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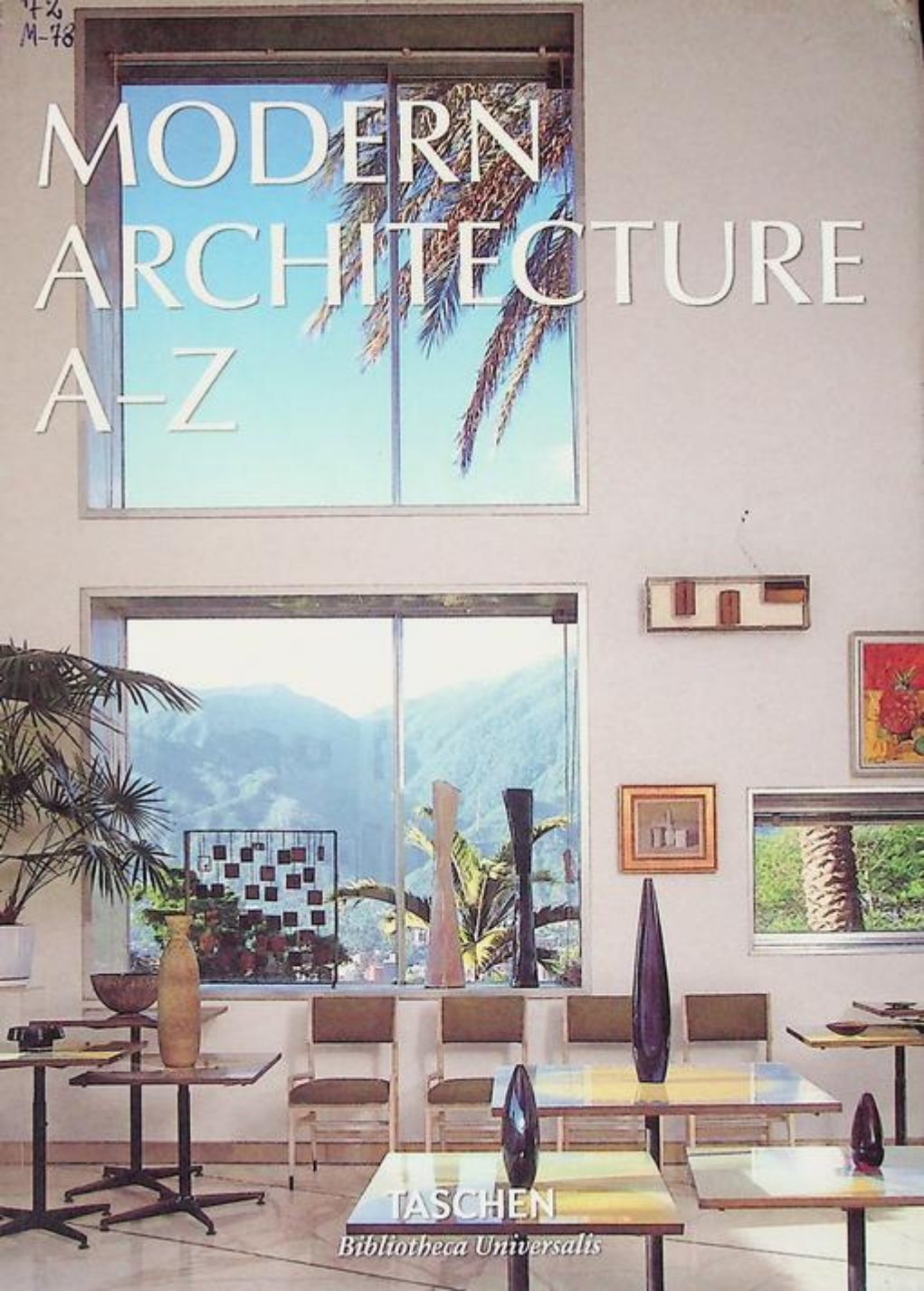
M-78

MODERN ARCHITECTURE A–Z



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Գրքի մասնաշար
Հայաստանի Ազգային գրադարան

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What is modern architecture?

The history of modernism begins, to cut a long story woefully short, with the emergence of the notion of an individual acting with sole responsibility. This happened against a background of the loss of the churches' cultural dominance, and a situation driven by the contradictions of a productive sphere geared towards profit. This radical change, often equated with the "revaluation of all values" (Nietzsche), finds its technical and social expression in the industrialization that drastically altered the lifestyles of humankind and, with the intensive development of urban areas, had a very direct impact on architecture.

The engineer, by profession, considers just the functionality of materials and uses them, wherever possible, only in the absolutely necessary quantity and size, relying in particular on standardized calculations. This rational principle soon pervaded the building industry and even became compulsory for "architects". By contrast, not all engineers adhered to the purely functional and necessary, creating bold and even aesthetically innovative buildings that made a radical impact on the idea of what was humanly possible.

Therefore, industrialization laid the foundations for a new architecture, "at a time when craftsmanship was metamorphosing into the industrial production process" (Eugene-Emmanuel Viollet-le-Duc). And yet, this transformation was by no means direct and deliberate. Many circuitous routes were taken towards modernism, which can still be said to be "a work in progress". Modernism is neither an epoch nor a tide of events that points a way forward from any particular historical point in time. Rather, it is on the one hand equated with technological progress and rationalization, but on the other with the loss of traditional values and aesthetics. From this standpoint, modernism must be regarded as a never-finished project concerned with harmonizing Enlightenment hopes for self-determined individuals with social and technological changes.

This is quite specifically reflected in the require-ments demanded of individual designers: the job specifications for engineers and architects describe specialists not merely assigned to technical projects, but those to whom social responsibility is also entrusted. This can be explained by the special role architecture plays in our lives, as, among all the arts—if we still categorize it like this, although perhaps not necessarily in the most serious sense—it certainly ranks among those that most influence people, yet in the subtlest manner. In fact, it is so much a part of the perception of our daily reality that the whole of our activity in perceived space is also activity in formed space: each person has an architecturally defined home. Even for those of us who, because they have no house, have to sleep under a bridge, every building is associated with the function of protection and warmth. As a living space, the city is defined by architecture. Even the countryside is structured by culturally typical settlements, representing residences and

destinations according to which our world view is established. That our perception of the world is linked with the structuring of space—and time—and that these factors have changed with industrialization, has been common knowledge, at least since Wolfgang Schivelbusch's *The Railway Journey*. The fact that the processing of this transformation in the cultural context takes time complicates our consideration of causes and effects. Here we can no longer speak of the inertia of the human being who is still, as in Richard Neutra's biorealistic theory, carrying round the genes of life on the steppes. The artist, as for example in Theodor Fontane's poem "The Tay Bridge", is allowed to make mistakes, but when the iron structure of a collapsed bridge mutates down to the frame, the architect must immediately prove fitness for function.

Modern architecture is born of a common desire for change, to alter not only the land, but also living conditions for the users. Architecture, therefore, doubtless has a special role, though many will question its character as art at all. From the moment of its handover, architecture is immediately and essentially measured on the grounds of its usability. It does not enjoy the same space for progressive development as other arts. This argument has led to some dispute over the quality of architecture as an art, as, for example, is still reflected in the German word for architecture, *Baukunst* (the art of building). Yet, when we observe the history of architecture, it becomes clear that no building has automatically developed purely from the application of functional and technical specifications. Rather, even in the case of what are known as the functionalists, basic assumptions of an aesthetic nature have crept into the creation of form. As in art too, self-referential expression by the architect as creator of a building must not necessarily be accepted without criticism. He is, after all, a creative person through whom spontaneous suppositions are translated into experience. In contrast with industry, the architect is constantly creating prototypes. Where industry, before mass production, engages in extensive testing to find the best possible solution, most buildings—leaving aside here prefabricated houses—are experiments arising from a unique set of circumstances and encounters between owner-builders and planners. Therefore architecture is also always a social process, the result of which cannot be pre-determined. In favorable cases, however, and herein lies the core character of modern architecture, it is born of a common desire for change, to alter not only the land, but also living conditions for the users, whether they are residents or workers. This was how, in 1913, Walter Gropius saw in a modern factory a "worthy garment", which will impress passers-by and make workers more productive, not just by giving the worker "light, air and cleanliness" but also an impression of greatness that will help him rise above the stupidity of factory work: "In it he will become more joyful as he plays his part in

creating great common values, as his workplace, designed by the artist, appeals to the sense of beauty innate in everyone and has an enlivening effect on the monotony of mechanical work."
Gropius wrote this from the self-confidence of someone imagining himself to be on the right path and seeing the end of an age essentially in search of a new style in tune with the industrialized world.
This period, largely coinciding with the 19th century, in which stylistic pluralism led to an arbitrariness generally felt to be deficient, was finally superseded by an epoch in which the concept of style in itself became obsolete. Even in 1914, Henry van de Velde was of the opinion that "for 20 years, some of us have been seeking the forms and embellishments that perfectly correspond to our time". But it was already clear where the journey was leading: to a functionalism referred to in 1932 as the "International Style", which rid itself of all ornament. Functional spaces and "appropriate" or "true" use of the available building materials formed part of the foundations of neo-realism. Its representatives demanded simple design, without any historicist overtones, and functionality that was geared towards prefabrication and mass production. Neither the temporal nor the geographical space in which this movement came into being can be clearly defined.
By 1927, modernism had asserted itself on the architectural scene, with flat roofs, white stucco façades, straight lines, open plans, steel frameworks and horizontal strip windows becoming for a time the standard must-have features of every modern building. Its architects were united in their rejection of architecture as fine art, and of traditional architectural teaching, and strived to form their own theories and create new schools such as the Bauhaus in Germany and VKhUTEMAS in the Soviet Union. The 1928 CIAM conference, under the leadership of Sigfried Giedion and Le Corbusier, set out what has become known as the Declaration of La Sarraz, which had a great influence on the idealistic teaching of modern architecture.
Even Le Corbusier, who, with his radical urban planning designs, was often misunderstood, realized that all the pamphlets and declarations remained unsatisfactory in the face of reality: "For me the word architecture denotes something more mysterious than the rational or functional, something that predominates, imposes itself... it is without doubt a human need to have warm feet and yet my sensibility rather responds to a need that is based on harmony and that is worth more than an American Hummer, a glass of champagne or a fresh salad...". When Julien Offray de La Mettrie extended René Descartes' mechanistic world view into the exaggerated notion of *l'homme machine*, it was also machines that cure man of his suffering and free him from his diseases in the end. This did not work, this outlook has proved untenable and neither has the functionalist approach proved to be the last word in architecture.

Space will not allow itself to be mechanically defined. Attempts to capture it in modules and Modulors have remained experiments. The failure of Le Corbusier's urban planning at Chandigarh is just as much proof of this as the blowing up of the social housing system at Pritt-Igoe and, ultimately, the discomfiture of every individual with the simplified forms of modern architecture that impinge on him at every turn. These are often imposed by purely commercial dictates and are deliberate intrusions on the artistic independence of architects capable of designing space beyond rationalistic calculation and with so much more to offer than what is found in a construction cost calculation.
Julius Posener has insisted on the error and the danger of wanting to define modernism from one's own historically limited perspective. And because it is not appropriate to seek a mould when we do not as yet know the final form, we can indeed regard modernism only as a project and, like the individual architects working with awareness of this problem, treat it as such. Modernism's differences are often more remarkable and take us further than the similarities. They point to the special characteristics of the individual building in its environment, its historical situation, its users, but the similarities indicate only categories that have been created by art or architectural historians and in general barely lead any further.

Peter Gössel

Aalto Hugo Alvar Henrik

Workers' House, Jyväskylä, Finland, 1924–1925

Hugo Alvar Henrik Aalto (1898–1976) graduated from his architectural course at the Technical University in Helsinki, where he studied between 1916 and 1921 under Armas Lindgren, then opened his practice in Jyväskylä in 1923, working together with his wife Aino. Aalto's early designs from that period are the Workers' House (1924–1925) and the Defence Corps Building (completed in 1929). In 1927 he moved his offices to Turku and built the City Library in Viipuri, Finland, now in Russia (1927–1935), which developed over the course of several design phases from the Neo-classical through to a decisively modern style. The combination of two offset squares is accessed via a fully glazed staircase between the two units. In the auditorium, an undulating wood panel ceiling provides good acoustics. Aalto also designed his own lighting units, seating and door handles. His tuberculosis sanatorium in Paimio, Finland (1928–1933) has a very well-designed ground plan. From the entrance, the ward block is accessed to the right via an annexed wing with an open-air terrace. To the left are functional and communal areas. Here again, Aalto designed all the details and fittings himself. In 1928 he joined CIAM and the editorial building he designed for the *Turun Sanomat* newspaper in Turku, Finland (1928–1929) was featured in Philip Johnson and Henry-Russell Hitchcock's 1932 publication on the International Style. In 1933 Aalto moved, taking his practice to Helsinki and, with his wife Aino, Maire and Harry Gullichsen and Nils Gustav Hahl, founded a furniture company, Artek, in 1935. After this he won a competition to create the Finnish pavilion at the 1937 World Exhibition in Paris. To exhibit his work, he travelled to the USA for the first time in 1938, and then designed the Finnish pavilion for the 1939 World Exhibition in New York with its sophisticated, oblique presentation wall and, around the same time, completed the first section of the Sunila Cellulose Factory in Kotka. In 1940 Aalto taught as professor of architecture at the Massachusetts Institute of Technology (MIT) in Cambridge. He completed his only building for an American client between 1947 and 1949. This was a students' residence, Baker House, for MIT. The extensive list of his works includes over 200 projects, of which almost half were completed, most of them public buildings such as the Town Hall in Säynätsalo (1949–1952), the House of Culture in Helsinki (1952–1958), the Technical University in Espoo (1949–1974) and the city center and church in Seinäjoki (1951–1987). In Germany he designed a residential building for Interbau in Berlin (1957) and the Neue Vahr residential complex in Bremen (1958–1962) on a fan-shaped ground plan. It was not until a long time after his death that the Essen Opera House he designed was completed (1959, 1981–1988).

Abell Thornton

▼ Lebrun residence, Zuma Beach, California, 1966

▶ Abell's office building in Los Angeles, 1954

During his time as a student at the University of Michigan and the University of Southern California, Thornton Montaigne Abell (1906–1984) gained experience working with various architects, notably Joseph J. Kucera in Pasadena, California. From 1930 to 1942 he was employed by the firm of Marsh, Smith, and Powell in Los Angeles before setting up his own practice in 1944. His single-story Case Study House No. 7, constructed of concrete blocks in San Gabriel, California (1945–1948), has ceiling-height glazing and is particularly noted for the overhead panel that illuminates a planted area within the interior of the house. His works also include his own home in Santa Monica Canyon (1937) and a model house for the Southern California Construction Industry and Home Show in Los Angeles (1952), as well as his office in Los Angeles (1954). In the case of his later designs for luxury villas, such as the Lebrun residence in Zuma Beach (1966) or the Rich residence (1967) in Brentwood, the roof no longer appears as an overhead panel. The timeless architectural style is very understated yet, with its wood cladding and glazed walls overlooking the garden, still provides a comfortable retreat. Abell also taught at the Chouinard Art Institute in Los Angeles.

its own theater seating an audience of around 4,000. It reflects the architects' preference for designing buildings in which several stories are supported by systems of columns, topped with rounded arches. A similar example, in this respect, is the Walker Warehouse in Chicago (1888–1889), a simpler and more ponderous structure. The Wainwright Building in St. Louis, Missouri (1890–1891), with slender, soaring, masonry-clad steel supports and topped by an ornamental frieze of elaborately intertwined foliage, was Adler & Sullivan's first proper skyscraper. Horizontal decorative panels between the windows provide a balancing contrast to the building's emphatic sense of verticality. Like the Wainwright Building, the Guaranty Building in Buffalo, New York (1894–1896), with its steel- and terracotta-colored façade, has small round windows let into the cornice area; these are not lost amid ornamentation but mark the visual high point of the soaring columns of the façade. Their use of the caisson technique in building also enabled Adler & Sullivan to develop an important basis for skyscraper construction in Chicago and their individual style was a key element in the so-called Chicago School of construction. This was put into practice for the first time in the Chicago Stock Exchange Building (1893–1894). In the case of the Gage Building in Chicago (1898–1900), Holabird and Roche were the architects and Louis Sullivan designed only the façade. In his article entitled "The Tall Office Building Artistically Considered", Sullivan outlines his model for a properly functioning skyscraper. It is based on the notion of separating the base, the tiered vertical section, and the surmounting roof cornice, thereby starting to break away from the traditional historical styles of façade division. The Schlesinger & Mayer Department Store in Chicago (1899–1904), which later became the Carson Pirie Scott & Co. Building, a 120-story skeleton-frame structure featuring ornamentation only on the lower two storys, arguably represents Sullivan's most significant contribution to the development of the large department store. His most important later works include the National Farmers Bank in Owatonna, Minnesota (1907–1908) and the Van Allen Building in Clinton, Iowa (1913–1915).

"It is the pervading law of all things organic and inorganic, of all things human and superhuman, of all true manifestations of the head, of the heart and of the soul, that life is recognizable in its expression, that form ever follows function." Louis Sullivan

◄► Schlesinger & Mayer Department Store, Chicago, 1899-1904

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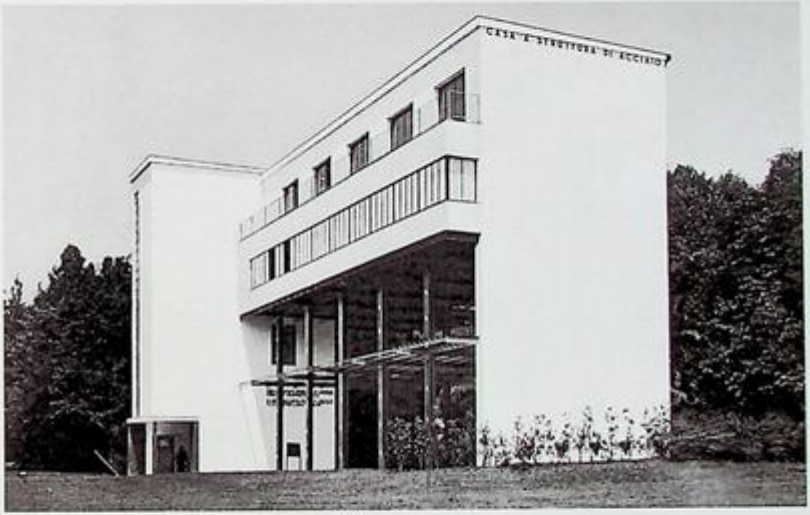
Ain Gregory

Dunsmuir Flats development,
Los Angeles, 1937–1939

Gregory Ain (1908–1988) studied architecture at the University of Southern California. From 1927 to 1929 he was employed by the Los Angeles firm of Benjamin Marcus Priteca and, from 1930 to 1935, worked for Richard Neutra. In his designs of modern houses, Ain focussed more on functionality and finding solutions to specific, difficult construction problems than on distinctive architectural features. Consequently, his carefully designed houses are unpretentious and modest in appearance. He produced designs for almost 200 buildings, mainly in and around Los Angeles, fewer than half of which were actually realized. His early designs included the Edwards residence in Los Angeles, California (1936) and the Ernest residence in Los Angeles, California (1937). The end of the 1930s saw the completion of the Dunsmuir Flats, a housing development built on sloping ground in Los Angeles (1937–1939). These four, staggered, white, flat-roofed apartment blocks are two stories high. On the entrance elevation, high-level ribbon windows run the length of the façade. The southern side opens onto balconies and terraces leading to private gardens. Many of Ain's prewar apartment designs reflect his efforts to marry the ideal of a Californian dream house with the resources of modern architecture, whereby he complemented elements of functionalist vernacular with imaginative detail, introducing different ceiling heights according to the use of rooms. During the post-war years, he was heavily involved with housing projects, attempting to create good-quality homes within reach of the average income. By rotating and mirroring a single floor plan in different directions, the 52 houses of the Mar Vista Tract (1946–1948) form eight different configurations. Strangely enough, Ain was passed over for inclusion in the Case Study House Program, and an exhibition house he designed for New York's Museum of Modern Art in 1950 fell short of expectations.

Albini Franco

House at the 5th Milan Triennale, Italy, 1933, with Renato Camus, Giulio Minoletti, Giuseppe Mazzoleni, Giuseppe Pagano and Giancarlo Palanti



Franco Albini (1905–1977) studied at the Milano Politecnico and began his career working for Gio Ponti, before opening his own firm in 1930. In 1945–46, he edited *Casabella*, an architecture magazine. In 1952, he teamed up with Franc Helg. From 1963 to 1977, Albini was a professor at the Politecnico in Milan. His early works, including a house at the 1933 Triennale and the Fabio Filizi workers' housing project (1936–1938) in Milan, devised in collaboration with Renato Camus and Giancarlo Palanti with five-story tenement buildings, corresponding with the principles of Neo-rationalist design. In the years following the Second World War, Albini developed a more historical style, combined with complex technical detail. His interest lay, in particular, in the design of interiors: in Genoa, for example, for the Palazzo Bianco Museum (1951) as well as the Museo del Tesoro di San Lorenzo (1954–1956). His design for the Rome branch of the La Rinascente Department Store chain (which began awarding its own "Compasso d'Oro" design prize in 1959) featured a building with cornices and pilasters that gave it the appearance of a *palazzo* (1957–1961). As far as Albini himself was concerned, these elements were mere technical details. He also designed a great deal of furniture and, in 1938, a radio, the glass casing of which flirted provocatively with various technical possibilities.

Amsterdam School

Johan van der Mey, Michel de Klerk and Pieter Lodewijk Kramer, Scheepvaarthuis, Amsterdam, 1911–1916

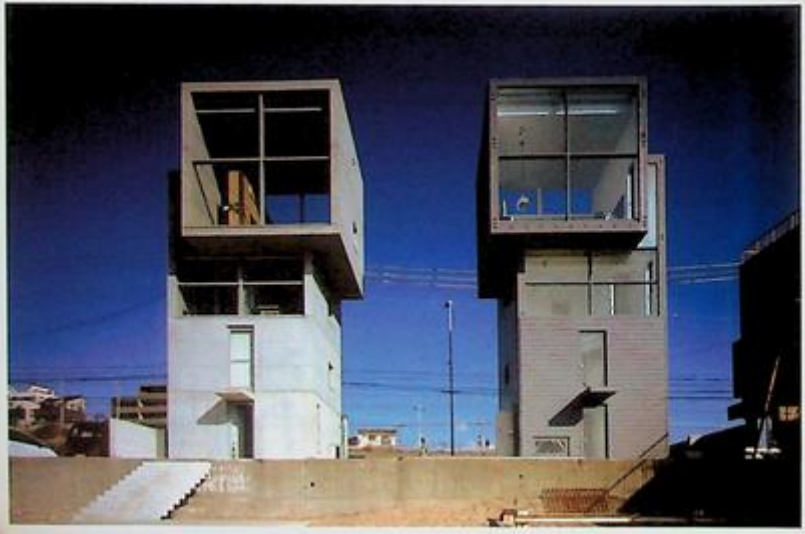
When Jan Gratama first coined the term Amsterdam School, in a 1915 article in honour of Hendrik Petrus Berlage, the architects to whom he was referring, and who were beginning to move away from Berlage's rationalist approach to design, were already enjoying a certain amount of success. In their design of the Scheepvaarthuis in Amsterdam, Netherlands (1911–1916), Johan van der Mey, Michel de Klerk and Pieter Lodewijk Kramer, who formed the nucleus of the group, were on the point of completing their most significant work. The group's mouthpiece was the magazine entitled *Wendingen*: published between 1918 and 1931 by the "Architectura et Micitia" association, it focused not only on architecture and interior design but also contained articles on art, theater and photography. The founder and editor until 1925 was architect Hendricus Theodorus Wijdeveld. Other exponents of the Amsterdam School included Cornelis Jonke Blaauw, Guillaume Frédéric La Croix, Joseph Crouwel, Adolf Eibink, Margaret Kropholler, Jan Antoine Snellebrandt, Jan Frederic Staal, Pieter Vorkink and Jacques Ph. Wormser. Their buildings were mostly brick constructions, which, in the case of inner city buildings, featured integrated sculptures on the wall surfaces and, in the case of free-standing buildings, the artistic composition of varied roof surfaces and angles. The predominantly white window frames and numerous, lovingly crafted details produce a pleasing effect, not just for individual residences but for entire housing areas. The architectural style developed by the Amsterdam School came to characterize Amsterdam's new residential quarters during the period between the wars, since some of the movement's leaders were represented in the planning and building department and were influential in applying their own aesthetic principles. The Amsterdam School was also able to influence a large number of housing construction projects carried out by private companies although, in a large number of instances, their influence was limited to the design of the façades, their work consequently misused merely for cosmetic purposes. In the case of community housing projects, however, the architects were able to implement their ideas as a whole and help influence surrounding public areas.

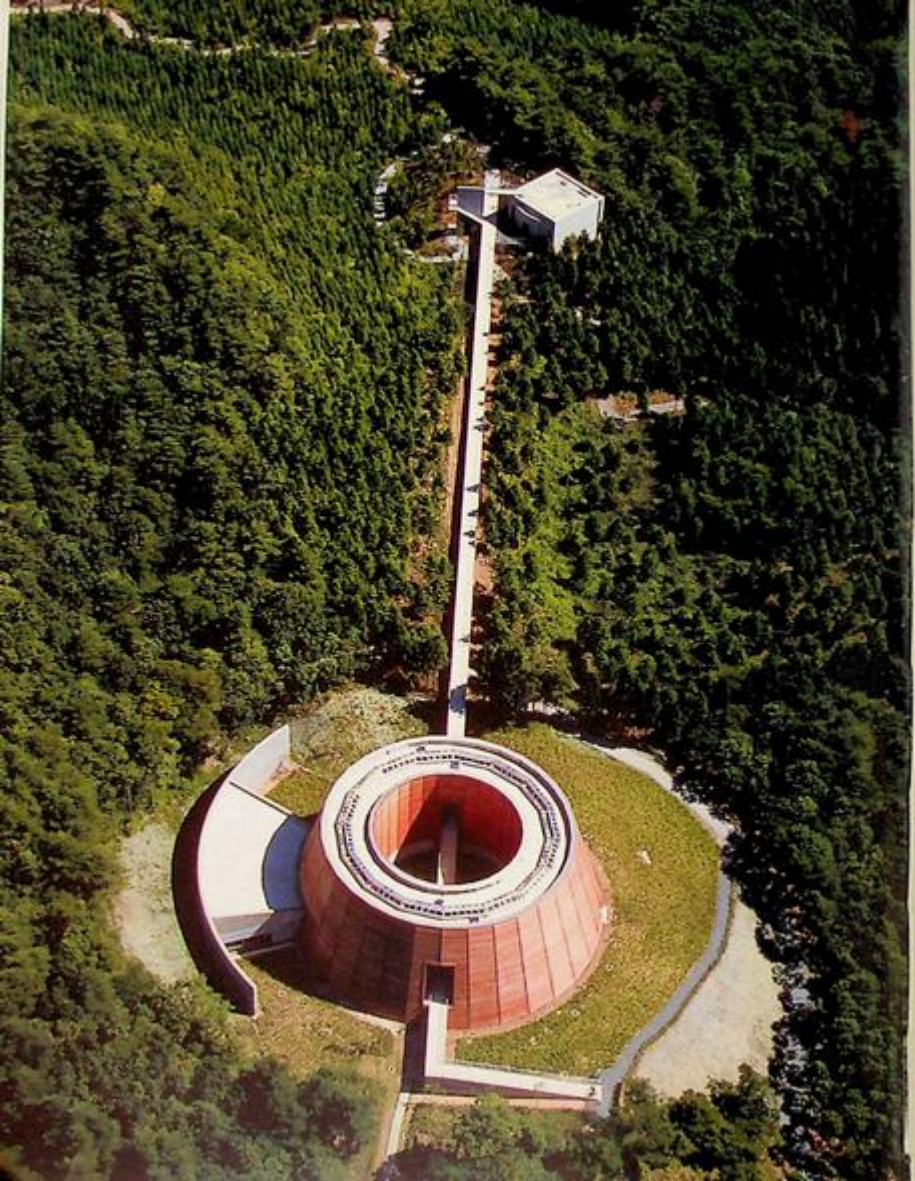
Ando Tadao

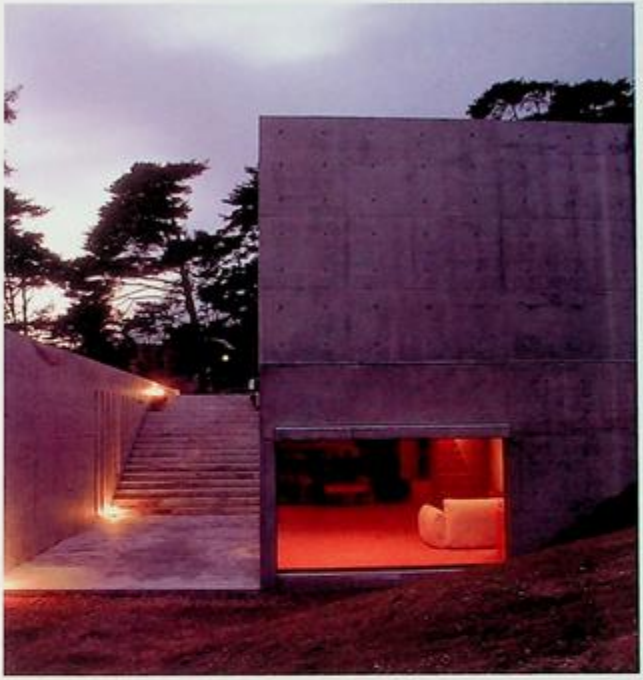
▼ 4 x 4 House, Kobe, Japan, 2001-2003

► Church of the Light, Ibaraki, Japan, 1987-1989

Before establishing his practice, in Osaka in 1969, under the name of Tadao Ando Architect & Associates, Tadao Ando (born in 1941) undertook some extensive journeys through North America, Africa and Europe, teaching himself his skills as he went. In 1987 he taught at Yale, in 1988 at the University of Columbia and in 1990 at Harvard. Characteristic of his architecture are simple forms in exposed concrete, both inside and out. Generously glazed inner courtyards allow the occupants to observe wind and weather. In the Row House, in Sumiyoshi, Osaka, Japan (1975-1976), three squares of identical dimensions form front building, courtyard and rear building. The street façade is broken only by a narrow entrance. Ando also created rigid interior coverings in his Koshino House in Ashiya, Hyogo (1979-1980), Japan. Two rectangular house wings sunk deep into the earth were later supplemented by a fan-shaped annex. As his building commissions became increasingly complex, Ando extended his range of materials. He often used pools to form a link with nature. In the Chapel on the Water in Yufutsu, Hokkaido (1985-1988), the cross stands in the water. In the Church of the Light in Ibaraki, Osaka (1987-1989), the cross is formed by light falling through slits in the wall. In the Water Temple of Hompuku-ji







◂ Museum of Wood, Hyogo, Japan, 1991-1994

▴ Koshino House, Ashiya, Japan, 1979-1980

in Tsuna, Hyogo (1989-1991), visitors descend a staircase that cuts through the middle of the pool of water itself. The Japanese pavilion for Expo '92 in Seville, Spain and the Museum of Wood in Mikata, Hyogo (1991-1994) were almost completely constructed in timber. An axis formed by a suspended bridge stretching far out into the landscape crosses the windowless cone of the latter building, with its hefty timber supports. Between 1999 and 2000 Ando built the Komyo-ji Temple in Saijo, Ehime, the timber construction of which is intended to recall the historical building principles used in Japanese timber temples. At the Chikatsu-Asuka Historical Museum in Minamikawachi, Osaka (1990-1994), many of the buildings are buried in the landscape, a feature repeated at Benetton's research and communications center, "Fabrica", in Treviso, Italy (1992-2000). More recently, Ando has designed the Modern Art Museum in Fort Worth, Texas (1997-2002), and a few very small residential buildings in Kobe, Hyogo (2001-2003), each of four stories on a ground area measuring just 4 x 4 meters.

