Design for an Interpretive Center at the Fairmount Waterworks

MATHEU CEBUL & ASSOCIATES

Final Report
June 30, 1986

Schematic Design for an INTERPRETIVE CENTER at the FAIRMOUNT WATERWORKS

Prepared for

The Water Department, City of Philadelphia

FINAL REPORT

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Full architectural plans are available through the Water Department, City of Philadelphia

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TABLE OF CONTENTS

1. Introduction: A Celebration of Water

It was the midpoint of the nineteenth century, a time of immense transition in American society. Industrialization was under way; from the steam engine to the Jonval turbine, machines had emerged with the potential to harness nature's resources in the service of an exploding population. In this remarkable period, at the gate to the Fairmount Park in Philadelphia, there stood a structure that symbolized to the entire world the power and promise of "the machine in the garden." It was the Waterworks--a monumental phenomenon that brought architecture, engineering, and landscape together to channel the pure waters of the Schuylkill River into the homes and businesses of an entire city.

Whereas steam and breastwheels provided power initially, by 1851 the crux of the Waterworks operation was the Jonval turbine, a huge hydraulic engine that pumped river water uphill to reservoirs atop "Faire Mount," the highest point in Philadelphia. From across the ocean and around the country, visitors traveled to this romantic place to view the wonderful machine and to marvel at the massive flume gates, the giant iron and brick standpipe, and the riveted iron mains with their masonry supports ascending the hill to the reservoirs. And they came to promenade as well, through the lovely classical buildings, the beautifully laid out gardens and gazebo, past the fountains and the forebay and along the river retaining wall. For Philadelphians and foreigners alike, the Waterworks was a place to see and be seen.

But by 1909, the city had found new reservoirs for its water supply. Fairmount Hill was filled in to accommodate the impressive new Philadelphia Art Museum, and the forebay became the site of the Aquarium. Over the years, the Waterworks fell into disrepair. Only in the last decade, through a remarkable joint private and public effort, has the promise of its restoration and use been seriously explored.

The effort was begun at the instigation of the Junior League of Philadelphia; and with the support of the Philadelphia Water Department, the Fairmount Park Commission, and the Coastal Zone Management Program, a study of the site was launched. The Waterworks was declared a National Historic Landmark and a National Historic Engineering Landmark; and it was listed as an Endangered Historic Landmark as well, perhaps qualifying it for special funding support. The project has been coordinated through the Pennsylvania Historical and Museum Commission, and upholds the Secretary of the Interior's standards for historic restoration. There is new hope that the Waterworks may once more actively involve the public in learning about and celebrating the place water and its management have in the past, present, and future of every citizen.

The purpose of this study is to examine the feasibility and set forth the possibilities for a Waterworks Interpretive Center, one that would incorporate the many aspects of this historic site in an imaginative and significant way. The threads that must be woven together to accomplish this are many, but the results could handsomely reward the challenge. Any actions taken to reuse the site must be carefully considered and executed.

First, the new Interpretive Center would serve a historic preservation function. The Jonval Turbine at the Waterworks is the last remaining example of such a machine in the country, and deserves restoration and display. An important educational function would follow; the Center's exhibits, lectures, and resource library would allow people of all ages to become reacquainted with the importance of the Waterworks in the development of the city.

A commercial function will play an intrinsic role as the site is adapted for reuse; a restaurant would be associated with the Center and serve the needs of both park and Art Museum visitors, and funds generated by commercial participants will be used to defray the maintenance costs of facilities. There is recreational value as well in a restoration of the Waterworks; the surrounding park could be refurbished and maintained in a unified way to become again a green link between Fairmount Park on the north and the proposed new Schuylkill River Park on the south. And finally, an important environmental purpose is served by revitalizing this historic site; its reuse will draw attention to the entire Schuylkill River Coastal Zone and remind Philadelphians of the importance of this waterfront in the overall ecology of the region.

To coordinate such a project is a complex process, requiring the participation of public and private civic groups on several levels. In these pages we will explore the scope and organization of such an effort, laying out our basic philosophy, goals, and assumptions; posing a design solution; and identifying the major issues that remain to be resolved.

2. Concept, Goals, and Assumptions

The Waterworks Interpretive Center has the potential of restoring to full use and beauty one of the most interesting, well-known, and important sites in this country's historical development. From both a recreational and an educational standpoint, the value of such a restoration is inestimable. Our concept works to take advantage of the diversity of the site as well as that of its prospective audiences, and to bring themes and people together in enjoyable ways, so they might celebrate water in their past and plan for its use in their future.

The site itself is one of the most attractive and appealing in all of Philadelphia. Besides its own architectural and historic charm, the Waterworks stands in the shadow of the great Philadelphia Art Museum and just downriver from the popular Boathouse Row and its associated recreation area. Further, the Waterworks is highly visible from the expressway and West River Drive; from the city, it serves as the eastern entrance to all of Fairmount Park.

Audiences, Attendance, and Use

Several different groups of anticipated users will each bring different needs to the Waterworks site; the design and operations of the Interpretive Center must accommodate these several needs.

Casual visitors. Residents and tourists make up this segment of the visitor market; and undoubtedly residents will outnumber tourists. We predict that families with elementary and junior high school age children, young adults, and older adults will make up the majority of this category. Some will come to the Waterworks as their primary destination; others will add it to a visit to the Art Museum or a meal in the new restaurant; still others may stop for a break as they walk or jog through the grounds.

Casual visitors will be admitted between 10 a.m. and 6 p.m., and perhaps during evening hours in the summer season. Peak demand for this group is likely to be around 1:30 p.m. on Sundays in spring, early summer, and fall.

