

ON

LIGHT

To talk about light in architecture, start with darkness. In the earliest buildings, thick walls and sheltering roofs framed the dark, and hearth fires pushed back the gloom so that people could see what they were doing. This low illumination gradually took on special significance, and the hearth, with its warm, flickering glow became almost synonymous with home. The Japanese novelist Jun'ichirō Tanizaki explained that his “ancestors, forced to live in dark rooms, presently came to discover beauty in shadows.” So, they developed ceramic fire bowls, sheltered picture alcoves, paper screens, lacquerware flecked with gold—even miso soup and soy sauce, Tanizaki noted—which show themselves most fully and beautifully under layers of shadow. A world away, Victorian art critic John Ruskin exhorted young architects to develop the habit of “thinking in shadow.” In his *The Seven Lamps of Architecture*, he advised them to consider a building not as a collection of lines on paper but as a creation emerging from obscurity, “conceived as it will be when the dawn lights it, and the dusk leaves it.” Light and dark, he suggested, are the principal materials of architecture.

In the 20th century, architects suddenly acquired new technologies to push back the darkness. Working with electric lights, they refined techniques of providing illumination for everyday tasks. They lit vast factory floors, warehouses and endless office cubicles, banishing the darkness with a shadowless, stultifying glow. Workers labored in the light, far from windows or skylights, as executives gazed over cities in sun-bathed, overheated corner offices. But electric light also recast the nighttime moods of otherwise severe, functionalist buildings. Using incandescent and fluorescent lamps, recessed fixtures, luminous walls, and light-washed ceilings, pioneering mid-century architectural lighting designers such as Richard Kelly helped transform austere modernist buildings at night. Kelly’s designs intensified the rhythmic power of New York’s Seagram Building by Ludwig Mies van der Rohe, for example, and made Philip Johnson’s Glass House in Connecticut its most dramatic in the dark. While ubiquitous ceiling troffers may have expelled the dark with an all too oppressive, uniform brilliance, architects began to understand that effective electric lighting constructs architectural character on a foundation of darkness.

But electric lights pale when the sun breaks the eastern horizon. The first daylight rakes nighttime darkness aside, replacing it with long shadows of trees, signposts, benches, dogs and brisk walkers. Sunlight traverses window frames in bedrooms and kitchens to cast bright, shimmering parallelograms on still dim walls and to

Alex
Anderson

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FOOTNOTE — First published in 1933, Japanese novelist Jun'ichirō Tanizaki's essay *IN PRAISE OF SHADOWS* shines a light on Japanese aesthetics and studies how light and shadow's dependence on one another inflects everyday moments with repose and beauty.

wrap them around doorframes, cabinets, chairs, tables, and coffee cups. The oval light of the Pantheon's oculus in Rome begins a slow, daily spiral down its ancient concrete coffered toward the early-morning worshipers and tourists below. Outside, as the sun lifts up, the shadows under cornices deepen, and sunlight sharpens the acanthus foliage on Corinthian capitals. Everywhere, the sun begins to paint intricate shadows on carved temple facades, pagodas, and cathedral towers, confirming Frank Lloyd Wright's assertion that “shadows were the brushwork of ancient architecture.” On modernist buildings, however, sunlight must serve more sculptural ends. Their broad, unadorned surfaces absorb sunlight, allowing subtle changes in tone and value to reveal surface modeling and accentuate the careful disposition of masses. Who could forget Le Corbusier's first reminder to modern architects: “Architecture is the masterful, correct, and magnificent play of volumes brought together in light”? As the pale-pink morning radiance intensifies, curved surfaces bend subtly and beautifully into shade; steel and glass glisten brilliantly; flat walls dazzle.

Midday sunlight is two hundred times more intense than typical indoor electric lighting. It is far too bright for most day-to-day tasks, causing glare and eye strain, as well as uncomfortable heat inside buildings. Nevertheless, daylight is best for most architectural applications, Chris Meek, director of the Integrated Design Lab in Seattle, explains, because it is “information rich.” Its slowly shifting rhythms shape our moods and affect our health. It tells about the time of day, the seasons, the weather, and the drift of clouds. One of the great architects of daylight, Tadao Ando, uses the sun's full intensity only briefly in his buildings. For a few rare moments, a resplendent figure of light will lance across a smooth concrete wall. Slowly, though, the sun continues its arc, and shadows take over. “Light can be used as an object,” Ando says, “but a more gentle light is generally needed for everyday life.” So, designers use shadows to relieve the intensity of sunlight and emphasize its beauty. They use trees to cast cooling shade on the grass and pavement and to scrawl tempering ornaments on brass exterior walls. Screens and louvers shape staccato patterns, breaking up the sunlight to diminish its intensity. Overhangs and deep window recesses interrupt direct rays so that, reflecting off walls and ceilings, they fall softly on work surfaces.

The immoderate brilliance of sunlight challenges architects to exercise delicate control with shadows, just as they must disperse the night judiciously with electric illumination. Architecture thereby becomes an exquisite play of these most ephemeral materials: dark and light. —