



Aligning Museum Building Projects with Institutional Goals: A Visitor Experience Centered Approach

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The University of Michigan Museum Studies Program's series of "Working Papers in Museum Studies" presents emerging research from a variety of disciplinary perspectives, all focused on the multiple concerns of the modern museum and heritage studies field. Contributions from scholars, members of the museum profession and graduate students are represented. Many of these papers have their origins in public presentations made under the auspices of the Museum Studies Program. We gratefully thank the authors published herein for their participation.

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What Matters Most in Planning Museums?

A new museum building or an expansion can advance the goals of a museum institution. The new setting may diversify the relationship between artifacts and gallery space and thus introduce new potential journeys for visitors. A museum expansion project, then, promises visitors thrilling ways to explore the collections. This promise is often showcased with a new exterior building face with impressive form and features. For museums selling the image of their new setting, the architectural work of star architects who can be identified by their signature architectural style can be very desirable. However, proposing expensive projects during the current economic downturn is especially challenging; at the same time the need for an enriching and effective museum setting might be more important than ever. As Martha Morris notes, the current economic conditions bring new reasons for museums to think more critically and carefully about their expansion projects (Morris, 2010).

This paper examines how architectural design may shape the museum visit experience in alignment with museums' institutional goals. This paper draws upon an analytic approach that defies the general assumption that impressive and non-conventional architecture may bring positive results, such as attracting greater numbers of both first time and returning visitors. On the contrary, the recent museum boom has witnessed some problematic museum building projects. For example, after the extensive hype for its impressive design with non-orthogonal space and spiky forms, the new addition to the Denver Art Museum designed by Daniel Libeskind received poor reviews for not providing a comfortable and enjoyable museum visit experience as well as not working well for curatorial considerations (Ouroussoff, 2006; Pogrebin, 2007). To better understand how architecture might advance museum institutions, this paper provides a timely exploration of the link between architectural design and how museum settings function. To this end, this paper evaluates the findings of a case study performed by the author in 2009 to investigate the effects of museum settings on the museum visit experience. This case study investigates two key aspects of museum visits, exhibit

narratives and visitor spatial activity, in three exemplary institutions: the Yale Center for British Art (YCBA) in New Haven, Connecticut, the Museum of Modern Art (MoMA) in New York, and the High Museum of Art (HMA) in Atlanta, Georgia [fig. 1]. These museums were chosen due to their architectural design characteristics, comparable in that they allow visitors' individualized itineraries. YCBA, MoMA and HMA have renowned collections that are different in scope and content, and embody different institutional roles within the contemporary definition of an art museum. This variety serves to illustrate various ways in which architectural design might advance institutional roles through its effects on exhibits and visitor explorations.

Art Museums' Institutional Roles and Buildings

The institutional roles that art museums undertake today are much more complex than those the first art museums in the eighteenth and nineteenth centuries played. In contrast to those earlier institutions that were shaped to impress a very specific audience, today's art museums have to keep up with the increasing desire to attract broad groups of visitors, and thus to wear several hats at the same time.¹ Within this trend, art museums have to explore various strategies of displaying art to fulfill not only educational and scholarly objectives, but also to address potentially entertaining aspects of the museum visit. To achieve this, as suggested by Nicholas Serota, art museums may need to emancipate themselves from their perceived scholarly and pedagogic responsibilities involving the interpretation of art, and explore the ways in which works of art can be recognized and enjoyed by broader audiences. To Serota, presenting works of art by highlighting their experiential qualities instead of focusing on their scholarly interpretation is a key strategy for attracting broader audiences to art museums (Serota, 1997). While this may be a plausible attitude, one can argue that understanding and enjoying art are in fact inseparable aspects of art exhibits. Thus, art museums should not completely abandon the interpretive and educational components of their exhibits in an attempt to maintain visitors' interest (Elderfield, 2004). Within these debates, many art museums seek to reposition their institutions somewhere between being a museum for scholarly engagement and being a place for a leisurely visit, yet the need for defining clear goals and objectives remains

important.

Many museums today try to define clear goals and objectives while attempting to reach broad groups of visitors. Defining clear goals and objectives can be possible by determining target audiences and what specific content, experiences, or programming can be offered to them. Some convenient categories for thinking about these target visitor groups and their associated museum visit experiences have been suggested in a recent discussion by Guy Hermann, owner of a growing museum consultancy practice in New England. Drawing from his experience working with various institutions, Hermann argues that museums can be grouped into three categories according to their target audiences and experiences offered: curatorial, destination and community museums.² Accordingly, curatorial museums mostly attract scholars and students with the richness of their collections, potentially promising for further research. The institutional goals of curatorial museums tend to be collection oriented and the exhibits are organized to allow researchers, students and other enthusiasts to examine the collection at a deeper level. Another category defined by Hermann, destination museums, describes museums designed mostly to lure tourists or “thrill seeking” visitors who expect to be amazed and impressed with exhibits in the collection. The main draw of such museums is interesting exhibits that may be planned around experiential qualities of the artifacts, such as visual affinities among the works of art that can be appreciated without getting into a particular scholarly or curatorial interpretation. The third category, community museums, Hermann suggests, describes museum spaces designed for people from the local community of the museum site, where visitors look for shared experiences, familiarity and social encounters during their visit. The main attractions in community museums are programs and exhibits where visitors can participate in groups and build up collective experiences (Hermann & Carmichael, 2010). Despite this intriguing categorization made by Hermann, the demographic, cultural and intellectual profiles of museum visitors in general are much more complex than the three categories of researchers, tourists and local community groups. Thus, museums frequently adopt multiple roles in order to appeal to this varied set of groups. Nevertheless the curatorial, destination and community museum categories do serve to clarify the primary roles today’s art museums can embrace.

While these institutional roles cannot be defined by a single factor, their definitions imply certain qualities that architectural design might bring to the museum. These qualities can be better understood when architectural design is considered in terms of the spatial properties of the setting rather than focusing on the building “image,” recognizable by its impressive external appearance. As renowned architectural

critic Michael Brawne suggests, the ways in which the building space creates viewing sequences through the organization of objects and circulation paths form the essence of a museum visit experience. He argues that architectural design can enrich visitors’ museum experience by defining the ways in which artworks are presented to visitors.

Architectural design may enrich the museum visit experience through diversifying the organization of displays and circulation paths. This clarifies the central question of this paper—how might the architecture of a new museum building shape the museum visit experience in such a way that it could reinforce, advance or even transform that museum’s institutional goals? This question is addressed by assessing the ways in which the architectural designs of the Yale Center for British Art, the Museum of Modern Art and the High Museum of Art affect exhibition of the collections and visitor spatial activity. How might the effects of architectural design on exhibits and visitor movement and activity align with institutional values that correspond to the curatorial, destination and community museum definitions? This discussion starts with a review of each museum’s collection policy and interpretive goals as well as a description of the character of the works exhibited, all of which contribute to an understanding of the intended institutional roles for the three museums.

The Three Art Museums: Their Collections and Institutional Roles

The Yale Center for British Art (YCBA) was founded in 1966 with Paul Mellon’s private British Art collection. The collection houses paintings, sculptures, watercolors, drawings, prints, rare books and manuscripts that date from the 1650s to the 1850s (Robinson, 1985). Since its foundation, the museum has placed a strong emphasis on being a curatorial museum through its commitment to presenting this collection. Mellon’s collection represents British art and its cultural legacy, and as an institution, YCBA addresses an audience with a primarily scholarly interest in British art and culture. Promoting the Mellon collection as a primary source, the museum strives to be a place where British art primarily from the sixteenth to the nineteenth centuries can be studied and understood (Meyers, 2007). Within this focus, YCBA presents its collection “in such a manner that the significance of British art may be fully appreciated by all those concerned with the study and viewing of works of art” (Prown, 1977, p. 15). The museum’s larger scope is to serve as a resource for the understanding of Anglo-American civilization. Consistent with these stated objectives, YCBA’s permanent exhibits concentrate on telling the story of “the development of British art, life, and thought from the Elizabethan period

onward," (Meyers, 2007).

As for the character of the permanent collection, the museum's paintings and sculptures exhibited on the fourth floor of YCBA belong to the pre-Modern era of art history, namely the sixteenth to the nineteenth centuries, and they depict and document significant moments, figures, places and attitudes characterizing British culture. The exhibited art gains various layers of meaning as further research is done on the historical moment in which the object was created, the life story of the depicted figures, and the history of artistic investment and pursuit. Researchers and experts on British art can appreciate the British-ness of the works fully through research in the displayed collection, while novice visitors can only enjoy the aesthetic array of paintings that depict the land and other subjects observantly, with meticulous brushstrokes. Some of the titles of displayed works, such as "William Johnstone-Pulteney, later 5th Baronet" (T. Gainsborough), "A Landscape with a Horseman" (J. Middleton), and "The Beggar's Opera" (W. Hogarth), illustrate the fact that many works are loaded with meaning or references that can be opaque to novice visitors.

The Museum of Modern Art (MoMA) in Manhattan was founded in 1929 with the primary purpose being to "help people enjoy, understand and use the visual arts of our time."³ Since its foundation, the museum has promoted works of art which it considers "experimental, progressive, original and challenging," rather than "safe and academic" (Elderfield, 2004, pp. 10-12). With this focus, the museum's original mission has been "to preserve, collect and display the best works of Modern and Contemporary art and to serve as a laboratory for understanding the visual art manifested by modernity" (Lowry, 1998, p. 24). Considering how explicitly the museum's mission has been shaped around the collection and its interpretation, it can be argued that MoMA has a strong focus on its role as a curatorial museum. On the other hand, its growing collection, including masterpieces of Modern and Contemporary art and exhibits highlighting the experiential qualities of the Modern masterpieces (referring to visual affinities and stylistic similarities), attract many visitors including those who are new to Modern and Contemporary art. Thus, MoMA also acts as a destination museum for visitors to midtown Manhattan. This role has been strengthened with the recent acquisition of a number of Contemporary works, including free-form installations, video productions, and other experimental work of younger and lesser-known artists, as well as the opportunity to exhibit dozens of Modern masterpieces in close juxtaposition, thanks to the new expansion.