School groups. The educational aspect of the Waterworks is significant, and a concerted effort will be made to give young people an experience of the important role it played in the development of Philadelphia. We can expect from current curricula that field trips will be common by classes from fourth grade through high school; and college and graduate students in the field of art, architecture, engineering, history, environmental protection, and public health will visit the facility as well.

The goal would be to book 60 students in advance for each weekday hour between 9:30 a.m. and 1:30 p.m., with groups completely gone from 2:30 p.m. on.

Special interest groups. Because of the considerable historic, architectural, engineering, and landscape significance of the Waterworks, special interest groups will probably also be well represented among its visitors. These can be serviced by advance group sales programs, and will probably want to take full advantage of all educational programming as well as resource library privileges.

Rentals. There is potential income from renting space at the Waterworks Interpretive

Center for cocktail parties, small dinners, or large dinners arranged in conjunction with the restaurant at the site. Valet parking would be necessary for such functions. Other possible rental clients would be civic and professional groups needing meeting space, movie production companies, or the fashion and advertising industries. Any income generated will be contributed to the cost of operations.

Waterworks Support Group. An auxiliary group such as "Friends of the Waterworks" might be created. Such a group would certainly hold its meetings at the center, might volunteer in its operations, and could help finance certain programs.

Operations

The proposed staff of the Waterworks Interpretive Center would be as follows:

--Supervisor of operations
--One full-time staff person
--Two part-time staff people
--One janitor/security guard

ESTIMATED ATTENDANCE

The following table is a presentation of conservative projected attendance figures assuming the existence of a healthy marketing and public relations operation.

SEASON	CAPACITY	%	ESTIMATED ATTENDANCE	%	ESTIMATED ATTENDANCE	TOTAL
In-Season*	154,000**	75%	115,500	3%	4,620	120,120
Shoulder Season	154,000	50%	77,000	10%	15,360	92,360
Off-Season	154,000	-	negligible	5%	7,700	7,700
						220,280

CASUAL VISITOR

GROUP VISITORS

* In-season refers to the months of May through August, shoulder season refers to March, April, September and October; and the off-season refers to November through February

** A capacity for each of the four month seasons was calculated by taking the estimated building capacity of 335 times 4-5 turn-overs per day times six days per week times sixteen weeks

3. The Design Approach: Philosophy and Themes

The Waterworks Interpretive Center is conceived primarily to be a celebration of water, as provider of energy and as sustainer of life. The pure waters of the Schuylkill River have historically been used to serve these functions, from earliest Indian days through the great industrial and technological transitions of the last century. As we look ahead to the critical role this water will play in our future, the Waterworks can stand as both symbol and promise.

Everything in the Interpretive Center will work to illuminate these central themes--its landscape, its architecture, its graphics, and the design of each exhibition. As visitors move from one area to another, they will be continually aware of the wonderfully diverse role the river plays in their lives, a natural resource of incalculable value and a powerful generator of the energy on which they increasingly depend.

Several essential qualities of space work together to carry out this philosophy, both outdoors and inside the buildings.

The Site and Outdoor Interpretation

Recreating the interplay of water, landscape, and machinery that drew crowds to the Waterworks in the mid-1800s will be crucial to the atmosphere of the entire Interpretive Center. It is therefore important to restore as much water--active water--to the site as is feasible from the standpoint of maintenance. As indicated on the site plan, fountains, watercourses, and river views will draw visitors like a magnet from the point where they leave the Italian Fountain all the way out to the Gazebo and back along the old forebay, through the garden, and along the river.

The outdoor exhibitions will be carefully designed so as not to intrude upon the landscape or buildings. First, the building exteriors and garden landscape must be faithfully renovated in a way that allows for their successful reuse. Next, the original forebay and water passage through the site should be recreated, at least by implication--using paving surfaces, changes in elevation, the old bridge, and new watercourses and fountains. Throughout, interpretation will be low-key, avoiding free-standing signs in favor of a recessed medium such as etched metal plates on walkways, benches, or balustrades. Pamphlets for walking tours can be provided in the Interpretive Center information office to those who require more detailed materials.

The Indoor Exhibition Spaces

Four more qualities of space take shape in the indoor exhibit areas, so the visitor might experience the full power and grandeur of the Waterworks in the past, as well as the possibilities for the Schuylkill's waters in the future. Wherever water once flowed through this building the effect will be recreated here, either through shallow water or through special effects using plexiglas, lighting, or fibre optics.

The South Entrance House, the Interpretive Center's entry point, will appear just as it did in 1851 save for the sign over the door heralding

its new function. Inside at ground level, enlargements of lithographs from the 1800s will immerse the visitor in the romantic, old-fashioned mood of the place that drew visitors to see and be seen here at the Waterworks. In the lower level foyer, the feeling will be of grandeur and reverence, emphasized by the symmetrical stairway and the magnificent motion of the breastwheel with water cascading down over its paddles.

Inside the Turbine Room the visitor will experience the industrial feeling through every sound and sight, from the clanking and grinding of the gears turning on the giant machine, the hiss of the pump, footsteps ringing on the metal catwalk, and huge Graff drawings depicted in tile on the river wall. Along the long, narrow, vaulted hallway, the original function of the Waterworks will be vividly apparent as the illusion is created of waters rushing along the flume towards the engine room.

Finally, the contemporary, functional ambiance of the modern exhibit areas will bring the visitor into the current technological era and define prospects for the future. Here tanks, interactive exhibits, and other devices will create an inspiring museum space.

4. The Design Solution

The Waterworks is a complex structure on a difficult site--a small amount of building space, situated on bedrock, with many changes in elevation that are integral to the purpose of the structure. Our major challenge is to design an exhibit area for visitors that will at once preserve the historic nature of the landmark, provide a clear story line explaining the significance of various areas, and maintain continuity throughout the visit.

