Chapter 4
Adaptation and Continuing Use

Newport Casino, constructed 1880, Newport, Rhode Island (HABS photograph copied from undated photogrammetric plate)

Historic Atlantic City Convention Hall
From White Elephant to Billboard Magazine #1 Hit

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> The Atlantic City Convention Hall is not only the largest in the world, but perhaps the most perfectly equipped, offering . . . unexcelled recreational opportunities in a gem of coastal centers. With its immense breadth and massive reaches, it presents by day a truly impressive picture, and when, at darkness, a great moon sails through the starlit sky, washing in with white and silver its tremendous walls, the vast hall, posed in the beauty of a moon-drenched night at the shore, seems modeled into a structure of dreams and visions.[1]
>
> —*The World's Largest Convention Hall*, City of Atlantic City, 1928

Atlantic City's historic 1929 Convention Hall is one of America's most enduring iconic entertainment sites, for generations the home of the Miss America pageant. It evokes images of pomp, parades, and beauties in swimsuits, a nostalgia for sunnier, simpler times. It also reminds us of an era of colossal enterprises, record breaking achievements, and vigorous optimism, before the dark shadow of the Great Depression engulfed the country.[2] Yet, in recent years the structure itself was little known by the general public; televised broadcasts offered limited glimpses of the monumental facade as a backdrop for the yearly parade and interior shots focused on theatrical sets. This lack of exposure reflected a sad reality: in the past half-century, maintenance and cleaning cut-backs, uninspired renovations, and repainting campaigns had transformed the interior of this National Historic Landmark.

By the 1990s, "Boardwalk Hall" had become a "white elephant," seemingly destined to be shuttered or share the destruction suffered by grand hotels such as the Claridge, Traymore, and the Marlborough-Blenheim, that once lined the Boardwalk. What had made the Convention Hall a stand-out facility when constructed (massive scale, technical complexity, elaborate decorative treatments) now made it an awkward feature on prime boardwalk real estate facing intense pressure from a dynamic gambling industry. Once again a scenario familiar to many large historic recreational complexes seemed to be unfolding, one that would conclude with the building joining many of its contemporaries as part of an Atlantic City that only exists in postcards, pictures, and memories.

In 1992, stewardship of the hall was turned over to the New Jersey Sports and Exposition Authority (NJSEA), the public governing body that operates the Meadowlands Racetrack and Giants Stadium. From this unlikely source came a decision to pursue a policy of preservation-sensitive stewardship. The first step: a five-year, 100-million dollar rehabilitation of the building's main space, the auditorium.

*Figure 1. Aerial photograph of the historic Atlantic City Convention Hall (*The World's Largest Convention Hall, Atlantic City, New Jersey USA, "The Playground of the World," *Brochure, City of Atlantic City, 1928)*

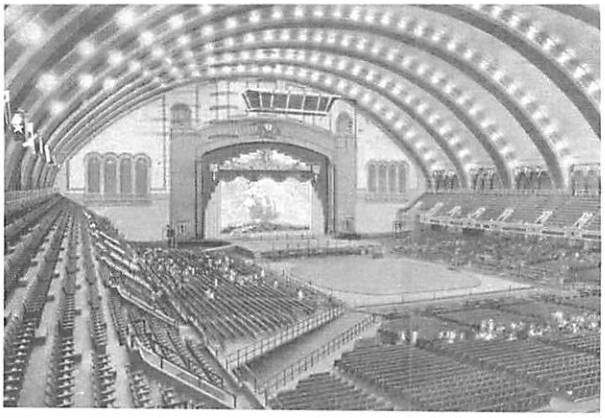

Figure 2. Historic interior view of the Atlantic City Convention Hall (Postcard, collection of the author)

This paper will discuss design issues and preservation philosophy for the auditorium rehabilitation, and the range and scale of preservation treatments, unusual in a one-space "interior" restoration, that qualified the project for federal rehabilitation tax credits. It will demonstrate how threats posed by an outdated and obsolete configuration, and monumental scale were addressed, and include the challenges facing the now top-grossing venue post-rehabilitation.

Background

Atlantic City has always been synonymous with leisure and recreation. Home to a humble boardinghouse in the 1830s–1840s, it soon became "a choice resort . . . [thriving] on the imagery of excess and pleasure."[3] By the first decade of the twentieth century, an estimated 27,000 lived in the resort city that boasted over 1,000 hotels, and spectacular entertainment on the piers.[4] Atlantic City was a place to escape and recharge, "a colorful kaleidoscope of gay activity, luxurious comfort, restful quiet."[5] Its proximity to New York, Philadelphia and Washington, DC also made it a place to conduct business, with trade shows and manufacturers' conventions on the Boardwalk piers attracting spectacular attendance year after year.[6]

By the mid-1920s, approximately 14,000,000 people visited Atlantic City yearly.[7] Local businessmen started pushing the idea of building a permanent exhibition hall for the over 175 yearly exhibitors, and the 350,000 to 400,000 visitors that might stroll the Boardwalk at any one time during special summer events.[8] Their ambitious goal: to mark Atlantic City's role as "the world's greatest show window," a city turned by hundreds of great enterprises into a national "university of American business and industry."[9]

Designed by the New York City firm Lockwood-Greene Engineers, Inc. and built by Atlantic City general contractor M. B. Markland Co., the Atlantic City Convention Hall (Figure 1) opened on 6 May 1929, as "a permanent monument, conceived as a tribute to the ideals of Atlantic City, built by its citizens, and dedicated to the comfort, convenience, and pleasure of its patrons."[10]

The Building

Reflecting its function—a large column-free space for exhibitions and conventions—the hall covered a 350-foot by 650-foot city block and followed the structural form of barrel-vaulted train sheds, with the auditorium's monumental arched roof rising 150 feet above the boardwalk.

This monumental exterior was mirrored in an equally impressive interior, with a primary auditorium seating 32,000, a ballroom with space for 5,000, what remains to date the world's largest pipe organ, and state of the art systems throughout. The auditorium was 456 feet long, by 310 feet wide with 196,000 square feet of clear-span-barrel-vaulted ceiling rising 130 feet above the floor. Ten three-hinge arched box roof trusses provided rhythm and sequence to the ceiling assembly. Elaborate fine arts and ornamental plaster decoration were applied, focusing attention on the 90-foot wide,

110-foot high proscenium arch and imparting human scale to the over 1,200-foot long balcony loggia that rings the space on three sides. This combination of monumental structure and detailed artisanship held together an expansive room, and provided focus to the clear span, uninterrupted volume (Figure 2).

This huge exhibition space was conceived without a single window. Lighting a huge volume with no natural light without the glare of overhead lighting for what may have been the first time in the United States, the ingenious design used the ceiling as reflector for a dazzling show of indirect lighting technology with flood lamps concealed behind openings in the trusses and aimed at the ceiling, and lighting troughs outlining the proscenium arch. Automated color schemes created sunrises, sunsets, or daylight, highlighting the decorative scheme that wove a tapestry of colors throughout the auditorium, creating what contemporary visitors described as "... a sense of immensity ... a splendid simplicity of the whole, a vast enclosed clearness ... no deep shadows—only effects of light innumerable ... enchanting graduations and cadences of color, animating the entire huge creation ..."[11]

This sophisticated machine for entertainment, built at a cost of $13,400,000, cost $2,500,000 more than the second and third size/cost ranked competing venues—the Cleveland Auditorium (1922) and the Philadelphia Auditorium (1931)—combined.[12] Including the interest for the forty-year serial bonds issued to finance construction, total costs exceeded $26,500,000.[13]

Pre-Rehabilitation Building Condition

This massive investment had many wondering as early as 1929 how "Atlantic City, a community of 65,000 people, [could] build and maintain a $12,000,000 auditorium which cannot possibly hope to earn more than operating expenses, leaving other carrying charges to the local taxpayer."[14] Such concerns became particularly acute in the stark budgetary reality of the Great Depression. By 1932, a survey found that the auditorium was housing events approximately 75 percent of the year, that it was "not probable that activities will be materially increased in the future," and that cost overruns were largely due to the size of the building, but also to its "additional facilities and exceptional equipment." The survey's recommendations to decrease operating expenses included personnel cuts and scaling back the costliest maintenance and operational element in the auditorium: the lighting scheme.[15]

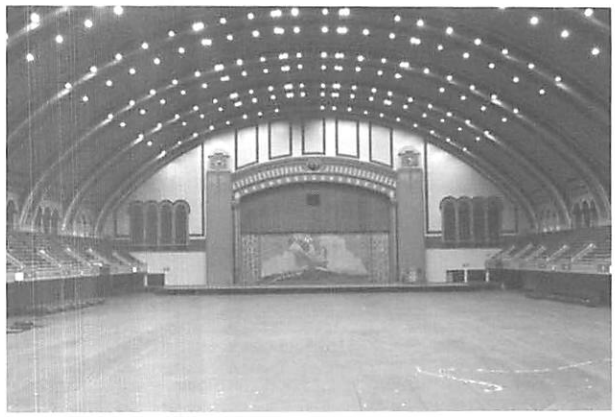

Figure 3. Interior view prior to rehabilitation (Photograph by Craig Terry, 1997, Craig Terry Photography, Vineland, New Jersey)

By 1934, the ambitious lighting scheme was abandoned, replaced with three rows of pendant lights, and floodlights mounted on the side-walls of the trusses. The original equipment remained in place, never to be used again as originally intended. Further cut-backs curtailed maintenance and cleaning operations at areas difficult to access, resulting in ample soiling and depredations of the ceiling (Figure 3).

Over the next decades, the auditorium underwent uninspired renovations and repainting campaigns. Rigging and lighting equipment was added in the simplest manner, by perforating the ceiling tiles at each new location (Figure 4). Within thirty years of its construction the original glory and architectural beauty of the auditorium disappeared behind the glare of harsh overhead lights, layers of inappropriate treatments, and grime.

Restoration and Rehabilitation of the Auditorium

In the mid-1990s, construction of the new Atlantic City Convention Center made obsolete the use of the historic hall for exhibitions and conferences, and in 1996 NJSEA commissioned a feasibility study to explore the possibility of turning the outdated auditorium into a modern events center. Based on the study's conclusions, NJSEA retained a design team consisting of Ewing Cole Cherry Brott (now EwingCole) and Rosser International,

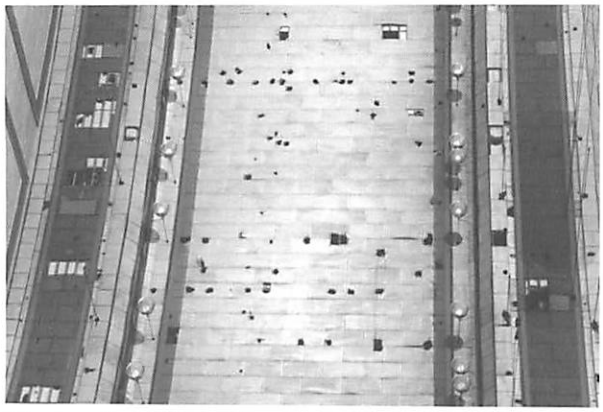

Figure 4. Condition of the ceiling prior to rehabilitation (Photograph by Craig Terry, 1997, Craig Terry Photography, Vineland, New Jersey)

Figure 5. Loggia column capital and the auditorium ceiling beyond after the rehabilitation (Photograph by Craig Terry, 2001, Craig Terry Photography, Vineland, New Jersey)

arena specialists, to develop a program for the rehabilitation of the auditorium into a 12,000-to-15,000 seat special events and ice hockey arena, and Watson & Henry Associates (W&HA), historic preservation architects/engineers, to establish and implement a guiding philosophy for restoration and rehabilitation components. EwingCole and Rosser identified the functional needs lacking in the existing configuration, such as sightlines, seat size, barrier-free access, amenities, egress, etc, and potential remedies. W&HA identified the building's significant features, and developed the preservation philosophy that would guide treatment of historic fabric and incorporation of new construction.

Beyond the historic, cultural, and engineering significance of the building, W&HA identified three essential significant architectural elements in the auditorium: the unique scale, volume, and size of the space, the complexity of the architectural effects of the combined original ceiling and innovative lighting scheme, and the high level of craftsmanship in the decorative treatments. W&HA then developed a preservation philosophy following the Secretary of the Interior's *Standards for the Treatment of Historic Properties* that would accommodate the shift in use from flat-floored exhibition and convention hall to modern event hall with limited intrusion on the historic fabric. The proposed approach combined application of the standards for preservation (proscenium assembly, end walls, decorative arts finishes), restoration (ceiling, effects of original lighting scheme) and rehabilitation (below the balcony concourse), and provided guidance for the design of new architectural features.[16]

Some decisions were straightforward: ornamental plaster, fine arts, and decorative painting fabric should be restored and conserved (Figure 5). Other decisions, such as how to update seating arrangements, or address the severely deteriorated ceiling, were more difficult, requiring multi-disciplinary design team work, innovative thinking, and sustained communication with, and input from, the New Jersey Historic Preservation Office and the National Park Service.

Various scenarios were developed to address the issue of seating arrangements and sightlines, from retention of the original balcony (not considered to be of primary architectural significance) to depression of the event floor or incorporation of a new seating bowl. This last option was determined to best address the need of the events venue; however, it became clear that the existing balcony would constrain the geometry of a new seating bowl, with the bowl having to be narrower and shorter than the plan dimensions of the existing balcony concourse. The design team reached a compromise: remove the balcony and retain sample balcony seats for restoration and exhibition, and incorporate a free-standing seating bowl, the top of which would be level with the balcony concourse on the sides, and slightly above it at the rear.[17]

Preservation guidelines for the seating bowl required maintaining the openness of the space with minimal visual interruptions and a clear view of the proscenium assembly, including a "scenic overlook" musicians' balcony near the south end wall, and using new materials in colors derived from, but not matching, the original color scheme.

The result was a new bowl, standing distinct from the significant historic ceiling, end walls and loggias, with a concourse at the vomitory level of the original balcony wrapping around the back of the seating bowl and open to the Auditorium ceiling above, connected to the historic fabric along the side balcony concourse and loggia (Figure 6).

The four-and-a-half acre ceiling, the largest element of the auditorium, showed little trace of the high quality craftsmanship evident in other areas; furthermore, the damaged, combustible, asbestos contaminated ceiling was a major hazard. Limiting the intervention to cosmetic repairs and repainting, or encapsulating the ceiling behind a new finish would improve appearances but provide little acoustics improvement, and maintain asbestos and flammability hazards. The design team chose to replace the ceiling with custom fabricated ceiling panels, upgraded supports, new rigging systems and access points, and a computerized lighting system recreating the effects of the original lighting scheme, thus reinstating the full architectural effects of the original designers' intent to turn the record-size cavern into a stunning backdrop of light and texture (Figure 7).

Initially budgeted at $35,000,000, the project was completed in October 2001. The final cost of nearly $100 million reflected the scale of preservation treatments, operations and techniques. The project was completed under the federal rehabilitation tax credit program.

After the Restoration and Rehabilitation

The auditorium rehabilitation has received ten architectural, engineering, and business awards, including a 2003 National Preservation Award. Renamed "Boardwalk Hall," the building has been recognized in the past two years as *Billboard* magazine's top grossing mid-sized arena in North America. Yet many of the challenges facing Boardwalk Hall's original operators face its present day manager, Spectator Management Group, seventy-five years later: how to manage and provide responsible stewardship for a building on such a monumental scale.

The tax credit certification was granted on condition that NJSEA have an overall preservation master plan for the building, with a cohesive approach to all of the building components such as facades, organs, maintenance, etc., and that future work be submitted for review. To date authorized and approved work has included a three-volume Preservation Master Plan prepared by W&HA, and the construction of nearly $ 1.5 million of fire protection work in the Midmer-Losh and Kimball organs.

Since its reopening, the venue has attracted a range of top concert artists and high-profile events and touring productions. It has showcased some of the most touted professional boxing matches carded in recent history, including *Ring* magazine's 2003 Fight of the Year, Gatti versus Ward III, as well as sports and family entertainment such as Disney On Ice. In a context of a varied target audience that ranges from local attendees to casino patrons with complementary seats and the general public, Boardwalk Hall has proven to promoters that the community can support a wide range of events, by providing a unique setting that has finally brought back to Atlantic City artists of the caliber of the "high priest of Jersey cool," Bruce Springsteen. In

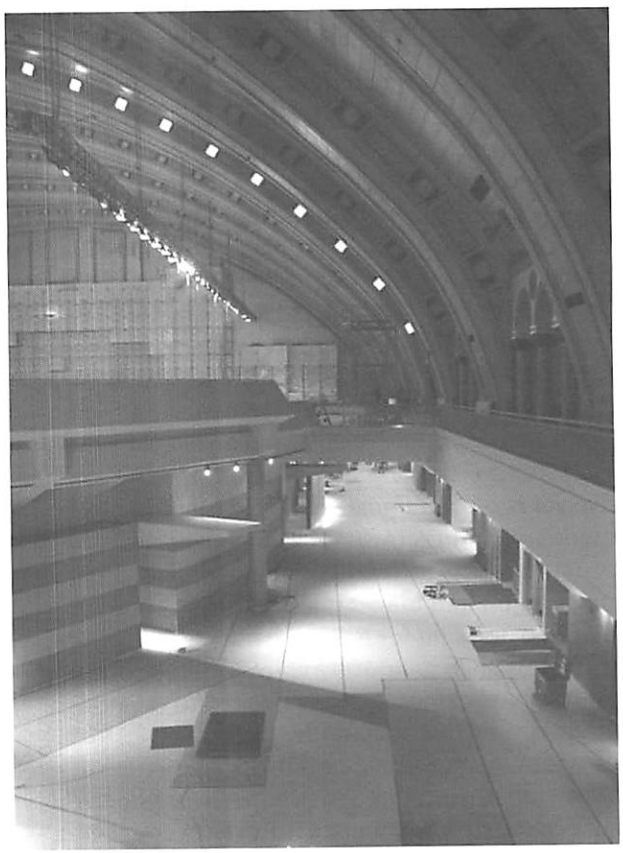

Figure 6. New seating bowl during the rehabilitation (Watson & Henry Associates, 2000)

Figure 7. Interior of the auditorium after the rehabilitation (Photograph by Craig Terry, 2001, Craig Terry Photography, Vineland, New Jersey)

his March 2003 concert Springsteen told the sold-out crowd of 12,500, "it's nice to see these old buildings refurbished and brought back to life . . . There's a soulfulness. They always remain a little bit on the funky side, but it's hard to come by."[18]

Initial skepticism regarding the rehabilitation of the historic venue was replaced by a realization of its business appeal from a management standpoint. For operational and staging purposes, Boardwalk Hall is a *new* venue that just happens to be seventy-five years old, a familiar building requiring little marketing efforts towards local and regional promoters. Its distinctive character gives it instant recognition and makes it a stand-out venue for planners looking for a unique backdrop for programs such as sports exhibitions, or corporate events. No "camouflage" is needed to conceal an arena setting; lighting up the decorative features provides an incredible backdrop. In this age of television, the unique visual aspects of filming in such an environment are a boon to event producers who often request that the ceiling and proscenium arches be lit up specifically for purposes of being incorporated into television or video broadcasts.[19]

But this large historic venue also presents distinct challenges. Considerable education efforts are required to prove to national promoters and a marketplace familiar with previous deficiencies that this is now a venue that can fit their business plans. Despite major improvement, Boardwalk Hall retains features and limitations that cannot be changed. Staffing for security and flow control costs much more than in other venues because of the many stairways and exits throughout the building. Where modern venues have four or five access points, loading of the auditorium can only be done from the boardwalk, requiring additional personnel to keep up to 13,000 attendees moving smoothly. Because of the importance of the auditorium ceiling, overhead rigging points have been limited to avoid damage, and temporary attachment points have to be carefully set up through ceiling windows or panels, increasing time and labor costs for pre-rigging and event turn-

around, at times leading to event cancellation.[20] Incidental damages to restored painted finishes and ornamental plaster result in expensive repairs. And maintenance operations take on a completely different scale when dealing with items such as 33,000 organ pipes, a 350-foot wide, 150-foot high limestone masonry facade, or an overall building volume in excess of 30,000,000 cubic feet.

