

121 APR/MAY 2021
www.arc-magazine.com

arc

LIGHTING IN ARCHITECTURE

Green Light

Light Collab breathes new life to
Singapore's Parkroyal Collection Marina Bay

LAM PARTNERS 60TH ANNIVERSARY • QISTINA AHMAD ALI
HOSPITALITY FOCUS • DARK SOURCE FINALE • LED LINEAR ULTIMA-P REVIEWED • CASAMBI AWARDS

On Guard for Lighting Quality

The establishment of the first association of professional lighting designers

Asst. Prof. Dr. Karolina M. Zielinska-Dabkowska IALD, IES, CIE, MSLL, RIBA, looks at today's recognised lighting design profession and its historical formation combining aspects of science and art.



Figure 1 Night view of the Panama Pacific International Expo, 1915 with illumination designed by Walter D'Arcy Ryan. (Pic: © San Francisco Photography Collection, PC-SF; California Historical Society)

N

ot many people in the lighting community are aware of the fact, that after electricity was invented and in general use in the United States from the late nineteenth century, only electrical engineers were responsible for the illumination of architecture. After 1906,

when the Illuminating Engineering Society of North America (IESNA) was established in the USA, companies and individuals professionally involved in the field of gas lighting and natural light, were first brought together. However, this new field quickly became dominated by people applying electric light in their projects.

Members of this young discipline were mindful from the beginning, that a collaboration with architects was decisive and of great importance for the future development of lighting as a profession. One of the tasks that was set was the promotion of cooperation between these two professions in the field of architectural illumination. This included the presentation of completed projects, the monthly publication of articles in "Transactions of the Illuminating Engineering Society", and the participation in annual conferences related to the topic of artificial illumination. In order to control the chaos of illuminated advertisement that began to flood New York, the first rules were introduced to regulate external illumination. However, architects of this period seemed rather reluctant to cooperate with illuminating engineers, as they did not want to bear the cost of additional consulting services. For many years, the relationship between these two groups was strained.

Interestingly enough, the subject of architectural lighting initially did not appear in the architectural press at all. Instead, it was present on the front pages of journals and in technical journals related to the electrical industry. As the wave of lighting installations gradually spread across America, and later, also across Europe, even more of such publications were printed.

Meanwhile, on the other side of the Atlantic, in several other countries, similar associations of lighting specialists were established. First, in 1909, the Illuminating Engineering Society was founded in London, then in 1912, the German Society of Lighting Technology was established in Berlin. Later, the Illuminating Engineering Institute of Japan was founded in Japan in 1916, and then in Poland, in 1924, the Polish Electrotechnical Committee was created, which five years later, was transformed into the Polish Committee of the International Commission on Illumination.

In the IESNA professional press, there was a heated polemic between members of the association on the direction of the development of this new profession. Most wanted to follow the functional lighting path, including technical aspects, such as the amount of light and functional needs: "There is a large field for the illuminating engineer where aesthetics is only of secondary importance: in this field [he] may achieve success even though he does not concern himself personally with purely artistic side of the work." [1]

In addition, some members believed that there was no need at all for an illuminating engineer to be creative: "An [illuminating] engineer, by reason of his education, is unsuited absolutely for the work [artistic illumination of architecture], which he sets out to do.



Figure 2 Walter D'Arcy Ryan director of the Illuminating Engineering Laboratory at General Electric and pioneers of the newly emerging movement. (Pic: © Bain / Library of Congress)

“He has no conception of the effects desired. He has no creative ability, no knowledge of the history of architecture and history of ornamentation, and in fact, he is working in the dark absolutely.”

