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**INSIDE: ARCHITECTURE AND DESIGN AS INTERPRETATION**  
PLUS: THE ROLE OF CREATIVITY IN WIDENING ACCESS TO STEM  
EDUCATION AND MORE!

# ARCHITECTURE AND DESIGN AS INTERPRETATION

By Lee H. Skolnick

Although the issue at hand has hovered in the air around the world of science centers and concept-based museums for a very long time, it came in for a landing not too long ago while a few of us were standing inside the amorphous blob of the Graz Kunsthalle in June of 2016, when we were attending that year's ECSITE Conference in Austria. We stood in wonderment: what a curious place to display art!...what did the outside of the building have to do with the inside?...with the purpose of the building?...with the functionality and operations of the institution? As we critically pondered these questions, I felt it was finally time to ask my colleagues an obvious question: why don't these conferences ever deal with the fundamental issue of the role of architecture and design in the pursuit of effective and meaningful interpretation? Why are there no focused sessions or papers on the subject? After all, there is without question a tremendous amount of informal discussion, most of it quite negative, regarding the impediment that most purpose-built museum buildings present to the proper functioning and educational mission of their respective organizations.

As I am often the lone architect at these conferences, or at least the only designer present for these complaint-filled discussions, I find myself absorbing the abuse born of years of the pent-up frustrations of many museum professionals. The architects of their buildings are routinely characterized as arrogant, stubborn, myopic, clueless, and worse. Of course, my dilemma in responding is that these multi-faceted complaints about their buildings and their authors are often largely correct.

So, who is to blame? Well, certainly the architects bear a great deal of responsibility for this unfortunate situation. But let's not forget about the people who hired them in the first place and proceeded to egg them on to their flights of hubristic and fantastical fancy. Board members and senior administrators can feel compelled for financial reasons (and a healthy dose of personal ambition?) to obtain a sellable architectural icon, frequently along with a brand-name architect, in order to cultivate the financial support they will need to realize their project. They believe they need that architectural rendering, often of a radical and aggressive design concept that will outshine and out-shout the other commodities on the grocery shelf of contemporary museum design, to attract the similarly ambitious sources of the big bucks. And the architects are only too happy to oblige. How could they not? Of course,

these designs can at times bear little sensitivity to the eventual operations of the organization. And because of this short-sightedness, or egregious omission, it will fall to others, down the food chain, to accommodate the angles, curves, idiosyncratic spaces, convoluted circulation, conservation challenges, uncontrolled natural light, poor acoustics, etc., that can frequently accompany the building as "statement."

## ARCHITECTURE *IS* INTERPRETATION

It is a well-documented and widely held truth that the physical characteristics of the environments within which we dwell and engage in experience have a tremendous impact upon how we perceive and internalize those experiences. Context is both a filter and an integral component of making personal associations, and ultimately, meaning. As the original developers of the Reggio Emilia education philosophy and schools observed, "Environment is the third teacher."

How interesting then, and perhaps alarming, that so few designers and developers of museums and science centers take advantage of the rich and exciting opportunity to create exteriors and interiors that directly interpret the themes and concepts that they seek to communicate through the visitor experience. What we often see instead in the design of these buildings is an expression that is a symbolic, trendy, stylistic representation of the idea of "museum" or "science center," but not necessarily a true embodiment of the institution's communication goals and key messages nor an enhancement of the visitor's ability to gain deep understandings or find deep meaning.

We are all familiar with the museum or science center as an independent vessel into which we must then insert exhibitions and programs. At worst, these "containers" pose insurmountable obstacles to utilizing space effectively, whether through the imposition of idiosyncratic forms and shapes, or a disregard for the effects of too-specific circulation, the detrimental impacts of natural light, or the impossibility of adequate acoustic buffering or isolation. Consequent limitations abound, created by architectural features that are not attuned to the optimal functioning of the institution in delivering and offering to the public the highest quality interpretation and the most commodious experience. However, they do clearly illustrate the all too frequent situation wherein the design ambitions of the architect, as well as the leaders of the institutions them-

selves, overwhelm and ignore the more mundane, but critically important, issues that facilitate the best utilization of their buildings, including flexibility and the potential to evolve and adapt.