Conclusion

The success of the treatment of large historic entertainment and recreational venues can be measured by how historic fabric significance, preservation choices, and operational challenges are balanced to provide an economically sustainable resource. Such a balance has been achieved in Boardwalk Hall. Boardwalk Hall has a location, character and elegance that could not be economically matched by a newly-constructed structure, the costs of which, on this prime boardwalk real estate, with the same A-Market level of elegance, would have far exceeded rehabilitation costs.[21] Operationally, the "young" venue has not yet turned a profit, a situation not unique in the world of entertainment venues, but has very strong potential to be a robust participant in the varied panoply of NJSEA venues. As visitors to Boardwalk Hall recollect memories of first dates, past pageants or family stories about the construction, they are taking back the monument "conceived as a tribute to the ideals of Atlantic City [and] built by its citizens."[22]

Leila Y. Hamroun has been active in historic restoration and preservation for over twenty years. She has extensive national and international experience in the managing, planning, programming, design, documentation and implementation of a wide range of historic preservation projects. Her projects have included long-term planning for historic urban centers, award-winning restoration projects, and award-winning design guidelines for historic districts. After seven years as project manager at Watson & Henry Associates, Ms. Hamroun has recently joined the Vitetta Historic Preservation Program in Philadelphia, Pennsylvania.

Acknowledgments

The preservation philosophy of the project was developed by Penelope S. Watson, AIA, and Michael C. Henry, PE, AIA, Principals at Watson & Henry Associates, through an in-depth investigation into the history of the Atlantic City Convention Hall and a detailed assessment and inventory of the historic fabric. This preservation philosophy is addressed in Michael C. Henry's *Keeping the Volume Up: Infill & Adaptive Reuse of Atlantic City's Auditorium* (forthcoming).

Notes

1. *The World's Largest Convention Hall, Atlantic City, New Jersey USA, "The Playground of the World,"* brochure, City of Atlantic City, 1928, 28.

2. "Spirit of Atlantic City Typified by Completion of Auditorium" *Auditorium Magazine*, Inaugural issue, June 1929, Atlantic City, 27.

3. "Railroad Resorts," Chapter 2 in *Resorts and Recreation: A Historic Theme Study of the New Jersey Heritage Trail Route*, http://www.cr.nps.gov/history/online_books/nj1/chap2.htm: 5.

4. Ibid., 6. "The Boardwalk," Chapter 4 in *Resorts and Recreation: A Historic Theme Study of the New Jersey Heritage Trail Route*, http://www.cr.nps.gov/history/online_books/nj1/chap4.htm: 3–4.

5. *The World's Largest Convention Hall*, 5.

6. Paula Hubbs Cohen, "The Atlantic City Convention Center: Rich in History, Convention Hall has Seen its Share of Momentous Occasions," *A Special Show Supplement to Swimming pool/Spa Age*, January 1997, 6.

7. "Spirit of Atlantic City Typified by Completion of Auditorium" *Auditorium Magazine*, inaugural issue, June 1929, Atlantic City, 27.

8. *Atlantic City Convention Hall Written Historical and Descriptive Data*, Historical American Buildings Survey, HABS No. NJ-1130, 1. "World's Largest Hall Seats 40,000 People" *Scientific American*, February 1929, 154.

9. "Spirit of Atlantic City Typified by Completion of Auditorium," 27–28.

10. *The World's Largest Convention Hall.*

11. Ibid., 11–13.

12. The Atlantic City Survey Commission, *The Atlantic City Municipal Auditorium and Convention Hall: Report of a Survey Conducted by the Atlantic City Survey Commission*, 15 August 1932, 9.

13. Ibid., 7.

14. "Spirit of Atlantic City Typified by Completion of Auditorium," 1929, 27.

15. *The Atlantic City Municipal Auditorium and Convention Hall: Report of a Survey*, 7–28.

16. Michael C. Henry, *Keeping the Volume Up: Infill & Adaptive Reuse of Atlantic City's Auditorium*, (forthcoming), 11–13.

17. *Historic Preservation Assessment of the Auditorium*, Watson & Henry Associates, June 1997, 38.

18. Amy S. Rosenberg, "Springsteen's blessing was a boon to the venue, which has fought its image," *Philadelphia Inquirer*, 13 March 2003, http://www.philly.com/mld/inquirer/news/magazine/daily/5416591.htm.

19. Greg Tesone, Assistant Manager, SMG/Boardwalk Hall, interviewed by Leila Hamroun, April 2005.

20. Ibid.

21. Ibid.

22. *The World's Largest Convention Hall*, 2.

From Exercise to Eating
Adapting a Historic Athletic Facility

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During the past four years, Bruner/Cott & Associates has designed conversions of three university gymnasium buildings to serve new uses. These are the Radcliffe Gymnasium at Harvard University designed by McKim, Mead & White and completed in 1898 (Figure 1); Bartlett Gymnasium at the University of Chicago designed by Shepley, Rutan & Coolidge and completed in 1903 (Figure 2); and the Women's Gymnasium at the University of Florida designed by Edwards and Sayward and completed in 1919 (Figure 3). Despite differences in size and programs for their respective reuses, these projects have involved similar preservation and planning challenges. The most significant among these challenges have been to design new mechanical systems and building envelope improvements that could mediate between new uses and the historic gymnasium space, and to adapt the gymnasium space for different uses without destroying its identity as a single architectural volume.

Bartlett Gymnasium at the University of Chicago, now Bartlett Dining Commons, is the only example for which construction is complete. It is also the project with the most demanding program and the only one that included a significant expansion of the original building.

Origins

University gymnasium buildings like Bartlett had Victorian predecessors framed in heavy timber with wood siding and Gothic Revival details. They were quirky, unselfconscious structures that were often glorified barns with radiators. Early gymnasiums were typically built on the outskirts of the academic campus where they were used for exercise and individual self-improvement—not intercollegiate sports.

By the end of the nineteenth century, competitive intercollegiate athletics emerged as part of the educational ideal, linking manly athleticism to ideas of heroism originating in Classical Greece. The rules for new team sports and the dimensions of fields, courts, and pools began to be standardized. The International Olympic Games were launched in 1896 in Athens. Bartlett Gymnasium was built as part of a bid by the University of Chicago to attract the 1904 Olympic Games. Chicago was selected, but somehow the games were transferred to St. Louis, where there were 651 contestants (six of whom were women) and only seventeen sports represented.

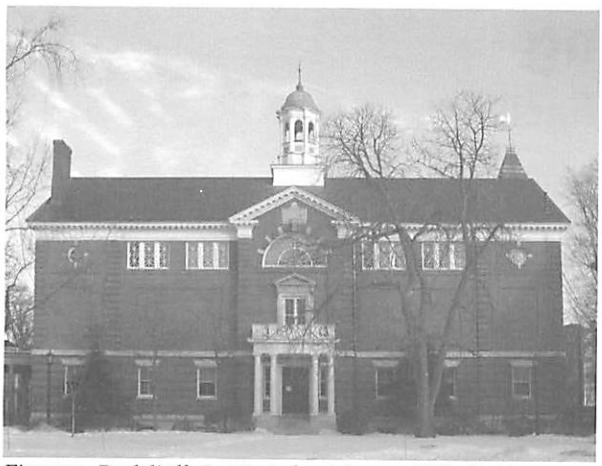

Figure 1. Radclieffe Institute for Advanced Study, former Radcliffe Gymnasium, 1898, Harvard University (Bruner/ Cott & Associates)

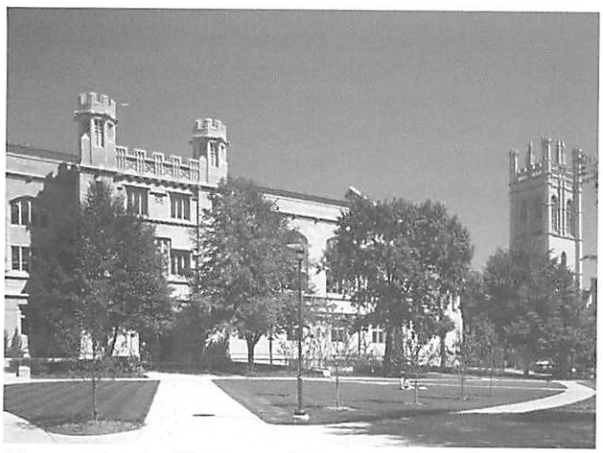

Figure 2. Bartlett Hall, 1903, University of Chicago (Peter Vanderwalker)

Figure 3. Women's Gymnasium, 1919, University of Florida (Bruner/Cott & Associates)

In 1896, the first academic quadrangle was built at the University of Chicago. Henry Ives Cobb, a Chicago architect, designed both the quadrangle buildings and the 1891 Master Plan upon which they were based. The quadrangle architecture's homogenous treatment was modeled after the English Gothic architecture of the colleges at Oxford University. In 1900, Shepley, Rutan & Coolidge were appointed as Campus Architect on the basis of their monumental Classical Revival commissions for the Art Institute of Chicago and the Chicago Public Library. However, they continued Cobb's English Gothic initiative in a new chapel, classrooms, and Bartlett Gymnasium.

Bartlett Gymnasium was built when heavy masonry wall construction was normal, but designers had begun to substitute steel for structural timber. Steel trusses allowed for a longer clear span with suspension rods to support a wide running track and, at Bartlett Gymnasium, a curving, three-dimensional wire mesh balustrade. (The smaller Women's Gymnasium at the University of Florida had wooden trusses, in spite of its later date.) The Bartlett Gymnasium exterior walls were brick with a 4-inch thick facing of Indiana limestone.

The main entrance was raised several feet above street level and set between two prominent octagonal towers. The space between the towers was elaborated with a massive stepped parapet above an enormous stained glass window set into limestone mullions. Heavy oak doors were set behind even heavier sliding doors of solid timber. The English Gothic prototype was clearly military rather than ecclesiastical or academic.

Windows in the first floor and basement rooms were kept small and the interior at those levels is dark. The gymnasium floor windows were two stories tall with recessed limestone spandrels. Originally, these windows were diamond pane leaded glass, but breakage led to their later replacement with glass block. The large window above the main entrance was filled with pictorial stained glass depicting a meeting of King Arthur and the Knights of the Round Table designed by Edward Sperry, an associate of Louis Comfort Tiffany.

Gymnasium buildings aspire to be covered fields. Their main characteristic is a large, high space spanned by trusses. The double or triple height gymnasium spaces in Bartlett Gym were well suited for mezzanine level running tracks, and sometimes

gallery seating for spectators. The gym volume, set above a first story of offices, corridors, and locker rooms, generated a large, simple building form.

In early gyms like Bartlett, vertical circulation never included an elevator, but large entrance lobbies and elaborate staircases were frequently placed at the front or side of the building and elaborated as the primary feature of the main facade. Natural light was valuable on the gym floor, but windows at that level were vulnerable to breakage. Locker rooms and pools posed privacy and condensation problems that also reduced the number of windows in athletic buildings. These features combined to encourage a grand architecture with a high solid to void ratio in external walls, large roofs, and large entrances. These characteristics allowed for building elevations that contrasted with classrooms, offices, and dormitories, where frequent and repetitive window openings dominated facades (Figure 4).

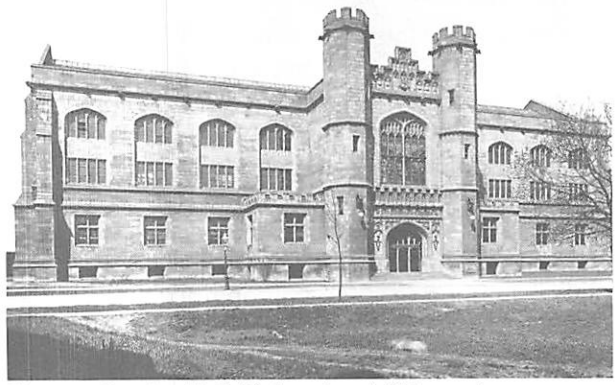

Figure 4. Bartlett Hall, University of Chicago, in 1904 (University of Chicago archives)

Vertical circulation at Bartlett Gymnasium was expressed through a dramatic multi-story entrance lobby and stairwell with dark, carved oak millwork, doubled stair flights, and an intermediate landing at the pictorial window. It was a fantasy environment with medieval imagery to inspire chivalric behavior. At the top of this theatrical stair, doors lead immediately onto the gymnasium floor.

Gradually, the old gymnasium and pool became obsolete for intercollegiate sports and new facilities were built on other sites. Bartlett Gymnasium was underutilized and available for new activities as it approached its one-hundredth birthday. During the last decade, the University of Chicago has expanded to include an additional 1,000 undergraduates. Ricardo Legorreta of Legorreta Arquitectos of Mexico City, with VOA Associates of Chicago, has built a large student housing complex next to Bartlett. The students needed a place to eat, and dining was the heart of the University's program for Bartlett Commons.

The renovated Bartlett Commons contains 64,000 square feet, plus a new receiving dock of 2,260 square feet. The structure cost $13.5 million to build and equip, with a $2 million stained glass restoration project waiting in the wings. The new dining hall accommodates 550 people and 2,500 meals a day (Figure 5). The kitchen is below the gym but much of the final cooking takes place at individual servery stations. The seating area can be cleared for special events. Two theatrical rehearsal and dance performance facilities occupy spaces on the first floor, where the swimming pool was previously located. Conference rooms and student organization offices are on the first floor and in the basement. A new convenience store for the campus was added on the first floor.

The most challenging planning and design element was a new two-story service bay, receiving facility, and trash handling area that supports a central production kitchen for the campus. This new construction houses a dumpster and emergency generator. Located on a visually prominent corner site, the receiving facility had to accommodate the functional requirements of very large trucks.

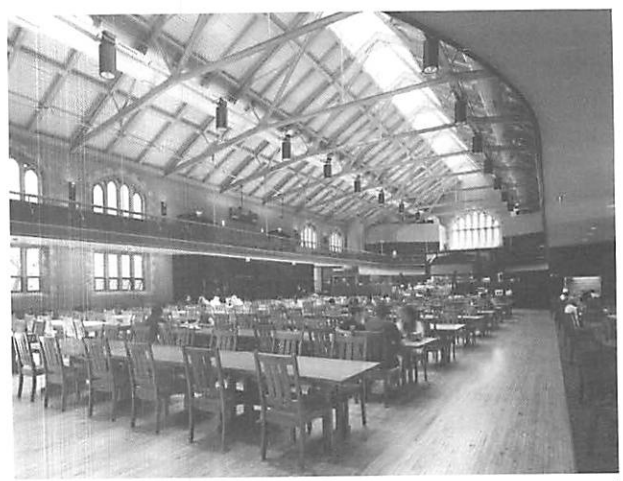

Figure 5. Bartlett Commons dining hall, 2002, University of Chicago (Peter Vanderwalker)

Preservation Priorities Plan

One of Bruner/Cott's first acts was to produce a Preservation Priorities Plan for Bartlett Commons. These guidelines were presented very simply, with captioned illustrations designed to establish a clear set of rules, enabling confident design and planning decisions. For all of Bruner/Cott's gymnasium projects (and, in some cases, reused ecclesiastical buildings), maintaining the major space has been the most important preservation priority.

At Bartlett Commons, as at the Women's Gymnasium and Radcliffe Gymnasium, integrating the existing running tracks into the new design has been a key preservation requirement and architectural objective. The running tracks add apparent height to the main volume of the gym, add interest because of activity at more than one level, and provide a place to run large ducts for cooling and heating.

Preservation priorities for Bartlett Commons identified special areas of interior finish and built-in furniture, murals, and pictorial stained glass, millwork, light fixtures, and the appropriate treatment of external openings. These were items that could arise in any university building of the same period, whereas the gymnasium volume and running track would not.

Site

The University of Chicago campus plan of streets with pedestrian spines through the landscaped interiors of the quadrangles does not allow for rear service yards. Like many early twentieth century campus plans, University of Chicago's does not feature or accommodate rear elevations. The introduction of institutional scale food service involving massive materials handling, with fifty-four-foot long trailer trucks and noisy dumpster vehicles, is a particular challenge. There is also no tidy hide-away for cooling towers or other large units of mechanical equipment on such a site.