Some members of the engineering community thought the architect should impose his ideas on these matters in such a way that the engineer follows his recommendations, because such cooperation will bring the most effective results in accordance with the direction set by the architect: “[...] the architect feels he should dictate in such matters, and that the engineer should follow his dictates, and this will produce the most efficient results along the lines laid down by the architect.” [2]

However, there were also new and differing opinions. First of all, there was a call for quality aesthetic solutions in illumination design as well as an artistic design approach, built on understanding of the architectural concept: “This branch of illuminating engineering is unquestionably an art, and only a science in so far as an art is scientific in its method. The illuminating engineer who hopes to cope with the lighting features of architectural problems, must be familiar with architecture.” Some professionals were also calling for better education of illuminating engineers to perform their new duty: “How, then, is the illuminating engineer successfully to cope with his problem and advise with the architect as to the best means of achieving results, if the engineer cannot appreciate and understand the architect’s viewpoint? [...] It seems, then, that a very important, if not essential feature of the engineers’ preparations is a study of the history of illumination and its relation to architectural design”. [3]

People who preferred these ideas explored the art of “painting with light” (Figure 3). Their lighting projects stood out because they were

unusual, aesthetically refined, and brought out the beauty of architecture during the night hours. It was believed that: “The illuminating engineer who considers only the scientifically practical side of the profession is necessarily doomed to ultimate failure, for he will not be able to obtain the recognition that the importance of his work deserves.” [4]

There were also voices that postulated renaming the profession: “Viewed in its broader sense it would seem that the term <illuminating engineer> is not entirely suited to the profession, but that <lighting expert> or <lighting specialist> would more fittingly describe the broad scope that the profession should cover.” [5]

E.L. Elliott, one of the IESNA members, promoted the need for an architect to employ an illuminating engineer, explaining that “architect” means “master-builder”, and therefore, the building consists of many elements, the details of which, must be more or less known to the architect. The special task is to make all the pieces fit together, properly coordinated, so that the final result is successful and complete. In 1908, Elliott wrote:

“The number of elements entering into the structure and design of modern buildings is vastly greater than anything conceived of in ancient or medieval times. With this great increase in the elementary problems has come a demand for corresponding greater knowledge of details, with the result that, in many cases, the requisite knowledge has broadened to such an extent as to render a sub-division necessary in order to leave the master-builder free to follow his legitimate office of co-ordinating the various details. This has given rise to an increased number of specialists, or engineers; and the latest among these is the illuminating engineer.” [6]

As a result of many activities undertaken in the 1920s and 30s, there was an unexpected change in the attitude of architects. This



Figure 3 The American Radiator Building illuminated by Bassett Jones, as it appears at night, New York, in mid 1930s. The tower was specially designed in black brick and gold plating to have its color scheme reversed under nocturnal illumination. (Pic: © Getty Images)

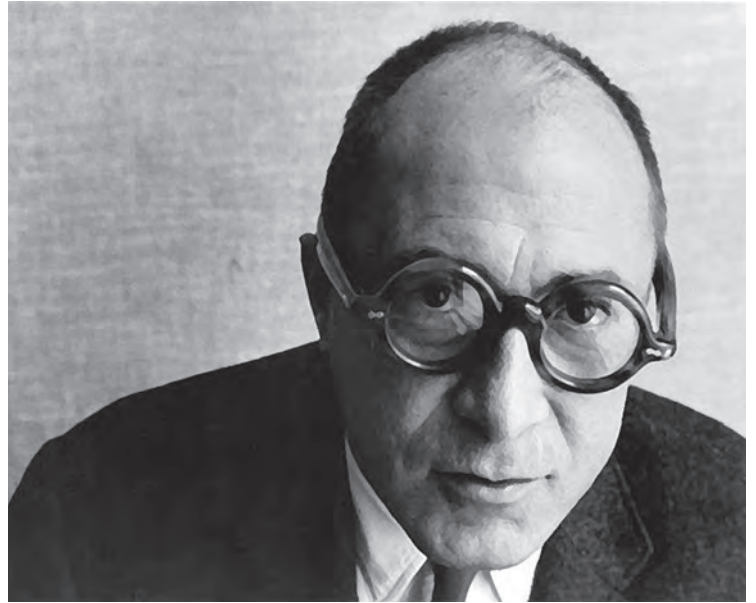


Figure 4 Richard Kelly - one of the founders of IALD known for his concept of "layers of light" or the approach of integrating three distinct types of lighting: ambient luminescence, focal glow, and play of brilliants. His notable works include: illumination for the Glass House, the Kimbell Art Museum, the Seagram Building and the Yale Center for British Art to name a few. (Pic: © IALD)

