THE GREAT ILLUMINATOR

Richard Kelly transformed a nascent technology into the lighting design profession

Philip Cialdella and Clara D. Powell

Curators of the Kimbell Art Musuem gambled that Kelly's daylighting theses would work in their facility

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The Van Meter House, Springfield, IL, is one of several glass houses Kelly illuminated.

In the brief history of architectural lighting, Richard Kelly made some of the greatest contributions. Pioneer, designer, practitioner, and educator, Kelly defined the art of lighting design by his unique illumination of many architectural landmarks of this century. Whether refining techniques in downlighting, accent lighting, and wallwashing or controlling daylight, Richard Kelly mastered the use of light in architecture, consistently breaking new ground.

Kelly's passion for light developed at an early age, but his professional involvement evolved in stages. Studying at New York City's Columbia University, he majored in science and English, with a minor in architecture. He first designed lighting fixtures for a local manufacturer, but by the time he graduated he was designing merchandise showrooms. He had ample opportunities to become acquainted with lighting equipment and explore the physical realm of light. Soon after college, Kelly opened an office "for designing and selling lighting ideas and the equipment to make them work." However, his scholarly endeavors were by no means complete.

In 1942, Kelly enrolled in the architecture program at Yale University. A few years of design experience had convinced him that an architecture degree would give him added professional credibility. There he had a chance to study lighting fundamentals with Stanley McCandless, a master of theatrical illumination. On a practical level, Kelly learned valuable theatrical lighting techniques. More importantly, he assimilated McCandless's ideas about light intensity, color, distribution, and control and their influence on human feelings. Kelly realized that "all our actions and reactions are based directly or indirectly on sensual perception." Through the manipulation of light, he could create excitement or boredom, comfort or discomfort.

Based on the theory that one's mood can be altered through visual stimuli, Kelly identified three types of "light energy impacts." They are focal glow, ambient luminescence, and the play of brilliants. Kelly had a unique way of describing these elements of visual design. He developed his own vocabulary, using natural imagery and life experiences.

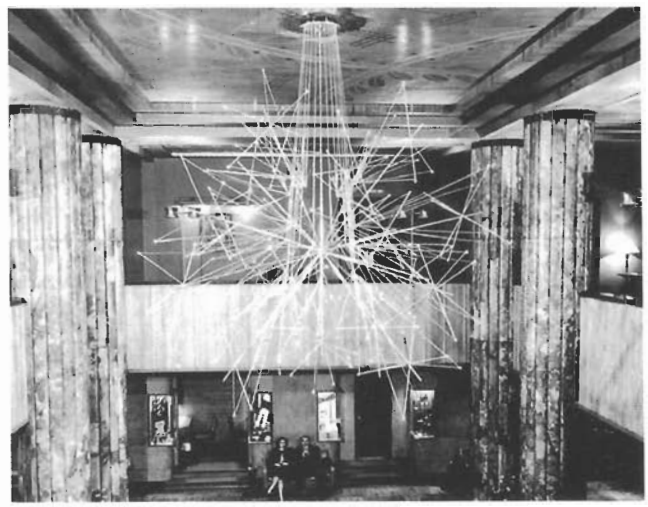
Focal glow is "the campfire of all time,...the sunburst through the clouds, and the shaft of sunshine that warms the far end of the valley. Focal glow commands attention and attracts interest. It fixes the gaze, concentrates the mind, and tells people what to look at. [It] separates the important from the unimportant." Kelly's idea of focal glow can be illustrated by the restaurant La Fonda del Sol. A small light tent creates an intimate pool of light from above the table. A ring of miniature incandescent lamps provides a warm glow. This focal glow focuses diners' attention in their own dining area; the rest of the room recedes.

Ambient luminescence is "a snowy morning in open country. It is underwater in the sunshine, or inside a white tent at high noon. Ambient luminescence minimizes the importance of all things and all people. It fills people with a sense of freedom, of space and can suggest infinity."

