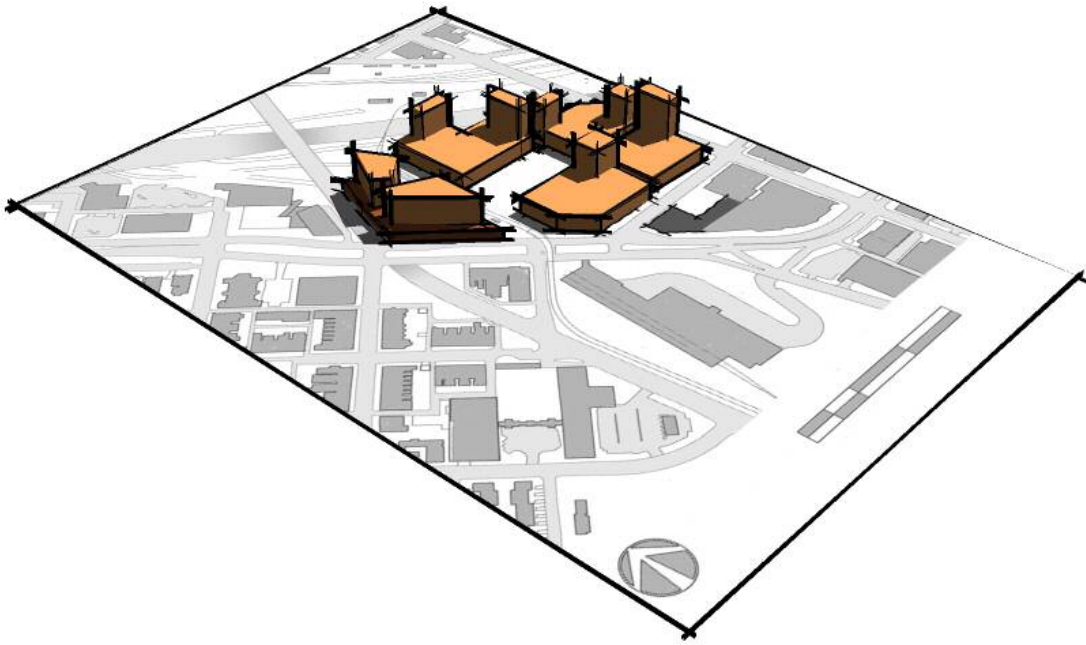


Figure 102: Village Scheme Axon:

## **Chapter 8: FINAL SOLUTION**

### **URBAN STRATEGY**

The colliding street grids of the central city of Baltimore and the neighborhoods of Bolton Hill, Reservoir Hill and the northern suburbs result in a series of ill-formed blocks. Within these irregular land forms, object buildings and cultural institution occupy the highly visible view corridors. This site lies at the northeastern end of this condition. (See image1, fig. 103)

Immediately surrounding this site lies several significant building as addressed earlier. These buildings create a context for an expressive new building. The industrial past of railroad traffic has carved and isolated this small triangular site from it's surroundings by massive retaining walls allowing the uninterrupted passage of both the rail and the Howard street. In addition, the streets themselves isolate this site even further from the context.

However, despite this isolation, a network of public spaces and the paths that connect them pass along the western edge of this site. In order to participate in this network of public space, as well as to maintain the corner objectivity of the Brown Center, it was deem extremely important to open the northwest corner of this site with an urban plaza. Additionally, the Mt. Royal edge is a critical component in the urban fabric. A large building that forms this edge and provides street front activity is crucial in creating a link between the neighborhoods of Bolton Hill and Mt. Vernon. The existing University of Baltimore parking also must be addressed. This lot will be redeveloped to create a space that embraces activities and festivals, Layers of green will

infiltrate the otherwise static, paved light. Trees will provide shade as well as establish an organizational grid for events such as Artscape. An large exterior stair will connect this parking lot to the corner plaza and encourage passage directly through a portal in the new building. The urban aspect of this design is important to reconcile the damage caused by uncalculated engineering of historical infrastructure. This infrastructure will become a significant element of the new center and ultimately, become the initiator of the formal realization

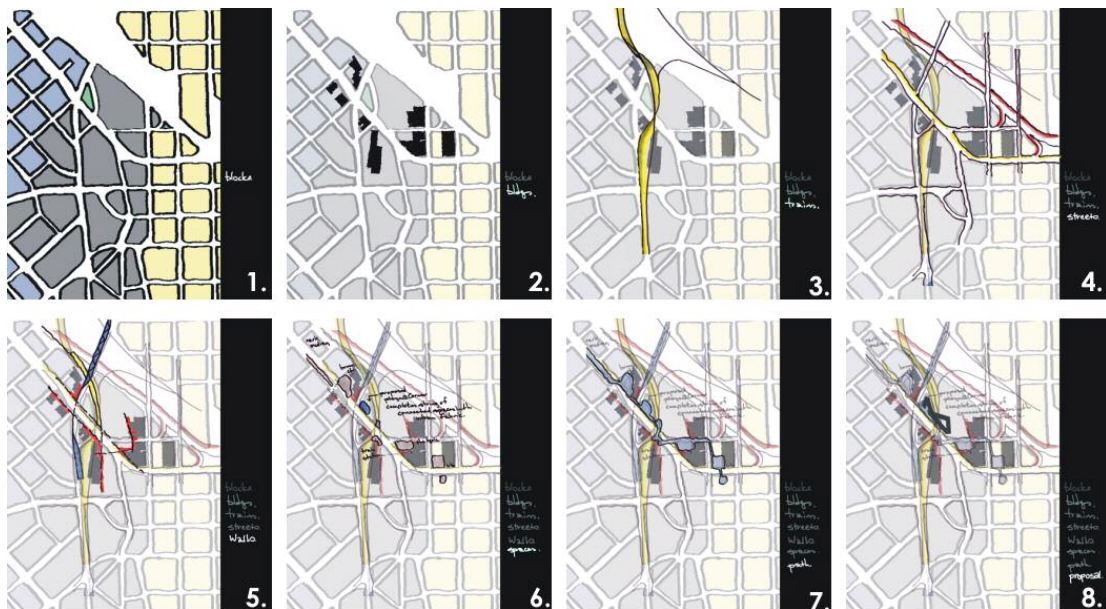


Figure 103: Urban Analysis

## **BUILDING DESCRIPTION**

In exploring concepts of an architecture that relates to and communications the artistic expression of digital technology, the ideas of surface and layers were essential. The basic formal premise of this building is an adaptation of the infrastructure that initially isolated this site. As series

of structural bridges, the unique conditions of this building occur at the intersections of the normalized bar (See structural sequence, fig. 104)