To achieve this we have relied on a linear, sequential design approach throughout the exhibit. Though the visitor enters from above, a potentially disorienting approach since the exhibition space and machinery are at a lower level, the river itself serves as a central orienting point, providing continuity throughout the tour. There are several places where the visitor has a choice of route, but a preferred route is always implied. Three larger rooms are available along the linear route so that the visitor may browse before proceeding to other exhibits; these spaces can also serve as crowd control on days with heavy attendance.

Handicapped access will be possible to over 50 percent of the building, including the Jonval turbine, but not by means of the regular route. To equalize the elevations throughout the center, we felt, would require heroic and expensive efforts that would result in an inappropriate change to the original structure.

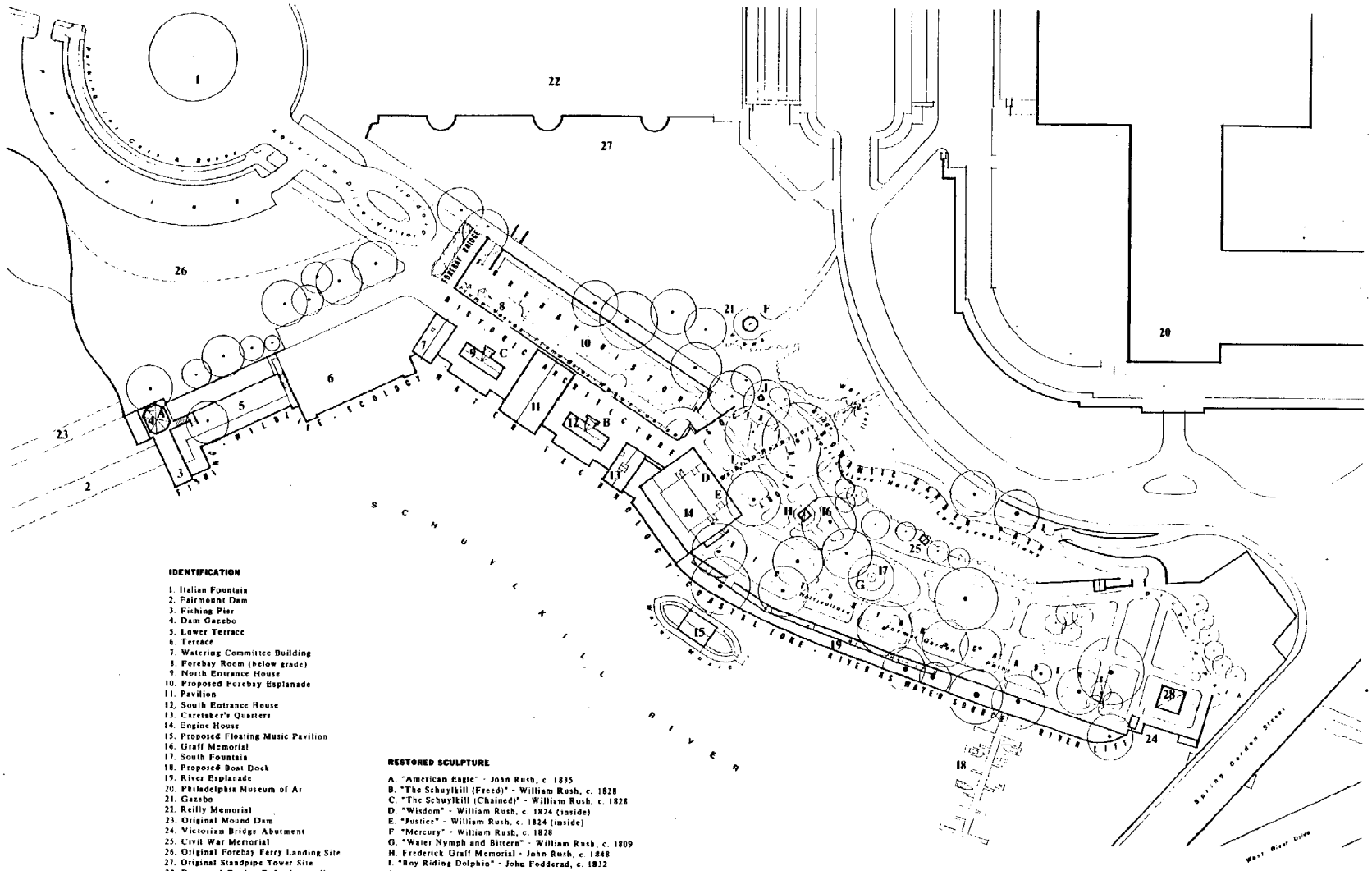
The Visitor's Experience

The following section offers a vision of the kind of use intended to be stimulated by the design. The reader is encouraged to imagine the setting and experiences suggested in order to capture the spirit and function of the proposal.

The Approach. Most visitors to the Fairmount Waterworks Interpretive Center will come by car, making their approach off East River Drive. Turning in toward the Italian Fountain, they will glimpse first the historic gazebo at the end of the plaza, and then the waters cascading over the fountain--a fitting beginning to an excursion into the history of water supply technology in Philadelphia. See Site Plan.

Diagonal parking will be provided all along the one-way entrance drive, with two more rows around the fountain on the river side. Sidewalks and a landscaped edge will buffer the parking areas from the sloping grassy open area and the plaza with its gazebo. A secondary, smaller drop-off circle, off the main rotary around the Italian fountain, will be a safe point of disembarkation for children and tour groups, and for those who cannot walk very far.