Problems and Solutions

Many think of historic preservation in terms of highly crafted objects and special finishes. More mundane features and characteristics such as windows glazed with imperfect cylinder glass; minimally-engineered wrought iron fire escapes; wear traces and patina; and early cast iron radiators are rarely seen as significant elements of historic buildings. The continuity in balustrades, original axial relationships in circulation, and the distinct form of interior spatial volumes are also often underappreciated character-defining features. One of the roles of a preservation architect is to help project teams value these elements within the context of other historic resources on the campus. At Bartlett Commons, fire escapes and cast iron steps to the original sloping running track were lost in order to make the running track a useable level for seating and to rationalize fire egress for the entire building.

In the gym interior, the critical architectural feature is the spatial volume. The steel trusses and a continuous skylight along the ridge provide scale and rhythm to the interior and instantly communicate the large dimensions of the space. In our experience, structural engineers are initially concerned about the structural capacity of early trusses—both timber and steel—but analysis usually proves these elements sound and capable of carrying an increased load for more people on running tracks and on the gym floor.

The running tracks always require some alteration for their new uses and the balustrades almost never meet the lateral resistance requirements of current codes. At Bartlett Commons and Radcliffe Gymnasium the balustrades are very beautiful and in both cases they are supported by connections to suspension rods that hang the running track from the trusses. As a result, they provide great visual continuity at the mezzanine level (Figures 6 and 7).

Preserving running tracks in historic gymnasium projects is not a simple endeavor. Live load capacity has been a problem for both the suspended tracks and their balustrades. In some buildings, such as Bartlett Commons, Bruner/Cott reduced the accessible floor area of the track in order to reduce the calculated live load. Window heads in gyms typically extend up to the underside of the running track, but there is normally some opaque spandrel area immediately above and below the track. If the track is banked for runners and the sloped floor is removed, then more opaque wall area is exposed. At Bartlett Commons, Bruner/Cott placed large horizontal ducts on the lowered track floor next to the exterior wall and introduced seating and circulation space along the original, transparent balustrade with views down to the interior of the gym space.

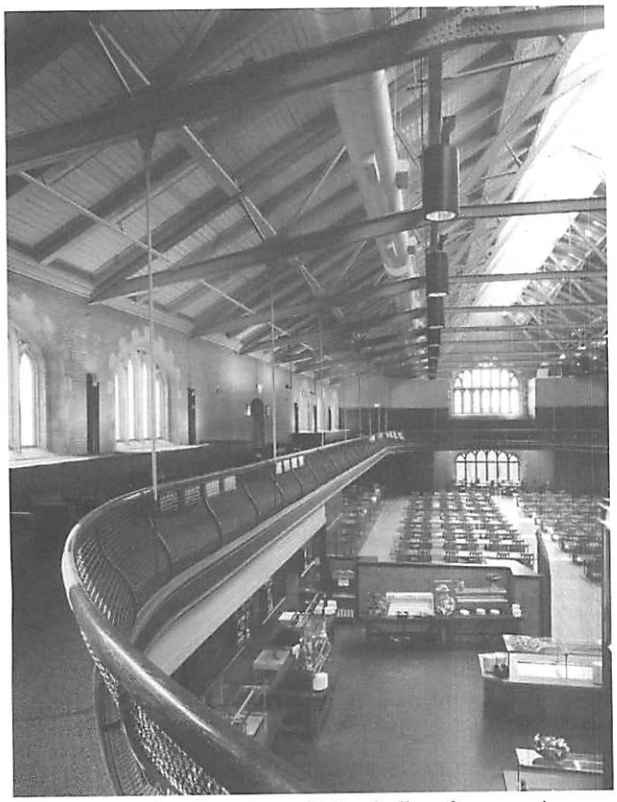

Figure 6. Bartlett Commons dining hall and mezzanine, University of Chicago, 2002 (Peter Vanderwalker)

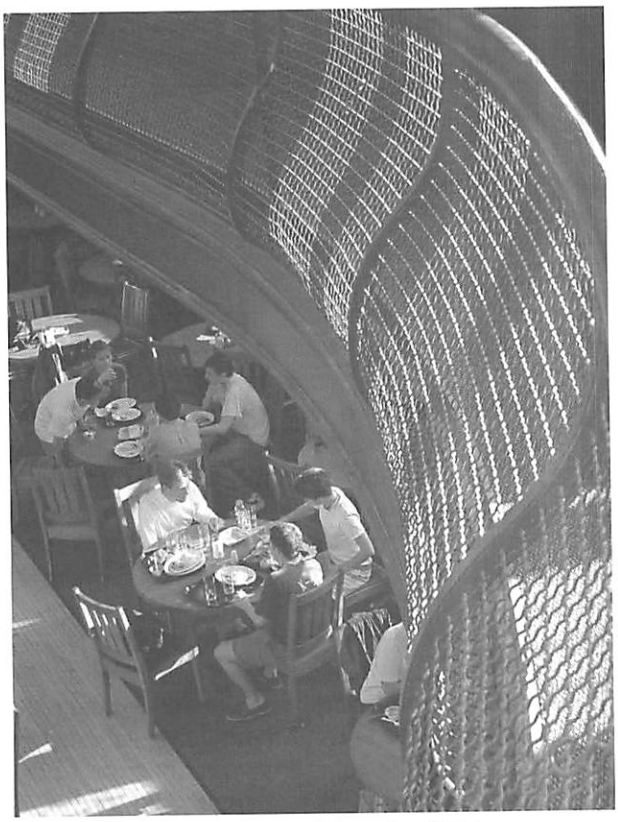

Figure 7. Bartlett Commons, University of Chicago, 2002 (Peter Vanderwalker)

Running tracks that have active new uses also must be made accessible for people who use wheelchairs. Bringing elevator access to these narrow strips of floor is challenging. At Bartlett Commons, Bruner/Cott could use one of the original towers' projections to introduce a new passenger elevator without interrupting the running track or placing the passenger elevator inside the gymnasium space.

The service elevators for Bartlett Commons provide the crucial link between the first floor kitchen and the serveries on the gym floor above. These elevators are set within the gymnasium floor plate, but they do not extend to the full height of the running track. The roof trusses and skylight are high above the elevator bank. The running track sweeps around it. The location of the elevator is a fundamental decision in gymnasium rehabilitation, because its impact on the space can be so detrimental. Inconspicuously venting the elevator shaft to the exterior is a common architectural challenge when converting gyms for a new use.

Elevators are only one aspect of accessibility. Entrances providing universal access on the main floor may be as challenging as getting up to the running track. Our first design approach to moderately elevated entrances is always to look for a landscape solution—ideally, a sloping path at 5 percent or less so we can avoid intrusive handrails. Fortunately, Bartlett Commons's most active entrance faces the Bartlett Quadrangle, which connects the dining hall with the Max Palevsky Residential Commons, Regenstein Library, and 57th Street. Bruner/Cott worked with Sasaki Associates to integrate long curving paths with Indiana limestone curbs into the circulation and planting plan of the space connecting the main library, the new dormitories, the pedestrian link to new athletic buildings, an art museum, and parking garages to the north. As a result, we were able to leave the more elaborate main entrance to Bartlett Commons unaltered.

Preservationists, architects, and building owners increasingly work toward sustainable design solutions. When the energy management aspect of rehabilitation projects is approached most conscientiously, the logic of insulating exterior walls proves inescapable. Bruner/Cott is currently exploring the vapor drive, air leakage, and interior wall moisture implications of insulated solid masonry under different HVAC and climate conditions. The issue of insulating exterior walls

did not arise at Bartlett Commons or other Bruner/Cott gymnasium conversions because the need to preserve their historic architectural features reinforced the owners' need to limit construction costs.

Mechanical equipment is an enormous part of adaptive reuse schemes. Typically, athletic buildings were served by very primitive heating and ventilation systems and had no cooling. Most campuses now have centralized plants and distribution systems for chilled water and steam. This is true of the University of Chicago. To accommodate new HVAC equipment it was necessary to excavate an existing crawl space by a further three feet below Bartlett Commons. Two mechanical towers were also inserted in corners of the building away from the street; air intake louvers were set in existing window openings.

Kitchen ventilation is often problematic, but preexisting parapets and rooftop ventilators provided a solution at Bartlett Commons. Exhaust fans were placed in limited areas of flat roof behind the parapets. These fans were connected to the kitchen and other spaces by the ducts that run along the running track. Large chases are physically associated with floor openings for new stairs and elevator shafts. The Radcliffe Gymnasium also benefits from centralized steam, but at Harvard geothermal wells are being used for both heating and cooling. Although these wells are more expensive than conventional cooling towers, three Harvard projects with visually sensitive sites or expensive structural requirements for support make geothermal solutions the better choice for reasons of appearance and cost—in addition to reduced dependence on fossil fuels.

Windows

The original windows at Bartlett Commons were remarkably fine architecturally and remarkably vulnerable. Shepley, Rutan & Coolidge produced beautifully drawn elevations in which diamond-paned windows with lead cames provided an intermediate scale to the building. By the time the study for this project began, few of these windows survived; most had been replaced by translucent glass block and some of the limestone window mullions were spalled.

Bruner/Cott proposed a complete replacement of glass block by new aluminum windows with insulated glazing units. Since the glazing is seldom close to observers at street level or within the building, Bruner/Cott advocated the addition of surface-applied lead in diamond patterns that reestablish the original subdivision of sashes. The applied lead is about one-eighth of an inch in depth, installed on the outside of the window, and casts a visible shadow on the exterior glass surface. The diamond pattern is equally effective in sunlight and after dark. The university's staff architect was concerned about the longevity of the applied lead, but the architectural benefits were clearly superior to sheets of plain glass, the only affordable alternative. Bruner/Cott restored original windows complete with individually leaded diamond panes where they survived in the towers.

Stained Glass

Bartlett Commons is further distinguished by the installation of Edward Sperry's vast, pictorial stained glass mural depicting an outdoor gathering of the Knights of the Round Table. When this project began, the mural was in fair condition with some bowed panels and broken panes. The university originally intended to leave the glazed panels in place during construction, protecting them and working carefully in the immediate vicinity.

When the street facade was scaffolded, the shortcomings of this approach became clear. The wall of glass, valued at $7 million, could not be adequately protected while facade cleaning and stone repairs were underway. Bruner/Cott introduced Julie Sloan, an independent stained glass restoration consultant, to the project; Sloan was already working on the glass in Frank Lloyd Wright's Robie House two blocks away. Her study convinced the university to remove the window in its entirety, record each panel with a rubbing, then crate and store the window until a $2 million restoration project could be funded and scheduled.

In the meantime, the outside wall of the stair lobby was protected with plain expanses of clear glass. This condition demonstrates how effective the Sperry window had been in modulating light to reduce glare, adding color to the architecture, and dramatizing the experience of entering and moving up and down through Bartlett Commons. The

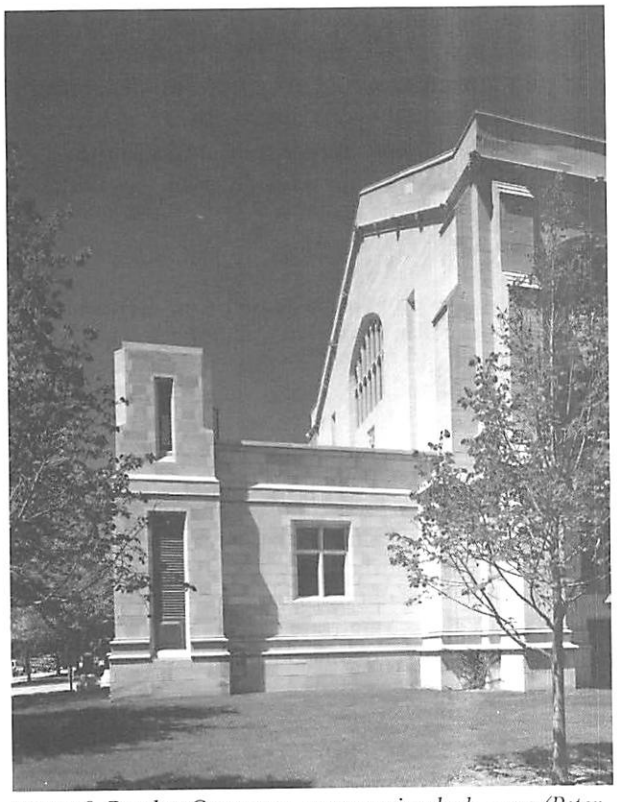

Figure 8. Bartlett Commons, new service dock, 2002 (Peter Vanderwalker)

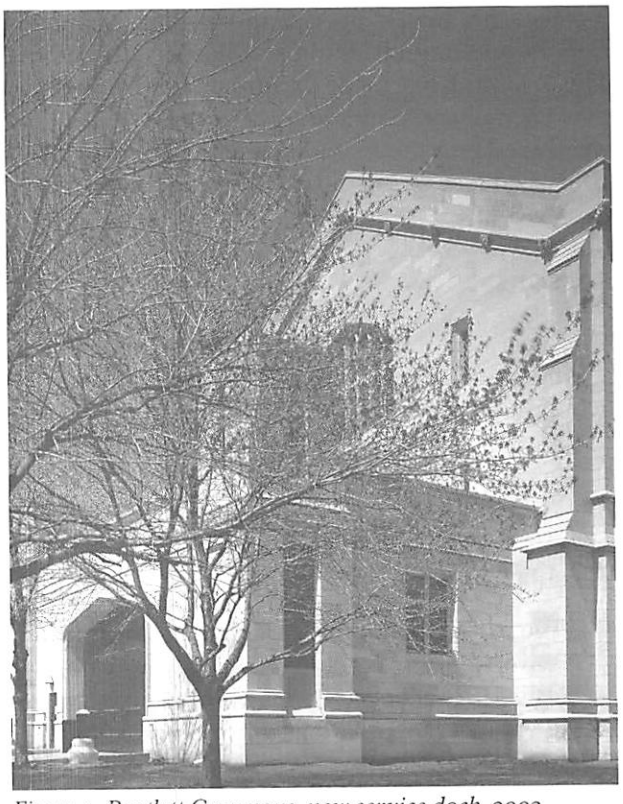

Figure 9. Bartlett Commons, new service dock, 2002 (Hedrich/Blessing)

mural had functioned well for 100 years, and when it is restored, the superior formulation of today's lead cames should further prolong its lifespan.

Food Service

Food service installations present a highly specialized set of planning, design, and equipment specification problems. Institutional kitchens are industrial settings with strict hygiene requirements and very demanding handling arrangements for a broad spectrum of materials, with fresh foodstuffs at one end and garbage at the other. Sustainable approaches to ventilation, heat recapture, and waste management are as difficult to attain as are some laboratory settings. Introducing these functions into a 100-year-old gymnasium required intensive coordination with mechanical engineers. The most pressing problem was to create an acceptable loading dock given that all sides of the building are exposed to public view (Figure 8).

The university's planning staff worked with Bruner/Cott, Legoretta Arquitectos, and Sasaki Associates to reconcile the needs of the housing, library, and dining hall located within the Bartlett Quadrangle. Eventually, the university decided that the service access for Bartlett Commons should be located at the highly exposed southeast corner of the quadrangle in order to move noise away from the new student housing and to provide sufficient space for large trucks to enter and leave the site. Bruner/Cott's design response was a large limestone addition, fully enclosed and detailed as a continuation of the original Bartlett Commons, subsidiary in massing but of equal quality in detail (Figure 9).

The new design is a straightforward application of the same Collegiate Gothic approach that Shepley, Rutan & Coolidge took from Henry Ives Cobb. The intent was to create an inconspicuous building on a conspicuous site. Our experience has shown that the best way to achieve this comfortable continuity is to pursue the design as if it were contemporaneous with the original, even if construction methods diverge fundamentally. Although the addition has a steel frame, water table configuration, stone molding profiles, ashlar dimensions, stone tooling, and window details match the original Bartlett Commons.

Small corner towers provide more stylistic connections between the addition and Bartlett Commons. The towers also provide a chimney enclosure for a new emergency generator. A large quantity of weathered limestone was salvaged from the concealed face of the old building and reused in the addition.

Lessons

The successful reuse of Bartlett Commons suggest a number of lessons applicable to other historic gymnasium projects:

- Preservation planning is a key element in the Master Planning process and it may include more aspects of the interior than the owner anticipates.
- The reconciliation of feasibility and historic preservation (or architectural quality) will likely be challenged by the competing interests of engineers, operations and maintenance staff, code officials, and even laudable sustainability objectives.
- It is important for the architect to communicate a holistic vision rooted in appreciation of the existing building's architectural quality—especially the grand space of the gymnasium.
- The large spans and special attributes of historic athletic buildings require a team with technical depth in truss design, structural masonry, fenestration, building envelope analysis, and HVAC issues. Otherwise, design approaches may be too conservative. This expertise must include the estimator.
- Cost effectiveness depends upon designing natural conversions that work with the existing structure. A loose fit may be most appropriate, as flexibility for future change is more valuable than project planners typically perceive.

The renovation of Bartlett Commons demonstrates that a conscientiously designed and executed rehabilitation project can, and should, compete for attention with more glamorous new construction projects. On campuses with rich histories, intelligent preservation can temper the physical upheavals attendant with major building campaigns. For alumni, Bartlett's timely renewal enabled the university to conserve an inimitable symbol of its past. For current students, as for generations of students yet to arrive, Bartlett's faithful adaptation and new, prominent role in campus life will ensure that the tradition it symbolizes—the university's athletic, cultural, and intellectual underpinnings—will continue to be valued for decades, or centuries, to come.

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After the Final Whistle
Reuse Alternatives for Abandoned Stadiums

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Sporting venues such as ballparks, stadiums, fields, and arenas are located in every town, city, and suburb of the United States. These building types are very much related to twentieth-century society, which showed a growing emphasis on leisure time and recreation. The business of organized sports has evolved over the past century from the simple sponsorship of teams to a multi-billion dollar industry encompassing major media networks, corporate level marketing and advertising, and local economic and land development initiatives.