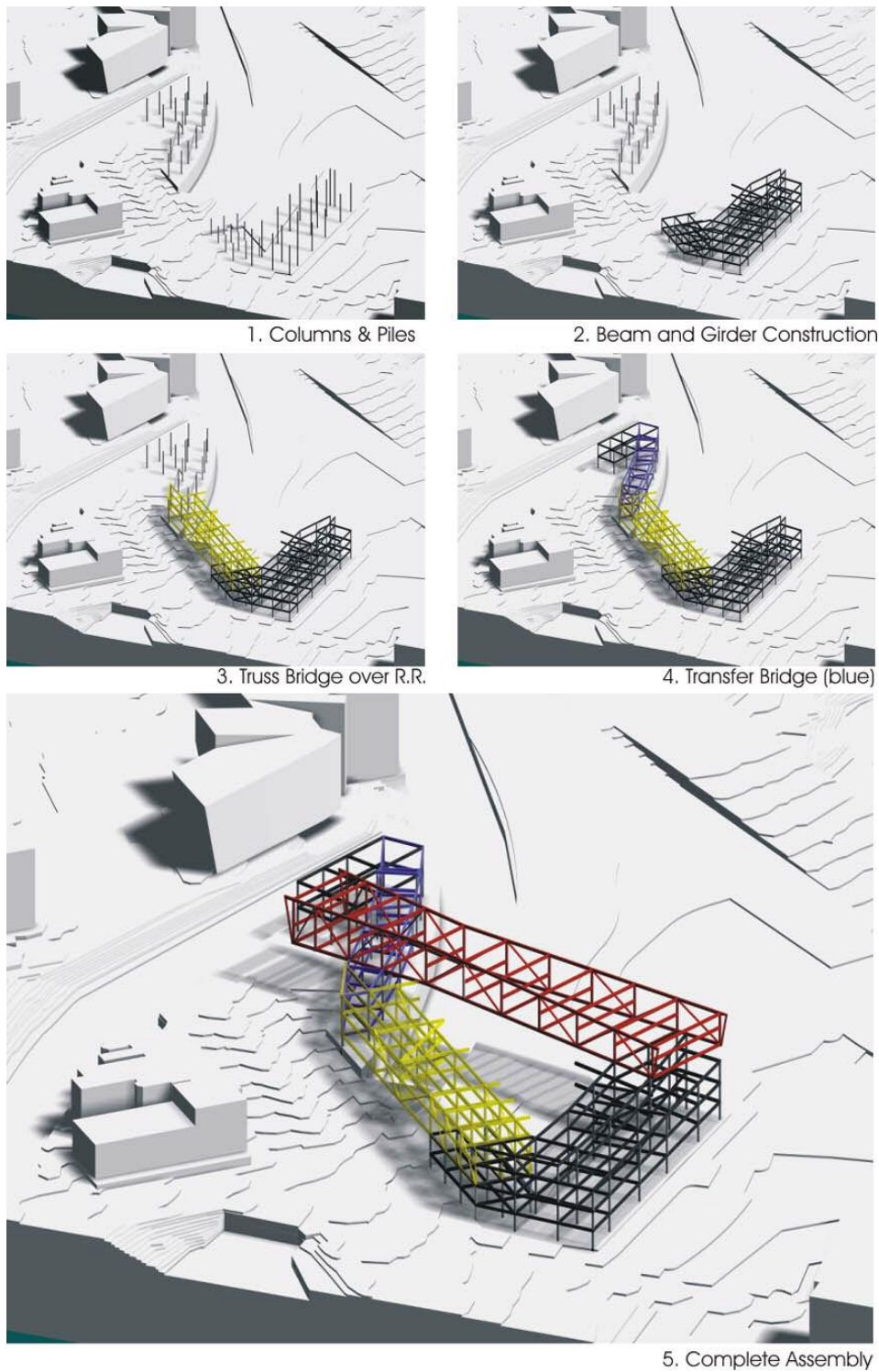


Figure 104: Structural Sequence

Dissecting and studying various surface treatments completed an additional deconstructive analysis of four contemporary museums for traditional art. In these traditional museums, a static threshold always mediated between spaces. However, surface treatment of these thresholds has been celebrated. In Taniguchi's MoMA (NYC) thresholds are lined with brushed aluminum while in Herzog and DeMeuron's Walker Art Center addition, elaborate painted fretwork celebrates the entry into the galleries. Because of the unique aspects of digital technology to tailor an experience around the individual, the idea of threshold became very important. By extruding the threshold at the intersections of these bridges, individual passage is controlled and artistic input can be mediated by any type of external influence.

By exploiting the ideas of layer and surface, this building will provide a venue for artistic input. The surfaces of the interior spaces are layered with a complex assembly of grids. On the ceilings, track systems for moveable panels, a regular grid of electronic infrastructure as well as mandatory grid systems for fire suppression, HVAC, and light create a deeply layered ceiling that allows for flexibility of installations below. The exterior vertical surface of the building is also layered using moveable partitions, fritted storefront glass (and the mullion grid associated with) and a panelized metal rain screen. The storefront weather barrier is operable, with windows and overhead doors that open and allow both the artist and the visitor to engage the interior surface of the rain screen and the exterior environment.

The organizational aspects of this building are based on layered circulation loops. Since the galleries are expansive, special attention was placed on creating smaller loops that can be experienced individually while still maintaining the integrity of the whole. By allowing the visitor to experience the museum in smaller segments, the sheer size of this building will not be intimidating. These loops are stacked in the traditional structural systems of post, beam, and slab construction. However, two systems of "Layer Walls" contain the major vertical circulation (See Fig. 105) Additionally, the vertical cores of fire egress stairs and mechanical chases puncture the horizontal layers and allow natural light to wash into spaces below.