Exhibited on the fourth floor of MoMA, the late Modern and pre-Contemporary art (from the 1940s to 1970s)

reflects a period in art history in which artists transcended the painting conventions of the previous century, exploring new languages in depicting the realities of the era. With the Modern artists' individualized experiments within mostly non-figurative and abstract language, many of the works displayed in MoMA's fourth floor have a pronounced graphic character. As can be guessed by examining titles such as "Untitled" (R. Morris), "Campbell Soup Cans" (A. Warhol), "Flag" (J. Johns), and "One" (J. Pollock), the works use a language of readymade objects and media images to make ironic and critical statements about art in the consumerist post-war world. Minimal explanation in the labels necessitates certain knowledge, a "connoisseur's eye" and critical understanding of Modern art, while novice visitors could possibly enjoy viewing these famous works' experiential qualities, which offer an observable evolution toward abstraction (Noordegraaf, 2004; Staniszewski, 1998).

The High Museum of Art (HMA) in Atlanta, Georgia was founded in 1905 as the Atlanta Art Association and only later expanded to include a museum. After the completion of its first building, the museum was opened to the public in 1983 at its current site in the Woodruff Art Center complex (Vigtel, 1983). The original museum collection included pieces of nineteenth century American decorative arts. Over time, the collection expanded with the acquisition of works from other genres, including American decorative art, European art, African-American and American Modern and Contemporary art as well the works of untrained (self-taught) artists. The inclusion of pieces of Contemporary art has been a recent development of the last ten years as the museum began working to build the premier Contemporary art collection in the southeastern United States (Brenneman, 2006). Although the museum keeps its mission statement rather implicit, the institution is characterized by its strong emphasis on educational programs and inclusiveness in collecting and interpreting art in order to welcome a broad audience. The museum has an entire gallery devoted to children and family learning and frequently hosts special events or programming for children as well as live-music events in its atrium for the local community. These aspects strengthen HMA's role as a community museum, though with its unique collection the museum also strives to be a destination museum for visitors to the southeast United States.

The works displayed in the skyway (fourth floor) of HMA belong to three different genres of American art: Modern, Contemporary and self-taught (folk) art from the twentieth century. These works present content that may be more familiar to a novice audience due to being organized with display strategies grouping the works based on visual affinities and with more explanatory labels. In the displays,

the American Modern works are more closely associated with Social Realism (referring to class struggles and economically distressing times) than with Modern styles and movements originating from Europe. Similarly, the works of self-taught artists (including those from the local Atlanta-area community) and underrepresented groups depict figures and events from their collective memories and religious background that can seem more familiar to novice audiences (Russell, 2001). These works share a similar visual language, with the most recent Contemporary works displayed according to their use of scrap materials and found objects while also sharing characteristics with Modern art due to an abstraction of forms and themes relating to the subconscious. Titles of displayed works include “Results of Poor Housing and Results of Good Housing” (H. Woodruff, American Modern), “Gospel Bike” (H. Finster, Southern Folk art), “Heading for the Higher Paying Jobs” (T. Dial, self-taught art), and “War and Rumors of War” (C. Andre, American Contemporary). With this wide array of art objects, HMA’s collection appeals to the broadest group of visitors with the greatest potential of touching the shared history and collective memory of various visitor groups.

As suggested by this review, YCBA, MoMA and HMA show variety in their institutional roles as implied by the scope of their collections, interpretive goals, and the character of the exhibited work. Further analysis of the museums’ gallery layouts, however, can reveal ways in which architecture contributes to the exhibition of art and the shaping of visitor explorations and thus how architecture may transform a museum’s intended institutional role.

Analyzing the Interactions among Gallery Spaces, Exhibits and Visitor Experiences

For the case study completed in 2009, YCBA, MoMA and HMA were chosen to be studied due to their similar layouts, which allow various itineraries and visually links spaces across a distance. This was formulated with the assumption that in museums with this type of layout it is possible to detect the influence of architectural design as visitors have to make choices based on the visual and spatial information available to them. The analysis was formulated with quantitative methods of understanding the characteristics of the museum space. Based on these characteristics, this analysis looked at what effects the architecture of YCBA, MoMA and HMA would have on visitors’ spatial behavior and possible narratives within the exhibits. This study included an analysis of the main gallery floors where the aforementioned collections were exhibited [fig. 1]. These gallery floors were those that most dramatically registered the building’s architectural characteristics. In these galleries the analysis focused on assessing visual cues which are likely

to guide visitors’ exploration of the museum space and exhibits.

For this analysis, the visual cues in each layout were construed quantitatively within the network of spaces that are visible from one another. The “visibility” of a space is a function of the relationship between that space and others nearby, determined by how easily one can see the immediate neighborhood and other spaces from within the original space. In museum buildings, the visibility properties of galleries (how much each gallery space can see into—and can be seen from—other spaces) may be enhanced or restricted by particular architectural features. For example, one design characteristic of many museum buildings, atrium space, may visually link gallery spaces across a significant distance and thus enhance visibility throughout the galleries [figs. 5, 13 and 18]. Connections linking gallery rooms by gateways, on the other hand, can also enhance visibility by allowing visitors to see farther ahead when viewing exhibits and navigating gallery spaces.

For this study, visibility relations in the three museums were obtained using computer software which described visibility in terms of quantified measures of how much can be seen of the immediate environment (“visual connectivity”), and how easily or frequently each space can be seen from other spaces (“visual integration”). These measures were represented on floor plans with color-coded renderings. This software was developed within “space syntax” research, which examines built environments based on network theory.⁴ To trace the direct links between building design and human activity, space syntax research analyzes buildings in terms of two main network or relational properties of spaces: “local relations,” corresponding to “connectivity” as described above, and “global relations,” corresponding to “integration.” These network relationships can be based on physical proximity (one can walk from one space to another) as well as visual proximity (one can see into one space from another). For this case study focusing on visibility relationships, each museum gallery floor was analyzed to obtain local and global visibility distributions. The distributions of local and global visibility were then compared with placement of the displays and with visitor spatial behavior in the YCBA, MoMA and HMA gallery layouts, recorded through detailed observation studies in the museums. For purposes of this study, the placement of the displays in galleries, undertaken by curators, is considered the medium through which possible narratives from the collection were derived. Visitors’ spatial behavior in the galleries is where the museum visit experience (made up of spatial exploration, orientation and exhibit-viewing) can be tracked and understood.

To compare exhibit narratives with visibility distribution in

the main gallery layouts, each museum's collections, exhibit themes and interpretive content had to be understood. This was done by gathering information on the displayed works from art history sources and from each museum's curatorial team through open-ended interviews. Based on this information, first the groups of paintings and sculptures in the galleries (displays) were examined, along with the themes these works may represent, in light of the curators' statements. Once this examination illuminated both the themes underlying the exhibit interpretation and placement of the works, these spatial relations within the displays were compared with spatial relations among the galleries. As mentioned above, spatial relations were described in terms of visibility distribution at both the local (connectivity) and global (integration) levels as obtained through computer aided spatial analysis techniques. In the comparison of the resulting visibility graphs with the established exhibit narratives, spaces with high degrees of local visibility (high visibility in the immediate environment) were considered those galleries in which a visitor could establish visual comparisons and associations with the other displays in sight. Spaces with high degrees of global visibility were considered those in which visitors could explore displays from a wide array of spaces, thus facilitating viewing sequences between nearby displays and several others in visual proximity. These spatial conditions at both local (room scale) and global (layout scale) visibility levels represent the potential for particular gallery layouts to facilitate the creation of multiple narratives in one exhibit.

To compare the spatial properties of a gallery with visitor behavior, visitors' patterns of space use were obtained onsite and were mapped onto the floor plans of YCBA, MoMA and HMA. The analysis of visitor behavior focused on spatial activity relevant to the museum visit experience, which involves navigating in museum space, viewing displays and getting oriented in a particular gallery space. Thus, the case study concentrated on three observable behaviors: movement in the gallery space, stopping to view exhibits, and stopping to grasp the layout. For purposes of comparing these behaviors with galleries' visibility properties, the observable behavior patterns had to be defined both within their distribution in space and in terms of "counts" denoting intensity and frequency. Therefore, counts tracking visitors' movement or paths and the number of stops visitors took to view particular displays and to look around were recorded through detailed observation studies conducted in the YBCA, MoMA and HMA. These movement paths were recorded by tracking randomly selected individuals, and stops were marked when the observed visitor paused for at least one second by bringing both feet to a full halt and orienting their body or head towards a display in the confines of the gallery room.⁵ Observed visitors were considered to have stopped in order to orient themselves

when this one-second pause coincided with looking around in the galleries. The collected data tracked individuals during the first twenty minutes of their visit, which in most cases included their entire tour of the gallery floor.⁶ The results obtained from comparing the visibility properties of the galleries with exhibit narratives and visitor behavior revealed the effects that the architectural design of YCBA, MoMA and HMA have on the museum visit experience.

Layout Characteristics and Visibility in the Three Museums' Main Gallery Floors

Despite the comparable characteristics of the gallery layouts in YCBA, MoMA and HMA, this analysis showed that the architectural designs of these museums may have dramatically different effects on the exhibit narratives and visitor spatial behavior, two key aspects of the museum visit experience. Differences in the interior spatial organization, involving both room sequence and gallery or atrium openings, played a significant role in the ways both space and display information were presented to visitors.

Yale Center for British Art

Visibility from Multiple Directions Inside Kahn's Modernist Building

As discussed earlier, the Yale Center for British Art's collection-oriented goals center on its commitment to present British art and its cultural legacy to a scholarly audience; in this way the museum seems to position itself as a curatorial museum. On the other hand, YCBA's museum building was planned to do more than just fulfill curatorial goals. When architect Louis I. Kahn was commissioned in 1974 to design the building, the planning committee wanted the design to establish a comfortable setting for its visitors. To achieve this, the planning committee specified some design characteristics the building should have—variety in scale and views across a combination of "large and small spaces, high and low ceiling heights, private and public spaces." The committee also noted that "the organization of spaces should provide legibility [and] choices in navigation" and "evoke interest and curiosity," in order to prevent "museum fatigue" during the visit (Prown, 1977, pp. 13-14). This interest in the architectural design characteristics indicated that the museum was concerned with balancing a strong curatorial mission with providing a welcoming experience through museum architecture.

The grid introduces square-shaped bays as the spatial unit of the exhibit spaces on each floor. The exhibit space on the fourth floor, which was included in this analysis, is situated between two atria voids. The galleries, consisting of single square bays defined by the placement of movable

pogo walls, form an enfilade around the atria [fig. 1, top image]. In this spatial arrangement, the physical connections among the square-shaped gallery rooms emphasize parallel promenades on the north and south sides of the atria. These promenades intersect at the corners and in between the atria voids, providing multiple options for visitors' itineraries.