Sports venues can sometimes be characterized as community meeting and gathering spaces, not unlike the public markets and town squares of the nineteenth century. Over the last hundred years, sports stadiums were and continue to be one of the largest community development projects municipalities undertake. Because team allegiance has become so pervasive and teams that play in stadiums are so closely tied to the community and region they represent, the construction of sports facilities often involves a mix of public and private funding. Increasingly, such facilities are being funded entirely by the public sector through the use of entertainment taxes, referendums, and tax-exempt bonds.

Early Stadium Construction

The twentieth century witnessed the construction of hundreds of sporting venues. An article published in the *American Architect* in 1923 notes that "in 1913 there were five completed stadia in this country. In 1920, there were eleven and by the fall of 1923 there would be twenty completed, two more partially constructed and several more on the drafting boards."[1] Although these figures did not include the many grandstands, baseball parks, or open-air theatres that existed, the article illustrated a growing trend and interest in a building type that would come to symbolize twentieth century sports venues. Even in the first quarter of the century, these construction projects were known to require an outlay of large sums of money—which in those days ranged from $250,000 to $4,000,000.

An example of an early stadium is Franklin Field Stadium designed by Day & Klauder Architects on the campus of the University of Pennsylvania. When this stadium was built in 1922, it was designed to accommodate 50,000 spectators, considered at that time to be an appropriate capacity. The location imposed building constraints such as the need to fit between several existing campus

buildings and within a grid of streets. The designers called for arcading over the city sidewalk on one elevation in order to optimize the space within the stadium. The stadium was built of reinforced concrete and cost a total of $ 798,342. Originally constructed in two phases, lower level in 1922 and upper level in 1925, today it remains the oldest two-tiered stadium in the country. With the actual playing field in use since 1895, the National Collegiate Athletic Association (NCAA) recognized Franklin Field Stadium as the oldest collegiate football field still in use in the nation.[2]

Ballpark Golden Era

It was during the first two decades of the twentieth century that the first steel and concrete palaces for professional baseball opened for business. These structures were built exclusively with reinforced concrete and steel, replacing the earlier ball yards built of wood. Typically the wooden facilities were destroyed by fire and as a result very few remained at the end of the nineteenth century. Their replacement, steel and concrete ballparks, set new standards for size, fire safety, player/spectator intimacy, and convenience. They were also larger, often accommodating more than 20,000 fans, and displayed grand architecture, although at great cost. For example, Forbes Field in Pittsburgh in 1909 cost $2 million, while Detroit's Tiger Stadium, built three years later, cost half a million dollars, and Yankee Stadium in 1923, the last of the golden era ballparks, cost $2.5 million to build. For most of these parks, their urban setting was central to their character. They were often designed to be in harmony with the architecture of the neighborhood and formed an integral part of the community in which they were built. In addition, their footprints had to conform to the layout of the city streets, creating interesting angles and contours. The idiosyncrasies of the playing fields only increased as the ballparks continued to expand within their urban settings. Few of these ballparks had the real estate to include parking lots and instead were generally located within close proximity to subway, trolley, or bus lines.[3] All but three—Wrigley Field in Chicago, Fenway Park in Boston, and Tiger Stadium in Detroit—have since been razed.

In the years between the Great Depression and the Second World War, teams were more likely to make renovations to their existing older stadium rather than build new. However, with the postwar economic boom and a growing automobile-focused culture, sports team owners were frustrated with the limitations placed on attendance at small urban stadiums that had little or no place to park. Owners wanted new and bigger stadiums that could bring in a larger fan base and increased revenue. This contributed in large part to the mass exodus of professional sports teams from the cities to the suburbs.[4]

Postwar Examples: 1960s and 1970s

The 1960s and 1970s saw rapid growth in the number of professional sports leagues as well as in the construction of stadiums. Several "modern" municipal stadiums were constructed to house more than one sports team. As these multi-purpose stadiums often took on the form of what has since been termed "concrete donuts," they were invariably large, round, and symmetrical. These cement bowls were not very interesting aesthetically and were criticized for not being very fan friendly. Examples include Three Rivers Stadium in Pittsburgh, Riverfront Stadium in Cincinnati, and Veterans Stadium in Philadelphia, and several domed versions like the Kingdome in Seattle, the Astrodome in Houston, and the Metrodome in Minneapolis. These stadiums were built to hold as many people as possible for as many sports as possible. In the years between 1962 (when Dodger Stadium was built) and 1991 (when the Kansas City Royal's stadium was built), only one new facility was constructed exclusively for baseball.[5] These stadiums were the first to use the cheaply maintained Astroturf (introduced in the Houston Astrodome in 1966) instead of natural grass, and circular seating plans that placed all fans equally distant from the field. These new round stadiums were also the first to eliminate such obstructions as steel support piers, though often at the expense of proximity to the field. They also offered improvements in concessions, accessibility, restrooms, and seating comfort.

Unlike the stadiums built in the first half of the twentieth century (particularly baseball parks which were built right in the bustling urban neighborhoods, convenient to homes, businesses, and public transportation) these multi-purpose stadiums coincided with urban renewal and suburban expansion. Often they were ringed by acres upon acres of parking lots, with the belief or hope that a new community would develop around the stadium. As places to watch baseball games,

these postwar parks that doubled as football stadiums were inferior to the early twentieth century ballparks, and lacked the character of the classic parks.

The Age of the Retro Ballpark: 1990s to Present

Circular multi-use sports stadiums were not to be long-lived. Beginning in the late 1980s a new generation of sports venues was born. Due to general discontent with the uniformity and resulting blandness of multi-use complexes, municipalities started making plans for new structures for each sports team, be it football, basketball, baseball, or hockey. The result was that old and relatively new stadiums alike were being razed, often along with blocks of other older building stock, in order to make room for "old-fashioned" replacements back in the heart of the cities.

New trends and new spectator amenities were introduced to make a stadium more comfortable for fans, more profitable for the property owners, and more functional for the team. These amenities include retractable roofs, luxury boxes, increased concessions, retro-appearances, and new technology for scoring, sound, and advertising. Although having an old-time look, these new stadiums were built increasingly larger than their historic models. Seating capacities, now including commodious luxury suites and club seats, ranged from 40,000 to 55,000, and the square footage of these new facilities with substantial retail space more than doubled the size of the historic ballparks.

Chicago's new Comiskey Park (now renamed U.S. Cellular Field), which opened in 1991, was marketed as one of the first "old fashioned" ballparks and attempted to provide character through the addition of a superficial postmodern facade. Ironically, its exterior resembled that of the golden era park it replaced, while its interior boasted all the conveniences of modern parks. However, it was still a symmetrical concrete stadium, and it sat in the middle of a 7,000-car parking lot rather than an urban neighborhood. Oriole Park at Camden Yards in Baltimore, which opened a year later in 1992, would set a new standard for stadium construction. The new ballpark, which successfully captured the character of a genuinely old ballpark, has played a pivotal role in the recent history of professional sports. It was the first to reject the antiseptic symmetrical oversized stadium design and instead strived to create an intimate urban ballpark with asymmetrical dimensions and a quirky layout.

Camden Yards caught the attention of every baseball team yearning for a new stadium. Unfortunately, this was the case even with teams that already owned an authentic "old fashioned" ballpark. Since Camden Yards's construction, new retro ballparks have been built in Cleveland, Houston, Denver, Milwaukee, Seattle, and San Francisco—all taking their cue from Baltimore's conceptual breakthrough. Even totally nontraditional parks, like those in Phoenix, Miami, and Tampa Bay, have emulated the asymmetry of the Camden Yards outfield.

Camden Yard's character and design was modeled after those golden era ballparks that remained intact and in use: Fenway Park in Boston, Wrigley Field in Chicago, and Tiger Stadium in Detroit. Ironically, this modern trend that swept the nation's pro sports teams has had a grave impact on these older parks. Despite the fact that Camden Yards was largely modeled on Fenway Park's style, intimacy, and character, the Boston Red Sox announced in 1996 their intentions to build a new stadium. When development plans were finally made public in 1998, it was revealed that they too were jumping on the bandwagon to create an "old-fashioned" ballpark across the street from the genuine article. After several years of preservation advocacy to save Fenway Park, and eventually through a change in ownership, the plan for new construction was discarded. Unfortunately, the same is not the case for Tiger Stadium. The last major league baseball game was played there in 1999 and the following year the Tigers began playing in the newly constructed Comerica Park. The old stadium, which opened the same day as Fenway in April 1912, now sits empty, awaiting a new lease on life.

Even today, more than a decade after Camden Yards opened, there are more plans for new neotraditional stadiums on the drawing boards. In 2004, the St. Louis Cardinals began construction on a new stadium to replace the 1966 Busch Stadium, and in 2005 the New York Yankees announced plans for a new stadium to replace their existing home. The press release for the new Yankee Stadium states that the new facility will replicate the original with a similar look and

architectural details, but will feature five to six times more retail square footage than the current stadium.[6]

Future Life for Abandoned Stadiums

The above illustrates that the twentieth century saw a lot of activity and money dedicated to stadium construction. It appears that more of the same will continue into the twenty-first century. Unfortunately, countless stadiums are left abandoned or demolished as a result. While there have been a few rare occurrences where existing facilities have been modified to include new innovations, more often than not, a team has claimed the need for an entirely new facility to meet the needs of the players, the fans, and the sporting business. In fact, such demands have been used as threats to keep teams from leaving a city, leading to 100 percent publicly financed new stadiums. What happens to the sports venues that are considered antiquated and left abandoned? Sadly, many sit deteriorating and collecting trash, and a large percentage eventually faces the wrecking ball.

Tiger Stadium is considered the most endangered of these vacant and abandoned sports facilities at the present time. After the stadium was abandoned in 1999, it was purchased by the city of Detroit for $1. Since then, the ballpark has sat vacant and minimally cared for while the city is reportedly waiting for an appropriate proposal for reuse. Over the past six years, several parties have expressed an interest in reusing the stadium both for sport and neighborhood redevelopment. The most logical occupant would be another team sport, whether a minor league baseball team or another field sport like soccer, lacrosse, or football. In fact, reuse plans for both a minor league baseball team and a professional soccer team have been among the many proposals, yet the city has rejected all proposals. There are suspicions among stadium advocates that the city has been pressured by the Tigers to reject such plans in an effort to control competition for spectators and recreation dollars. Despite the political red tape, there has been no lack of creative ideas for Tiger Stadium's reuse. Neighborhood planners and development corporations have called for redeveloping the stadium with a mix of uses, while an Italian designer has studied how the site and stadium could be reworked as a multi-functional performing and visual arts venue.

While a rare case study, Tiger Stadium is not the only stadium that has been the subject of redevelopment proposals. The Arsenal Stadium in the Highbury neighborhood of London, England, is another example where a new larger stadium has been built a short distance away from the local team, leaving its old stadium awaiting a new use. The local stadium authority in this case, however, is developing an adaptive reuse plan to accommodate housing, commercial, and public green space on the site.

Few Reuse Examples but Growing Number of Creative Adaptations

Reuse of historic stadiums has been rare thus far. In fact there are none that have actually been completed to point to as models. It is much more common to note examples of major renovations of older stadiums, as has occurred at Fenway Park and Soldier Field.

Fenway Park has been continuously renovated since 2002, including new seats on top of the famous Green Monster, and improvements to circulation, accessibility, concessions, restrooms, team offices, and player accommodations. This approach has won the team and stadium owners praise from fans, neighbors, and the preservation community alike. On the other hand, the major renovation of Soldier Field, which was built in 1924 and was a designated National Historic Landmark, was much more contentious. By sports fans' standards, the modern amenities offered by the twenty-first century improvements were very much welcomed. Yet by preservation standards, the alterations led to a unanimous vote by the Advisory Council on Historic Preservation recommending to the National Park Service that the stadium's National Historic Landmark designation be removed.

Stadiums, ballparks, and arenas are difficult building types to reuse or rehabilitate, especially after the original occupants have abandoned the structure. Too many sit vacant and are left to deteriorate until demolition is the only option, making the buildings prime case studies of demolition by neglect. The world of professional sports is big business and it is unlikely that the preservation community is going to be successful in convincing most stadium owners to preserve their facilities based on architectural or historical significance. Very few have been listed or even determined

eligible for listing in the National Register of Historic Places. However, there is a small but growing trend toward using the history of the venue to draw visitors and to keep them coming back. This is especially true of historic baseball stadiums, where tradition and history play a large role in the appeal and attraction of the game. The most successful preservation or reuse examples have been those where the occupant or owner have been creative in incorporating new sports business trends into an existing historic facility, recognizing the value and preserving the fabric of the old stadium and thinking creatively to meet the contemporary needs of players, fans, and owners. It is these examples that the preservation community needs to encourage, support, and hold up as models. If cheered on, this might be a tactic that others add to their play book.

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Notes

1. Roi L. Morin, "Stadia – Part 1: The Franklin Field Stadium, University of Pennsylvania," *The American Architect – The Architectural Review* 124, no. 2431 (24 October 1923), 366.

2. Wikipedia, http://en.wikipedia.org/wiki/Franklin_Field

3. Lawrence S. Ritter, *Lost Ballparks: A Celebration of Baseball's Legendary Fields* (New York: Viking Studio Books, 1992), 1–3.

4. Josh Leventhal, *Take Me Out to the Ballpark: An Illustrated Tour of Baseball Parks Past & Present* (New York: Black Dog & Leventhal Publishers, Inc., 2000), 10–13.

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6. T.J. Quinn, "It's Back to the Future for Yanks," *New York Daily News*, 15 April 2005.

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From the Ladies' Room to the Board Room
Preserving the Newport Casino

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In 1879, Captain Henry Augustus Candy, acting on a dare from James Gordon Bennett (editor of the *New York Herald*), rode his polo pony into the Newport Reading Room in Newport, Rhode Island. The result was Bennett's expulsion from this exclusive gentlemen's club and his decision to create his own social and recreational club just one block south on Bellevue Avenue. Designed by McKim, Mead, & White and completed in 1880, Bennett's Newport Casino originally offered billiards, archery, horse shows, lawn bowling, and theatricals (Figure 1). Today, the Newport Casino boasts thirteen grass tennis courts plus the only public court tennis court in the country. It is also the home of the International Tennis Hall of Fame (ITHF). While Stanford White's stunning example of the new Shingle Style of architecture provided new recreational opportunities for nineteenth-century Newport society, it also set the stage for many preservation challenges 125 years later.

The preservation challenges that have confronted the International Tennis Hall of Fame during its occupancy of the Newport Casino can generally be divided into three categories:

1. How to protect and ensure the longevity of this invaluable historic resource.
2. How to accommodate the ever-increasing space needs of a burgeoning non-profit institution.
3. How to balance current construction requirements and schedules with the demands of an actively used public facility.

The Ladies' Room

Before addressing these important issues, it is worthwhile to return to the project's beginning in 1997. At the Newport Casino, a donor came forward who was interested in restoring one of the original bathrooms (probably a men's room originally). While this large room had retained some of its original English encaustic floor tile and its oak partitions, the overall effect had been severely compromised by the installation of inappropriate wall tile, wall-hung sinks, and exposed plumbing pipes. Restoring the room involved selecting a more appropriate wall tile (from Minton Hollis & Co.), patching the encaustic tile floor with matching tile, refinishing the oak partitions, and resurrecting old light fixtures found in the attic. This was a fairly straightforward restoration of approximately 250 square feet of space. Then came the fire.

Figure 1. Historic image, circa 1895, of Newport Casino (International Tennis Hall of Fame)

Figure 2. Photograph of the fire from an article in the Providence Journal, *5 June 1998*

The Fire

In June 1998, a devastating fire struck the north wing of the Newport Casino (Figure 2). An ember from an electrical fire that had begun in the historic Travers Block to the north of the casino leapt over a six-foot-wide alley and found its way into one of the only unsprinklered areas of the casino—a nook in the attic where two of McKim, Mead, & White's picturesque roof forms come together to create an odd interstitial space. Amazingly, this was not the first time that the north wing had burned. In 1953, the second floor of the north wing was lost to fire and was not reconstructed until the 1980s. As a result, most of the building fabric that was damaged by the 1998 fire was not original. There was, however, considerable damage to the roof, to the function room on the second floor, and to the restaurant that overlooks the historic Horseshoe Piazza on the first floor. The day after the fire, as the north wing smoldered, the restaurateur insisted that he needed to reopen in two weeks. While it took a little more time than that to replace all of the water-damaged plaster and finishes and to install all new systems, the restaurant was able to reopen for the majority of the summer tennis season.

The reconstruction of the north wing following the fire of 1998 provided an opportunity to make several programmatic and architectural improvements. These improvements would ensure that the building was preserved well into the future and that it would serve its users as effectively as possible. First and foremost, fire detection and sprinkler systems were upgraded, including adding a new fire pump and generator, adding sprinkler heads to every conceivable nook and cranny, and installing an exterior deluge system that provided coverage to the outside of the north elevation of the building. New exhibits were designed for the International Tennis Hall of Fame Museum, a second-floor catering kitchen was upgraded, new accessible restrooms were added, and exterior details that had been missing since the 1950s fire were reconstructed. As a result, the reconstructed north wing is better protected, more suited to the owner's needs, and closer to the original building design than what existed before the 1998 fire.

The Information Research Center

Like most successful institutions that are housed within historic buildings, ITHF is constantly faced with the question of how to grow without jeopardizing the historic resource that is a critical component of its identity. Once the reconstruction of the north wing was completed, the ITHF focused on its need for a place to house and protect its extensive collection of tennis memorabilia. This would be a place that scholars could use to do research, a place where donors would feel comfortable leaving their valuable collections, and a place that the curatorial staff could use to preserve and catalog this important collection. The artifacts, which include books, prints, racquets, clothing, and trophies, need to be housed in carefully climate-controlled spaces to ensure their long-term preservation.