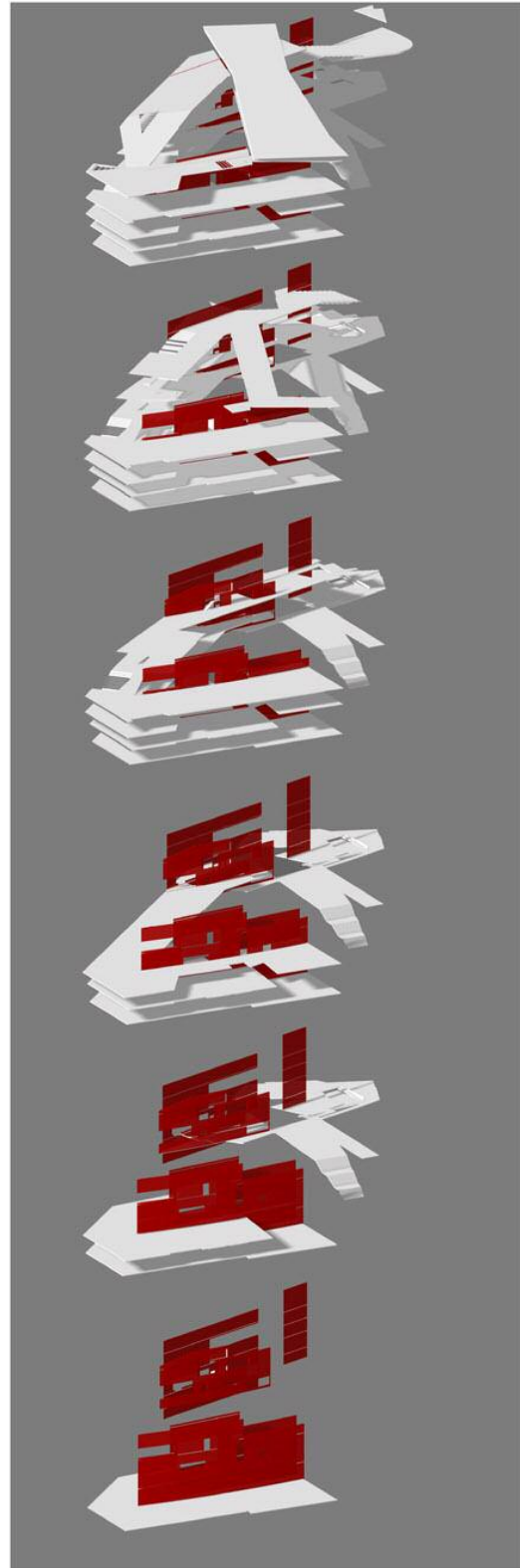


Figure 105: Layer Diagram

## FINAL DRAWINGS

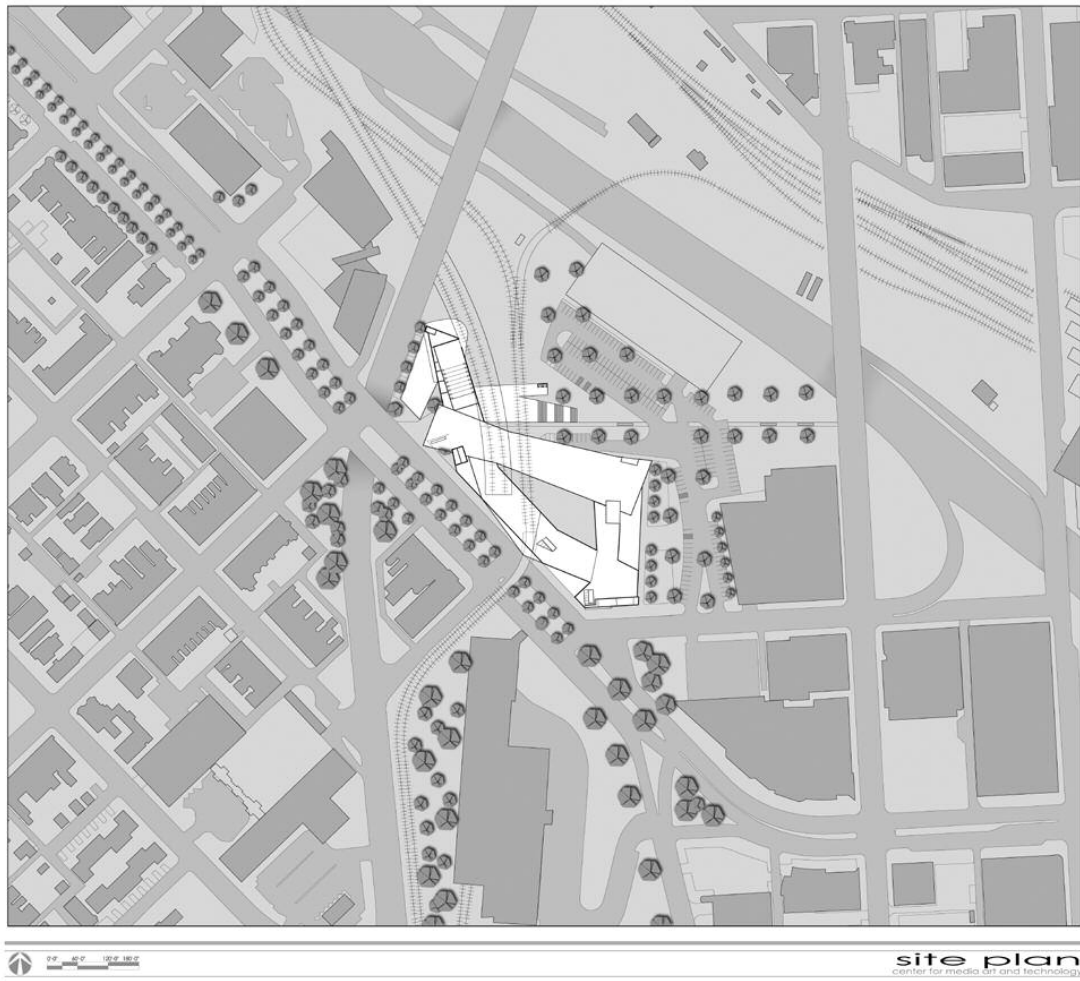


Figure 106: Site Plan

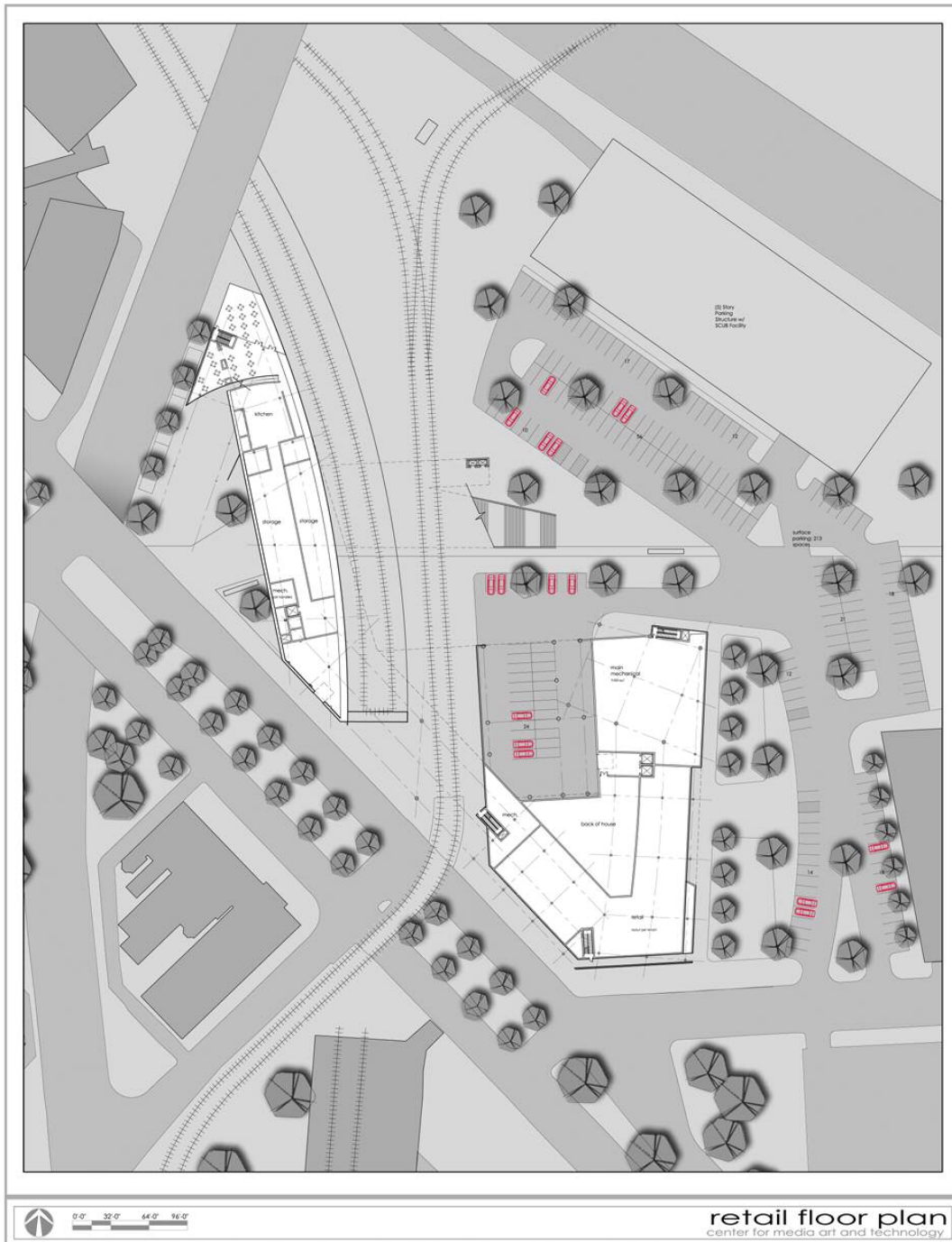


Figure 107: Retail Floor Plan

Tenant Retail is located on the east and edges parking / event space. Arcaded facades and digital image engage the ground around the entrances to the retail. The basement (western segment) contains mechanical, storage, service, kitchen, and a restaurant dining room with outdoor terrace.



Figure 108: Lobby Floor Plan

The main lobby falls on the corner plaza (Central segment). To the north is the entertainment sector containing a 300 capacity black box theater, a 3,000 square foot restaurant and 2,000 sq. ft Deli/Bar. The eastern portion houses the physical shops for sculpture, robotics, etc. with a two story exhibition space.



Figure 109: Main Floor Plan

