DESIGN

THE ART OF LIGHTING

The new home of the Barnes Foundation in central Philadelphia sheds new light on the world's most important collection of post-impressionist paintings.

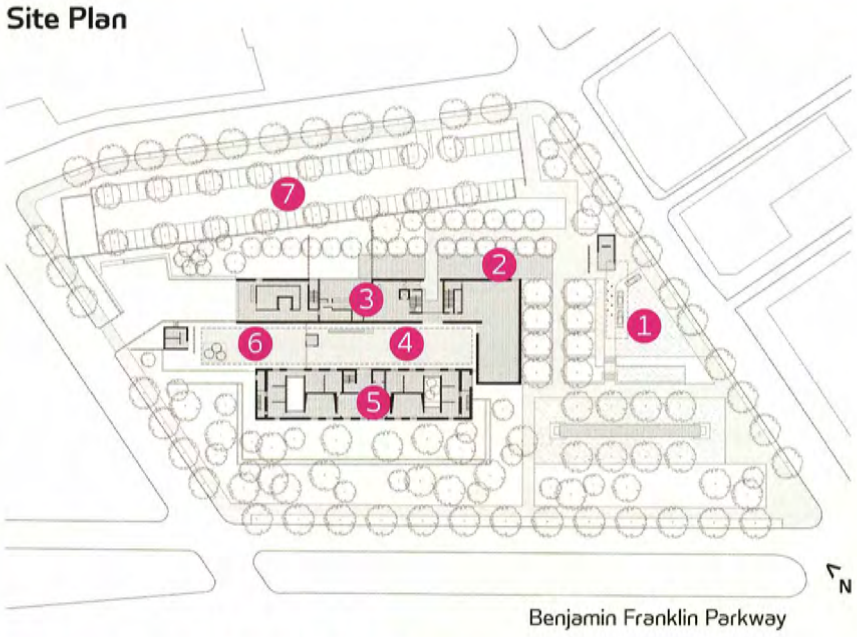
text by Aaron Seward
photos by Michael Moran/OTTO

In the early 20th century, Albert C. Barnes—a poor Philadelphia boy who made his fortune from inventing and marketing the antiseptic drug Argyrol—assembled what is widely considered to be the most important collection of post-impressionist paintings on Earth. Before the rest of the world caught on, he was laying out modest sums for the purchase of works by Renoir, Cézanne, van Gogh, Matisse, and many more. To house this collection, he erected a stately Beaux-Arts edifice in the midst of an idyllic arboretum in the suburban community of Lower Merion, Pa. On the gallery's burlap-covered walls, he arranged his pictures in idiosyncratic, symmetrical layouts that grouped works of art not by period or artist, but by interrelationships of composition, color, and form. As a finishing touch, he established a school on the grounds wherein students were taught art appreciation. The gallery was not open to the public, but if you wanted to view its riches all you had to do was write to Barnes himself. If he liked you, the door would open. If he didn't, the door would remain shut.

That would have been the state of the collection forevermore, had Barnes's will been followed to its letter. But after his death, a course of events—motivated by a certain ratio of financial illiquidity, avarice, civic-mindedness, politicking, and the ravages of time—drew this unique body of work out of its institutional confines and into the public realm. In the late 2000s, the board of the Barnes Foundation, backed by a court decision, determined to move the art to a site on the Benjamin Franklin Parkway in the heart of Philadelphia. The board then hired New York–based Tod Williams Billie Tsien Architects to design a new museum.

In a conciliatory gesture to the memory of Barnes, the new museum was required to re-create the interiors of the original Merion galleries down to the last detail, including the exact placement of the works of art. Outside of that, the architects were free to encase the galleries within a contemporary wrapper, so long as it provided the programmatic elements—café, gift shop, traveling exhibition galleries, art library, and queuing space—necessary for a public building that expected to host hundreds of thousands of visitors each year.

Site Plan



The Barnes Foundation at dusk (previous spread). A series of gardens and hard- and soft-scaped areas surround the museum. Visitors cross a reflecting pool as they enter the museum (top). A sensor on the roof—built as a miniature scale-model of the building—reads the galleries' light levels so that shades can be raised and lowered as needed (above).

1. Entry Court
2. Reflecting Pool
3. Pavilion Building
4. The Light Court
5. Collection Gallery Building
6. The West Terrace
7. Parking

Lighting remains true in spirit to the layouts of the original Merion site, but a concerted effort was made to light the galleries, not the art. The first gallery that visitors enter is the Main Room (top). Highlights here include Paul Cezanne's *The Card Players* and Georges Seurat's *Models*. To address southern light entering the space during winter, when the sun is low, the windows are treated with a UV coating, and outfitted with an automated shading system. In the galleries on the second floor, T5s concealed in the coves of the clerestories provide additional indirect light to each space (above left and right).

In the lower level lobby area (right), the theme of natural light working in concert with electric light continues. Track-mounted PAR wallwashers illuminate the art on the walls, while a linear fluorescent covelight uplights the concrete-exposed ceiling. Daylight, from the gallery garden seen beyond, makes up the balance of illumination.

"All of the fluorescent fixtures are 3500K color temperature," Marantz says, "warmer than daylight but cooler than most tungsten gallery lighting. We felt that if the electric light was going to complement the natural light in a way that they both work together, then you needed to have soft sources so that the transition is less abrupt."