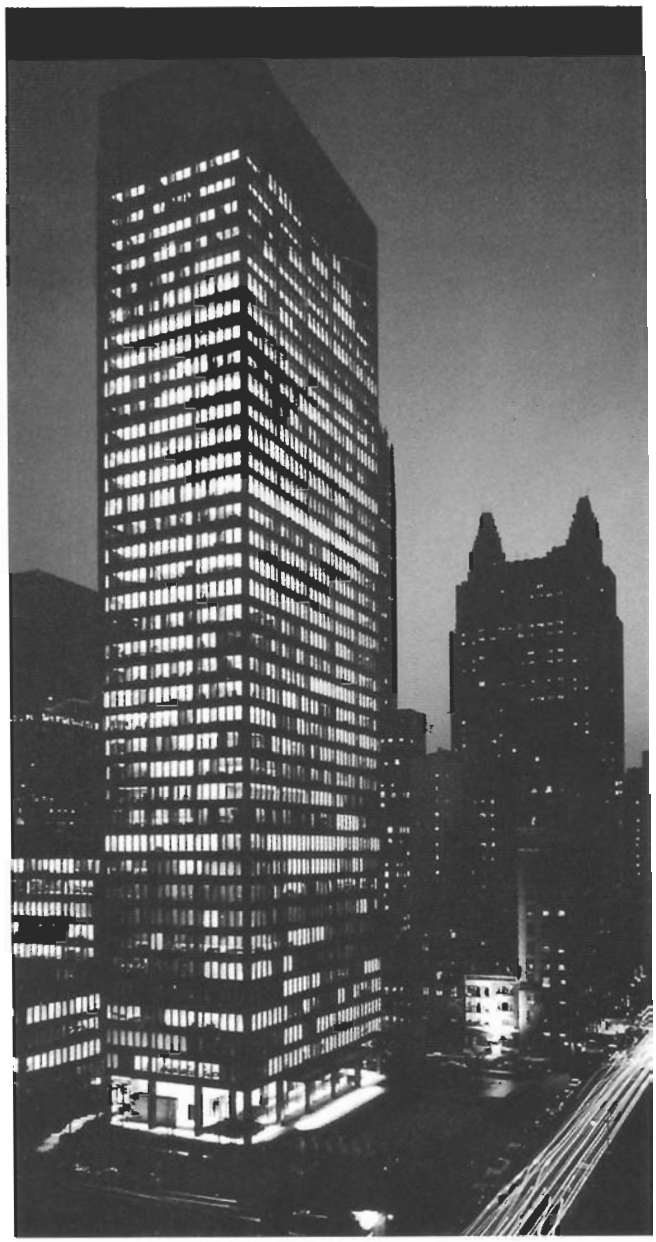
Ambient luminescence is often light bounced off architectural surfaces or screened by diffusing panels. To use daylight as a controlled source, Kelly scrutinized the architectural potential of every space, for, he wrote, "space is nothing until interrupted. Light is invisible until interrupted by a surface, or point, thus made visible." Working closely with architects from a project's inception, Kelly, a perfectionist, meticulously considered the material and shape of all reflecting surfaces.

Play of brilliants is "the aurora borealis,...the Versailles Hall of Mirrors with its thousands of candle flames. Play of brilliants is Times Square at night,...the magic of the Christmas tree, Fourth of July skyrockets. It quickens the appetite and heightens all sensation. It can be distracting or it can be entertaining."

The wireless chandelier Kelly developed with Edison Price for the Barbizon Hotel in New York City surely inspired excitement. When the hotel was renovated in the mid-1950s, the hotel industry was experiencing a significant slowdown. The owner's goal was to give the hotel a new look and to regain the public's attention. Kelly and manufacturer Edison Price developed a partnership that was to become long and fruitful. Together they designed new custom light fixtures that integrated with the architecture. The centerpiece was a 12-ft-diameter chandelier suspended in the main lobby. It rotated constantly, completing a full rotation every 2 min. This "cache of diamonds" was a technological feat. This chandelier, for which Kelly received a patent, is an antecedent of wireless low



Kelly and close collaborator Edison Price dreamed up this wireless chandelier for the Barbizon.



Night in New York: The Seagram Building

voltage systems. A press release from 1955 provided a technical description of this "galaxy of stars":

> "In the main lobby of New York City's Barbizon Plaza Hotel, tubes and rods instead of wires are used to supply electricity to the chandelier bulbs....A transformer mounted in the ceiling of the lobby supplies the 40 ampere, 6 volt current which is carried to the bulbs through bare nickel tubing and returned through the the brass rods...The weight of the chandelier is counterbalanced by the use of eight Negators located in the overceiling assembly. These Negators permit the chandelier to be lowered with bulbs lit, making it easy to locate burned out bulbs among the 192 in the fixture."