As one ascends the lobby stairs, views of the train station tower are framed by a vertical window. On the main floor, the visitor passes a café and bookstore and winds between two theater masses and out over the exhibition space below. A large terrace and amphitheater are located in the dark space of the sheltered courtyard



Figure 110: Second Floor Plan

The second floor contains gallery space and studios that engage the visitor and become an exhibit in and of itself. A large terrace and café fill the eastern corner. Extruded thresholds funnel the visitor past displays and create opportunity to digitally enhance and personalize the experience itself.

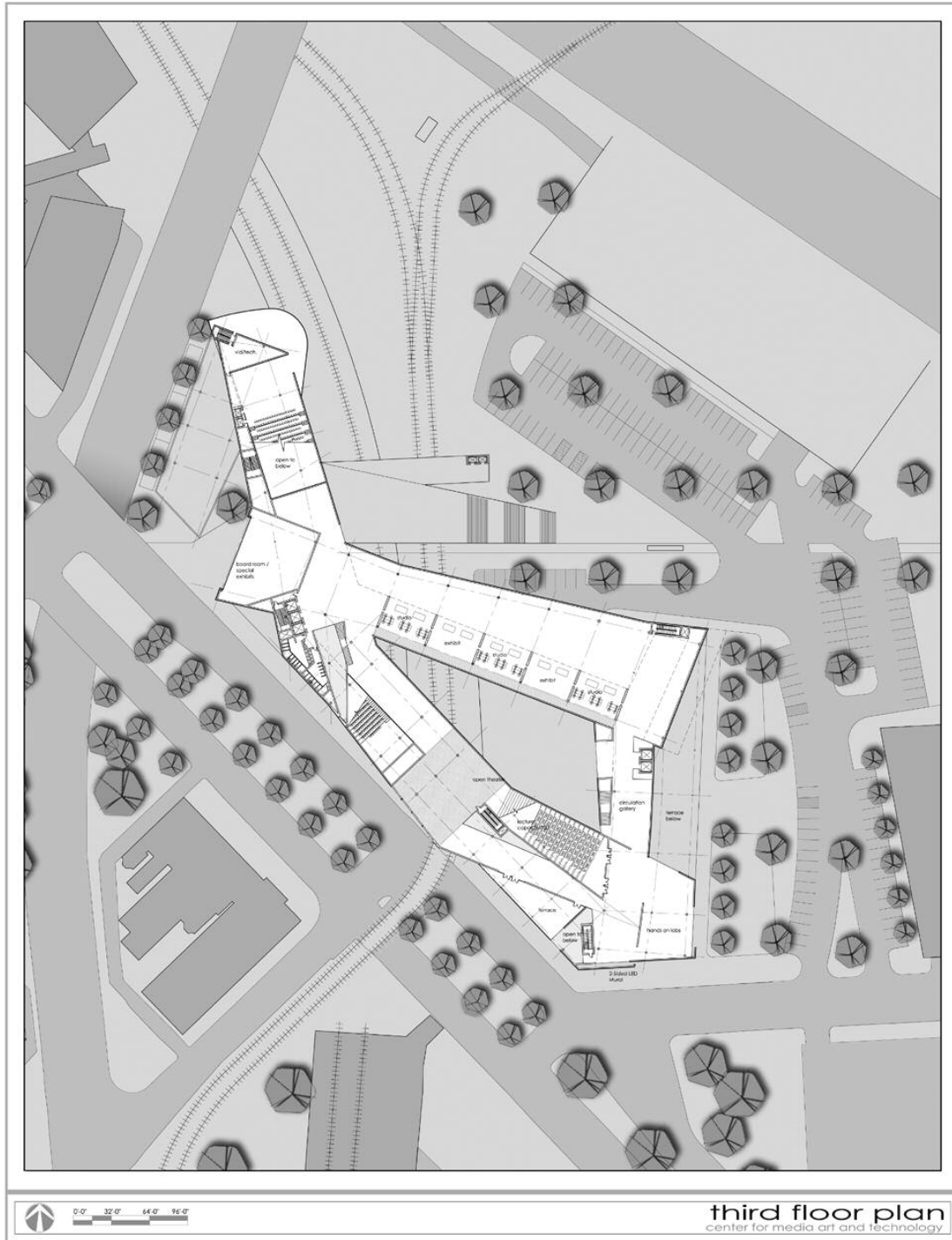


Figure 111: Third Floor Plan

More gallery space, including linear thresholds (circulation galleries), an open amphitheater of the roof of the lecture hall below, as well as the lower level of a 160 seat auditorium cover the floor below while the introduction of the bridge adds open studio and exhibit space.