spurred a fascinating cooperation between illuminating engineers and architects. The illuminating engineers also understood that to better serve architects, they must have basic architectural knowledge. For the first time in 1930, two series of lectures related to the basics of architecture and field trips were organised for IES members in New York and Chicago, led by practicing architects and professors of the schools of architecture of the University of Illinois and the Armour Institute in Chicago and Columbia University in New York. [7] "The Illuminating Engineering Society believes that in order to be of real service to the architect, the illuminating engineer must know more about the architect's problems and be able to talk to the architect in his own language. He should also be conversant with architectural terminology and have some knowledge of the fundamentals of that subject." [8] Professor Harold Vandervoort Walsh of Columbia University's Department of Architecture described the relationship of these two professional groups: "Architects do not seek to light every corner of their building. Shadows to them are as important as light. The new movement in lighting has come about as the engineer, busy with his problems of lighting efficiency, has looked beyond and realised that the architect wanted this playfulness and emotional quality of light. On the other hand, the architect, seeing a friendly face, has turned away from his old-fashioned ideas about lighting and had awakened to the fact that the engineer has developed for him newer and finer ways of playing with light." [9] Walsh also emphasised the expectations and concerns that architects usually have: "The [illuminating] engineer will not classify the apparently impractical and novel ideas of the architect as foolish, but will sit down and figure out how to do them. From the flights of imagination of artists come the problem for the scientists. [The architect's]

mind will be centered upon the best way to bring out the forms he has designed by good lighting. He will not get far with an engineer who answers his questions with, "it can't be done". But great progress will be made with a sympathetic engineer at his elbow, interested in helping him achieve an ideal." [10] This first step in the cooperation process was pivotal. However, architects were still, in most cases, the originators of the illumination concept, and the illumination engineers supported them with advice on how to achieve a particular lighting effect. For instance, where to place the luminaires, what type of luminaires to use, and what materials on the façade will be the most advantageous. Special models were also created, so it became possible to present the effects of illumination. However, the services provided by the illuminating engineer were still limited to technical advice, not to independent, creative work. There were two Americans in the early history of electric lighting who were pioneers of the newly emerging movement. One was

Walter D 'Arcy Ryan (Figure 2), Director of the Illuminating Engineering Laboratory at General Electric who was known for his skyscraper illumination, as well as larger projects including the 1915 Panama-Pacific International Exposition in San Francisco (Figure 1), or the Century of Progress Exposition in Chicago (1933-1934). Another was Bassett Jones, who was a key figure among architects active in the 1920s and 30s. Jones was an all-round engineer, inventor, theatre and architectural lighting designer. He was also a member and founder of IESNA, and one of the first to speak about key issues involving architectural lighting. He insisted on the cooperation between an illuminating engineer and an architect. Thanks to the influence of both these visionary people, interest in lighting increased in the first half of the 20th century. Yet, despite their obvious success, the profession of lighting designer remained unrecognised as an established career. When analysing the literature, it's clear it was really only the architects of



Figure 5 The New York State Theatre and Plaza with external and internal illumination designed by Richard Kelly. (Pic: © Erco Photography: Thomas Mayer)

INTERNATIONAL ASSOCIATION OF LIGHTING DESIGNERS

IALD

Figure 6 In 1971, the International Association of Lighting Designers (IALD) was officially incorporated, with its headquarters in Chicago, USA.

modernism operating in the second half of the 20th century, who considered illumination to be an important tool in creating an architectural form. Additionally, there was the need to create a new specialisation because knowledge about lighting technology became too broad for the architect of the building to study, or to rely only on consultancy from the illumination engineer, as had been the standard practice.

The consequence of this was the conscious use of the services of a lighting designer where this professional would initiate the dialogue in the early stage of the design process. At that time, the style and trend of modernism proposed new, bold solutions with materials and technology, which formed an excellent contribution to the development of this new profession.