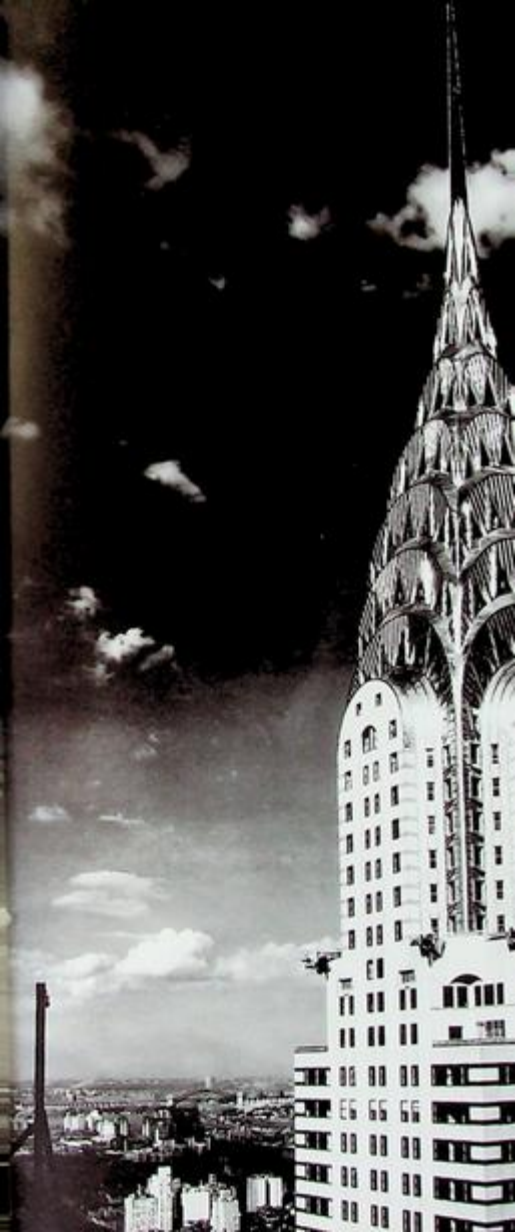
Art Deco

◂ Robert Bonfils, poster for the international decorative arts exhibition, Paris, 1925

▾ Piollenc and Morice with Maurice Picaud, Théâtre des Folies Bergères, Paris, 1926–1927

▸ William Van Alen, Chrysler Building, New York, 1927–1930

As the Art Nouveau movement began to decline in popularity, a strong commercial interest in decorative art remained. As far as craft products and modern architecture were concerned, this manifested itself as an amalgam of different styles that were nevertheless typical of the era. The Vienna Workshops, influenced in particular by Dagobert Peche, set a new artistic trend, which extended to the manufacture of fashionably elegant household objects. The new style was characterized by clear lines and shapes, featuring patterns which were either geometrical or, sometimes, exotic or historical in origin, and produced in high-quality materials. The term "Art Deco" is an abbreviation derived from the 1925 Paris exhibition (originally

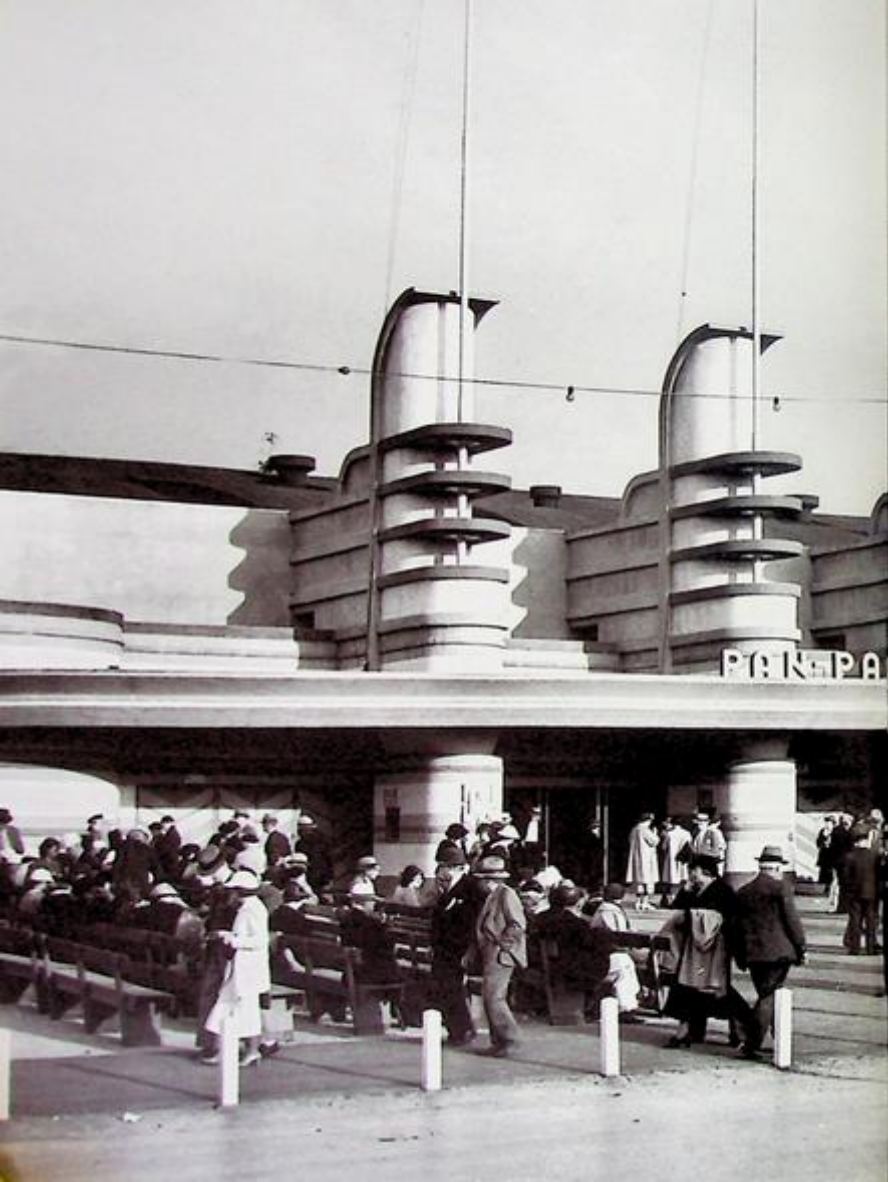


planned for 1915) entitled *Exposition Internationale des Arts Décoratifs et Industriels Modernes*, which was organized on the initiative of the Société des Artistes Décorateurs, a French group formed in 1901. Its main designers included Jacques-Émile Ruhlmann, Eugène Printz, Eileen Gray and Pierre Chareau. The uncomplicated lines of this new style of architecture were considered too purist and were softened by the application of decorative elements and free-flowing curves and swirls, designed entirely on the basis of emotionalism. A modernist style consequently emerged from this modern movement, of which the degree of decorative excess depended on personal taste and the particular building project. It was adopted with great enthusiasm by Hollywood, where numerous cinemas were built in the new taste, encouraged by studies conducted by the International Kinema Research group. Later Art Deco architecture turned new discoveries in aerodynamics into "streamline modern" design. Buildings were finished in brightly colored stripes and high gloss exteriors. The movement reached its peak with the Chrysler Building in New York (1927–1930) by William Van Alen, the Empire State Building (1930–1931) by Shreve, Lamb & Harmon, also in New York, and the Hoover Factory in Perivale, England (1931–1935) by Wallis Gilbert and Partners. This style also inspired the entire city of Miami Beach, Florida.

▼ Herbert's Drive Inn, Los Angeles, 1937

► Jacques-Émile Ruhlmann, African salon at the Paris colonial exhibition, 1931

►► Wurdeman & Bechet, Pan-Pacific Auditorium, Los Angeles, 1935



IC AUDITORIUM

Art Nouveau

► Félix Vallotton, poster for the L'Art Nouveau Gallery, Paris, 1896

▼ Eugène Vallin, dining room for M. Masson, Nancy, 1903-1905

◄ Antoni Gaudi, living room in the Palau Güell, Barcelona, 1885-1889

Towards the end of the 19th century, in various parts of Europe and America, a new style began to emerge in the field of graphic arts, arts and crafts and architecture, which became known as Art Nouveau, a movement that was felt to reflect the mood of the age. Thanks to efforts on the part of gallery owners with international interests, as well as magazines and exhibitions, a lively cross-fertilization of ideas took place across national frontiers, whereby style elements, such as graceful curves and strong lines, suggesting floral themes, and assymetrical compositions combined with both neo-Gothic as well as Oriental influences. Art historian Sir Nikolaus Pevsner defined the first designs in the Art Nouveau style as follows: "long, sensitive curves, reminiscent of the lily's stem, an insect feeler, the filament of a blossom or occasionally

Gustave Serrurier-Bovy, pavilion at the World Fair in Paris, 1900

a slender flame; a curve twisting several times, fluid and entwined with others; curves sprouting from all corners and covering asymmetrically all available surfaces". This style grew out of the new industrial wealth – particularly evident in Brussels – which popularized interiors and renovations crafted in metal. Important construction elements were produced in this connection by the Belgian glass industry, which, from around 1870 on, was marketing high-quality mirrors, and by the iron industry, which had discovered how to produce metal openwork designs using industrially produced rolled iron. In Brussels, the narrow plots of building land, which, in contrast to other large European cities, were given over to single-family residences, furthermore offered a creative opportunity for the newly affluent section of society to conduct image-boosting architectural experiments, whereby the cleverly lit stairwells and designed interiors not only provided optimum comfort but also constituted artistic models in their own right. The exterior façades of buildings by Victor Horta or Paul Hankar, however, are often relatively restrained in appearance. In 1900, Henry van de Velde moved to Berlin; from 1893, he had been publicizing in Europe the development of English craftsmanship within the Arts and Crafts movement and in 1895 designed four exhibition salons for the Paris Art Nouveau Gallery owned by Samuel Bing, specialist in Japanese art. He had a special role to play in his capacity as an author, seeking to provide a theoretical basis for the new style. At the Paris World Fair in 1900, however, neither he nor Victor Horta were strongly represented since official promotion of Arts and Crafts was slow to get underway. Only works by Josef Hoffmann and Joseph Maria Olbrich, representing Austria, were of significant quality. Outside the exhibition grounds, it was the new Métro stations by Hector Guimard that formed the real high point. The French designers were grouped in Samuel Bing's pavilion, while the display by the Munich group Vereinigte Werkstätten für Kunst im Handwerk (United Workshops for Art in Craft), featuring works by Richard Riemerschmid, Bernhard Pankok and Hermann Obrist, were likewise governed by commercial interests. Austria's special role was also reflected in the Vienna Secession movement, established in 1897; Olbrich's 1897–1898 design for the Secession's exhibition building represented a statement in construction. Here, too, attention was focussed expectantly abroad: Charles Rennie Mackintosh's exhibition in 1900, in particular, had far-reaching influence. In 1899, Grand Duke Ernst Ludwig invited Olbrich to form the Darmstadt artists' colony and the group of buildings he created on the Mathildenhöhe (Mathilda's Hill) in collaboration with Peter Behrens are a significant artistic achievement as an overall group rather than in terms of just an individual building. The designs, and names, relating to the new movement differed from country to country. Known as "Jugendstil" in Germany (after *Jugend* magazine), it was known in France as "Art nouveau", while it was termed "Secession" in Austria, "Modern Style" in Great Britain, "Stile floreale" in Italy and "Modernismo" in Catalonia. Other important examples of Art Nouveau include works by Louis Sullivan in the USA and by Antoni Gaudí in Spain, which, like similar examples in Budapest, Nancy and Helsinki, remained limited to localized regional areas. Predictably, Art Nouveau, which relied heavily on personal design styles, soon waned in popularity. What persisted for a while were mass-produced craft-style articles and building ornamentation, which lent otherwise nondescript buildings a modern appearance. In the words of Walter Benjamin, Art Nouveau, often celebrated as the beginning of modernism, actually represents "the last attempt by art to escape from the ivory tower in which it is besieged by technology".

Arts and Crafts

◄ Charles Francis Annesley Voysey, wallpaper design for Essex and Company, 1897

► Charles Harrison Townsend, Bishopsgate Institute, London, 1894

The Arts and Crafts movement was initiated in 1834–1836 by English artist, architect and designer William Morris and flourished until 1906. It challenged the use of industrially mass-produced products and aimed to revive consumer goods and furniture made by craftsmen. The idea originated from the fact that, from the mid-1900s, the market had been swamped by a flood of cheap imitations of craft items, made of inferior materials. These lacked character and were regarded as having no artistic merit. Morris, along with architect Philip Webb and painters Ford Madox Brown and Edward Burne-Jones, held the view that skilled craftsmen should be employed to produce high-quality items using traditional methods, thereby maintaining material, construction and functional standards. Another eminent figure of this 19th-century movement was John Ruskin. He too rejected machine-produced ornaments, attaching more importance to the quality of craftsmanship and the spiritual quality of design. The movement was inspired by the ideas of the 18th-century philosopher Jean-Jacques Rousseau, who believed that craftsmanship skills should be learned by everyone and individual artists should provide the necessary designs. Having evolved in the urban environment, the movement denounced the shortcomings resulting from urbanization and industrialization and consequently developed a strong affinity for design and culture based on rural life. Their name was derived from the Arts and Crafts Exhibition Society, which was founded in 1883 by several craftsmen. Other groups and workshops included architect Arthur Heygate Mackmurdo's Century Guild, founded in 1882, the Art Workers Guild, established in 1884, and the School of Handicraft, founded in 1888 by Charles Robert Ashbee. All of these aspired to economic self-sufficiency, but usually ended up relying on a very small client base. Examples of the Arts and Crafts architectural style demonstrate the movement's affinity with rural traditions. The most significant house-building developments are reflected in Bedford Park (from 1870), Port Sunlight (from 1880) and the garden cities of Letchworth (from 1903) and Hampstead Garden Suburb (from 1909), all in England. The main architects connected with the Arts and Crafts movement include, in addition to Ashbee, Mackay Hugh Baillie Scott, William Lethaby and Charles Francis Annesley Voysey. Inspired by Morris's example in England, a parallel Arts and Crafts movement developed in the USA, whose work came to be known as Craftsman Style, inspired by the architecture and furniture design of Gustav

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Stickley, Elbert Hubbard, Charles Sumner and Henry Mather Greene. Stickley had made several trips to England to acquaint himself with developments there. His research involved him in working with architects Samuel Howe and Harvey Ellis. From 1902, he published – a not uncommon practice in the USA – building designs for houses in *The Craftsman* magazine for local builders to copy. In 1926, Japan saw the establishment of the Mingei movement, a group led by philosopher Yanagi Sōetsu, who was influenced by the ideas of the British model and transferred them to his own culture. In this respect, objections to increasing urbanization combined with a growing unease at the Westernization of Japanese culture and attempts were made to revive traditional art, establish museums and stage exhibitions of new styles of living in order to achieve a blend of Japanese and Western elements and find ways towards an acceptable level of modernization.

◂ Harvey Ellis, residence at Crab Tree farm, Lake Forest, Illinois, designed 1903, reconstructed 1999

▾ Charles Francis Annesley Voysey, Broadleys House, Lake Windermere, England, 1898

Asplund Erik Gunnar

"The idea that only that which is created and perceived visually can be connected with art is too narrow. No, everything perceived through our senses, through the whole of our human awareness and capable of conveying feelings of desire, pleasure or captivation can also be art."

▼ Listers Härads Tingshus, Municipal Court in Sölvesburg, Sweden, 1917–1921

► International exhibition of 1930 in Stockholm, 1928–1930

Erik Gunnar Asplund (1885–1940) received his training at the Technical University (1905–1909) and the Free School of Architecture in Stockholm. After two years (1912–1913) working as an assistant at the Technical University, he travelled through Italy and France. With Sigurd Lewerentz, one of the founding members of the Free School of Architecture, he won the competition to design the Stockholm Cemetery in 1915. His first freelance projects include Villa Snellmann in Djursholm (1917–1918) and a woodland chapel in Stockholm (1918–1920). After the law-court building in Sölvesburg (1917–1921) and the Karl-Johan School in Gothenburg (1915–1924), he built the Stockholm City Library (1918–1927): a central cylinder, with three lower cube-shaped wings enclosing it in a horseshoe. After the imaginatively interpreted neo-classicism of these buildings, Asplund switched to an uncompromisingly modern approach. A loosely structured complex for the Stockholm exhibition of 1930 was created under his management. Its pavilions, made out of large quantities of glass, thin steel frameworks and colorful sun screens bearing designs that changed according to the theme, are the culmination of 1930s style. Between 1931 and 1940 Asplund taught as professor at the Technical University in Stockholm. During this period he designed the extension to Gothenburg Town Hall (1934–1937) and the woodland complex at the Stockholm Southern Cemetery (1935–1940), consisting of a crematorium and three chapels. The main entrance is distinguished by its large, colonnaded hall, while square pillars carry the flat-slab roof.

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Baldessari Luciano

▼ Breda pavilion, 30th Fiera Internazionale, Italy, 1952, with Marcello Grisotti

► Breda pavilion, 29th Fiera Internazionale, Italy, 1951

Baldessari (1896–1982), born in Rovereto, was a pupil of the painter Fortunato Depero and graduated in 1922 in architecture from the Polytechnico in Milan. In Austria he became familiar with the architecture of Adolf Loos and gathered experience between 1923 and 1926 as a set designer for cinema and theatre in Berlin. In this avant-garde environment, he made the acquaintance of Max Reinhardt, Oskar Kokoschka, Ludwig Mies van der Rohe, Walter Gropius and Hans Poelzig, the latter being responsible for the clearly expressionistic influences on some of his later work. On returning to Italy, he opened his own practice in Milan in 1928 and was commissioned to design the fittings for the Italian Textile Show at the World Exhibition of 1929 in Barcelona and the press pavilion at the V. Triennale in Milan in 1933. Together with Luigi Figini and Gino Pollini, he built the administrative building of the De Angeli Frua Printing House in Milan (1931–1932). During the period of Fascist rule, he had to pay for his refusal to join the party with exclusion from major commissions. In order to save his reputation as an independent designer, he declined to take part in any national competitions. Baldessari gained international recognition at the beginning of the 1950s with his designs for five exhibition pavilions for the Breda Finance Company at the Fiera Internazionale in Milan, which were publicized in the major journals and critically acclaimed as an interesting experiment in form. He was the only Italian architect with a 17-storey building erected between 1956 and 1957 represented at the Interbau exhibition in Berlin. The striking Chapel of Santa Lucia in Caravate (1962–1966) must be considered as one of his most mature works.

Baltard Victor

▾ ▸ Les Halles market, Paris, 1854–1857, extended 1860–1866, with Félix Callet

Victor Baltard (1805–1874) began studying architecture and painting in 1823 at the École des Beaux-Arts in Paris. At the age of 28, he was awarded the Grand Prix for his design of a military school and subsequently received a grant to enable him to study in Italy (1834–1839). During his stay there, he studied archaeology and drew reconstructions of ancient buildings such as the Pantheon in Rome. After returning to France, Baltard was appointed lecturer in architectural theory at the École des Beaux-Arts and in 1842 changed course to become Inspector of Buildings in Paris, working with Haussmann in redesigning the city. Among his most prominent and famous works are the market halls (1854–1859), described by Émile Zola as the "stomach of Paris". As the city's newest commercial centre, their construction was tied in with the surrounding infrastructure and the Gare de l'Est. The design conveys a seemingly weightless structure, supported by a cast-iron framework and a wrought-iron roof construction. The framework is finished with panels of brick and glass. Corridors link the glass-covered pavilions with each other crosswise. The basic ground-plan of each consists of two smaller halls either side of a higher central hall, the glass roofing of which bathes the interior in daylight. The entire area consists of a grid system, in which the individual market pitches are a standard 2 x 2 metres each. Baltard was commissioned to build the Church of St. Augustine in Paris (1860–1871). He used cast iron and glass as materials and a combination of styles borrowed from the Early Renaissance and Baroque periods.

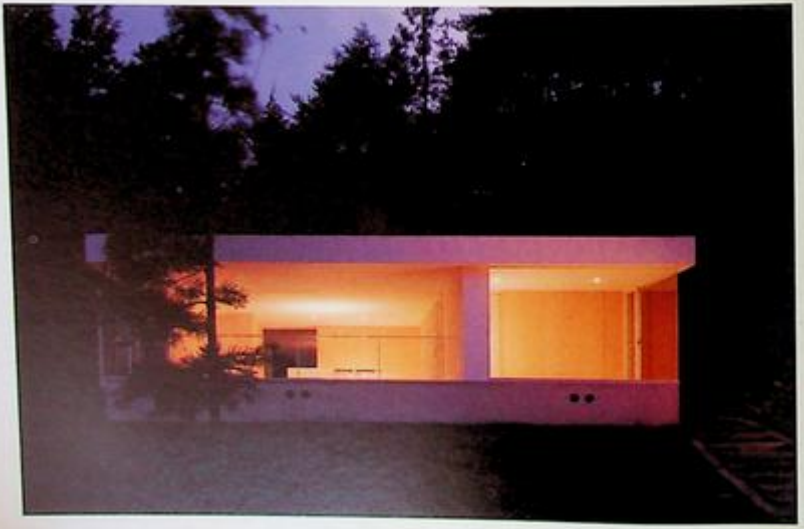
BAILLE
FRÈRES
BAILLE

Ban Shigeru

▼ Furniture House, Yamanashi, Japan, 1995

▶ Curtain Wall House, Tokyo, 1995

Shigeru Ban (born in 1957) attended the Southern California Institute of Architecture from 1977 to 1980, before studying with John Hejduk at the Cooper Union School of Architecture in New York (1980–1982). He then worked for Arata Isozaki before opening his own office in Tokyo in 1985. Since 1996, he has been Professor of Architecture at Nihon University. Ban has a reputation for introducing unusual materials into his buildings. Paper is the dominant material at Odawara Festival Main Hall in Kanagawa, Japan (1990), the Paper Gallery in Tokyo (1994) and the Paper Church in Kobe, Japan (1995), which was dismantled after ten years and moved to a location in Taiwan. In the case of the Paper House in Yamanakako, Japan (1995), a curving wall consisting of paper tubes in the shape of the letter "s" separates an open-plan living area from a smaller room. A series of nine Case Study Houses includes Ban's design for the so-called Wall-less House in Karuizawa, Nagano, Japan (1997): the floor platform is embedded in a



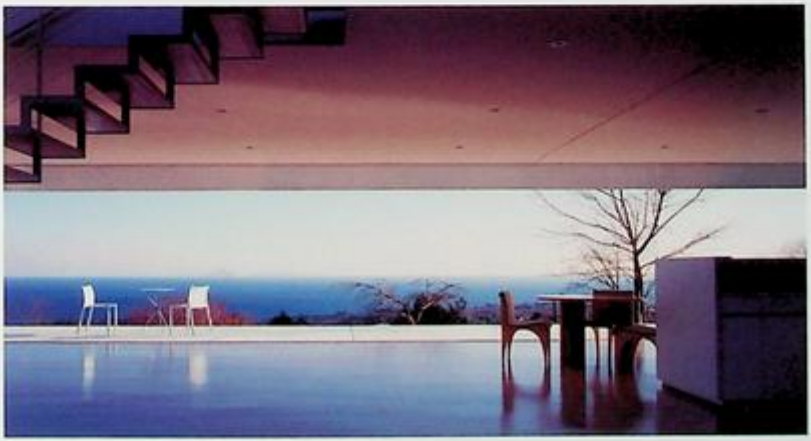
tree-covered slope and curves upwards against the hillside to merge with a thin steel roof. The side and front walls consist of sliding glass panels. Case Study House No. 7 is the two-story Curtain Wall House in Tokyo (1995). Two sides can be opened up completely, screened in summer by white curtains and in winter by glass panels. The Naked House, Case Study House No. 10 in Kawagoe, Saitama, Japan (1999–2000), resembles a warehouse: the outer walls consist of white polyethylene. The huge, arched roof, which Ban designed for the Japanese pavilion at Expo 2000 in Hanover, was constructed of paper tubes and posed fresh structural challenges. Wooden panels were used to provide the necessary fireproof cladding for the steel framework of the GC office building in Osaka (2000), the finished construction of which can be appreciated externally through an all-glass elevation. In addition to numerous family residences, the architect's more recent designs include cultural buildings: for example, the institute documenting the history of the Canal du Bourgogne in Pouilly-en-Auxois, France (2005) and *Nomadic Museum* (2005), a traveling exhibition by the photographer Gregory Colbert, which is built of paper tubes and shipping containers.

"I don't think of myself as a revolutionary architect, I just use existing technology and materials in a different way."

▾ Paper House, Yamanakako, Japan, 1995

▸ Wall-less House, Karuizawa, Japan, 1997

▾ Picture Window House, Shizuoka, Japan, 2001



Barclay & Crousse

▼ ► House Equis,
Cañete, Peru, 2003

Sandra Barclay (born in 1967) received her diploma from the Universidad Ricardo Palma in Lima in 1990. She then continued her studies at the École Nationale Supérieure d'Architecture in Paris-Belleville until 1993. Jean Pierre Crousse (born in 1963) also studied at the Universidad Ricardo Palma in Lima (1987), then at the Politecnico in Milan (1989). They opened the Barclay & Crousse studio in 1994. House M in Cañete, Peru (2001), is a bright red cube on a cliff directly above the sea. A double-story loggia offers protection against the desert sun. This oversized frame in light-colored concrete continues in the property boundary wall. House Equis in Cañete, Peru (2003), consists of two houses on a terrace-like plot. A swimming pool is suspended from the top floor of the two-story building and runs along its full width. The large terrace opens directly into the dining room, so that the boundaries between the interior and exterior are blurred. The ochre façades of the building create a visual reference to the desert landscape. Apart from the black cutouts of the windows and stone-clad grey façade elements on the terrace, House H in Gers near Toulouse (2005) is all-white. A further courtyard is created at the back by the incorporation of an old wall. Other more recent buildings in France, such as the Victor Hugo residential complex in Montreuil, Paris (2005) unfortunately lack the wonderfully inspiring interplay of color and form of their Peruvian residential buildings.

Barnes Edward Larrabee

Haystack Mountain School of Crafts, Deer Isle, Maine, 1958-1961

In 1942 Edward Larrabee Barnes (1915-2004) graduated in architectural studies under Marcel Breuer and Walter Gropius at Harvard University. He established his practice in New York in 1949. As part of his early modern work, he built the single-story Weiner House at Fort Worth, Texas (1952), with flat roof and ceiling-high glazing through to the garden. The terrace, tiled with marble slabs, is bordered with natural stone walls and protected by a wood-clad roof. The Straus House in Pond Ridge, New York (1956-1958), largely supported on columns, with its dark facing, blends sensitively with its wooded lakeside surroundings. Above the flat roof of the wing-shaped house stretched out into the landscape, rise the pointed gables of the living room with its colorful glass windows. On an island in the Atlantic, off Maine, Barnes built the campus of the Haystack Mountain School of Crafts (1958-1961). Various studios, halls, offices and residences are arranged in the form of terraced shingle-clad pavilions around a sweeping central stairway that runs down between the trees to the water. Barnes also designed the Dallas Museum of Art in Dallas, Texas (1978-1983), originally planned as a growing museum to be added to gradually. There is pedestrian access to the south and vehicular access to the north. In between is the official entrance area with its green atrium. The individual exhibition areas radiate out from a central interior lane. In this way they can be closed individually as needed to set up exhibitions. All buildings are clad with limestone sheets that also form a tranquil backdrop for the works of art in the sculpture garden. A special feature of the 43-story IBM Building in New York (1982-1984) with its glass and granite façade is the public area at street level, which takes up 60% of the plot: people can enjoy refreshments between giant bamboo plants under a glass roof. Edward Barnes collaborated with John M.Y. Lee and Partners and Victor Gruen Associates to build the Armand Hammer Museum of Art in Los Angeles (1989-1990) with its light and dark marble façades.

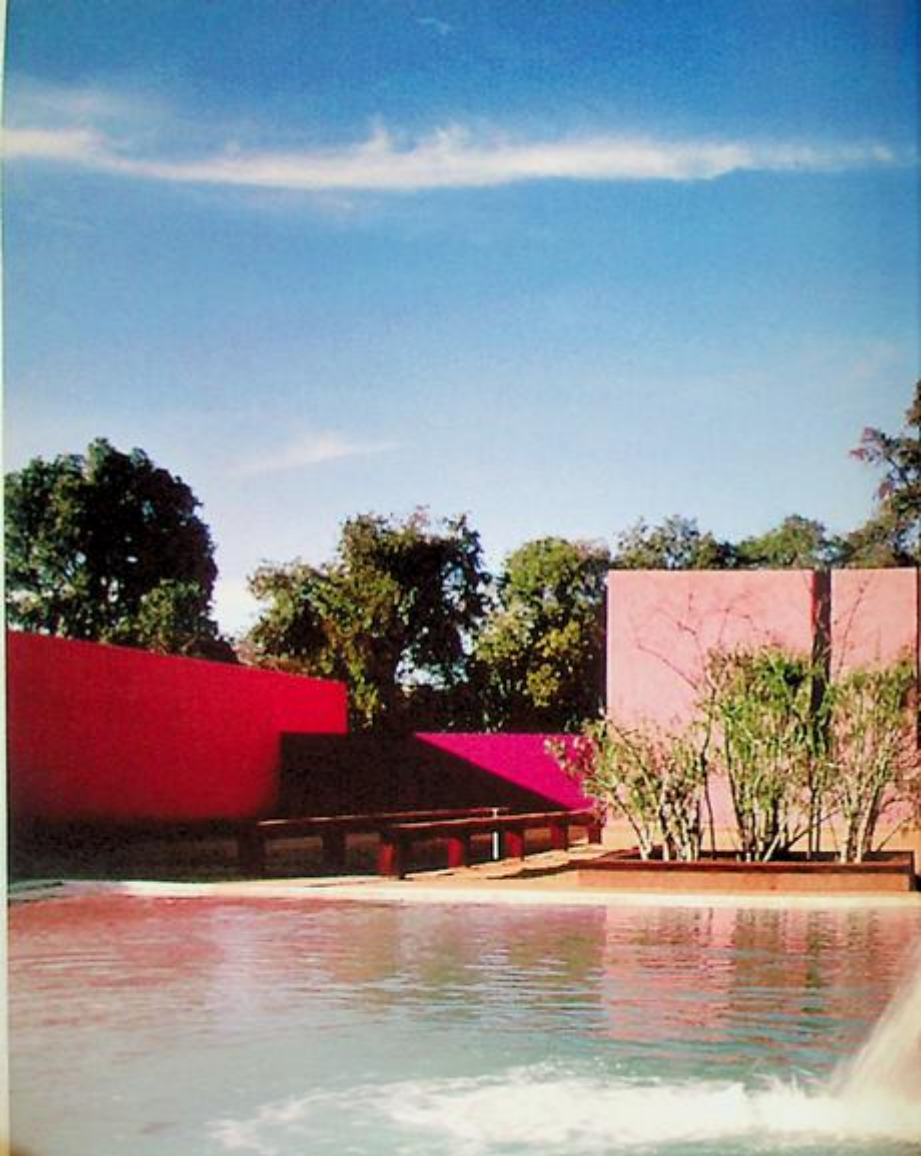
Barragán Luis

"Into the gardens and homes designed by me, I have always endeavoured to introduce the placid murmur of silence and, in my fountains, silence sings."

► Barragán House and Studio, Mexico City, 1947–1948

►► Stables, Cuadra San Cristóbal, Mexico, 1966–1968

Luis Barragán (1902–1988) completed his studies in 1923 at the Escuela Libre de Ingenieros in Guadalajara and subsequently followed a course of training to become an architect; he did not, however, complete these further studies. After returning from his first trip to Europe in 1925, he designed several apartment buildings in Guadalajara that bore the style of the area around the Mediterranean; he was, in fact, simultaneously a developer, an investor and an architect. He lived from 1935 in Mexico City, where he first of all completed a series of rationalistic, residential buildings, including the "Atelierhaus für vier Maler" (Studio house for four artists) (1939–1940). This was in collaboration with the German emigrant Max Cetto. He built his own house with garden at the Calle Ramírez in Mexico City (1947–1948) and, in doing this, created a refuge in which he lived until the end of his life, though he constantly altered it. Colourful walls and simple furnishings are features of the house. In the living room a frameless window, which runs up to the ceiling with cruciform sash bar openings, offers a view over the luxuriant garden. The development of the new district Jardines del Pedregal (1945–1954) in a lava landscape area to the south of Mexico City marks a further high point in the work of Barragán. It was here that he succeeded in providing an exemplar of how to combine nature and architecture on a grand scale. Apart from this, his great works include the Chapel of the Capuchin Monastery in Tlalpan/Mexico City (1953–1960), the Torres Satélite on a motorway in the north west part of Mexico City (1957–1958, in collaboration with Mathias Goeritz), the Stables of Cuadra San Cristóbal, which are set around a flat pond, and the Egerström Building in a suburb of Mexico City (1966–1968), as well as the Gilardi Building in Mexico City (1975–1977). Barragán's themes are color, structure and light; his rooms are clearly defined and based on simple geometry. His independent style is equally influenced by the native architecture of Mexico and the international, architectural and artistic trends of the first half of the twentieth century. For his life's work, Luis Barragán was awarded the Pritzker Prize and, in 2004, his apartment and studio building in Mexico City was put on the UNESCO list of World Heritage Sites. His estate is administered by the Barragán Foundation, with its head office in Birsfelden, Switzerland.