Ideally, an important collection like this is kept in a brand new building that has easy access and state of the art mechanical and electrical systems. To accommodate the Hall of Fame's program, however, the architect was directed not to an empty

site, but to the third floor attic of a nineteenth century wood-framed National Historic Landmark. The obstacles presented by the space that was to become the museum's Information Resource Center (IRC) included the following:

- More program than space
- No natural daylight or views to the outside
- Structural deficiencies related to existing framing and the need for storage space
- Limited headroom due to existing roof framing
- Multiple obstructions from existing mechanical and electrical equipment
- A need for multiple climate-controlled archival storage areas

Program and Daylighting

The program for the IRC included a secure reading room, a board room, office space, and as much archival storage as possible (Figure 3). The IRC would be linked to an existing office suite at the south end of the third floor, to existing stairs at the north and south ends of the building, and to an existing elevator in the north wing. Because the

Figure 4. Clock Tower Conference Room (Glenn Turner, Glenn Turner Photography)

IRC was to be housed within the roof of the Newport Casino—a building that is restricted by both a historic preservation easement and local historic district zoning—there was little opportunity for adding windows, dormers, or skylights. A limited amount of daylight was obtained by adding two windows to a recessed porch and replacing the existing door to the porch with one that included more glazing. This small change to the exterior of the building was permitted because the wall of the altered porch is recessed eleven feet behind the

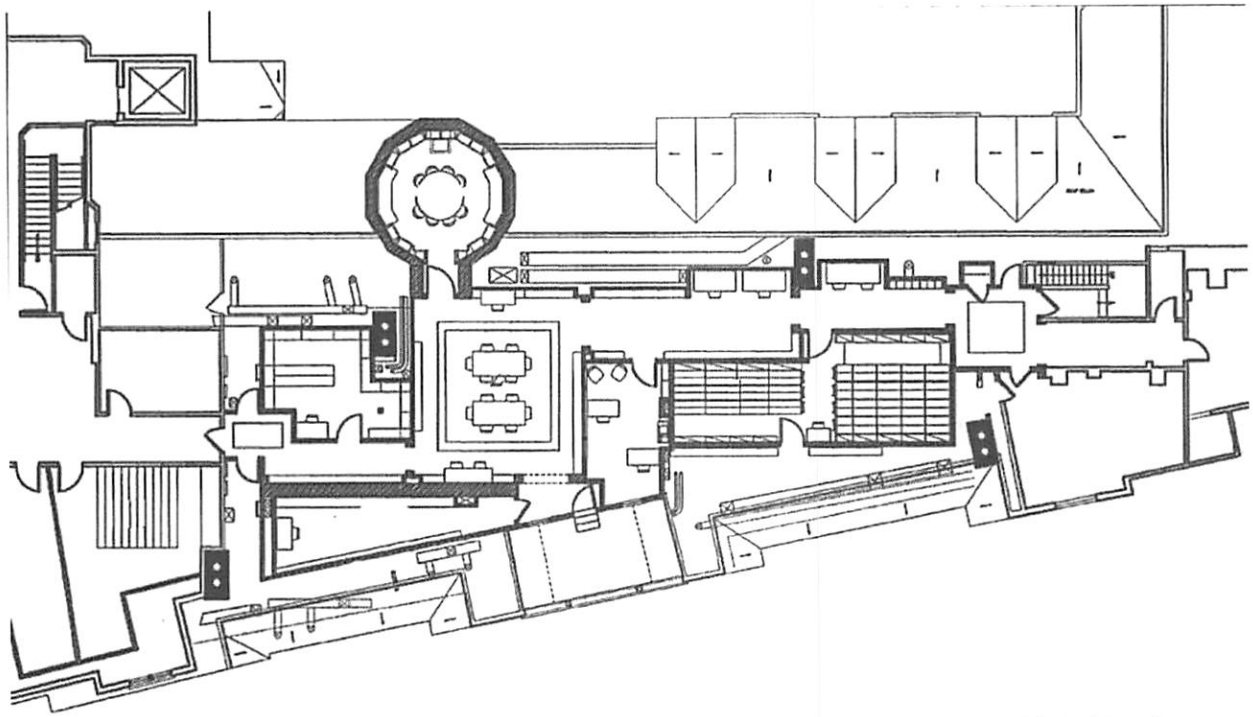

Figure 3. Partial third floor plan of Information Resource Center (Durkee, Brown, Viveiros & Werenfels Architects)

Bellevue Avenue facade. A diminutive dormer on the back of the clock tower was also preserved to provide some natural light for the new board room.

The casino featured a tower clock overlooking the horseshoe piazza. When entering the attic of the clock tower, one had to dodge structural members, step down eight inches, and walk between old cans of stored paint. In the attic, amongst the paint cans and supported on a makeshift wood stand, was the original mechanism for the tower clock. It was, in fact, a Tiffany clockwork—purportedly one of the only Tiffany tower clockworks still in existence. After numerous phone calls to New York, a very helpful clock specialist at Tiffany & Co. referred the architect to the Balzer Family in Freeport, Maine. The Balzers, who are tower clock specialists, completely restored the mechanism and fabricated new chimes to match the original grandfather chimes that had disappeared long ago. The biggest difficulty, however, was relocating the clockwork from the center of the clock tower to the outside wall, because the mechanism was attached to the rod that controls the hands of the clock, and to two weights that ride up and down the outside walls as the clock functions.

When creation of a boardroom in the attic of the clock tower was first proposed, there was an audible gasp from the board of directors. The original proposal to create a boardroom in the attic met with resistance and objections that the architects countered with a computer rendering of what the new room would look like. Though a consensus in support of this approach was eventually reached, skepticism remained right up until final occupancy. Today, the room is actively used by the board and the staff of the ITHF (Figure 4). To transform this dodecahedron space from a storage room to a boardroom, the floor was raised to the level of the rest of the attic, a false domed ceiling was constructed to bring the scale down from 30 feet to 23 feet high, the clock mechanism was moved, recessed weight pockets were framed into the exterior walls, and custom cabinetry was constructed to conceal ductwork and create built-in seating and bookshelves around the perimeter of the room (Figure 5).

Structural, Mechanical, and Electrical Systems

Several structural issues needed to be resolved in order to create the IRC on the third floor of this nineteenth-century wood frame building. Since

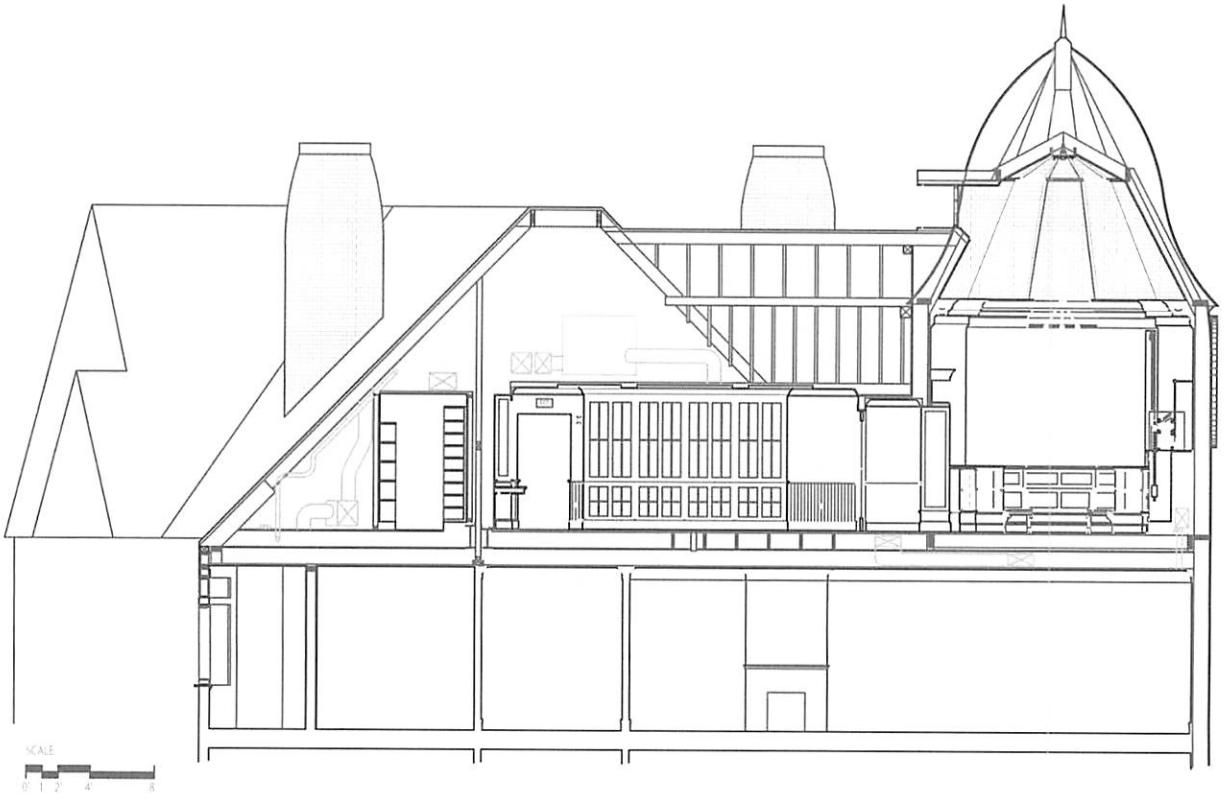

Figure 5. Section through Information Resource Center (Durkee, Brown, Viveiros & Werenfels Architects)

Figure 6. Reading Room (Glenn Turner, Glenn Turner Photography)

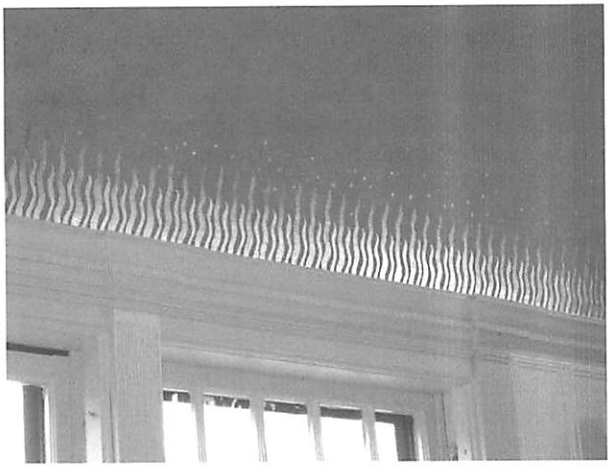

Figure 7. Restored stenciling at Enshrinement Gallery ceiling (Durkee, Brown, Viveiros & Werenfels Architects)

Figure 8. Decorative painters applying gold and palladium leaf to Enshrinement Gallery ceiling (Durkee, Brown, Viveiros & Werenfels Architects)

the third floor was constructed as attic space, the floor loading (60 psf) was far short of what is required for compact archival storage (250 psf). Accordingly, the floor framing needed to be reinforced and new transfer columns added that carry the new loads directly to the ground without over-stressing the existing wood framing. Collar ties that triangulate the roof framing were raised to create more head room over the reading room. All of this had to be accomplished while the commercial spaces on the first floor and the museum on the second floor remained occupied.

Low collar ties were not the only obstacles that existed in the attic. The space was full of mechanical and electrical equipment, duct work, sprinkler pipes, chimneys, and heavy timber trusses. Those obstructions that could be easily moved were relocated, but many had to remain and were integrated into the new design. The result is a floor plan that features the reading room (Figure 6), boardroom, and curatorial office at the center, with circulation to the archival vaults and stairs branching off to the north and south. In section, the lower height spaces at the edges of the roof were used to create study alcoves and to accommodate mechanical equipment.

Archival Storage Rooms

Preserving the building is one challenge, but in this project preserving the collection was also of paramount importance. In order to create spaces with closely controlled temperature and humidity levels, self-contained rooms were designed inside the building envelope. Within these archival storage rooms the temperature is maintained at 68 to 70 degrees Fahrenheit and the relative humidity at 30 to 35 percent. Each room has its own ethylene propylene diene monomer (EPDM) membrane roof beneath the roof of the building, its own rated wall construction, a separate mechanical system, and dry sprinkler heads. To maximize storage space, compact movable shelving was utilized.

In the end, a cramped attic space that had been used primarily for storage was converted to an attractive, functional resource center enhancing and preserving both the collection and the building. In addition, the board of directors has a room that it truly appreciates.

Billiard Room

Because the International Tennis Hall of Fame is an ever-growing and evolving institution, there always seems to be new projects to tackle. Recently, the architectural team was asked to restore the ceiling of the casino's original Billiard Room. Today, the Billiard Room functions as an Enshrinement Gallery for tennis players who have been inducted into the Hall of Fame; it is the first space one enters when visiting the museum. The room features a vaulted plaster ceiling, redwood paneling, and an ornate wood and marble fireplace surround. Because the vaulted plaster ceiling was cracked and water stained (from earlier leaks that had been addressed), it was the first feature to be restored.

Careful chemical paint removal revealed a very interesting stencil pattern at the spring line of the vaulted ceiling just above the wood cornice that caps the wall paneling. Suggestions of the stenciling also show up in a historic photograph of the Billiard Room. Ironically, given the building's history, the stencil pattern depicts flames of alternating silver and copper colors with small "sparks" rising above. After making templates and trying several methods for recreating this pattern, it was determined that the best effect was achieved by gilding alternating flames with Guisto Manetti 23K gold leaf and 100 percent Palladium leaf. Once dry, the gilded surfaces were burnished with soft sterile cotton. Prior to applying the stencil, the field of the ceiling was sprayed with non-tarnishing, bronze based enamel. A custom colored glazing liquid was then applied and rag textured to create a mottled background finish (Figure 7).

Naturally, the Enshrinement Gallery had to remain open during the restoration of the ceiling. To accomplish this, the contractor constructed scaffolding that would enable museum visitors to view the gallery beneath a platform from which workers were stripping paint, applying finishes, and gilding flames. While this resulted in rather cramped work quarters for the decorative painters (Figure 8), it did enable the museum to remain open.

Conclusions

The Newport Casino was built for recreation—from lawn tennis and billiards to archery, horse shows, lawn bowling, and theatricals. It continues to house a variety of recreational activities including lawn tennis, court tennis, tournament croquet, and jazz concerts. It is also home to the International Tennis Hall of Fame, a renowned cultural institution. Accommodating today's uses means that the building must evolve with its occupants' needs. The challenge for the architect is to balance ever-present preservation requirements with the need to accommodate the owner's changing program. At the Newport Casino, meeting that challenge included everything from finding new tile for a historic bathroom to relocating a Tiffany clockwork to creating a boardroom in a former clock tower attic.

Martha Werenfels is a principal at Durkee, Brown, Viveiros & Werenfels Architects, a thirty-person architectural firm in Providence, Rhode Island. Her work over the past twenty years has focused on the preservation and adaptive reuse of historic buildings. Ms. Werenfels received a Bachelor of Architecture from Cornell University and a Master of Arts in American History from Brown University. She is past president of AIA/Rhode Island and currently serves on the AIA Committee for Communities by Design.

Project Team

Owner
International Tennis Hall of Fame
Mark Stenning, Chief Executive Officer
Mark Young, Librarian
Ken Ferrebee, Director of Buildings and Grounds

Architect
Durkee, Brown, Viveiros & Werenfels Architects
Martha L. Werenfels, Principal
Providence, Rhode Island

Structural Engineer
Odeh Engineers, North Providence, Rhode Island
M. David Odeh, Principal

Mechanical Engineer
Wilkinson Associates, Warwick, Rhode Island

Electrical Engineer
Associated Engineering, Inc., Rumford, Rhode Island

Contractor
Walsh Brothers, Boston, Massachusetts

Clock Restorers
Balzer Family, Freeport, Maine

Architectural Woodwork
Jutras Woodworking, Smithfield, Rhode Island

Decorative Painter
E. F. O'Donnell & Sons, Providence, Rhode Island

The Georgian Court Casino
A Heritage of Preservation

Anne E. Weber, AIA
Senior Associate
Farewell Mills Gatsch Architects
Princeton, New Jersey

The Georgian Court estate in Lakewood, New Jersey, was built at the end of the nineteenth century by George Gould, son of railroad tycoon Jay Gould. Located fairly close to the Gould's main residence in New York, it was intended to provide the benefits of country living for the large Gould family, and to facilitate a social life with an emphasis on recreation. When the recreational activities of the outdoors alone proved insufficient, the Georgian Court Casino was constructed to provide additional opportunities.

Like many of the grand estates built during the Gilded Age, Georgian Court did not remain in private hands. The order of the Sisters of Mercy purchased the property in 1924, transforming the Gould's country home into a women's college (now known as Georgian Court University) by adapting the estate's original buildings to meet the school's needs. The casino, especially, remained relatively unchanged for several decades.

Between 1924 and the mid-1990s, the Sisters of Mercy unknowingly preserved the Georgian Court Casino according to the Secretary of the Interior's Standard for Rehabilitation. While finding compatible new uses for the casino, the sisters did an excellent job of maintaining the original character of the building. However, by the mid-1990s, the demand of growing enrollment and the pressure to expand facilities encouraged the consideration of new uses for the casino. In 1995, the university commissioned a Preservation Master Plan to guide these efforts, which are still in progress ten years later.

History and Significance

As part of the Master Plan preparation, it was important to understand the history of the property and to be able to evaluate the significance of the casino. George Jay Gould, born in 1864, was the eldest son of Jay Gould of Lyndhurst, the noted financier and railroad baron. He grew up in New York, at Lyndhurst, and was trained to become his father's successor in the world of finance and railroads. In 1886, George Gould married Edith Kingdon, the ingénue actress, and soon began what would become a large family. Their growing family led the Goulds to contemplate a country estate where they could live in the style of English gentry. The Goulds had enjoyed extended visits to Lakewood, and so they purchased a 200-acre tract in 1896, and commissioned Bruce Price to design an estate. Price and Gould settled on the English Georgian as an appropriate model, thus coining the name Georgian Court.

The Goulds broke ground for the mansion in January 1897, and moved in one year later despite incomplete interior decoration. The mansion included all the necessities of the Gilded Age—morning room, music room, library, billiard room, conservatory, and great hall, all rendered in elaborate materials and decorated with allegorical and ornamental painting.

The Casino

Georgian Court became the center of a social life of entertainment and recreation. After adverse weather conditions caused a house party in December 1898 to fail, George Gould commissioned Bruce Price to design an indoor recreational complex. The casino, originally known as the Bachelors Court, was located about one-quarter mile from the mansion and covered an area of about 49,000 square feet. The primary purpose of the casino was to replace or augment outdoor recreational activities. Cost-saving measures taken during construction of the mansion had left it too small to accommodate all of the Goulds' overnight guests. Many of these sporting guests were either bachelors or men visiting without their wives, hence the name "Bachelors Court."

