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ADOLF K. PLACZEK, *editor in chief*

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## EADS, JAMES BUCHANAN

In the Eads Bridge (1867–1874) in St. Louis, Missouri, James Buchanan Eads (1820–1887), a self-educated engineer and inventor who was born in Lawrenceburg, Indiana, made the first major application of structural steel and devised tension and compression tests of this little-known material. Piers of the then world's largest bridge were built within the country's first and deepest under-water pneumatic caissons. For Union forces in the Civil War, he built a fleet of ironclad gunboats at a St. Louis boatyard. He died in Nassau, the Bahamas, where he was promoting a ship-carrying railroad across the Isthmus of Tehuantepec, Mexico.

GEORGE MCCUE

### WORKS

\*c.1861–1865, Ironclad Gunboats (for the United States Navy); 1867–1874, Eads Bridge; St. Louis, Mo. 1875–1879, Jetties, South Pass Ship Canal, Mississippi River.

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## EAMES, CHARLES O.

Charles Ormand Eames (1907–1978) ranks as one of the most important American architectural designers of his generation. Although the scope of his work included urban planning, buildings, interiors, furniture, stage and movie sets, photography, motion pictures, graphics, industrial products, exhibitions, and teaching, he nonetheless considered himself "an architect who considers everything as architecture and has practiced architecture in all his work" (Eames, 1967, p. 3).

Eames was born in St. Louis, Missouri. He began his architectural studies at Washington University in St. Louis in 1924 and interspersed them

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with work in a local architectural firm, Trueblood and Graf. As a student, Eames is thought to have been particularly interested in the work of FRANK LLOYD WRIGHT, but his interest in modern architecture was considerably broadened on a trip to Europe in 1929 where he saw the work of the International style architects.

In the following year, Eames established the firm of Gray and Eames in St. Louis. The Great Depression was not the most opportune time for a young architect to begin his career, and Eames's work during the 1930s included a variety of commissions: theater sets, churches, stained glass, mosaics, textiles, furniture, and ceramics. His versatility as a designer was thus established very early. Perhaps his two most noted commissions in this period were for the John Philip Meyer Residence in St. Louis (c.1935–c.1938), a rather modern design, and the Aloe Plaza (only partially executed) for Carl Milles's fountain, *Meeting of the Waters*, in St. Louis (1938–1940).

The turning point in Eames's career was the award of a fellowship in 1938 to Cranbrook Academy in Bloomfield Hills, Michigan, then under the direction of ELIEL SAARINEN and one of the most important design centers in America. It was at this time that Eames established his close relationship with a fellow faculty member, EERO SAARINEN, who had been appointed a design instructor for 1939–1941. The two collaborated on an exhibit of the work of the Cranbrook staff (1939); in this early show may be seen many of the seminal ideas that Eames was to develop over the next three decades in numerous expositions. Their other collaboration was for three-dimensionally molded plywood chairs in the Organic Design in Home Furnishings Competition held at the Museum of Modern Art, New York, in 1940–1941; Eames and Saarinen received two first prizes and established their international reputations at the ages of thirty-four and thirty respectively.

In 1941, Eames moved to California with his second wife, Ray Kaiser, who was a noted sculptor and painter in her own right; together, they formed an extraordinary design team, and it is virtually impossible to distinguish what is husband or wife in their projects.

The decade of the 1940s was a period when Eames's work took many directions and when he made great strides toward becoming a mature artist. His work, like Saarinen's, seemed to have been based on a systems approach, which involved a detailed analysis of a design problem and a search for the latest technology to solve the problem. It was this design approach—rather than a predilection for a particular stylistic mode—which allowed Eames to work in many media with equal agility

and which accounts in part for the startling changes in his work.

One of Eames's early California projects was for a City Hall for the *Architectural Forum* (May 1943), which marked a decisive break from his St. Louis work and illustrated how much he had learned from the Saarinen and ALVAR AALTO. During the 1940s, Eames continued his experiments with molded plywood, resulting in a remarkable series of furniture designs for Herman Miller after 1946. His interest in photography quickened, and about 1944, Eames developed the fast-slide technique which was to be so integral in later exhibits and films. This interest in film was a natural outgrowth of his employment in the art department at Metro-Goldwyn-Mayer Studios after his move to the West Coast.

The two buildings on which Eames's international reputation as an architect is based were begun in 1945, with Eero Saarinen, as Case Study Houses No. 8 and No. 9 for *Arts and Architecture*. They were built respectively as the Eames residence (1945–1949) and the John Entenza residence (1945–1950) in Pacific Palisades, California. The initial design for the Eames house was for a cantilevered "bridge house" and was derived from a sketch (c.1934) by LUDWIG MIES VAN DER ROHE. As redesigned by Eames in 1949, it was changed to two prefabricated steel-framed pavilions separated by a patio. To the post-World War II generation, the executed design seemed to be an important alternative to the wood-framed tract house. It was also categorized as being quite Miesian, though the only similarities were in the frank expression of the steel frame as a modulating gridwork. Since most viewers saw the building only in black and white periodical illustrations, they were unaware of the exuberance and richness of the wall panels: transparent (clear and wire glass), translucent (fiberglass), and opaque (wood, grey asbestos, aluminum-colored metal siding, and blue, red, earth, white, black, and gold-leafed plaster) walls provided a complex relationship between interior and exterior. Eames's design took full advantage of the California light and the dramatic site, a meadow overlooking the Pacific Ocean. In the interiors, his conception of space as a "variable container" for objects and living—one of his most important contributions to modern design—reached its ultimate development. In contrast to the starkness of many International style interiors, Eames's interiors were increasingly filled with distinctive arrangements of furniture, rugs, flowers, pillows, toys, candles, shells, and other collectibles that approached a High Victorian clutter. This preference for rich interior decoration, a deep respect for nature, and his sensitivity to the building site per-

haps reflected a continued admiration for his collegiate idol, Frank Lloyd Wright. As with Wright, also, Eames's conception of form and space had decidedly Japanese overtones.

With the completion of the two Case Study Houses, Eames's accomplishments were significant enough to constitute a style that was recognized internationally. He continued to work on architectural projects through the mid-1960s, though buildings per se clearly occupied less of his time. One of the few commercial commissions executed during this period was the Herman Miller Showroom in Beverly Hills (c.1947-1949). A residence envisioned for Billy Wilder in Beverly Hills (1949-1951) would have been the greatest of the Case Study House's, and its loss for American architecture must rank with Wright's unbuilt McCormick House (1907).