Bauhaus

"The ultimate end of all creative activity is the building!" Walter Gropius

▼ Josef Albers, Hinnerk Scheper, Georg Muche, László Moholy-Nagy, Herbert Bayer, Joost Schmidt, Walter Gropius, Marcel Breuer, Wassily Kandinsky, Paul Klee, Lyonel Feininger, Gunta Stölzl, Oskar Schlemmer, 1926

► Walter Gropius and Adolf Meyer, Bauhaus Building, Dessau, Germany, 1925–1926

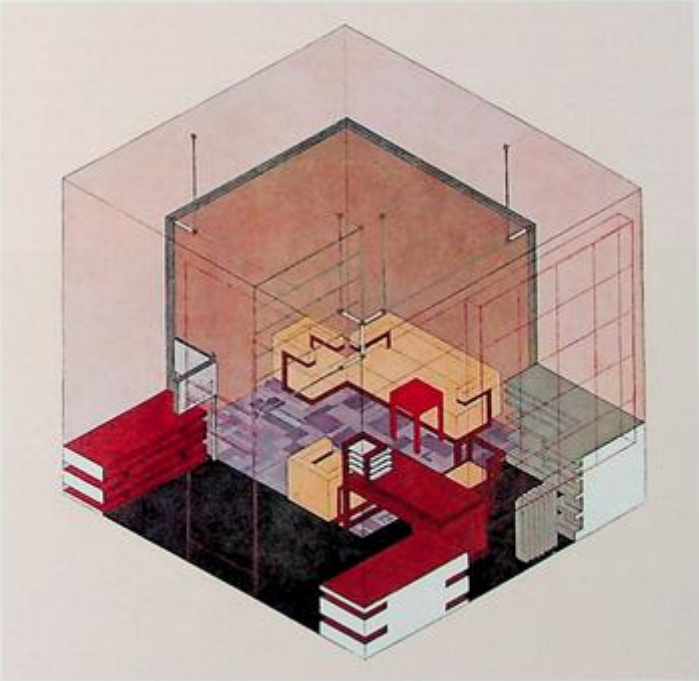
The history of the Bauhaus is linked inextricably with its first director, Walter Gropius. He was instrumental in combining various ideas on the reform of artistic training and, in doing so, attributed a leading role to architecture. In 1919, by amalgamating the Grossherzogliche Kunstgewerbeschule (Grand Ducal Arts and Crafts School), previously run by Henry van de Velde, and the Hochschule für bildende Kunst (School of Fine Arts), both in Weimar, he succeeded in creating a "unified school of art", to which he gave the name "Bauhaus" (Building House). One of the most significant innovations in the training it offered was the introduction of a uniform preliminary course for all participants. This was developed by Johannes Itten, a painter and teacher of art, whose position Josef Albers took over in 1923. Another aspect of the reform concept was the apprenticeship to a master: each student signed a contract according to which the teaching staff were known as "masters". The various workshops – for glass, ceramics, textiles, metal, cabinet-making, mural painting and sculpture – constituted the core of the teaching and were expected to recoup some revenue from the sale of patented products. A specific architectural department as such only existed under Gropius from 1927

BAUHAUS

to 1928, with the result that the only true Bauhaus construction was the Haus am Horn built for the 1923 Bauhaus exhibition, designed by Adolf Meyer in collaboration with the painter Georg Muche. Significant Bauhaus teachers and designers included Herbert Bayer, Marianne Brandt, Marcel Breuer, Lyonel Feininger, Paul Klee, Wassily Kandinsky, László Moholy-Nagy, Oskar Schlemmer and Gunta Stölzl. The Bauhaus experienced a variety of teaching reforms; Gropius himself changed direction in 1923 to focus on a new area dubbed "art and technology – a new unity". In 1925, the Bauhaus relocated to Dessau, to a prestigious new building designed by Gropius and his partner, Adolf Meyer. Following political criticism of Gropius, Hannes Meyer succeeded him in 1928. Turning away from a formal doctrine of design, he introduced fresh maxims, based on "the needs of the people", an ideology which eventually led to him being discredited as a Marxist and removed from his position. The last director of the Bauhaus, from 1930, was Ludwig Mies van der Rohe, who continued to run the Bauhaus as a private institute in Berlin for a further year after its closure by the National Socialists in 1932.

◂ Walter Gropius and Adolf Meyer, Bauhaus Building, Dessau, Germany, 1925-1926

▾ Walter Gropius and Herbert Bayer, Director's Office at the Bauhaus, Weimar, Germany, 1923



Bawa Geoffrey

Jayewardene House,
Mirissa, Sri Lanka, 1997–1998

Geoffrey Bawa (1919–2003) did not begin work as an architect until he was 38. He originally trained for a career in law before moving to London to study at the Architectural Association, from which he gained a diploma in 1956. Following this, he worked for Edwards, Reid and Begg in Colombo, Sri Lanka (Ceylon), before opening his own office in 1960 with Ulrik Plesner, in collaboration with whom he carried out a variety of projects, including the De Silva Bungalow (1962) in Sri Lanka. His style of architecture, which is hugely popular in his native country, is notable for its sensitivity towards landscape and nature. The three Buddhist temple pavilions built on a small island in Lake Beira, Colombo (1977), constructed predominantly of wood and with overhanging tiled roofs, consist of features and materials typical of his work and which reflect the traditions of his country. His contemporary designs integrate local building methods as well as colonial style. The buildings comprising the University of Ruhunu in Matara, Sri Lanka (1980–1986), for example, merge into a chain of hills and reflect the theme of nature in numerous internal courtyards. Similarly, the design of the Triton Hotel in Ahungalla, Sri Lanka (1979–1982) is intended as an extension of the surrounding environment. The entrance area, for example, is dominated by a generously proportioned, specially landscaped pool and palm trees. In the reception area, there are uninterrupted views through the foyer to the rear of the hotel, with glimpses of a pool and the sea beyond.

Behnisch Günter

Canopy roof construction, Olympic Stadium, Munich, 1968–1972

Günter Behnisch (1922–2010) attended the Technische Hochschule in Stuttgart, where he gained his diploma in 1951 and opened an office, in partnership with Bruno Lambart, in 1952. He was subsequently joined by Fritz Auer, Winfried Büxel, Manfred Sabatke, Erhard Tränker and Karlheinz Weber as partners and, in 1979, the firm of Behnisch & Partner was established. Behnisch taught as a professor at the Technische Hochschule in Darmstadt from 1967 to 1987. He concentrated initially on the building of schools, which were characterized by more rigid forms, but his designs gradually became more relaxed, open and fun. His major projects, undertaken in collaboration with Frei Otto, Leonhardt and Andrä, include the "tent" canopy construction stretching above the stadium, swimming pool and sports hall for the Munich Olympics (1968–1972). The roof consists of transparent plexiglass panels, which ensure the maximum amount of light and are supported by masts holding the main cables under tension. In 1987, the firm of Behnisch & Partner designed the deconstructivist Hysolar Institute Building of Stuttgart University (1987). The character of this building, with its almost improvised appearance, reflects the nature of the work on innovative solar energy technologies that takes place within. Between the steel containers that form the laboratory rooms is an obliquely positioned, glazed hall. Other major projects include the Museum für Kommunikation in Frankfurt (1984–1990) and the Bundestag Building in Bonn (1992). The use of lightweight materials in combination with a great deal of glass – the Plenary Chamber is encased in a glass cuboid, for example – lends transparency to the Bundestag Building while at the same time acting as a symbol for democracy.

"With colors I am able to change my world. Sure, I can do it in other ways. But it's easier to do it with colors."

Behrens Peter

▼ AEG Electrical Plant, Berlin, 1909-1910

► Behrens residence, Darmstadt, Germany, 1899-1901

Peter Behrens (1868-1940) studied art in Karlsruhe and Düsseldorf before moving to Munich in 1890. In 1892, this painter, graphic artist and designer became a founding member of the Munich Secession and a member of the Vereinigte Werkstätten für Kunst im Handwerk in 1897. In 1899, Grand Duke Ernst Ludwig von Hessen appointed him a member of the newly inaugurated Artists' Colony in Darmstadt, where he taught until 1903. He built his first house in the area known as Mathildehöhe for the exhibition entitled *A Document of German Art* (1901), an exhibition of the work of the Colony and Jugendstil (Art Nouveau) as a whole. From 1903 to 1907, he was director of the Kunstgewerbeschule in Düsseldorf. Behrens followed the "Nieuwe Kunst" movement in the Netherlands with interest and also brought Lauweriks to Düsseldorf to teach architecture. The general discussion surrounding the importance of geometry in "proportional" design reinforced Behrens' decision to break away from Jugendstil and seek the substantial fundamentals of "monumental art". It was around this time that he built the Obenauer House in Saarbrücken (1905-1906), the outline of which is based on two intersecting squares. In 1907, Emil Rathenau appointed him "artistic consultant" to the firm

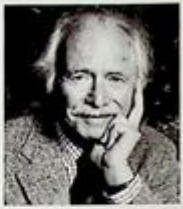
of AEG, Berlin, covering everything from the company logo on stationery through industrial products to architectural requirements. In addition to the logo, a curved lamp and kettle, he designed major buildings such as the turbine factory (1908–1909), the aesthetic program of which can be aptly described as "nobilization": the industrial plant, the technical structures of which were already in place, was transformed into a monumental building. Other AEG factory buildings followed. During this period, Le Corbusier, Walter Gropius and Mies van der Rohe were also employed in Behrens' studio. In 1911 and 1912, he realized the monumental representational buildings for the administration of the Mannesmann pipe works in Dusseldorf and the German Embassy in St. Petersburg. Between 1920 and 1924 he was involved in designing administration buildings of Hoechst AG in Frankfurt: a complex extending 150 meters in length with a high, cathedral-like entrance lobby. Whilst retaining his architect's firm in Berlin, he was also successor (1922–1927) to Otto Wagner, Director of the Department of Architecture at the Vienna Academy of Arts. In 1936, he took over the running of the Meisterschule für Architectur at the Prussian Academy of Arts in Berlin.

"Architecture is still not something for the general public... buildings have not yet become the personification of the artistic even though architecture is the art which is closest to reality."

◂ Water tower and elevated tar tank of the Frankfurt Gas Company, Frankfurt/Main, 1911–1912

▾ Hamburg pavilion, First International Exhibition of Modern Decorative Art, Turin, 1902

Belluschi Pietro



▼ First Presbyterian Church, Cottage Grove, Oregon, 1948–1951

► St. Mary's Catholic Cathedral, San Francisco, 1971

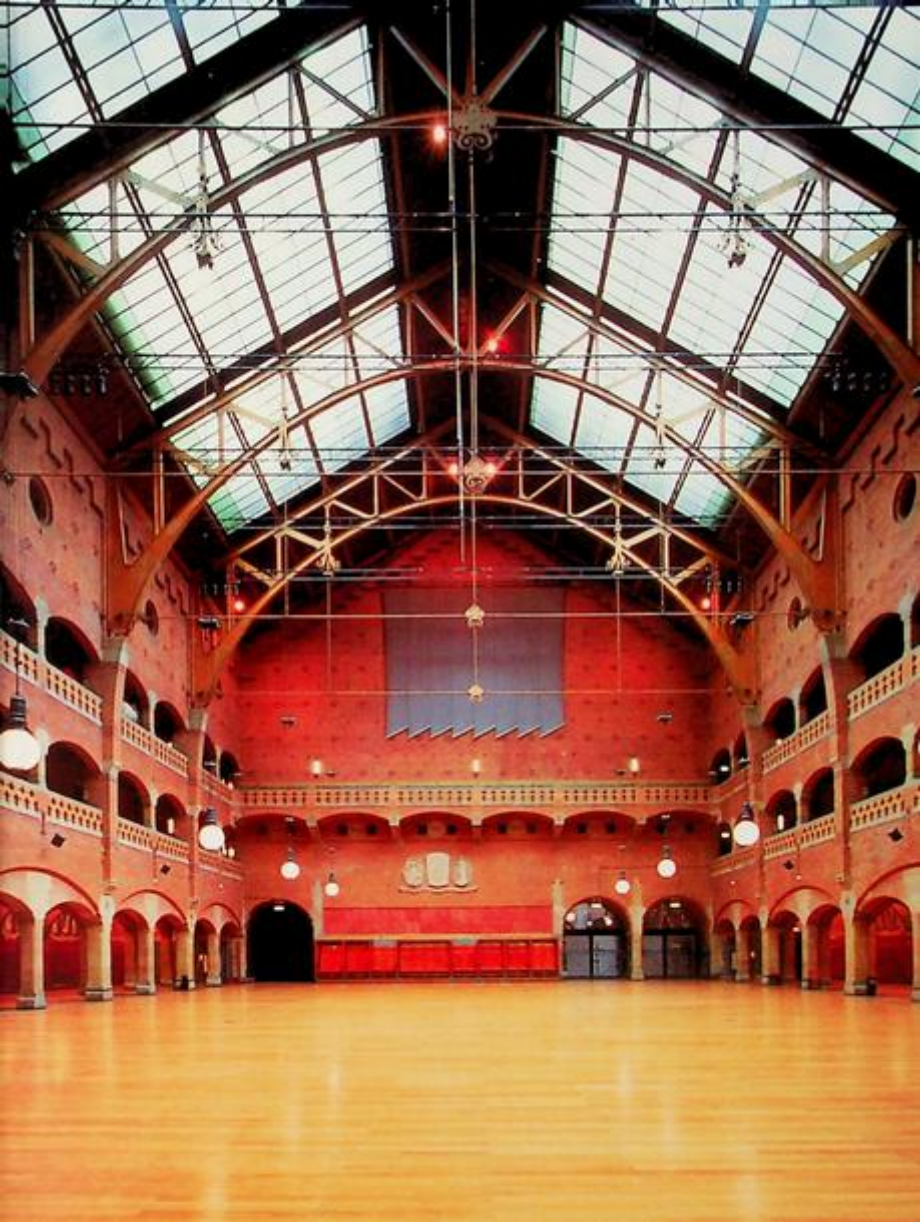
After university studies in Rome (1919–1922), Pietro Belluschi (1899–1994) travelled to America in 1923 where he attended Cornell University in Ithaca, New York, for a year. After a period spent working as an electrician for a mining company, he joined the architectural practice of A.E. Doyle and Associates in Portland, Oregon, becoming a partner in 1933. In 1943 he took over the company in his own name. His building for the Equitable Savings and Loan Association in Portland (1945–1948), with curtain walls in green glass, aluminium and marble, was one of the most striking International Style works of the post-war period. Between 1951 and 1965, Belluschi devoted himself to teaching, as Dean of the School of Architecture at the Massachusetts Institute of Technology in Cambridge. He then opened a new studio in Portland. Belluschi designed several residential buildings distinguished by their combination of local materials and modern forms. He achieved particular acclaim with a number of ecclesiastical buildings such as the Church of Portsmouth Priory in Rhode Island (1957–1960) and St. Mary's Catholic Cathedral in San Francisco (1971), in which he sought a form of spiritual expression in modern architecture. Between 1968 and 1970, together with Eduardo Catalano and Helge Westermann, he built the Juilliard School of Music in the Lincoln Center, New York City.

Berlage Hendrik Petrus

"In that architecture is the art of enclosing space, then the main value should be in the space, in the architectural reference, both structurally and decoratively, and the first principle of building should therefore not be the manifestation of the exterior."

Stock Exchange, Amsterdam, 1896-1903

Hendrik Petrus Berlage (1856-1934) studied at the Polytechnic in Zurich from 1875 to 1878 and then travelled to Italy, Germany and Austria before returning home to Amsterdam in 1822. As a partner of Theodorus Sanders, Berlage was involved the neo-Renaissance office building for Focke & Melzer in Amsterdam (1885), amongst other projects. He opened his own office in 1889. He broke away from retrospective styles with his building for De Algemeene insurance company in Amsterdam (1893). Carel Henny, director of the insurance company De Nederlanden van 1845, gave Berlage the opportunity to develop his architectural ideas further: two office buildings, both of plain brick, were created, one in Amsterdam (1893-1895) and one in The Hague in 1895. This association brought him further commissions throughout the course of his career, including a house for Henny in The Hague (1898). Post-1896 he started working on the design for the Amsterdam Stock Exchange, which was originally the subject of a competition. The building was completed in 1903. It is widely regarded as the high point in Berlage's development, though the simplicity of its façade caused considerable protest among his contemporaries. Another major work is his building for the General Dutch Diamond Workers' Association in Amsterdam (1899-1900). Berlage also worked on urban extension plans for Amsterdam (1902, 1925), The Hague (1908, 1924), Rotterdam (1922), Utrecht (1924) and Groningen (1927-1928), many of which were realized. On a trip to America in 1911, he was much impressed by the buildings of Louis Sullivan and Frank Lloyd Wright. From 1913, he worked for Mr. and Mrs. Kröller-Müller, and therefore moved to The Hague. His projects for them included a villa (not realized), an office building in London (1914-1916) and the St. Hubert Hunting Lodge in Otterlo, the Netherlands (1915). Berlage was also an author. His main publications include *Thoughts on style in architecture* (1905) and *Principles and development of architecture* (1908). From 1924, he lectured at the Technical High School in Delft.



Bill Max

Radio Zurich,
Switzerland, 1964–1974

After qualifying as a silversmith (1924–1927), Max Bill (1908–1994) studied architecture under Walter Gropius and Hannes Meyer at the Bauhaus in Dessau. László Moholy-Nagy, Paul Klee and Wassily Kandinsky shaped his artistic development. He received his first commissions for graphic façade designs in Zurich in 1929. He began his building work with his own home and studio (1932–1933) in Zürich-Höngg. From 1932 to 1936, he was a member of the Abstraction-Création group of artists and participated in their exhibitions in Paris. There, he met Piet Mondrian, Antoine Pevsner and Marcel Duchamp. His first public commission was for the construction of the Swiss pavilion at the VI Triennale di Milano (1936). In 1938, he was accepted into the Zurich CIAM Group and published the third volume of Le Corbusier's *Oeuvre Complete*. For a time, he worked with Hans Schmidt on the graphic design of the Department of Urban and Rural Development for the Swiss National Exhibition (1939) in Zurich. Bill elaborated his theories in the book *Form*. His concept of "good form" found resonance with the German Work Federation (Deutscher Werkbund) and, in 1949, Otl Aicher and Inge Scholl invited him to Ulm to be a consultant on various reconstruction projects. The plan to develop a new Bauhaus in Ulm was developed under his leadership and guidance. From 1950, Bill was the director designate of the future Academy of Design. He developed a pedagogic program and planned the facility at the same time: it was realized between 1953 and 1955 and is widely regarded as his most important work. Flat, functional constructions are grouped on hilly terrain. Exposed concrete frames surround the large windows that flood the classrooms with light. In 1964, Bill built the halls for the "Teaching and Design" sector at the Swiss National Exhibition in Lausanne. He used modular systems, with which he had started experimenting early in the 1960s. During the 1980s, Bill worked mainly on the implementation of plastic themes. Completed projects include the pavilion sculpture in Zurich (1979–1983) and the sculpture *Continuity* (1979–1983), which is outside the Deutsche Bank in Frankfurt, Hessen.

"... there, where the individual contemplates his existence as an individual, he is not only capable of mechanizing his world, that is to say, of furnishing it according to his most essential material requirements, but he is capable of truly designing his environment."

Bo Jørgen

▼ ► Louisiana Museum of Modern Art, Humlebæk, Denmark, 1958, with Vilhelm Wohlert

Jørgen Bo (1919–1999) studied architecture at the Royal Danish Academy of Fine Arts in Copenhagen from 1936 to 1941. Two years after graduating, he opened his studio in Copenhagen. Between 1960 and 1989, Bo lectured at the Royal Danish Academy School of Architecture. The Louisiana Museum of Modern Art in Humlebæk, Denmark (1958), designed with Vilhelm Wohlert for the exhibition of modern paintings and sculptures, blends harmoniously and sensitively with its environment. A sequence of freestanding, glazed corridors connects the exhibition rooms and winds across various levels through the museum park. Plain, white-tiled walls and ceiling-high windows surround the pavilions; flat roofs with exposed wooden beams emphasize the impression of crouching. A further project realized in collaboration with Wohlert was the Danish Embassy of Brazil (1968–1973). Other notable commissions include the Municipal Museum in Bochum (1978–1983) and the Gustav-Lübcke Museum in Hamm (1989–1993). The latter has a rounded, elevated impression that draws the visitor into the bright rooms of the museum.

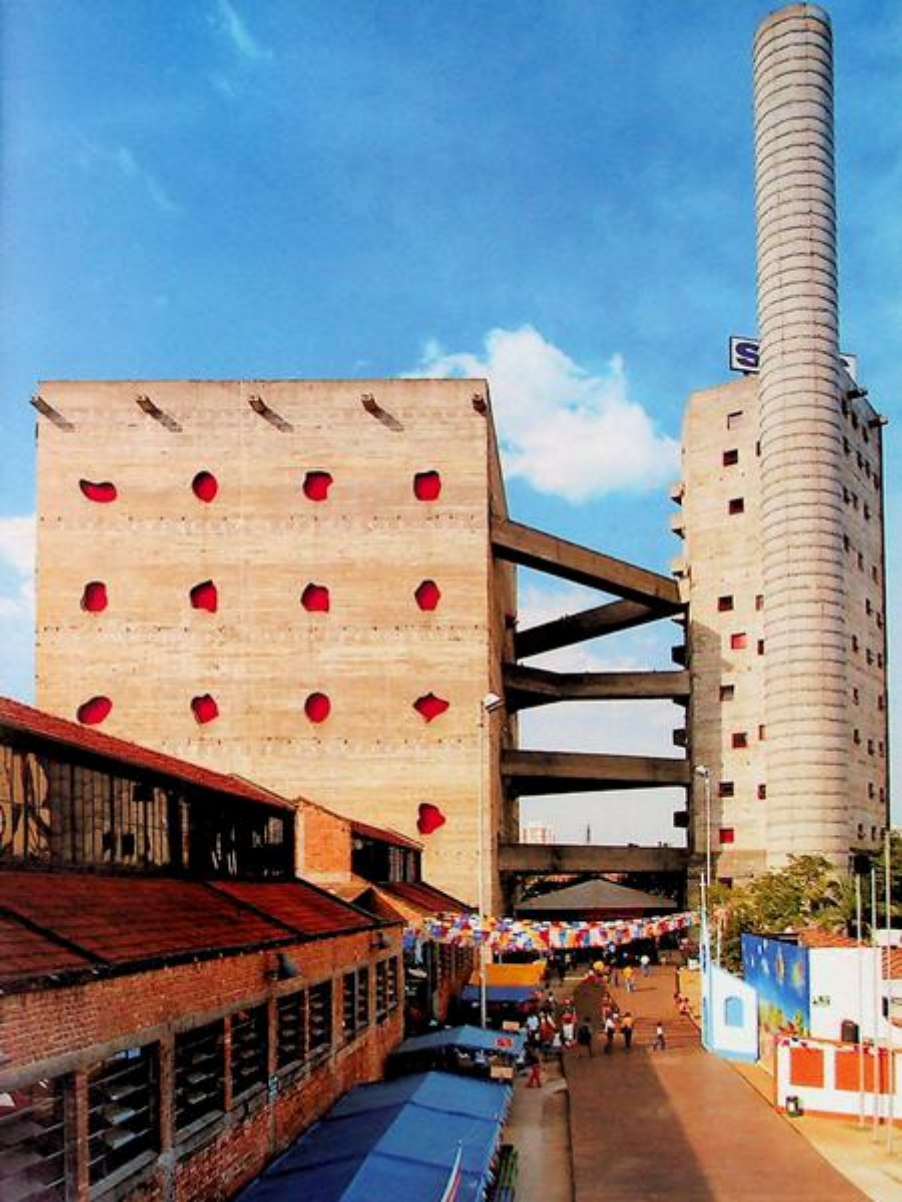
Bo Bardi Lina

"Architecture is almost implicitly everything that is structure and representation, from the rocks, the skeleton, from the structure of the atom up to the appearance of the spheres that are part of the planetary system."

▸ SESC Pompéia Factory, São Paulo, 1977-1986

▸▸ Glass House, São Paulo, 1950-1951

Lina Bo Bardi (1914-1992) studied in Rome, where she received her diploma in 1940. Whilst still a student she worked in the practice of her professor, Marcello Piacentini. After this, she worked for Gio Ponti in Milan, in the editorial department of *Domus* magazine and for the organizers of the Triennale. In 1940, she and Carlo Pagani opened an architectural studio in Milan. In 1946, Bo Bardi emigrated to South America, where she met Oscar Niemeyer, Lúcio Costa and other representatives of modern architecture. Her first building was her own home, constructed of glass, in the São Paulo suburb of Morumbi (1950-1951). Situated on a slope and resting on slender columns, the living room floats behind a glass façade above the gardens. The house also has a private area behind a patio that cannot be seen from the outside. The Museo de Arte in São Paulo (1957-1968) is in two sections. A two-story construction, it is embedded flatly in the surrounding park, with two massive, red concrete arches above it from which another construction is suspended. This leaves a clear space at road level that forms a public area. This radical solution fulfils the desire to maintain a formal appearance to the visible axis along the park. When she received the commission to build a sports and leisure center on the former factory site of the company SESC Pompéia in São Paulo (1977-1986), Bo Bardi decided against demolition of the existing buildings. Instead, they were converted and new structures added. She built upwards on the remaining site. The result was two buildings in exposed concrete, joined to one another by a number of bridges. The larger building contains a swimming pool and two sports halls over several floors. The red linings behind the freely shaped windows announce that this is no longer a factory. The same windows were also used for the Coati Restaurant in Ladeira da Misericórdia in Salvador, Brazil (1987-1990). The restaurant was part of a renovation concept for the historic old town. The building is made of undulating, pre-fabricated concrete parts, and was set on a small site next to the existing buildings.



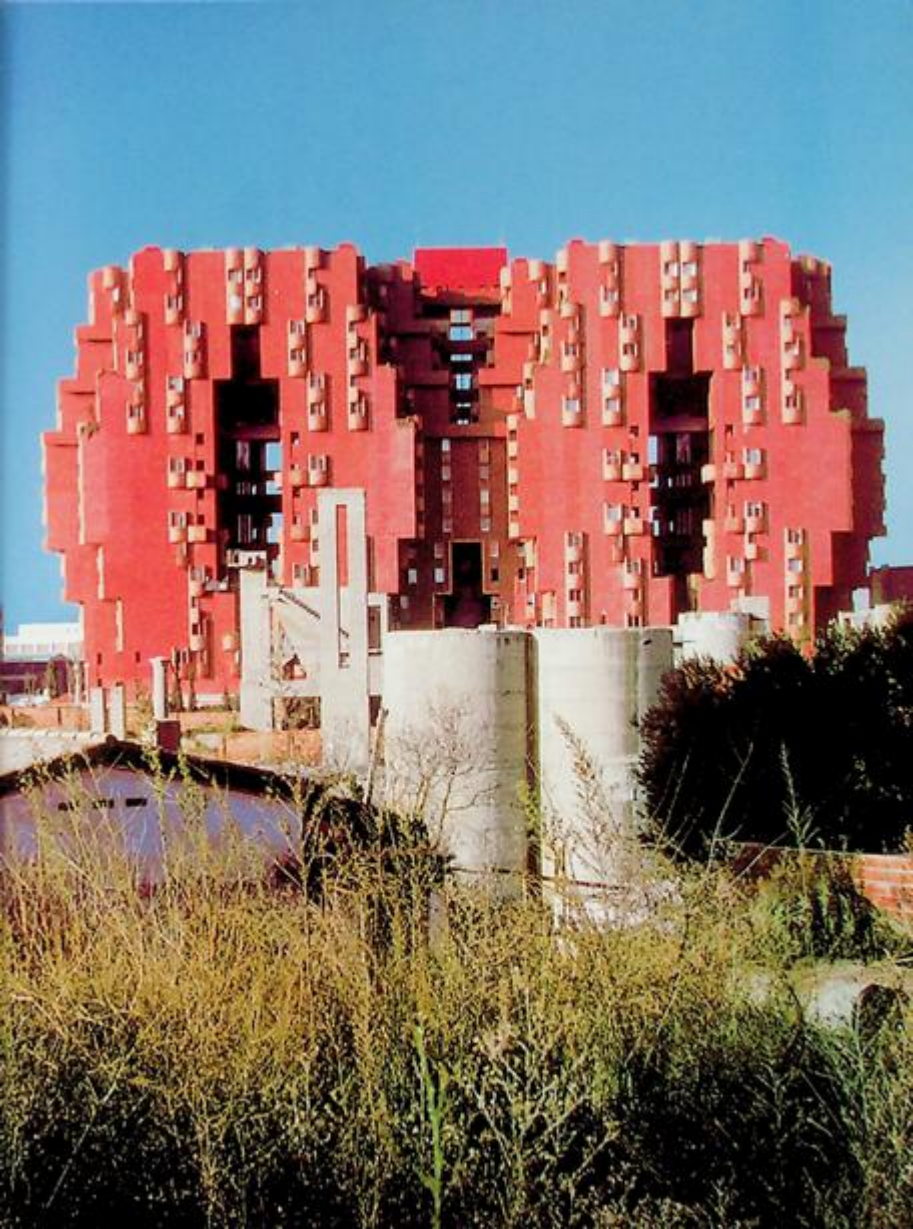
Bofill Ricardo

"At 40, I have created more utopias than others."

▼ La Manzanera residential complex, Calpe, Spain, 1969

► Walden 7 residential complex, near Barcelona, 1972–1975

Ricardo Bofill (born in 1939) attended the Escuela Técnica Superior de Arquitectura in Barcelona and the University of Geneva. In 1960 he set up his own practice, the Taller de Arquitectura, combining the talents of architects, engineers, literary authorities and visual artists. Bofill developed and employed, first and foremost, precise and detailed construction methods, based on pre-constructed concrete panels, which were quite different from the usual perception of "slab constructions". During his early years, he produced the Barrio Gaudí residential block in Reus, Spain (1964–1968), the Xanadú apartment block (1969) and La Muralla Roja holiday complex (1968–1973), both in Calpe, Spain. The Walden 7 housing estate on the site of a disused cement factory near Barcelona (1972–1975), which is also where the Taller de Arquitectura office is located, has a staggered façade of red concrete. Bofill's ambition of reviving classic forms was realized in France in the form of several monumental housing estates. The Arcades du Lac in Saint-Quentin-en-Yvelines (1972–1982), a residential area created symmetrically around a circular plaza, is reminiscent of a palace. It is connected to a complex of high-rise buildings grouped in a linear arrangement, surrounded by an artificial lake, known as Le Viaduc. The Abraxas complex in Marne-la-Vallée was created between 1978 and 1983. With a semi-circular "theater" and impressive columns, portals, triumphal arches and a "palace", it's a rather dubious example of post-modernist design, in which the point-of-view of the residents no longer seems to matter. Bofill's Teatre Nacional de Catalunya (1989–1992) and Barcelona Airport (1988–1992) proved more functional examples of his work.



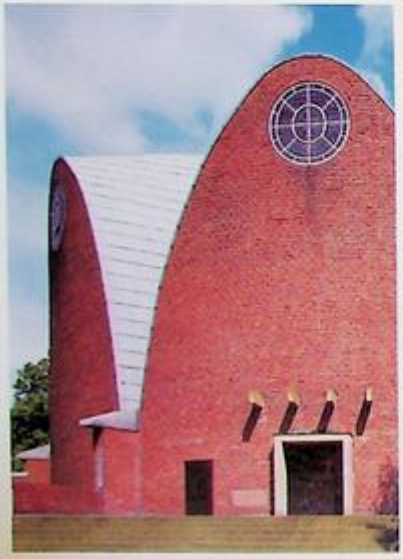
Böhm Dominikus

"I build what I believe."

▼ Church of St. Engelbert, Cologne-Riehl, 1930–1932

▶ Church of Christ the King, Mainz-Bischofsheim, 1926

After training at the Technical College for Construction in Augsburg, Germany, Dominikus Böhm (1880–1955) completed his studies with Theodor Fischer at the Polytechnic in Stuttgart. In 1902 he opened his own office in Cologne. In 1907, he taught at the Technical School for Construction in Bingen and between 1908 and 1926 he was a teaching professor at the Technical School for Construction and Art in Offenbach. From 1926 to 1934, he taught at Cologne's Vocational School. Böhm is best known for his involvement in the building of numerous churches and, thanks to his departure from historicism and his use of new materials, he made a significant contribution to reforming the construction of German sacred buildings. A further innovation was his notion of involving the community more closely by physically bringing the altar and congregation closer together, one of the demands of Catholic liturgy reform. His church designs which did get built include the Church of Christ the King in Mainz-Bischofsheim (1926), St. John the Baptist in Neu-Ulm (1926–1927) and the village church of Frielingsdorf near Cologne (1926–1927). The Catholic church on Norderney (1930–1931), though it appears to be an excursion into the International Style is, in fact, in essence unconnected with this movement. One of Böhm's masterpieces is the Church of St. Engelbert in Cologne-Riehl (1930–1932). This octagon-shaped building of reinforced concrete is linked to its free-standing, square bell-tower by means of a chapel corridor. The vaulting and walls are clad on the interior with limestone mortar. Circular windows along the upper edges of the vaulting and a high window behind the altar allow daylight into the building.



Bonatz Paul

▼ Stuttgart railway station, 1911-1928

▶ Motorway suspension bridge over the Rhine near Cologne, 1939-1941, with K. Schächterle and F. Leonhardt

After studying at the Technische Hochschule (Polytechnic) in Munich from 1896 to 1900, Paul Bonatz (1877-1956) worked until 1902 in the city's town planning office. From 1902 to 1906, he was assistant to Theodor Fischer at Stuttgart's Technische Hochschule and in 1908 took over Fischer's professorship there. From 1909 to 1943, Bonatz ran an office in partnership with Friedrich Eugen Scholer. After moving to Turkey in 1943, Bonatz was a teaching professor at the Technical University of Istanbul from 1946 to 1953. He was a proponent of traditional architecture and a critic of the modernist movement: as such, he favoured expressionist forms in his buildings. Hanover Town Hall, built on a circular ground plan (1910-1914) and with a mighty dome of steel-reinforced concrete that features a skylight, is linked to a two-story building with a pointed roof at the front and a rectangular annex at the back. Stuttgart's main railway station (1911-1928) is a monumental building consisting of staggered sections of different heights, over which looms the rectangular station tower. An almost roof-high arched entrance forms part of the façade of limestone bosses. Large sections of the building are divided by risalits (projections). Bonatz also designed the Villa Roser in Stuttgart (1921), his own residence in Stuttgart (1922) and the brick-clad, steel-frame, high-rise Stumm-Konzern Building in Düsseldorf (1922-1924), the columns of which project higher than the roof. In connection with management work on the River Neckar, Bonatz also designed several barrage weirs with locks. Later, he worked as an adviser on German autobahn building (1935-1941).