A large central tanbark ring, used for equestrian events and polo practice in inclement weather, dominates the casino. The ring is covered by a steel trussed hip roof with a large central skylight; the walls are brick, with patterns of buff and red brick making up the decorative scheme.

Surrounding the ring are the other sporting venues and the guest suites. The ballroom, swimming pool, and sports lounge, complete with baronial fireplace and marble steam rooms are to the south. A series of guest suites and the observation area for the ring occupy the second floor. To the east, a bowling alley at the first floor sits below more guest suites. To the west, squash and handball courts occupy the ground floor and lower level. These courts, like the ring, are skylit. More guest suites are located above the lounge area outside the courts.

Two of the most unusual features of the casino, the court tennis court and the racquets court, are located to the north of the ring. Court tennis, a game of medieval original, was the pre-cursor of lawn tennis. Called real tennis in England and jeu de palme in France, court tennis was a game of the elite, partly due to the expense of building and maintaining a court. The Gould's court tennis court was supposedly only the second private court in the United States. Racquets was a game in which hard balls were hit around enclosed spaces. It appears to have been invented in the early eighteenth century by English prison inmates. By the end of the nineteenth century, however, racquets had developed into an elite pastime; it also spawned the modern game of squash.

Court tennis originated in monasteries, where monks hit balls with their hands off the interior walls of cloistered courtyards, developing scoring systems and rules based on the architecture of these spaces. The game became more standardized as indoor courts were constructed specifically for tennis starting in the fourteenth century. These courts contained stylized versions of the architecture of the cloisters: the tambour represents a flying buttress; the grille, a buttery hatch; the penthouse, the roof of the cloister; and the galleries, the cowshed.

Court tennis is thought to have been introduced into the United States in 1876, when a court was built in Boston. The second American court tennis court was built in 1880 at the Newport Casino in Rhode Island. At the Georgian Court Casino, court tennis became a particular passion of George Gould's son Jay Gould who became an expert court tennis player, U.S. champion from 1906–1925, Olympic champion in 1908, and world champion in 1914.

The Georgian Court Casino was the scene of many and varied sports and entertainments while the Goulds lived there. The ring was used for a living chess game and for other non-athletic events and spectacles, including a circus. The Goulds kept up their lavish lifestyle as a model happy family until 1921, when Edith collapsed and died while playing golf. George re-married in 1922 and died while on a trip to Europe with his new wife and their three children in 1923.

The Private Estate Becomes a College

In 1924, the Sisters of Mercy of North Plainfield, New Jersey, bought the Lakewood estate for $800,000, about half the asking price, to house their expanding College of Mount St. Mary's. At the request of the Goulds, they retained the name and the school became Georgian Court College. The sisters viewed their acquisition of the estate as

an act of providence and they treated the property well. The estate fit their needs perfectly in many ways, although the lifestyle of a convent and Catholic college could not have been more different from that of the Goulds.

The mansion was used for housing and public functions, the stables were converted to classrooms and a chapel, and the casino adapted for athletic programs and offices. A wood floor was added to the ring to make a basketball court and auditorium. The sports lounge was converted to marble-clad locker rooms. The pool served its original purpose. The guest suites were reused for offices, and other facilities were adapted when they could be, or otherwise left vacant and unused. The school allowed visiting players to use the court tennis court, which occurred on an intermittent basis through the years.

By the mid-1990s, the ballroom had become a snack bar, the area outside the squash courts a fitness center, and the racquets court was used for storage, despite its leaking skylight. The squash courts were unusable due to roof and skylight leaks, which had severely damaged the wood floors. The bowling alley was idle, with the equipment in disrepair. And the court tennis court also suffered from leaks, with water pooling on the special red cement floor.

The Casino Master Plan

Given the casino's deteriorating state, the Sisters of Mercy realized that they had a large project on their hands, but one that could benefit the school if undertaken properly. In 1995, they commissioned Ford Farewell Mills & Gatsch Architects, LLC, to prepare a Preservation Master Plan for the casino, along with concepts for adaptive use of underutilized spaces. The Master Plan included an assessment of the significance of the various parts of the building, with consideration given to balancing the historic significance of the spaces with the needs of the university.

The racquets court is a case in point. As one of fewer than ten courts surviving in the country, it is undeniably significant. However, there are very few racquets players, and no likelihood of developing a racquets program for the university community. Pressed for space, the university could not realistically devote a large amount of space to what would be a completely unused room without public benefit. This court was classified as a rehabilitation space, where existing architectural details would be retained, but new construction could be added, and the use could be changed. Similarly, the squash courts are classified as rehabilitation spaces. They are potentially useful as courts to the university, but would require additional safety equipment and some re-surfacing in order to be used regularly.

The U.S. Court Tennis Association has remained in contact with Georgian Court University, to assure the court will remain intact. The sisters recognize the importance of the court, and have always held a commitment to its maintenance and restoration. As a result, this court, as well as the ballroom, the swimming pool, and the bowling alley, is classified as a restoration zone.

As part of the Master Plan, the architectural team also completed a thorough evaluation of the physical conditions of the casino. The surviving original metal roof and skylight over the racquets and court tennis courts were severely deteriorated. The original metal roof and skylight over the ring had been covered with white asphalt shingles. The exterior envelope—stucco over brick with terra cotta, glazed brick, and marble trim—was highly deteriorated. The terra cotta elements were heavily damaged, and the glaze on the bricks was largely gone.

The most severe interior deterioration was associated with roof leaks, particularly in the squash and court tennis courts. Besides years of wear, incompatible alterations had been made to accommodate new uses. Fortunately, little alteration had been made to significant original fabric, and most of these interventions could be easily removed.

The Master Plan presented recommendations for correcting these deficiencies, and estimated costs. It also addressed revisions that would be required by the fire code and building codes, as the building would be more intensively used. The guest suite areas in particular were comprised of long, dead-end corridors; additional exits would be required to use these spaces as offices. The main stair in the building was not enclosed, and the corridor walls were not fire rated. Many parts of the building were also not accessible to the disabled, although an elevator in the southwest corner provided access to a portion of the second floor. There were

no barrier-free men's restrooms, and no access to the court tennis court. Also, the stage in the ring area had no fire protection.

Looking to the Future

The Master Plan presented concepts for future use and development of the casino, with the projected work organized in seven phases. The first phase included the exterior envelope rehabilitation, replacement of all roofs except the roof over the ring, code compliance upgrades to stairs and corridors, redesign of the stage with fire protection, and fire protection and electrical work in the basement. This work was completed in 1997.

The second phase included redesign of the fitness center and the offices of the west wing, while the third phase included redevelopment of the Racquets Court, either as an auditorium or two multi-purpose rooms with a floor inserted. Phase 3 would also include rehabilitation of the east wing offices. Phase 4 would be restoration of the ring and south offices; Phase 5 would include rehabilitation and redesign of the locker rooms. Phase 6 would be the restoration of the primary intact historic spaces. Finally, in Phase 7, the roof over the ring would be replaced and the skylight reopened.

While providing helpful directives to the university, the plan's concepts for future use and development are also meant to be flexible, so that many different orders and combinations of work items may be possible. This has proved to be true. After a highly successful completion of the first phase as outlined in the report, the university has completed projects as they have been funded by donors or grants, and not necessarily in the order projected by the plan.

Benefits of the Master Plan

Development of a plan has allowed the school to target donors and proceed with fundraising. The New Jersey Historic Trust funded part of the first phase, and the New Jersey Higher Education Facilities Trust Fund provided support for the new stage and fire protection. The conscientious Sisters proved to be model grantees, as the New Jersey Historic Trust subsequently funded restoration of portions of the campus fence and gates, and the current restoration of the court tennis court. In addition to cosmetic repairs to the court, the current project includes barrier-free access and structural repair of the roof trusses. For this project, the university also partnered with the Court Tennis Association, which will use the court on a regular basis after restoration.

The Georgian Court Casino successfully survived its transition from recreation palace of the wealthy to athletic center for a thriving university. While work to enhance this building's utility to the school remains, it has been made sound and now features restored spaces that will become a magnet for future funding. The Sisters of Mercy still treat this property as a gift from God, and will continue with their plan to use it for the advancement of Georgian Court University.

Anne E. Weber, AIA, is a senior associate with Farewell Mills Gatsch Architects in Princeton, New Jersey, specializing in historic preservation. She has lectured on accessibility for historic buildings and on the application of the New Jersey Rehabilitation Subcode.

Smith Memorial Playground and Playhouse
Restoring a Philadelphia Tradition

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Hillier Architecture
Philadelphia, Pennsylvania

As stated on its website, "Smith Memorial Playground and Playhouse provides safe, creative and fun recreational activities free of charge to children in the Philadelphia area," especially those with limited social and financial opportunity.[1]

Founded in 1899 by philanthropists Richard and Sarah Smith, Smith Memorial Playground and Playhouse is one of America's oldest non-profit playgrounds and is a beloved tradition for Philadelphia's children and their families (Figures 1 and 2). More than 100,000 children, parents, and caregivers visit Smith Memorial Playground and Playhouse annually, with 1,000 to 2,000 visitors daily during the busy May through October season. Visitors come from all Philadelphia neighborhoods, though most are from low-income families. Smith Memorial is also attended by groups from day camps, daycare centers, and community centers in Philadelphia, Delaware, Montgomery, and Chester counties.

Smith Memorial is supported by the Smith and Strawbridge Trusts as well as donations; there is no admission fee for visitors. Although situated on six acres within Fairmount Park, the park provides only tree and trash removal. Smith Memorial is responsible for privately maintaining its buildings and landscape. This financial arrangement has proven challenging. Due to a lack of funds and years of deferred maintenance, Smith Memorial was forced to close some of its facilities in May 2003.

Prior to this closure, facilities included the 24,000 square foot playhouse with three floors of activities for children age five and younger; the playground, with over thirty pieces of equipment; and the ninety-five year old wooden Giant Slide. At present, the playhouse is the only facility open for visitors. As Smith Memorial's historic structures and landscapes continue to age, and as its programs continue evolving to meet the changing needs of the community, renovations and new construction are required to return the Playground to the children of Philadelphia.

A Master Plan for the restoration and renovation of Smith Memorial Playground and Playhouse was completed in March 2004, with the intent of providing a modern, fully-accessible, safe, and fun experience for future generations. Smith Memorial is now proceeding with this restoration and renovation project, which will be divided into multiple phases that are contingent upon the success of its fundraising campaign.

This paper will present the work carried out in Phase 1, which includes restoration of the historic Giant Slide, with its new Tree Walk providing

Figure 1. Playhouse, 1907 (Smith Memorial Playground and Playhouse)

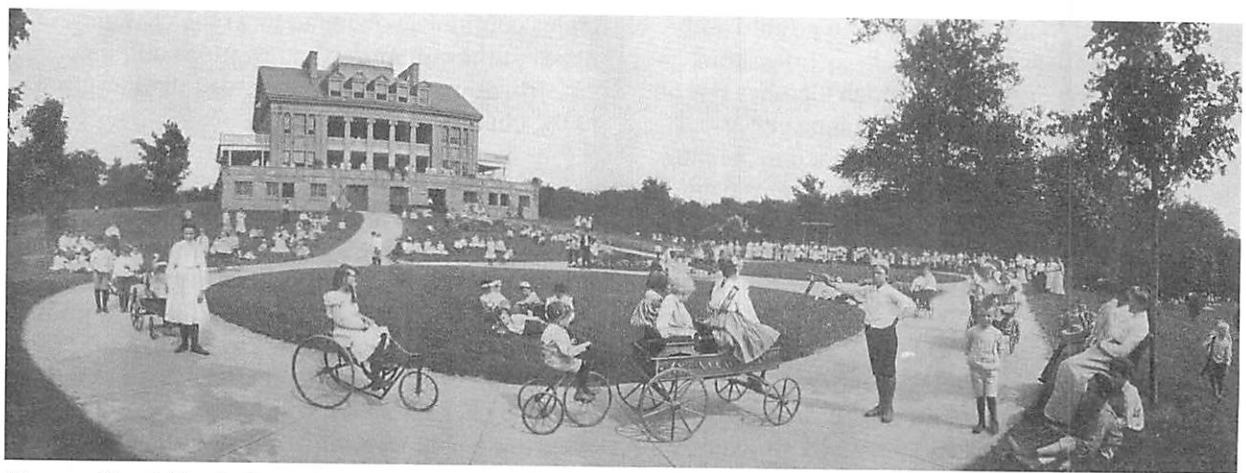

Figure 2. Bicycle Track, date unknown (Smith Memorial Playground and Playhouse)

access for both typically-developing and disabled children. This phase also includes design of the new Gateway Building, containing restrooms, a staff office, and three play areas on the south side of the playhouse. New play equipment will be ground-based, similar to the historic play equipment at Smith Memorial Playground, and will be appropriate for a variety of age groups. A ground-based play component is an item that can be approached and exited at ground level via an accessible route, as opposed to an elevated play component that is reached from above or below grade and is part of a composite play structure.

The goal was to finish the design work for all of Phase 1, with an expedited package for the Giant Slide, and complete the construction of the Giant Slide restoration and Play Area C in time to reopen in July 2005. The dedication of the restored Ann Newman Giant Wooden Slide occurred on 14 July 2005. Phase 2, including three additional play areas for older children, was designed by the author while at Hillier Architecture and was completed in July 2006. Future phases will include construction of the new Gateway Building, new parking areas and entrance driveways on the east side, and the restoration and renovation of the historic playhouse itself.

Site Improvements

Entrance drives and parking will be relocated to the street side of the property, separating areas of vehicular traffic from pedestrian and play areas (Figure 3). A new service drive will provide handicapped access to the playhouse. The front picnic lawn, where food is permitted, will be separated from the playground areas, where food is not permitted, by new decorative metal picket fencing.

Smith Memorial is committed to providing handicapped access to all playground areas. New handicapped-accessible pathways will link the new parking, Gateway Building, and all play areas so that typically-developing and disabled children can play together.

A full inventory of existing trees was performed. Unhealthy trees and invasive species will be removed. The majority of specimen and healthy trees will be retained.

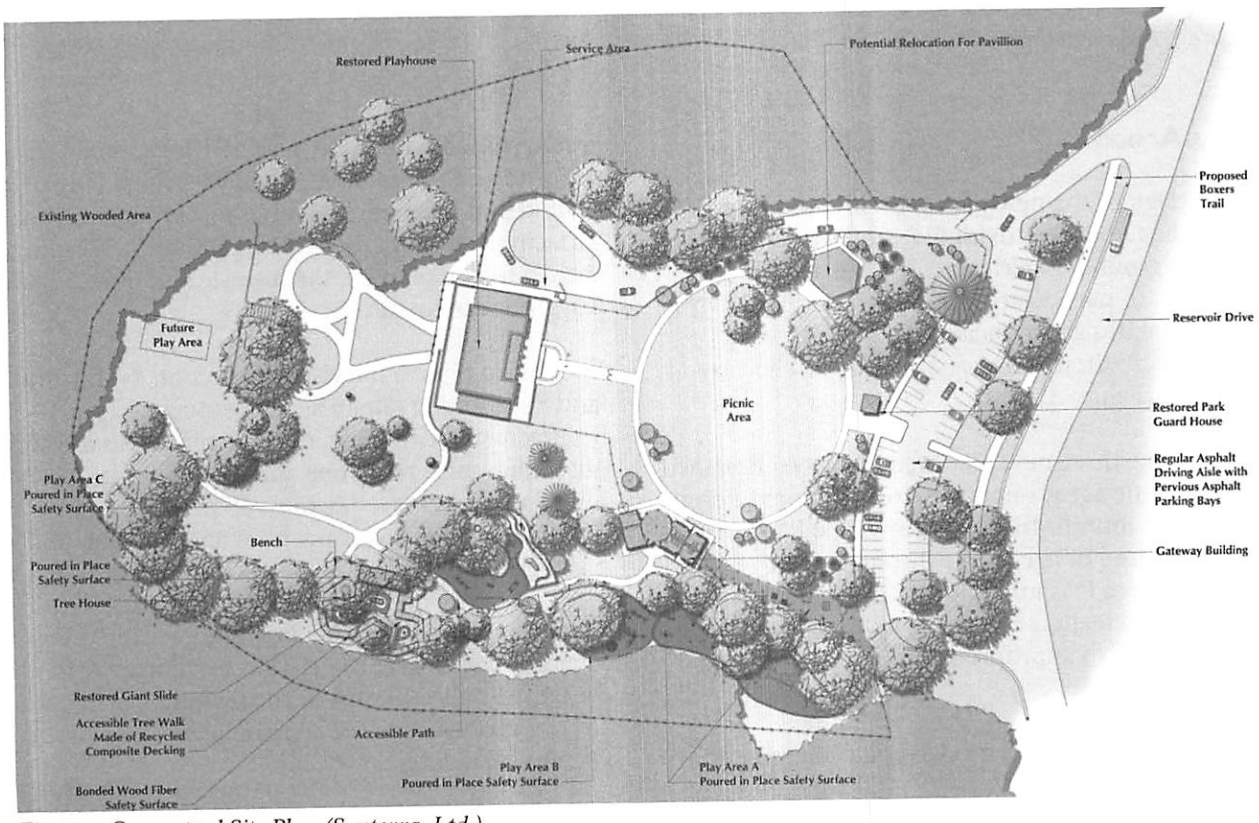

Figure 3. Conceptual Site Plan (Synterra, Ltd.)

