The Most Perfect Building

TEXT AND ILLUSTRATIONS BY Stephen Harby

Nocturne
graphite and watercolor on paper, 18x24

For more than 20 years, I've found the Pantheon in Rome to be an engaging subject for artistic study and analysis. Built in the year 118 by the Roman emperor Hadrian and converted to a Roman Catholic church in 609, it offers an extraordinary example of an ancient Roman interior. The majority of its original materials and details remain intact, thanks to the building's continuous use and, thus, preservation. The Pantheon is the only Roman structure that didn't fall irretrievably into ruin when the ancient city's population declined from more than a million to less than 20,000 inhabitants.

The Pantheon's rich palette of materials—verde antiqua marble and porphyry from Egypt; golden yellow marble from Chemtou, Tunisia; and massive bronze doors—expresses the wealth, scope and breadth of the Roman empire at its peak. The structure's perfect proportions—a circle and a square in a drawn plan that translates to a hemisphere supported on a drum of equal height to permit the completion of the hemisphere to a sphere that just touches the ground—are sublime to the utmost degree. Its technological innovation combines brick construction and lightweight poured concrete, resulting in the largest self-supporting dome in its day and the first vast interior spatial volume, which even today is among the largest in the world. The structure was game changing at the time it was built and remains unsurpassed to this day.

The radial organization of the Pantheon—two cross axes, two diagonal axes and four more axes marked by smaller tabernacles—juxtaposed with its Cartesian gridded floor pattern—expresses the conjunction of earthly and cosmic realms. The presence of the cosmos is further embodied by the astounding illumination of the interior, with a sole source of light introduced through a central oculus in the dome. This opening to the sky in the apex corresponds to a mere 4 percent of the floor area of the building, yet it provides ample illumination throughout the day.

One can trace the sun's daily trajectory from sunrise to sunset as the earth rotates by observing the circle of light shining through the oculus as it travels from the dome downward into the structure and back up again. Through the seasons, one can trace the differing elevations attained by the noonday sun by noting the extent to which the light penetrates into the lower reaches of the interior. In December, the light descends barely halfway down the dome, while in June, it illuminates a spot just off-center on the floor. In this way, the building,

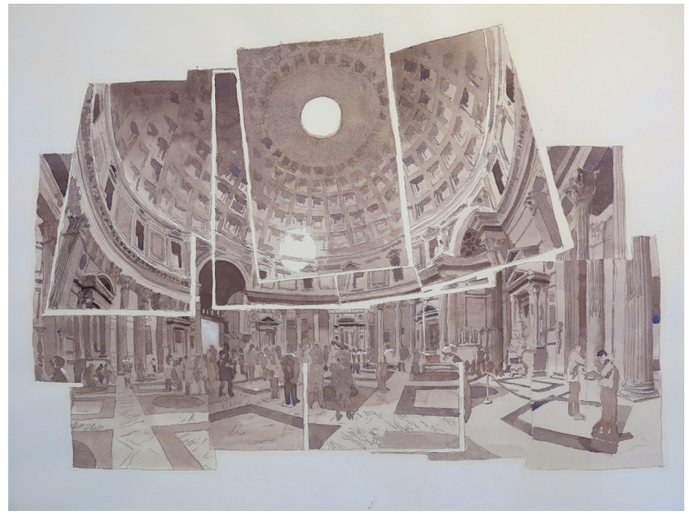
X-RAY VISION?

A significant graphic challenge for all artists attempting to represent the expansive interior of the Pantheon concerns the limitations of perspective and the relatively narrow field of vision—as demonstrated by *Interior of the Pantheon, Rome* (below), by Giovanni Paolo Panini. In order for Panini to observe this view from life, he would have needed to be positioned outside the enclosure of the drum, looking through it as if its walls were transparent.