Bonet Castellana Antoni

Antoni Bonet Castellana (1913–1989) began his architectural studies at the Faculty of Architecture in Barcelona in 1929. He worked for Josep Lluis Sert and José Torres Clavé whilst still a student. He attended the fourth CIAM conference in 1933, where he met leading representatives of Modernity. To promote the cause of contemporary architecture, he joined GATEPAC in 1934. There, he collaborated on the design for a workers' holiday camp and on the Macià plan for Barcelona. In 1935, a year before graduating, he founded MUDVA (Muebles y decoración para la vivienda actual/ Furniture and interiors for life today) with Josep Lluis Sert and Josep Torres Clavé. Their first success was the Spanish pavilion for the 1937 World Exhibition in Paris, which Bonet realized with Sert and Luis Lacasa. He then worked for Le Corbusier, where he was able to make a number of important contacts. He emigrated to Argentina at the outbreak of the Spanish Civil War. Bonet and a number of other young architects set up the Grupo Austral, which devoted itself to the subject of contemporary urban planning. In 1939, he built a private home with artists' studios in Buenos Aires, Argentina. Some of the studios – which were all of different sizes – had two storys, and objects could be exhibited in small display windows. Façade elements in glass and glass bricks provided plenty of light. The office in Buenos Aires also gained a number of projects in Uruguay, such as the house for Gabriel Berlingieri in Punta Ballena (1946–1947). The building, which is situated on a beach, is notable for the use of pre-fabricated barrel vaults. In 1958, Bonet opened an office in Barcelona with Josep Puig Torné. As well as working in architecture, he also designed furniture and was involved in the development of pre-fabricated elements.

◂ La Ricarda, house, Barcelona, 1953-1963

▸ House with artists' studios, Buenos Aires, 1939, with Vera Barros and Abel López Chas

Botta Mario

▼ Synagogue, Tel Aviv-Yafo, 1996–1998

► Leeum Museum, Seoul, 1995–2004

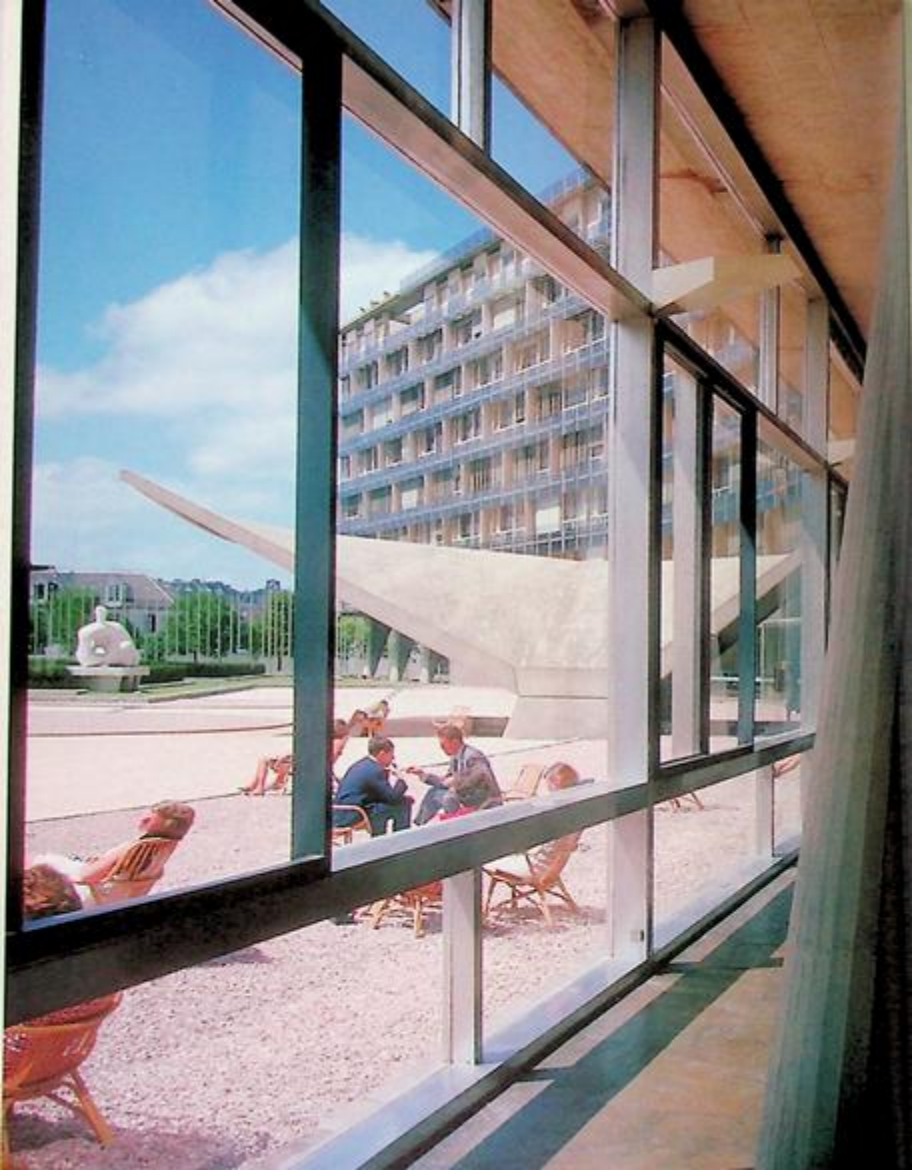
Swiss-born Mario Botta (born in 1943) began his training in 1958 with an apprenticeship as a structural draughtsman with architects Luigi Camenisch and Tita Carloni in Lugano. Between 1961 and 1964, he studied at the Liceo Artistico in Milan. When the first house he designed was built, the Parsonage at Genestrerio in Switzerland (1961–1963), Botta was just 18 years old. From 1964 he studied under Carlo Scarpa and art historian Giuseppe Mazzariol at the Instituto Universitario di Architettura in Venice. In 1965, he worked alongside Julian de la Fuente and José Oubrerie in Le Corbusier's studio on the latter's final project, the new hospital in Venice. Towards the end of his studies, he made the acquaintance of Louis Kahn. This resulted in his collaboration in an exhibition at the Palazzo Ducale in connection with a project for the new congress building in Venice. In 1970, Botta opened his own architect's practice in Lugano. Two years later, he planned his most ambitious project to date, the secondary school at Morbio Inferiore (1972–1977). He designed a great many family homes on basic geometrical forms, such as the square house in Cadenazzo (1970–1971), the rectangular tower with access bridge in Riva San Vitale (1971–1973) and the cylindrical house in Stabio (1980–1982). The Capuchin Library in Lugano should also be mentioned (1976–1979). Although this is an underground structure, a generous amount of light enters the rooms through the greenhouse-like glass roof. In subsequent major projects such as the annex to the Staatsbank in Fribourg (1977–1982), Botta attempted to translate his clear geometry into a city context. In 1983, he was made honorary professor of the University of Lausanne and an honorary member of the Bund Deutscher Architekten (Federation of German Architects). Botta also created the Maison du Livre de l'Image et du Son (the "book, image and sound" center) in Villeurbanne, France (1984–1988), the Museum of Modern Art in San Francisco, USA (1989–1995) and the Cathedral in Évry, France (1988–1995). The brick structure on a circular ground plan has a steeply inclined roof planted with trees, while a filigree bell tower projects from a circular opening in the façade. He designed the Santa Maria degli Angeli Chapel at an elevation of 2,000 meters on Monte Tamaro in the Swiss canton of Ticino, (1990–1996). Its porphyry outer walls harmonize with the environment. Botta also designed the Church of San Giovanni Battista in Mogno, Switzerland (1992–1998). The white and blue church in alternating marble and granite stripes receives natural lighting through a circular glass roof. In 2004, he modernized the Teatro alla Scala in Milan and designed a museum in Seoul, South Korea (1995–2004). Between 2003 and 2006 he created a spa area for the Tschuggen Grand Hotel in Arosa, Switzerland. Only the ecclesiastical-style rooflights of the bathing area, most of which is underground, are visible.

Breuer Marcel

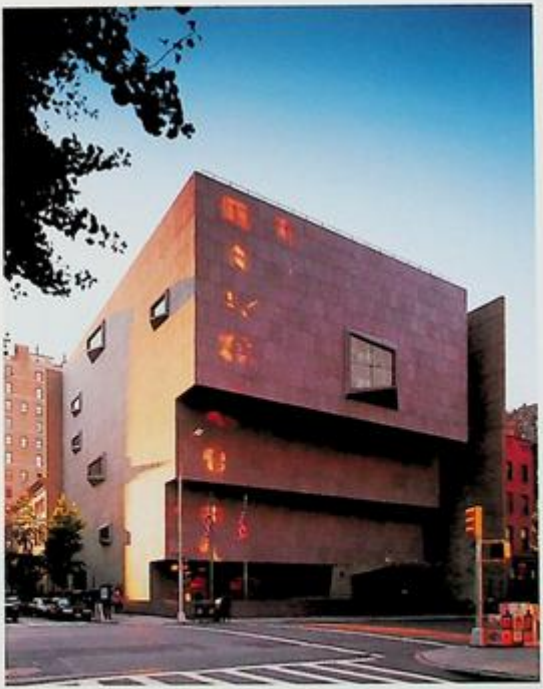
▼ Harnischmacher House, Wiesbaden, Germany, 1932

► Breuer House II, New Canaan, Connecticut, 1947-1948

After breaking off his studies at the Academy of Visual Arts in Vienna, Marcel Breuer (1902-1981) became a Bauhaus student in 1920 and graduated in the carpenters' workshop there. By 1925 he had quickly risen to be head of the furniture workshop. He designed furniture made of steel tubes, including the first tubular steel chair, which later became known as the Wassily Chair, and at about the same time produced his first architectural designs. Breuer established an office in Berlin in 1928 for his work as an interior and furniture designer and built his first house in 1932, the Harnischmacher House in Wiesbaden. One part of this two-story, flat-roofed house and the terraces are freestanding on columns. Subsequently, along with Alfred and Emil Roth, he developed the concept for the Doldertal Apartments near Zurich (1933-1936). In 1935 Breuer went into exile in England, where, because of restrictive employment conditions, he practised in an office with F.R.S.Yorke. In 1937 he finally moved to America, after Walter Gropius had managed to obtain a professorship for him at Harvard University. They subsequently ran an office together and designed, among other things, the Hagerty House in Cohasset, Massachusetts (1937), which was typical of Breuer's collation of modern elements and traditional materials. After 1946 Breuer realized larger projects from his newly founded New York office, including the UNESCO Building in Paris (1952-1958) with Pier Luigi Nervi and Bernard Zehrfuss. Further buildings included St. John's University in Collegeville, Minnesota (1953-1961), the IBM Research Centre in La Gaude, France (1960-1962) and the Whitney Museum of American Art in New York (1963-1966), a monumental concrete structure with a plastic shape.



"There is the main concept, and then there is the concept of details: between those two the design of a building just grows. Common sense, experience, taste or work is good enough without those first basic concepts."



◄ UNESCO Building, Paris, 1952-1958, with Pier Luigi Nervi and Bernard Zehrfuss

► Whitney Museum of American Art, New York, 1963-1966, with Hamilton P. Smith

Brinkman Johannes Andreas and van der Vlugt Leendert Cornelis

◂ Johannes Andreas Brinkman

▾ Van Nelle Tobacco Factory in Rotterdam, 1926–1930, with Mart Stam

▸ Sonneveld House, Rotterdam, 1929–1933

Leendert Cornelis van der Vlugt (1894–1936) graduated after studying from 1910 to 1915 at the Academy of Visual Arts and Technical Sciences in Rotterdam. After working for several years in various architectural offices, he started to practise independently in 1919. He designed houses at Beukelsdijk in Rotterdam, Netherlands (1921) and the Higher Technical School and the School of Industry in Groningen (1922). From 1925 he worked with Johannes Andreas Brinkman (1902–1949), the son of the architect Michael Brinkman, who had studied at the Technical High School in Delft. In their joint office, Brinkman dealt more with the organizational and technical aspects, while Van der Vlugt was responsible for architectural matters. Their early projects include the Theosophical Temple in Amsterdam (1927) and the Van der Leeuw House in Rotterdam (1928–1929). A broad ribbon window runs all along the smooth front of the latter building and its garden façade, with its two-story conservatory, is fully glazed. After this they worked on apartment buildings, including the De Bruyn House in Schiedam (1930–1931) and the Sonneveld House in Rotterdam (1929–1933). The Van Nelle Tobacco Factory in Rotterdam (1926–1930) can be attributed to the International Style. Despite its size, the building has a light rather than solid appearance because of its transparent curtain wall façade made of reflecting glass, which hangs in front of the steel frame. A circular, glazed roof structure houses a cafeteria. The façade of the office building, which can be reached via a glass corridor, is curved. The apartments of Bergpolder, the disc-shaped, high-rise housing development for workers in Rotterdam (1933–1934, with Willem van Tijen) can be reached via balconies. The stairs and the lift are located behind the fully glazed façade at the entrance side of the building. After the death of Van der Vlugt, Brinkman worked with Johannes Hendrik van den Broek.

Broek Johannes Hendrik van den

► Church, Nagele, Netherlands, 1962

▲ Auditorium, Technical University, Delft, Netherlands, 1959–1966, with Jacob Berend Bakema

After training as a teacher, Johannes Hendrik van den Broek (1898–1978) began to study architecture in 1919 at the Technical University in Delft. In 1924, he passed his final exam. He worked for three years in the practice of B. J. Ouendag before opening his own office in Rotterdam. In 1928, van den Broek, together with Willem van Tijen, visited the residential estates of Ernst May in Frankfurt, Hessen. The influence of this study trip can be seen clearly in the 1933 Eendracht residential project in Rotterdam. During the war, van den Broek developed new construction techniques and types of domestic building. In 1937, Johannes Andreas Brinkman offered him a partnership; they were to work together until Brinkman's death. From 1947, van den Broek taught at the TU in Delft. In 1948, he entered into partnership with the considerably younger Jacob Berend Bakema. A second study trip took him to the USA in 1948. The impressions made on him by the Chicago and Detroit skyscrapers are visible in the general design for the De Lijnbaan Shopping Centre (1949–1953) in Rotterdam. His own house in Rotterdam (1948–1952) can be perceived as the result of many years of research: it makes a definite modernist statement, to which features such as the flat roof, open ground plan, freestanding supports, strip windows and exposed concrete are contributing factors. Van den Broek also designed all the furniture for his house. Despite efficient use of space through functional organization, he managed to create a homely atmosphere. In 1957, in the context of the Interbau exhibition, he designed an apartment building of 73 dwellings in the Hansa quarter of Berlin. Later, he would build the Town Hall of Terneuzen (1963–1972) and the Kernwand Building in Tilburg (1964–1975), both in the Netherlands.

"Anyone who, as architect or client, does not feel able to further refine the modern concept with complete devotion will not break away from traditional construction."

Buff, Straub & Hensman

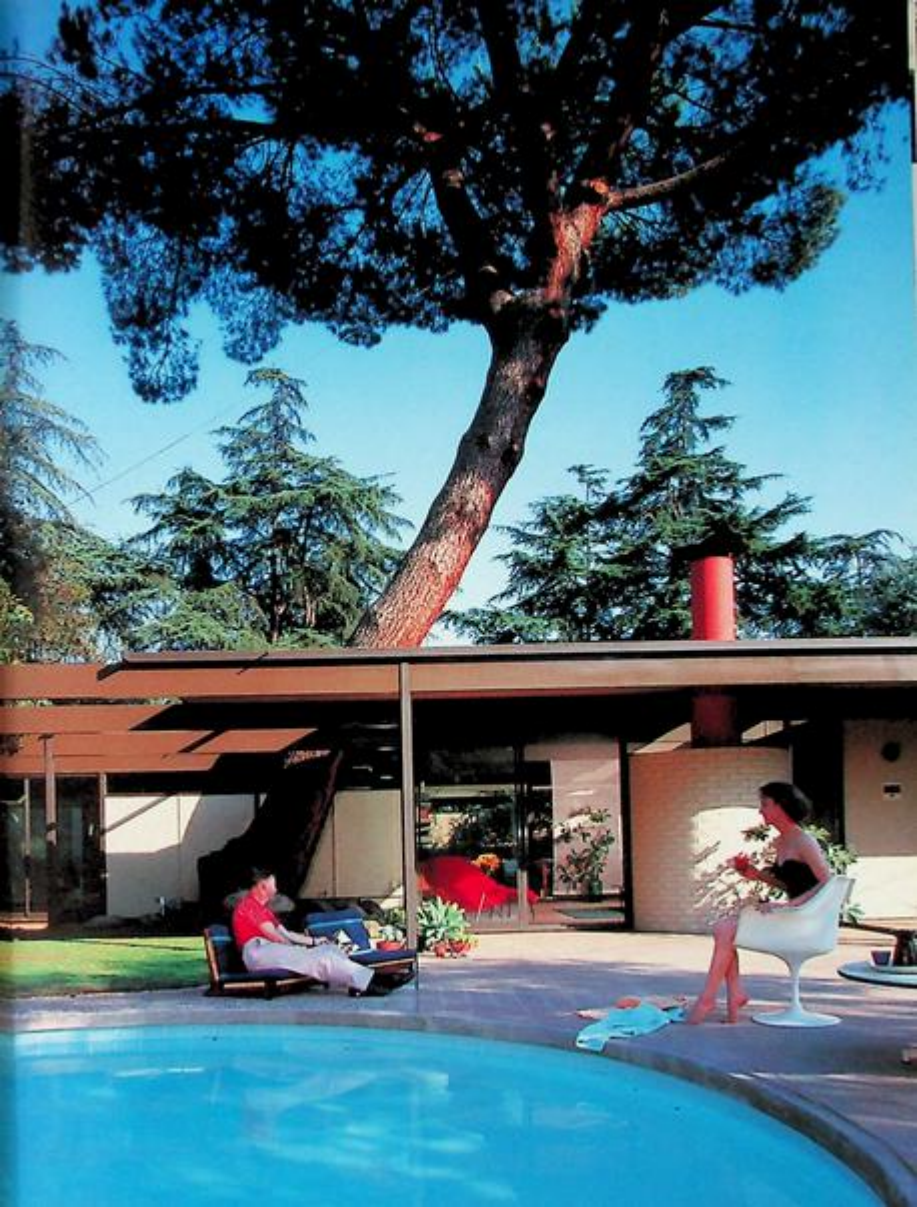
"Natural light gives architecture form. It is not only there to brighten up a room; it also intensifies the effect of the structural elements of the building." Donald Hensman

▼ Lawry Foods Building, Los Angeles, 1961

► Case Study House No. 20 (Bass House), Altadena, California, 1958

►► Garden Pavilion, Mirman House, Arcadia, California, 1956

Conrad Buff III (1926–1988) and Donald Charles Hensman (1924–2002) studied at the School of Architecture within the University of Southern California. Even as students, both of them worked part-time for the investor Harry Brittain, drawing up plans for major development programs and designing hundreds of family houses. In the years between 1956 and 1961, Calvin Straub (1920–1998) joined the team. All three architects taught at the University of Southern California. From 1952, Buff and Hensman made a name for themselves with many family houses. In the beginning, most of their work consisted of post-and-beam structures, but experimentation led them to create many different variations. For example, the two Case Study Houses designed by their practice departed from the flat-roof culture and avoidance of brick buildings that had hitherto prevailed in the Case Study Program. Case Study House No. 20, Bass House in Altadena (1958), has a round chimney structure, an oval pool and a ceiling formed from vaulted units. After Straub's departure from the practice, they designed Case Study House No. 28 in Thousand Oaks, California (1965–1966). Here, five bedrooms are grouped around a square inner courtyard with pool. The predominant building material for the bearing walls and columns is brick. Among their many other commissions were the Lawry Foods Building in Los Angeles (1961), the Andrews House in Pasadena (1964) and a ski lodge on Lake Donner, California (1973). Over recent years, the residential buildings have tended to become larger, but commissions more difficult to realize. For example, the commission for a new governor's residence in Sacramento, California (1974–1981) was complicated by external factors in relation to safety and sponsorship issues but was ultimately successfully completed.

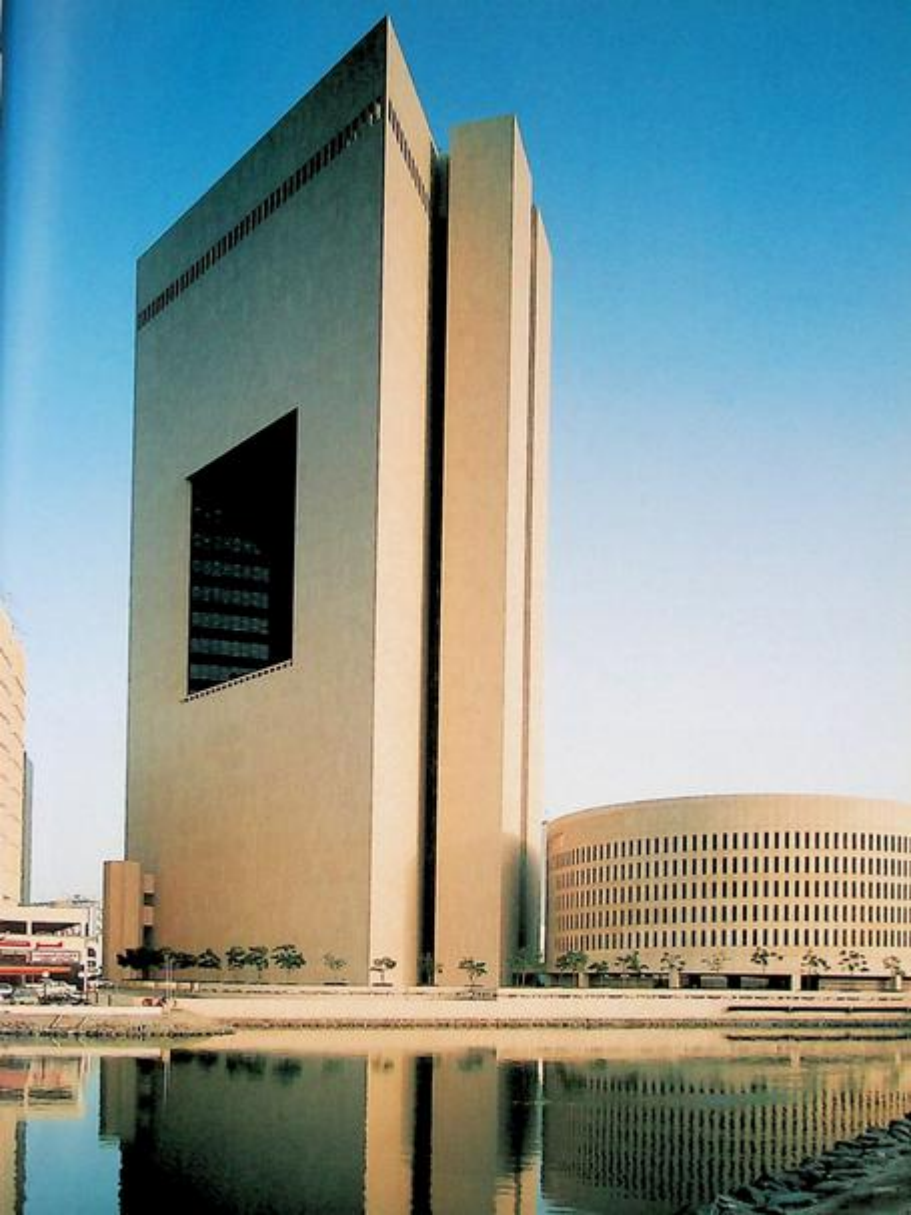


Bunshaft Gordon

▼ Hirshhorn Museum, Washington DC, 1969–1974

► National Commercial Bank in Jeddah, Saudi Arabia, 1981–1983

During the time of his studies at the Massachusetts Institute of Technology, Gordon Bunshaft (1909–1990) went on extensive journeys through Europe and North Africa. After working for 12 years as chief designer for the New York architectural office Skidmore, Owings & Merrill, he became a partner in 1949. Many of the buildings constructed by the firm can be traced back to his designs: for example, the Venezuela pavilion for the New York World Exhibition of 1939, with its glazed, steel frame construction and prominent concrete roof, along with the administration building for Lever Brothers in New York (1951–1952). This slim, high-rise structure has curtain wall façades of green, thermal-insulating glass and thin, steel profiles. Bunshaft was also involved, along with Sedad Hakki Eldem, in the building of the Hilton Hotel in Istanbul, Turkey (1952–1955) and the Beinecke Rare Book and Manuscript Library at Yale University (1960–1963). Bunshaft's own residence in East Hampton, New York (1963), known as Travertine House because of the floors installed throughout, had a radically simplified ground plan with a living area in the center. The Hirshhorn Museum in Washington DC (1969–1974) is laid out as a three-story ring around a central courtyard with a fountain and is set on four massive columns, through which there is access. There are exhibition galleries inside the completely enclosed ring as well as in the basement that runs through the museum. Bunshaft was also responsible for the concept of the triangular ground-plan of the National Commercial Bank in Jeddah, Saudi Arabia (1981–1983). Enormous, rectangular openings are cut into the façades in order to provide daylight for the offices, which are set back, avoiding exposure to direct sunlight and sandstorms.



Burnham & Root

▼ Union Station, Washington DC, 1901-1908

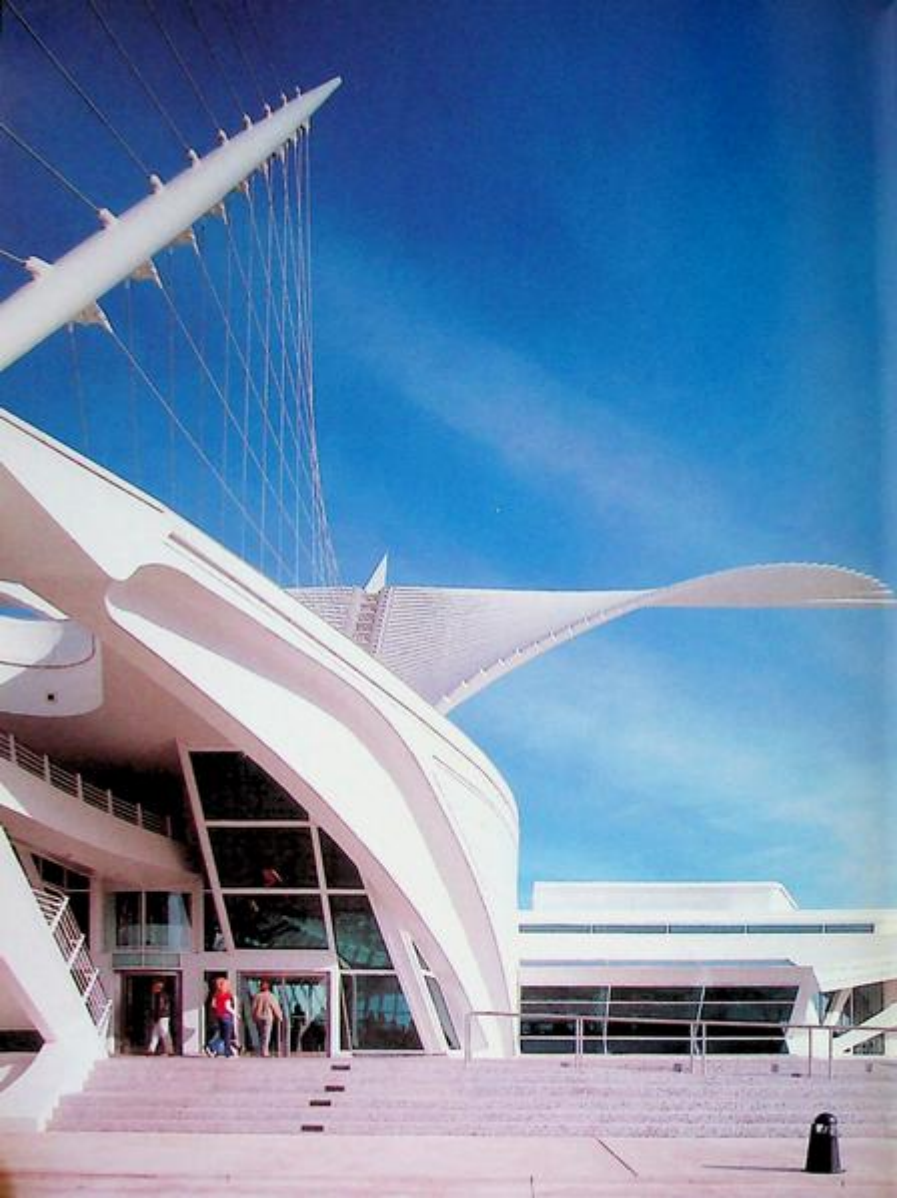
► Fuller Building, "Flatiron", New York, 1901-1903

After his training in the office of the engineer William Le Baron Jenney in Chicago, Daniel Hudson Burnham (1846-1912) formed a partnership from 1873 onwards with John Wellborn Root (1850-1891). After studying at New York University, Root worked with James Renwick and John Butler Snook in New York. For Snook he was the director of construction for Grand Central Station in New York City. The designs of Burnham and Root are attributed to the Chicago School. Their early works include the Monadnock Building in Chicago, Illinois (1889-1891), with a cast-iron framework in the interior and brickwork façades. This 16-story structure did without any form of ornamentation. The Rookery Building in Chicago (1885-1888) has a rectangular outline with a steel framework and is distinguished by the curvature of the windows and entrance area, massive granite columns on the ground floor and small towers. A further project was the Reliance Building in Chicago (1894-1895) with Charles B. Attwood; this has a steel framework filled in with glass, and a feather-edged flat roof. There is also the Fuller Building in New York (1901-1903), known as the "Flatiron" and built on a triangular ground-plan. This differs from previous high-rise buildings due to its lavish ornamentation. Burnham also built the Union Station in Washington (1901-1908) and created plans for the cities of Washington (1902) and San Francisco (1904), as well as a further development plan for Chicago (1909), with Edward Bennett, featuring broad boulevards set out in a radial pattern.

Calatrava Santiago

Montjuic Communications Tower, Barcelona, 1989-1992

Santiago Calatrava (born in 1951) attended the School of Art in Valencia between 1968 and 1969. He then studied until 1973 at the Escuela Técnica Superior de Arquitectura in the same city before studying civil engineering at the Eidgenössische Technische Hochschule in Zurich between 1975 and 1979. When he was awarded his doctorate in 1981, he founded a practice in Zurich. Calatrava's projects have a highly dynamic sculptural quality. The shapes of his technical structures are often reminiscent of life forms. His artistic works, sculptures and drawings, which are often motion studies of the human body, heavily influence the architecture. One of his early designs is Stadelhofen Station in Zurich (1983-1990), a combination of solid concrete prefabricated units in the underground part of the station, and a light steel skeleton above ground. Other significant projects by Calatrava include the Bach de Roda Bridge in Barcelona (1984-1987), Lucerne Station (1989), the Montjuic Communications Tower in Barcelona (1989-1992) and the Lyon-Saint Exupéry Station in Satolas (1989-1994), the hall roof of which is reminiscent of a flying bird. Two concrete arches support the 1300-tonne aluminium-covered steel framework, meeting at the front in a V-shaped angle. For Expo '92 in Seville, Calatrava designed the State of Kuwait pavilion and the Alamillo Bridge, with oblique cables between the carriageway and the sloping bridge pillars, resembling a harp. The extension to the Milwaukee Art Museum in Wisconsin (1994-2001) has a roof that can be raised and lowered as if in a slow-motion replay of a bird in flight. In association with Expo '98, he designed Oriente Station in Lisbon (1993-1998), in which the railway installations are vaulted over with filigree branching tree structures. The concert hall in Santa Cruz on Tenerife (1991-2003), with its two function halls, was deliberately planned to be a new emblem of the island. To this end, its shell concrete roof soars 60 meters above the plaza that surrounds the building. The IMAX cinema in the City of Arts and Sciences designed by Calatrava in Valencia (1991-2004), with its moving, hemispherical glass capsule on an elliptical ground plan, is reminiscent of an eye. The facility was extended with an opera house, completed in 2006. For the 2004 Olympic Games in Athens, Calatrava created new roofs for the existing arenas, and many new infrastructural facilities.



"I am sure that concrete, together with steel, will be the material of the 21st century. My interest is concentrated on introducing a new vocabulary of shapes, surrealistic forms that are to some extent in harmony with our times."