Eames's style was disseminated through a series of public installations: a room at the exhibit "For Modern Living" at the Detroit Institute of Arts (1949); the Good Design Shows at the Merchandise Mart in Chicago (1949) and the Museum of Modern Art (1950); and numerous showroom installations for Herman Miller into the 1960s. The last major interior design project executed by his office was a lobby in the Time/Life Building in New York (c.1959-1960).

If there were fewer architectural projects, the output of the studio up until Eames's death in 1978 was nonetheless phenomenal. Fiberglass and aluminum were employed in a series of innovative furniture designs. More than fifty films were produced on subjects ranging from architecture, furniture, toys, statesmen, to computers. Eames's energies in his later years, however, seemed to have been devoted mainly to a series of traveling exhibitions. In examining subjects such as the computer (1971), Copernicus (1972), or Franklin and Jefferson (1975-1976), he sought to communicate ideas about our society and where it was going.

It is thus somewhat ironic that for a man who did not have a formal architectural degree, Charles Eames perhaps more than any American of his generation claimed such universal responsibilities for the architect in twentieth-century society. As Edgar Kaufmann, Jr., saw so clearly in 1950, "Eames designs are carriers of a new look at life, of a new concept of the designer as a craftsman of the modern tradition who unites technology and artistry in a fresh concept of living" (Kaufmann, 1950, p. 40).

R. CRAIG MILLER

#### WORKS

c.1935-c.1938, John Philip Meyer Residence; c.1938-1940, Aloe Plaza for the Meeting of the Waters Foun-

tain (with Carl Milles); St. Louis, Mo. 1945-1949, Charles Eames Residence (with Eero Saarinen); 1945-1950, John Entenza Residence (with Saarinen); Pacific Palisades, Calif. c.1947-1949, Herman Miller Showroom, Beverly Hills, Calif.

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- "Case Study House for 1949: Designed by Charles Eames." 1949 *Arts and Architecture* 66, no. 12:26-39.
- "Dallo studio di Eames." 1963 *Domus* no. 402:26-42.
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- MCCOY, ESTHER 1975 "Charles and Ray Eames." *Design Quarterly* 98-99:21-29.
- NOYES, ELIOT 1946 "Charles Eames." *Arts and Architecture* 63:26-44.

#### EAMES, WILLIAM S.

William S. Eames (1857-1915), in partnership with Thomas C. Young, had a prolific practice in St. Louis, Missouri, from 1885. The firm was responsible for several United States penitentiaries, the Education Building at the 1904 St. Louis Exposition, and many skyscrapers, both in St. Louis and further west.

GWEN W. STEEGE

#### WORKS

c.1892, Cupples Station; c.1903-1908, Cupples Warehouses; c.1903-1908, Frisco Building; c.1903-1908, Liggett Building; c.1903-1908, Wright Building; 1904, Education Building, Louisiana Purchase Exposition; St. Louis, Mo. 1906-1911, United States Custom House, San Francisco. 1907, Penitentiary, Leavenworth, Kan. 1913-1914, Boatman's Bank and Office Building, St. Louis, Mo.

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 STURGIS, RUSSELL 1908 "Some Recent Warehouses." *Architectural Record* 23:373-386.

## EBERSTADT, RUDOLPH

Rudolph Eberstadt (1856-1922), born in Worms, Germany, was trained as an economist, and his doctoral dissertation, on the development of legislation and taxation of the crafts in France, reveals the influence of Gustav Schmoller and economists of the historical school; his standing as an economist was recognized with his appointment to a chair at the University of Berlin. Eberstadt's interests were diverse. His publications include studies of the origins of the guild system in France and Germany and an extended investigation of the capital market in Germany. But he is remembered above all for his writings on housing. His numerous publications in this field include studies of the taxation of urban land, municipal land policies, the provision of capital for the housing market, and investigations of housing in Holland, England, and the Rhineland; in 1910, his entry, with Bruno Mohring and Petersen, in the competition for the plan for Greater Berlin, won third prize. His most important work, *Das Handbuch des Wohnungswesens und der Wohnungsfrage* (1909), was regarded as the standard work on the housing question in the years immediately before World War I.

Eberstadt's first publication on housing, *Städtische Bodenfragen* (1894), which offered an analysis of the relationship between housing form and land values, immediately attracted the attention of housing reformers and established his reputation in the field. Dismissing the idea that the tenement block or *Mietskaserne*, the high-density form of housing then current in German cities, was the result of high land values, Eberstadt claimed to offer evidence that it was, on the contrary, the expected return from this dense form of housing that determined the price of land. This was hailed by housing reformers, particularly the members of the Verein für öffentliche Gesundheitspflege, as vital support for the campaign for stricter control on the density of residential development and a clear argument for the introduction of zoning regulations.

In *Das Handbuch des Wohnungswesens*, Eberstadt

not only reviewed the whole field of housing but also extended and generalized his attack on the *Mietskaserne* form of residential development. This he denounced as a product of a malign form of speculation, based not on normal economic processes, but on the unhealthy manipulation of mortgages and capital for building. He argued that this damaging state of affairs was made possible by two developments. First, the supply of land was artificially restricted by the land companies and others speculating in land. Second, he maintained that the absence of any distinction between money borrowed for the purchase of land and that used for construction, coupled with the fact that residential builders were invariably men without capital, placed the unscrupulous developer—typically a broker for building land—in a position of unnatural influence. In this way, the structure of the housing market gave free rein to those with a vested interest in raising the price of land and encouraged the unhealthy *Mietskaserne* form of housing. This interpretation was vigorously challenged by Andreas Voigt who, in *Kleinhaus und Mietskaserne* (1905), defended the *Mietskaserne* as a rational means of reducing housing costs where land values had been inflated as a result of the competition for land between commercial and other interests which could afford to pay a higher rate of return than residential development. After bitter controversy, the consensus of opinion favored the views of Eberstadt and his followers in their condemnation of the failings of the existing situation.

Eberstadt naturally regarded the reform of specific failings of the existing system of providing land and capital for housing as the most effective approach to solving the problems of housing. Unlike the more radical members of the housing reform movement, he dismissed the work of the nonprofit sector and the co-operative housing movement as insignificant and stressed the importance of reforming private enterprise as the only way of securing sufficient supply of housing to improve housing conditions and lower rents. Although a fourth and final edition of *Das Handbuch* was published in 1922 (the year of his death), Eberstadt's views were regarded as increasingly irrelevant in the changed climate brought about by government intervention in the housing market after 1914.