Once parked, visitors find themselves at the northernmost portion of the site, with a clear longitudinal view south to the cluster of small buildings that house the machinery at river level. It is a festive scene, with families strolling past cart vendors of balloons and souvenirs, and joggers and bicyclists on the specially marked paths. At the base of the dam fishermen cast their lines into the water; lovers stroll arm in arm along the balustrade. Small



IDENTIFICATION

1. Italian Fountain
2. Fairmount Dam
3. Fishing Pier
4. Dam Gazebo
5. Lower Terrace
6. Terrace
7. Watering Committee Building
8. Forebay Room (below grade)
9. North Entrance House
10. Proposed Forebay Esplanade
11. Pavilion
12. South Entrance House
13. Caretaker's Quarters
14. Engine House
15. Proposed Floating Music Pavilion
16. Graff Memorial
17. South Fountain
18. Proposed Boat Dock
19. River Esplanade
20. Philadelphia Museum of Ar
21. Gazebo
22. Reilly Memorial
23. Original Mound Dam
24. Victorian Bridge Abutment
25. Civil War Memorial
26. Original Forebay Ferry Landing Site
27. Original Standpipe Tower Site
28. Proposed Garden Refreshment House

RESTORED SCULPTURE

A. "American Eagle" - John Rush, c. 1835
B. "The Schuylkill (Freed)" - William Rush, c. 1828
C. "The Schuylkill (Chained)" - William Rush, c. 1828
D. "Wisdom" - William Rush, c. 1824 (inside)
E. "Justice" - William Rush, c. 1824 (inside)
F. "Mercury" - William Rush, c. 1828
G. "Water Nymph and Bittern" - William Rush, c. 1809
H. Frederick Graff Memorial - John Rush, c. 1848
I. "Boy Riding Dolphin" - John Fodderad, c. 1832
J. "Diana" - Sculptor & Date Unknown

SITE PLAN
1"= 30'-0"

motorboats bob at their moorings towards the south end of the esplanade, an excursion ferry pulls into its dock, and small paddleboats churn through the water near the Waterworks floating Music Pavilion.

The visitor follows along the water course, on the same route the original forebay took, and is thus brought to the main entrance of the Waterworks.

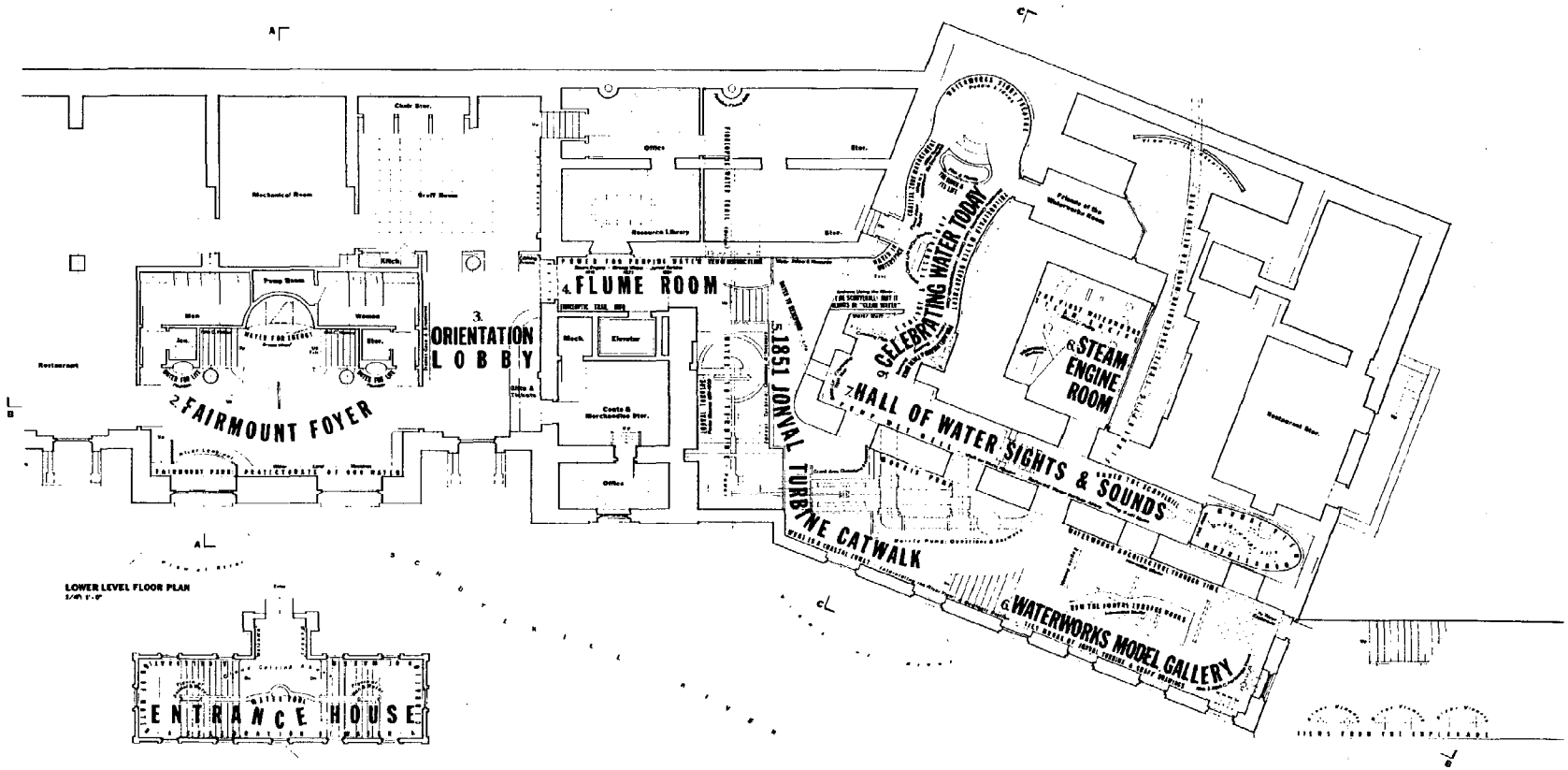
1. South Entrance House. At the center of the site are two entrance houses, with a pavilion between them. One serves as the entrance to the restaurant associated with the Waterworks; and the South Entrance House is where visitors come into the Waterworks Interpretive Center itself.