◂ Milwaukee Art Museum, 1994–2001

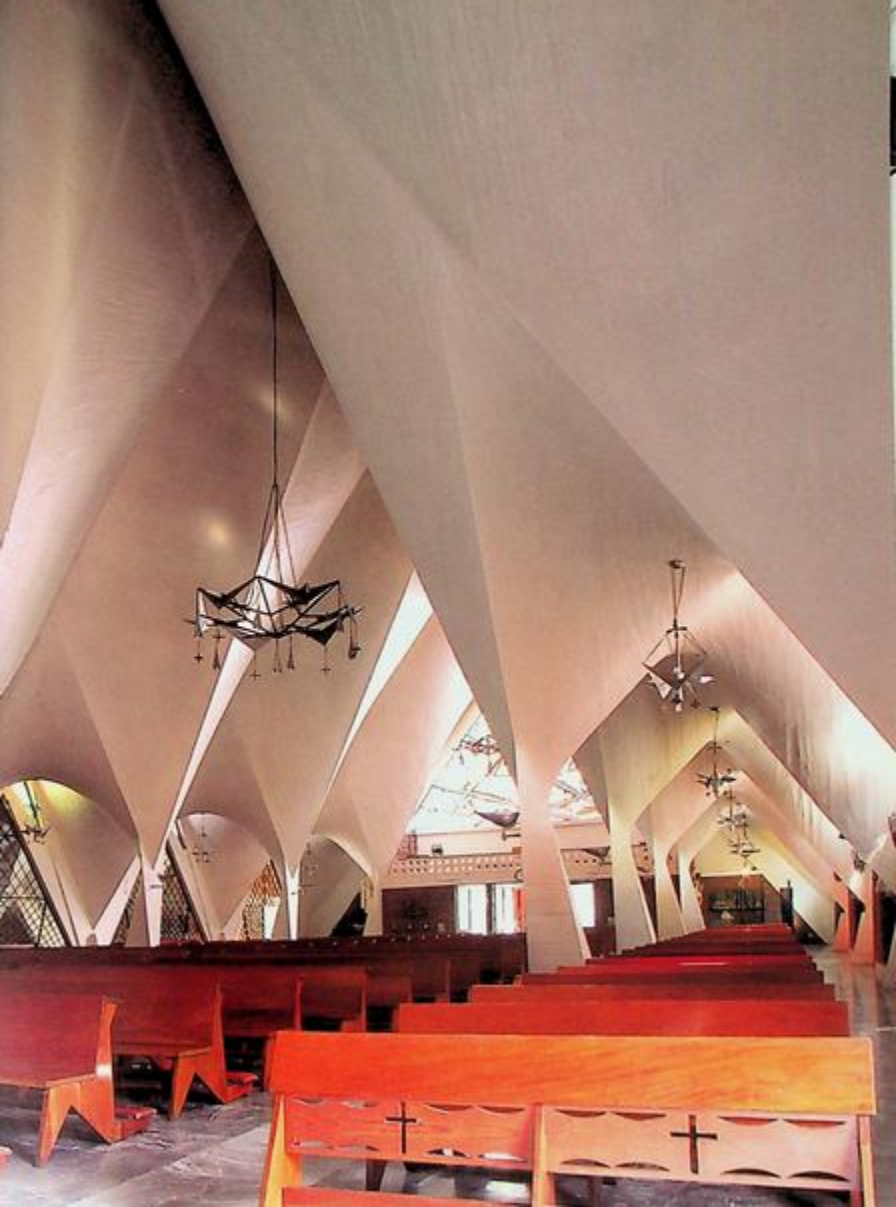
▴ Pfalzkeller Emergency Service Centre, St. Gallen, Switzerland, 1988–1998

Candela Félix

▼ Laboratory complex for Ciba, Mexico City, 1953-1954, with Alejandro Prieto

▶ Iglesia de la Virgen Milagrosa (Church of Our Miraculous Lady), Mexico City, 1954-1955

Félix Candela (1910-1997) graduated from the Escuela Superior de Arquitectura in Madrid in 1935. In 1939 he moved to Mexico, where he created his extensive body of work, significant not only from a technical and engineering point of view, but also architecturally. He carried out the construction of variously shaped, thin, reinforced concrete shells and, together with Fernando Fernandez, in 1950 founded the building company Cubiertas Ala S.A. specializing in these structures. One of Candela's early buildings was the Cosmic Rays Research Laboratory at the University of Mexico (1951), which he built with architect Jorge Gonzales Reyna. In order to allow radiation through, the roof could not be thicker than 1.5 cm, so Candela elected to build a double curve to increase stability. In the period that followed, he experimented with every imaginable kind of concrete shell, and in 1951 and 1952 built five residential buildings with various domed roofs in the Pedregal Gardens for *Novedades* newspaper. In the last two of these houses, Candela used umbrella structures that he had previously studied in test projects. The finance ministry then commissioned him to build a large building, the Las Aduanas (Customs) Warehouse in Vallejo (1953-1954). He then built a laboratory complex for Ciba in Mexico City (1953-1954) with architect Alejandro Prieto. As Candela was generally only interested in the execution of his roof structures and left the rest of the work, such as the completion of the walls, to the architects with whom he was working, the buildings particularly characteristic of him are those in which the shell completely forms the structure itself, as is the case with the Iglesia de la Virgen Milagrosa (Church of Our Miraculous Lady) in Navarte (1954-1955) and Los Manantiales Restaurant in Xochimilco, Mexico City (1957-1958). Between 1959 and 1960 he built a bottling plant for Bacardi in Cuantilan and in 1968 with Enrique Castañeda and Antonio Peyri the sports center for the Olympic Games in Mexico City. Between 1953 and 1970 Candela taught at the University of Mexico in Mexico City and, after emigrating to the USA, between 1971 and 1978 at the University of Illinois in Chicago.



Case Study House Program

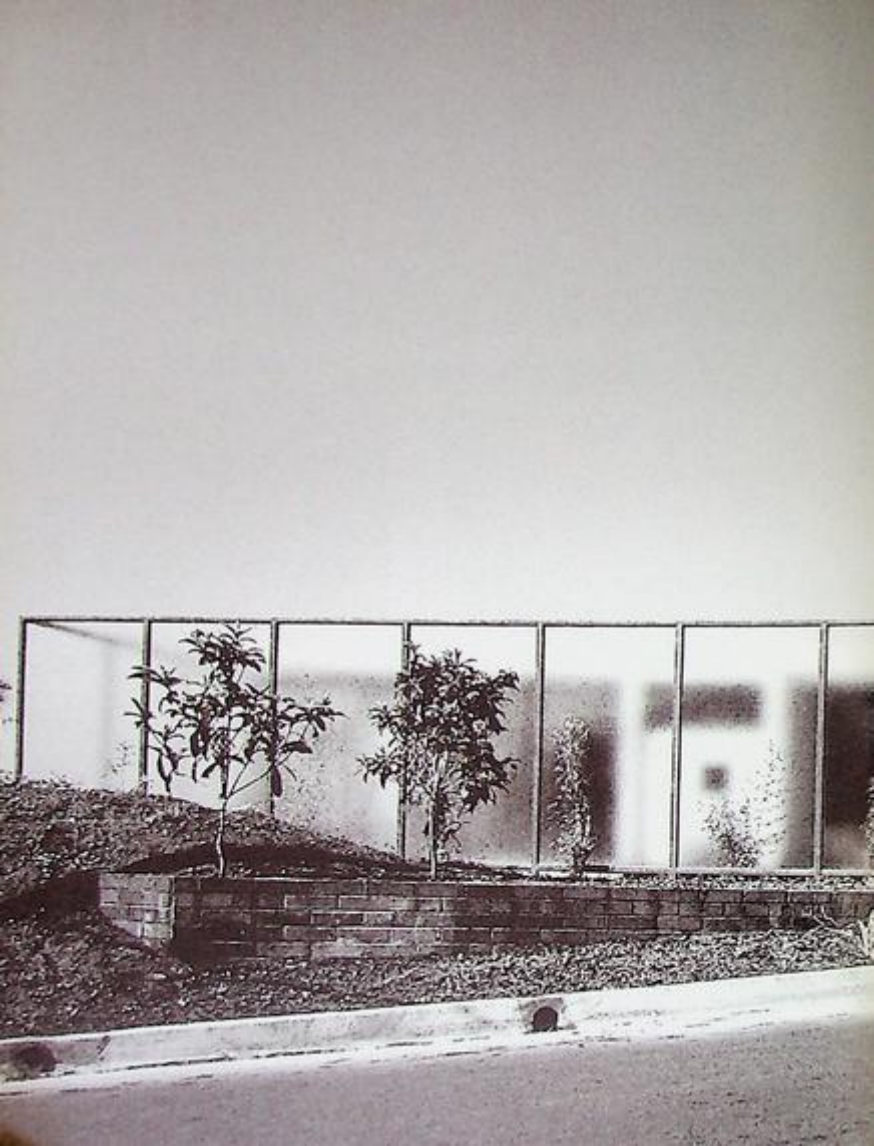
▾ Title page of the magazine *Arts & Architecture*, January 1945

▾ Ralph Rapson, Case Study House No. 4 (Greenbelt House), 1945, birds-eye view

▸ Pierre Koenig, Case Study House No. 21 (Bailey House), Los Angeles, 1956–1958

▸▸ Craig Ellwood, Case Study House No. 16, Los Angeles, 1952–1953

The showhouse project entitled the Case Study House Program was initiated in 1945 in California by John Entenza, publisher of the magazine *Arts & Architecture*. Entenza invited local architects to design reasonably priced apartment buildings as prototypes. The program focused on the changes in society in the post-war years. It was designed to promote understanding of the modern architectural building process and to produce individual houses with simple plans that involve new building technologies using industrially prefabricated elements. Due to the program's lack of resources, clients had to be found who would take over the financing. The incentive would be the publicity for the supply companies, who had actually raised the money. Since this idea did not come off as well as expected, buildings that had been constructed outside the program later became recipients of contributions. In January 1945, the names of the nine architects who had been selected were published and eventually, between 1945 and 1966, 21 architectural offices took part in the program, including Thornton Abell, Buff, Straub & Hensman, Julius Ralph Davidson, Charles and Ray Eames, Craig Ellwood, A. Quincy Jones, Killingsworth, Brady & Smith, Pierre Koenig, Richard Neutra, Eero Saarinen, Raphael Soriano, Beverly Thorne, Rodney Walker and William Wurster. Of the 35 plans that were published, two of which were for apartment buildings, and were later adopted into the program, 25 were actually realized. In addition, in some cases for reasons that are no longer comprehensible, the accounts became so confused that some of the plans in the program were given away several times.



Castiglioni Enrico

"The poetic essence of Architecture is space: a motionless space which wraps and contains man and his time."

Sempione Primary School in Busto Arsizio, Italy, 1958, with Dante Brigatti

Enrico Castiglioni (1914–2000) first graduated in engineering studies in 1937 at the Milan Politecnico then in 1939 studied to qualify as a lecturer at the University of Rome, where he taught composition and urban development.

After the Second World War he received some Italian local authority commissions for school buildings: in Busto Arsizio (1957–1958) and in Gorla Minore (1962–1963). With the use of generous expanses of glass and exposed reinforced concrete girders, here the architect was continuing the tradition of classical modernism. In 1961 Castiglioni designed a restaurant at Lisanza on Lake Maggiore, Italy. The Technical School in Busto Arsizio (1963–1964) was a joint work by Enrico Castiglioni and Carlo Fontana. The structure consists of two symmetrical wings set at an obtuse angle to one another that reach out at the back in a parabolic shape. The two wings are linked by a lower structural unit forming the entrance hall. The teaching workshops are on the ground floor, while the classrooms are on the upper storeys. The sloping roof forms a sunscreen, with supports extending upwards and inset horizontal surfaces. The utopian character of many of the architect's designs remained unrealized, and included expressionist prototypes such as the Pilgrimage Church of Madonna delle Lacrime in Syracuse (1957). The idea for a church in Montecatini (1955) used similar motifs. The particular power of Castiglioni's architecture lies in the sculptured expressiveness of form moulded into the combination of reinforced concrete and glass.

Cetto Max

"Architecture is...a creation amongst others on earth, just like water, trees and clouds too."

The architect's house, El Pedregal, Mexico City, 1948–1949

Max Cetto (1903–1980) studied at the Technical Universities in Darmstadt and Munich (1921–1923) and in Berlin, where he graduated under Hans Poelzig (1926). The same year, he worked for Ernst May in the housing estates office in Frankfurt am Main. In 1928 he became a founder member of CIAM. Three years later, in Frankfurt, he became self-employed, but received few commissions. Between 1936 and 1938 he was appointed by the Herbert Rimpl practice as architect in charge of the building of the Heinkel Aircraft Works in Oranienburg. In 1938 Cetto emigrated to the USA. After a short period working with Richard Neutra in San Francisco, he moved to Mexico in 1939. There he found employment with Luis Barragán, with whom he worked on the extension of the El Pedregal de San Angel estate between 1945 and 1965. Here the residences were integrated into their natural surroundings, between blocks of lava and the established plant life. After gaining Mexican citizenship in 1947, he built his own house in the El Pedregal estate (1948–1949), followed by a house for artist Roberto Berdecio (1951) in the same place. Between 1971 and 1978 he designed the Club Alemán de México in Tepepan, Mexico. He worked as a freelance architect until 1980 and taught between 1965 and 1979 at the Universidad Nacional Autónoma de México (UNAM), during which time he also taught in Auburn, Alabama.

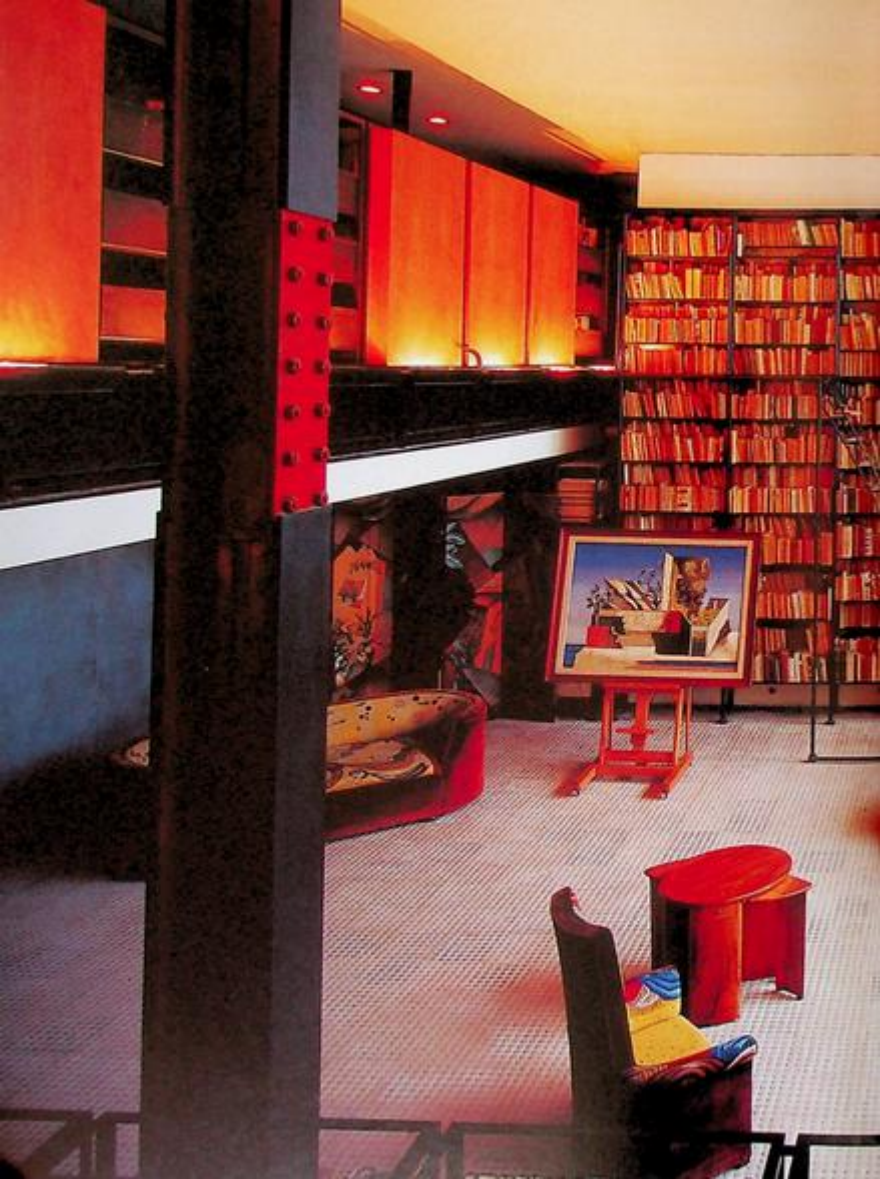
Chareau Pierre

▼ Grand Hotel, Tours, France, 1928

► Motherwell's Weekend House and Studio, East Hampton, New York, 1945–1946

►► Maison de Verre, Paris, 1928–1931, with Bernard Bijvoet and Louis Dalbet

After many years employed as a technical draughtsman with furniture and fittings company Waring & Gillow in Paris (1899–1914), Pierre Chareau (1883–1950) started up as an independent furniture designer and architect in Paris in 1919. He was one of the founding members of CIAM and the Union des Artistes Modernes. Initially, he mainly designed furniture – predominantly made from solid wood with simple, classical lines – and other items, for the Dalsace family. In 1924, in collaboration with metal-worker Louis Dalbet, he opened his own shop, La Boutique, in Paris. Transparency played a major role in his furniture even in this early period, and was achieved by the use of alabaster, glass and perforated plate metal. His first building project was in 1926, a club house built together with Bernard Bijvoet in Beauvallon, France. With Bijvoet and Louis Dalbet, he built the Maison de Verre (House of Glass) for the Dalsaces in Paris between 1928 and 1931, a radical conversion of an existing house: the front consisted of glass bricks framed by black profiled steel, with alternating sheets and blocks of glass and panels of dark metal reaching through to the garden. The interior, too, was striking, having many moving elements. Meals could be run along a track into the dining room, and bathrooms, completely enclosed by partitions, were integrated into the bedrooms. Dark tiles and rubber served as floor coverings, and warm, wooden, upholstered, classical style furniture combined with refined modern designs in metal, glass and perforated metal sheeting. In 1940, Chareau emigrated to New York. Between 1945 and 1946, he built a Weekend House and Studio for artist Robert Motherwell from a converted military barracks on Long Island, New York, the façade of which was made from white bricks, expanses of glass and a curving corrugated iron roof.



Chermayeff Serge Ivan

"Broadly speaking, the functions of any structure or components of that structure are determined by the demands of the times and not by available materials."

◂ House, 64 Old Church Street, London, 1935–1936, with Erich Mendelsohn

▸ "Bentley Wood", Halland, England, 1938

After qualifying in Harrow, England, Serge Ivan Chermayeff (1900–1996) worked as a journalist between 1918 and 1922. From 1924, he worked as a furniture designer, first with E. Williams Ltd. and then from 1928 for Waring & Gillow. He opened his architectural studio in London in 1930 and, from 1933 to 1936, was also in partnership with Erich Mendelsohn. In 1940, Chermayeff went to America, and in 1947 set up an office with Konrad Wachsmann. From 1953 to 1962 he lectured at the Massachusetts Institute of Technology and Harvard University; he then held a chair at Yale University until 1971. His collaboration with Mendelsohn also produced the two-story, straight-lined Nimmo residence in Buckinghamshire, England (1934), which has a flat roof and white façades with large glazed areas overlooking the garden, and the De La Warr Pavilion in Bexhill-on-Sea, England (1933–1935). The theater and cinema lie behind white, closed, concrete façades; the restaurant area is open. On one side, a stairwell leads into a semi-circular glass extension. Chermayeff's own house in Halland, England (1936–1938) is clearly structured in tiles, wood and glass. Stone stairways lead from the slightly raised ground floor into the sheltered garden, in a building that testifies to his fondness for lighter constructions. In America, in particular, he often experimented with wooden frames. In 1952, he created the Payson House in Portland, Maine.

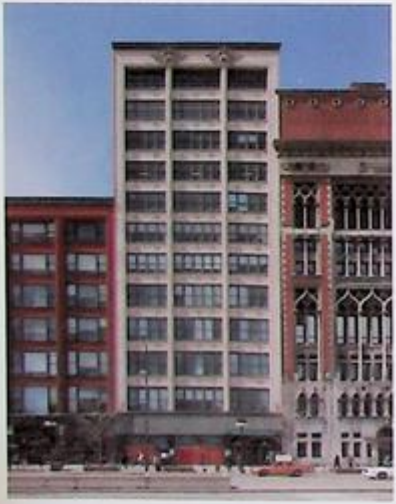
Chicago School

▼ William Le Baron Jenney, Home Insurance Building, Chicago, 1885

▼ Holabird & Roche, Louis Sullivan (façade), Gage Building, Chicago, 1898–1900, uppermost four floors, completed in 1902

► William LeBaron Jenney, First Leiter Building, Chicago, 1879

The city of Chicago in Illinois experienced rapid growth in the 19th century due to its position on the Illinois & Michigan Canal, which had been completed in 1848, and also because of its increasing significance as a railway junction. All this led to a tremendous increase in the price of land. After the great fire of 1871, the city became an area of architectural experimentation. Burnham and Root's Montauk Block was built between 1880 and 1882: conventionally built of brick, its 10 stories set a new height record. Shortly before this, William LeBaron Jenney's First Leiter Building (1879) had only seven floors but an open façade, supported just by the necessary pillars, and had paved the way to new possibilities in the construction of buildings, only made possible by the use of an iron framework. With LeBaron Jenney's Home Insurance Building (1885) there was finally a 10-story high-rise building of the new generation, using purely an iron framework construction method. These buildings became possible and economically feasible only through the use of the electric lift. A further important technical advance was developed by Adler & Sullivan: the caisson method for building foundations. Allowing distribution of the weight over small areas, this was first used in the Chicago Stock Exchange (1893–1894). Over time, "skyscrapers" came to display a more sophisticated form with clearly gradated basement and roof areas and, in between, an array of floors in a grid formation, often featuring bay windows. As well as Daniel Burnham, John Root and LeBaron Jenney, the Chicago School also included William Holabird, Martin Roche, Dankmar Adler and Louis Sullivan.



M. DWELLE & COMPANY

Chipperfield David

"You start off with certain ideas and you always keep reworking those same ideas, come what may, notwithstanding the fact that it would be stupid to deny that the architect or the designer develops through experience."

Residential building, Berlin, 1994-1996

David Chipperfield (born in 1953) studied at the Architectural Association in London and received his Diploma in 1977. In 1984, after several years in the practices of Norman Foster and Richard Rogers, he opened his own office, David Chipperfield Architects, in London. His first projects were commissions to design boutiques in London, Paris, Tokyo and New York. Following a large number of projects in Japan, including a private museum in the Chiba Prefecture (1987), the Toyota Design Store in Kyoto (1989) and the Matsumoto Headquarters in Okayama (1990), he opened an office in Tokyo (1987). In England, he has worked on the Plant Galleries and Central Hall of the Natural History Museum in London (1993), the Wagamama Restaurant in London (1995) and the River & Rowing Museum in Henley-on-Thames, Oxfordshire (1989-1998), which was his first major project. By virtue of its shape and use of materials, the museum resembles an upturned rowing boat: the lower half consists of a transparent glass skin, while the upper walls are clad in English oak and topped with a steel roof. In the late nineties, Chipperfield designed an office building in Düsseldorf (1994-1997) and the Circus Restaurant (1997) and Joseph Menswear Shop (1997) in London. The two lower floors of the latter, elegant building are encased in a 6-meter-high band of glass, while the upper floor is finished in stainless steel. Dark grey sandstone floors and white walls create an atmosphere of formality appropriate to men's clothing. Chipperfield's most recent projects include the Landeszentralbank in Gera, Germany, three hotels in America, and private residences in Spain. In 2006, the Literaturmuseum der Moderne (Museum of Literature on Modern Art) was opened in Marbach. Slim concrete posts running around the building give it a temple-like appearance.

Chochol Josef

Kovarovic residence,
Prague, 1912-1913

Josef Chochol (1880–1956) studied architecture at the Technical University of Prague from 1898 to 1904, after which he spent three years with Otto Wagner at the Academy of Fine Arts in Vienna. In 1911, he joined the SVU Mánes group of artists, which also included the first generation of Czech cubists. In 1912, he joined the Prague Art Workshops, which specialized in cubist interiors. Following the First World War, Chochol participated in the 1920 exhibition by the group Die Hartnäckigen ("The Stubborn"). The Czech-born architect was a founder member of the Left Front (1929) and the Association of Socialist Architects (1933). His first new building, a house for three families in Prague (1912–1913), was a clear reference to the contemporary movement of cubism. He used similar polygonal models for the façade of the three-story Kovarovic residence in Prague (1912–1913). For the apartment building on Neklanova Street (1913–1914), Chochol designed a façade of crystalline shapes, whose plastic effects resulted in a complex interplay between light and shadow. Chochol was strongly influenced by Russian constructivists during the 1920s; in 1927, he realized the avant-garde theater, Osvobozené Divadlo, in Prague.

"Form should be a truly living being with a precisely developed individuality."

Coates Wells

Embassy Court apartment building, Brighton, England, 1934–1936

Wells Wintemute Coates (1895–1958) was born in Japan, the son of Canadian missionaries, and studied engineering in Vancouver and London. He subsequently worked temporarily as a journalist for the *Daily Express* as well as being an employee in the offices of Adams and Thompson in London in 1924. Here he got to know Maxwell Fry. In his role as a journalist he attended the Exhibition of Arts and Crafts in Paris in 1925, where the work of Le Corbusier caught his eye in the form of the Pavillon de l'Esprit Nouveau. A contract to design shops from the firm Cresta Silks in 1928 gave him the opportunity to work independently. The shops, which he designed, were a success thanks to his innumerable detailed solutions with regard to the furnishings and his use of typography for the exterior effect. Coates was a member of CIAM and in 1933 was a founder member of the group MARS, which wanted to help rationalism gain a foothold in Great Britain. He collaborated with Denys Lasdun between 1935 and 1937. For the four-storey Lawn Road Flats in Hampstead, London (1932–1934), also known as the Isokon Flats, he used arcades to open up the building to powerful effect. He also worked alongside Patrick Gwynne on The Homewood, a villa in Esher, Surrey (1934). The Embassy Court apartment building in Brighton, Sussex (1934–1936) emphasizes its horizontal nature through surrounding balustrades between the rolling, recessed, ribbon glazing. All the living rooms and main bedrooms in the building have a view of the sea, while the apartments were fitted out by Coates with built-in kitchens and newly designed furniture made of steel tubes. In the apartment building in Palace Gate, London (1939) he introduced staggered levels with two floors on one side of the building set opposite three on the other, so that in the flats the interior height corresponded with the use of space in the room. Coates also involved himself in design as well as architecture, including the design of new kinds of sailing boats with a double hull and aerodynamically developed sails.

Coderch i de Sentmenat
Josep Antoni

▼ Torres Trade Building, Barcelona, 1965–1969

► Banco Urquijo residential complex, Barcelona, 1967

Josep Antoni Coderch i de Sentmenat (1913–1984) completed his studies in 1940 and first worked, after some commissions in Madrid between 1942 and 1945, as the city architect in Sitges, Spain. His better-known buildings, mainly designed in collaboration with Manuel Valls, are from the 1950s. In 1959, he became a member of CIAM, and in 1960 joined Team X. From 1965 he taught design at the School of Architecture in Barcelona. His flair for understanding regional factors, including climate, resulted in a synthesis of modern and local tradition in his architecture. Ugalde House in Caldes d'Estrac, Spain (1951), perched on a cliff in Mediterranean style, has undeniably modern forms. This low house with its white, part masonry work, part smooth façades and irregular ground plan harmonizes with the uneven terrain. Angular and rounded forms are reconciled. Around the same time, he built an apartment building in La Barceloneta, Barcelona (1951–1955), a multi-storey corner house with angular sidewalls and a thin, projecting roof. Large areas of glass with sun louver-boards look out over the harbour and alternate with areas of ceramic. His works also include the Calle Compositor Bach apartment house (1957–1961), the Banco Urquijo residential complex (1967) and the Les Cotxeres Apartments (1968), all in Barcelona. Between 1965 and 1969, he built the four towers of the Torres Trade Building in Barcelona. Glass curtain walls encase the offset, corner-less structures. Rounded forms are also the most striking feature of the extension to the Escola Técnica Superior d'Arquitectura in Barcelona (1978). The undulating walls are repeated outside and in the access corridors of the interior.

Connell, Ward & Lucas

"Arguments on aesthetics are as meaningless as they are endless..." Colin Anderson Lucas

▾ House, 66 Old Frognal, London, 1937–1938

▸ High and Over, Ashmole residence, Amersham, England, 1929–1930

Amyas Douglas Connell (1901–1980) started his studies in New Zealand and continued them in England, where he then set up his own studio. Basil Robert Ward (1902–1976) became his partner in 1930; Colin Anderson Lucas (1906–1984) joined them in 1933. In 1932, Connell's modern functional architecture led to a debate with the influential architect Reginald Blomfield, who represented traditional values and, in particular, disagreed with the international character of the new building styles. Based on the principles of the International Style, Connell, Ward and Lucas created the linear Ashmole residence ("High and Over") in Amersham (1929–1930) in white concrete on a Y-shaped layout. A glazed central courtyard and covered roof terraces offer protection against the English climate, while the numerous windows provide unrestricted views of the surrounding countryside. The Lowes-Dickinson House in Grayswood was also built in cooperation with Ward in 1932. One striking element of this building, which consists of several angular elements, is the stairway, which is glazed on both sides and finely divided by slender, black, steel frames. The black window frames and balustrades further emphasize the white façades. The houses created by the partnership of Connell, Ward and Lucas at the end of the 1930s contain some new features. Thus, for instance, the house in Wentworth (1936) combines concrete with brick, whereas the one at Moor Park is notable for its circular bay and rounded louver. The studio was dissolved in 1939; Connell emigrated to East Africa in 1947, working first in Tanga, Tanzania, and later in Nairobi, Kenya. There, he used simple means and materials to realize buildings that took the local climate into account. He returned to England in 1977.

Constructivism

▼ Ilia Alexandrovic Golosov, Zuyev Workers' Club, Moscow, 1927–1929

► Vladimir Tatlin, Memorial to the Third International, Moscow, 1919–1920, model

Constructivism in Soviet architecture arose out of the after-effects of the October Revolution of 1917. The architects and artists of this movement occupied themselves with the development of a new type of architecture that would serve the rising proletarian culture. Forceful social ideals from within society were translated into a new architectural and design theory, based on revolutionary ideology and avoidance of national traditions. These experimental designs and ideas for state building projects exist almost exclusively on paper. Among the many projects that did not come to fruition were the Memorial to the Third International (1919–1920) by Vladimir Tatlin, the Street Kiosk (1919) by Alexander Rodchenko, the Lenin Tribune (1924) and the Wolkenbügel (Cloud Iron) Projekt (1924–1925) by El Lissitzky, the publishing building of the *Leningrad Pravda* (1924) by the brothers Leonid, Viktor and Alexander Vesnin, the Lenin Institute (1927) and the Culture Palace in the workers' district of Moscow (1930) by Ivan Leonidov and the Elektrobank in Moscow (1926) by Ilia Golosov. Many of these architectural works were represented in drawings, which had a tremendous effect. There were machine-aesthetic metaphors, façades for factories and industry, floating structures, all derived from abstract art. All constructive elements were shown off, typically horizontal and vertical patterns of lines and typography-based posters. The designers involved followed two basic rules: the most rational facilitation of the building program and "a solution to the problem of artistic and ideological function", the so-called "moment of agitation". The latter's purpose was served by the presentation of grand architectural models in parades, such as Tatlin's Memorial to the Third International. Constructivism appeared on the international stage with the Soviet pavilion by Konstantin Melnikov at the Paris Arts and Crafts Exhibition (1925). Within the framework of training at the VKhUTEMAS (Russian avant-garde art school), constructivism was seen as a scientific design method that was publicized in 1927 by Moisei Ginzburg in a magazine called *Contemporary Architecture*. Projects that were realized were a number of workers' clubs, which served as propaganda centers for revolutionary ideals of freedom, such as the Zuyev Workers' Club in Moscow by Ilia Golosov (1927–1929).

ДА ЗДРАВСТВУЕТ
III-й ИНТЕРНАЦИОНАЛ
КРЫТИЕ МАТ
К ОБРАЗЦА
ЛИСТ
ТИ СТРО
ИЧЕСКОГО

Coop Himmelb(l)au

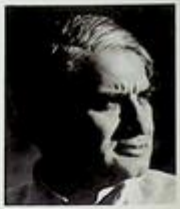
▸ Wolf D. Prix

▾ Residential and office complex Schlachthausgasse, Vienna, 2001-2005

◂ "BMW Welt", Munich, 2001-2007

The Coop Himmelb(l)au architectural co-operative was founded in 1968 in Vienna by Wolf D. Prix (born in 1942), Helmut Swiczinsky (born in 1944) and Rainer Michael Holzer, who left the group in 1971. The three architects initially worked together on ideas and projects in the field of experimental architecture, often involving pneumatic spatial structures, for example the project for a moveable, inflatable and liveable cloud (1968-1972) and the cloud backdrop for the Wiener Supersommer (Vienna Super Summer, 1976). The adoption of a more aggressive idiom occurred with the Reiss Bar in Vienna (1977). A telescope-like stainless steel tube mounted between the walls gave visitors the optical illusion that the room had been stretched apart, creating a split extending through the entire room from the floor over the walls and up to the ceiling. For the project to design a city residential building entitled Hot Flat, the co-operative designed a glass roof in the form of a flaring flame, which was installed as a fragment in the Technical University of Vienna (1978-1979). *Architecture Must Burn* is the title of a publication that appeared in Graz, Austria, in 1980. The HUMANIC offices in Mistelbach, Austria (1979) and Vienna (1980-1981) can be seen as a further step in the interpretation of an architectural concept based on violation and deformation. In addition to numerous unrealized designs, such as the First Media Tower for Hamburg, between 1983 and 1988, a law practice was built in Vienna, on a roof extension, the elements of which extend beyond the plain façade, making the act of conversion clearly visible. In 1988 Coop Himmelb(l)au was represented at the deconstructivism exhibition at the Museum of Modern Art in New York. With the design of the Funder Particle Board Factory in Kärnten, Austria (1988-1989), the co-operative made the transition towards larger industrial commissions. In the project for the City Museum in Groningen, Netherlands (1990-1995), Coop Himmelb(l)au produced a structural unit the floor surfaces of which were of glass, giving visitors a surprise view of the waters of the city canal flowing beneath the building. The UFA Palace, designed for the city of Dresden (1993-1998), with its oblique, angled façades that seem to be tilting over, looks like a gigantic sculpture standing next to the neighboring buildings.