Our spatial analysis showed that visibility relations on YCBA's fourth floor were mostly shaped by the two atria which are widely open to gallery rooms. Together with the atria openings, gallery room entrances enhanced visibility at both global and local levels. Visibility at the global level extended in a diagonal direction from the atrium openings through the gallery promenades. Based on the definition of global level visibility (or visual integration) provided earlier, the areas rendered with warmer colors in the visibility graph [fig. 3] denote the places where an entire layout could be grasped with the fewest number of space/visibility changes. Enhanced visibility at the local level (or visual connectivity) could be observed in several areas, rendered with warmer colors in the local visibility graph [fig. 2]. This analysis showed that in YCBA's fourth floor layout, most spaces were mutually visible from their surrounding spaces, except for the Long Galleries section at the northern side of the building (rendered with cold tones). In particular, the gallery rooms around the atria were directly visible from neighboring galleries across the atria. Along with the generously open and centrally located atria, the aligned gallery room entrances also allowed the visitor to YCBA's fourth floor to visually grasp the entire exhibit space from a wide array of vantage points (high visual integration), thus improving visibility at the global level. The enhanced visibility connecting a wide array of spaces brought opportunities for visitors to read the displays and the exhibit space in various orders. This analysis showed that these opportunities shaped visitors behavior as they explored the museum space, while presenting the exhibit content through various potential narratives.

Visual Narratives of Sixteenth to Nineteenth Century British Portraits and Landscape Paintings

In YCBA, the fourth floor galleries display British painting and sculpture from the sixteenth to mid-nineteenth centuries, which represent the art and culture of Great Britain from the reign of Queen Elizabeth I to the first decades of the Victorian era. Historically, YCBA's display strategies appear to have been based on a conventional scholarly interpretation of British art, which was mainly chronological and structured according to historically and politically significant periods. Acknowledging significant changes in conventions for exhibiting art during recent decades, since 1998 the museum's curatorial team has moved away from a conventional single-perspective

(historical) narrative conveyed through directed sequences with explicit references to historic periods of the British Empire. As a recent attempt at moving away from these conventions, the permanent exhibit installed in 2005 used only implicit references to historical periods with the intention of highlighting the individual artists' intentions and offered multiple viewing sequences without a prescribed route. Another distinctive feature of the 2005 exhibit was the curator's acknowledgment of the potential of the gallery layout—one that embraces the symmetric organization of the space, providing navigational options rather than dictating a prescribed route (Trumble, 2005b). The primary intent of the 2005 installation was to display the works of art in a manner that creates an aesthetic experience where British art can be enjoyed and appreciated, while exploring alternative dialogues between the works of art (Trumble, 2005a).

In YCBA's 2005 exhibit, the display themes representing British Art between the sixteenth and nineteenth centuries had various conceptual foci, ranging from subject matter (works depicting people or natural landscapes), to art in certain political periods, to the styles of individual artists. The references to political developments in the British Empire explored their direct and indirect influences on artistic production and the subject matter painted. As for the subject matter, the works of British portraiture reflect the mannerisms and social status of sitters from the British aristocracy and bourgeoisie, while British landscape painting reflects independent artistic inspiration from nature, depictions of the changing environment, and other aesthetic values shaped by the worldview of the era. This thematic variety in the exhibit was intended to deliver the message that British art can be understood within the depth and complexity of the history of the British Empire as well as via the experiential and artistic qualities of the works. In contrast to this complexity of exhibit content, the gallery layout presented a strict geometry and spatial organization, characterized by square- or rectangular-shaped rooms arranged on a structural grid. In an effort to present complex content within the constraints of the exhibit space, the curators intended to convey the "British-ness" of the collection most explicitly through highlighting subject matter and artistic endeavor (Trumble, 2005a, 2005b; Trumble & Albinson, 2005). As a result, the exhibit focused on two groups: the works of British portraiture, developed through the influence of patrons and political figures, and British landscape painting, distilling and illustrating independent artistic endeavor.

The spatial logic of the installation was based on assigning the thematic display groups associated with individual artists, subject matter, and political periods to the gallery rooms defined within one or more bays of the grid [fig. 4].

Within the geometry of the exhibit space, gallery rooms that formed parallel room sequences were utilized to present the display groups associated with portraiture and landscape paintings in chronological groupings. When the major sections of the fourth floor (the Main Galleries and Long Galleries) were examined together, three gallery room sequences parallel to each other in the longitudinal direction reflected a chronological progression from south to north. While the first sequence focused on British portraiture developed in the sixteenth and seventeenth centuries (in the Long Galleries), the second sequence (on the southern side of the atrium core in the Main Galleries), presented more specific categories of British portraiture, namely the “conversation pieces”⁷ and other formal portraits depicting members of the British middle class in the early eighteenth century. The third sequence (at the northern side of the atrium core) exclusively presented British natural scenic painting that had appeared latest in history, portraying rural places and marine scenes as well as imaginary natural settings. One far corner of this section included portraits of significant British artists as a tribute to the renowned painters and sculptures who had contributed to these new genres and styles of British Art [fig. 4].

These sequences of portraits and landscapes were divided into shorter sections delineated by the location of an introductory gallery (labeled “Introduction”), which was the first exhibit space visitors encountered on the fourth floor. This space was located between the two atria and thus it separated the promenades sequencing portraiture and landscape paintings into western and eastern portions [fig. 6]. The western portions of both the landscape and portrait sequences were devoted to works influenced by Romanticism [fig. 7]. The eastern portions focused on emerging and evolving categories in British art, such as landscapes featuring animals or the portrait “conversation pieces.” On the other hand, the room sequences in the transverse direction made connections between portraiture and landscape paintings by focusing on themes concerning both. For example, the art in Queen Victoria’s era emphasized moral values and the British Empire’s expansion to new lands. This was illustrated with portraiture signifying these changing moral values as well as landscape paintings depicting the newly conquered lands. In summary, the room sequences created in both longitudinal and transverse directions were utilized to interpret the collection based on an implicit chronology of evolving styles as well as changes in subject matter (from portraits of aristocracy to natural scenery and marine paintings).

In YCBA, both local and global visibility brought another dimension to “reading” the exhibit. During the installation, the local visual connections among neighboring spaces were utilized to create an aesthetically pleasing exhibit

in addition to one with scholarly depth [figs. 8 and 9]. A number of the paintings in YCBA’s 2005 installation were placed to intentionally create visual juxtapositions with other pieces as well as to create a framing effect using the atrium openings [fig. 8]. Visual connections between some display groups, established through gallery gateways and atrium openings, emphasized those displays within the narrative. Most notably, galleries displaying art from the Victorian era looked out on a panoramic view of the main atrium, offering a view of the displays positioned in other galleries in diagonal directions. This location created a visually powerful position for a visitor to the early Victorian England and Queen Victoria’s England galleries, which symbolically reflected the importance of the Victorian era in British art [fig. 9]. Enhanced visibility also characterized the introductory gallery as well as the areas towards the eastern end of the portraiture sequence. These areas included the displays from depictions of key developments in the art of eighteenth century England to those showing the emergence of the “conversation piece” genre. The fact that these areas were potentially visible from a wide range of spaces helped relate each of these artistic moments to the definition of “British-ness” being developed throughout the entire exhibition. While both the portraiture and landscape art sequences were also quite visible from everywhere else in the exhibit, the sequence representing art of the sixteenth to seventeenth centuries (which highlighted political figures and developments) was much more isolated, both visually and physically, on a disconnected promenade in the Long Galleries section. This seems to indicate that the story of British art from the sixteenth to mid-nineteenth centuries as told in YCBA minimized—but did not exclude—historical developments and political agendas as potential artistic influences.

This analysis suggests that the architectural design of YCBA, which engenders a rich array of visibility relations in its exhibit spaces, influenced the narratives presented in its galleries in two ways. First, the design created an aesthetic presentation of the collection, utilizing the atria openings to create opportunities to view the pieces at a glance, in juxtaposition to others. Although these visual juxtapositions were not designed to facilitate in-depth understanding of each piece and its scholarly significance, they did act to relax the structured organization of the displays. The exhibition layout was able to address more novice audiences by offering a different way of reading the exhibition—an alternative to the traditional scholarly narrative. Second, the architectural design of YCBA engendered global and local level visibility relations that visually connected the displays, thus depicting the emergence of genres like “conversation pieces” and landscape paintings within a wide array of other displays in the layout. This property sharpened the curatorial message,

which sought the roots of changes in British art outside a purely politico-historical approach. Needless to say, the full extent of this curatorial message might only be absorbed or recognized by visitors with greater knowledge of British art. Hence, YCBA's building addressed both the specialized audience (which aims to explore further and make new connections among the works of art), and the novice audience (which might be encountering British art for the first time). The building environment seems to motivate the second group to enjoy the vast visual array of British works of art, fulfilling the function of a destination museum.

Visitors' Experience Synergized by Art and Architecture

The capacity of the YCBA building to address different audiences can be further understood by examining the extent to which the architecture influenced visitors' behavior in the galleries. This analysis compared visibility properties, engendered by architectural design, with visitors' movement through the galleries and with counts of stops taken while viewing displays and surveying space. Results show that visitors are more likely to move through spaces with enhanced visibility. This means visitors' navigation was guided by visual information available from being able to view a wide array of spaces. Similarly, visitors tended to stop to view displays that were located in areas visible from many other spaces. This connection between visitor behavior and enhanced visibility was true for enhanced visibility on the local level (gallery scale) as well. These results suggest that the full range of visitors' gallery behaviors—moving, stopping to view displays, and stopping to look around—were influenced by the visual information available at the global and local levels. This means that visitors are often engaged in exploring space and interacting with displays in similar spaces, possibly at the same moments. Because these behaviors were found to be so closely associated, it can be argued that YCBA's spatial configuration offers a museum visit in which visitors actively engage in viewing displays and surveying the environment while navigating space. Because these various aspects of the museum visit are so closely associated, it might be said that a kind of synergy is created among the various behaviors associated with experiencing both the art and architecture at YCBA.

These findings reveal an emphasis on aspects of the museum visit other than merely inspecting exhibits, which serves to temper the museum's role as a curatorial museum. YCBA not only attracts a specialized audience (with its academically interpreted collection) but also draws a broader audience by offering a museum visit experience where architectural features and the aesthetically arranged works of art can be appreciated. This acts to expand the institutional role of YCBA from that of a curatorial to a destination

museum, in the sense described earlier in this paper.

