

Book Review

Electric Light: An Architectural History — Sandy Isenstadt (Cambridge, MA, USA: MIT Press, 2018, 292 pp.)

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■ **ONE SHOULD PROBABLY** not spend a lot of time trying to parse the title of this appealing book: it is neither a work focused on the built environment nor a history of the electric light. Instead, one might consider the author's words that his intention is to study cases that "suggest an architectural history of spaces that have been generated or extensively reconstituted by electric light." His thesis is "the electric light changes the underlying nature of a space."

Isenstadt is clearly wide-ranging in his interests: one of the refreshing aspects of his book is his numerous quotations taken from literature: Henry Adams, Edgar Allan Poe, H.G. Wells, Sigmund Freud, Seamus Heaney, and Rupert Brooke to name just a few.

The book opens with a short course on the history of indoor lighting, beginning with such primitive artifacts as candles, oil lamps, gas lamps, and, dating from 1876, the first practical electric lamp, which was not incandescent but employed a visually intense and smelly electric arc. Man-made lighting had been at last separated from the flame. A major date in the history of incandescent electric lighting in the United States was Thomas Edison's launching of the Pearl Street electric power (DC) station in New York City in 1882. This was the first commercial source of electricity in the U.S. Prior to that time there was some limited use of the recently

invented Edison incandescent bulb but the property owners had to provide their own generator.

Rather than focus on the history of the bulb itself, Isenstadt dwells on a device that accompanied incandescent electrical lighting: the light switch. Anyone who went to Sunday school will know the third line from the book of Genesis: "And God said, 'Let there be light,' and there was light." With the lighting of the home and factory came the switch, and the feeling enjoyed by the first users as they threw a switch must have bordered on the uncanny. To discuss this phenomenon Isenstadt brings in the master of the uncanny, Sigmund Freud, who described his grandson learning that he could throw objects away from himself and then, by retrieving them, to make them reappear—the child's first instance of mastering his space. Isenstadt remarks that we replay this phenomenon in illuminating a room and then sending it back to darkness. While not fully receptive to a Freudian interpretation of a light switch, I would credit Isenstadt with novelty in his analysis. We do learn the origin of the word "switch" which derives from the English "switch": a long stick to control a horse and tell it to increase its speed. From this, the term made its way to railways for track switching, and from there it went to electric circuits.

The confluence of light and space was at times a mixed blessing. Isenstadt quotes Robert Louis Stevenson on electric street lighting: "A new sort of urban star shines out nightly, horrible, unearthly,

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obnoxious to the human eye; a lamp for a nightmare.” The word “glare” came to be employed to describe unpleasant electric lighting. The author supplies one meaning: “an unpleasant sensation resulting from excessive brightness.”

Although the glare of streetlights might be regarded as a minor nuisance, this was not the case with automobile headlight glare which emerged as a significant problem. Initially, cars had nonelectric acetylene lamps the illumination of which required a chemical reaction and which was superior to the early automotive electric lamps of the automotive era. It was not until around 1910 that we see a growing preference for electric car lamps.

Aside from the glare perceived by another driver or pedestrian caught in the headlamps of an approaching car, there were difficulties for car drivers as they sat behind their own “moving cone of light.” A nice quote from the Boston Globe, in 1910 that Isenstadt employs states the problem:

no matter how well he may know the road by daylight, he is often at a loss[at night] to recognize familiar objects and will even pass the place he desires to go without being without being aware of itObjects by the roadside have an unnatural appearance and seem out of proportion.

The bright headlights that evolved in this period had their downside, as Isenstadt relates with a quote from New York’s secretary of state in 1914:

There are few situations more paralyzing for the traveler ... than meeting a motor car with powerful headlights. All that is visible to him is a pair of eye scorching white discs set in the midst of impenetrable darkness.

Not surprisingly, in 1918, New York State passed a law specifying a maximum candlepower at a certain point in space with respect to the headlamp. Police carried specialized instruments to enforce this law. It wasn’t until the late 1930s that federal laws were passed regulating automobile headlamps.

Here, I would fault Isenstadt for a problem that dogged me throughout his book: a scarcity of hard technical information, e.g., when did the system of dim/bright lighting that all cars now have and which is triggered by a button on the floor or a switch on the steering column come into use? And when the intensity of light in a room or on the street is

measured, it must be done with some kind of light meter. Nowhere does he mention the history and origin of such an instrument and yet it is key to many of his discussions.

In the following chapter, Isenstadt moves his attention from outdoor illumination, and the automobile, to the indoors as he takes on factory lighting. The “dark satanic” English mills that sprang up in the 18th century had to have light. The factories created in the 1700s consolidated labor for the first time in large buildings. If water or steam power were used as a prime mover, the factory was long, multistoried, and narrow on account of the system of overhead driveshafts employed. Such a building was difficult to keep illuminated for work by means of daylight, and an array of awnings and screens were employed.