Correa Charles Mark



▼ Centre for Astronomy and Physics, Poona, India, 1988–1992

► ◄ Kanchanjunga Apartments, Mumbai, 1970–1983

Charles Mark Correa (1930–2015) studied between 1949 and 1955 at the University of Michigan in Ann Arbor and at the Massachusetts Institute of Technology in Cambridge. In 1958, he founded his own office in Mumbai (Bombay). His architecture bears the stamp of Indian culture and tradition, with an appreciation of climatic conditions and local materials, but with modern style elements. As well as working as an architect and a residential planner, he published a number of articles; he also wrote a book entitled *The New Landscape* (1985). His works include the Gandhi Ashram Memorial Museum in Ahmedabad, India (1958–1963); the arts and museum center Bharat Bhavan in Bhopal, India (1975–1981); and the Kanchanjunga Apartments in Mumbai (1970–1983). Each of the 32, part-duplex apartments in the 85-meter-high Kanchanjunga Tower has a generously laid out terrace, onto which the four rooms lead. Correa fulfilled here an expressive concept of color, with yellow tiles on the outer walls and white and red stepped, geometric surfaces in the terraced areas, which are cut into the elevations. In 1992, he completed the cuboid building of the British Council in New Delhi, whose façade is dominated by a wall painting by the British artist Howard Hodgkin. Large exterior and interior courtyards define the open character of the structure. In the same year, he realized the inter-university Centre for Astronomy and Physics in Poona, India. An inner courtyard laid out with steps serves as a meeting point for the students and researchers. The Salt Lake City Center, a city development project in Calcutta, India (2000–2004), features traditionally narrow streets with the character of a bazaar alongside residential and office buildings, as well as an air-conditioned shopping center along Western lines. Pedestrian precincts and open squares connect the individual elements of this new district of the town.

Costa Lúcio

"Each component has been conceived according to the nature of the function involved, and thus creating harmony between apparently contradictory needs. Thus, while monumental, the city is also comfortable, efficient, welcoming and intimate. It is at the same time spacious and neat, rustic and urban, lyrical and functional. Automobile traffic is processed without intersections, and the ground is returned, in so far as possible, to the pedestrian."

Ministry for Education and Health in Rio de Janeiro, 1936–1943, with Oscar Niemeyer

After graduating from the Escola Nacional de Belas Artes in Rio de Janeiro in 1924, Lúcio Costa (1902–1998) entered into partnership in Rio with Gregori Warchavchik. He then founded his own practice there. In 1930 he became manager of the Escola Nacional de Belas Artes. As a representative of the Brazilian modernists, Costa managed the construction of the headquarters of the Ministry for Education and Health in Rio de Janeiro (1936–1943) with the collaboration of Affonso Reidy, Oscar Niemeyer and Le Corbusier. Horizontal, swivelling sunscreens run across the entire northern façade of the concrete high-rise structure supported on round, white columns. Again with Oscar Niemeyer, Costa designed the Brazilian pavilion for the 1939 World Exhibition in New York, drawing international attention to modern Brazilian architecture. The upper part of the cuboid building, partially on supports, is reached via a curving ramp. Costa also built the Park Hotel São Clemente in Nova Friburgo, Brazil (1944–1945). In his multi-story residential buildings in Rio de Janeiro (1943–1954), the Parque Guinle development, the smooth outer façade is divided into squares; the balconies are set into the outer surface so that they appear flush with the façade. He was also responsible for planning the layout of the new capital Brasilia. His plan of 1957, reminiscent of a flying bird, which he baptised Plano Piloto, was based on two main axes intersecting at right angles: one curved slightly towards the residential quarter and one, 6 kilometers long, stretched straight from "Three Powers Square", the seat of government, to the railway station, with an entertainment and services center at the intersection of the two axes. The new city was officially inaugurated in 1960, although not all the planned blocks of buildings have been completed, even today.

Crites & McConnell

"House building has always been my passion because it is the base of all architecture."
Raymond David Crites

◂ Raymond David Crites

▾ Second Crites House, Cedar Rapids, Iowa, 1963

▸ Shive House, Solon, Iowa, 1961

▸▸ Tucker House, Cedar Rapids, Iowa 1961

Raymond David Crites (1925–2008) studied under Richard Duncan McConnell (1922–2013) within the Faculty of Civil Engineering at Iowa State University. Crites and McConnell began working together in 1958 in Cedar Rapids

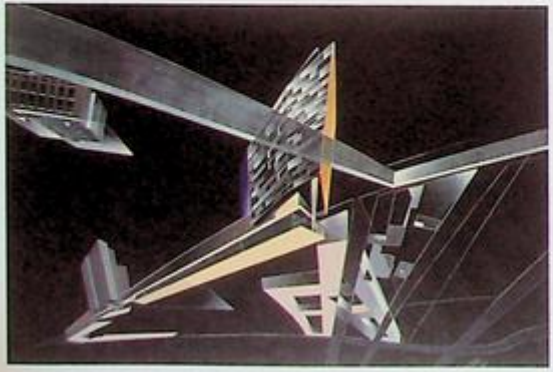
in Iowa. The Seiberling residence in North Liberty, Iowa (1961) was built on a cruciform layout. The roof consists of seven concrete screens. The open-plan living area forms the center of the house, with double-height rooms and a wood-framed skylight. The first Crites residence in Cedar Rapids, Iowa (1959) was also built in the shape of a cruciform, in a square grid pattern. The house was constructed on the post-and-rail system. Horizontal and vertical floor and wall panels made of wood protrude from the façade, creating a visual link between the building and its surrounding woodland. One of the key aims in the project was to preserve the private areas of the individual occupants. As a result, almost every room has its own balcony or terrace. The layout of the United Covenant Presbyterian Church in Danville, Illinois (1965) is extremely unusual: it consists of two triangles, with wood cladding to both the exterior and interior. The C.Y. Stephens Auditorium of the Iowa State University in Ames, Iowa (1966–1969) was created as a theater and concert hall in collaboration with Brooks, Borg & Skiles. A bent wooden ceiling and concrete walls provide excellent acoustics. The roof protrusions are cedar-clad and colored to match the concrete.

Deconstructivism

▼ Team Disneyland Administration Building, Anaheim, 1987–1989

▶ Zaha Hadid, *The World (89 Degrees)*, 1983

This architectural movement, arising in the 1980s, displays certain parallels with 1920s Russian Constructivism. Deconstructivism wants to create the impression of a fragmentation of building form and is characterized by its lack of harmony, continuity and symmetry. The French philosopher Jacques Derrida is considered to be the father of deconstructivism and has made a significant contribution to the definition of this genre. Architects belonging to this movement, in some cases against their own convictions, include Coop Himmelb(l)au, Peter Eisenman, Frank O. Gehry, Zaha Hadid, Rem Koolhaas, Daniel Libeskind and Bernard Tschumi. They were all represented in the exhibition at the Museum of Modern Art in 1988 under the title *Deconstructivist Architecture*, the exhibition having been put together by Philip Johnson and Peter Eisenman. Mark Wigley stated in the catalogue: "A deconstructivist architect is ... not someone who dismantles buildings, but rather someone who localises the inherent problems of the buildings. The deconstructivist architect deals with the pure forms of architectural tradition like a psychiatrist deals with his patient. He determines the symptoms of a suppressed impurity. This impurity is brought to the surface by a combination of gentle flattery and violent torture. Form is interrogated." The perceptions and contexts of everyday life, which are constantly at odds with one another, are no longer obscured by the architect through the solution to a building task, which is then seen as uniform and, finally, valid. It is much more the case that contradictions should be clearly shown. In this way the classical laws of support and load, the enclosure of walls and space, proportion and regularity, are dissolved. In the exhibition itself, the formal and aesthetic aspects were overestimated. Derrida saw this as a dissection, which happened with narrative texts – if one is to understand architecture as a text – on the way to a new understanding. This is found rather more in works like those of the artist Gordon Matta-Clark, who opened up new perceptions with his consciously inlaid sections of building materials that were to hand.



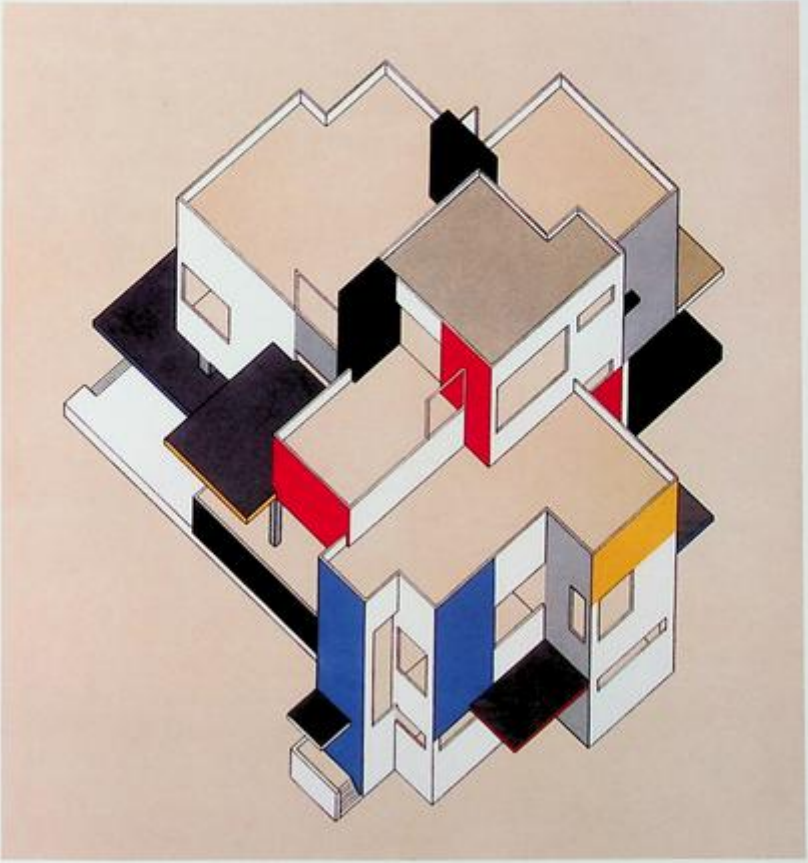
De Stijl

The group of Dutch artists known as De Stijl was founded in 1917 in Leiden with the painter Theo van Doesburg as its focal point. Along with Doesburg, other founding member painters were Vilmos Huszár, Piet Mondrian, Bart van der Leck and Georges Vantongerloo and there were also architects, including Robert van't Hoff, J.J.P. Oud and Jan Wils, as well as the poet Antony Kok. Later additions to the group were Gerrit Thomas Rietveld and Cornelis van Eesteren. Together they covered many artistic areas and shared the same stylistic ideas. The basic concepts laid down by Mondrian with regard to the distribution of surface area formed a theoretical basis. The use of abstract, geometric shapes and primary colors are features of their work. De Stijl was dedicated to objectivity and clarity in its design and in this way contributed significantly to the trend away from historicism and traditionalism. Up to 1928, the members of the group brought out a magazine of the same name, which served as their propaganda platform. An important event for the group was the 1923 exhibition *Les architects du groupe De Stijl* in the L'Effort Moderne Gallery in Paris. One of De Stijl's most significant architectural works is Rietveld's Schröder-Schräder House in Utrecht, Holland (1924), which demonstrates the three-dimensional transformation of geometric abstraction and strong contrasts in color. The group had an influence on other avant-garde architects such as Frank Lloyd Wright and Mies van der Rohe, as well as on the Bauhaus movement. The group came to an end in 1931 with the death of Doesburg.

◂ Vilmos Huszár, title page of the magazine *De Stijl*, No. 1, 1917

▸ Theo van Doesburg, colour design for a room in Bart de Ligt's House, Katwijk aan Zee, Netherlands, 1919–1924

▾ Theo van Doesburg and Cornelis van Eesteren, plan for an artist's house, 1923



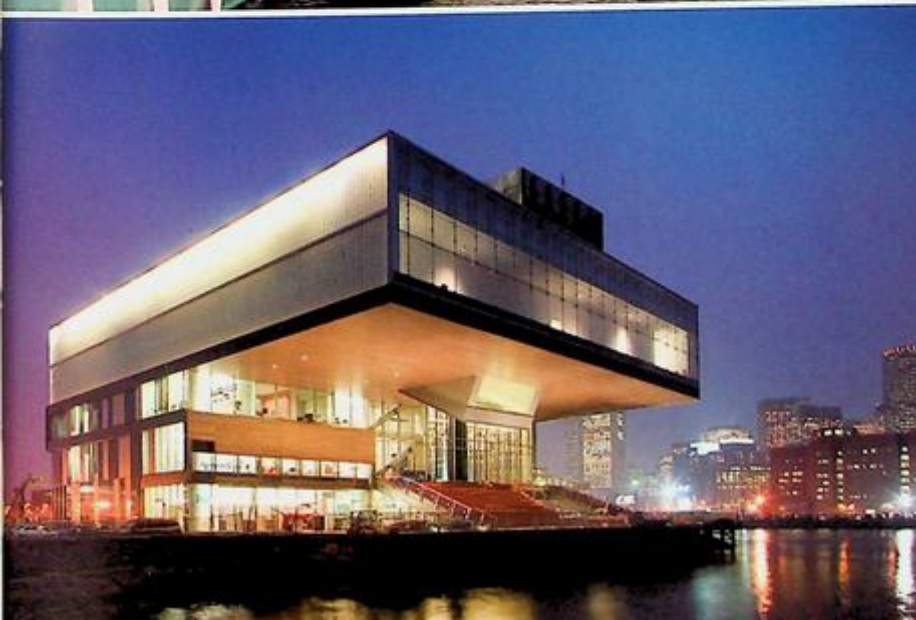
Diller + Scofidio

▼ The Brasserie, New York City, 1998–2000

► Blur Building, International Expo 2002, Verdun, Switzerland, 1998–2002

▲ Institute of Contemporary Art, Boston, 2003–2006

Elizabeth Diller (born in 1954) and Ricardo Scofidio (born in 1935) studied at the Cooper Union School in New York and have run a joint practice in New York since 1979. Diller teaches in Princeton, while Scofidio is a professor at the Cooper Union School. They designed The Brasserie in New York's Seagram Building (1998–2000); features include smooth floors and synthetic resin tables with pearwood ceilings embellishing the interior. Monitors over the bar display new arrivals. For the International Expo 2002 in Yverdon, Switzerland, they designed the Blur Building (1998–2002), which seems to hover 25 meters above Lake Neuchâtel. Mist is generated around the structure, to blur its contours. Installations by Diller + Scofidio have been presented at the Fondation Cartier in Paris and the Museum of Modern Art in New York. In 2000, their Slither Building was completed in Gifu, Japan: 100 social housing units behind a perforated, plate-metal façade. With the Institute of Contemporary Art in Boston, Massachusetts (2003–2006), Diller + Scofidio were able for the first time to realize a permanent building in accordance with their aims: an architectural event on the planned, but as yet unbuilt, 69-kilometer-long Harbor Walk in which the wooden decking of the promenade below runs up into the public building. At the same time, a contrasting design principle is developed from above – the private aspect with quiet gallery rooms. The media room is a spatial highpoint. It folds downwards from the overhanging main body, giving a view from a panoramic window over the stretch of water.



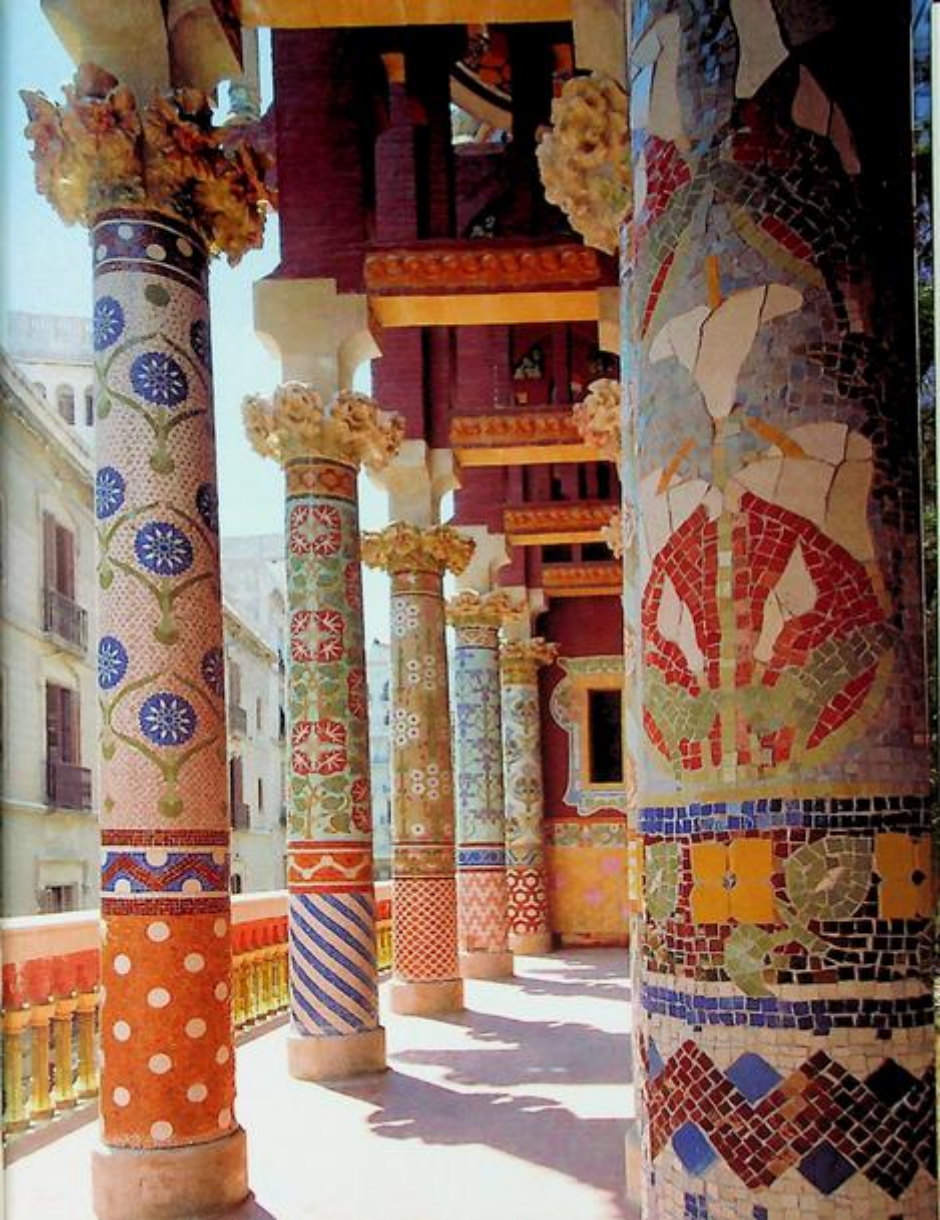
Domènech i Montaner
Lluís

▼ Café-Restaurant, Barcelona, 1887–1888

► Palau de la Música Catalana, Barcelona, 1905–1908

Between 1870 and 1873, Lluis Domènech i Montaner (1849–1923) studied at the Escuela Especial de Arquitectura in Madrid. He published several articles in the journal *La Renaixensa* (including, in 1878, "In search of a national architecture"). He was one of the major campaigners for Catalan modernism, and wanted to renew not only architecture but, in particular,

Catalan independence. He taught for a total of 45 years at the Escola d'Arquitectura in Barcelona. Domènech tried, by turning to medieval forms, to revive forgotten techniques and crafts. His design for the publishing house Montaner y Simón in Barcelona, Spain (1879–1885), is essentially that of a rational working building. For the 1888 World Exhibition in Barcelona he built the massive Gran Hotel Internacional (later demolished) and a Café-Restaurant (1887–1888), whose castle-like exterior is reminiscent of regional medieval buildings. His other works include the Casa Thomas in Barcelona (1895–1898) and the Casa Lleó Morera, topped with an oriental-style structure, also in Barcelona (1903–1905). The façades and interiors of the latter are sumptuously decorated and all five stories of the sandstone building are distinctive with their quite different windows and balconies. The Palau de la Música Catalana in Barcelona (1905–1908), with its turrets, arches and pillars, is a fascinating structure, its colorful and highly detailed interior featuring painted glass windows, mosaics, decorated ceilings, horses jumping out of walls and elaborate chandeliers. Domènech set the Hospital de la Santa Creu i de Sant Pau in Barcelona (1901–1912) at a 45° angle to the surrounding road layout and used tower-like additions to emphasize the corner structure and the entrance façade.



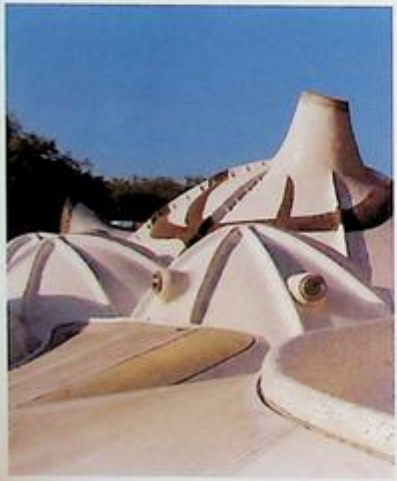
Doshi Balkrishna

▼ Husain-Doshi Gufa, Ahmedabad, India, 1992–1995

► Doshi House, Ahmedabad, India, 1959–1961, extension 1987

◄ Aranya residential complex, Indore, India, 1983–1986

By visiting Europe, Indian-born Balkrishna Doshi (born in 1927) came into contact with Western architecture very soon after graduating from his course (1947–1951) at the J.J. College of Architecture in Mumbai (formerly Bombay). Initially, he studied at the North London Polytechnic, before working for Le Corbusier in Paris (1951–1954). His pilgrimage church in Ronchamps and, in particular, his later collaboration with Louis Kahn (1962–1974) defined his architectural understanding, which is characterized by an intuitive search that is less focused on the rational than on pure creativity. Design should be timeless, as buildings will stand for decades. Instead of structural considerations, the demands of the user should be at the fore. After returning from Paris and establishing his own practice in Ahmedabad in 1956, he realized a residential building there (1959–1961, extension 1987): a simple, concrete structure on a square ground plan. Roof-lights and wall slots provide incident sunlight. During the 1970s, he created the Indian Institute of Management in Bangalore, India (1977–1985), the plan of which was based on the ground plan of the 16th-century city of Fatepuhr Sikri. The long, high corridors are in places open to the heavens and in others glazed with skylights. He also built the Madhya Pradesh electricity board administration buildings in Jabalpur, India (1979–1989) and the Aranya residential complex in Indore (1983–1986) for people with low incomes. Each house had its own identity, with different entrances, balconies, stairways and windows. In more recent times, Doshi has designed the National Institute of Fashion Technology in New Delhi (1994–1997), and the Husain-Doshi Gufa in Ahmedabad (1992–1995), planned as an art gallery and residence for the artist Maqbool Fida Husain. With domes covered in white mosaic tiles, the underground suite of rooms is characterized by slanting columns. With this expressionistic and organic design, Doshi turned his back on clearly ordered structures and made a spiritual return to older regional models. Steel mats and concrete replace the traditional loamwork.



Dudok Willem Marinus

"I have never felt bound to any particular form and that is quite different from a lack of conviction. I know that its cause lies in the fact that my work does not have the power of persuasion that is to be found in the architectural expression of a single restricted concept."

▼ De Bijenkorf Department Store, Rotterdam, 1928-1930

► Town Hall, Hilversum, Netherlands, 1923-1931

After training as an engineer at the royal military academy in Breda, Willem Marinus Dudok (1884-1974) became deputy manager of the municipal building authority in Leiden in 1913.

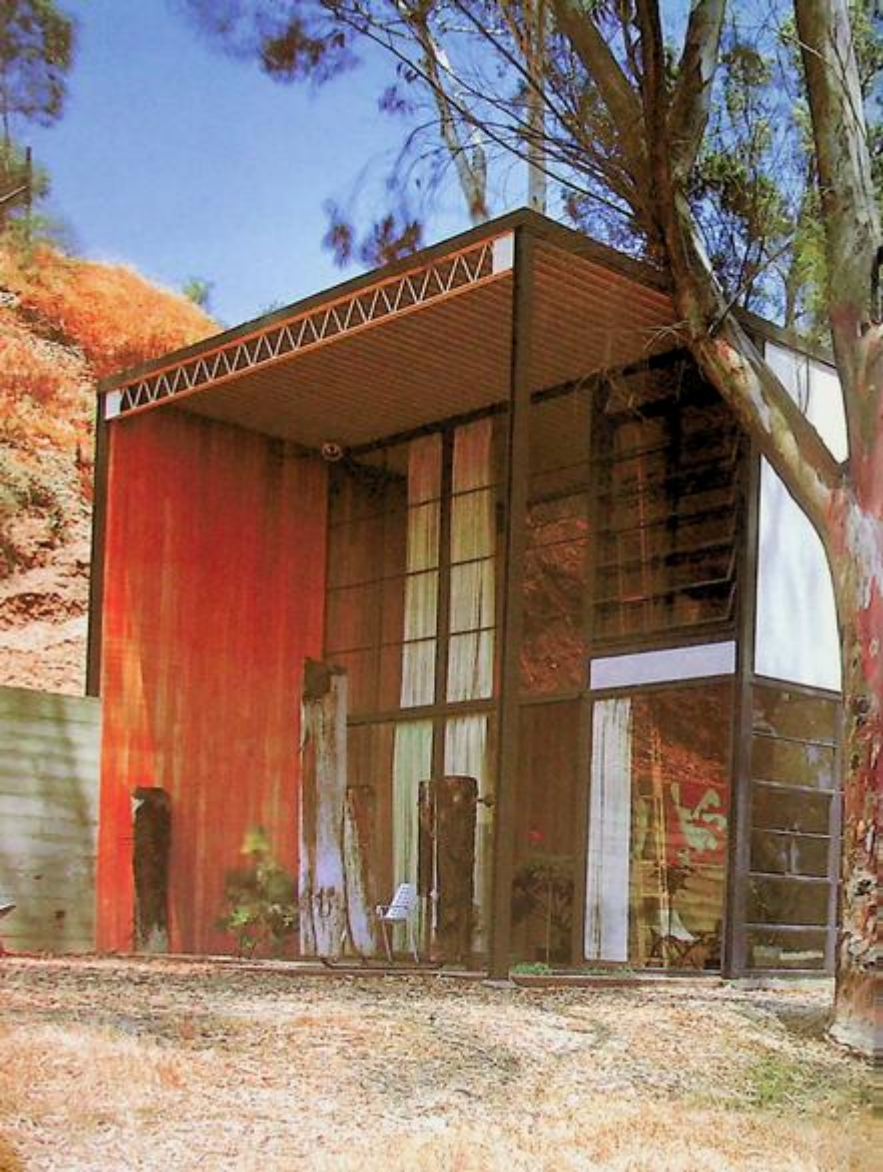
During this period he also worked on various projects with Jacobus Johannes Pieter Oud. In 1915 he moved on to the position of head of the municipal department of works in Hilversum, where in 1927 he was appointed official city architect and worked on city development plans. Among Dudok's early works in Hilversum, Netherlands, are the Geranium School (1916-1918), a brick construction with a high tower in the middle and white window frames. In the 1920s he built the city swimming baths (1920-1921), the Dr. Bavinck School (1921-1922), the Fabritius School (1925-1926), the Minckeler School (1927), the Vondel School (1928-1929) and the Valerius School (1929-1930). The Hilversum Town Hall, divided into graduated units (1923-1931), is surmounted by a tower reflected in water, and represents Dudok's own journey from a style oriented towards the Amsterdam School to a more expressive modernism. Notable works built outside Hilversum are the Dutch Students' House at the University Centre in Paris (1927-1939), the De Bijenkorf Department Store in Rotterdam (1928-1930) and the City Theater in Utrecht (1937-1941). From 1934, Dudok worked as city planner in The Hague.

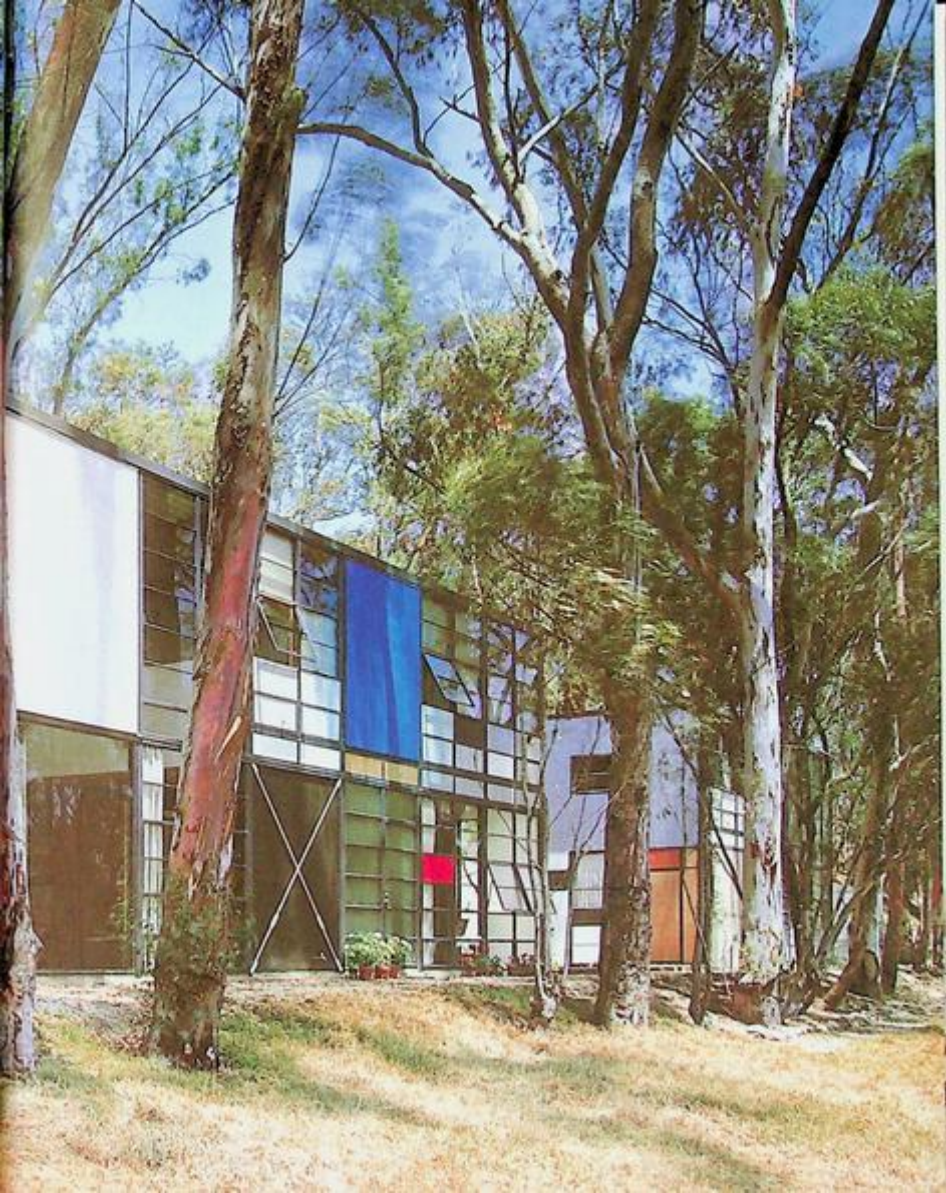
Eames Charles and Ray

▼ Case Study House No. 9, Pacific Palisades, California, 1945-1949, with Eero Saarinen

▸▸▸ Case Study House No. 8, Pacific Palisades, California, 1945-1949

After attending the Washington University School of Architecture in St. Louis from 1924 to 1926, Charles Eames (1907-1978) opened his first practice. From 1937 he studied and taught at the Cranbrook Academy of Art in Michigan, where he met Eero and Eliel Saarinen as well as his wife Ray Eames (1912-1988). In 1940, in collaboration with Eero Saarinen, he designed a prize-winning, shell-shaped chair of moulded plywood. Charles and Ray Eames, who married in 1941 and moved to southern California, continued to work in experimental design using plywood. Their most famous furniture designs include "Lounge Chair", created in 1956; consisting of a lounger and stool, it was constructed of moulded, layered plywood on a curved, stainless steel frame (1958). The same sort of highly innovative approach also characterizes their architectural projects: their first steel frame construction design was for their own house, Case Study House No. 8 in Pacific Palisades, California (1945-1949), as part of the Case Study House Program. The building consists of two two-story cubes connected by a courtyard. The elevations are comprised of colored plates and glazed panels of varying sizes. By way of contrast, Case Study House No. 9 in Pacific Palisades, California, constructed by Eames and Eero Saarinen (1945-1949), is not an exposed structure but encased in wood cladding. Eames is also famous for his film *Powers of Ten* (1977), in which he addresses the relative size of things in the universe.