However, what is too often overlooked is the other, more positive side of the equation. This is the tremendous potential that design holds to powerfully contribute to the interpretation and communication of the content of the museum. All those same elements of design, and more – iconography, form, space, materiality, light, color, texture, pacing and movement, and even the smallest scale detail – can be harnessed and synthesized to support the creation of environments that provoke the most profound meaning making. It is toward the recognition of this powerful phenomenon, and the exploration of the tools and processes for achieving it, that our work must aim.

It must aim for what I call “design as interpretation.” Applicable to every medium of design (architecture, exhibits, graphics, media, etc.), it is an approach whereby content becomes embodied in every aspect of the designed environment, and we facilitate the greatest potential for learning and enlightenment on the part of the visitor.

Interpretation has many interesting definitions. I am particularly attracted to these two: “...to conceive the significance of” and “to present or conceptualize the meaning of by means of art.” It’s a profound form of “communication,” which itself has been defined as: “to make known; to reveal clearly; to manifest; to have an interchange – as of ideas.” I submit that “design as interpretation” consists of mining the individual situation to unearth the stories that constitute its essence and that it is the surest way of designing an experience that conveys meaning.

I have found interpretive design to manifest itself at two levels of depth and efficacy – one, minimally acceptable, and the other, sublime. I call the first mode “Representation,” and it’s certainly not terrible.

## REPRESENTATION

Some very nice buildings use metaphor and symbol to great poetic effect. This is especially true in recent times, when formal architectural vocabulary has been freed from the formulaic constraints of strict stylistic convention, and as technological advances in both design tools and construction methods have allowed for greater freedom in imagining buildings and in building them (although in many cases the ways people actually use buildings may not have undergone the same revolutionary changes). I think the operative point for us is that often these exuberant expressions bear very little relation to the ostensible or real purpose of the building, and that they sometimes actually

impede rather than enhance their natural and proper function.

In Frank Gehry’s Guggenheim Museum, Bilbao, the light, curvilinear forms of walls and roofs have been said to evoke sailing ships on the water and are themselves sculpturally expressive. Further, they refer to Bilbao’s geographical position and historical role as a port city. This does not necessarily qualify them, or the interior spaces they enclose, as the most beneficial place to display art. Similarly, Santiago Calatrava’s boldly expressive Milwaukee Art Museum with its birdlike form and retractable roof, is a blockbuster in its own right but neither particularly expressive of nor supportive to the artwork stored inside. And while Renzo Piano’s New Metropolis Museum in Amsterdam may be photographed strategically in juxtaposition with the ships’ prows from which it takes its form, it is difficult to understand what relationship this is intended to have with the science activities which are at the heart of the museum’s program and *raison d’être*. We might compare these buildings to Jorn Utzon’s iconic Sydney Opera House, whose forms manage to refer to both the sails of the harbor and to the theme of music, while having the added advantages of clearly delineating the concert halls and offering them notably euphonic acoustics.

Of course, sometimes the “Representation” is quite literal. Throughout history, there have been buildings and structures which were, if not actually figurative, referential in their visual message to nothing so strongly as the function and/or subject for which they were created. And if they didn’t always work perfectly as integrated experiences or as beautiful objects, they nevertheless gave people a pretty good idea of what they were for. The Long Island Duck, of “Complexity and Contradiction” (Robert Venturi) fame, wears its function and subject on its sleeve (or wing). You bought ducks there. The forms of Frank Gehry’s Experience Music Project in Seattle are said to have been developed by smashing up electric guitars and then rearranging them until an optimal composition was found. (It is widely held that the usually masterful Gehry may have hit a “clinker” on this one. Herbert Muschamp, former architecture critic for the New York Times, likened it to “something that crawled out of the sea, rolled over, and died”.) Much of the music venerated at EMP was played on the electric guitar, and groups from “The Who” to the “Jimi Hendrix Experience” enjoyed smashing them. Unfortunately, the interior of the building gains little other than irrelevant, spatial bombast for all the trouble. It might get at the fracturing rebelliousness of rock music, but it doesn’t capture any of its other qualities. On the other hand, in that regard it beats I.M. Pei’s, Rock and Roll Hall of Fame in Cleveland, by “miles and miles.” Some can see the supposedly intentional reference to a record player there, but I’m not that

creative. It manages to freeze any of the heat of Rock and Roll, while sticking the exhibits in the basement and the mausoleum-like Hall of Fame way up in its darkened peak. And, Dominique Perrault's infamous Bibliotheque Nationale in Paris (the one that baked the books) is defined by the four glass towers at its corners (wherein books are stored behind large sheets of glass), each in the shape of an open book. Books within books, get it?