The Museum of Modern Art

Exhibiting Complexities in Taniguchi's Modernist Building

Since its foundation in 1929, the Museum of Modern Art in New York has aimed to promote the collection, display, understanding, and enjoyment of progressive and unconventional works of art. As its collection grew and the museum continued to welcome larger and larger crowds, MoMA underwent some changes in an expansion of its building. The last expansion project of MoMA, part of which was completed in 2004, was planned with two objectives in mind: to create a larger gallery space so as to accommodate a greater number of visitors and to create a space that would allow the museum to offer a synoptic overview of the story of Modern art, acknowledging the complexities and contradictions in its development (Elderfield, 2004, p. 56). This required enlargement of the gallery space, the end result of which enhanced both the flexibility and function of the space and the opportunities for exhibiting more of the collection (Lowry, 1998). The museum's ultimate purpose was to transform the ways in which the story of Modern art is told by affording multiple narratives. Therefore, the new gallery building was envisioned to offer multiple routes that would allow visitors to tailor their explorations to their individual interests (Elderfield, 2004). These objectives were incorporated into Yoshio Taniguchi's architectural design for the expansion, doubling the available space with the addition of a five-story building for the museum's exhibitions and programs.

In this new building, MoMA's fourth floor is characterized by a large atrium at the center and an enfilade gallery room sequence. The rooms are open to each other through gateways positioned at perpendicular, opposing and staggered sides of each room. Despite this variety, the gallery rooms at the central part of the main itinerary are connected only through staggered gateways directing movement in one direction. As a result, the room sequence defines the visitor's itinerary almost entirely in a single direction and allows choice of direction only towards the dead-end parts of the sequence [fig. 1, middle image].

As for visibility distribution on the fourth floor, though most gallery rooms are visually connected to neighboring rooms, this visual connection does not extend farther than a few rooms ahead. This property is consistent throughout the layout except for a couple of rooms that are located towards the end of the main itinerary. These rooms open to the atrium and thus provide vistas across larger spatial

distances [fig. 13]. These vistas also offer reference points to visitors at the end of their itinerary, where the entrances to the galleries are located. The global level visibility was most enhanced in the galleries towards the south. This was due to a greater number of gallery entrances opening in multiple directions and the availability of atrium openings visually linking the galleries to farther spaces. Nevertheless, the atrium did not seem to make a substantial difference to visibility levels throughout the itineraries and visibility at the local level remained limited. This meant visitors tended to navigate through the galleries seeing only one or two rooms ahead without noticing the spaces or central atrium farther ahead [figs. 10,11].

Tracing the Complex Story of Late Modern and Pre-Contemporary Art (1940s-1980s)

Starting from its first decades, the focus of MoMA's exhibits has been art from the nineteenth century to the post-war decades. The museum shaped its permanent exhibits on the basis of Alfred Barr, Jr.'s interpretation of Modern art, seeking its roots in late-nineteenth century European painting styles. It has since aimed to collect works that would help explore the evolution of Modern art movements and styles in complex patterns of evolutions, transformations and derivations (Kantor, 2002). Barr's interpretation has since been the basis of the organization and placement of the works of art in MoMA gallery floors. The galleries planned in the earlier constructions (1964 and 1984) presented the collection within a prescribed order corresponding to the trajectory provided by Barr's diagram, which tended to overlook or simplify the complexity and variety of the individual artists' styles and left little room for the works of artists creating toward the end of the twentieth century. The gallery floors in the latest construction of MoMA on the other hand were planned to present these Modern art movements and styles with the fullness of their richness and complexity.

When analyzed for this case study in 2006, the fourth floor of the MoMA building exhibited painting and sculpture from the 1940s through 1980s. These works represent the late Modern and pre-Contemporary art movements, starting with Surrealism and Abstract Expressionism and ending with post-Minimalism. In the exhibit, these art movements were presented by displays placed in separate galleries, or so-called "chapter rooms."⁷⁸ Each chapter room was devoted to a single art movement, or the style and works of an individual artist, while subdivisions within each room corresponded to subtle differentiations within the same movement or style. Connections between these chapter rooms expressed how the various art movements emerged and evolved. In MoMA's exhibit and interpretation, the development of an art movement within a genealogical

trajectory might include oppositions, reactions, derivations and other complexities. These developments that characterize late Modern and pre-Contemporary art could be traced through physical and visual connections between the gallery rooms, evident from a close examination of the exhibit layout.

Accordingly, the gallery rooms at the beginning of the itinerary (the northern side galleries) present works from the post-war era (1940-50s) within a somewhat directed sequence with few choices in direction. This directed sequence identifies this period with the emergence of Abstract Expressionism, and its evolution leads to either the gallery on "Painterly Abstraction" or to the post-Cubist and late Surrealist movements. The galleries displaying later derivations of Abstract Expressionism—namely non-painterly abstraction and the post-1960s reactionary movements—were reached through rooms situated in staggered positions. This positioning of rooms created changing directions in the viewing sequence, which referred to the unsteady and multi-directional developments of Abstract Expressionism in post-war period art. Indeed, in the 1960s the Modernist movements became increasingly complex, as represented in a gallery called "Reinventing Abstraction, ca. 1960." This gallery opened onto several other galleries in various directions, exhibiting Pop Art, Conceptual Art, Minimalism and post-Minimalism. This spatial arrangement served to express the complex, reactionary, and multi-directional developments which produced these more individualized styles [fig. 12]. These observations suggest that the gallery layout's formal and spatial properties were intended to express the complex, dynamic, and non-linear development of late Modern and pre-Contemporary art between the 1940s and 1980s. Beyond this direct relationship between layout and content, further probable effects of the visibility distribution on the exhibition narrative are explored below.

Analysis of the visibility distribution on MoMA's fourth floor revealed that the spaces which showed the highest levels of enhanced global visibility were the "Reinventing Abstraction, ca. 1960" gallery, portraying the cross currents of the 1960s, and the "Minimalism" and "Post-Minimalism" galleries, presenting the styles emerging out of these crosscurrents. This visibility pattern emphasized the art of the 1960s and those reactionary styles which developed afterwards. This emphasis on the relationships between the "Reinventing Abstraction, ca. 1960" gallery and the "Minimalism" and "Post-Minimalism" galleries implies that the complex and diverse post-1960s movements are significant for an understanding of late Modern and pre-Contemporary art. Enhanced global visibility in the post-Minimalism gallery was afforded by the atrium opening connecting this gallery to the north entrance. This

opening also visually connects the post-Minimalist gallery with more recently dated Contemporary works displayed at the northern entrance to the galleries thus facilitating visual comparisons or continuity between the two sets of works. On the level of local visibility, the visual isolation of the northern side galleries displaying post-Cubism and late Surrealism undermined the relative importance of these movements in the narrative. This weak spatial emphasis seems to imply that these movements need to be understood individually as the precursors to the complexity of post-1960s movements. From the beginning to the end of the fourth floor galleries, the visitor was able to see only a few rooms ahead. This arrangement facilitated viewing the works in the upcoming or just recently visited rooms in conjunction with the gallery a viewer occupies, emphasizing the “kinship” between adjacent rooms and their related art movements. “Masterpieces” were thus placed at the end of visual axes which can be seen from the adjacent rooms, a display strategy the MoMA has utilized quite often in its history [fig. 14]. This placement utilized gallery room entrances to frame the masterpieces and emphasize their unique qualities.

These strategies of displaying art utilizing visual and physical connections between the galleries place emphasis on the “experiential” or aesthetic qualities of the masterpieces. At the same time, these strategies establish a spatial structure parallel to the conceptual structure of the exhibit content, characterizing MoMA’s approach to understanding the story of Modern art as still relatively close to that originally developed by Barr. MoMA’s fourth floor exhibit can therefore be considered quite didactic, utilizing the space to express scholarly or academic interpretations of art. But the extent to which visibility relationships place greater emphasis on the increasing complexity of late Modern art after the 1960s (and are utilized to frame the masterpieces on visual axes between the adjacent rooms), as well as MoMA’s focus on individual artists’ work independently of historical context, both allow the visitor to appreciate and enjoy the experiential qualities of art rather than focusing on a strictly didactic presentation. One can argue that MoMA’s ability to blend didactic and experiential methods of presenting art has reinforced both its roles as a curatorial and a destination museum. In order to better understand these two capacities, one should also look at how visitors explored the displays within the galleries.

Divergence of Attention between Art and the Building

This analysis comparing visibility relationships with visitors’ movement and stops in the galleries revealed the ways in which visitors interacted with displays and gallery spaces. The analysis showed that visitors were most often guided by visual information in surrounding areas

(or adjacent rooms). This means visitors moved through a room sequence that unfolded only a few rooms ahead following the subtly expressed relationships between the subsequent art movements and styles through visual connections between the “chapter rooms.” The analysis of visitor stops also suggests that visitors did not necessarily stop to view exhibitions in visually connected areas that they moved through. Instead, more stops were made to view displays at visually isolated areas, which were visited by a smaller proportion of the total visitors. The popular paintings, which were mostly in visually isolated areas, also seemed to motivate visitors’ stopping. Visitors’ tendency to stop at displays in galleries which were isolated or poorly integrated with visual information from other galleries implies that certain works of art were viewed and enjoyed individually rather than by making visual comparisons with other works in sight. Along with the results of visitor movement analysis suggesting intense navigation and wandering behavior in the visually connected areas, visitors’ tendency to stop in areas that were visually isolated points to a divergence in visitors’ exploratory and display-viewing behaviors.

Tracking visitor movement in this way also revealed how visitors interact with the building, guided by visual information as each new gallery or vista unfolded. Visitors tended to stop and look around wherever many spaces were visible (enhanced global visibility). Since both moving through the galleries and stopping to look around can be considered indicators of visitors’ interactions with the gallery layout and building features, these behaviors seemed to be influenced by the availability of visual information (at both the gallery room scale and the larger layout scale). In contrast, exhibit-viewing behavior was primarily influenced by a location’s visual isolation from the rest of the layout. Results confirmed that in visually isolated spaces visitors engaged with works of art in a focused manner and yet seemed less engaged in exploring and experiencing the building. This difference implies a disassociation of the exhibit viewing from the spatial exploration and orientation components of the museum visit. Therefore visitors’ interaction with architecture appeared to be a discrete property of the museum visit, independent of their direct interaction with art.

Based on these findings, it can be argued that MoMA’s new building advances the institution’s goals in its roles as both a curatorial and destination museum in a number of ways. First, the building strengthens MoMA’s curatorial role by allowing a spatial expression of the complex relationships and dialogues between Modern works of art which were not explored entirely in the earlier buildings. Second, the building has intensified the interaction between visitors and works of art, not only by walking visitors through the

complex trajectory of Modern art but also by maintaining the possibility of enjoying each work of art individually from a purely aesthetic perspective. MoMA's strong potential to be a destination for visitors to Manhattan has been enhanced to some extent by the new building's grand entrance and atrium. Additionally, the building contributes to both the museum's destination and curatorial roles even more profoundly by providing a neutral backdrop to the unfolding of the complexities and experiential qualities of Modern and Contemporary works.