N. O. A. BULLOCK

## ECKBO, GARRETT

Garrett Eckbo (1910-) was born in New York and raised in California. He attended the University of California, Berkeley, from 1932 to 1935 and earned

a B.S. in landscape design. He received an M.L.A. from the Harvard University Graduate School of Design under Walter Chambers in 1938. During his early career, Eckbo worked for Kastner and Berla, architects, and designed with NORMAN BEL GEDDES the landscape of the General Motors exhibit at the New York World's Fair of 1939. His major work consists of gardens, urban landscape designs, and development plans for public buildings, private homes, and institutions located primarily in California. Eckbo's work expresses his belief in uniting natural and man-made elements in the urban environment. His firm, Eckbo and Kay Associates, has won numerous awards.

Besides his professional practice, Eckbo has held several university positions including chairman of the department of landscape architecture at the University of California from 1965 to 1969. In addition, Eckbo has established himself as an influential author with the publication of six books pertaining to the theory and practice of landscape architecture as well as innumerable articles on related topics in *Architectural Record*, *Landscape Architecture*, and other professional journals. As a designer of outdoor environments, teacher, and author, Eckbo has made a substantial and instructive contribution to our knowledge of landscape architecture.

LEAH NESS

#### WORKS

\*1939, General Motors Building, World's Fair, New York. 1956, El Caballero Country Club (landscaping), Calif. 1958, Bellehurst Community Development (landscaping), Calif. 1960, Harper Humanities Garden, University of Denver, Colo. 1961, Mount Sinai Hospital Playground, Los Angeles. 1963, El Paso International Airport (landscaping), Tex. 1968, Lodi Park Master Plan, New Delhi. 1970, The Villages (housing), San Jose, Calif. 1973, Denver Botanic Garden, Colo. 1974-1978, Bayhill Office Building (landscaping), Calif. 1977, Student Union Square, University of New Mexico, Albuquerque. 1978, Sand Bay Village Condominiums (landscaping), Calif. 1978, Baylands Master Plan (with Kenneth Kay), Palo Alto, Calif.

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#### ECKEL, E. J.

A native of Strasbourg, France, and 1868 *diplomate* of the Ecole des Beaux-Arts, Edmond Jacque Eckel (1845-1934) developed a varied architectural practice in Saint Joseph, Missouri, with a number of partners: George R. Mann, 1880-1892; Walter Boschen, 1908-1910; and Will S. Aldrich and George R. Eckel, his son, starting in 1910.

WESLEY I. SHANK

#### WORKS

\*1885-1888, Pottawattamie County Courthouse, Council Bluffs, Iowa. 1889, German-American Bank Building; \*c.1890, Wheeler-Motter Dry Goods Company Building; Saint Joseph, Mo. 1894-1895, City Hall, St. Louis, Mo. c.1904, Auditorium, Saint Joseph, Mo.

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#### ECOCHARD, MICHEL

Michel Ecochard (1905-) studied architecture in Paris, where he was born, but most of his career as an architect and urbanist took place outside of France. From 1932 to 1945, he worked in Syria where he built the remarkable museum of Damascus (1943) and prepared the master plans for Damascus (1936) and Beirut (1943). In Rabat from 1946 to 1953, he directed the Moroccan service of urbanism and architecture. A man of scrupulous integrity, Ecochard found himself in conflict with speculators and opportunists. His uncompromising character and convictions made him undesirable to an administration all too ready to give in to all types of pressures and compromises.

A civil servant, Ecochard was transferred to France and condemned to a depressing inactivity.



By opening a private studio for architecture and urbanism, however, he was able to continue to work in the Middle East which he knew well and to which he had always remained sentimentally attached. In collaboration with French and Lebanese colleagues, he built several schools in Lebanon and established master plans for Junieh and Byblos as well as the new plan for Beirut. In 1960, his very interesting entry in the international competition for the museum of Kuwait won a well-deserved first prize, but it was never realized. On a UNESCO mission to Pakistan, Ecochard prepared plans for a beautiful university. Unfortunately, this project had to be modified, and not for the better, following the change of generals at the head of the government.

Enthusiastic, always ready to fight for his ideal of a progressive and humanistic architecture, Ecochard knew more disappointments than successes. This man of rare professional and moral merit deserved better.

PIERRE VAGO  
*Translated from French by  
Richard Cleary*

#### WORKS

1931, Museum, Antioch, Turkey. 1936, Damascus Master Plan. 1936, Museum, Damascus. 1943, Beirut Master Plan. 1961, Hospital (with others), Beirut. 1962-1978, University of the Ivory Coast, Abidjan. 1963, College of Further Education, Brazzaville, Congo. 1963, University of the Federation of the Cameroons, Yaounde. 1964, Damascus Master Plan. 1964, Primary School, Martigues, France. 1969, French Embassy, Yaounde, Cameroons. 1978, Beirut Master Plan.

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### EDBROOKE, FRANK E.

Frank E. Edbrooke (1840-1918) in 1879 began a thirty-five-year career as one of late nineteenth-century Denver's leading architects. His commercial architecture, in particular, set a sophisticated standard for the downtown section of the city. His Chamber of Commerce Building (1884), with its round arches and tripartite vertical division, placed Edbrooke firmly in the mainstream of those commercial designers influenced by H. H. Richardson and Louis H. Sullivan. In several of his commercial blocks, such as the People's National Savings Bank (1889-1890), Edbrooke used a stone base with the more delicate scale of brick for the upper stories; this combination was widely imi-

tated in Denver. Edbrooke's best known building is probably the Brown Hotel (1890-1892), a nine-story sandstone triangle with gracefully curved corners. Strongest in the commercial field, Edbrooke nevertheless also designed residences, mainly in the Queen Anne style, as well as some institutional buildings, such as the Richardsonian Romanesque Central Presbyterian Church (1890-1892).

GWEN W. STEEGE

#### WORKS

\*1879-1880, Tabor Block; \*1879-1880, Tabor Grand Opera House; \*1883, First Baptist Church; \*1884, Chamber of Commerce Building; \*1887, Unity Temple; \*c.1888, Frank C. Young House; 1889, Masonic Temple; 1889-1890, Metropole Hotel (now Cosmopolitan Hotel); \*1889-1890, People's National Savings Bank; 1890-1891, College of Loretto; 1890-1892, Brown Palace Hotel; 1890-1892, Central Presbyterian Church; \*1892, California Building; \*1892, Club Building; 1892, Warren House; 1893, Frank E. Edbrooke House; 1894, Denver Dry Goods Company Building; Denver, Colo.

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### EDBROOKE, W. J.