There have been more ingeniously sophisticated examples of "Representation" as well. Here, a modern sensibility has filtered and translated historical, cultural, or other subject matter information into an essentially contemporary design vocabulary. Still, in these buildings the references frequently appear to be somewhat applied, and as such have less influence on the depth and specificity of the experience in and around them. Two come to mind immediately.

Jean Nouvel's Institut du Monde Arabe in Paris, one of whose glass facades is fitted with a pattern of Islamic-inspired mechanical irises that open and close based on sensors which measure the sunlight hitting them. This late-twentieth century tour de force sends a message about Islam's traditional art, its marriage with a heritage of mathematics and science, and also serves as a forward-looking comment regarding the Islamic world's relevance and vibrancy in an age of technology. It has the added advantage of modulating the light entering spaces devoted to work and study.

James Ingo Freed's U.S. Holocaust Memorial and Museum, in Washington, DC, adapts a visual language referring to Hitler's World War II death camps for some of its interior and exterior forms and details (although far too slickly and exquisitely for my taste), and in an ironic twist for a building in our nation's capital, collides and juxtaposes it with an overtly hulking and conventional institutional building. Its almost covert insertion into its federal context provides a subtle but subversive commentary on the dangers of government-sanctioned atrocities. In this building, one must note that the staggering power of the total visitor experience is the result of a clear desire on the part of both the architect and the exhibit designer to imbue their separate parts with meaning and association. And, although the integration between architecture and exhibits could be both more intentional and more seamless, there is an undeniable emotional impact which owes to the largely successful attempt to let design help tell the story.

## EMBODIMENT

When Louis Sullivan told the world that form should follow function he was interpreted by different people in different ways. On the most mundane level, the phrase is

understood to mean that a building should do no more nor less than be designed to facilitate its most pragmatic purpose. Storage facilities need big, open spaces. Prisons need lots of cells (perhaps), good lines of sight for security, and should be hard to get out of. Offices benefit from easy access to light and air and the provision of certain types of workspace and communication. It is easy to be reminded of Le Corbusier's "machines for living." However, Sullivan's declaration and edict is widely interpreted in architectural and academic circles as proposing something which is both more philosophical and more creatively challenging. It is understood to demand that the design of a building stems from an initial set of ideas which inform, to the greatest degree – and extent – possible, the creative problem solving which is embodied in the myriad of decisions regarding how it looks, functions, and is made. The idea is that by being clear regarding one's intent, and by carefully integrating each part of the building through adherence to rules and referents which support that intent, a unique harmony – an "organic rightness" – can be achieved. And it strongly suggests, I believe, that those guiding concepts be derived from the project's purpose, in a range of both general and specific terms. By following this path, we stand a decent chance of achieving the deeper and richer goal of "embodiment."

Thus, a church, while designed to comfortably seat its congregation, must also speak to themes of inspiration, and do so in ways which are evidenced in its materials, acoustics, and ventilation no less than in its space, light, and "decoration." (I use this term guardedly, for while Sullivan and his contemporaries felt comfortable in ascribing organic significance to decoration and ornamentation, subsequent history has gone through a sequence of banning it as impure and perverse, re-introducing it as symbolic pastiche, and, more recently – as seen in some of the previously cited examples – making it the guiding principle or image of the overall design. A big duck, a big bird, smashed guitars, boats of all sorts.)

The Penguin Pool at the London Zoo (1933), designed by Ove Arup and others, is a perfect poster child for "Embodiment." It is meant to enhance the viewing of penguins by offering them a place to congregate, to walk down a ramp, and to jump in the water. It affords the viewing public multiple unobstructed views of the proceedings and does so in a simple, elegant, and straightforward manner. It doesn't refer to anything else. Some may say that it doesn't refer in a strongly literal enough way to the penguins' natural habitat, but that is a matter of taste.

To return to our own subject of museums, it is fruitful to look at Daniel Libeskind's Jewish Museum in Berlin (2001). Widely revered, its jagged, slashing design is unquestion-

ably successful at evoking the wrenching, irrational, and disorienting chaos of the Holocaust on the most visceral and experiential level. Its highly architecturally specific spaces, are eloquently interpretive of the subject at hand rather than something completely unrelated. It is unfortunate that its physical design makes mounting exhibitions inside very challenging. And it is disappointing that many of his subsequent projects, having nothing to do with the Holocaust, employ the same aggressive and angular design vocabulary.

