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Designing the Science Center





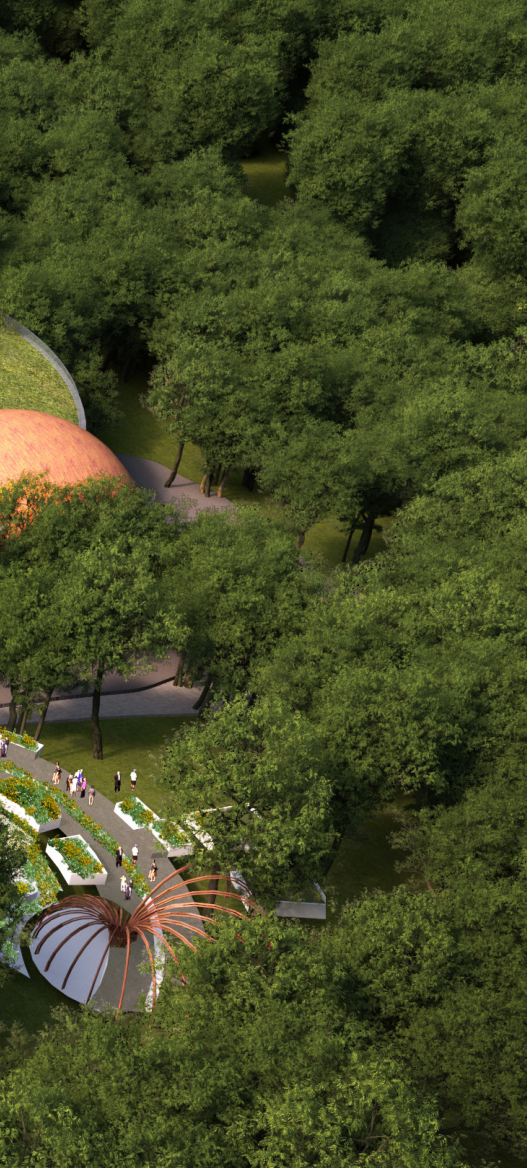
The bird's-eye-view rendering for Explorium, a new science center created by SKOLNICK Architecture + Design Partnership in Istanbul, Turkey, offered a descriptive presentation of the building and site and was designed to cultivate financial and public support. Image courtesy SKOLNICK Architecture + Design Partnership

So You Think You Want to Build a New Science Center...

By Lee Skolnick

Over the course of more than three decades, SKOLNICK Architecture + Design Partnership has had the privilege of helping scores of museums and science centers navigate the complex waters of design and construction, guiding them safely to their desired destinations. Throughout this journey, we have learned a tremendous range of lessons about the potential and the pitfalls, about what should work but in reality doesn't, and about what seems impossible but in the end transcends all of our expectations. It has been a humbling experience and not one for the faint of heart. But, ultimately, we and our partner clients have shared these adventures that are often the highlight of our professional lives.

There is no reason to keep secret the knowledge that we have gained along the way. As committed designers and educators, and as inveterate "museum people," it is in fact our sacred responsibility to share what we've learned to help our colleagues to become informed about the process that they will be entering into, and to succeed to the highest degree possible. For no matter what training and even expertise senior executives and



undertakings at any scale, so it is important to be perfectly clear about what you hope to achieve through the project. Is it about expanding your audience? Reinventing your brand? Revising your mission? Demonstrating your vision for the future? Or perhaps the prime motivation is that you've outgrown your facility and have simply run out of space for exhibits, offices, storage, public spaces, or adequate visitor circulation. While addressing pragmatic space concerns will be of critical importance during the planning process, the more existential questions should dominate the discussions and explorations at the inception of the project. We like to say that we design "from the inside out," and this does not really refer to a physical phenomenon. What we mean is that by understanding both the core vision and mission, and the resultant intended types of experiences and offerings of the organization, we can design a building that embodies the unique qualities—the essence—that will help to ensure that you wind up with an appropriate, and ultimately successful, result.

So be prepared to dig deep, do some soul-searching, consult with others, and perhaps engage in some facilitated

visioning and/or strategic planning. And, as much as possible, hear from your community of constituents and stakeholders and then be responsive to their interests. Just keep in mind that the clearer you are regarding your goals, the much greater the potential to actually meet them.

WHO CAN I TURN TO?