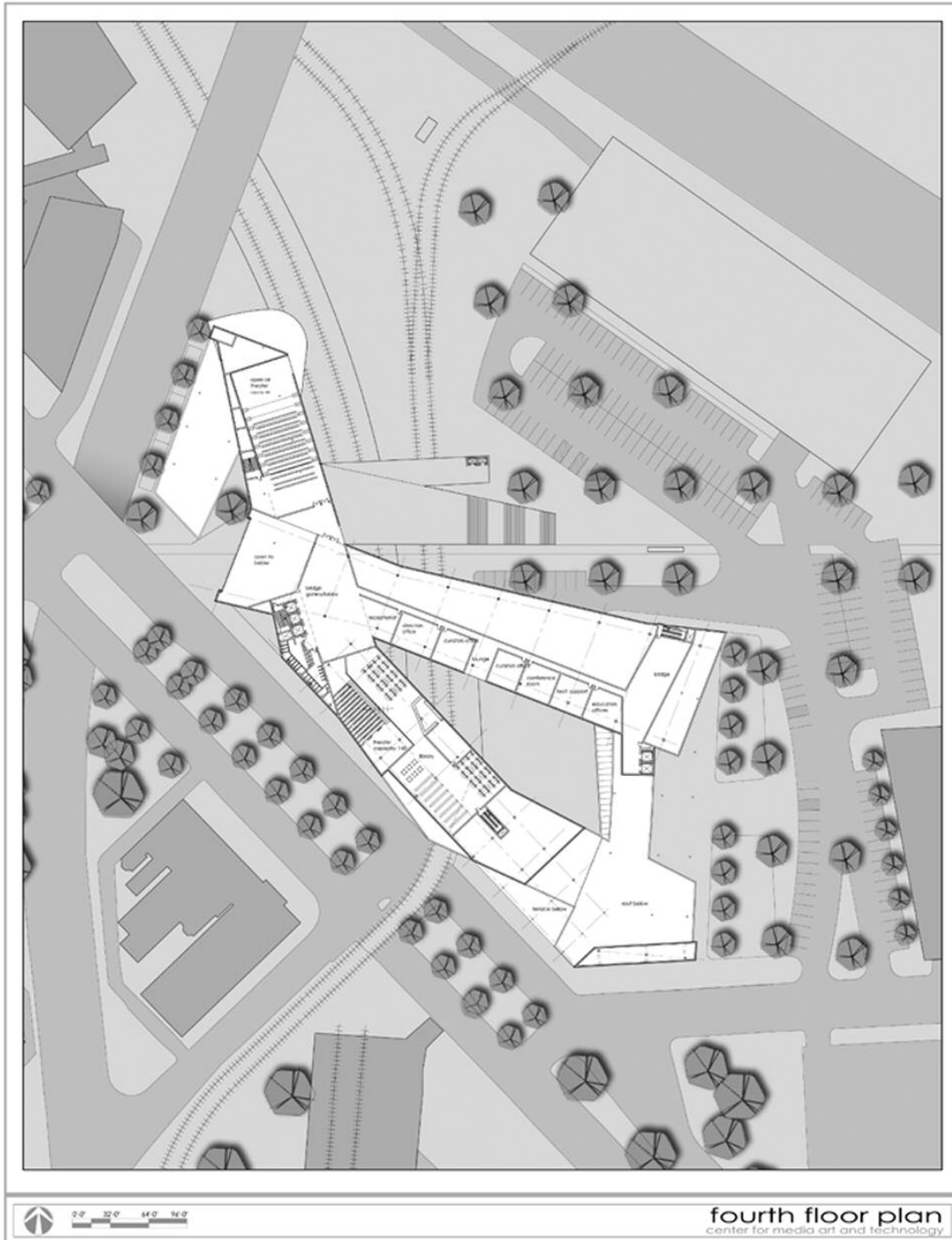


Figure 112: Fourth Floor Plan

The fourth and uppermost floor houses administration offices, a library/mediateque, and a 300 seat open air theater