Upstairs and from the outside, the portal of the South Entrance House is as it was in 1851, restored to its clean, crisp lines. The only addition is a handsome sign above the door on the entablature. A faithful reproduction of the famous William Rush sculpture, "Schuylkill Freed," again graces the top of the building, symbolizing the themes of nature and technology that are the focus of the Waterworks Interpretive Center. See Figure 2.

Just inside the door on the left are several bronze plaques recognizing contributors to the project, and to the right is a sign of welcome. Inside, visitors see a waist-high wall of water bubbling over a ledge or weir; the sound of rushing water mutes their voices as they gaze up at a beautiful ceiling tableau of treetops and clouds. To the right a grand stairway, illuminated by natural light from the original windows, descends to the machinery below. See Figure 3.

Enlargements of old lithographs depicting people promenading at the nineteenth-century Waterworks as it once was lead our twentieth-century visitors down the stairs. Statues at the landings further contribute to the romantic mood of the space. Other visitors leaving the museum are climbing identical stairs to the left.

2. Fairmount Foyer. As they round the edge of the weir and the columnar sculpture that marks the stair's turn, visitors have a clear view out through windows to the river beyond. Below, a roomy foyer spreads before them, outfitted with window seats and three large story murals that introduce the theme of the Park as protector of water. The atmosphere is dominated, though, by a giant water-driven breastwheel suspended in the grotto at the landing. As the water cascades over the weir from above and from a recessed wall of water behind the wheel, the buckets on the wheel turn it with a steady, mesmerizing swish. Multi-colored blue, silver, and gold tiles reflect light through the water wall as spotlights illuminate the sparkling spray. As they dip their fingers in the water, our visitors notice a sign explaining that this building indeed housed the paddlewheels that drove the Waterworks pumps in the early nineteenth century. Not only is the grotto and water beautiful to watch, it is also functional, for the paddlewheel actually drives the mechanism that pumps water into the two drinking fountains at either side of the back of the stairs. In this way, the two major themes of the Center are introduced: water as energy, and water as a precious natural resource.

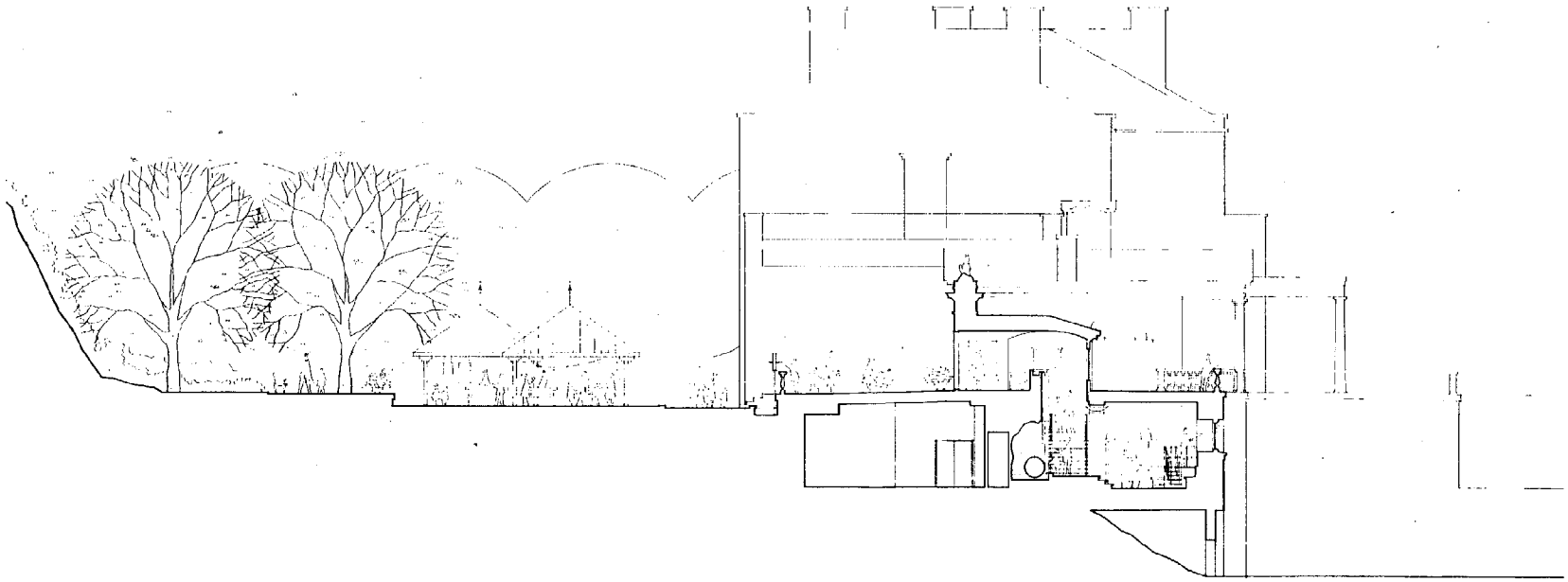


LOWER LEVEL FLOOR PLAN

UPPER LEVEL FLOOR PLAN - SOUTH ENTRANCE HOUSE

A NEW INTERPRETIVE CENTER at the FAIRMOUNT WATERWORKS
The City of Philadelphia Water Department

MATHES GERUK and Associates
June 1986



ENTRANCE HOUSE & FOYER
SECTION A - A

Along the cushioned seating a school group rests briefly, several children climbing to the lookout window to better view the river. At the two stair landings, restrooms are located.