So many museum leaders (board members and executives alike) assume that to attract the big bucks to pay for a major capital project they must have a "starchitect" to make their project more glamorous. While they may be right on some level, my advice is: buyer beware. Although I don't wish to denigrate the skills or intelligence of any of my colleagues, my experience is that museums and science centers enjoy a much higher degree of success when they collaborate with an architect who understands how these institutions function and who has proven, positive experience planning and designing these unique facilities. You want someone to help you navigate the complex process, who will steer around the potholes, be familiar with the critical milestones, and control the speed and direction of the journey. There are so many advantages to being able to avoid

boards of directors may possess, there is little that prepares them for the particular exigencies of a comprehensive design and construction project.

What follows is a somewhat organized (but kind of random) and necessarily personal collection of prescriptions, admonitions, and advice on what you should be thinking about, who should be involved, what to expect to encounter, and how to avoid the pitfalls and scale the heights. And keep in mind that, no matter how well prepared you (think you) may be, it will be a wild ride.

WHY ARE YOU DOING THIS?

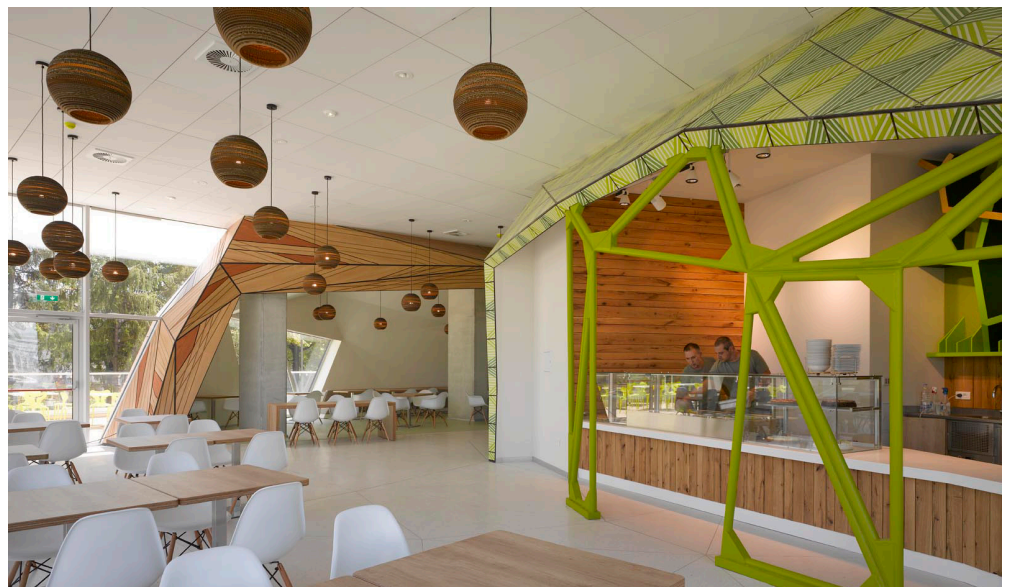
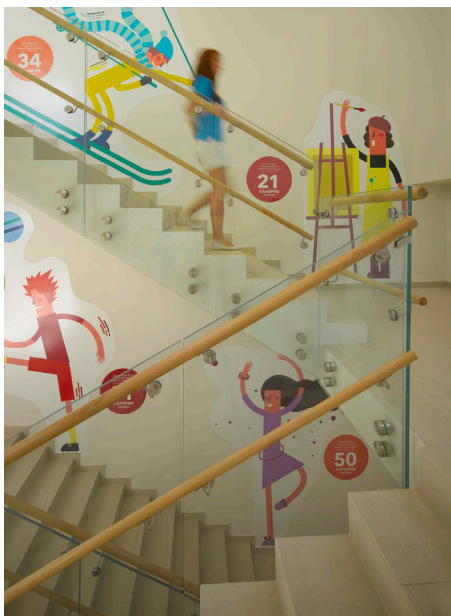
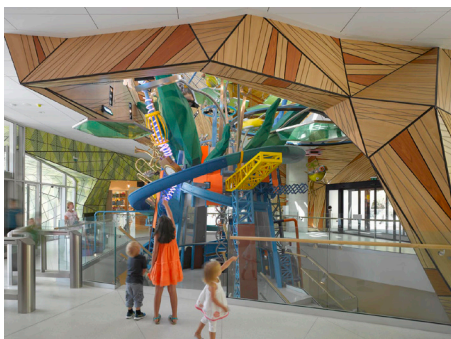
When is a science center ready to contemplate creating a new home? Creating a new building for an existing institution or launching and constructing a brand new institution are fairly monumental

At the Creative Discovery Museum in Chattanooga, Tennessee, the clearly marked admissions desk and gift shop entrance plus the three point-of-sale stations ensure a smooth flow of traffic in the lobby. Photo by Peter Aaron/Esto



the kinds of mistakes that occur simply because your professional team has not tackled the particularities of museum design enough times to guide and protect you.