The High Museum of Art

Individualized Narratives through the Meier and Piano Gallery Wings

The High Museum's latest wing was planned to enlarge its gallery space considerably. This decision was part of a larger institutional expansion that included broadening the scope of the collection with the addition of Contemporary works. The building expansion would accommodate some oversized Contemporary paintings requiring larger gallery rooms for installation and viewing. The museum's increased capacity eventually allowed the works of Contemporary independent artists to be shown together with the works of Modern and self-taught artists. The museum expansion included the addition of two new wings designed by Renzo Piano (devoted to the display of Contemporary works), and the renovation of the original building, designed by Richard Meier. Piano's two wings, the Wieland and Cox wings, were designed to be integrated with the original Meier building, now called the Stent wing (High Museum of Art, 2005).

In HMA's new facilities, the Stent wing is bridged to the Wieland Wing by a narrow connector. The interior of the Stent wing was renovated a number of times since its original design but is today composed of an L-shaped arrangement of galleries which enclose a quarter-circle shaped atrium. The Wieland wing, designed by Piano, has a simpler geometry with a slanted rectangular shape. The layout of the skyway gallery floor (connecting the Stent and Wieland wings) therefore shows hybrid design properties formed by the different spatial geometries of the two wings. On the one hand, the interior of the rectangular shaped Wieland wing is partitioned by symmetrically situated walls to form a series of connected rectangular rooms. The Stent wing, on the other hand, is composed of gallery rooms of various sizes, the largest of which are adjacent to the atrium along its orthogonal edges. The atrium is quite open to these large galleries and thus works to provide natural light as well as a view of the lower level floors. The smaller galleries are situated at the outer edge of the Stent wing's L-shape. At the outer edge, the corners of the L-shape feature square-shaped room-within-a-room organization

while the spaces between are more freely organized [fig. 1, bottom image].

In this composite room configuration of HMA's skyway floor, spatial analysis showed visibility relationships amongst gallery rooms were quite varied. Through the open atrium [fig. 18] and large galleries leading to the Wieland wing, the core space (extending in a longitudinal direction from the Stent wing's atrium area to the first room of the Wieland wing) had enhanced global visibility, allowing the visitor to simultaneously view the entire floor's layout. The longitudinal core also presented enhanced visibility at the local level, providing direct visibility of the galleries at the backside of the Stent wing through a number of doorways. The gallery sequence at the outer periphery of the Stent wing seemed to create fluid visual connections from room to room (with fewer partitions in the middle), but remained visually hidden from all the other spaces in the layout. In the Wieland wing, the gallery rooms were connected to each other at their corners. As a result, the corners that opened onto five other gallery rooms had the highest degree of direct visibility [figs. 15, 16].

Hybrid Narratives and Visual Affinities among the Works of the Twentieth Century

As discussed earlier, the High Museum of Art's collection includes works of art representing three genres from twentieth century North America: Modern, Contemporary and self-taught art. With the displays of selected pieces from these three genres, the exhibition in HMA skywalk galleries is arranged to explore possible dialogues among the Modern, Contemporary and self-taught art. To this end, the museum's display strategies utilized the galleries' geometry and spatial features as well as the strengths and diversity of the collection. Conversations with curators confirmed that the display strategies in the exhibition could be considered "less scholarly" in the sense that displays did not always align with categorizations determined by art history. Rather, the curatorial team employed visual affinities that could be easily recognized between the various works of art (Brenneman, 2006; Cove, 2006). More specifically, the displays of Modern art grouped furniture, paintings, sculpture, photography and designed objects based on similarities in visual language in order to stage period developments and emerging styles [fig. 19]. Additionally, in a few galleries, the most recently produced Contemporary works and the works of self-taught art were displayed together based on similar visual languages utilizing scrap materials, found objects, everyday objects and famous human subjects. These display strategies arguably made the exhibition understandable and appealing for visitors with almost any educational background.

Since the works of the three genres emerged and evolved according to diverse factors, the displays of these works were arranged with different spatial organization consistent with each group's conceptual structure. The Modern art displays included references to key developments in North American social and political history as well as information about when and how art movements and styles emerged. On the other hand, the self-taught art displays talked exclusively about the untrained artists' unique, individualistic artistic language, grouping the pieces by individual artist. The third genre of the exhibit, Contemporary art, illustrated the progressive and avant-garde notions of Modern art within the highly diversified styles and individual explorations of later artists. While the earlier Contemporary works could be grouped into art movements and styles, the latest works in the collection represented increasing individualization and therefore had to be placed independent of any categorization.

Due to the diversity of the exhibit's conceptual structure as well as the composite spatial properties of the layout, the spatial logic of HMA's skyway galleries was highly complex. This complexity may have required understanding the entire exhibit narrative part by part and interpreting the narratives of Modern, self-taught and Contemporary art individually at first since the displays of these three genres were placed in different locations in HMA's fourth floor layout [fig. 17]. Only in the places where these different genres intersected could the displays of different works be read in conjunction. The works of Modern art were installed in the room sequence located at the outer edge of the Stent wing's L-shape where the displays were arrayed in chronological order. The rooms at the beginning and end of this sequence have a room-within-a-room organization, creating a circular viewing sequence and allowing a focused representation of key periods within the non-linear array of displays [fig. 19]. The works of self-taught art were installed in a similar room sequence in the other "arm" of the L-shape, which was not immediately visible from the entrance to the gallery floor. The same room-within-a-room organization at the end of this sequence was utilized to create a focused representation of "memory painting," grouping the works by individual artist. The works of Contemporary art on the other hand were placed in both the Stent and the Wieland wings. While the most recently acquired and latest dated works were placed without explicit sub-categorization in the large Stent wing gallery hall facing the atrium, the earlier Contemporary works were installed in a room sequence of the Wieland wing according to the styles they represented. This installation followed an implicit chronology of the early Contemporary styles, Minimalism, late Abstract Expressionism, Pop art and the individual artists' work, arranged in a clockwise direction around the room sequence. While the large gallery rooms in this

sequence were used for those works which best represented the style of a particular artist or movement, those in the rectangular but more open rooms were reserved for works that represented the transition between two stylistic periods.

Visibility analysis showed that the composite spatial and formal structure of the layout engendered varied levels of visibility and thus placed different emphasis on the displays. Accordingly, the works of American Modern art displayed on one side of the Stent wing were more likely to be visited separately from all the other displays due to the visually isolated location of the galleries. The works of self-taught art in the other side of the Stent wing were similarly affected due to their inconvenient location as well as the visually isolated position of the galleries. The works representing pre-Contemporary art periods in the Wieland wing were also in a relatively detached location. These properties of the layout prevented a seamless narrative flow and instead presented the narrative within distinct chapters or parts.

The most recent Contemporary works on the other hand were placed in the large gallery hall next to the atrium, a place easily visible from a range of spaces in the layout. The degree of visibility was highest at the bend or corner of this hall (which was also the inner corner of the L-shaped Stent wing gallery space). At this corner the display sequence of the most recent Contemporary works intersected with the sequence of self-taught art, thus both Contemporary and self-taught art could be viewed in conjunction. This comparison highlighted the two collections' similar artistic language—utilizing scrap material, found objects and animal figures representing subconscious thoughts and motivations [figs. 20, 21]. On the other hand, a few Modern works that anticipated the emergence of Contemporary styles were also visible from this location. Displaying these works of Modern, Contemporary and self-taught art in visual juxtapositions revealed possible dialogues between/among these art genres. Most importantly, this space was highly visible and permeable from every other space in the layout. By providing many opportunities for these displays to be visually compared to those in other sequences or spaces, HMA's skyway level layout emphasized these works as representing a coalescence of different art genres. This emphasis indicated the museum's less scholarly but more inclusive approach to presenting and reading art, with the potential to appeal to broad groups of visitors regardless of their art historical interests. This provides suitable grounds for calling HMA a destination museum as exhibits combining various types of art works and genres based on visual affinity could offer a thrilling exploration for many visitors to Atlanta.

In addition, the fluid organization of the rooms in the Stent wing, as well as the visual connectedness among the rooms

in the Wieland wing, brought about opportunities to “read” the works of art in numerous visual combinations rather than viewing each work in a pre-determined sequence. This could motivate visitors’ individualized ways of understanding the exhibit narrative or even motivate them to share their perceptions within small groups. Further, this effect of the layout on visitors’ encounters with art might facilitate a broad group of visitors’ authentic and collective interactions with art, thus potentially reinforcing its role as a community museum.

Divergence of Attention between Exhibits and Space by Choice

An analysis of visitor behavior in HMA would help evaluate the capacity of the building to contribute to the museum’s role as a community and destination museum. Comparing visitors’ movement with visibility levels in the gallery spaces suggests that visitors were usually attracted to areas with enhanced visibility at both global and local levels. This finding confirms that exploratory movement mostly appears along the longitudinal core of the layout (which had enhanced visibility), offering access to the entire layout as well as surrounding galleries [figs. 22, 23]. On the other hand, visitors seemed less likely to stop and view the exhibit along this longitudinal core space. Instead, they were more likely to stop and look around at the points where continued movement required decision making, that is, where visual information about permeable spaces in various directions was available. This shows that along the longitudinal core space, where Contemporary works were placed, visitors’ rarely paid attention to the displays. A number of factors may be at play here. While the Contemporary works—displayed with weaker narrative structure and less explanatory material—were less engaging than other galleries for most visitors, the longitudinal core is nevertheless located along the way to the Wieland wing.

As for display viewing behavior, visitors’ stops were concentrated in visually isolated parts of the layout where displays could be viewed without the distraction of other galleries. The visually isolated parts in the layout were the galleries displaying Modern and self-taught art at the separate corners of the Stent wing, and Contemporary art at the Wieland wing. This analysis showed that while these areas ranked low in exploratory movement, visitors who passed through nevertheless seemed to stop to view individual works of art quite frequently. This suggests that visitors were more inclined to focus their viewing when visiting visually isolated parts of the layout. Exhibits in the visually isolated parts of the layout (including the works of Modern art and self-taught art as well as a few works of Contemporary art) were viewed without much comparison with the art in the rest of the layout. More importantly,

results indicate that visitors tended to engage in spatial exploration and orientation in spaces different from those in which they engaged in focused viewing. This means that HMA’s layout separated the more holistic spatial experience (characterized by movement and getting oriented) from the more focused experience (of stopping to view displays). Because the spaces where visitors engaged in these different behaviors were reachable through different itineraries one can argue that HMA can accommodate visitors with different intentions and interests. While the variety in the exhibited work might appeal to broad groups of visitors, HMA’s layout also facilitates visitors’ engagement with the exhibits at various levels (from focused viewing to skimming) along the itineraries of choice.