Although the number of people in America who dealt with the professional lighting of architecture continued to increase, it was only at the beginning of 1968, that the first attempts were made to institutionalise this field of lighting design. Even though many individuals created innovative work, the profession remained largely unrecognised. Initially, faced with the challenge of securing their future, a small group of passionate and inspired pioneers from New York, met monthly for informal gatherings in Manhattan restaurants, private apartments, and conference rooms, to define their new profession, and to set future goals for development.

The first meeting was at Richard Kelly's home. The same individual known for his concept of "layers of light" or the approach of integrating three distinct types of lighting: ambient luminescence, focal glow, and play of brilliants. [11]

Most who attended had an architectural and theatrical training/background and were members of IESNA, yet they chose to connect in recognition of their unique position. Their services

differed from those of electrical engineers or illuminating engineers, as their skills involved the design, application, and use of lighting that was in harmony with architecture – this was a combination of science and art. The initial goals of the emerging organisation were thus defined: "[...] to do all acts and things necessary to bring together practicing professionals in the field of lighting design; to define, develop, advance and maintain standards and excellence among Association members; and to communicate these ideas and the attendant benefits of designing lighting to allied professions and the public at large." [12]

In 1971, the International Association of Lighting Designers (IALD) was officially incorporated, with its headquarters in Chicago, USA. Today, members of this professional organisation are designers with an education in the field of architecture, interior architecture, theatre, electrical engineering, as well as lighting design. The association unites more than 1,500 independent, professional lighting designers from all over the world. The association's mission is to advance the global profession through advocacy, creating global standards for lighting design excellence. It promotes excellence in lighting design through the work of its members, who make a huge contribution by providing innovative and responsible lighting solutions. These designers understand the role of lighting in architecture, interior design, and urban and landscape design, and they use their rich experience and knowledge to raise the profile of these projects. Today, as it was in the past, professional members of the IALD cannot also be involved in any way, in the sales of lighting products. Their earnings are derived from design services, which gives them complete independence in choosing the best aesthetic and technical solutions, whilst also supporting needs of humans and the external environment. ■

References

[1] Jones B., *The relation of architectural principles to Illuminating Engineering Practice. Transactions of the Illuminating Engineering Society*, 1908, vol. III, p. 9.
 [2] *ibid.* p. 42.
 [3] *ibid.* pp. 25-26.
 [4] *ibid.* p. 9.
 [5] *ibid.* p. 50.
 [6] *ibid.* p. 55.
 [7] *Architect and Illuminating Engineers Break Bread together, Reflections. Transactions of the Illuminating Engineering Society* 1920, no. 7, p. 749.
 [8] *Transactions of the Illuminating Engineering Society*, 1930, no. 6, p. 535.
 [9] Walsh H. V. *An Architect's reaction to the new movement in lighting. Interim Report – Committee on Light in Architecture and Decoration. Transactions of the Illuminating Engineering Society* 1930, no. 7, Vol. XXV, pp. 603–604.
 [10] *ibid.* pp. 603–604.
 [11] Zielinska-Dabkowska, K.M. *Home Sweet Home. Connecting the dots for healthy evening residential illumination.* *arc magazine* 2019, no. 111, pp. 055-060. <http://bit.ly/30TqC55>
 [12] *International Association of Lighting Designers (IALD). Celebrating 35 Years of Lighting Design Excellence, 35th Anniversary Yearbook*, Chicago 2005, p. 4.



Asst. Prof. Dr. Karolina M. Zielinska-Dabkowska is a chartered RIBA architect and an award winning practicing lighting designer. She is also an Assistant Professor at the Faculty of Architecture, Gdansk University of Technology, Poland, and co-founder of GUT LightLab, where she conducts research on various aspects of light and lighting in the built environment. She is actively engaged in the work of international organisations such as the International Association of Lighting Designers (IALD), the Illuminating Engineering Society (IES), International Commission of Illumination (CIE) and International Dark-Sky Association (IDA), providing guidelines and sharing best practice for nighttime illumination in the built and natural environment. She has participated in a number of international conferences, and has written articles for national and international publications. Karolina joined Women in Lighting (WiL) in March 2018 as an Ambassador for Poland.