I can't tell you how many times I have seen lobbies and admission areas that aren't designed for proper crowd control; buildings that don't allow for the welcoming and staging of school groups; galleries that lack the proper management of



Above: The sweeping modern form of the main pavilion of Vortex, an innovation museum in Dayton, Ohio, is intended to deliver a clear message of inventiveness and forward thinking. Image courtesy SKOLNICK Architecture + Design Partnership

By providing high-quality, nutritious food to visitors, and designing the café as an integral part of the museum, Muzeiko offers a holistic and pleasurable visitor experience. Photo by Roland Halbe

Above: When visitors enter the lobby atrium at Muzeiko, a children's science center in Sofia, Bulgaria, they encounter a giant, playful, iconic "tree." This visual anchor morphs from naturalistic at its base on the lower level to high-tech as it bursts into the skylight three stories above, acting as a de facto wayfinding tool for navigating the various exhibition galleries. Photo by Roland Halbe

Even the stairways at Muzeiko are interpretively activated. Playful graphics invite visitors to calculate the calories they burn as they ascend the steps and compare them with other common activities. Photo by Roland Halbe

natural and artificial light; a disregard for the requirement for flexible spaces; and angles and curves that make mounting exhibits almost impossible. And there is nothing worse than finding out that there are costly gaps and/or duplication between architectural and exhibition design plans and specifications because they were not properly integrated.

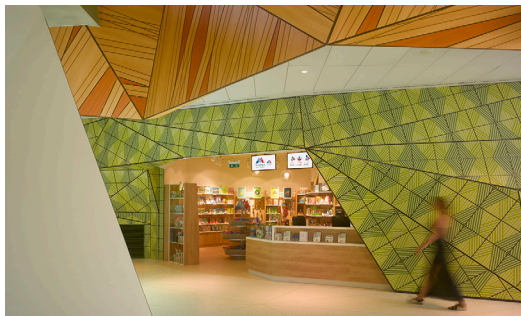
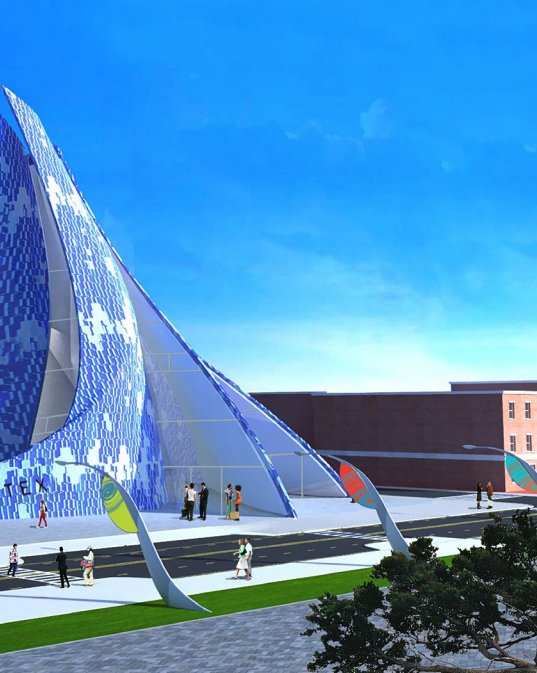
So, whether you contact and interview a few firms or mount a full-fledged request for qualifications (RFQ) and request for proposals (RFP) campaign, keep a lookout for those architects that have a track record of producing functional spaces.

Then find the ones with the added value of creating beautiful design coupled with a supremely high regard for the needs and desires of your visitors. And don't worry, these days most architects can produce exciting and compelling renderings that will help you sell your project.