In summary, the museum’s gallery layout allows genuine and collectively shared interaction with the displayed art, viewing each genre quite separately and revealing visual affinities between the genres at the central core of the layout. Embracing individualized and authentic interactions with art as well as thrilling explorations of visual affinities among the different works, the architecture strengthens the museum’s ability to attract both visitors to Atlanta and the local community.

Discussion: Architectural Design Extending the Intended Roles of Art Museums

These complex findings, obtained from case study analyses of YCBA, MoMA and HMA, exemplify a range of ways in which the architectural design of museum buildings can extend a museum’s intended roles, usually determined by their collections (or the character of the art objects) and their curator-determined interpretive goals. In this paper, a close examination of interpretive goals, scope of collections, and mission statements implied that YCBA aimed to fill the curatorial museum role based on its scholarly dedication to its collection; MoMA might be identified as a curatorial and destination museum because of its academically interpreted but attractive collection; and HMA seemed close to being a community museum due to its exhibit content, connecting to visitors’ shared experiences and collective memory.

This analysis revealed how these institutional roles may be extended and advanced by the spatial qualities diversifying the relationship between displays and exhibit space and by subtly orchestrating visitors’ spatial explorations. In all three museums it can be argued that architectural design enriches the museum visit experience to the extent of introducing more interesting (and mostly experiential) ways of presenting art beyond a simple didactic placement of works.

More specifically, YCBA's architecture (unfolding works of British art through the visualization of both nearby and distant gallery spaces) achieves what was desired by the building expansion planning team: "the building should have variety in scale, and views across a combination of large and small spaces, high and low ceiling heights, private and public spaces" (Prown, 1977, pp. 13-14). Allowing glances through atria and gallery entrances in addition to nearby galleries, the architecture of the building offers an aesthetically pleasing and visually thrilling museum visit experience centered on works of British art which might otherwise interest only a limited group of people. This illustrates one way in which the museum visit can be enjoyed within the interplay of art and architecture. Thus, the architecture of the new expansion tempers YCBA's strong emphasis on its curatorial role and helps the center to be a more interesting place for visitors who are not researchers.

The architectural design of MoMA's expansion wing on the other hand is seldom experienced in interplay with art. Instead the architecture helps the museum advance its curatorial role as the building allows the museum to finally exhibit Modern art with all its complexities and intensify visitors' interactions with the Modern masterpieces. This reinforces the role of MoMA as a destination museum as well because the thrilling experience of viewing masterpieces with an emphasis on high level art historical detail becomes the main attraction, while the sheer Modernist building welcomes visitors to this journey with a grand atrium.

Finally, HMA's two building wings present works of three different genres for a broad spectrum of visitors. Its display strategies are based on visual affinities between works, artists, and genres—an intellectually inclusive mode requiring no previous background in art history. The fluid, openly organized rooms, along with a layout which offers choices between focused viewing and walk-through viewing, further adapt HMA's display approach to a level many kinds of visitors can enjoy. These spatial qualities strengthen HMA's community museum role, seen in the exhibited content, diversity of the collection and the transparent interpretations of the art. At the same time the spatial qualities of HMA's original and newly added wings advance the museum's potential as a destination museum, making exhibit viewing an exciting experience, the spatial design highlighting visual affinities between the different genres.

As can be seen from this analysis, architectural design often enriches the experiences visitors have of the displayed work, providing rich visual connections from a wide array of spaces. However, these spatial qualities function quite

differently for each museum, depending on the character of the displayed work and how each museum's interpretive goals play out. The rich array of visual connections that worked for YCBA could be unnecessarily distracting for other museums, which have different collections and goals.

These conclusions concern the interior organization and spatial experience of the museums and imply the conceptual levels on which museum staff and building design teams could collaborate. These findings also point to a number of important factors which should be considered when planning a successful museum building in concert with the goals and roles held by a particular institution. First, architectural design can have a more profound impact when its function is imagined and evaluated on the basis of its interior spaces and their interaction with works to be displayed rather than on its exterior—the first impression the building creates. Indeed this factor has been overlooked by many museum planning teams, perhaps most notably by the design team involved with the Denver Art Museum expansion project. Second, planning a successful museum building requires the collaboration of museum client and architect as well as collaboration between museum curators and exhibit designers. This collaboration should aim to communicate the museum's intended roles (as derived from the museum's interpretive goals and target audience) to the architectural planning team. The architectural teams then could tailor their spatial solutions around the envisioned visitor experiences instead of handling design as a self-indulgent sculptural exercise. Within this collaboration, the visitor experiences could be envisioned in detail, intentionally distinguishing spaces for intense and focused viewing, wandering around, and getting the general feel of the museum. Similarly, the exhibition strategies could be part of this planning wherein didactic and experiential exhibit strategies utilizing spatial organization could be designated. Third, all this collaboration may benefit most by the inclusion of a consultant (perhaps one familiar with the techniques of spatial analysis) who would mediate the museum's institutional roles and interpretive goals with possibilities that come with the architect's design. Finally, the earlier this collaboration and consultancy starts the more likely it will be that the process will lead to a successful museum building and that concerns can be addressed before the design plans becomes unchangeable.

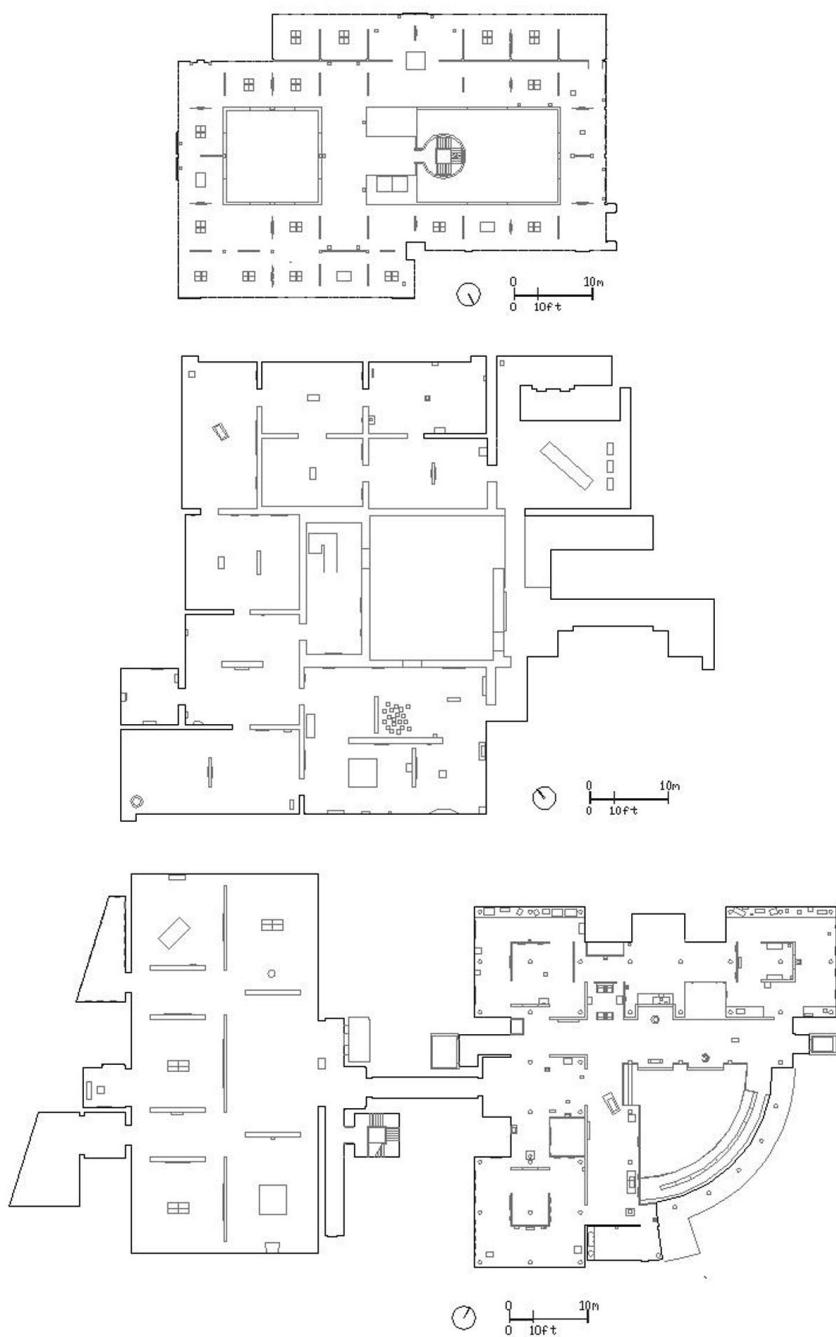


Figure 1. The three museum gallery floor plans with scale and orientation. Floor plans provided by the museums have been modified by the author to delineate spaces open to visitors: YCBA, 4th floor (top), MoMA, 4th floor (middle), and HMA, skyway/fourth floor (bottom).

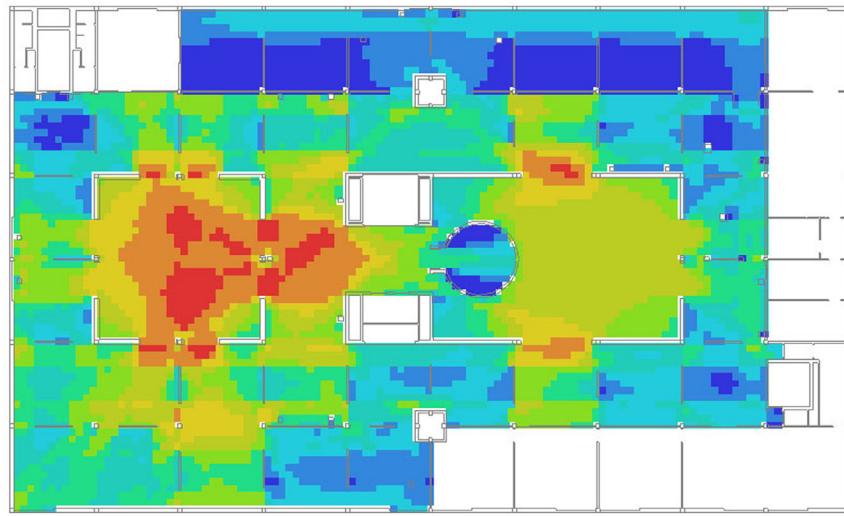


Figure 2. Visibility graph of YCBA's fourth floor showing local level visibility (visual connectivity) distribution (the reddish colors denote higher level visibility, generated by the author in 2008 with *Depthmap*).

