Making Modernity

at the Chemical Heritage Foundation

by Margo Bresnen

en years ago, a group of chemists approached the Chemical Heritage Foundation (CHF) in Philadelphia, Pennsylvania, USA, with a challenge: to collect as many as possible of the instruments that proved crucial to the advance of chemistry. The foundation's quick success in this endeavor soon gave rise to a new challenge: to use these objects, in addition to CHF's unparalleled collections of fine art, rare books, archival material, and other scientific artifacts, to bring to life the exciting, untold story of the chemical and molecular sciences for a too-often unaware public audience.

How best to do this? Earlier this fall, CHF unveiled a state-of-the-art museum and conference center. The museum component of this \$20 million, 18 000-square-foot project includes the Masao Horiba Exhibit Hall, home to the Arnold O. Beckman Permanent Exhibit, and the Clifford C. Hach Gallery for changing exhibi-

tions. Four years in the making, the extensively renovated space was made possible by bringing together some of the best minds in museum design. The new space conforms to "green" building principles and the sustainability standards of CHF.

Making Modernity

Ralph Appelbaum Associates (RAA), the world's largest interpretive museum design firm, and Dagit • Saylor Architects (now SaylorGreag Architects) worked hand in hand with CHF staff to realize Making Modernity, the major new permanent exhibition installed in the Horiba Exhibit Hall. As Robert G.W. Anderson. a CHF board member and former director of the British Museum, describes it. Making Modernity "tells an intriguing story of human endeavor and relates scientific pursuit with those practical end products which have transformed our lives."

The unique nature of CHF's collection posed challenges for RAA. The firm, whose notable projects include the National Constitution Center in Philadelphia and the U.S. Holocaust Memorial Museum in Washington, D.C., is known for tackling specialized subjects and extracting stories from objects. But chemistry's long, complex history does not make for a simple narrative, and the objects and documents of scientific heritage can be visually dull.

Still, CHF's curators and historians insisted that the collection tell its own story of

vital significance. In *Making Modernity*, science drives the tale. The education level of CHF's typical visitor allowed RAA to set a high bar for the collection's inter-

pretation. RAA project director Tim Ventimiglia says, "The project is very focused, and we're excited about the serious level of the scholarship."

Making Modernity's 24 sections illustrate 8 thematic arcs ranging from chemistry's origins to the role science plays in the modern world. Each section presents a story based on a person or group of people and displays items that convey the history of a given innovation or idea. The section entitled "Chemistry and the Public Good," for example, features scientists who became public advocates during the Industrial Revolution. It includes Louis Pasteur's 1865 letter upbraiding French winemakers for not adopting pasteurization, as well as photographs, journals, and popular magazines from the period.



Students from a local charter school tour Making Modernity. Photo by Rich Dunoff Photography.



Making Modernity's twostory "video column" features 18 high-tech screens. A film that brings the periodic table to life plays on a continuous loop. Photo by Tim Ventimiglia.

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Left: The new museum inhabits CHF's oldest wing, shown here under construction in April 2006. Photo by Gregory Tobias. Right: Visitors gather before a display of medical instrumentation in Modern Modernity. Photo by Rich Dunoff Photography.

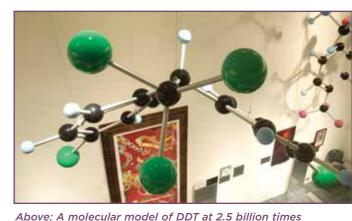
Other sections expose the chemistry behind Isaac Newton's work, early dyes, Bunsen burners, thermometers, Geiger counters, computers, fuel cells, buckyballs, and much more. They are arranged to help visitors draw connections between different scientific insights and eras. For instance, the area devoted to synthetics pairs a display about celluloid, an artificial compound made in part from natural matter, with one about Bakelite, a completely artificial material. The synthetics story continues with nylon, which revolutionized the textile industry in the mid-20th century, and GORE-TEX, a membrane used today with equal success in outerwear and surgical implants.

The centerpiece of Making Modernity is a two-story "video column." The tower's 18 screens play a 14-minute continuous loop of the periodic table in motion. The film was produced by Theodore Gray, the cofounder of Wolfram Research famous for his periodic-table table and poster, and filmmaker Max Whitby. Each element is represented by a filmed demonstration, which cycles through a cascading hierarchy on the column that can also be manually manipulated, turning the periodic table into an engaging interactive experience.

Because science is everevolving, *Making Modernity* was designed to allow a degree of flexibility. Principal architect Peter Saylor constantly kept the presentation of CHF's collection in mind as he plotted the renovation of the 1865 wing of CHF's headquarters. He describes the plan as "a contemporary intervention into a classic building for a project where a collection of world-class artifacts is integral to the architecture. It gives CHF a cutting-edge way to deliver a history which is one of rapid change."

Molecules that Matter

The Hach Gallery, the adjoining space devoted to science-themed rotating exhibitions, also allows for change. Because CHF has strong relationships with the Smithsonian and other loaning institutions, it was important to reserve room for temporary installations that offer something new to returning visitors.



actual size hangs in Molecules that Matter. Left: Guests mingle around the centerpiece of Making Modernity during the grand opening. Photos by Rich Dunoff Photography.





Left: The exhibition spaces originally housed Philadelphia's First National Bank, built in 1865. Photo by Gregory Tobias. Right: CHF's president and CEO, Thomas R. Tritton, at far right, toasts the museum's unveiling. Photo by Rich Dunoff Photography.

According to Erin McLeary, a curator at CHF, the space "will also function as a recruitment tool for future donations and loans. Visitors will come to think of us as the appropriate stewards for artifacts that they themselves own."

The Hach Gallery's first exhibition, *Molecules that Matter*, was developed by CHF in collaboration with the Frances Young Tang Teaching Museum and Art Gallery at Skidmore College in Saratoga Springs, New York, USA. The fascinating traveling exhibition showcases 10 organic molecules, each associated with one decade of the 20th century, which profoundly altered modern life. The molecules' scientific and sociological implications are explored through contemporary art, historical artifacts, and large-scale molecular models. For more on this exhibit, see the Nov-Dec 2007 issue of *Cl*, page 32.

To fully seize the opportunity presented by hosting this exhibition, CHF organized a companion lecture series in which Robert S. Langer, Eric Roston, Chrissy Conant, Sandra Steingraber, and Dawn A. Bonnell—all leaders in their respective fields—offer their perspectives on the molecules, on the science in everyday experiences, and on the promise and peril of discovery and innovation. These lectures are one more way that CHF encourages the general public to become informed about and engaged with the scientific progress it preserves and promotes. Major challenges facing the world today demand a better public understanding of modern science—the ultimate end to which CHF's new museum aims.

Located in the heart of Philadelphia's historic Old City, CHF's E.I. du Pont Conference Center features a range of fully equipped rooms with prime views of Independence National Historical Park. The 13 500-square-foot facility allows for a variety of configurations, includes all of the amenities required for successful meetings and events, and is centrally located near such major attractions as the Liberty Bell and National Constitution Center. It also adjoins CHF's new exhibition spaces. Able to accommodate up to 400 people, the center is available to select groups. For more information about the rooms or to reserve a space, please call 877-CHF-4500 or visit www.chfconferencecenter.org.

To learn more about the renovation, *Making Modernity*, *Molecules that Matter*, the lecture series, or how to visit CHF, go to www.chemheritage.org.

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