3. Orientation Lobby. In the adjacent orientation and lobby area, books, souvenirs, and scientific toys are displayed; volunteers in Waterworks aprons work the counters and hand out pocket-sized floor plans and exhibition guides. A display case showing merchandise and holding self-guided tour materials hangs on the opposite wall. Tucked behind the storage room is an elevator for handicapped use and stock transfer.

To the left as our visitor leaves the ticket counter are a set of double doors and a sign identifying the Graff Lecture Room; an announcement board indicates the coming week's schedule of programs and the museum library's hours. The Graff Lecture Room is more than an auditorium for use by civic and other rental groups; it houses a complete audiovisual system that can display to visitors the Waterworks documentary in preparation. At this point visitors pass through a set of doors into the exhibition areas.

4. Flume Room: The River Is Energy. The spirit of nineteenth-century industrial vigor is immediate and vivid as our visitors enter the long hall that makes up the first exhibit area. It is a historic and intriguing area, marking the actual opening where one of the original flumes brought the Schuylkill's waters from the forebay into the breastwheels and later to the Jonval turbine.

It is at this point that visitors see the beginning of what is the major interpretive element in the exhibition--a two-path fibre-optic trail system depicting the route taken by water through the building where the first turbine was introduced. One path, in green, is the route of water to be used by the Jonval turbine as it creates energy to drive the pumps and then release back into the river. The other, in blue, is the route of water being taken to the pumps to be elevated up the ascending main into the reservoir above, and used for drinking water.

The original stone and brick chamber that opened into the hallway is illuminated by these two colored fibre-optic tubes. A backlit diagram invites visitors to follow the paths of the tubes, to understand the route water took through the buildings and machinery in 1851, when the Jonval turbine was first used.

Over the clatter of feet coming and going, our visitors look down at where the actual turbine is displayed. They have timed their visit to see the huge machine in action, as it is at scheduled intervals throughout the day. The piped-in sounds of engines and pumps bounces off the hard tiled walls, contributing to a sense of energy and motion.

5. 1851 Jonval Turbine Catwalk. Up a few stairs and to the right is a narrow metal catwalk along the length of the 15-foot Jonval Turbine below. Small graphics mounted along the handrail pose questions and provide answers to our visitors about the various parts of the machine below. Following the fibre-optic trail, they come to a landing overlooking the Morris pumps;

again, the function and history of every part of the machinery is interpreted. On a lower landing along the deep tiled wall are windows that let in light from the river; there is a beautiful view of the water and of the gemlike Waterworks Pavilion floating in the sun. A large model section superimposed on the tile defines the geology of the coastal zone and describes the importance of water in the coastal zone ecosystem.

This exhibit room is a large, deep rectangular space that our visitors can experience on three levels. Giving it visual unity is the huge wall mural done in tile, a depiction of the nineteenth-century Waterworks industrial machinery, which works together with the sounds of the room to conjure up the atmosphere of men at work. See Figure 4.

6. Waterworks Model Gallery. On the ground level of this same large room is another major exhibit: an eight-foot-long, waist-high model of the Waterworks of 1851. A good overall view of the model can be had from above on the pumps landing, but it is also accessible for more direct interactive use from the floor. Actual water flows through the model; our visitor can set a small colored capsule adrift on the little Schuylkill River and watch as it flows with the water behind the dam, into the forebay, through the flumes behind plexiglas walls, into the Jonval turbine turning and humming, or through the pumps and up the mains to the reservoirs on the hill above.

Suspended on the wall opposite the tile mural is another model, this one of the actual Waterworks buildings and associated machinery. Our visitors can pull several levers to demonstrate the changes in the Waterworks structures at several pivotal points in their evolution throughout the nineteenth century. Other levers will let them see more recent renovation and reuse of the site, from the swimming pool and aquarium that Philadelphians will remember so well to the imposing Art Museum where the reservoirs once were. Transparent etchings of historic engine patents associated with the Waterworks are suspended overhead.

At the end of this large room, next to the emergency exit out to the river esplanade, are a set of scopes protruding from the wall and designed somewhat like periscopes. Peering into the lenses, our visitors can view in turn various aspects of the esplanade and gardens. Other scopes, though appearing the same, are fitted out with period views of the same landscape in the 1850s--people in Victorian finery promenading along the water's edge just as today's visitors do.

During rentals or special occasions the esplanade can be regarded as an exhibit in itself, though a low-key one; here visitors can walk close to the water's edge, relax on benches, and then either mount the original steps to the restored garden above or return to the indoor exhibition. Once out on the Esplanade in the midst of that beautiful setting, visitors are again presented information as to the delicate balance of coastal zone ecosystems and the precious resource that the Schuylkill's waters represent. Binocular viewers offer sights of wildlife. Meanwhile, small boat traffic hums at the dock and music wafts from the Pavilion.

FOYER & EXHIBITION SPACE
SECTION B - B

7. Hall of Water Sights and Sounds. Through the Model Room and back up the steps to the landing, our visitors once more pick up the trail of the blue fibre-optic tube and are led by its soft glow into the narrow space once occupied by the original watercourse. This is a dark, vaulted hallway that surrounds them with the sights and sounds of water. High on the walls, small windows bring in some light from the Model Gallery; deflected light from hidden sources plays on the ceiling as if on water. The view to the right is of underwater fish life behind a bubbling water wall, and overhead floats a rowing scull right out of the "Schuylkill Navy." The fibre-optic trail takes visitors across this space and on into the Steam Engine Room, the fifth and last historic exhibition space.