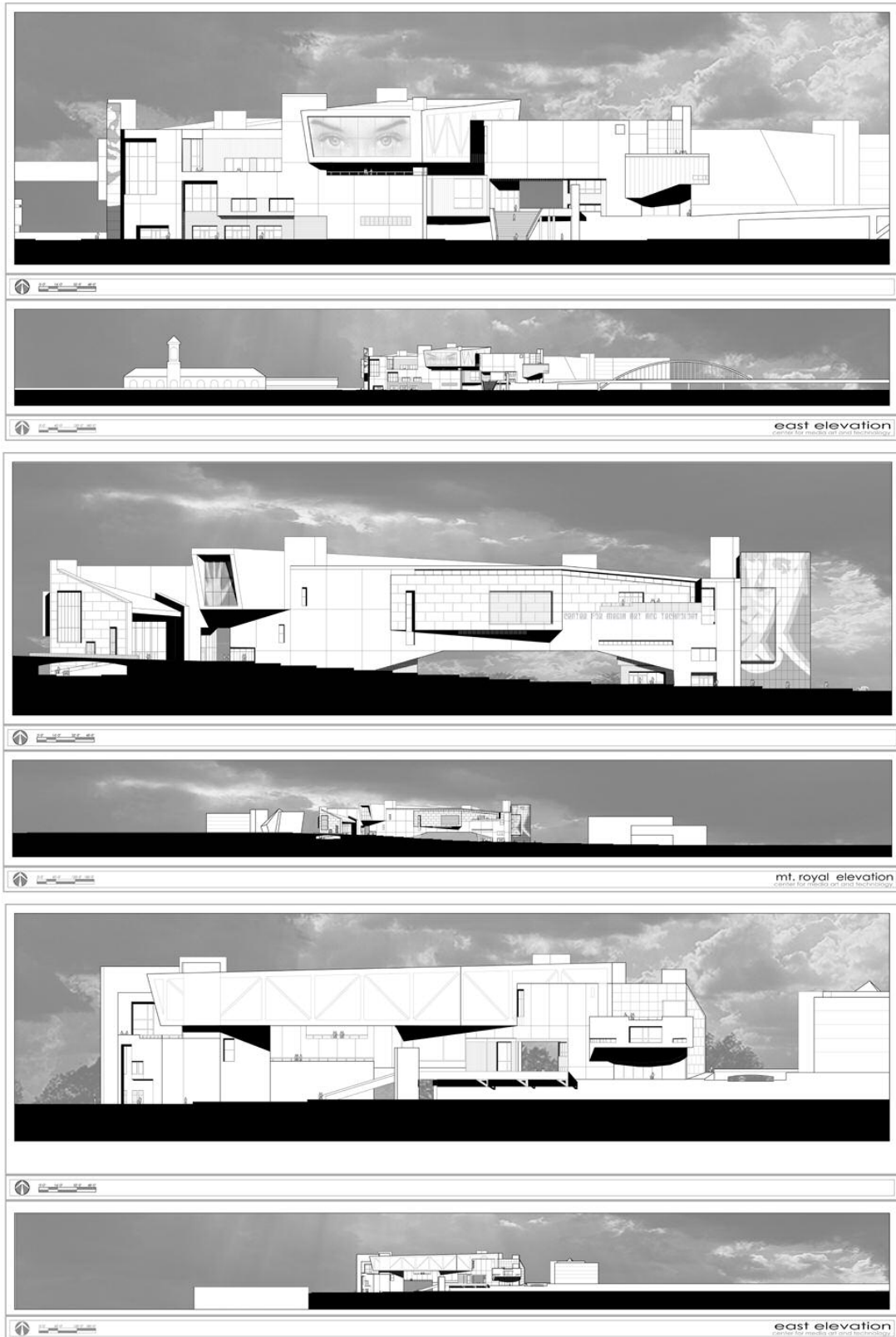


Figure 113: Elevations

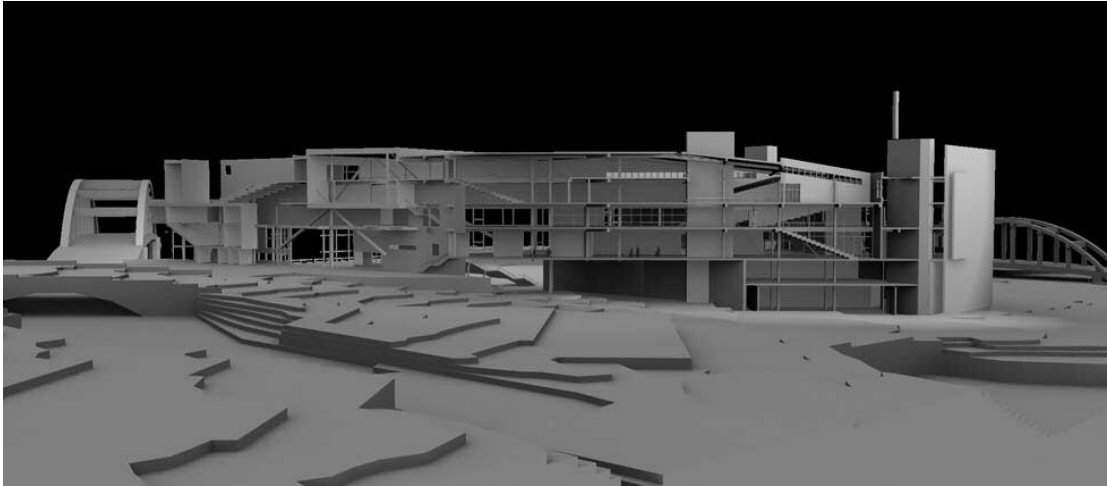


Figure 114: Longitudinal Section Perspective



Figure 115: Transverse Section Perspective-1

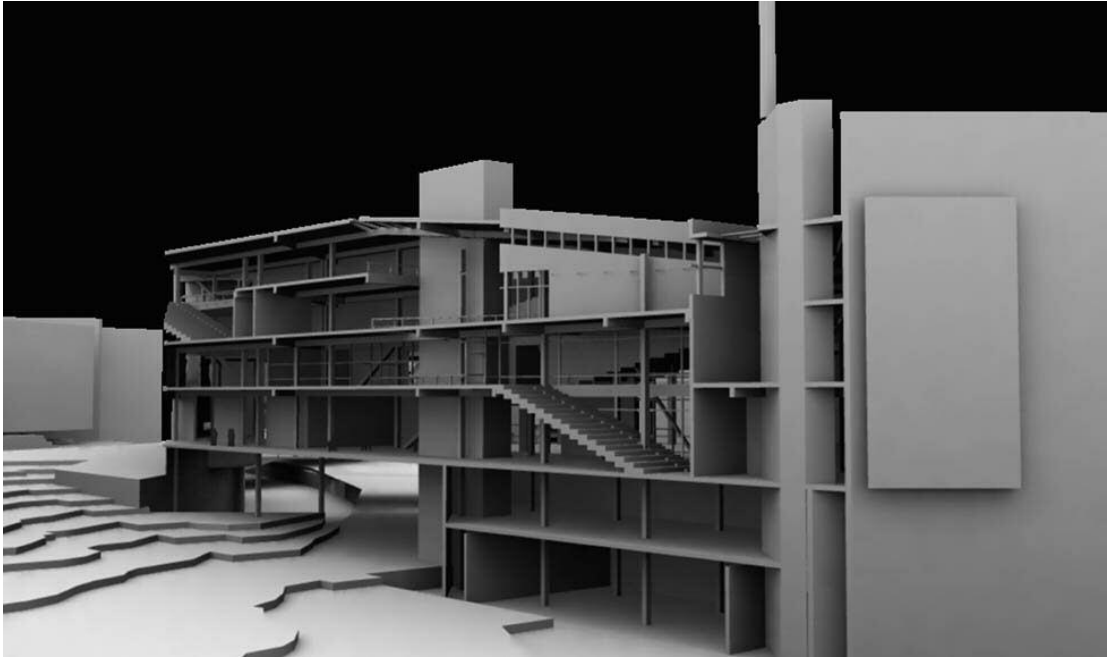


Figure 116: Transverse Section Perspective-2

These section perspectives display the spatial intersections that occur between layers. The theaters, as both object and void mediate between layers while the punctures around the vertical towers exposes the edges of the layers and creates visual connections to the spaces above and below.