Kelly believed that visual beauty could be created by the interplay of focal glow, graduated wash, and sharp detail, though one of them usually dominated.

Kelly always considered the planning of light, its effect and its magic a crucial and integral part of architectural design. He insisted that lighting decisions be concurrent with architectural decisions. However, most architects trusted his professional judgement only after he had obtained his bachelor's degree in architecture. From then on, they asked for his participation from the project's inception, instead of selecting lighting fixtures after the building was completed, permitting the lighting and architectural schemes to develop in parallel.

Kelly, in an effort to communicate his passion and understanding of light, became a significant participation in lighting education. He lectured at Yale, Harvard, Cooper Union, Columbia, and many other prestigious schools of architecture and professional associations, introducing his philosophy and recommending lighting techniques.

During the most active part of his career—from the early fifties to the late seventies—Kelly became more and more involved with commercial spaces. In the late fifties, he conceived the lighting for an entire office tower. By the end of his life, he had completed several renowned museums. However, many of the structures Kelly illuminated had one feature in common—glass.

Philip Johnson's Glass House takes on a new visual depth when its landscape is illuminated.

During his career, Kelly had the opportunity to work with Louis Kahn, Mies van der Rohe, Harrison & Abramovitz, Eero Saarinen, I.M. Pei, and other prominent architects. One of Kelly's first significant works was with Philip Johnson. The Glass House in New Canaan, CT, marked a turning point in Kelly's career. It presented a puzzle, lighting a house with all the exterior walls constructed of clear glass. This problem, not uncommon in International Style houses, required a new, creative solution. During the day natural light made the outside of the house visually continuous. At night the glass acted as a solid black mirror reflecting all indoor lights. Kelly's solution was to light the entire outdoor surrounding area, including the trees.

This restored visual depth by connecting indoors and outdoors just as in daytime. It both expanded the house and gave a sense of security.

On a much larger scale, new curtain wall technology brought glass office towers and introduced a new era in skyscraper design. The function and aesthetics of fenestration changed, reducing the distinction between outdoor and indoor spaces. When Kelly started planning the lighting for the Seagram Building in New York City, he knew that every detail of the building would have to be coherent visually. The architects, Mies van der Rohe and Philip Johnson, selected all building materials and finishes with Kelly's assistance. At night, from outside, light became the primary design material. In the lobby, the light-colored marble walls of the building core were illuminated with a newly developed wall grazing system. It consisted of PAR lamps, closely spaced and baffled to reduce glare. This technique accentuated the height of the lobby, creating the effect of a floating building.

On the main floor of the Seagram Building, the Four Seasons restaurant reflects another of Kelly's successful lighting schemes, combining comfortable ambient light with sparkle. His lighting concept for the office floors used large luminous ceiling panels lighted by recessed fluorescent fixtures and aligned on the building module. Providing office lighting on all floors, this luminous ceiling avoided the broken-up look of individual luminaires, giving the ceilings and the interior a homogenous, consistent appearance from outdoors at night. To maximize this uniform effect, venetian blinds were limited to three standardized positions, fully open, fully closed, and exactly half closed. Tinted glass windows on all the office floors modified the apparent color of the fluorescent lamps to match the incandescent sources in the building lobby. Leaving nothing to chance, Kelly conceived a lighting control system based on an astronomical clock. The levels of electric light changed throughout the day, compensating for the variations in daylight.

Kelly had a particular interest in daylight. He felt that nighttime lighting affects only a small portion of our lives. Most of the time, "once you get inside a building, it is daylight that focuses the room," he said. In fact, he considered daylighting such an integral part of architectural lighting that he would rarely use the term artificial light. Daylight, after Kelly had manipulated it with reflectors or diffusers, became "artificially used daylight." The Kimbell Museum in Fort Worth, TX, and the Mellon Center for British Studies at Yale University, New Haven, CT, reflect two different approaches to daylighting.