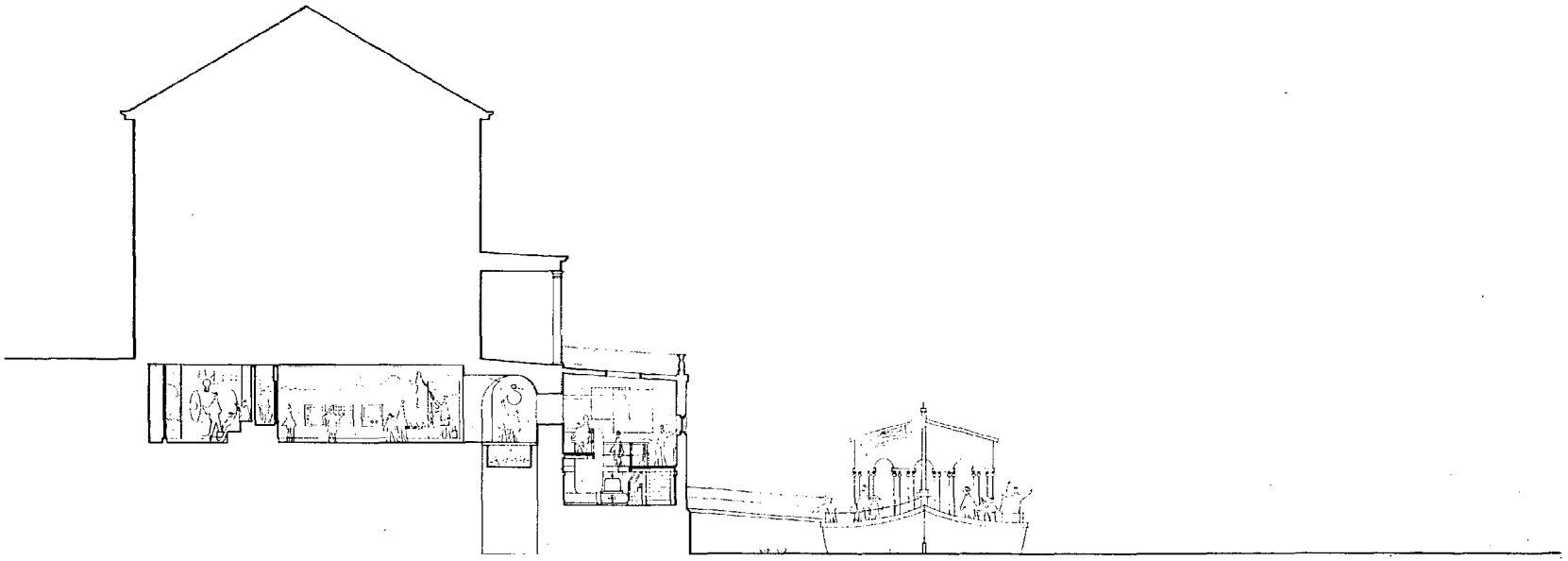
8. The Steam Engine Room. Our visitors have just seen in the Waterworks Model Gallery the location and date of operation of the steam engines used in the Waterworks at its inception. Here in the Engine Room they will view the actual space where those engines were housed, and will operate a large-scale steam-engine model themselves. The light levels are low and the model is dramatically illuminated.

All along the right side of the room runs the ascending main from the pumps below in the Jonval Turbine Room; the fibre-optic trail above them shows the route that the water took up through the 96-foot main to the reservoirs on the hill. And a backlit photo montage of men working at the Waterworks hangs on the opposite wall.

This room is relatively small; it will be treated as a cul de sac in order to encourage a circular flow and give everyone access to the model. Once our visitors have operated the steam engine and seen the ascending main disappear through the wall beyond on its route to the reservoir, they leave this room and turn to their right, back into the Hall of Water Sights and Sounds. A short set of stairs takes them up a few feet to a landing and the blue fibre-optic trail in the area that was once the pump wet well. Visitors experience the illusion of walking on water while dapples light dances on the ceiling as if reflected off water.

The entrance to the last exhibit room is immediately engaging and draws our visitors down the hall. It is a constantly moving sculpture of a Schuylkill fisherman pulling at his line, which arches overhead and disappears in a shimmering pool of water. Periodically fish are visible under the water pool.

9. Celebrating Water Today. This space illuminates current issues in land and water management; recreation technology; the conservation of ecosystems; and the role of the Water Department, Fairmount Park, the Pennsylvania Coastal Zone Management Program, the Pennsylvania Department of Environmental Resources, and the people of Philadelphia in ensuring a pure water supply for their future. A set of visitor-activated computers works in conjunction with a back-projected slide presentation and an oval floor-to-ceiling fish tank to convey the central message: the precious resource of pure waters, and the vital challenge of maintaining them for residents and industry in the Delaware Valley. See Figure 5.



EXHIBITION SPACE
SECTION C - C 3/4"=1'-0"

A NEW INTERPRETIVE CENTER at the FAIRMOUNT WATERWORKS
The City of Philadelphia Water Department

MATHEU CZERR and Associates
June 1995

A small room off to the right provides work space with a view of the ascending main for Friends of the Waterworks volunteers. As they circle the room reading the graphics, working on computers, watching slides, and observing the wildlife of the Schuylkill River in the tank, our visitors are brought back to the first exhibit area and into the hallway out to the orientation and sales area. Here they can buy books and souvenirs; and if they have timed their visit right they can catch a program just beginning in the Graff Room. If not, they can emerge into the restored nineteenth-century garden just outside, and enjoy from another perspective the classical dignity of this historic site.