## RENDERINGS



Figure 117: Northeast Aerial Perspective

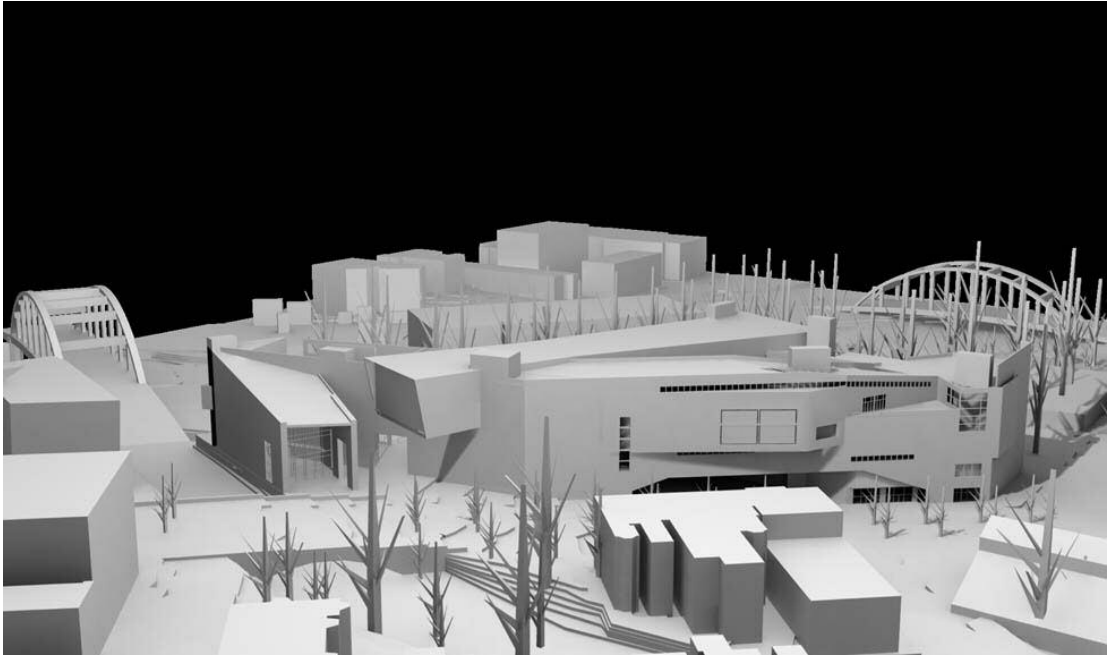


Figure 118: Northwest Aerial Perspective



Figure 119: Mt Royal Ave. Approach



Figure 120: Mt Royal Ave. Approach-2



Figure 121: Interior Perspective - Lobby



Figure 122: Interior Perspective - Terrace



Figure 123: Interior Perspective - Third Floor

## **APPENDICES**

### **APPENDIX-1 – BALTIMORE CITY REVISED CODE – TITLE 5**

#### **TITLE 5 OFFICE-RESIDENCE DISTRICTS** ***SUBTITLE 1. OVERVIEW; GENERAL REQUIREMENTS***

##### ***PART I. OVERVIEW***

#### **§ 5-101. Design.**

The Office-Residence District is designed primarily to accommodate office and residential uses in appropriate areas and locations.

#### **§ 5-102. Regulatory intent.**

The regulations for this district are intended:

- (1) to encourage sound development in the district; and
- (2) to promote the stability and desirability of the district and adjacent districts.

#### **§ 5-103. Subdistricts.**

The Office-Residence District is divided into 4 subdistricts for purposes of bulk regulations, as set forth in Subtitle 2 of this title.

##### ***PART II. GENERAL REQUIREMENTS***

#### **§ 5-104. In general.**

In addition to the general provisions of Title 3 {“General Rules”} of this article and the regulations specified in this title for a particular subdistrict, the following provisions apply to all Office-Residence Subdistricts.

#### **§ 5-105. Lot area.**

(a) *In general.*

Except as specified in § 3-306(d) {“Preexisting lot of record”} of this article, no

use may be established and maintained on a lot that is smaller than the size required by this title for that use in the subdistrict in which it is to be located.

(b) *Open space reduction.*

If the front, side, or rear lot line of a lot adjoins or is directly across a street or alley from a permanent open space that is at least 5 acres and at least 200 feet deep perpendicular to the lot line, the required lot area per dwelling unit may be reduced by up to 15%.

(c) *Computations.*

(1) The maximum number of permitted dwelling units on a lot is determined by dividing the total area of the lot by the lot area requirement that applies to the subdistrict in which the lot is located.

(2) A fraction of the total area that is 50% or more of the required lot area factor counts as an additional permitted dwelling unit.

**§ 5-106. Reserved**

**§ 5-107. Yards.**

(a) *Accessory structures.*

Accessory structures must comply with the yard requirements of the principal structure, except that:

(1) in O-R-3 and O-R-4 Districts, an attached garage that is no more than 12 feet high need not comply with the rear yard requirements of the principal structure; and

(2) in O-R-2, O-R-3, and O-R-4 Districts, an accessory garage attached to a multiple-family dwelling or an apartment hotel need not comply with any of the yard requirements of the principal structure.

(b) *Using average of existing improvements.*

(1) This subsection applies to a subsequently-erected or -expanded structure on a block where lots having 50% or more of the frontage on the same side of a street and within 200 feet of either of the structure's side lot lines have already been improved with structures that have front yards of more or less depth than required by this title.

(2) The required front-yard depth for the subsequently-erected or -expanded structure within that frontage is the average depth of the front yards of the already-improved lots, but in no case more than 30 feet.

**§ 5-108. Floor area ratio.**

(a) *In general.*

Floor area ratio requirements, as set forth in this title for each subdistrict,

determine the maximum floor area allowable, for both principal and accessory structures, in direct ratio to the gross area of the lot.

(b) *Open space reduction.*

If the front, side, or rear lot line of a lot adjoins or is directly across a street or alley from a permanent open space that is at least 5 acres and at least 200 feet deep perpendicular to the lot line, the floor area ratio may be increased by up to 15%.

***SUBTITLE 2. O-R DISTRICT***

***PART I. USE REGULATIONS***

**§ 5-201. Permitted uses.**

In an O-R District, permitted uses are as follows:

- (1) Dwellings.
- (2) Apartment hotels.
- (3) Educational and cultural institutions: nonprofit or publicly owned, as follows:
  - (i) Elementary and secondary schools.
  - (ii) Community colleges, colleges, and universities — but not including trade schools.
  - (iii) Libraries and art galleries.
  - (iv) Museums, aquariums, and planetariums.
- (4) Foreign consulates and consular offices.
- (5) Offices: business, governmental, and professional — but not including sales and bulk storage of merchandise on the premises.
- (6) Recreational facilities: nonprofit or publicly owned, as follows:
  - (i) Athletic fields.
  - (ii) Parks and playgrounds.
  - (iii) Recreation buildings and community centers.
  - (iv) Tennis and lacrosse clubs.
- (7) Religious institutions, as follows:
  - (i) Churches, temples, and synagogues.
  - (ii) Convents, seminaries, and monasteries.
- (8) Rooming houses — but with no more than 10 rooming units in each structure.
- (9) Telephone exchanges.

**§ 5-202. Accessory uses.**

In an O-R District, accessory uses and structures include the following:

- (1) As in an R-1 District, except that club houses or similar structures on the grounds of golf courses are not permitted.
- (2) Accessory shops in a multiple-family building that contains 50 or more dwelling and efficiency units or in a building that contains more than 20,000 square feet of gross floor area devoted to business and professional office use, subject to the following conditions:
  - (i) the uses are limited to dining room, cocktail lounge, drug store or pharmacy, newsstand, retail food shops, beauty shops, barber shops, and similar personal service shops primarily for the occupants of the building;

- (ii) the use must be conducted entirely inside the building;
- (iii) the aggregate of all such uses may not exceed 7% of the gross floor area of the building; and
- (iv) no exterior advertising sign is allowed, except 1 non-illuminated or indirectly illuminated identification sign that:
  - (A) is limited to the name or description of the use;
  - (B) does not exceed 3 square feet;
  - (C) is no more than 12 feet high; and
  - (D) does not project more than 8 inches from the building.