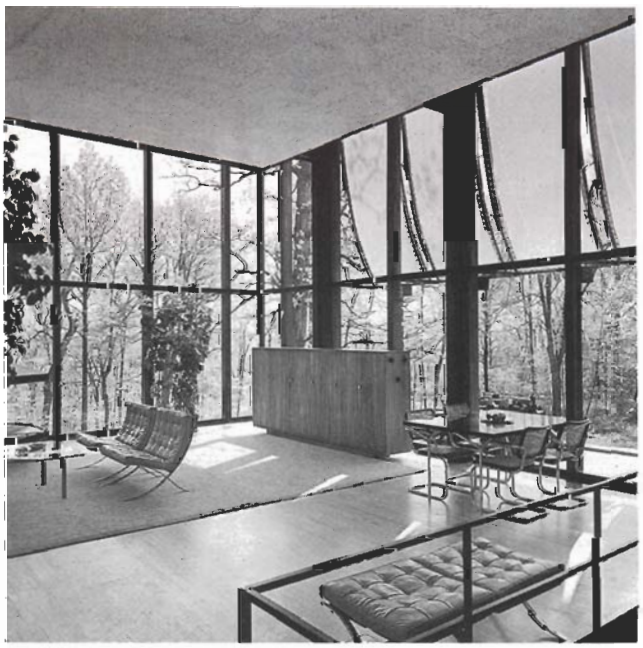
The owner of the Kimbell Museum and Louis Kahn, its architect, agreed to bring daylight into the museum, though they stipulated that the light remain away from the paintings. Based on Kahn's sketches, Kelly, in collaboration with Edison Price, developed a daylight fixture that distributed light evenly on the building's cycloidal concrete vaults. Kelly determined the curve for the fixture reflector after several revisions. Isaac Goodbar verified it with computer calculations. Kelly also selected perforated aluminum, for its transparency and reflective quality. To cut glare and hide the light source (daylight) the central part of the reflector directly below the skylight was solid. A track lighting system, structurally integrated into the daylighting fixture, provided direct light. Kelly's correspondence with the architects and drawings show an indirect, linear light source at the center of the reflector that was eliminated from the design for budgetary reasons.

At the Mellon Center for British Studies at Yale, another Kahn-Kelly collaboration, daylight was the primary light source illuminating the space and the paintings. After many computer calculations, Kelly proposed an amazing louver system. It created a "sun shadow pattern on a diffusive material" that then

The Four Seasons Restaurant is the paradigm of Kelly's ambient light with sparkle.

became the source of light for the paintings. Metal louvers on the rooftop skylights were positioned to bounce different quantities of light into the building, according to the height of the sun in the sky.

Richard Kelly's achievements in daylighting applications, as well as lighting equipment, suggest the extent of his lasting legacy. Need we be reminded that a number of lighting solutions that seem universal (wallwashing, indirect lighting) and equipment available on the market today (downlights, luminous ceilings, louvers) were developed in response to a specific need? For Kelly, the ideal lighting solution consisted of analyzing a building and its program, having a vision of "what great things could happen," and making them happen.



Wiley House combines light diffusing screens and exterior light fixtures.

Editor's note: An exhibition of Richard Kelly's original work will take place at the offices of Haines Lundberg Waehler, 115 Fifth Avenue, fifth floor, in New York City. The opening will be May 18, and the exhibition will be open to the public by appointment May 19–June 18. Please contact Jim Conti at (212) 353-4600 to make arrangements. After the exhibition in New York, the work will be available as a touring exhibit to schools and cultural institutions. For further information regarding availability and cost write Matthew Tanteri, Chairperson Richard Kelly Grant, c/o IESNA, 345 East 47th Street, New York, NY 10017.

The authors: Philip G. Cialdella is a project manager with Edison Price Lighting specializing in lighting applications and custom products. In 1990 he graduated from Parsons School of Design with the master of fine arts in lighting design. The article is based on the original research conducted for his master's thesis.

Clara D. Powell began her design career in Paris as an interior designer. In 1988 she received a Fulbright scholarship to study at Pratt Institute, where she completed the master's degree of interior design. Two years ago, she was awarded a Kelly Grant for the study light and objects—A Metamorphosis. Mrs. Powell is now an Associate with Synergy Consultants, Inc., a New York City consulting firm providing architectural lighting services and conducting lighting energy research.