## TOWARDS EMBODIMENT

For those of us who labor and dwell in the world of museums, who believe in their potential and are committed to making them better, the challenge is to take up the tools – of embodiment, of narrative, of the broadest interpretation of function – and to exploit their still untapped capabilities in order to enrich the museum experience for the broadest range of visitors.

At Lee H. Skolnick Architecture + Design Partnership, we have spent over twenty-five years pursuing this challenge. Our mission statement indicates our unique approach: “Through collaborative design we unearth the compelling story behind each project to enrich the lives of our clients and communities.” Through projects ranging from master planning and site design, through the architectural design of new buildings, renovations and additions, to exhibition design, graphics and educational programming we have explored and refined an interpretive design approach - new ways of creating seamlessly integrated experiences which embody the mission, goals, and objectives of each institution, combining an understanding of their specific target audiences with the unique stories these organizations seek to tell and the spaces that can enhance those experiences.

A key indication of our commitment to the values of interpretation and audience is the fact that I believe we were the first design firm – certainly the first architecture firm – to have a full-time museum services division, led and staffed by trained museum educators, as an integral part of our design team. One impact of this is that we are uniquely equipped to engage the interest, expertise, and perspectives of the full range of players necessary to ensure a project’s success: the museum board and administration, the curators and subject area specialists, the educators and programming personnel, the registrars and conservators, and the facilities and maintenance staff. And, most importantly, the visitor.

There are a few fundamental aspects to our approach to any project. First, we try and put ourselves in the position of the potential anticipated participant: What do they know about this subject? How interested might they

be? We try to learn as much as we can both about them and about the subject itself in order to find connections between the two. This involves research, close collaboration with curators and content experts, educators and interpreters, as well as the implementation of any range of interviews, focus groups, and other forms of front-end evaluation.

Secondly, we look at all the interpretive opportunities which the situation might offer – from its location within a larger architectural or geographic context, to the potential for interpretive expression in the building design, and finally to the marriage of site, building, and exhibitions into a cohesive visitor experience. These explorations eventually lead us to the development of a highly particularized, yet consistent visual and communicative vocabulary, including forms, space, materials, details, graphics, and media. Finally, through various evaluative means, we test our assumptions and refine them along the way in order to ensure that the story we are telling is as vivid, as compelling, and as understandable as we can make it. Throughout the process, we continually challenge ourselves, and our collaborators, to un-earth, identify, and exploit any aspect and/or component of the project which has interpretive potential and can contribute to the complete embodiment of the content.

## CASE STUDIES

### *The Muhammad Ali Center*

To honor and further the humanitarian achievements of “The Greatest,” the Muhammad Ali Center in Louisville, Kentucky had to embody the strength, power, lightness, speed, and grace that Ali brought to “the ring” and to the field of human empowerment, respect, and understanding. The form of the Center, referring to Ali’s famous dictate to “float like a butterfly, sting like a bee” juxtaposes a solid masonry base, firmly rooted to the ground, with a light and aerodynamic winged roof canopy. The narrative is further enhanced by the façade’s use of digitized photographic images of “the most recognized face on earth” to impart its distinctive identity. The man whose ascendancy paralleled the proliferation of mass media within our culture will forever be remembered through the medium that helped to immortalize him. On a substantive experiential level, the story of Ali’s evolution as a professional, as a world ambassador, and as a man is traced through a spatial organization that uses the timeline of his life as an armature. Along it are hung both the key moments in his development and the broader themes which they represent, and which tie his experiences to the lives of each visitor. In ascending along with Ali, we are all encouraged to be the greatest we can be.



Figure 1: The Muhammad Ali Center in Louisville, Kentucky.



Figure 2: Muzeiko – The America for Bulgaria Children’s Museum in Sofia, Bulgaria.

### *Muzeiko – The America for Bulgaria Children’s Museum*

Muzeiko, the first children’s museum in Eastern Europe, was envisioned by its founders to introduce the joys of the American phenomenon of interactive informal education to the underserved Bulgarian populace. Our concept for this new, modern educational facility consciously expresses the nation’s cultural heritage while looking to the future and re-connecting Bulgaria with the global community.