Willoughby J. Edbrooke (1843-1896), born in Evanston, Illinois, first practiced in Chicago, in 1868, and eventually formed a partnership with Franklin P. Burnham. Among their major commissions were the Georgia State Capitol (1884-1889) and the Mecca Apartments (1891-1892) in Chicago. Edbrooke served as the superintendent of construction of Chicago and as supervising architect of the Treasury Department for which he initiated the design of at least forty government buildings.

MARJORIE PEARSON

#### WORKS

1879-1882, Main Building; 1883-1886, Edbrooke Science Hall; Notre Dame, Ind. 1884-1889, Georgia State Capitol (with Franklin P. Burnham), Atlanta. 1888, Sorin Hall (with Burnham), Notre Dame, Ind. 1891-?, Courthouse, Custom House, and Post Office, Omaha, Neb. 1891-?, Post Office, Dallas, Tex. \*1891-1892, Mecca Apartments (with Burnham), Chicago. 1891-1896, Post Office, Courthouse, and Custom House (not

completed until 1899), Milwaukee, Wis. 1891-1896, Post Office (not completed until 1899), Washington. 1892-?, Courthouse and Post Office, Wilmington, Del. 1892-?, Post Office and Courthouse, Kansas City, Mo. \*1892-1893, U.S. Government Building, World's Columbian Exhibition, Chicago. 1892-1896, U.S. Appraisers Warehouse (not completed until 1899; partial redesign by William Martin Aiken), New York. 1892-1896, Post Office, Courthouse, and Custom House (not completed until 1900), Saint Paul, Minn.

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## EDELMANN, JOHN

Raised in Cleveland, Ohio, of German parentage, John Edelmänn (1852-1900) joined Burling, Alder (see ADLER AND SULLIVAN), and Company of Chicago in 1872. In 1873, he became the foreman of William Le Baron Jenney's atelier where he met LOUIS H. SULLIVAN. The ornamental design of both benefited from Jenney's library. Edelmänn taught Sullivan aesthetics and German metaphysics, introducing him to his theory of "suppressed functions." He was the partner of Joseph C. Johnson in 1874. After a hiatus, he returned to Adler in 1880, bringing Sullivan with him. He designed several buildings in Cleveland for Coburn and Barnum (1881) and J. B. Perkins (1882-1883) which evolved from polychromatic Victorian toward a Chicago functionalism. He worked for SOLON S. BEMAN in 1884, but by 1887, he was permanently located in the New York-New Jersey area. Unsuccessful in private practice, he worked for others such as ALFRED ZUCKER for whom he designed the Decker Building (1892-1893), New York. Edelmänn never reconciled his many talents and dissipated his energies in radical politics.

THEODORE TURAK

#### WORKS

\*1874, Moody Tabernacle, Chicago. 1881, Blackstone Building; 1881, Perkins-Power Block; 1882-1883, Gilman Building; \*1882-1883, Stephens and Widlar Building; \*1882-1883, Wilshire Building; Cleveland, Ohio. 1892-1893, Decker Building; New York. 1894, John Edelmänn House, Kearny, N.J.

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## EDIS, R. W.

A minor master of the Queen Anne school of English architecture, Robert William Edis (1839-1927) came in his youth under the spell of WILLIAM BURGESS and of French Gothic but took to Queen Anne in the 1870s. His prosperous and increasingly conservative practice included warehouses, hotels, clubs, galleries, and houses for the artistically respectable. Edis was also a London politician and the formidable commander of the Artists' Rifles. His social pretensions were rewarded with royal patronage and, in 1919, a knighthood.

ANDREW SAINT

#### WORKS

\*1865, Warehouses, Wood Street; 1872, Warehouses, 91-93 Southwark Street; 1873, Joseph Lancaster Junior School, Harper Road, Southwark; 1879-1881, 31 and 33 Tite Street; London. 1883, 1891-1892, Sandringham House (additions), Norfolk, England. \*1884-1886, Constitutional Club, London. \*1887-1891, Byrkley Lodge, Staffordshire, England. 1890-1891, Junior Constitutional Club; 1897-1899, Great Central Hotel; London.

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## EFFNER, JOSEPH

Joseph Effner (1687–1745), one of the leading artistic personalities in Munich in the first third of the eighteenth century, is noteworthy for his instrumental role in introducing Bavaria to the latest French architecture and decoration. Son of the court gardener at Schloss Dachau, he learned his father's profession at an early age. In 1706, when Elector Max Emanuel was forced into political exile, Effner accompanied his patron to Paris. There, he studied gardening and architecture, probably under GERMAIN BOFFRAND. He returned to Munich in 1715, after Max Emanuel's restoration, and was appointed court architect in charge of the electoral country palaces, notably Schloss Nymphenburg (1664–c.1750) and Schloss Schleissheim (1702–1726) near Munich.

Orchestrating the contributions of the large, international corps of artisans that Max Emanuel had assembled at his court, Effner supplied designs not only for architecture and decoration, but also for gardens, furnishings, and court festivities. He made his greatest impact in the field of interior decoration. Through his collaboration with the talented stuccoer Johann Baptist Zimmermann (at Schleissheim, 1720–1726, and the Reiche Zimmer in the Munich Residenz, 1726–1729) and with woodcarver Johann Adam Pichler (at Nymphenburg, 1716–c.1725, as well as at Schleissheim and the Reiche Zimmer), Effner contributed significantly to the creation of a brilliant, indigenous rococo style. At the height of this development in the 1730s and 1740s, notably in the work of FRANÇOIS CUVILLIÉS at the Amalienburg (1734–1739, Nymphenburg Park), the Bavarian rococo far surpassed its French models in playful whimsy, elusive surface effects, and freedom from architectural constraint. Effner prepared comprehensive plans for the completion of Nymphenburg (1715) and Schleissheim (1719), but only the lateral wing blocks (1715–c.1750) and the Rondell (1728–1758) of the former were realized. His most successful architectural works were the Pagodenburg (1716–1719) and the Badenburg (1718–1721), small pavilions in the Nymphenburg Park. Both were influential in the later development of this building type in Germany. In their classical re-

straint, they remained, like most of his exterior architecture, rigorously French. His Palais Preysing (1723–1728) in Munich, with its overlay of exuberant relief ornament, is an important exception. Beginning around 1730, Effner gradually lost his artistic pre-eminence to Cuvilliés, the favorite architect of Elector Karl Albrecht, and became increasingly involved with administrative duties.