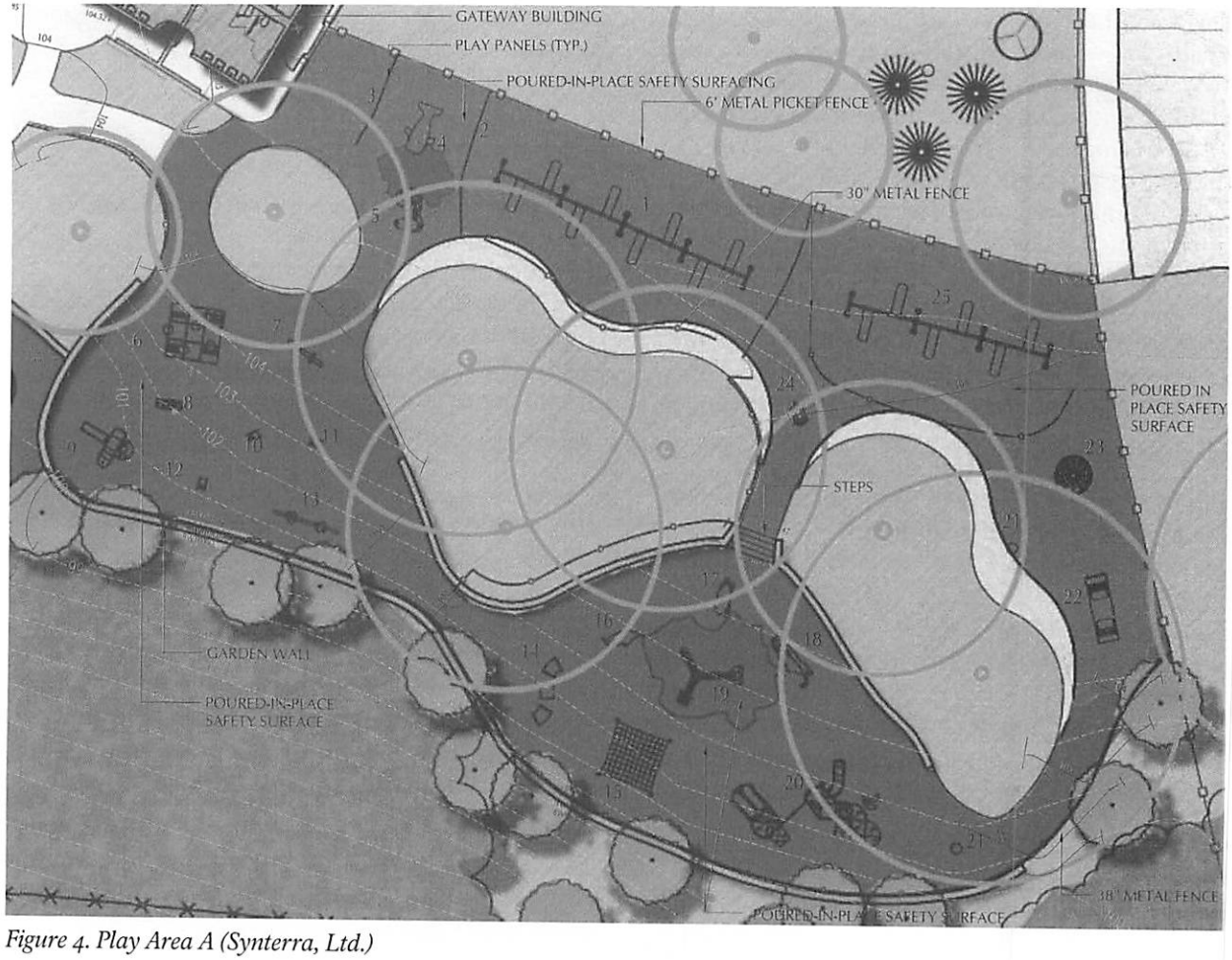

Figure 4. Play Area A (Synterra, Ltd.)

Play Areas

The design of the new play areas is based on the overriding goal of providing a modern, safe, and fun playground experience for Philadelphia children. In particular, based on the principles of "universal design," typically-developing and disabled children will access play areas and play together (Figure 4).

Each of the three new play areas has been designed for a specific age group: Play Area A is for children of ages six months through four years; Play Area B is for children of ages three through seven years; and Play Area C is for children five through ten years. The selection of play equipment for each play area is also appropriate for each specific age group.

Although high-quality, modern play equipment that meets all of today's safety guidelines and standards will be provided, this equipment will be ground-based and reflect play activities similar to the historic equipment at Smith Memorial Playground and Playhouse. Rubber playground safety surfacing will be installed at all play areas, in colors chosen to complement the historic and new playground structures.

In order to reduce the visual impact on the historic landscape and maintain as many specimen and healthy trees as possible, the new play areas are laid out to minimize regrading and maximize the number of trees saved, while still providing sightlines for supervision within and between the play areas.

Sitework materials, particularly the concrete block retaining walls, were selected to harmonize with the existing glazed brick of the historic Playhouse and the ground-face concrete block of the new Gateway Building.

Giant Slide

Ever since its construction in 1905, the wooden Giant Slide has been Smith Memorial's "signature" piece of playground equipment (Figure 5). The goal of this project was to restore the Giant Slide to its original appearance. The challenge to the design team involved the following issues:

- Restore the original open-air pavilion quality of the Giant Slide while allowing the slide to be secured at night and during inclement weather
- Provide accessibility to all children; include queuing space and a single point of access for typically-developing and disabled children together
- Satisfy all modern safety guidelines and standards, balanced with issues of historic preservation

A later shed addition at the top of the slide was removed. Another addition at the bottom of the slide provided additional shade, but posed a safety hazard because it encouraged children to congregate at the bottom of the slide. This second addition was also removed.

On the interior, an existing stair was removed because it could not be rendered "safe" (i.e., meet modern playground safety guidelines and standards) without providing separation between the slide and the stair, destroying the open-air quality of the slide building. In addition, continued use of the stair would have provided two points of access, one for typically-developing children and one for disabled children, causing supervision and safety concerns.

According to the National Electronic Injury Surveillance System (NEISS) and the Consumer Products Safety Commission, the most frequent cause of fatal injury at playgrounds is entanglement at slides. The major safety concern at the Giant Slide was posed by the entanglement hazard caused by the vertical posts and bead-board walls at the interior of the slide building. A new interior face of wall was provided above the existing wood base and to the height of the window sills. This wall is composed of bead board that matches the existing board but is flush with the interior faces of the vertical posts, eliminating the entanglement hazard.

Figure 5. Giant Slide, date unknown (Smith Memorial Playground and Playhouse)

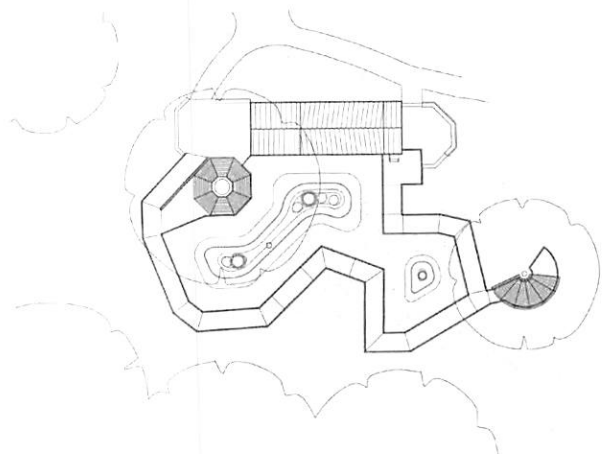

Figure 6. Giant Slide and Tree Walk (DPK&A Architects, LLP)

A further safety problem was caused by the existing sills being as low as 30 inches above the slide surface whereas modern safety guidelines and standards require an entanglement-free zone a minimum of 42 inches high. Three options to address these issues were considered by Smith Memorial and reviewed by the Philadelphia Historical Commission:

- Option 1 – stainless steel wire cloth, 1/16 inch by 1/16 inch square, 61 percent open area, filling all window openings and flush with the interior face of the vertical posts
- Option 2 – 12-inch high impact-resistant glass panels, in stainless steel frames, located at the bottom third of all window openings and flush with the interior face of the vertical posts

- Option 3 – sills and roof raised 12 inches so that the lowest sill is 42 inches above the slide surface, negating the need for any infill at the window openings

Option 3 was chosen and implemented. Although this option resulted in a slightly greater quantity of original fabric being removed and replaced, it was determined to be the most successful in terms of preserving the original experience of the open-air slide building, while satisfying safety standards.

A wood sit-down bar was provided at the top of the slide in order to force children to sit down before entering the slide and to prevent them from running back up the slide. New terraces, covered in playground safety surfacing, were constructed at the top and bottom of the slide, providing opportunity for adult supervision and seating.

All deteriorated components, including wood and metal roofing, roof decking, rafters, and bead-board siding and shutters, were removed and replaced in kind. The existing large shutters were divided in two to improve ease of operation. New bead-board doors were provided at the top and bottom of the slide. The wooden slide surface was repaired and refinished, and the building's paint colors were restored to the original two shades of green.

The most exciting enhancement to the Giant Slide is the new Tree Walk (Figure 6). This feature, built of recycled composite decking, provides queuing space and a single point of access at the top of the slide for both typically-developing and disabled children. It is designed as a new play experience, with tree houses, ramps, and bridges. Its boardwalk structure, elevated above grade, allows existing trees to remain. In particular, the tree house near the bottom of the slide permits retention of an existing large sycamore tree that otherwise would have to be removed due to the low height of its limbs. At the top of the Tree Walk, a new access door and stair with handicapped transfer is provided into the Giant Slide.

Hexagonal Pavilion

Located adjacent to the top of the Giant Slide, the Hexagonal Pavilion was originally used as a sandbox, a use that is no longer permitted for safety and sanitary reasons in public playgrounds in Philadelphia. Most recently, the pavilion was used as a picnic enclosure but Smith Memorial will not be allowing food within the new playground areas. Therefore, there was no programmatic use for the pavilion in its original location, and it has been dismantled and will be stored temporarily for future reconstruction adjacent to the new picnic lawn.

Gateway Building

The new Gateway Building is intended to provide a single point of access and control, as well as visitor amenities, for the restored playground (Figure 7). Particular consideration was given to security issues and durability of finishes and fixtures.

The program includes accessible restroom facilities. Since the picnic lawn and playground areas are to be separated, two sets of restrooms are provided. An octagonal open-air gathering space provides an area for large groups to congregate before entering the playground, while still allowing the playground to be secured at night with decorative metal gates. An office, with windows to the gathering space and supervisory views to the playground areas, and a vending space for the picnic lawn are also included.

The design of the Gateway Building complements the scale and vocabulary of the other playground structures, particularly the Giant Slide and the Hexagonal Pavilion, in order to harmonize with the park landscape and reduce its impact on the front view of the playhouse. A base of ground face concrete masonry units will have a color similar to the glazed brick of the playhouse and the new retaining walls in the play areas. Fiber cement lap siding and trim with a painted finish will give the appearance of wood siding but with increased durability and reduced maintenance. A standing seam metal roof will be provided, similar to the Giant Slide. Finally, paint colors have been chosen to complement those of the Giant Slide, Hexagonal Pavilion, and other playground structures.

Conclusion

The long-term success of this project depends on the acceptance and support of key community leaders, as well as the design team and Smith Memorial representatives. A holistic, integrated team approach to the design process, involving Smith Memorial board members, staff, program participants, and community members, in addition

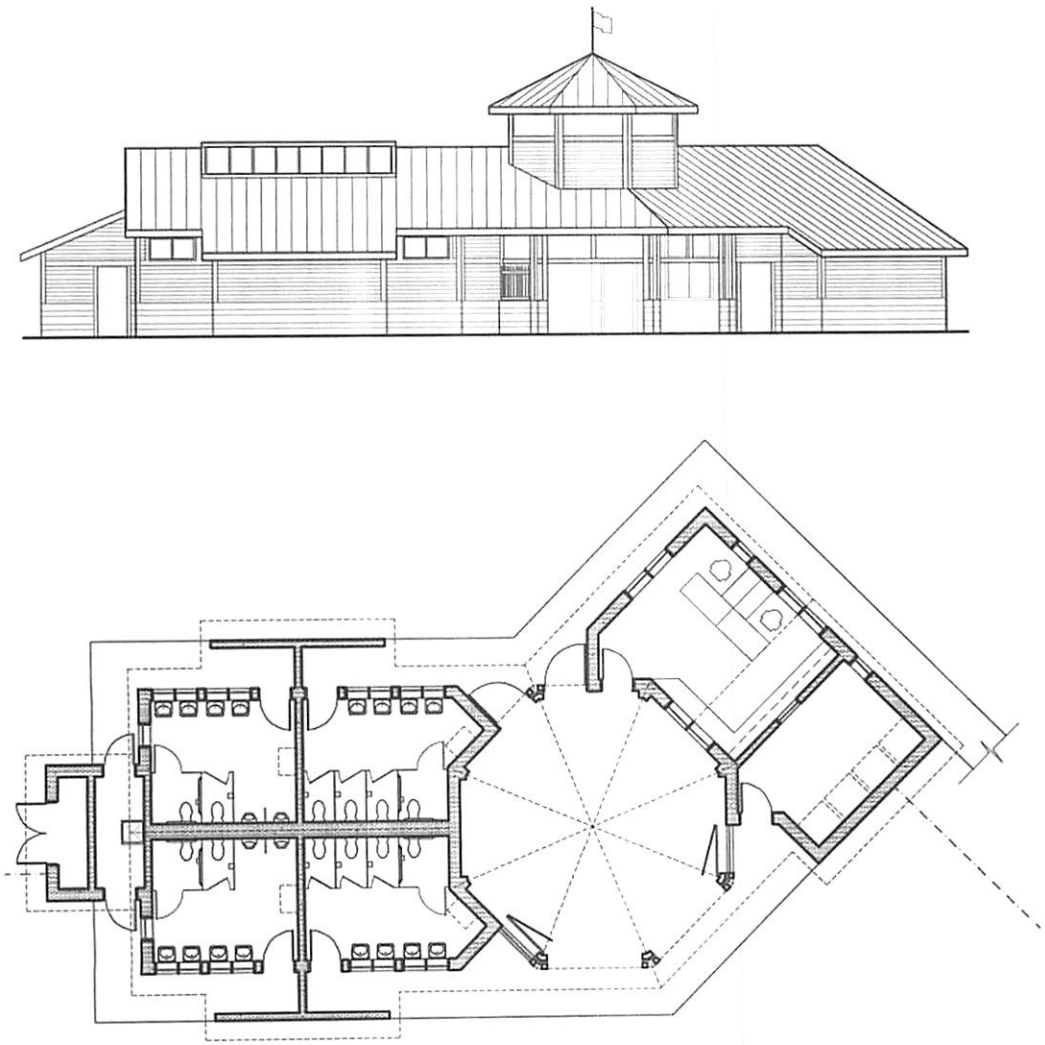

Figure 7. Gateway Building, elevation and plan (DPK&A Architects, LLP)

to the architectural design team, has been critical in achieving the desired consensus and ultimate success.

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All work was performed while Mr. Hotes was a Senior Associate at DPK&A Architects, LLP, of Philadelphia, Pennsylvania.

Notes

1. www.smithplayground.org

The Analysis and Restoration of the WPA Outbuildings in the Wissahickon Valley

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During the Great Depression, the Works Progress Administration (WPA) funded a three-phase project to improve the Wissahickon Valley in Philadelphia's Fairmount Park. One of many WPA projects in Fairmount Park, this particular work included the construction of outbuildings along the Wissahickon Creek designed in the rustic style promoted at the time by the National Park Service. In 1996, after a long period of neglect and a threat of demolition, new scholarly attention demonstrated the importance of the buildings and provided recommendations for their restoration. Since then, a collaborative effort has begun between the Fairmount Park Commission and a local Friends group using this research to restore the buildings and provide them new uses.

Fairmount Park's Wissahickon Valley, located in the northwest corner of Philadelphia, consists of 1,372 acres of steep valley walls covered with evergreen trees that edge the Wissahickon Creek. A striking landscape that has been compared to an alpine gorge, the valley was one of the first landscapes nominated as a National Natural Landmark (in 1964).[1] It is home to miles of trails for hiking, biking, and horseback riding, popular fishing spots, and many picturesque picnic areas (Figure 1). Yet the Wissahickon, known for its secluded and rural appearance, presents an anomaly: it is actually located in the midst of a major city.

The Wissahickon was acquired by Fairmount Park in 1868,[2] immediately becoming one of the park's most beloved attractions; however, its appeal was widespread long before this time. In the nineteenth century, the Wissahickon was world renowned, some considering it in the same light as Niagara Falls. It was the subject of works by leading artists and writers such as James Peale, Currier and Ives, Fanny Kemble, and Edgar Allen Poe.[3] There were at least seven inns catering to tourists along the creek, and public transportation provided easy access for city dwellers.[4] However, despite its appeal as a natural area, the Wissahickon was not always as tranquil as it is today. Before becoming part of Fairmount Park, more than sixty mills lined the creek and a turnpike along the length of the creek enabled transportation of goods to the city.[5]

Most of the existing structures were quickly removed from Fairmount Park over the next ten years, transforming the Wissahickon into a picturesque "natural" landscape typical of late nineteenth century city parks.[6] Early in the twentieth century, after citizens protested allowing automobiles in the Wissahickon, the upper turnpike was closed and nicknamed Forbidden Drive, assuring that the park would retain its pictorial character.[7] One of the groups organized for this cause, the

Friends of the Wissahickon, to this day is dedicated to the Wissahickon's conservation and preservation.[8]

As Fairmount Park was acquiring the Wissahickon, wealthy Philadelphians began moving to the adjacent neighborhood, Chestnut Hill, and building massive stone estates. The stone, Wissahickon schist, came from a local quarry, operated by two recent immigrants from northern Italy, Augustina Marcolina and Emilio Roman.[9] The men began to coax masons to follow them, and between 1890 and 1905, more than half the population of their Italian village moved to Chestnut Hill.[10] The construction boom continued for years, forever characterizing Chestnut Hill by its Wissahickon schist buildings.

With the onset of the Great Depression, development slowed and the local stone masons found themselves out of work. The sense of social responsibility was strong in Chestnut Hill, and the established residents began creating make-work projects throughout the neighborhood. One local resident and president of the Friends of the Wissahickon, Senator George Woodward, even donated land and funded the creation of a new section of Fairmount Park. Development of the land required construction of new stone walls and an elaborate stone entry gateway.[11]

Relief organizations such as the Civil Works Administration (CWA) and the Local Works Division (LWD) also began projects in the Wissahickon. Most were landscaping projects that did not help the masons.[12] In 1935, the Works Progress Administration (WPA) took over the work of the LWD and together with the Friends of the Wissahickon built the Harper's Meadow picnic shelter.[13] Although constructed of local stone, the shelter had a formal quality that was very different than typical park buildings.