MAKE IT EVEN BETTER— ENHANCEMENTS TO CONSIDER

You can get the basics right and still not achieve a transcendent result. Keep these few things in mind and think of other ways you can send your project "over the top":

- Think about some kind of large-scale



Muzeiko's gift shop is also highly integrated into the design vocabulary. Its placement between the admissions desk and café promotes strong appeal and patronage. Photo by Roland Halbe



At Explorium, SKOLNICK Architecture + Design Partnership took advantage of the generous natural site to design a wide array of interactive exhibits. These additions to the museum's offerings allow for experiences that would otherwise not be possible (involving the natural environment, gross motor skills, and messes!). Image courtesy SKOLNICK Architecture + Design Partnership

The Roper Mountain Science Center's new Environmental Science and Sustainability Building is designed to represent the institution's message that we must live our mission of protecting the earth in everything we do—certainly in the creation of a facility explicitly devoted to this theme. Image courtesy SKOLNICK Architecture + Design Partnership

exterior exhibits, sculpture parks, nature areas, gross motor skill-building areas, etc.

- Be an exemplar of environmental sustainability in your planning, design, materials and systems selection, energy and resource use, and facility and programmatic operations. This should not really be seen as an enhancement but as a basic necessity. If not you, who?

BUILDING NEW VS. RENOVATION/ADAPTIVE REUSE

It is exciting to conceive of a building from scratch—one that functions perfectly for your needs and at the same time offers the opportunity to create something beautiful, powerful, shiny, and new. But keep in mind, too, that from a true environmental sustainability point of view (and in some cases, in the interest of historic preservation), it can be a very rewarding and ethically instructive strategy to reimagine and rework an existing structure for your use. In urban situations, you will often find that an existing structure is your best (or only reasonable) alternative, and you might also act as a catalyst for the economic development of an undervalued neighborhood.

icon that will announce your identity in a powerful way, even without signage. The proverbial “BIG WOW” should preferably be interactive, either outside or inside, or both. We always consider this a critical part of our design brief.

- Be ambitious in your interpretive design. Recognize that no space is immune from a positive infusion of
- education and fun: bathrooms, lobby, lockers, café, stairways, and elevators. Explore the opportunities to enrich the experience.
- Studies have shown that having some kind of food offering extends the length of visits by as much as 100%. But do you want to be in the restaurant business? Do you want to deal with a whole host of Health Department and zoning regulations? Consider leasing the space to a vendor and collecting some small percentage of the revenue if you can.
- If your site allows for it, consider the benefits of providing outdoor offerings and programming: shade pavilions,



The design of the Muzeiko building, while fulfilling the client's goal of presenting a thoroughly modern character, nonetheless incorporates references to a uniquely Bulgarian identity. The three "little mountains" reference the three mountain ranges that surround the capital city of Sofia, and each mountain is sheathed in a pattern derived from traditional Bulgarian crafts. Photo by Roland Halbe

There may also be financial benefits to this direction, but don't assume that's always true. Conduct a cost-benefit analysis before you make the decision, especially if that is your prime motivation for considering this approach. And keep in mind that your project may be saddled with many additional code requirements, necessary upgrades, landmarks restrictions, and additional approvals hurdles—all of which can add costs and schedule delays.

HERE VERSUS THERE—WHAT'S THE DIFFERENCE?

We have had the privilege to collaborate on design projects with organizations around the United States, as well as in other countries. People often ask what the differences are between U.S. versus non-U.S. projects. Of course, this is a complicated question and often boils down to more individualized issues pertaining to the precise location of the project. For instance, on occasion we have had to adapt our design and detailing to the local capabilities and construction conventions of the particular locale. And as we get acclimated to these parameters, we often find that their project development process, phasing, and project delivery methodologies differ dramatically from those with which we are familiar. Another factor is cost. Whether we are working in various parts of the United States, or any

of a wide range of places around the world, you would be amazed at the variation in construction costs. Building in some areas has been as much as four times lower than in New York City, for instance. Of course, building codes vary widely, too, although the IBC (International Building Code) has been increasingly adopted in many places.

However, the biggest difference is often not technical or financial, but cultural. The role of museums, of education, and of science in different regions and nations can be significantly divergent. One of the most rewarding parts of our job is immersing ourselves as fully as possible in the values, practices, and beliefs of these different cultures. Even with the increased globalization brought on by technology and other forces, there are still major distinguishing features of which you must become aware. And then you must leave your prejudices and presumptions at the door (or border) and approach the situation with complete openness, but without abandoning what your experience and expertise have taught you.

HOW (AND WHY) THE HECK DID YOU EVER GET INTO THIS?