SAMUEL J. KLINGENSMITH

## WORKS

1715–1717, Schloss Dachau, Germany. 1715–1717, Schloss Fürstenried; 1715–c.1750, Schloss Nymphenburg; 1716–1719, Pagodenburg, Nymphenburg Park; 1718–1721, Badenburg, Nymphenburg Park; 1719–1726, Schloss Schleissheim; 1723–1728, Palais Preysing; 1725–1728, Magdalenenklaus, Nymphenburg Park; 1726–1729, Reiche Zimmer, Residenz; 1728–1758, Rondell, Schloss Nymphenburg; \*1734, Gelbes Jagdhaus, Forstenried Park; Munich.

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## EGAS, ENRIQUE

Enrique Egas (?–1534) was one of the major architects in Castile in the last years of the fifteenth and first decades of the sixteenth century. His style is transitional, falling between the bold and splendid late Gothic style of his master JUAN GUAS and the younger masters of the new Plateresque style, ALONSO DE COVARRUBIAS, DIEGO DE SILOE, and

others, who adopted Italianate forms of decoration and planning. Egas simplified the decorative forms of Juan Guas but he never completely came to terms with the new manner. His career exemplifies the continuing vigor of medieval architectural modes into the sixteenth century in Spain.

Enrique Egas was a descendant of a family of architects and sculptors who came from Brussels. His father, Hanequin, and his father's brother, Egas Cueman, settled in Toledo where they were working on the cathedral by 1448. Enrique and his brother Antón Egas both became architects, but Antón's career is not well known, apart from his collaboration with Enrique. Enrique had at least three children: Enrique, who became an architect and worked with Alonso de Covarrubias at the Alcázar in Toledo; Diego, who was a sculptor; and Juan, a painter and decorator. It used to be thought, incorrectly, that María Gutiérrez de Egas, the wife of Alonso de Covarrubias, was Enrique's daughter; but she may have been a relative. This continuity of families is typical of the artistic and building professions in Spain in the fifteenth century and it is a significant factor in defining architectural practice. Most architects, like Egas, were the sons of architects. Enrique succeeded his father Hanequin as master of the works at Toledo in 1498, a position he held until his death in 1534.

The Cathedral of Toledo was begun in 1227 on the model of French cathedrals such as Bourges and Le Mans. By 1497, it was largely complete. Egas was responsible for continuing construction, and he was nominally in charge of overseeing all architectural and decorative projects; however, a number of chapels by other architects were built during his tenure at the cathedral. Egas himself supervised the remodeling of the sanctuary (Capilla Mayor) from 1500 to 1504 with Pedro de Gumiel and others, including the well-known sculptor Felipe Bigarny. From 1504–1512, Egas and Gumiel also designed and built the entrance to the chapter room (Sala Capitular). Egas's most striking work in the cathedral is his design for the new Chapel of the Mozarabic Rite (Capilla Mozárabe) in 1519.

Egas is usually cited in documents as the "master of the works" at Toledo, clear evidence that this position established him professionally; but he is best known for other works. A significant number of Egas's designs are for royal commissions from the Spanish kings and, in this, his career resembles that of his teacher Juan Guas.

Egas most probably worked at the royal foundation, San Juan de los Reyes, in Toledo after the death of Juan Guas; the simple, open-well staircase is attributed to him. The first of Egas's royal buildings, however, was the Royal Hospital at Santiago

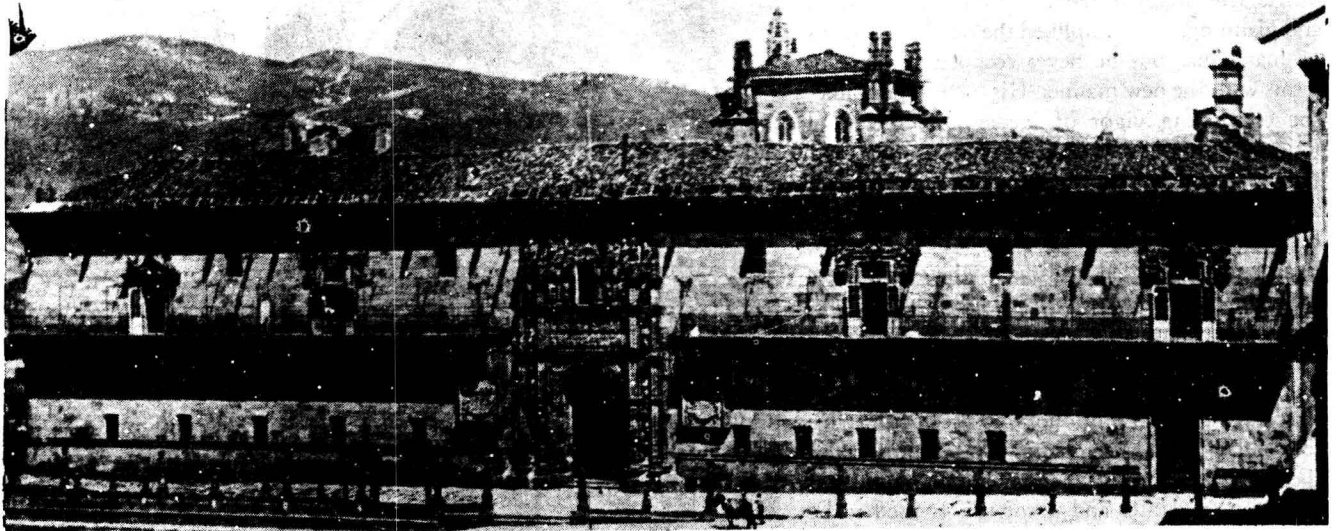


Egas.  
*Chapel of Mozarabic Rite,  
Cathedral,  
Toledo, Spain.  
1519*

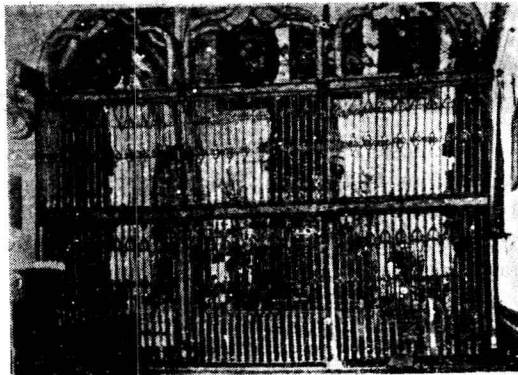
de Compostela in Galicia. The hospital was founded in 1499. From 1501 to 1511, Enrique Egas, working in collaboration with Antón, provided designs and approved construction of the main façade (1501–1511), the two courtyards behind it (1509–1513), and the hospital chapel (begun in 1511). The main portal was executed by French sculptors from 1518, but since Enrique Egas was in Santiago in 1517 to inspect construction, it is not unreasonable to assume that he designed the main portal.

