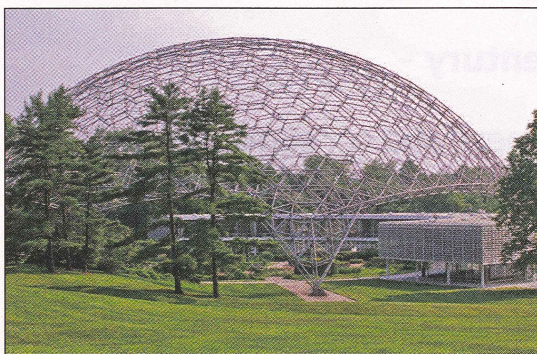


Materials Mastery: The Renaissance

► **Victoria Burt**
ASM Staff

ASM International's headquarters receives a renovation worthy of its historic status



ASM's first managing director William Eisenman wanted to build a structure that would "embody the wonderful world of metals, would express the soaring opportunities of metals engineers, would harmonize with the beautiful landscape, and would serve functionally the headquarters staff."

The 45-acre campus known as Materials Park has been home to ASM International for the past 52 years. Originally completed in 1959, the headquarters, 20 miles east of Cleveland in Novelty, Ohio, is the result of the vision of three men. William Hunt Eisenman, one of ASM's founders and its National Secretary and first Managing Director, donated 100 acres from his family farm with the mandate to build a landmark headquarters. Prominent Cleveland modern architect John Terence Kelly designed the building and concept for the geodesic dome and

brought in architect, mathematician, and futurist R. Buckminster Fuller. The dome, designed by Fuller, is a symbolic gesture of what humankind can create from raw minerals and materials by transforming them into useful and reliable products and services.

The exterior and interior of the office space conveys the ideas of the American Modern movement in architecture during the 1950s. John Terence Kelly sought to design a structure for ASM (then known as the American Society for Metals) that would symbolize man's power of transmuting raw metals into soaring expressions of art, science, and engineering wonder. At the same time, he wanted a structure that would complement the beautiful, tranquil, majestic

quality of the site; something that would stand as a positive statement of man in nature. The semicircular building has 50,000 square feet of office space and features modern design elements such as floor-to-ceiling windows throughout all three stories. It is also a tribute to the association's mission through extensive and varied use of metals in construction and detail, including stainless steel floating staircases supported by stainless rods running from the ground floor to the second floor, brass handrails, copper doors, and stainless steel sunscreens on the outside of those large glass panels.

Renovation

ASM is preparing for the next 100 years, looking to its roots in the American Society for Steel Treating, and to the future as the provider of materials information to the world. Toward this end, the office building under the dome has undergone a multimillion dollar renovation. The Chesler Group, based in Cleveland, Ohio, is developer and general contractor for the project and drafted the application for historic designation.

"When most people think of historic buildings they picture a brick and masonry building built in the 1800s," says Michael Chesler, president of Chesler Group. "ASM hadn't considered that the 1959 building would be eligible for historic designation, seeing as how it was built in the modernist period."



When Kelly designed the semicircular building and dome in 1958-59, his vision was a glass-enclosed building with maximum light and open views extending to the woods, fields, and sky.

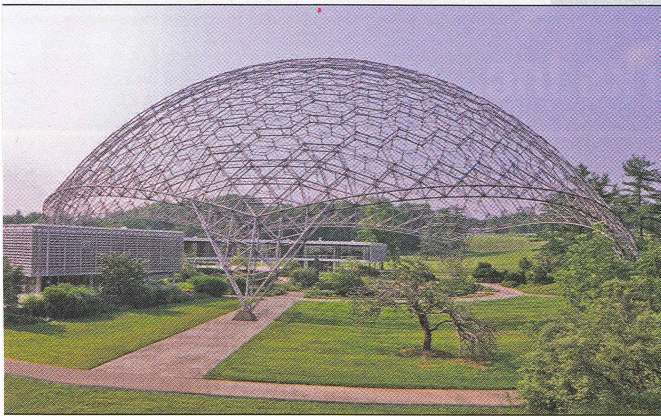


Cubicle walls only come up about four feet so there is nothing to block the views outside, a critical point of Kelly's original design. On the garden level, shown here, each workstation has a view of the dome's pylon and surrounding garden.