We are frequently asked how we came to work on so many cultural and educational projects; what led us to become so immersed in the design of what we call



The design of the Luxembourg Science Center incorporates the turn-of-the-century gas turbine hall and heating plant of a steel mill into its new facility. Besides restoring landmark-quality buildings, the authenticity and power of these structures add to the interpretive impact of the overall visitor experience. Rendering by Craft Studio, LLC

informal education venues? The reasons that we are attracted to these pursuits are probably easy to guess. Certainly, using our training and skills to aid in the enlightenment and improvement of people's lives is a strong motivator. Then there is the fact that we get to work with smart, creative, and enthusiastic partners who think out of the box, recognize and want the best, and appreciate the work we do to try to achieve it with them. But, if I am correct in my assumptions and believe what I've heard, the reason we are invited to collaborate with so many of these organizations lies at least partially in the fact that we are an intensely interdisciplinary studio. We integrate many design disciplines in a highly unique and synthetic way in order to exploit every possible means of embodying the content throughout every aspect of the project. Our architects, exhibition designers, interior and graphic designers, and educational and interpretive specialists work together to ensure that we create rich, coherent, and seamless visitor experiences.

From the beginning of founding the firm, I have held the passionate and sure belief that *all design is interpretation*. This approach is most highly operative and particularly advantageous when working in the museum field, where content can be organized into a narrative, and that narrative can become the basis for design. This distilled storyline—this essence—informs every design decision, from major architectural iconography, to planning

and organization of space, all the way down to how we employ materials, colors, graphics, and the most minute details.

IT'S NOT ENOUGH TO BUILD A BUILDING—WHY SOME MUSEUMS FAIL

Of course, there is another option: don't build a building at all. Why not? Because it takes a lot more than a shiny structure to ensure a bright and productive future for your institution. And if you haven't carefully and proactively prepared for the vast changes you will be encountering—potential increased costs for staffing, maintenance, marketing, additional programming, etc.—then you may be in for a rude financial awakening. So make sure you have set aside money and budgeted properly for your new operations. Hopefully, in addition to fundraising based on accurate financial projections, you have an endowment that provides some steady income to supplement these expenses. And, it should go without saying: don't spend your endowment (although you can borrow against it).

A client of ours built a spectacular new building on a beautiful site, with exciting and informative exhibits. The exhibits, while highly interactive, were specifically designed to be brought to life by staff facilitation that would foster conversation among visitors. So when the institution needed to cut expenses because of the unanticipated increase in the cost of operations (and the cost overruns of the construction) and then decided to lay off a large chunk of the facilitator/education staff, they found themselves with a visitor experience that did not function as intended (or at all). Fortunately, they got back on their feet and are thriving, but that downturn was not a pleasant experience—it was more like a harrowing one.

Are you assuming that “if you build it,

they will come”? That may happen, but there's a much greater probability of this if you do your preparatory homework. Market the heck out of the opening. Cultivate press support and exposure. Offer special discounts and plan lots of targeted events for your various (and hopefully some new) constituencies and stakeholders. There's nothing as discouraging as a brand new but empty building. Assuming you did everything else right, this is something over which you have control, so there's no excuse for dropping the ball, no matter how exhausted everyone is by the time you open.

Keep in mind as well that, as with the process of bringing a newborn into the world, a certain amount of postpartum depression is not unusual. The thrill of the conception, the preparation for and anticipation of the delivery, and the ecstatic moments following birth inevitably give way to the challenges, changes, and mundanity of nurturing this new and needy life. Insecurity sets in. “Am I really capable of doing this?” “Did I bite off more than I can chew?” “Why did I think this was a good idea in the first place?” None of these are good reasons NOT to build a new facility; they're just things to be prepared for. Senior leadership must

help guide the process, provide the necessary training and emotional support for the staff so they do not get too overwhelmed, and keep morale high as you face new and different circumstances. And be prepared for a certain amount of staff drop-off. Some people are great at the creative development of a project but just aren't suited to the more everyday tasks of keeping the place running. By the way, this can be true of chief executive officers, presidents, and directors, too.

GOOD LUCK!

If none of the foregoing has deterred you (and that was certainly not my objective), then go forth and dream. You are probably considering this major undertaking for all the right reasons and you can be sure that the help and guidance you will need are out there waiting to join you on this journey. The results can be spectacular—life affirming for your community and immensely gratifying personally and professionally. ■

Lee Skolnick (lskolnick@skolnick.com) is founding principal and lead designer at SKOLNICK Architecture+ Design Partnership in New York City and has been named a fellow of the American Institute of Architects.

The juxtaposition of old and new creates a dialogue linking the narrative of science across the centuries at the Luxembourg Science Center. Rendering by Craft Studio, LLC