The Santiago hospital was the first royal general hospital and Egas's cruciform plan was widely influential. The cruciform idea may have been adumbrated earlier in Spain at the Hospital General in Valencia which was begun in 1493 and described as cruciform when the program was reconstituted in 1512. The motif ultimately derives from the Italian type of general hospital. At Santiago, long open wards form a T with the chapel in the central arm. The entire complex is enclosed and two courtyards are placed on either side of the chapel. In the eighteenth century, two more courtyards and wards were added at the rear of the building. The closest Italian precedents for this arrangement are the hospital of Santa Maria Nuova in Florence (fourteenth and fifteenth centuries), Santo Spirito in Sassia in Rome (1476–1483) built for Sixtus IV, and a group of north Italian hospitals, the most famous of which is IL FILARETE's Ospedale Maggiore in Milan (begun in 1456). This building was incomplete but Filarete's designs were known from his *Trattato di Architettura*, written about 1465. There is no evidence that Egas





Egas.  
Royal Hospital.  
Santiago de Compostela,  
Galicia, Spain.  
1501-1517



Egas.  
Chapel, Royal Hospital.  
Santiago de Compostela,  
Galicia, Spain.  
1501-1517

knew any of these buildings directly, but it is likely that the plan type was widely known, especially by patrons.

Egas's style in the hospital chapel is still late Gothic; but the façade of the hospital is simple and organized around its central portal in a manner used by later Plateresque architects. The portal itself is a rectilinear composition of decorated pilasters framing a series of statues, standing under Gothic canopies. A round central arch is framed by relief ornament and small figures on the archivolts. In the portal and the main cornice, Egas adopted a vocabulary which included many motifs (particularly foliage) of classical origin but he combined them without regard for classical syntax.

Egas is considered to have been responsible for two other cruciform hospital designs. In 1494, Cardinal Pedros González de Mendoza, archbishop of Toledo and councillor to the Spanish kings, provided for the foundation of a general hospital in Toledo on a site near the Alcázar. Construction on the Hospital of the Holy Cross began in 1504 and continued to 1515 but little was built, partly because the cathedral, which administered the project, was reluctant to provide the funds. Egas's role

is not documented, but it is assumed that he provided the plans since he was then architect of the cathedral. The plan is a Greek cross and Egas is thought to have built the four interior halls. The decoration is simple; there is no elaborate sculpture, but the two-storied crossing and decorated wooden ceilings make an impressive interior. The main façade, the entrance portal to the courtyard, and the courtyard and staircase were all designed by Alonso de Covarrubias at a later date.

Even less was built of Egas's cruciform design for the Royal Hospital in Granada, which was founded in 1504 and under construction until 1511. The interior halls and a portion of a courtyard were completed later in the sixteenth century.

The hospitals are Egas's most modern buildings. The institution was not medieval and the programs and plans were of Italian inspiration. Partly because of these buildings, Egas was once viewed as one of the founders of Spanish early Renaissance style, known as the Plateresque. Egas's other works, however, are chiefly ecclesiastical and they belong to the late medieval style.

In 1498, Egas began construction at the new Cathedral of Plasencia, but he was replaced in 1513 by Francisco de Colonia who, in 1521, was replaced by Juan de Alava, the architect responsible for the present church. It is not known why Egas left the works but it may be that other commissions were more pressing.

In 1506, he was ordered to Granada to assume control of the building of the Royal Chapel, the royal burial chapel of the Spanish kings, which was to be attached to the cathedral. Egas was not the original designer of the building and, in 1509, he objected to the plans that he was expected to follow, saying that they were small and mean. Agreement was reached in 1510, and Egas continued to

Egas.  
Royal Chapel.  
Granada, Spain.  
1506-1507



supervise the work but Gallego y Burín (1952) does not believe that the basic design of the chapel was by Egas. In plan, the chapel is a rectangular box, two stories tall, with shallow side chapels off the nave and a shallow transept and polygonal apse. Its style is usually described as Isabelline Gothic. The simple mural surfaces are enlivened on the exterior by a strip of intricate open-work tracery and by an elaborate portal which leads from the interior of the present cathedral to the chapel. The Capilla Real is most famous for its Renaissance sculpture and decoration but there is no evidence that Egas himself contributed to these designs.

In December 1521, Egas went again from Toledo to Granada to prepare plans for its new cathedral, adjacent to the royal chapel. Construction began with the assistance of Sebastián de Alcántara. In 1528, Egas was paid for a lengthy visit to Granada and for a set of projects and plans for the church (Rosenthal, 1961). Only a few days later, however, a request was made for a master of the "Roman" style, and by June 1528, Diego de Siloe had replaced Egas as master of the works. It was once thought that Egas's foundations determined much of Siloe's plan but Rosenthal has shown that Egas's construction affected only the width of the church, the outer walls of the chevet, and the position of the transept. No drawings by Egas have survived to give a more precise notion of his plan but it is generally thought that he had submitted a design based upon the thirteenth-century plan of the Cathedral of Toledo. By 1528, this must have seemed old-fashioned.

In spite of his dismissal from Granada, Egas continued to play an important role in Spanish architectural projects. Long after the new Plateresque or "Roman" style (as it was called) was popular in Castile, Egas was still advising at major projects. He was a consultant at Seville Cathedral in 1512 and 1515, at the new cathedral project at Malaga in 1528, in Segovia in 1529. His activity at the building of the new cathedral in Salamanca has been documented by Chueca (1951): he criticized the works in 1523, 1530, and in 1534. Egas's most brilliant pupil was Alonso de Covarrubias who rejected Egas's Gothic ornament but kept something of his taste for elaborate, active decoration which brought figural sculpture, relief carving, and ornamented structure into dense and active compositions.

CATHERINE WILKINSON

#### WORKS

1500-1504, Cathedral (sanctuary); Toledo, Spain. 1501-1517, Royal Hospital, Santiago de Compostela, Galicia, Spain. c.1504, Monastery of San Juan de los Reyes (staircase); 1504-1512, Cathedral (entrance to

Chapter Room); 1504-1515, Hospital of the Holy Cross (completed by Alonso de Covarrubias); Toledo, Spain. 1506-1507, Royal Chapel; 1506-1517, Royal Hospital (remained incomplete); Granada, Spain. 1519, Chapel of Mozarabic Rite, Cathedral, Toledo, Spain. 1521-1528, Cathedral (foundations only; completed by Diego de Siloe), Granada, Spain.

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#### EGGERICX, JEAN J.