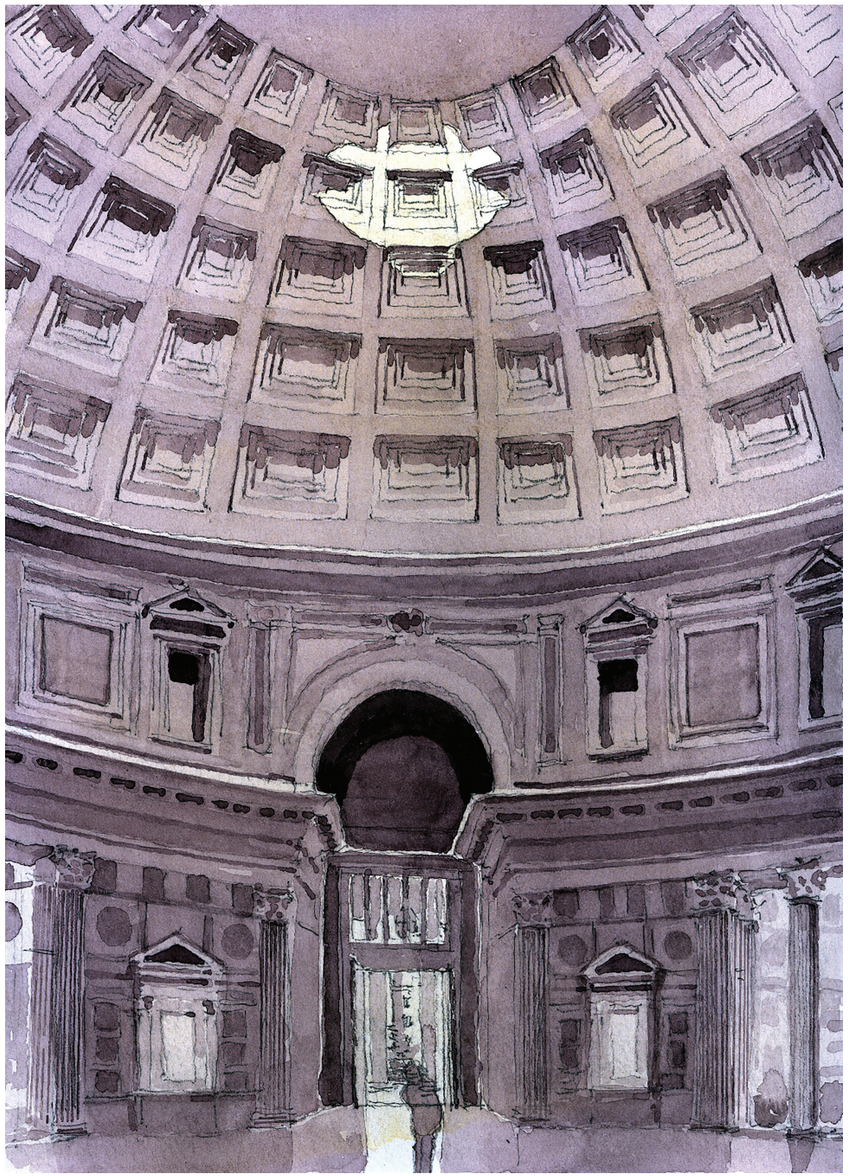
In *Pantheon: Composite of Multiple Views* (bottom), I met this challenge by creating a collage of photographic views. I then drew the collage onto a single sheet of watercolor paper, preserving parts of each photograph's frame so as to leave a trace of the process and retain the focus and compostion of each photo. A series of layered washes unified the ensemble.

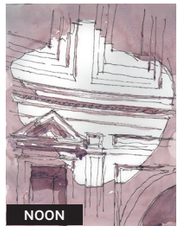
LEFT
Interior of the Pantheon, Rome
by Giovanni Paolo Panini
ca 1734; oil on canvas, 50⅜x39
NATIONAL GALLERY OF ART

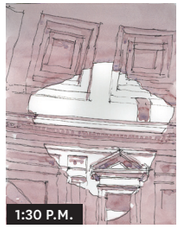
BELOW
Pantheon: Composite of Multiple Views
by Stephen Harby
graphite and monochrome wash on paper, 18x24

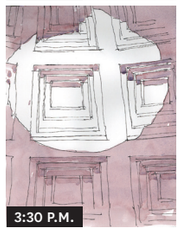


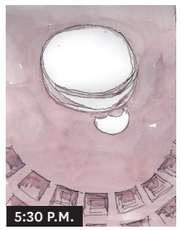
FOLLOW THE LIGHT











Snapshots
ink and monochrome wash on paper, 8½x6½ each

On December 22, 1999—the winter solstice—I captured the location of the projected disk of sunlight through the Pantheon dome's oculus at exactly noon (above). This was the lowest point the sun would reach that day. Six months later, on the summer solstice, the sun spot reached the floor in front of the door. On April 21, the date established by legend as the founding of Rome in 753 B.C., the sun at noon aligns exactly with the arch over the entrance.

The series of "snapshot" sketches (right) trace the movement of light from noon to 5:30 p.m. on a day in xmonthx. I allowed myself a half hour for each ink and watercolor sketch.

Sun at noon on winter solstice
graphite and monochrome wash on paper, 10¼x7¼

This view of the sun projected on the dome coffers (graphite and monochrome wash on paper, 10x7¼) documents the many subtle values of direct and reflected light and cast shadow. It also reveals the sophisticated design of the coffers. Their steps are offset, changing in proportion as they approach the dome's apex, which provides an optical correction when seen from below.

since well before the time of Galileo, has served as a celestial instrument expressing and celebrating the earth's position in the solar system. (See Follow the Light, opposite).

The unique and revolutionary nature of the Pantheon is concealed by its exterior appearance: a temple front of columns surmounted by a pediment roof (see *Nocturne,* page ••). This form was ubiquitous and familiar at the time the structure was erected, and the drum behind would have been concealed by the freestanding colonnades wrapping the rectangular space fronting the structure. For those fortunate enough to be able to enter the building, a great surprise awaited.

My own study of this remarkable building began at the time I was a Fellow at the American Academy in Rome and continues through the years that I've lectured on the spot to students of the Yale School of Architecture's Rome program.

My sketches and paintings encompass the setting of the building in its urban context, confront the challenge of representing the character of its interior space, and provide a documentation of the path of the sun as its projected disk moves around the interior over the course of a day and seasons. The artwork ranges from quick graphite studies or spontaneous wash drawings, done in situ, to larger, more sustained works, also done on site.

In more recent times, the number of daily visitors has risen, and working on site with easel and watermedia is no longer allowed. Now my larger works are done in the studio, based on my studies. These studio works increasingly tell the story of how the rich detail and materiality of the building refract the sun and light.

Stephen Harby is an architect, watercolorist, faculty member of the Yale School of Architecture and founder of Stephen Harby Invitational, which organizes travel opportunities for small groups.

Since it's no longer possible to set up an easel within the Pantheon, I now draw inspiration from quick value studies for subsequent paintings completed in the studio. **Sun Projected Mid-Morning in May, Oblique** (graphite and monochrome wash on paper, 22x16¼), is a much larger format than would have been possible to deal with inside the Pantheon.