ESTIMATED CAPACITIES AND SPACE REQUIREMENTS

Summary	SF
Mill House	5,236
Engine House	3,215
Entrance House	528
Caretaker's House	432
TOTAL	9,411

Interior Spaces Summary	Capacity	SF
Foyer/Orientation/Lobby	75	1,000
Graff Lecture Room	60	600
Exhibition Rooms - Total	200	2,000

Overall Visitor Capacity 335

Code Capacity (Fire) 500

COST ESTIMATE SUMMARY *

Interpretive Center Building (demolition and construction)	$1,767,610
Exhibition: Interpretive Center (Allow) **	350,000
Turbine Removal/Restoration/Reinstallation (Allow)	150,000
	$2,267,610

Site Development (To be determined)

- Lower Esplanade
- Garden
- Forebay Entrance
- Boat Dock
- Floating Theatre/Music Pavilion
- Parking Facilities

Survey and Design Fees (To be negotiatied)

Construction Management Fees

* Other items to be determined are the power substation, furnishings, and asbestos removal

** For the present project, exhibition costs must remain an allocated amount prior to design development at which time a detailed budget will be generated based on specific exhibition elements.

5. Major Issues

For the Waterworks Interpretive Center to be a success, several significant planning issues must be resolved. In some cases, this report will suggest strategies for dealing with these issues; we raise others simply as points to consider in future planning. They are listed in no particular order, but tend to flow from general site conditions to specific aspects of the design project.

General Site Development. The Waterworks buildings and the surrounding site are viewed, in general, as a unit by Philadelphians and tourists alike. Any restoration projects such as a restaurant or visitor center, therefore, should be developed as an integral whole; and will require appropriate master planning and development funds.

Construction Phasing. To insure a harmonious integration of every part of the site, our design presupposes that related work previously produced by John Milner Associates will be completed before construction of the new Interpretive Center begins. Dimensions, structural systems, and fabrication materials for the Center, therefore, coordinate with those shown in the Milner phasing packages.

Odor on the Site. Extremely unpleasant odors plague the Waterworks site; they must be eliminated if the restaurant, the Interpretive Center, and other visitor uses are to be a success. These odors emanate both from the river and from several sewer manholes in the garden.

Garden Management. A beautifully refurbished garden adjoining the restaurant and Interpretive Center will not only provide a place for visitor overflow but also serve as a significant attraction itself. But a garden

of this scope inevitably presents a management and maintenance challenge. We suggest that responsibility for this not be shared, but be taken on by the restaurant, Fairmount Park, or even a private volunteer garden club.

Parking. Though many visitors will come to this area on foot or bicycles, by public transportation and by park trolley, the majority of family users will certainly arrive by car. This study provides for an adequate number of parking spaces for the Interpretive Center; but an overall site use study must be completed in order to establish the parking needs of the site as a whole, including the restaurant and other special uses.

Access for the Handicapped vs. Historic Restoration. In many instances, adaptation of the lower level of the Engine House for use as an Interpretive Center was in conflict with providing the handicapped with access. This was a particularly difficult problem to solve, because to provide wheelchair access in some cases would be to violate the physical integrity of the historic structure. The basement of the Engine House, of course, was never intended for public access; its many levels served a water transport function, not an esthetic or informational one. With this in mind our study proposes varying levels of access for the handicapped; final decisions must be made on these alternatives during design development, so that documentation of the project may proceed.

Flooding. Structural engineers advise that flooding of the Interpretive Center building at the 100-year flood level must be allowed to occur, and our design proposal takes this into account. Any structural

changes that would be undertaken in an effort to repulse the natural flow of water through the building would put the structure in jeopardy. We assume, then, that the mechanical room will be located at the higher east side of the building; that mechanical duct work and electric conduits will be suspended high and easily accessible; and that all finish materials will be immersible, easily cleaned, or easily replaced. In compliance with Executive Order #11988 this position was proposed at a public meeting held to foster public participation in decision-making as to whether the project should be constructed within the flood plain. A full report of that meeting can be obtained from Mr. Drew Brow of the Water Department City of Philadelphia.

Security. As it has fallen from public use over the last decades, the Waterworks has become the victim of vandalism, fires, and other destruction. The best defense against such a problem is to create a popular attraction in active use. Especially at the beginning, however, some form of overnight security may be necessary in order to reverse the current trend.

The Interpretive Center and the Restaurant. It will be crucial to create a physically interactive, operationally symbiotic, relationship between the Interpretive Center and the restaurant because visitors will experience the site and its buildings as a unit. As the management systems of these two facilities are developed it will be particularly important that they work with each other to minimize conflict, promote mutual gain, and most of all serve visitors as a quality experience.

The Interpretive Center and the Art Museum. As with the restaurant, the visitor center will have a direct relationship with the Art Museum and its visitor flow; this must be taken into consideration during planning stages. Ideally, visitors to the general area will be inclined to see both the museum and the Waterworks, as well as wander through the garden and along the river. We suggest a set of physical connections on the site (walkways, railings, signs) between the two facilities, in support of this important relationship.

Dock. The proposed marina, or dock, shown in our drawings could be a successful termination point for day trips by small craft up the Schuylkill River. Our goal is to make the Waterworks Center sufficiently attractive that this will occur; but without river dredging in the area such use will be impossible. Dredging is probably the answer to some of the odor problem as well, and should therefore be planned. Permits will also be required from the state and federal governments.

Forebay Room. The original forebay room can be refurbished to serve as an additional entrance to the building, used by either Fairmount Park or the restaurant. Its location and its original purpose will be explained in site interpretive materials; but because it is so far from the central core of the Interpretive Center, it is not considered part of the visitor's route through the Center.

Floating Music Pavilion. The Pavilion as envisioned on Figure is seen as a way to give the redeveloped Waterworks a new image, especially from across the river along the West River Drive and Schuylkill Expressway. In addition, it would provide additional needed sheltered space that is also mobile.