An architectural educator and journalist as well as a designer of both individual buildings and building groups, Jean J. Eggericx (1884-1963) was a leading figure in the Modern movement in Belgium. During the decade following World War I he was responsible for planning a number of garden-city housing estates, mostly around Brussels. In these designs, Eggericx relied mainly on English precedents and worked closely with LOUIS VAN DER SWAELMEN. His architecture of this period also bears comparison with certain contemporary Dutch work, especially in the sensitive use of traditional materials. During the 1930s, Eggericx assimilated the influence of the International style. He designed many types of buildings throughout his career but remains best known for his small- and large-scale residential projects and planning work.

ALFRED WILLIS

#### WORKS

1919-1921, Cité de Comines, Zonnebeke, Elverdinghe, Belgium. 1921-1963, Floréal and Le Logis Housing Estates, Watermael-Boitsfort. Brussels. 1925, Van der Perre House, Uccle, Belgium. 1925-1926, Wolfers

House, Brussels. 1927, Children's Home, Bredene-Oostende, Belgium. 1929, Chapel, Virton, Belgium. 1929, Les Trois Tilleuls Housing Estate (with amenities), Boitsfort; 1931, Health Center, Boitsfort; 1936-1938, Léopold and Albert Apartment Buildings; Brussels. \*1937, Belgian Pavilion, World's Fair, Paris.

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## EGGERS and HIGGINS

Otto R. Eggers (1882-1964) and Daniel Paul Higgins (1886-1953) formed the partnership of Eggers and Higgins in 1937. Since 1922, they had both been partners in the office of JOHN RUSSELL POPE; upon Pope's death, they continued their practice. Barred from using Pope's name, the firm continued as Eggers and Higgins, Eggers taking responsibility for the designs and Higgins for administration and sales representation. The firm grew to be one of the largest in the country in the 1950s.

Eggers, born in New York, received his architectural education at Cooper Union as well as in the atelier of HENRY HORNBOSTEL at the Beaux-Arts Institute of Design in New York.

Higgins began work in Pope's office around the same time as Eggers, working as an accountant. In his spare time, he studied architecture at New York University.

The firm is best known for its designs of large institutional projects, particularly hospitals and university buildings. In 1976, the firm became known as the Eggers Group, with David L. Eggers as its senior partner.

STEVEN MCLEOD BEDFORD

## WORKS

1937, National Gallery of Art, Washington. 1939, Schaefer Building, New York World's Fair. 1941, Cardinal Hayes High School, Bronx, N.Y. 1943, Naval Train-

ing Station, Bainbridge, Md. 1945, Church of Our Lady of Victory, New York. 1948, Veteran's Administration Hospital, Albany, N.Y. 1951, New Rochelle High School, N.Y. 1952, SS United States. 1952, New York University Law School. 1955, Canada House; 1955, General Grant Houses; New York. 1956, Federal Reserve Bank, Buffalo, N.Y. 1966, Banque Continentale, New York. 1970, Avco Corporation Headquarters, Greenwich, Conn. 1971, Pace College, New York. 1973, Indiana Law School, Indianapolis. 1974, Lehigh Valley Brewery, Allentown, Pa. 1975, Staten Island High School, N.Y. 1978, Saint Joseph Mercy Hospital, Ann Arbor, Mich.

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EHRENSVAERD, CARL  
AUGUST

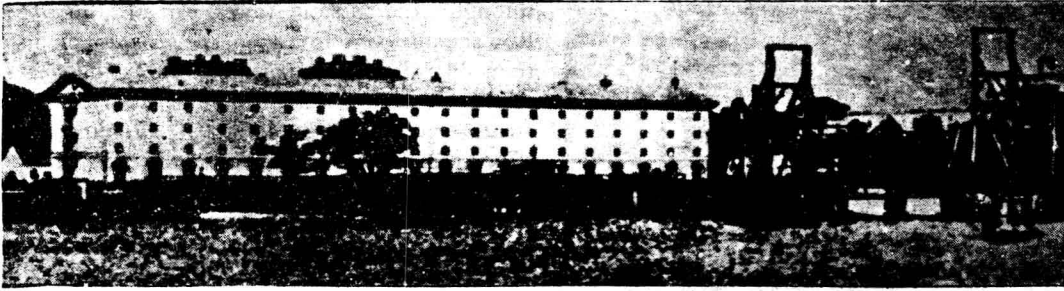
Carl August Ehrensvaerd (or Ehrensvärd) (1745-1800) has been called an original Swedish aesthetician and early functionalist. He was born in Stockholm of noble birth. His father was commander-in-chief of the fortress of Sveaborg in Finland, then belonging to Sweden, and Ehrensvaerd grew up there. He continued his studies in Sweden, entering a military career, which culminated with his being appointed colonel in the Swedish navy. Abruptly, he determined to break his career and started on a stimulating journey to Italy.

This journey had as a result two of the most individual works in the Swedish literature of the eighteenth century: "Journey to Italy 1780, 1781, 1782" (1786) and "Philosophy of the Free Arts" (1786) as well as a large number of drawings and watercolors. In these two works we meet many of the new ideas of that time, including neoclassicism and physiognomy, and theories of climate. The major importance of these works, however, is that many ideas later encountered in modern functionalism—above all the ideas of LE CORBUSIER—were presented in polemical form to the architects of Ehrensvaerd's own time. His sketches also prove that he was as radical as were ETIENNE LOUIS BOULLÉE or CLAUDE NICOLAS LEDOUX in their contemporary projects. The Storehouse in Karlskrona, built in 1784, is pure functionalism, the earliest executed example in Sweden and perhaps in Europe.

HOLGER FRYKENSTEDT

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Ehbrensvaerd.  
Storehouse.  
Karlskrona, Sweden.  
1784

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## EIDLITZ, CYRUS

Cyrus Lazelle Warner Eidlitz (1853-1921), son of LEOPOLD EIDLITZ, was educated in Geneva, Switzerland, and Stuttgart, Germany, before entering his father's office as a draftsman in 1871. Stylistically eclectic, Eidlitz's work demonstrated a particularly fine use of decorative and textural effects and command over difficult design challenges. Important early buildings which brought him national attention were Dearborn Station, Chicago (1885), and the Buffalo, New York, Public Library (c.1884-1887), a Romanesque building designed for an extremely irregular site. His outstanding achievement is usually considered the original New York Times building (1903), designed with Alexander Mackenzie, for a trapezoidal site located over an old subway station in New York.