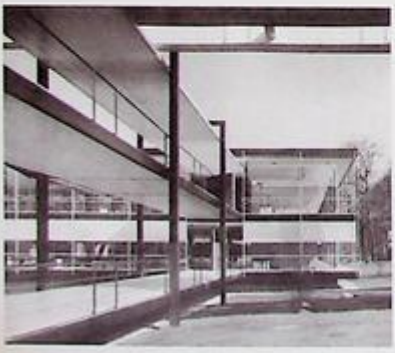


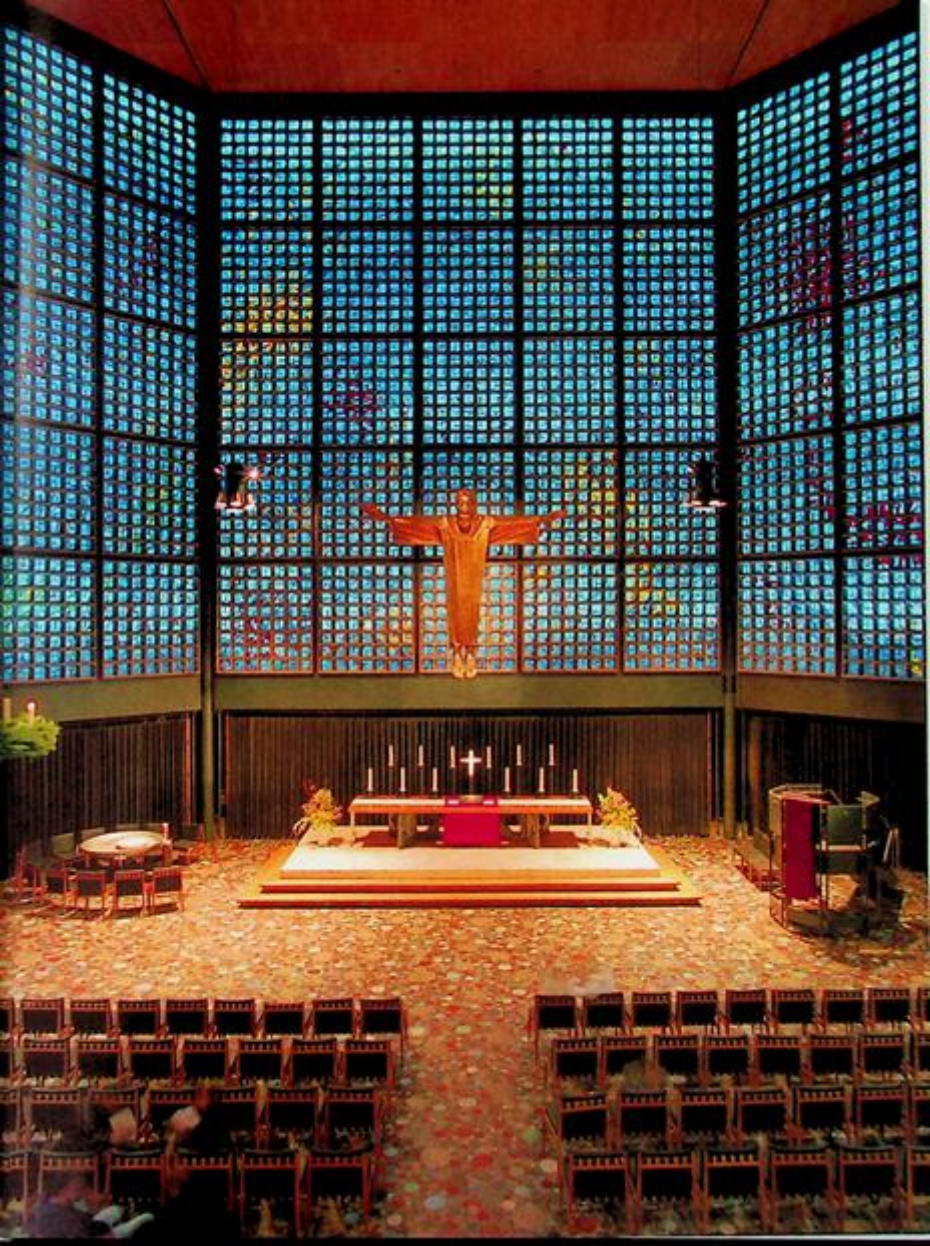
Eiermann Egon

▼ ▶▶ Pavilion of the Federal Republic of Germany, 1958 Brussels World Fair, 1956–1958, with Sep Ruf

▶ Kaiser Wilhelm Memorial Church, Berlin, 1957–1963

After studying architecture at the Technical University of Berlin under Hans Poelzig (1923–1927), Egon Eiermann (1904–1970) worked in the Hamburg design studio of the Karstadt department store chain before moving to the Berlin electricity works. In 1931 he opened his own practice, in partnership with Fritz Jaenecke. Despite a large number of buildings produced during the thirties, the most influential phase of his work began during the post-war period. In 1947, he accepted the Chair of Architecture at Karlsruhe Technical University. His steel framework style of industrial building became a model for the years of reconstruction. The Blumberg Handkerchief Factory was built between 1949 and 1951, an industrial plant with a coherent layout for which Eiermann was awarded the Hugo Häring Prize. On visits to the USA he met Walter Gropius, Marcel Breuer and Konrad Wachsmann in 1950, as well as Ludwig Mies van der Rohe in 1956. As part of the Brussels World Fair in 1958, he and Sep Ruf realized a pavilion group consisting of eight cubes of elegant, transparent glass. Eiermann also designed a 300-meter-long, 6-story building for the Neckarmann mail-order firm in Frankfurt (1958–1961) and won a competition to design the Kaiser Wilhelm Memorial Church in Berlin (1957–1963). On a raised platform with steps leading up to it, this edifice with its slender, octagonal tower was constructed alongside the historic, ruined tower. Its double-walled shell, filled with colored glass bricks, creates a sense of quiet and seclusion, far away from the commercial world that surrounds it in the bustling center of Berlin. His ideas for the German Embassy in Washington (1959–1964) comprised a terrace-style layout, which took into account the existing terrain. Like the high-rise Bundestag Building in Bonn (1965–1969), it has a meshwork style of outer shell, consisting of horizontal panels and vertical struts. Some of his most significant administrative buildings, created during the latter part of his life, include the IBM office pavilions in Stuttgart (1967–1972) and the Olivetti Building in Frankfurt (1968–1972) with its high-rise towers raised on tripod-like, concrete pillars. Neither building was completed until two years after his death. He was not able to realize his original plan of hanging the stories from a free-standing, central core. Even so, his ideas on introducing the flexibility of adding extra floors is evident in the fact that, in one of the buildings, the top floor has not been developed.





Eiffel Gustave

▼ Cubzac Road Bridge over the Dordogne, France, 1879–1884, engineer Charles de Sansac

► Eiffel Tower, Paris, 1884–1889, architect Stephen Sauvestre, engineers Émile Nouguier and Maurice Koechlin

Gustave Eiffel (1832–1923) was the descendant of a Rheinlander who, in memory of a river in his homeland, had appended Eiffel to his name of Boenickhausen. As Gustave Eiffel did not pass the entrance examination for the École Polytechnique in Paris, he instead attended the École Centrale des Arts et Manufactures between 1852 and 1855. From 1856 he worked for the French railway company Compagnie de l'Ouest under engineer Eugène Flachat, who introduced to France a method of building railway bridges from riveted rolled iron. Eiffel's first major project was the latticed bridge over the River Garonne in Bordeaux, France (1857–1860, engineers Stanislas de la Roche Tolay and Paul Regnauld), for which he was appointed site director for the "Compagnie de matériels de chemin de fer". In 1864 he became a freelance consultant engineer in Paris. After some small commissions, including work on the 1867 World Exhibition halls in Paris, he took over an existing metal construction company in La Villette and, between 1868 and 1879, became an entrepreneur, establishing, with engineer and partner Théophile Seyrig, the company Eiffel & Cie. With a passion for innovation and a talent for appointing good engineers, he was able to hold his own against fierce competition. He began to take on larger and more challenging projects, such as the Rouzat Bridge over the Sioule (1867–1869, engineer Wilhelm Nordling), and more international commissions, such as the West Station at Pest in Hungary (1875–1877, architect G. Salard, engineer Théophile Seyrig) with its prominent, glazed, gabled front, the bridge over the River Douro in Portugal (1875–1877, engineer Théophile Seyrig) and the Garabit Viaduct in France (1879–1884, engineer Léon Boyer). The last two both spanned the river with an arched structure, the cross-section of which altered towards the middle according to the distribution of forces from horizontal rectangular to vertical rectangular. Eiffel built the supporting inner framework for the construction of New York's Statue of Liberty (1881–1886). He is known primarily for the 305-meter-high Eiffel Tower named after him (1887–1889), which he erected for the World Exhibition in Paris on the basis of a design by his colleagues Émile Nouguier and Maurice Koechlin. At that time it was the highest man-made structure in the world. The architect Stephen Sauvestre added the large platform and the arch, which was not necessary for structural reasons but was a decorative detail pleasing to the eye.

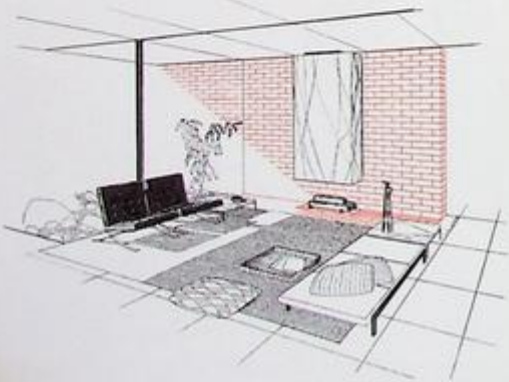
Ellwood Craig

"Mies taught me how to fill interior space."

▼ Case Study House No. 17, Hoffman House, Beverly Hills, 1954-1955, perspective view

▶ Rosen House, Los Angeles, 1961-1963, with Philo John Jacobson

Craig Ellwood (1922-1992), born Jon Nelson Burke, learned about the practical aspects of architecture from a building contractor who worked for architects such as Richard Neutra and Raphael Soriano. In 1947, with his brother and two friends, he established a building company in Los Angeles under the name of Craig Ellwood Incorporated. He did not learn about architectural theory until later, during structural engineering studies that he took between 1949 and 1954 at evening classes at the University of California in Los Angeles. Mies van der Rohe was a major influence on him. Ellwood cleverly combined modern building materials such as plastics and steel. He used the latter in his exposed framework structures. In 1949 he made the acquaintance of John Entenza, organizer of the Case Study House Program, when he was doing the cost accounting for the Eames House in Pacific Palisades. Ellwood later designed three Case Study Houses of his own (Nos. 16, 17 and 18) in Beverly Hills and Los Angeles (1955-1958). Varying degrees of light transmission through the walls, a typical feature of his architecture, is used to good effect in House No. 16 in the form of frosted and clear glass window walls. In House No. 18 he used blue wired glass to filter sunlight. The Rosen House in Los Angeles (1961-1963) is a low, square structure supported on short steel pillars and surrounding a square inner courtyard. A high level of transparency is achieved by the use of glass interior walls. An unusual design by Ellwood that was never built was Bridge House (1968), which was to stand over a river. However, he used the same idea in the Art Center College of Design in Pasadena, California (1970-1976). Ellwood's colleagues had a very strong influence on his designs, in which their own styles are clearly recognizable. In 1977 Ellwood closed his office and afterwards largely devoted his time to painting.

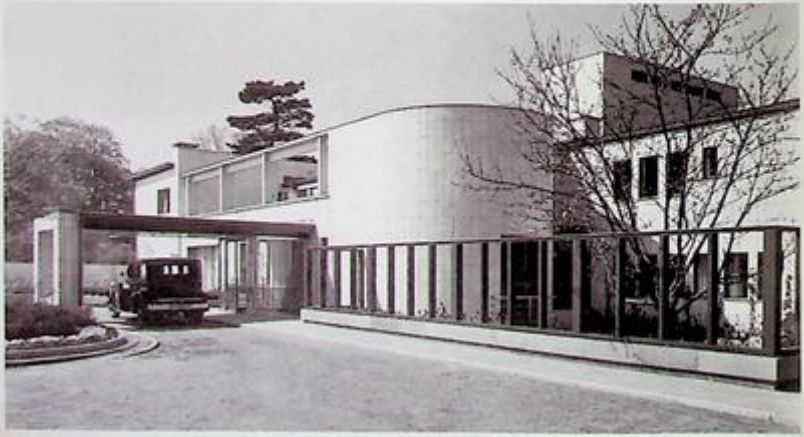


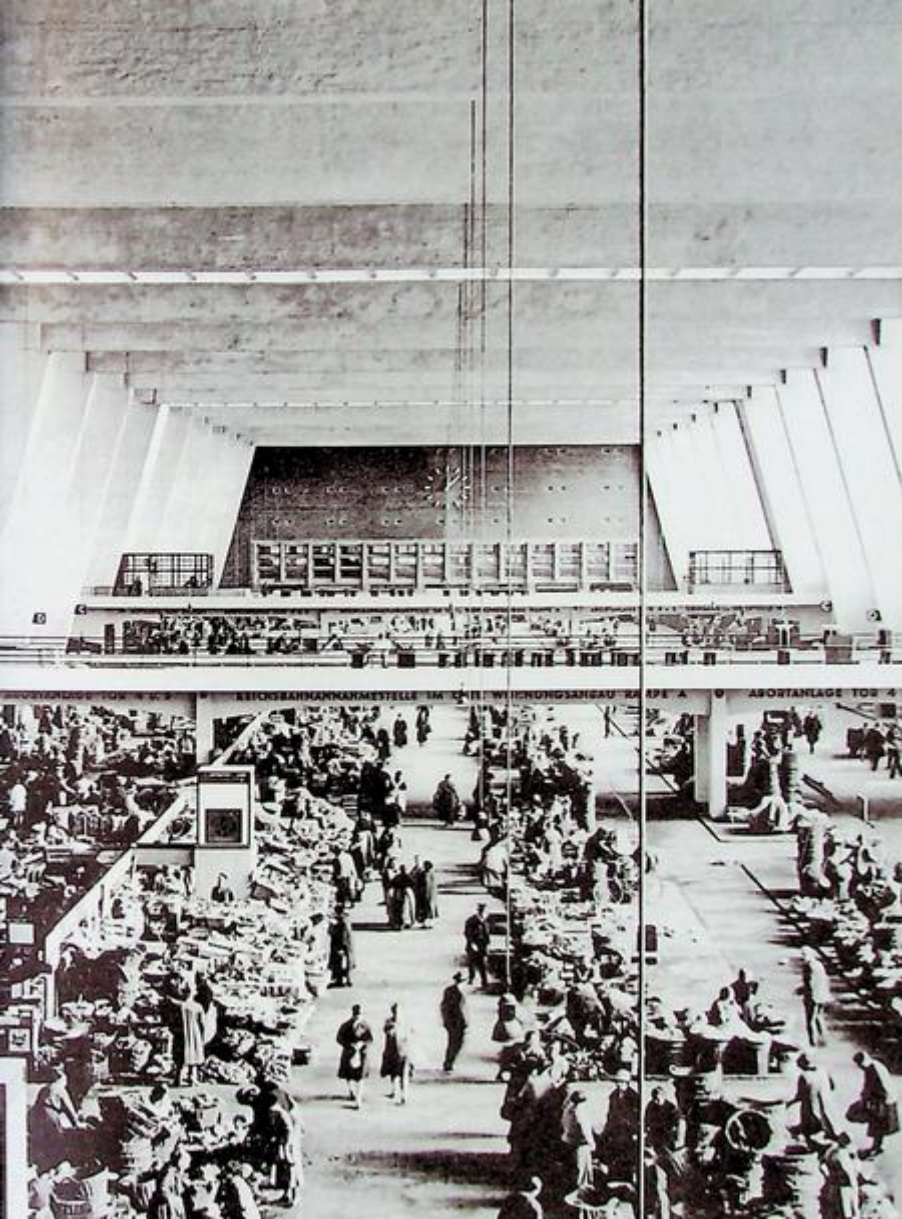
Elsaesser Martin

▼ Villa Reemtsma, Hamburg, 1930–1932, ground-plan

► Large market hall in Frankfurt/Main, 1927–1928

Martin Elsaesser (1884–1957) studied at the Technical University in Stuttgart under Theodor Fischer and at the Technical University in Munich under Friedrich von Thiersch. Between 1912 and 1920 he taught at the Technical University in Stuttgart. Between 1920 and 1925 he was director of the School of Applied Art in Cologne. Between 1925 and 1932, Elsaesser was municipal building surveyor in Frankfurt am Main. He then worked in Berlin and after the Second World War was involved in the reconstruction of Frankfurt and Stuttgart. In Frankfurt he built the 250-metre-long market hall with two brick-faced entrance halls (1927–1928), decorated with 15 shell vaults, the school on the Römerstadt estate (1928–1929) and the Ludwig-Richter School (1928–1929) with its clearly structured façades. In the Villa Reemtsma in Hamburg (1930–1932), Elsaesser was able to implement his undogmatic modernist ideas with a large budget at his disposal. The extensive building was faced on the outside with light grey-green ceramic panels and on the inside was fitted out with tubular steel furniture, much timber and natural stone.




ABORTANLAGE TOR 4

Emberton Joseph

▼ Casino in Blackpool, England, 1939

▶ Simpsons of Piccadilly, London, 1936

Joseph Emberton (1889–1956) began his studies in 1911 at Kensington College of Art in London. He gathered practical experience in the London architectural practice of Sir John Burnet, Tait and Lorne, before beginning self-employment. Emberton was one of the architects who helped modernism become established in England. His Royal Corinthian Yacht Club (1930–1931) in Burnham-on-Crouch, UK, was mentioned by Hitchcock and Johnson in their publication *The International Style*. This angular three-story building, supported on its pillars, projects out into the sea. On the seaward side it is glazed and has extensive, pre-existing balconies. Emberton also created the London fashion store Simpsons (1936) with a welded steel skeleton and colorful neon façade illumination. The late 1930s brought in several commissions for leisure architecture in Blackpool, Southport and Morecambe, in which Emberton used round ground plans, copious quantities of glass and towers that reach dramatically skyward. In the post-war period, he was predominantly preoccupied with the construction of residential apartments.

Erickson Arthur

▼ Napp Laboratories, Cambridge, England, 1979–1983, 1987

► Catton House, West Vancouver, 1967–1969, with Geoffrey Massey

Between 1942 and 1950 Arthur Erickson (1924–2009) attended the University of British Columbia in Vancouver, where he learnt Japanese, and then the architectural faculty of McGill University in Montreal. In the years that followed, he travelled around the world visiting the Far East, North Africa and Europe. From 1953 Erickson worked with various partners, and the joint practice Arthur Erickson Architects Inc. was established in 1977 with offices in Vancouver, Toronto, Kuwait and Jeddah. His extensive work includes very different buildings and projects: regional and international trends blend, and he follows Japanese building traditions in creating harmony between building and nature. Erickson created the Graham House in West Vancouver (1962–1965), a generously glazed residence descending a cliff face and the timber Catton House (1967–1969) in West Vancouver with its steep, low roof. In 1963, together with Geoffrey Massey, he created the master plan for the Simon Fraser University in Burnaby, Canada. With the first stage of the building work completed and opened in 1965, the campus has continued to be expanded to the present day. Other works include the Canadian pavilion at Expo '70 in Osaka, the Museum of Anthropology at the University of Vancouver (1971–1976, extended in 1981) and Lethbridge University in Alberta (1968–1972), of which the long, horizontal building is buried into the sandhills. Sealed off from the outside, it includes all university facilities and student residences. His tendency toward the high-tech in the 1970s manifested itself in the two glass towers of the Bank of Canada in Ottawa (1969–1979), in the dynamic Yorkdale subway station in Toronto (1977) and Robson Square in Vancouver (1973–1979), consisting of law courts, offices and restaurants. The new, avant-garde court building is made from concrete and roofed over with a steel structure, contrasting with the adjacent old court building. The surroundings include steps, water features and green spaces. Together with Nick Milkovich Architects, Erickson designed the Glass Museum in Tacoma, Washington (1996–2002).

Erskine Ralph

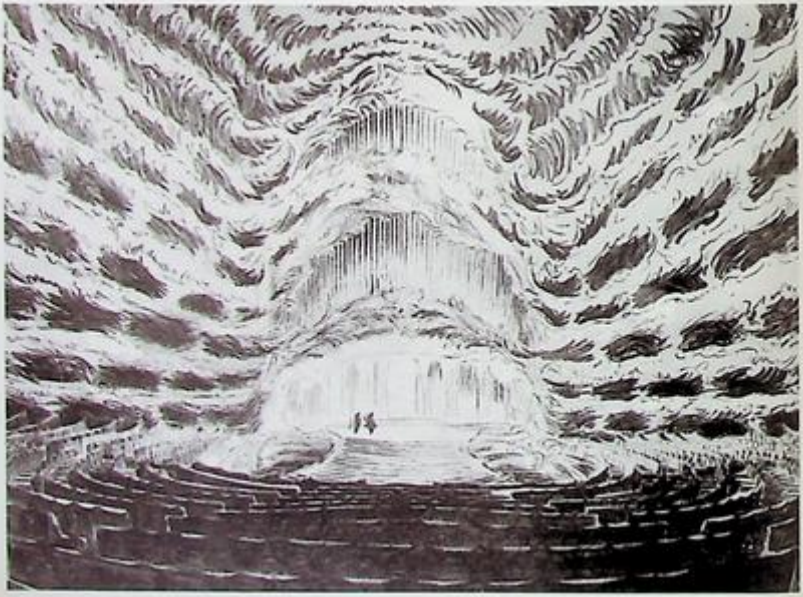
▾ Ski Hotel in Borgafjall, Sweden, 1950, view and section, with Aage Rosenvold, Lennart Bergström and John Staalehoe

▸ Residential settlement in Svappavaara, Kiruna, Sweden, 1963–1964, with Aage Rosenvold, Bengt Ahlqvist and Peer-Ove Skånes

Ralph Erskine (1914–2005) was born in London and studied at the Regent Street Polytechnic. In 1938, he moved to Sweden, where he worked for Weijke & Odeen before opening his own practice in 1939. During the winter of 1941/1942 he and his wife, together with his future Danish practice partner, Aage Rosenvold, built their first private residence, known as The Box, with their own hands. It was situated on a sloping piece of land in Lissma near Djupdalen on the outskirts of Stockholm. From 1944 to 1946, Erskine attended the Royal Academy of Arts in Stockholm. The main feature of his architecture is that it takes very close account of the climate and – as a member of Team X – the needs of the occupier, whose views were taken into consideration at the design stage and during the implementation of the project, as was the case with the Byker housing estate in Newcastle-upon-Tyne, England (1969–1981). Due to the fact that this is a very busy road, this one-kilometer-long row of houses is closed on one side, except for a few small window openings, and protects the lower houses built at the rear. In the case of his Scandinavian settlements, such as Svappavaara in Sweden (1963–1964), he was at pains to incorporate protection from cold winds and snow. His office began to receive more and more commissions with the result that, in 1982, Erskine converted the main practice into the joint-stock firm of Arken-Erskine Arkitektern A. B., while he himself continued running a smaller office for more creative projects.

Expressionism

Expressionism began around 1910 as a new style in art, architecture, literature, music, theater and film and remained effective until the 1920s. The architects among the Expressionists strove to implement emotional aspects in their designs. As a reaction to negative developments in German society, they discussed visionary solutions for life in the cities. Their ideas were represented in fantastic architectural drawings, formulated in manifestos, letters, articles and books, and discussed in forums such as the "Glass Chain". The poet Paul Scheerbart investigated the symbolism of color and transparency of the material glass, in his publication *Glass Architecture* (1914), which he dedicated to Taut. Drawings by Hermann Finsterlin appeared in the *Exhibition of Unknown Architects* (1919), while Bruno Taut showed fantastic structures with colored glass windows that broke the rays of natural light in his lithographic series *Alpine Architecture* (1919). Most of the works of this time are philosophical and aesthetic experiments. The few designs that were actually produced combine light, glass and shapes in expressive structures: they include Hans Poelzig's Large Theater, Berlin (1919), Erich Mendelsohn's Einstein Tower, Potsdam (1917–1921) and Bruno Taut's Glass Pavilion at the Cologne Werkbund Exhibition of 1914.



◂ Hans Poelzig, design for a festival hall in Salzburg, 1920

▴ Peter Behrens, colour study for the cupola hall in the administration building of the Hoechst Paint Works, Frankfurt/Main, 1920-1924

Fahrenkamp Emil

Emil Fahrenkamp (1885–1966) attended the Technical University in Aachen and the Kunstgewerbeschule in Düsseldorf. From 1909, he spent two years at the practice of Wilhelm Kreis, who continued to be a strong force in promoting his career. In 1919, Fahrenkamp joined the Düsseldorf Academy of Art, of which he became Director in 1939. His early work bears the hallmarks of Expressionism. Towards the end of the 1920s, his forms became increasingly elegant and modern. Fahrenkamp was responsible for the Rheinstahl-Handelsgesellschaft warehouse in Nuremberg (1924) with vertical lines dividing its simple brick façade; the Neumann Weaving Mill in Zittau (1925) with its contrasting horizontal and vertical window bands and irregularly structured, closed façade sections; and the Breidenbacher Hof Hotel in Düsseldorf (1927). His transition to modern forms and materials is very evident in the generously glazed Hotel Monte Verità in Ascona, Italy (1927–1928). The Shell Building in Berlin (1930–1932) was constructed as a steel skeleton, cleverly staggered both in terms of its floor layout as well as rising vertically in stages. The rounded corners of the building's edges and horizontal division with its natural stone cladding contribute to the overall wave-like appearance. Less well known are his elegant residential buildings, such as the Wenhold residence in Bremen (1927), although there is a certain lack of sophistication to the interior design.

▸ Rooftop café of the Michel Department Store, Wuppertal, 1929–1930, with Georg Schäfer, perspective

◂ Warehouse of the Rheinstahl-Handelsgesellschaft in Nuremberg, 1924

▴ Shell House, Berlin, 1930–1932

Fathy Hassan

▼ Residential area, New Gourna, near Luxor, Egypt, 1946-1953

► Akil Sami House, Dahshûr, Egypt, 1979

Hassan Fathy (1900–1989) studied architecture at the Technical University in Cairo where he opened his own office in 1930. From 1930 to 1946 and 1953 to 1957, he taught at the Cairo College of Fine Arts. Fathy regarded the International Style as levelling the cultural and climatic differences between countries. His architectural philosophy was based on Egyptian traditions. Architecture should be utilized as a means of protection from the sun, be enduring and, as he expounded in his book *Architecture for the Poor, an Experiment in Rural Egypt* (1973), should include buildings that could be erected simply and cheaply by simple people, making use of local materials and construction methods. Buildings should be typical of the region and possess a clear identity of their own. His houses are largely made from mud bricks and stone. They are characterized by clear outlines, simple façades, domes, vaults and Nubian arch constructions. Fathy also built residential complexes for the poor as well as villas for the rich, which likewise reflect traditional forms and materials, even if the degree of decoration increases exponentially with their size. His early works in Egypt include the imposing yet simple Al-Nasr residence in El Faiyûm (1945) and the Stopplaere House, situated high on a hill near Luxor (1950–1952), while his most famous housing project is New Gourna, Luxor (1946–1953). The plain cube shapes and numerous domes of the mud-brick houses, some of which are colorfully painted and others left in their natural state, blend into the surrounding landscape. In the case of the New Bâris project, Egypt (1967), a housing complex situated in a windy desert wilderness which was never fully completed, Fathy used mud and palm wood. The village is characterized by its overhanging roofs, covered passageways and the effective way in which Fathy incorporated protection from the sun and wind. Later house designs, such as the Akil Sami residence in Dahshûr, Egypt (1979), have more complex floor plans and are more richly decorated.

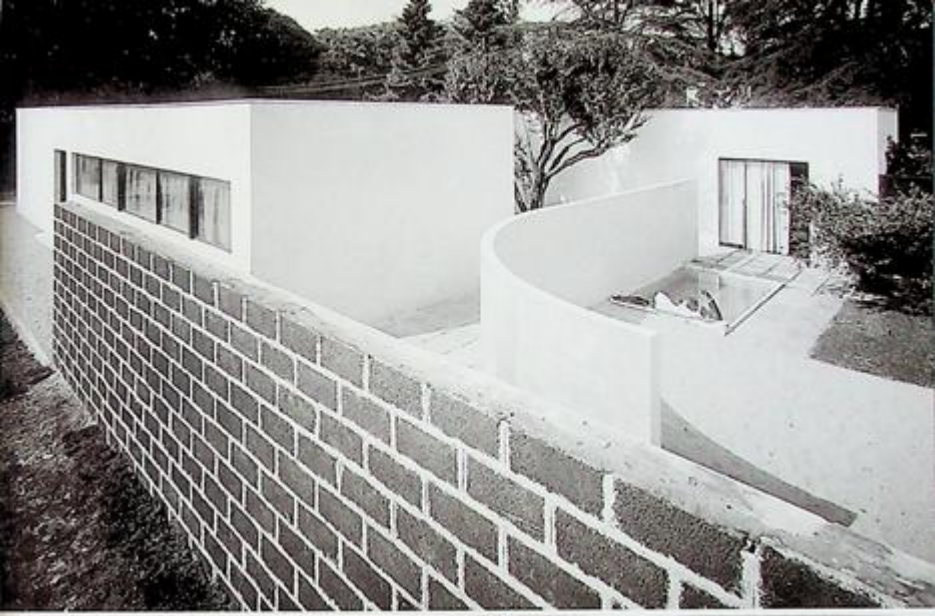
Figini Luigi and Pollini Gino

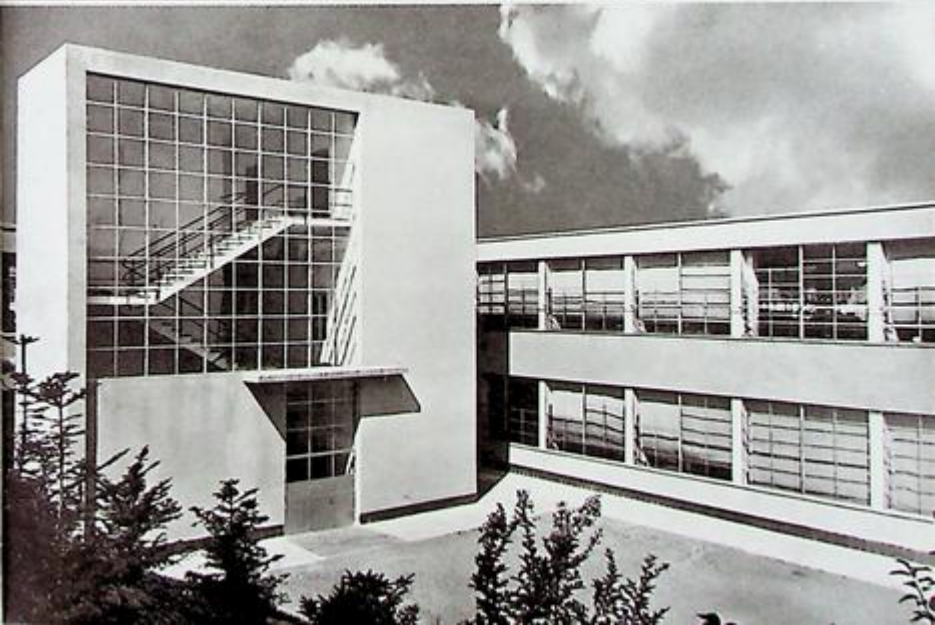
▼ Figini's own house, Milan, 1934–1935

► Studio for an artist, V Triennale, Milan, 1933

◄ Administration building for Olivetti, Ivrea, Italy, 1934–1935

After graduating in engineering (1922–1923), Gino Pollini (1903–1991) studied from 1923 to 1927 at the architectural faculty of the Politecnico in Milan, where Luigi Figini (1903–1984) was also a student (1921–1926). They and five other Milan architects set up Gruppo 7 in 1926, which helped to establish rationalism in Italy, and presented its projects at the Deutscher Werkbund (German Work Federation) exhibition in Stuttgart in 1927. Both Figini and Pollini were members of M.I.A.R. (Movimento Italiano per l'Architettura Razionale) and CIAM. From 1929 to 1984 Figini and Pollini shared an office in Milan. They designed the elegant Casa Elettrica for the exhibition in Monza, Italy (1930), and a simple, single-story studio for an artist, which was exhibited at the V Triennale in Milan (1933); in the latter, white concrete, tiles and angular shapes contrasted with rounded walls and with a courtyard concealed behind a wall. The elongated, rectangular Figini residence in Milan (1934–1935), with its white façade and black-framed ribbon windows, floats up high on stilts. A long-term project for Adriano Olivetti was followed by an administration building for the Olivetti company in Ivrea, Italy (1934–1935). The façades of the offices are largely glass, and are finely divided into rectangles. Further additions to this project (accommodation for employees, a kindergarten and other communal facilities) were created up to 1958. Figini and Pollini also built the Church of the Madonna dei Poveri (Madonna of the Poor) in Milan (1952–1954), which was to be followed by other religious buildings.