**§ 5-203. Conditional uses — Board approval required.**

In an O-R District, conditional uses that require Board approval are as follows:

- (1) Accessory radio and television antennas that are free-standing or that extend more than 12 feet above the building on which they are mounted — but not including microwave antennas (satellite dishes).
- (2) Accessory microwave antennas (satellite dishes), as follows:
  - (i) A mounted satellite dish that:
    - (A) is attached to the front half of the roof of the principal building or to the rear half of the roof less than 5 feet beyond the center line; and
    - (B) has the following dimensions:
      - 1. if constructed of solid material, it:
        - 1 is over 4 feet in diameter; or
        - 1 projects more than 6 feet from the building on which it is mounted; and
        - 2. if constructed of expanded aluminum mesh or wire screen, it:
          - 1 is over 6 feet in diameter; or
          - 1 projects more than 8 feet from the building on which it is mounted.
    - (ii) A free-standing satellite dish that is:
      - (A) more than 6 feet in diameter;
      - (B) more than 10 feet high; or
      - (C) not constructed of expanded aluminum mesh or wire screen.
  - (3) Bed and breakfast establishments, subject to the condition that no sign or other advertising is allowed on the premises other than a nameplate in accordance with § 11-316 {“Nameplates”} of this article.
  - (4) Bed and breakfast homes, subject to the condition that no sign or other advertising is allowed on the premises other than a nameplate in accordance with § 11-316 {“Nameplates”} of this article.
  - (5) Clinics: medical and dental.
  - (6) Clubs and lodges: nonprofit.
  - (7) Day nurseries and nursery schools.
  - (8) Foster homes for more than 6 children.
  - (9) Fraternity and sorority houses: off-campus.
  - (10) Governmental services, as follows:
    - (i) Fire and police stations.
    - (ii) Post offices.

- (iii) Sewerage pumping stations.
- (iv) Water filtration plants, reservoirs, and pumping stations.
- (11) Health and medical institutions: for care of aged or children.
- (12) Helistops.
- (13) Marinas: recreational.
- (14) Marinas: recreational boat launch/tie up.
- (15) Multi-purpose neighborhood centers.
- (16) Philanthropic and charitable institutions.
- (17) Public utility uses, as follows:
  - (i) Antenna towers, microwave relay towers, and similar installations for communications transmission or receiving.
  - (ii) Bus and transit turnarounds and passenger shelters.
  - (iii) Railroad rights-of-way and passenger stations — but not including railroad yards and shops.
  - (iv) Repeater, transformer, pumping, booster, switching, conditioning, and regulating stations, and similar installations.
- (18) Radio stations.
- (19) Recycling collection stations when an accessory use to a school, church, recreation facility, or public facility.
- (20) Rooming houses with 11 or more rooming units.
- (21) Swimming pools: nonprofit or publicly owned.
- (22) Travel trailers, recreational vehicles, and similar camping equipment: parking or storage.
- (23) Uses accessory to a conditional use listed above.

**§ 5-204. Conditional uses — Ordinance required.**

In an O-R District, conditional uses that require approval by ordinance are as follows:

- (1) Community correction centers.
- (2) Convalescent, nursing, and rest homes.
- (3) Hospitals.
- (4) Housing for the elderly.
- (5) Massage therapists' offices.
- (6) Nonprofit homes for the rehabilitation of non-bedridden alcoholics and for the care and custody of homeless persons.
- (7) Parking, open off-street areas and off-street garages, other than accessory, for the parking of 4 or more automobiles.
- (8) Parole and probation field offices.
- (9) Planned unit developments: office-residential.
- (10) Substance abuse treatment centers.

**§ 5-205. {Reserved}**

*PART II. BULK REGULATIONS*

**§ 5-206. Lot area.**

(a) *In general.*

For each dwelling, efficiency, or rooming unit in an O-R District, the minimum lot area is as specified in this section.

(b) *O-R-1 District.*

(1) *General.*

Except as specified in paragraph (2) of this subsection, the minimum lot area in an O-R-1 District is:

- (i) 1,250 square feet per rooming unit.
- (ii) 1,675 square feet per efficiency unit.
- (iii) 2,500 square feet per other dwelling unit.

(2) *Housing for elderly.*

*The minimum lot area for housing for the elderly in an O-R-1 District is:*

- (i) 500 square feet per efficiency unit.
- (ii) 750 square feet per other dwelling unit.

(c) *O-R-2 District.*

(1) *General.* Except as specified in paragraph (2) of this subsection, the minimum lot area in an O-R-2 District is:

- (i) 275 square feet per rooming unit.
- (ii) 375 square feet per efficiency unit.
- (iii) 550 square feet per other dwelling unit.

(2) *Housing for elderly.*

*The minimum lot area for housing for the elderly in an O-R-2 District is:*

- (i) 135 square feet per efficiency unit.
- (ii) 200 square feet per other dwelling unit.

(d) *O-R-3 and O-R-4 Districts.*

(1) *General.*

Except as specified in paragraph (2) of this subsection, the minimum lot area

in an O-R-3 and O-R-4 District is:

- (i) 100 square feet per rooming unit.
- (ii) 135 square feet per efficiency unit.

(iii) 200 square feet per other dwelling unit.

(2) *Housing for elderly.* The minimum lot area for housing for the elderly in an

O-R-3 and O-R-4 District is:

- (i) 80 square feet per efficiency unit.
- (ii) 120 square feet per other dwelling unit.

#### **§ 5-207. Yards.**

(a) *In general.*

*The minimum yard requirements in an O-R District are as specified in this section.*

(b) *Front.*

- (1) In an O-R-1 District — at least 20 feet deep.
- (2) In an O-R-2 District — at least 10 feet deep.
- (3) In an O-R-3 and O-R-4 District — none required.

(c) *Interior side.* None required. However, where an interior side yard is provided, it must be at least 10 feet deep.

(d) *Street corner side.*

- (1) In an O-R-1 District — at least 30 feet deep.
- (2) In an O-R-2 District — at least 10 feet deep.
- (3) In an O-R-3 and O-R-4 District — none required.

(e) *Rear.*

- (1) In an O-R-1 District — at least 30 feet deep.
- (2) In an O-R-2 District — at least 10 feet deep.
- (3) In an O-R-3 and O-R-4 District — at least 10 feet deep.

(f) *Along Residence District boundaries.*

If any part of a side lot line in an O-R District coincides with a side or rear lot line in an adjoining Residence District, a minimum 10-foot yard must be provided on the Office-Residence lot wherever the lot lines so coincide.

#### **§ 5-208. Floor area ratio.**

(a) *In general.*

*The maximum floor area ratios in an O-R District are as specified in this section.*

(b) *O-R-1 District.*

(1) *General.*

Except as specified in paragraph (2) of this subsection, the floor area

ratio in an O-R-1 District may not exceed 1.0.

(2) *Housing for elderly.* The floor area ratio for housing for the elderly in an O-R-1 District may not exceed 1.5.

(3) *Height limitations.* In any event, no structure in an O-R-1 District may be higher than 40 feet.

(c) *O-R-2 District.*

(1) *General.*

Except as specified in paragraph (2) of this subsection, the floor area ratio in an O-R-2 District may not exceed 3.0.

(2) *Housing for elderly.* The floor area ratio for housing for the elderly in an O-R-2 District may not exceed 5.5.

(d) *O-R-3 District.*

(1) *General.*

Except as specified in paragraph (2) of this subsection, the floor area ratio in an O-R-3 District may not exceed 6.0.

(2) *Housing for elderly.* The floor area ratio for housing for the elderly in an O-R-3 District may not exceed 9.0.

(e) *O-R-4 District.* The floor area ratio in an O-R-4 District may not exceed 12.0.

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