At first many mills also tried candles. Gaslight was adopted by factories beginning in the early 19th century but suffered from flicker and odor, and by the 1870s some mills switched to the brighter but hotter arc lamps. With the spread of electrification in America and the United Kingdom, it wasn’t many years before arc lighting was dropped in favor of incandescent.

Isenstadt explains how the scientific management movement, also known as Taylorism, was quick to employ incandescent lighting in factories. Unlike other aspects of Taylorism, which frequently involved speeding up production lines, and directives about how workers were to move their body, improved lighting, brought about by Taylor’s disciples, was generally liked by the working class—better lighting was a non-coercive way to improve production.

From the factory, an improved lighting movement spread to schools—helped by a prevalent notion that public schools were themselves a kind of factory in which the raw materials (kids) are reshaped to meet the demands of life. Inadequate lighting was seen as a source of eye problems as well as a cause of bad posture. By the 1930s, General Electric, maker of both electric power generators and bulbs, offered to send consultants into private homes to assess lighting conditions. Their advertisements pointed to their success in factories and schools.

From indoor lighting—home, school, and factory, all centers of production—Isenstadt takes up in a new chapter to what might be deemed as its opposite: outdoor lighting designed to promote consumption. His attention here is on Times Square

in Manhattan and its evolution from the late 19th century until the middle of the last one. Isenstadt has a knack for finding appropriate quotes and he uses one here from William Brevda:

The two great machines of desire in the first half of the 20th century were the movies and the electric advertising sign, metonymized respectively as Broadway and Hollywood.

Isenstadt is not the first to write on this subject, and the reader whose appetite is whetted by reading him will also want to explore an excellent earlier book, *American Illuminations* by David Nye, a well-known historian of electrification. And to further your knowledge of the subject you might like *City Lights: Illuminating the American Night (Landscapes of the Night)* by John A. Jackle.

The Times Square phenomenon can be traced to the lighted billboards that sprang up in London and Paris in the 19th century. But what was to appear at the corner of Broadway and Seventh Avenue in New York, unlike the billboards in London and Paris, concentrated the spectacle at one site.

Times Square is now famous for its neon lighting, which dates from the 1930s, and one wishes that Isenstadt had more to say about this invention. Prior to the use of neon, lower Broadway, below Times Square, was brightened with gas and arc lamps as early as 1880. By the early 20th century Broadway had become a mecca for incandescent outdoor advertising. Key to its appeal was the use of flashing signs which, starting around 1900, was facilitated by the automatic bending of a heated bimetallic metal strip. The real novelty of the Square, however, lay in its use of signs with moving text. This “talking sign” was based on a 1911 patent that employed a perforated insulating ribbon that passed over a conducting sheet. In this way, the hundreds of attached bulbs could be switched on and off sequentially to produce the spectacle of moving letters. This was later improved to form bands of letters that moved around the outer surface of a building and in 1928 may have reached its apotheosis with 15,000 bulbs on the Times Square building’s tower consisting of 5-foot tall letters which flashed out the news of the world, obtained from a telegraph connection, “collapsing time and geography,” as the author puts it.

In support of this thesis, “an electric light changes the underlying nature of a space,” Isenstadt

concludes his book with a chapter on the experience of occupying a space that once enjoyed electrical illumination but is now dark. Blackouts, arising from the fear of nighttime aerial bombing, became commonplace in the United Kingdom, Europe, and the United States in the years leading up to World War II. A blackout was held pre-war in America in May of 1938 in Farmingdale, Long Island, and the New York World’s Fair was also blacked out when the nation was still at peace in October of 1940. Isenstadt remarks that after decades of increasing illumination in the United States, “the idea of a darkened nation came as a shock.”

In a blackout, sirens would sound, triggering an air raid drill. Homes could be illuminated but the windows were covered with blackout curtains. Table lamps with dark shades were used and ceiling lamps were discouraged. An “air raid warden” —my father was one—would ring the bell at a non-conforming house and speak with the occupants. Electric signs went dark, street lamps were switched off and shop windows darkened and theater marquees were turned off. Automobiles could be driven with headlights partly covered.

A series of articles appeared in newspapers and magazines during the war to explain how to use the four nonvisual senses during a blackout in order to safely go about one’s business. People were encouraged to use “audible cues” and to become familiar with odors as so as to recognize the use of poison gas. David Nye, mentioned earlier, has written yet another book that will be of interest to readers of Isenstadt: *When the Lights Went Out, a History of Blackouts in America*. He treats not only wartime blackouts but unintentional blackouts such as the one that brought down the power grid in much of the United States in 1965.

IN CLOSING, I would like to compliment both the publisher (MIT) and the author for the design of this book. The choice of illustrations is inspired—running from William Hogarth to Walker Evans to *Saturday Evening Post* covers. The reproductions are excellent, and reading this book is a treat. ■

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