Its architectural theme, “Little Mountains,” is an allusion to Sofia’s mountainous setting. The structure’s glass volume is intersected by three sculptural forms – “mountains” – each referencing through its color scheme and texture indigenous craft traditions. One “mountain” features abstracted patterns inspired by embroidered textiles, another by glazed ceramics, and the third by wood carving. These expressive, dynamic forms embody the sense of freedom, curiosity and discovery to be found within. Children travel into a unique, unfolding interior landscape that is organized conceptually as a journey through time and space, where they can explore “the past” in educational exhibits based on archaeology, geology, and paleontology; “the present,” represented by hands-on exhibits about the natural environment and contemporary cities; and “the future” with interactive exhibits featuring cutting-edge technologies and space travel.

Interactivity also pervades the site, which includes a science playground, green roof, rooftop climbing wall, rain garden, outdoor activity space, and an amphitheater. Muzeiko’s architecture, interiors, and exhibitions form a seamless journey moving from the ancient past to future exploration in a dynamic, fun, informal learning experience unknown to Bulgarians until now. All within a building which is literally and figuratively transparent, welcoming, and open.

### *International Technology Museum*

When a major wireless technology company proposed to create a venue combining seamlessly interactive building and exhibits to demonstrate the powerful impact of its innovations on our lives, we mined the content to create a new kind of facility. This unique museum is defined by a light and luminous design that responds to the human presence. The structure and experience of the museum are characterized by a field of veil-like screens that diffuse into the landscape, displaying continuously changing content on surfaces ranging from semi-transparent (perforated metal) to translucent (channel glass) to opaque (solid wall). Day and night, the building’s veils are alive with intriguing, shifting patterns, text, and images. The displays morph in response to the movement of guests and other real-time and pre-programmed phenomena. Passing by the water-wall on the plaza leading to the entry, a dynamic pinwall sculpture behind the water responds by changing its profile, redirecting the cascade. This is the guest’s first experience with this responsive building – the first message that this experience is “all about you.” From its cutting-edge, visitor-activated responsive exhibit and architectural design to its engaging, personalized interactive experiences, this museum embodies the deep human need to connect, revealing for guests an inspiring vision for the future of communication technology that opens up new horizons, connects people and communities, and enhances lives.

### *The Queens Library – Children’s Library Discovery Center*

While most libraries offer to help users to locate what they’re looking for by using conventional signage (and helpful librarians), the Queens Library enlisted our help to envision a community-centered Children’s Library Discovery Center that celebrates both its unique sense of place and the spirit of exploration and discovery.



Figure 3: The International Technology Museum in China.

A large floor map of Queens with illustrative icons leads visitors into the children’s library and orients them to both the borough at large as well as the various offerings within the CLDC. Wayfinding directories and graphics were developed to identify various features throughout the new building including “Dewey Lane,” a book stack area on the second level, and the “Cyber Center” computer area. Sculptural icons are used to identify special science “pla-

zas” that incorporate interactive exhibits, changing displays and reading material related to the natural and physical sciences.

#### ONWARDS, TOWARDS...

While the foregoing examples demonstrate our attempt to embody our projects’ identity, character, and purpose within the experiences they offer, “Design as Interpretation” is not about seeking a singular solution. There will always be as many alternative interpretations of a situation as there are interpreters. What is of critical importance is to understand, as the philosopher Hegel suggested, that no matter what its program or pragmatic function, a building can have the additional function of showing forth, or “darstellen,” of embodying its own notional and performative essence. And to remember, as the environmental psychologist, Rob Semper, observed that “...the individual in most instances is an aroused and active organism who defines, interprets and searches his physical environment for relevance.” It is in the service of these lofty but achievable objectives that interpretive design finds its justification and its promise.



Figure 4: The Children’s Library Discovery Center at the Queens Library in Queens, New York.

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# THE INFORMAL LEARNING REVIEW

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## ON THE COVER:

*The International Technology Museum in China is the first “responsive” building. Designed by a major tech company, this unique museum is defined by a light and luminous design that responds to human presence. From its cutting-edge, visitor-activated responsive exhibit and architectural design to its engaging, personalized interactive experiences, this museum embodies the deep human need to connect, revealing for guests an inspiring vision for the future of communication technology that opens up new horizons, connects people and communities, and enhances lives.*

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