The creation of the CWA, LWD, and WPA was very timely for Fairmount Park. In 1931, with more than 500 men working in the Wissahickon alone, the park commission considered the park to be in the best condition since it was established.[14] However, that opinion was not shared by all. At the time, Fairmount Park was criticized nationally for being old fashioned. Trends in park design had changed from romantic beauty to active recreation and Philadelphia had not kept up.[15] In 1935, Lebert Weir, the director of the National Recreation Association, completed a study of Fairmount Park

Figure 1. Enjoying the Wissahickon circa 1900 (Francis B. Brandt, The Wissahickon Valley: Within the City of Philadelphia. *Philadelphia, Pennsylvania: Corn Exchange National Bank, 1927)*

and found it sorely deficient. He stated that "The Philadelphia park system is about the only great park system in the United States that has not kept pace with the wider conception of the human services."[16] He recommended that the park commission add playing fields, swimming pools, picnic shelters, and toilet buildings, among dozens of other services that would encourage city dwellers to be active and enjoy the outdoors. Fairmount Park found the WPA a perfect instrument for modernization, and between 1935 and 1942, it used WPA labor for more than $16 million in projects.[17]

Local legend has it that the project entitled "The Improvements and Developments of the Wissahickon Valley" was started at the suggestion of one of the Friends of the Wissahickon as a small WPA project that would employ the local stone masons.[18] Apparently, the park commission believed that the initial plan was too modest and proposed a massive three-phased project intended to transform the "natural" wilderness area into a recreational prize. The proposal submitted to the WPA included improvements to the picnic areas, repairs to the fences, new recreational facilities such as tennis courts and backstops, and the construction of toilets and shelters. The specific description of work on phase one alone requested:

> Improvement and Development of the Wissahickon Valley. Building 10 picnic areas, establishing lawn areas, 12 toilets, 12 shelters, 4 large shelters, planting 1,168 trees, 10,000 plants, quarrying, repair 3 dams, 6,000 cy masonry, bldg. 200 rest seats and 80 rustic benches, seeding and installing waterline for golf course, 14,675 feet cable safety fences, 600 picnic

benches, redressing footwalks and baseball fields, 16,000 feet of bridle paths with 12 rustic bridges, 439 cy stone retaining walls, 6 tennis courts, 3 baseball backstops, repairing of 9,950 feet of fence and building 10,356 feet of new fence. Exclusive of any other project specifically approved or applied for.[19]

The massive proposal included work for 1,003 men on relief and 28 non-relief men for ten months. The enormity of the endeavor is reflected most vividly in the total cost, estimated to be $833,869. This first portion of the Wissahickon Valley improvements was approved by the WPA on 28 August 1937, but work did not begin until November and then not without controversy.[20]

When word of the size of the project was released to the public in October, it created an uproar. The idea that the WPA would ruin the natural wonderland created sixty years prior horrified the neighbors. Newspapers published scathing articles about the park's plan to commercialize the Wissahickon with titles such as "Cool on Hot Dog Stands in the Wissahickon" and "Hot Dog Stand Menace Looms in the Wissahickon." (Figure 2) The project was referred to as creating an "amusement park." Senator George Woodward was quoted as stating simply, "I think the plans are rotten," while Judge McDevitt representing the Saddlehorse Association went so far as to describe it as "sacrilegious and disgraceful."[21] In early November, Senator Woodward wrote a letter to the chief executive of the WPA, Harry Hopkins.[22] Although Hopkins claimed to have little influence, shortly afterwards federal landscape architects reviewed the project, and on 12 November, the WPA and the park held a public meeting to display the plans and models of a much scaled down project.[23] Six days after this meeting, the project was formally approved to construct three guard shelters, three toilet buildings, three picnic shelters, two trailhead structures, and to adaptively reuse two remaining mill outbuildings.

The Wissahickon campaigns ended only when the WPA was phased out of the park and closed down entirely due to increased private sector employment opportunities. From the beginning of the first phase of the Wissahickon Valley Improvements project until 31 March 1943, when the Fairmount Park WPA forces disbanded, not a single day went by without work on these projects. The first phase ran from 1937 to 1939, the second phase from 1939 to 1941, and the final phase from 1941 to 1943.[24]

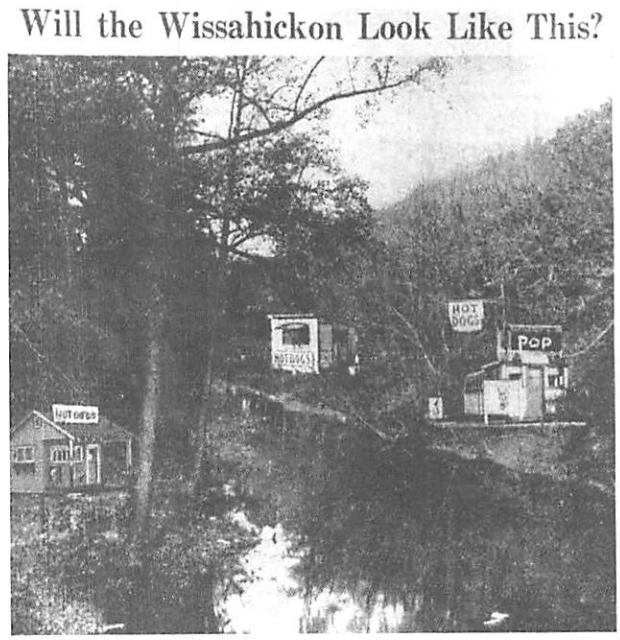

Figure 2. "Hot Dog Stand Menace Looms in the Wissahickon" (Philadelphia Inquirer, *11 November 1937. Reprinted with permission from Urban Archives, Philadelphia, Pennsylvania)*

Although each phase of the project included recreational facilities, trail improvements, and the construction of some shelters, the first phase saw the largest extent of architectural construction. By the end of 1938, two buildings had been renovated and nine new buildings completed.[25] Eventually, a total of thirteen new buildings were added to the valley.

The buildings were all of similar construction. The structures were designed around National Park Service guidelines contained in *Park and Recreational Structures.*[26] First published in 1935, this guide describes design standards for park buildings and was a leading force in the design of rustic park buildings so prolific in national and state parks. Several aspects of the Wissahickon structures were noticeably influenced by the NPS guidelines: 1) the buildings were constructed at the site of existing buildings or clearings so as not to disrupt the landscape any more than necessary; 2) the trail head buildings were uniquely designed to mark the beginning and end of the park; 3) the toilet buildings had horizontal clay pipes in place of windows for a combination of light and ventilation; 4) all of the buildings were constructed of stone and wood directly from the valley; and 5) probably most prominently, all buildings had a rustic motif now

Figure 3. Allen's Lane Shelter, original WPA documentation photograph, 1938 (Fairmount Park Commission Archives, Philadelphia, Pennsylvania)

Figure 4. The Lincoln Drive Shelter ("The New Bicycle Concession Building" Evening Bulletin, *25 June 1940. Circulating collection, Wissahickon Valley, Free Library Prints and Pictures Room, Philadelphia, Pennsylvania. Reprinted with permission from Urban Archives, Philadelphia, Pennsylvania.)*

referred to as Parkitecture. These structures were designed to blend into the surrounding environment so they could be easily overlooked. [27]

All of the guard shelters were located between the creek and Forbidden Drive (Figure 3). They were used by the Fairmount Park Guards, the police force dedicated to the park, and as places for park users to rest and enjoy the creek. Each shelter had an accompanying toilet building hidden in the woods on the opposite side of the drive. The toilet shelters were constructed entirely of Wissahickon schist. One small picnic shelter was constructed in a clearing next to the creek and the other two were constructed at the top of the hill, serving the adjacent baseball fields and golf course. These two shelters were larger and had fireplaces and attached toilet rooms. A large trailhead building was constructed closest to downtown at what could be considered the beginning of the trail (Figure 4). It had a bicycle rental shop as well as a guard shelter and toilet rooms. The other trailhead building, marking the end of the trail, looked like a tiny, one-room western fort.

Except for the toilet shelters, all of the buildings had a stone base with traditional log construction above. The roofs were wood shingle and the chimneys were stone. The gable ends were clad in deckled siding to represent log construction. Each guard house had an open porch and an enclosed room. The interior walls were sheathed in vertical wood cladding and were equipped with a wood stove and a telephone. [28]

After construction, the buildings blended into the surrounding landscape—so perfectly that they were soon all but forgotten. The Fairmount Park Guards were disbanded in the early 1970s and the toilet buildings were locked shortly after. By 1996, the buildings had been largely ignored for at least twenty years and were quickly deteriorating. A battle began among fans of the Wissahickon. One faction hoped to repair the buildings and the other wanted them torn down, believing them an intrusion on the natural beauty of the valley.

The repair campaign was led by Ed Stainton of the Friends of the Wissahickon and Chris Palmer, the Fairmount Park Wissahickon district manager. At the time, the WPA's work in Fairmount Park was not commonly thought of as historic. Based on this fundamental lack of understanding about the buildings, the strategy was to repair rather than restore; using modern building techniques and materials such as dimensional lumber and asphalt shingle roofs.

During this time the author was researching these buildings for her graduate thesis in Historic Preservation at the University of Pennsylvania. The author was able to locate and map each structure, based on archival records, oral interviews with elderly members of the Friends involved in the original planning, and by exploring the

Wissahickon on foot. In the forty years since construction, four buildings had been lost. A standard inventory form was developed to document each building, including the location, a description, the general condition, and photographs of each facade. A summary and location of archival documentation that included the original drawings and photographs was also listed.

Next, one prototypical building was chosen to receive a detailed condition survey and treatment recommendations. The subject building was the Allen's Lane guard shelter. Because the buildings have similar locations and identical building materials, these recommendations could be generally applicable to all of the buildings. A graphic condition survey was completed which included photographic documentation showing the building's current status. The Allen's Lane shelter was hidden in the bushes and had holes in the roof; some areas of the walls and roof had significant rot (Figure 5). The stoves, telephones, doors, and windows were gone. The interior was damaged by graffiti carved into the wood.

The general recommendations established for the building's restoration explained the practice of preserving as much material as possible and utilizing techniques that were reversible. The details for replacement of wood logs were developed directly from the original drawings; a mortar analysis provided a formula for repointing mortar; and general methods of repair were discussed. A maintenance schedule was also provided. Copies of the author's completed thesis were provided as a courtesy to Chris Palmer and Ed Stainton. After learning the history of the outbuildings presented in the thesis, Palmer and Stainton changed their focus from repair to preservation. The threat of repair with modern building materials no longer loomed.

Palmer and Stainton developed a collaboration between the Friends and the park commission to preserve and restore the buildings. The Allen's Lane shelter was the first project to be undertaken (Figure 6). The Friends provided volunteer labor and most of the financing. The park provided managing support, some financing, and some labor. The volunteers paid close attention to the tenets of preservation, including preserving as much original material as possible. Traditional log construction was to be utilized and the original construction detailing was to be matched. The

Figure 5. Allen's Lane guard shelter, 1996 (K. Cowing)

Figure 6. Allen's Lane guard shelter volunteers, 1997 (Ed Stainton)

Figure 7. Allen's Lane guard shelter, 2005 (K. Cowing)

workers devised a replacement window that mimicked the original detail; however, the muntins were made of metal to serve as window guards. They also installed reproduction log benches and have recently begun to mill the wood from the valley on-site using a portable sawmill. As of the spring of 2005, the Friends have completed the restoration of three guard shelters, one toilet building, one picnic shelter, one rehabilitated mill building, and one trailhead building (Figure 7).

A second component of the Friends' mission is to find uses for each building. They made one of the guard shelters available to a local group that provides trail maps and organizes hikes. Another guard shelter was restored to its period appearance, including the return of a wood stove and telephone. One of the old mill buildings is used as the storage shelter for the restoration materials. Currently the Friends are investigating the use of composting toilets. This has been one of the most active collaborations between Fairmount Park and a local Friends group. The restoration of the WPA structures has established a whole new status for the Friends. They have become dedicated to the maintenance of the buildings and are now involved in the planning of all projects within the Wissahickon.

WPA-built outbuildings fulfilled the need for human comfort in the parks, while responding to the picturesque quality of the surroundings. The buildings were designed in the rustic style prevalent with the National Park Service to blend into their environment, to be forgotten. This goal was so well accomplished that they were close to ruin before any attention was paid. The Friends of the Wissahickon championed the cause of repairing these little buildings when others were rallying for their demolition. Through collaboration of the Friends and the Fairmount Park Commission, nine of the original thirteen buildings will be restored and given a use. The restoration of these buildings has established a new method through which Fairmount Park can manage its tremendous resources.

Katherine Cowing is an architectural conservator with HJGA Consulting, Architecture & Historic Preservation in Montclair, New Jersey. Ms. Cowing manages the preservation and restoration of a wide variety of historic structures ranging from small park structures and railroad stations to farm buildings and large government complexes. Having received a Master of Science in Historic Preservation with a concentration in Conservation from the University of Pennsylvania, her professional pursuits have focused on developing sensitive approaches to the conservation of historic building materials.

Notes

1. T.A. Daly, *The Wissahickon* (Philadelphia, Pennsylvania: Garden Club of Philadelphia, 1922), 9; letter of Acknowledgment from the Department of Interior to the Fairmount Park Commission, 17 March 1964. "Wissahickon Folder," Fairmount Park Commission Archives.

2. The Fairmount Park Commission, a city agency, began by buying the Lemon Hill and Sedgeley estates along the Schuylkill River in 1867 and then rapidly expanding the property. All of the property along the Wissahickon Creek within city limits was attained by 1873.

3. Cornelius Weygandt, *The Wissahickon Hills: Memories of Leisure Hours Out of Doors in the Old Countryside* (Philadelphia, Pennsylvania: University of Pennsylvania Press, 1930), 56.

4. Various newspaper articles, undated, unnamed, Jellet Clippings, Wissahickon Box 1, Germantown Historical Society.

5. Douglas MacFarlan and James Magee, 'The Wissahickon Mills," Vol. 2. Unpublished manuscript found in the secured history collection at the Free Library of Philadelphia, Logan Circle Branch. See also Wissahickon Turnpike Enactment, Act No 361, Session 1850, Approved 1856. Wissahickon Turnpike Authority and City of Philadelphia, Found in "General Wissahickon File," Fairmount Park Commission Archives.

6. Linda F. McClelland, *Presenting Nature: The Historic Landscape Design of the National Park Service, 1916 to 1942* (Washington, D.C.: Department of the Interior, National Park Service, 1993), 20–25; Galen Cranz, *The Politics of Park Design* (Cambridge, Massachusetts: The MIT Press, 1982), 19–24.

7. Various newspaper articles, undated, without names, Jellet Clippings, Wissahickon Box 1, and Wissahickon Box 2, Germantown Historical Society.

8. Pamphlet describing the history of the Friends of the Wissahickon, Friends of the Wissahickon Inc., Wissahickon Box 1 at the Gemantown Historical Society.

9. Joan Younger Dickinson, "Aspects of Italian Immigration to Philadelphia," *Pennsylvania Magazine of History and Biography*, 90 (1966), 453.

10. Ibid.

11. *Annual Report of the Chief Engineer,* 1932, 1933. Fairmount Park Commission, Philadelphia, Pennsylvania. Fairmount Park Commission Archives, Philadelphia, Pennsylvania. This report states that the work was done by men paid by George Woodward. A letter from Senator Woodward, President of Friends of the Wissahickon to Harry L. Hopkins, Chief Executive WPA, dated 9 November 1937, explains his contributions to Fairmount Park.

12. *Annual Report of the Chief Engineer.* Various years.

13. *Annual Report of the Chief Engineer,* 1935, 10–13, and 1936, 9–11. This list excludes a vast amount of the WPA work in the Wissahickon. They rebuilt dams, were responsible for extensive repairs of roads, trails, fences, and walls. A massive planting campaign also occurred, partially with the help of the Friends of the Wissahickon. Specific information on the planting work can be found in 1935: 40, 48–50, 52, and 1936: 32–33, 43–44, 40–41.

14. *Annual Report of the Chief Engineer,* 1931.

15. Cranz, 61–63.

16. Report by L.H. Weir referred to in the Transcript of Meeting on 16 November 1935, Fairmount Park Commission Investigation, in City Parks Association, Box 6, Urban Archives, Temple University, Philadelphia, Pennsylvania, 7.

17. Actual expenditures from 1935–1942.

18. Archival research found nothing to determine the root of the idea for this project.

19. Official Project Application for Plans and Improvements of the Wissahickon Valley, WPA Project Folders, Official Project Number 465-23-2-310, Index 130 T935 & 936, Roll 5377, Reel 3136, National Archives, Washington DC.

20. Ibid.; "$834,000 Project started by the WPA along the Wissahickon," *Evening Bulletin* 22 October 1937.

21. "Cool on Hot Dog Stands for Wissahickon" *Evening Bulletin*, 1 November 1937; "Hot Dog Stand Menace Looms in the Wissahickon" *Philadelphia Inquirer*, 11 November 1937.

22. Letter from Senator Woodward, President of Friends of the Wissahickon to Harry L. Hopkins, Chief Executive WPA, 9 November 1937, WPA State Files, Pennsylvania, 651.109 Parks and Playgrounds Construction and Improvements, National Archives, Washington, D.C.

23. Letter from Harry L. Hopkins, Chief Executive WPA to Senator Woodward, President of Friends of the Wissahickon, 15 November 1937, WPA State Files, Pennsylvania, 651.109 Parks and Playgrounds Construction and Improvements, National Archives, Washington, D.C.; "No Hot Dog Stands in the Wissahickon" *Evening Bulletin*, 12 November 1937; "The Gift Horse" *Evening Bulletin*, 12 November 1937.

24. *Annual Report of the Chief Engineer*. Various years.

25. *Annual Report of the Chief Engineer,* 1938.

26. Albert H. Good, *Park Structures and Facilities* (Washington, D.C.: Department of the Interior, National Park Service, 1935).

27. Ibid., 3–4.

28. General descriptions of the plans are drawn from architecture drawings and on-site investigation.

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