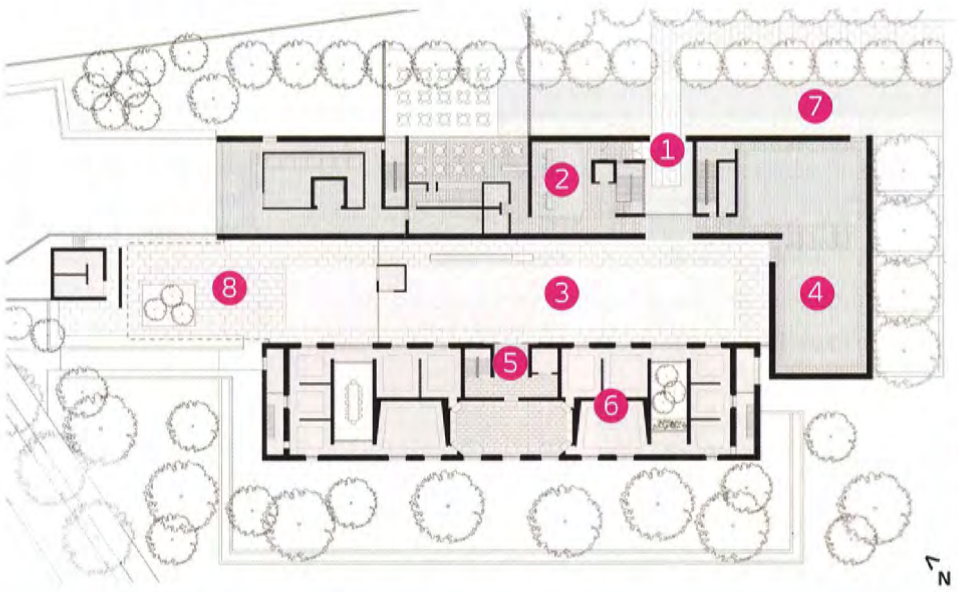
Photo sensors on the gallery wall opposite the windows monitor the amount of daylight entering the room and adjust the electrical sources in order to maintain a consistent light level. The fluorescent sources, however, are never turned off completely. Another sensor on the roof raises and lowers the shades—this sensor is a miniature scale model of the building. In addition, the automated control system has optional manual overrides that can dial in the exact condition desired in any one of the rooms.

The rest of the museum is lit with a combination of fluorescent electric sources and daylight. The most phenomenal of these spaces is the cavernous court where visitors queue up to await their turn to experience Barnes's peculiar world. Here, Williams and Tsien reiterated a theme that they have applied to many projects, most recently the C.V. Starr East Asian Library at the University of California at Berkeley. The angled ceiling captures southern light entering through an enormous light box that runs the length of the building and casts it down into the space. The natural light combines with 28W T5 fluorescents that wash the perimeter walls.

The one exception to the fluorescent-and-daylight approach is in the exhibition gallery, which combines T5s concealed behind a Clipso fabric ceiling with 90W halogen PAR and AR111 fixtures on tracks.

Not everyone has been happy with the collection's move from Merion to central Philadelphia. It's undeniable: Something special was lost in the destruction of Barnes's original museum. The old sylvan setting he cultivated for the appreciation of art is now used merely for the horticulture education program started by his wife in 1940. But much has been gained from the new arrangement. Not only is this treasure trove of art more accessible and better protected, it is also easier to see. "When we moved into the new building, everybody said, 'Oh, you cleaned all the pictures,'" Marantz says. "That wasn't true. It was just that the color rendering got improved so radically. For the first time since they shuttered the windows at Merion, you could see the blues." •

Ground-Floor Plan



1. Entry Alcove
2. Entrance Lobby
3. The Light Court
4. Exhibition Gallery
5. Gallery Entry
6. Galleries
7. Reflecting Pool
8. Terrace

Details

Project: The Barnes Foundation, Philadelphia • **Client:** The Barnes Foundation, Philadelphia and Merion, Pa. • **Executive Architect:** Tod Williams Billie Tsien Architects, New York • **Landscape Architect:** Olin, Philadelphia • **Associate Architect:** Ballinger, Philadelphia • **Lighting Designer:** Fisher Marantz Stone, New York • **Structural Engineer:** Severud Associates, New York • **M/E/P Engineer:** Altieri Sebor and Weiber, New York • **Project Size:** 93,000 square feet • **Project Cost:** $150 million (construction and related expenses) • **Lighting Cost:** Not available • **Energy Code Compliance:** ASHRAE 90.1-2004 • **Watts per Square Foot:** 1.1 • **Manufacturers/Applications:** Aurora Lampworks (decorative pendants in galleries); Birchwood Lighting (T5HO fluorescent channel in Light Court clerestory, T5HO asymmetric reflector fluorescent uplight in galleries and clerestories, and linear fluorescent uplight in luminous ceiling in special exhibits gallery); Cooper Lighting, RSA (PAR38 downlights in auditorium); Edison Price Lighting (recessed-mounted halogen downlights throughout, track-mounted accentlights—halogen/day, metal halide/night—illuminate main stairway chandelier, and tracklighting throughout); Kurt Versen (PAR30 adjustable accent downlights in gift shop); Specialty Lighting (downlight in Gallery 1, covelighting in auditorium); The Lighting Quotient/Elliptipar (asymmetric reflector linear fluorescent channel in Light Box)