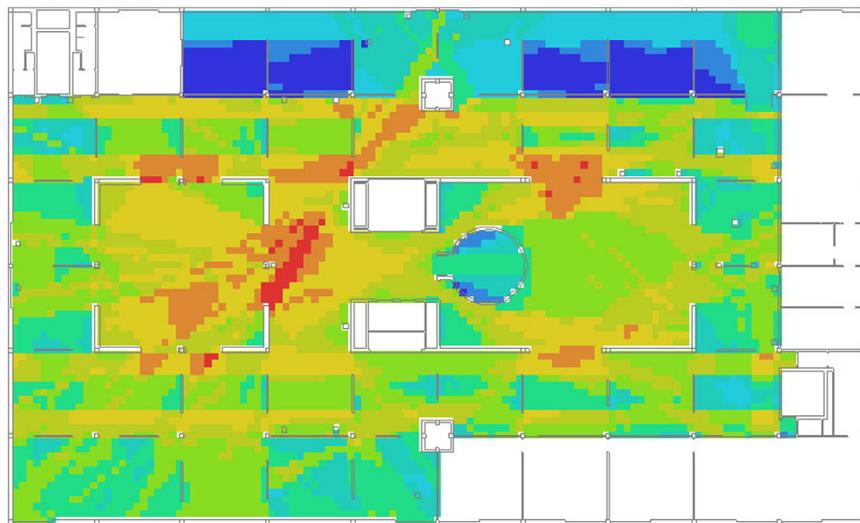


Figure 3. Visibility graphs of YCBA's fourth floor showing global level visibility (visual integration) distribution (the reddish colors denote higher level visibility, generated by the author in 2008 with *Depthmap*).

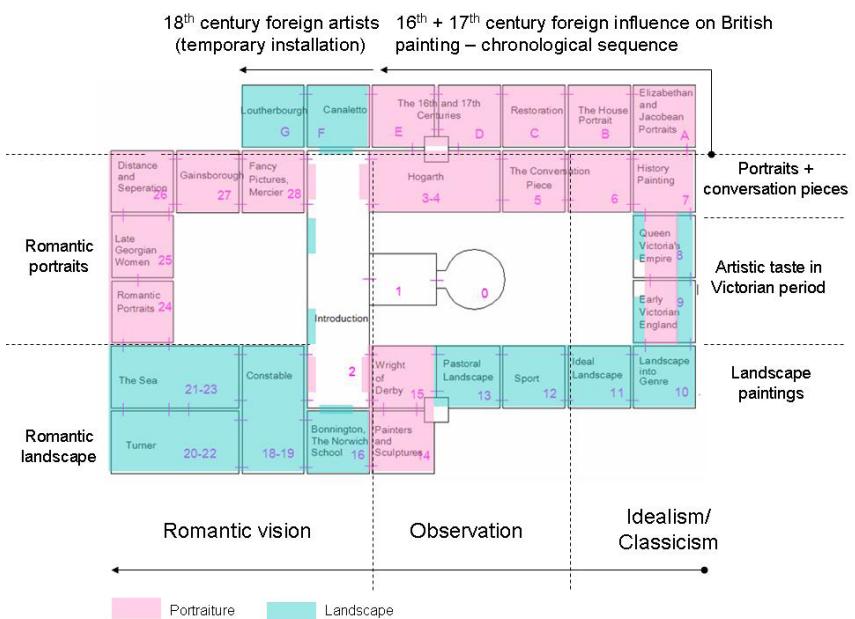


Figure 4. Layout of displays on YCBA's fourth floor (diagram prepared by author, based on information obtained from the museum and further research).



Figure 5. YCBA's main atrium as viewed from the galleries on the western end (*photo: İpek K. Rohloff*).



Figure 6. View from a YCBA gallery showing the alignment of gallery gateways along the promenade displaying portraiture (*photo: Ipek K. Rohloff*).



Figure 7. View from the galleries at the southwestern corner of the YCBA's fourth floor displaying Romantic period landscapes (*photo: Ipek K. Rohloff*).



Figures 8. The framing effect of the atrium opening (*photo: Ipek K. Rohloff*).



Figure 9. View from the YCBA galleries displaying art of the Victorian era across the atrium where other works and gallery rooms are visible (*photo: Ipek K. Rohloff*).

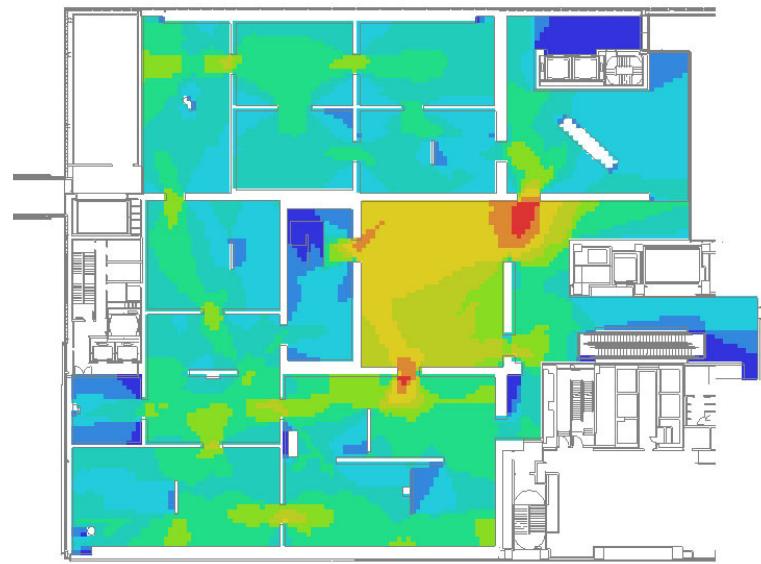


Figure 10. Visibility graph of MoMA's fourth floor, showing the local visibility (visual connectivity) distribution (the reddish colors denote higher level visibility, generated by the author in 2008 with *Depthmap*).

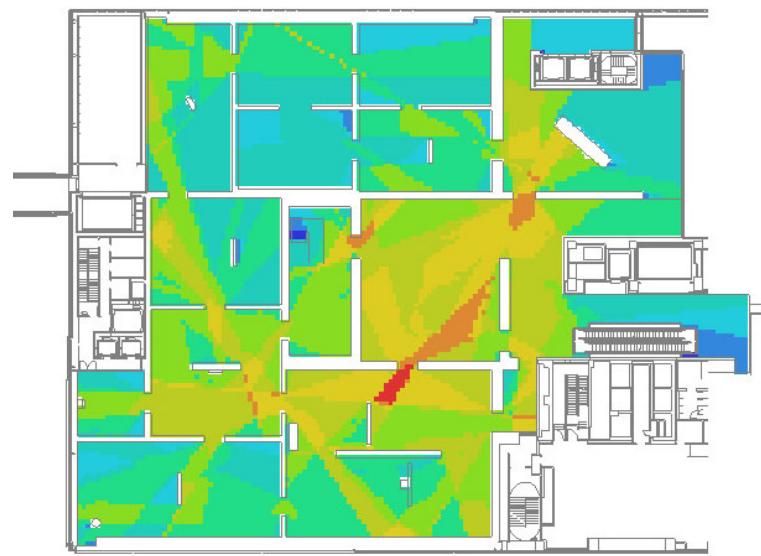


Figure 11. Visibility graph of MoMA's fourth floor, showing global visibility (visual integration) distribution (the reddish colors denote higher level visibility, generated by the author in 2008 with *Depthmap*).

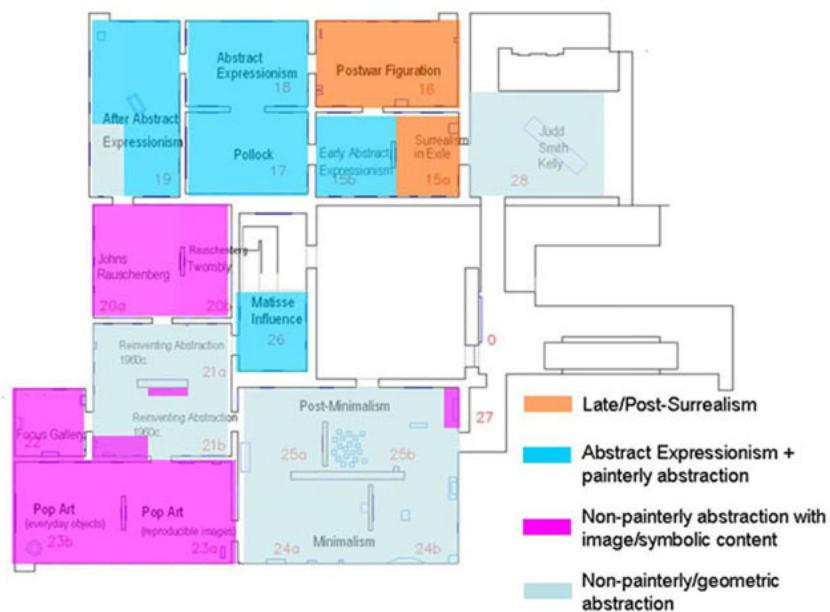


Figure 12. The layout of exhibit content presented on MoMA's fourth floor (diagram prepared by the author).

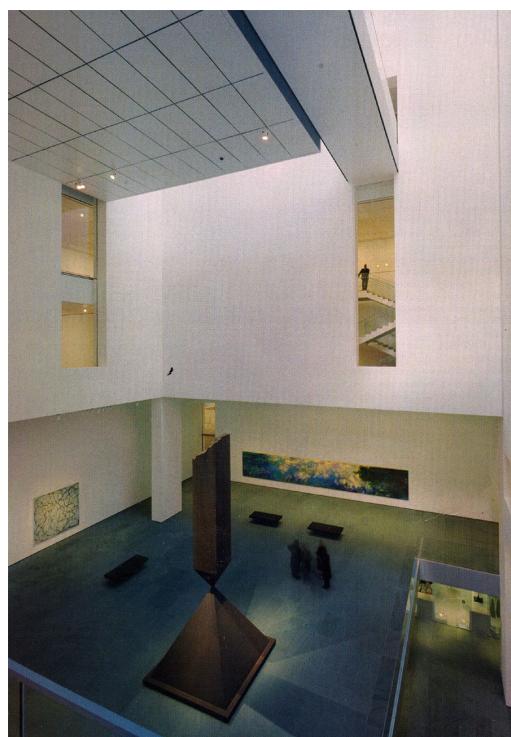


Figure 13. View into MoMA's atrium from the north side gallery entrance (© Timothy Hursley, 2004; courtesy of MoMA).