GWEN W. STEEGE

## WORKS

1878, Saint Peter's Church (reconstruction), Westches-

ter Square, N.Y. c.1879, Railway Station, Detroit, Mich. c.1884-1887, Public Library, Buffalo, N.Y. 1885, Dearborn Station, Chicago. c.1887, Metropolitan Telephone Building, Cortland St.; 1889, Western Electric Building; 1890, Metropolitan Telephone Building, Broadway; 1891, Racquet and Tennis Club; 1894, Bank for Savings; 1894, Fidelity and Casualty Company; 1896, Bar Association; 1896, Townsend Building; 1903, New York Times Building; New York.

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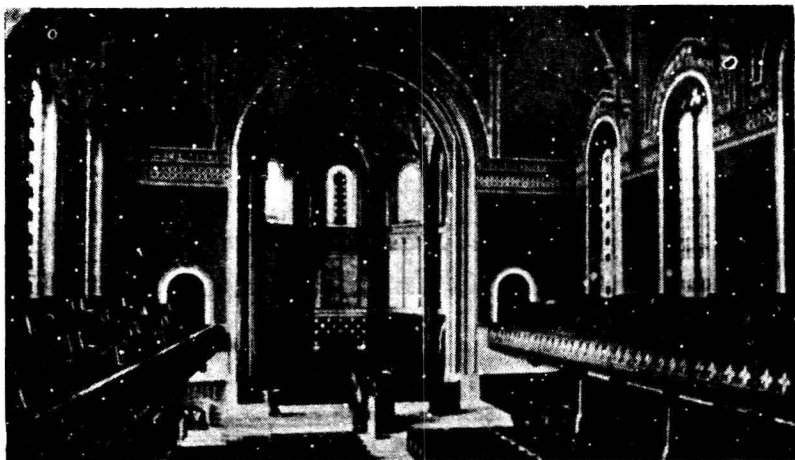
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## EIDLITZ, LEOPOLD

Leopold Eidlitz (1823-1908) was one of the founding members of the American Institute of Architects and an untiring advocate of the functional-organic approach to architecture. An ardent, but also a Gothic, structuralist, he believed in that essential Gothic unity between architecture and engineering. Structure, he felt, must always be clearly expressed, it being the chief generator of all significant architecture; buildings must be organized in ways analogous to nature; and only natural materials must be used.

As much of his work has not survived, Eidlitz has been long neglected, but there is no denying the integrity and, at his best, the almost animal strength of his buildings. Architecture, he wrote, should be able "to perform acts . . . of muscular and nerve motion . . . equivalent to actual motion arrested" (Eidlitz, 1881, p. 222). Influenced by Ralph Waldo Emerson, he compared a building to the body of a lion—both are constructed for a specific purpose and with "a beauty . . . expressive of the nature of [their] structure" (Eidlitz, 1858, p. 141). This kinesthetic view, which he developed in his book, *The Nature and Function of Art* (1881), was to influence in particular FRANK FUR-





Eidlitz.  
Saint George's.  
New York.  
1846-1848

NESS and, through him, LOUIS H. SULLIVAN in their development of an architecture evoking physical gesture. But Eidlitz, though certainly no formalist imitator of the past, was at heart a romantic medievalist for whom the Romanesque and Gothic vocabulary as well as the structural principles of the thirteenth century sufficed. The architectural development he had influenced, which could be carried out only in steel, led into a world he was unwilling to enter.

Eidlitz was born in Prague. He never studied architecture formally but was trained at the Vienna Polytechnic to be a land-steward, whose concern was the construction of utilitarian buildings for estate administration. He emigrated to New York in 1843, soon followed by his brother Marc (who became his builder), and went to work as a draftsman for RICHARD UPJOHN. Montgomery Schuyler, who knew him well, reported that from the beginning of his career Eidlitz admired the architecture of the Bavarian Romanesque Revival, especially that of FRIEDRICH VON GÄRTNER. The influence of Upjohn's contemporary Romanesque work can also be felt in Eidlitz's early churches, particularly in their towers. His first commission, for which he went into partnership with Charles Blesch, a Bavarian with the architectural training Eidlitz lacked, was Saint George's, New York, a twin-towered *Rundbogenstil* hall, for many years the largest interior space in the city. It was to be his only large church of this kind, for he then moved more and more in the direction of Upjohn's ecclesiological Gothic. When in 1865 fire left only its walls and towers standing, Eidlitz rebuilt Saint George's, his second interior enlivened with polychroming, now lost, which served to focus the huge space, lending added thrust to its enfolding gallery and to the exposed beams of the roof.

Following Saint George's, Eidlitz and Blesch designed a new building for the First Church of Christ in New London, Connecticut. It is entered

through a central stone tower, part of a massive Romanesque west front; one passes through its tunnelliike transverse corridor into a different world of slender wood columns and pointed arches—Eidlitz's first Gothic Revival interior. Wood construction provided him the opportunity to develop his penchant for exposed structure, which he was to continue with particular success in his Willoughby House (1854) in Newport, Rhode Island. In this large chalet, exterior communicates with interior by means of first- and second-story balconies that wrap around the house, holding it deftly together, so that one can step out-of-doors from almost every room.

In the 1850s, Eidlitz built a series of five Gothic churches, all with open-timbered roofs, in which he made a gradual transition from the New London galleried hall and apse to the cruciform, clearstoried designs he produced for the Broadway Tabernacle in New York (1858-1859) and Christ Church, St. Louis, Missouri (1859-1867). It was not academic Gothic that interested him, however, as the flush, undecorated arch of the west door of his Second Congregational Church in Greenwich, Connecticut, or the octagonal piers at Christ Church, branching into arches in smooth lines uninterrupted by capitals, demonstrate. These churches do have a solid, workmanlike quality about them, an angularity at times quite awkward, which prompted Schuyler to comment that it looked "as if an inspired village mason, aided, or even possibly impeded, by a manual of German geometric Gothic, had piled up stone" (Schuyler 1908). But Eidlitz's primary concern was to have his buildings admit how they worked, even if this was to "attempt . . . forms which are less pleasing" (Eidlitz, 1881, p. 70). Crude form was "not to be entirely annihilated; . . . through all the modelling the mass must be felt" (ibid., p. 417).

All but one of Eidlitz's public and commercial buildings in New York are now gone, but they constituted an important part of his work. The Continental and American Exchange Banks had Renaissance façades with powerful stone cornices and an almost equal ratio of glass to stone. Their impression of massiveness and strength was achieved by the modeling of the full thickness of wall in the window reveals. For the Produce Exchange, however, Eidlitz was able to design a fully free-standing building, almost square and fitted cleverly onto its irregular site by means of slightly projecting transepts. By giving it no principal façade and only the simplest main entrance, he invited its being experienced in the round. The Exchange room, lit by huge windows and unobstructed except for four brownstone piers that supported the exposed timbers of the roof, took up