'Make no little plans'

William Hunt Eisenman was one of ASM's founders, its National Secretary and its first Managing Director, serving from 1918 to 1958. Eisenman was instrumental in bringing life to Materials Park, originally known as Metals Park, and it was his mandate to build a significant landmark structure on the site. He donated the land for the headquarters, selected the architect, approved the final design, and personally drove the wooden stakes that marked the footprint of the new structure. Unfortunately Eisenman died in 1958, a year before construction was finished. To honor his role in both the society and creation of Materials Park, ASM created the William Hunt Eisenman Garden. Set beneath the dome, the garden displays more than 75 specimens of mineral ores from all over the world. Every metal in the building is represented by its corresponding ore in the garden. In an alcove beyond the trees and plants of the central garden is a granite memorial to Eisenman, dedicated in 1999. On the memorial are the words of well known architect Daniel Burnham, which Eisenman frequently quoted, "Make no little plans; they have no magic to stir one's blood. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die."

of Materials Park



The dome's purpose is symbolic and aesthetic. Symbolically, man's very ability to erect such a dome dramatizes his mastery of metals.

"I never thought of restoring our building to get on the Historic Register," says ASM Managing Director Stan Theobald. "I didn't think we qualified; wasn't even aware of it as an opportunity until I met Michael Chesler."

The building is now listed on the National Register of Historic Places, and is designated as a Historic Landmark by the state of Ohio. This designation means all decisions had to be negotiated with the National Park Service. "Every single element, every color, light fixture, where we can put a bathroom...every decision had to be discussed and approved by the Park Service as well as the local building officials," says Chesler. "It's a herculean challenge to get approval from all sides."

The Chesler Group replaced the building's mechanical systems, cleaned and refurbished the sun screens, installed new gaskets and seals for the plate-glass windows, added better insulation, and repaired corrosion. The garden level of the building, which is below grade, has a "green" roof with soil and grass over the reinforced and newly water-proofed concrete.

Because of the Historic Landmark designation, the building must be returned as closely as possible to its original design. Although computers and high-tech lab equipment are allowed, the open spaces of the original design must be returned. The plate-glass windows are considered "original material" under the National Register designation and cannot be replaced with contemporary thermal pane windows.

Lakewood, Ohio, based firm Dimit Architects was responsible for restoring Kelly's concept of an open, bright space in the interiors. "What was important to Kelly then is still important now," says Analia Nanni Dimit, lead designer. "The views, the lighting, a sense of balance...the unique feeling you have in each space. We've stayed true to his vision but in a way that works for ASM today," she says.

Many original elements from the 1959 design were restored, reupholstered, or refinished including 32 original Steelcase chairs, brass metal screens, a conference room table with stainless steel ASM medallion inlays, and door

Facts and figures about Materials Park

- Listed on the National Register of Historic Places in 2009 and as a Historic Landmark by the state of Ohio
- \$2.0 million in state and federal tax credits to help offset costs
- The geodesic dome is made from tubular 7075 aluminum alloy, consists of 65,000 parts, rises to 103 ft and is 250 ft in diameter
- The largest open-work geodesic dome in the world
- The stainless steel sun shield lets direct sunlight into the building only one time a year, at exactly 4:30 p.m. on Dec. 21
- ASM International employs 75 people at its headquarters
- Starting in August 2011, grounds are open to visitors Monday through Friday from 9 a.m. until 6 p.m.

Project: ASM World headquarters

Client: ASM International

Developer and General Contractor: The Chesler Group

Architect of Record: Dimit Architects

Size: 50,000 sq ft

Cost: \$6 million

Completion Date: July 2011



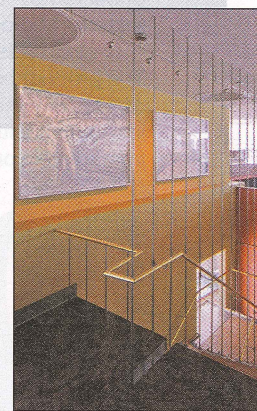
The stainless steel sun shield extends on across the large glass curtain walls and provides protection from the western sun without obstructing the view of the rolling hills and woods.

handles and hinges designed by Kelly. All of the original light fixtures, also designed by Kelly, are in working order and needed no work. ASM rediscovered seven panel brushed-aluminum murals by metals artist Bel-Jon. The "History of Iron" series of panels was commissioned in 1953 and have been rehung throughout the building.

Geodesic dome

The geodesic dome, made of tubular 7075 aluminum alloy, is in perfect shape and needs no renovation. Defined by a network of hexagonal and pentagonal shapes, the open-work dome stands 103 ft high and 250 ft in diameter, and weighs 80 tons. In addition, the dome is formed of 13 miles (65,000 parts) of aluminum alloy tubing and rods in tension. The dome is ornamental and open, honeycomb-like, and stands on five pylons, one of which arches 77 ft beneath the ground's surface. The architect's concept required the minimum number of dome supports and the use of only five pylons represents a real engineering achievement. The dome's purpose is aesthetic and symbolic. It is the largest open-work geodesic dome in the world. ◻

Photography: © Scott Pease/Pease Photography 2011



The main stairway is made of stainless steel, hung by steel rods running the height of the three levels. On the wall are two brushed aluminum panels by metals artist Bel-Jon that were rediscovered during the renovation.