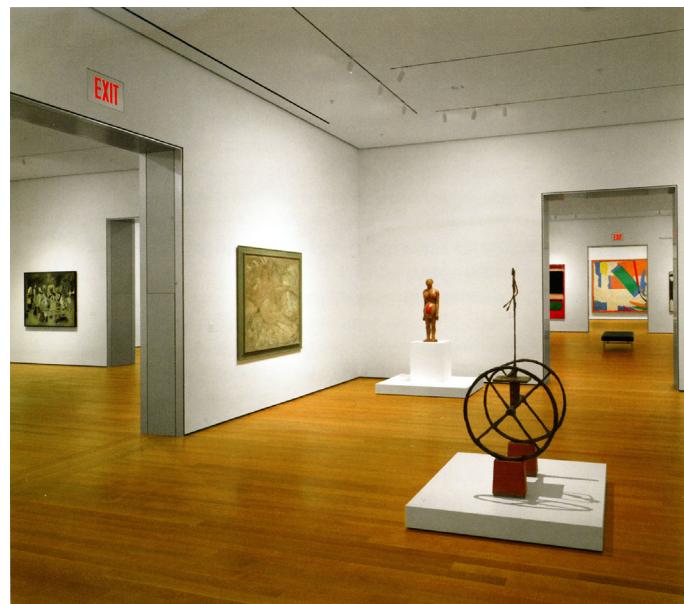


Figure 14. View from one of MoMA's north side galleries where visitors could see displays in two rooms ahead (*© Timothy Hursley, 2005; courtesy of MoMA*).

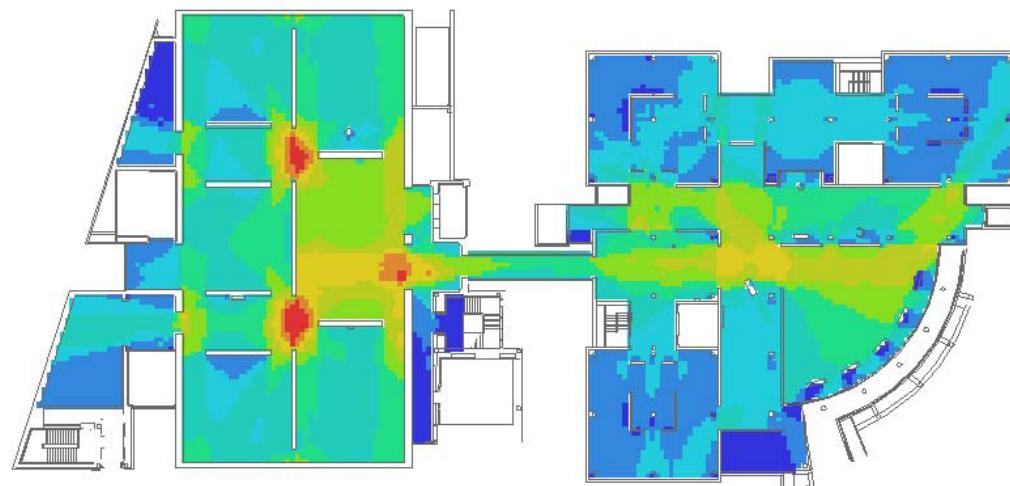


Figure 15. Visibility graph of HMA's fourth floor, showing local level visibility (visual connectivity) distribution (reddish colors denote higher level visibility, generated by the author in 2008 with *Depthmap*).

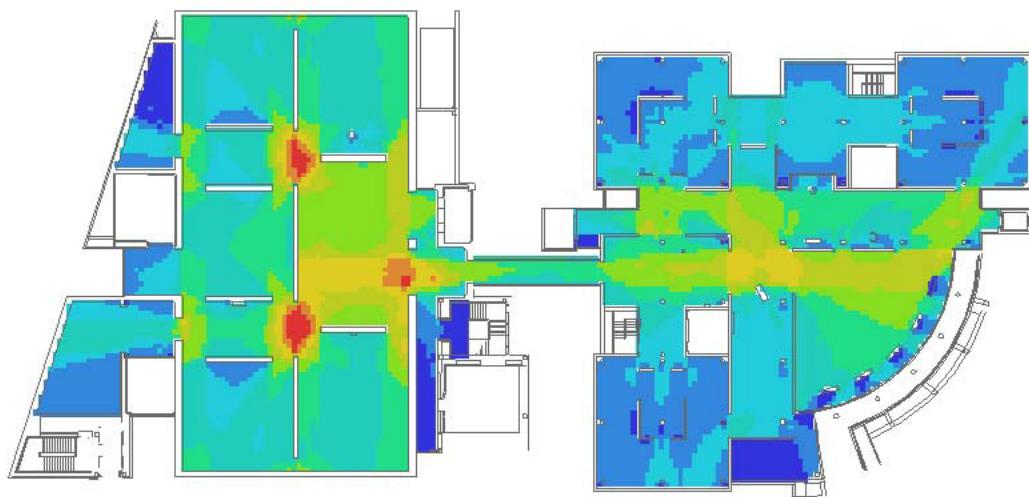


Figure 16. Visibility graph of HMA's fourth floor, showing global level visibility (visual integration) distribution (the reddish colors denote higher level visibility, generated by the author in 2008 with *Depthmap*).

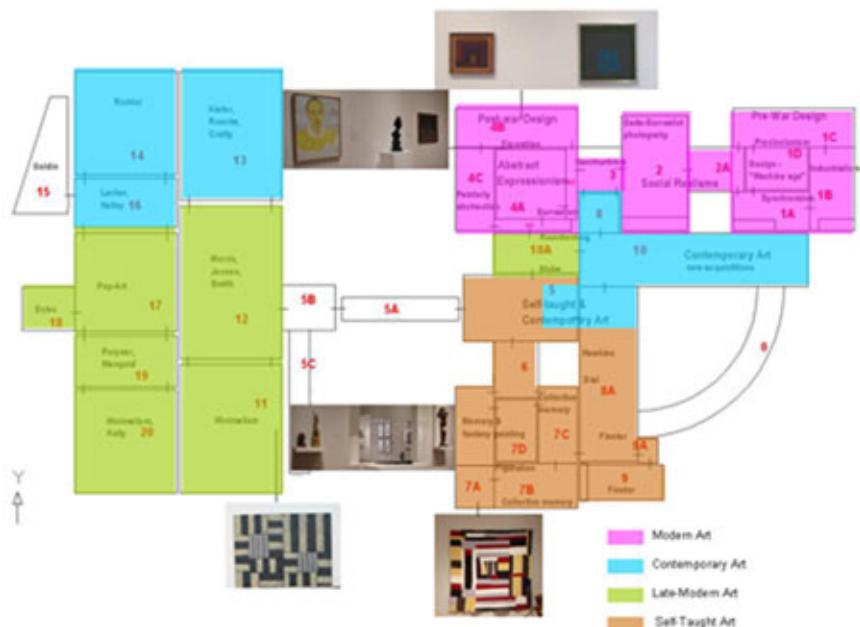


Figure 17. Exhibit narrative organization on HMA's skyway floor (diagram prepared by author, photos: Ipek K. Rohloff).



Figure 18. HMA's atrium in the Stent wing (*photo: Ipek K. Rohloff*).



Figure 19. View of HMA's Modern art displays in the Stent wing, combining different artifacts in a room-within-a-room organization (*photo: Ipek K. Rohloff*).



Figure 20. View at the corner of HMA's Stent wing where the Contemporary and self-taught art display sequences intersect (*photo: Ipek K. Rohloff*).



Figure 21. Another view at the same corner from another angle (*photo: Ipek K. Rohloff*).



Figure 22. The large gallery at HMA's Stent wing displaying the most recent Contemporary works (*photo: Ipek K. Rohloff*).



Figure 23. A view from HMA's Wieland wing showing the space extending in a longitudinal direction (*photo: Ipek K. Rohloff*).

Notes

1. Elaine Heumann Gurian points out that it is usually a perplexing task to distinguish boundaries between various types of museums as they often overlap in curatorial goals, operations, and the kinds of experiences they offer (Gurian, 2002).
2. This discussion was part of a workshop session given by Guy Hermann and Elaine Carmichael in the 2010 “Building Museums” Conference of the Mid-Atlantic Association of Museums, held in New York City. Guy Hermann is the owner of the consulting practice “Museum Insights.”
3. This is MoMA’s original mission, stated by the founding director, Alfred Barr, Jr., in Lowry, 1998, p. 24.
4. Space syntax theory originated with Bill Hillier, Julianne Hanson, and other researchers in the Bartlett School of Architecture, University College, London. The methods of space syntax were first introduced in Hillier and Hanson’s book *The Social Logic of Space* (1984), and later expanded with new methods and investigations by its growing research community. Network theory developed from the intersection of computer science and mathematical graph theory. It involves the study of graphs as the representation of either symmetric or asymmetric relations between discrete objects.
5. This criteria is based upon Serrell’s (1995) study, which suggests visitors’ 2-3 second pauses in front of various exhibit objects including a panel, case, diorama, computer screen or interactive device should each be considered a “stop.”
6. The twenty minute time frame was chosen because prior research shows that first time visitors focus on the exhibition in the first 20-30 minutes of their visit, after which visitor attention drops due to museum fatigue, as discussed in earlier studies. This was confirmed by the pilot studies conducted in the three museums prior to this study which indicated that most visitors were able to complete their exploration of the gallery layout within 20 minutes.
7. The “conversation piece” is a genre of painting developed by British artists. The word “conversation” is used to characterize informal group portraits showing families and friends engaged in everyday activities such as hunts, meals, or music parties.
8. “Chapter room” refers to a display strategy utilized by MoMA consisting of a series of rectangular gallery rooms representing each artistic style at a domestic scale. These white rectangular rooms provide a laboratory-like setting for visitors to study and appreciate art with minimal contextual information (Noordegraaf, 2004).

Throughout several expansion projects the museum has maintained the chapter room strategy in its buildings.

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