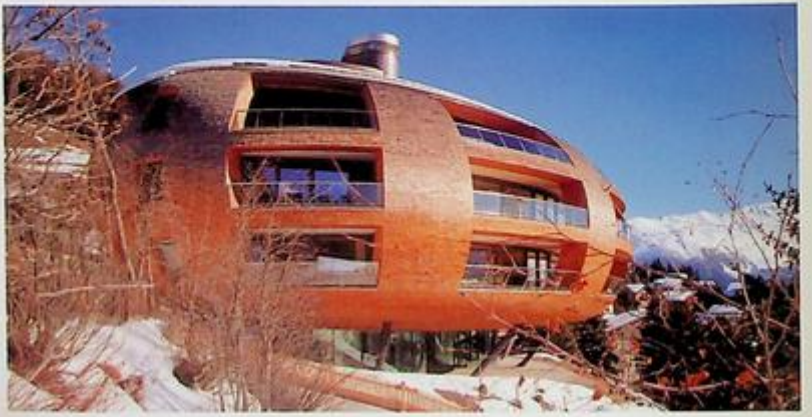


Foster Lord Norman

▼ Chesa Futura, St. Moritz, 2000–2004

► Swiss Re Tower, London, 1997–2004

Lord Norman Foster (born in 1935) studied urban planning and architecture at the University of Manchester. After his finals in 1961 he received a grant to attend the renowned Yale University in New Haven, Connecticut, where he gained his master's degree. Back in England, with his wife Wendy and Su and Richard Rogers, he founded an architects' practice, Team 4. They built several residential projects, for example the Mews Houses in London (1965), as well as the Reliance Electronics Factory in Wiltshire, UK (1964–1966). Here Lord Foster was already trying, with the use of modular building sections and mobile wall units, to take into account future changes of use at the planning stage. In 1967 he expanded the practice, taking on new partners. Foster Associates built the passenger terminal for the Fred Olsen shipping line at the London docks (1970–1971) and the main administrative building of the company Willis Faber & Dumas in Ipswich, UK (1971–1975), the curving façade of which consists of glass panels fixed without a frame. In the hall of the Sainsbury Centre for Visual Arts in Norwich, UK (1974–1978), the load-bearing structure was housed inside the double-shell outer skin, together with the services system. For the English sales center of the Renault automobile company in Swindon, UK (1980–1982), the practice developed a structure of hollow masts with tensioned and angled metal supports, picked out in luminous yellow paint. The high-rise headquarters building for the Hong Kong and Shanghai Bank in Hong Kong (1979–1986) was a masterpiece of precision and technology, completed in the space of just five years. Foster Associates had a staff of 160 people in the year of its completion. Since then, they have executed many more projects, such as London's Stansted Airport (1981–1991), with its tree-like



branching support structure, and the television tower in Barcelona (1988–1992), which is held in place by stainless steel cables. For the redesign of the Berlin Reichstag (1992–1999), the practice laid the emphasis on light and lightness in the new installations and roof structure. A glass dome surmounts the parliamentary chamber: although the business of politics carried on here is not open to the public view, the building does quite literally raise its citizens above the government. The roof of the large inner courtyard of the British Museum in London (1994–2000) not only created a sumptuous open space that is part of a public footpath through London, but also linked the central cylinder with the Reading Room, organically integrating it into the overall concept of the museum. In the new main administrative building of Swiss Re in London (1997–2004), one cannot fail to perceive a certain resemblance to a never-built Future Systems design of a phallic high-rise for London, but Foster's design has its own unique shape, with the diameter swelling towards the central part of the shaft. In terms of construction, a geometrically separate load-bearing façade skeleton has freed the useful floor space of pillars. For a new building for the Philological Library of the Free University of Berlin (1997–2005), Foster created a teardrop-shaped structural unit. The upper stories were made from reinforced concrete covered with a suspended skin of aluminium segments, ventilation elements and panes of glass. Foster Associates also created Chesa Futura, a holiday home for a wealthy client in St. Moritz, Switzerland (2000–2004). The round, stilted structure on its kidney-shaped ground-plan was given a composite structure of concrete, steel and timber, with an outer skin of native larch shingles.

◂ Hong Kong and Shanghai Bank, Hong Kong, 1979–1986, with Ove Arup and Partners

▾ Swindon Renault Centre, England, 1980–1982

Frank Josef

"It cannot be stressed often enough that the single-family house is the basis of all our modern architecture and urban facilities."

◄ Trude Waehner's House, Provence, France, late 1950s, watercolour

► Villa Claesson, Falsterbo, Sweden, 1924-1927

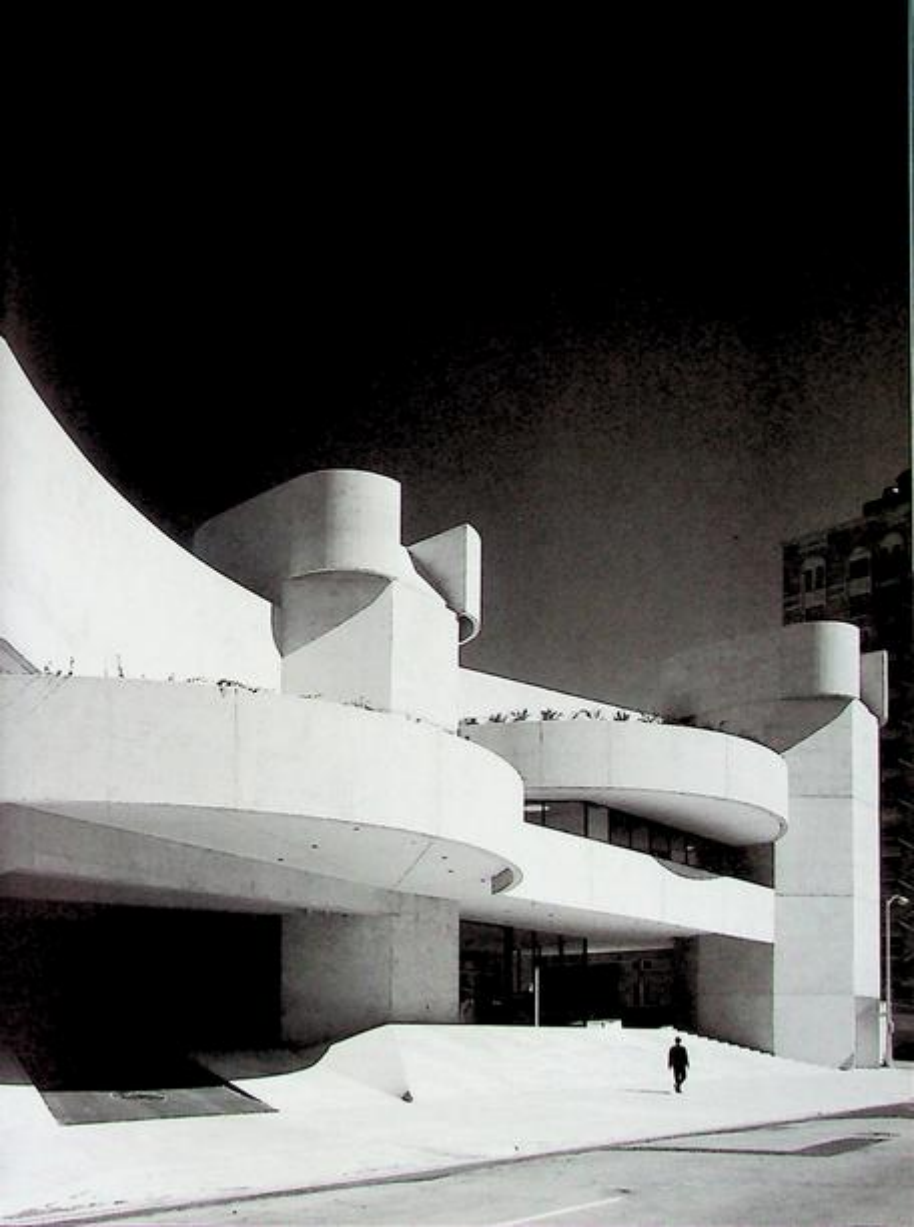
After studying at the Technical University in Vienna, Josef Frank (1885–1967) opened his own office, which he ran from 1910 to 1934 in collaboration with Oskar Wlach. In 1914, he became one of the founding members of the Austrian Werkbund. He developed an early interest in the issues of workers' housing complexes, which led him to reject as unfeasible the type of large, Viennese apartment block typical of the years between the World Wars. From 1919 to 1925, he lectured at the Kunstgewerbeschule in Vienna and, in 1921, was appointed architect for the Austrian Settlement and Allotment Garden Association. In 1925, he and Oskar Wlach opened House and Garden, a furniture store and, in 1928, Frank became a founding member of the CIAM. As a member of the German and Austrian Werkbund, he was involved in building the orphanage settlement in Stuttgart (1925–1927) and a key figure in the Viennese Werkbund settlement (1932). The Haus Beer in Vienna (1929–1931), which he built with Oskar Wlach, demonstrated Frank's interpretation of Adolf Loos' floor plan. Josef Frank spoke of "the house as a thoroughfare and a place"; the functional areas within should not merely fulfil their own purpose, but evoke an appropriate atmosphere. The large window apertures of the Haus Beer in Vienna open out onto the garden, which forms part of the concept. From 1934, Frank lived in Sweden, where he designed furniture, textiles, and household articles for the firm of Svenskt Tenn. His heavily patterned and strongly coloured materials greatly influenced Swedish interior design culture during the post-war years. From 1942 to 1947, he taught at New York's New School of Social Research.

Franzen Ulrich

"I have found myself excited by the possibilities of combining different formal systems into a single compositional framework."

Alley Theater, Houston, 1968

Ulrich Franzen (1921–2012) was born in Germany and studied with Walter Gropius and Marcel Breuer at the Graduate School of Design at Harvard University in Cambridge. He then worked with I. M. Pei in New York, before setting up his own practice in 1955. His extensive oeuvre varies widely in terms of material selection and form. He uses concrete, glass, wood and natural stone. His façades, however, are usually brick. Franzen created several family dwellings, such as the Franzen House, with its all-round glazing, in Rye, New York (1956), and the Towers House in Essex, Connecticut (1963), both of which have an unusual roof structure. The Buttenweiser House in Mamaroneck, New York (1965) is on a rocky spit of land regularly subjected to high waters, and is therefore supported on four broad concrete pillars. The ample space is distributed over four buildings – a central structure and three tower-like wings with various functions. While the three smaller annexes have brick façades, the central building, with its broad balconies and terraces, is exposed. Other major projects by Franzen include facilities for the Institute of Agronomy at Cornell University in Ithaca, New York (1968), a complex of two low buildings and a thirteen-storey tower with an expressive brick façade, and the Alley Theater in Houston, Texas (1968), made from pre-cast concrete with semi-circular projecting facings. The multifunctional tower of Cornell University (1974–1975) appears from one side as a plain, brick façade and from the other as a transparent, glass one. The different design corresponds to the requirements of the specially secured experimental laboratory for veterinary medicine and associated offices. On Long Island, New York, between 1978–1979, another Franzen house was built: this one is a box on supports in white-painted wood, the façade of which is rounded on one side and reminiscent of a ship's hull.

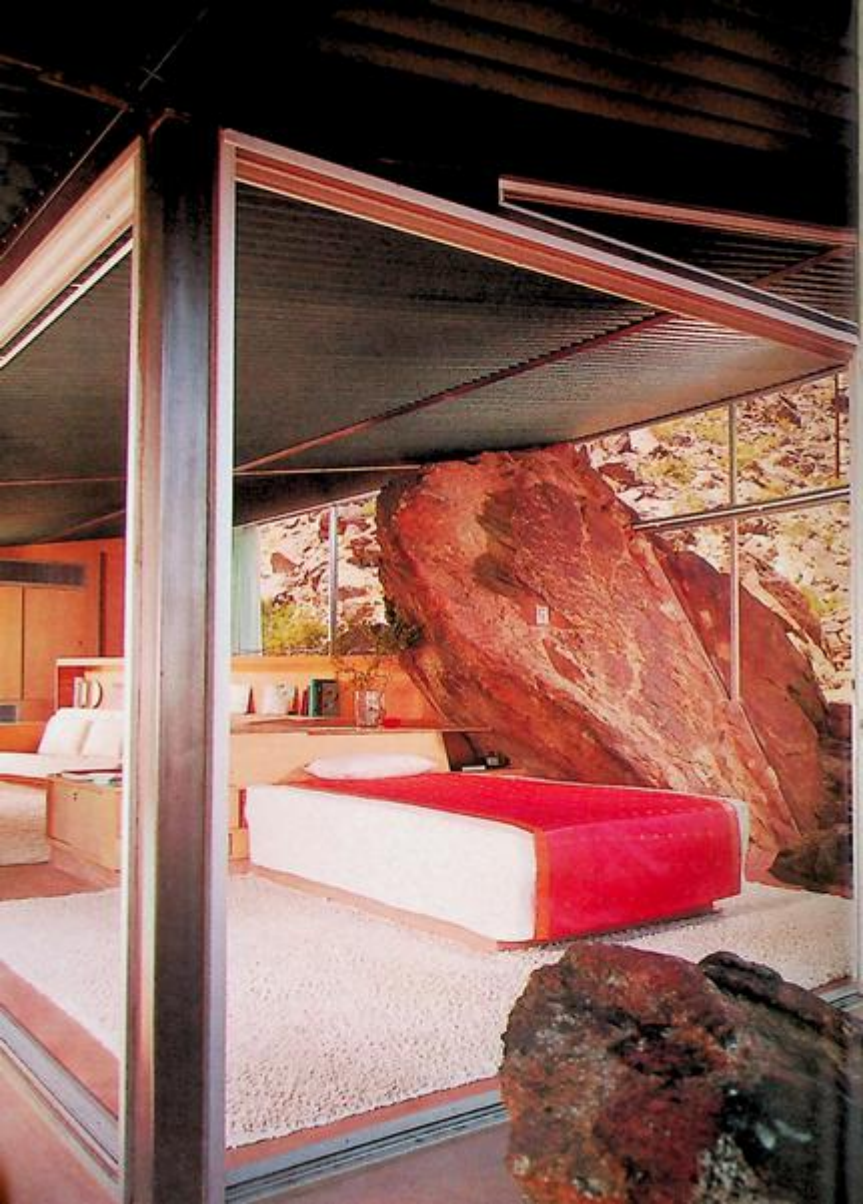


Frey Albert

▼ Aluminium-panelled house, Syosset, New York, 1930–1931

► Frey Residence I, Palm Springs, 1953

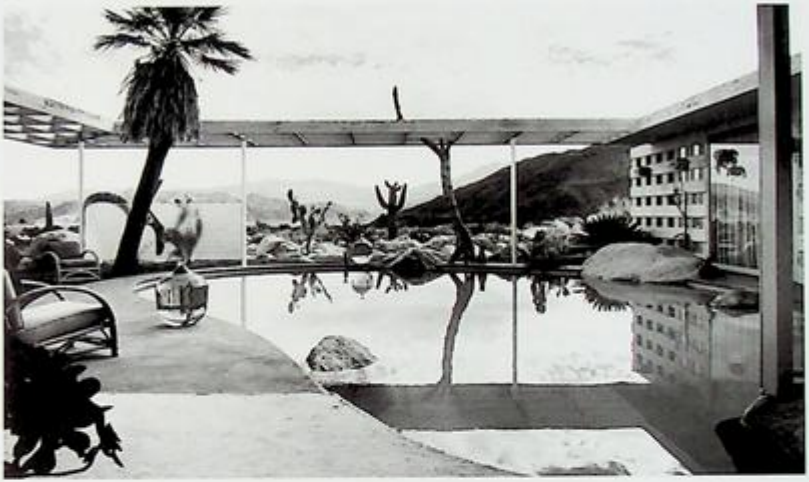
Albert Frey (1903–1998) was born in Switzerland and completed his architectural studies at Winterthur Technikum in 1924. In 1930, he emigrated to America, having first worked in Belgium and trained under Le Corbusier in Paris. He was one of just two architects working on a full-time basis in Le Corbusier's studio. One of his projects during this period was the Villa Savoye. After arriving in New York, Frey worked until 1935 with Lawrence Kocher, who also edited the *Architectural Record* journal. His ideas were characterized by a style of architecture that stood out against the respective landscape and was suggestive of a machine in both function and appearance. His multi-story houses were built in the form of cubes, including an aluminium-panelled house with clear geometrical lines in Syosset, New York (1930–1931) and the Kocher Weekend House in Northport, New York (1934), suspended on stilts. Only four houses were produced in collaboration with Kocher, the last one for Kocher's brother in Palm Springs (1934–1935). Frey moved permanently to this desert town, which had by then already become a popular retreat for Hollywood celebrities. In the absence of a licence of his own, he worked with John Porter Clark as a member of Van Pelt and Lind Architects from 1935 to 1937. His experiences with cost-saving, pre-fabricated construction sections were recorded in his book *In Search of a Living Architecture*, published in 1938. The houses he designed after his move to the West Coast differ radically from earlier designs, reflecting the dry and windy climate. Frey Residence I, in Palm Springs, California (1940), is a single-story, flat-roofed building with broad, overhanging eaves providing protection against the sun. Major extensions in 1947 and 1953 substantially altered the overall appearance. The Lowey House in Palm Springs (1946–1947) has large windows looking out onto the pool area, which encroaches into the living room. Frey's work remained largely confined to Palm Springs. The charm of his unpretentious work is often only discovered on closer inspection. A petrol station (1965, with Robson Chambers) is distinctive for its roof in the form of a hyperboloid. The unusual feature of Frey Residence II in Palm Springs (1963–1964) lies in the fact that a huge section of cliff side has been incorporated into the structure of the house.



◂ Frey Residence II, Palm Springs, 1963-1964

▾ Albert Frey, Loewy House, Palm Springs, 1946-1947

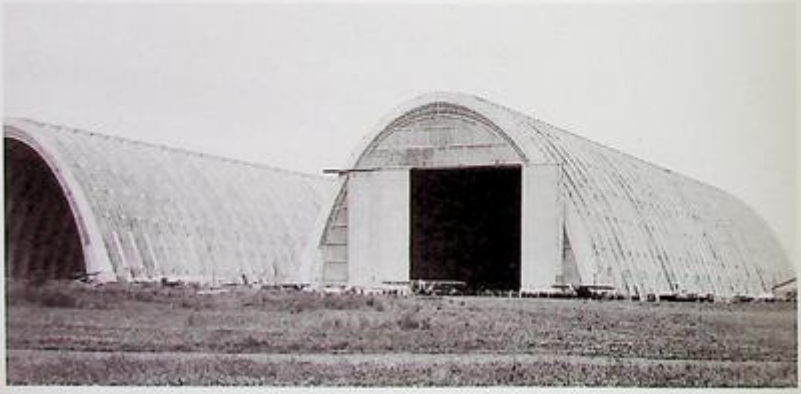
▾▾ Hatton Residence, Rancho Mirage, California, 1945



Freyssinet Eugène

Airship hangars, Orly, France, 1921–1923

Eugène Freyssinet (1879–1962) attended the École Polytechnique and the École des Ponts et Chaussées in Paris. In 1904–1907 and 1914–1918 he served with the French army. Observing his concrete bridges (over the River Allier at Le Veurdre, 1910, and Vichy, 1912) led him to the conclusion that existing formulae for the behaviour of concrete were inaccurate and that deformation of the material under stress had not been correctly described. His researches led him to important discoveries in the field of pre-stressed concrete construction for which he obtained a patent in 1928. Vaults with top ribs and sliding shells were a direct result of innovations made by Freyssinet. Before he established his own civil engineering practice in Paris in 1928, he worked between 1918 and 1928 as technical manager for the Paris building firm Limousin & Cie. His airship hangars in Orly, France (1921–1923) consisted of a continuous parabolically curved and folded reinforced concrete shell erected with the assistance of moveable formwork made from individual 7.5-metre-wide sections. The ribs became stronger lower down to support the structure's own weight. Further to a successful redevelopment of the Le Havre port facility (1933–1935), he became a partner in the company Campenon-Bernard, which gave rise to STUP (Technical Association for the Use of Pre-stressed Materials). Among other things he designed the concrete dam at Beni-Bahdel in Algeria (1935–1940) and the bridge between Caracas and La Guaira in Venezuela (1952–1953).



Fry Edwin Maxwell

"So little divided us then, the architects, the artists, the philosophers, the engineers, even the industrialists who were members of this society, drawing together in difficult days when Welsh miners sang their lamenting songs for bread along the gutter of Victoria Street and Ramsay MacDonald failed finally to charm."

Villa Miramonte,
Kingston, England, 1937

Edwin Maxwell Fry (1899–1987) attended the School of Architecture in Liverpool. Between 1934 and 1936 he worked in partnership with Walter Gropius. Together they built Levy House in London (1935–1936) and Impington Village College in Cambridgeshire, UK (1936–1939), which, with its axial, asymmetrical ground-plan arrangement around a main central area, became a model for many other facilities. Sun House in London (1935) owes its name to the optimum location of living and sleeping rooms on the southern side, which Fry achieved by reinforced concrete construction and astute interior organization. His independent works include Villa Miramonte in Kingston, UK (1937), which has horizontal strip windows on the south-facing side and a largely plain façade to the north, and Kensal House, an apartment block in London (1936–1937), also designed on the principles of the International Style with several community areas. After the Second World War Fry undertook many projects in Africa and India together with his wife, Jane Beverley Drew. They worked with Le Corbusier on the construction of the new Indian administrative city, Chandigarh, becoming involved in particular in the design of residential estates there (1952–1954). The solutions based on Western lifestyles that they selected for the severe monsoon climate in the region suffered under the restrictions imposed by Le Corbusier's overall urban development plan. Fry described his experiences of architecture in tropical climates in his book *Tropical Architecture in the Dry and Humid Zones* (1966).

Fuchs Bohuslav

"Designing a single-family house means demonstrating that a kitchen is for cooking, a living room for living, a bedroom for sleeping and a bathroom for bathing."

▼ Vesna women's hostel, Brno, Czech Republic, 1929–1931, with Josef Polášek

► Green Frog thermal pool, Trenčiansky Teplice, Slovak Republic, 1935–1936

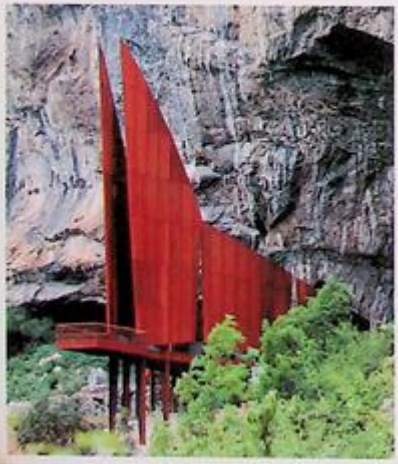
While studying at the Academy of Fine Arts in Prague (1916–1919), Bohuslav Fuchs (1895–1972) worked for the practice of Jan Kotera. From 1921 to 1923, he ran an office in Prague in partnership with Josef Štěpánek and, until 1929, was city architect for Brno. Fuchs lectured at the Brno Technical University in his capacity as Professor of Urban Planning. As a representative of the Czech modernist movement, he was also involved in publication of the magazines *Architektura*, *Blok* and *Stavitel*. Fuchs designed a large number of buildings for the city of Brno: the Hotel Avion (1927–1928); the Masaryk Student Hall of Residence (1928–1929); and the Brno pavilion at the Exhibition of Contemporary Culture (1928). This latter features horizontal and vertical ribbons of window, running from ground level to underneath the flat roof, which are incorporated into the smooth, reddish-orange brick façade. Fuchs was also responsible for a hall of residence for students in Brno (1929–1931), designed in the modernist style. The white elevations in the concrete building are generously glazed. His other works include the Green Frog thermal pool in Trenčiansky Teplice (1935–1936) and the T-shaped, five-storey Morava convalescent home in Tatransky Lomnica, both in the Slovak Republic.

Fuksas Massimiliano

▼ Entrance, Niaux Grotto, France, 1988-1993

► Grappa Nardini Research and Multimedia Centre, Bassano del Grappa, Italy, 2002-2004

Massimiliano Fuksas (born in 1944), after finishing his studies in architecture at the university in Rome, opened offices in Rome (1967), Paris (1989), Vienna (1993) and Frankfurt, Hessen (2002). His work has primarily been in Italy and France. It includes the Orvieto cemetery (1984-1991), the town hall and library at Cassino (1990) and the Ecole Nationale d'Ingenieurs in Brest (1992). Fuksas created the entrance to the Niaux Grotto in France against a cliff face (1988-1993). This sculpture, made from staggered, angular sheets of pre-rusted Corten steel, is supported on stilts and extends back into the mountain. At the Centre for Art at the Université Michel de Montaigne in Bordeaux (1992-1994), the rectangular body of the building with its green copper cladding is divided into two halves by an encircling strip window. The radio studio, in the form of an angular, timber-clad roof turret, projects over the side elevation. Between 1999 and 2001, Fuksas built the Twin Towers in Vienna, a double skyscraper with glass façades linked by multi-storey bridges. He also designed a shopping centre in Eindhoven, the Netherlands (1999-2005). The new complex is next to a Gio Ponti store, the colour and size of which he took as his basis. The buildings are linked by a covered glass passageway on high, biomorphic pillars. Fuksas realized an office building for the Ferrari group in Maranello, Italy (2001-2004), in which water as an element had an important design function. The Grappa Nardini research and multimedia center in Bassano del Grappa in Italy (2002-2004) was planned and built as an extension to the existing distillery. Fuksas related the transparent building forms, erected on an elliptical ground plan, to the laboratories they accommodated, together with their associated glass apparatus. The buildings are supported above a stretch of water and linked by passageways and bridges to integrated, futuristic effect. The interior fittings are by Doriana O. Mandrelli, who has worked with Fuksas since 1985.

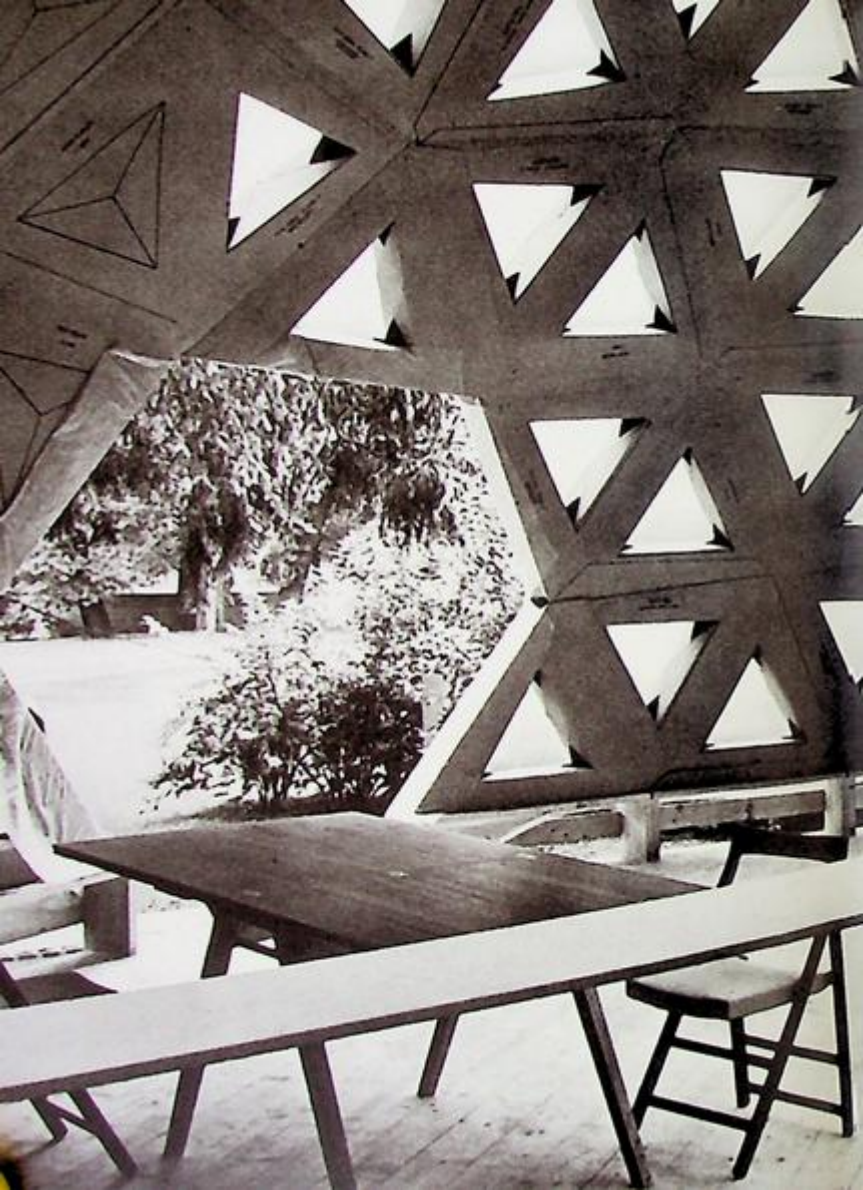


Fuller Richard Buckminster

▼ Model house, Beech Aircraft Works, Wichita, Kansas, 1946

► Dymaxion House, Wichita, Kansas, 1940

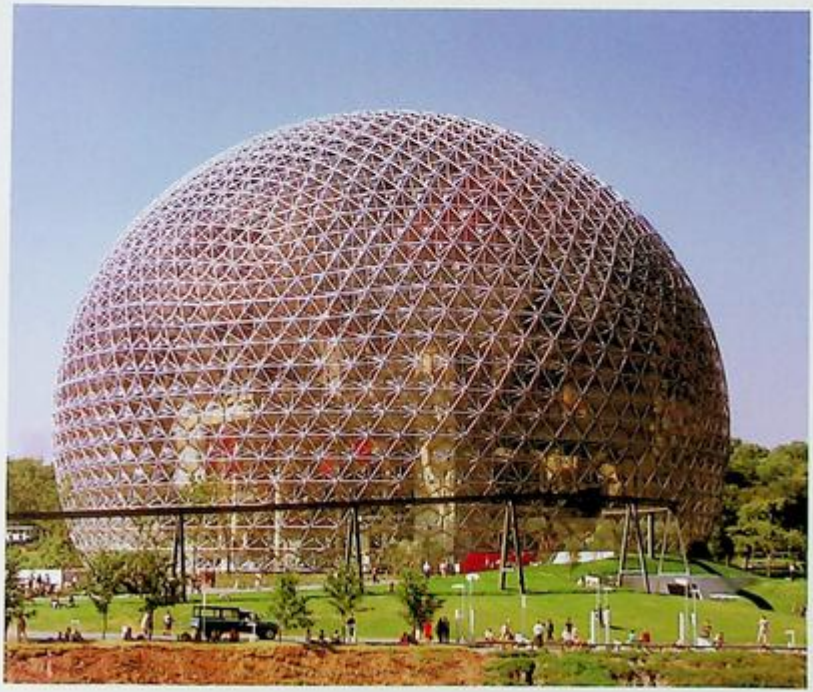
Richard Buckminster Fuller (1895–1983) was a student at Harvard University in Cambridge, Massachusetts between 1913 and 1915. He served as a sailor and in 1917 was distinguished by the US Marines for his development of a seaplane rescue mast. In 1922, he founded the building company Stockade Building System with his father-in-law, J. M. Hewlett, although this enterprise only survived for a few years. A family house designed in 1927 on a hexagonal ground plan had six triangular rooms. This "living container" was served by a central mast with integrated supply lines. The entire weight of the house, including furniture, was just 2,227 kilograms, with a diameter of 15 meters and a height of 12 meters. It was transportable and could be quickly dismantled and rebuilt. This house later became known as the 4D House and represented Fuller's basic technical principle: to derive maximum benefit from minimum expenditure of energy and materials, with the help of all available scientific and technical resources. Between 1932 and 1935, Fuller was founder, director and chief engineer of the Dymaxion Corporation in Bridgeport, Connecticut. During this time he applied for a patent for his Dymaxion Car, a streamlined three-wheeler, though unfortunately this proved unsafe in traffic. During the war years, he further developed the prototype of his 1929 Dymaxion living container. Round ground plans, porthole windows and low-domed roofs were the external features. Fuller later became increasingly involved in systematic research on frameworks, by means of which the largest possible area could be covered quickly and cheaply over the smallest possible ground plan. He developed geodesic domes based on regular multiple



sections and, in collaboration with students, created many experimental domes. In 1953, Fuller built a fiberglass/polyester rotunda for the Ford Motor Company. A year later, he designed a dome for a restaurant in Woods Hole, Massachusetts made from timber parts covered with transparent, plastic sheeting. For the Union Tank Car Company in Baton Rouge, Louisiana, he covered 117 meters with a 36.5-meter-high dome consisting of 321 hexagonal steel sheets (1958). Fuller also displayed a geodesic dome at the 1959 American Exhibition in Moscow. His most famous building was the dome of the US Pavilion at the 1967 World Exhibition in Montreal, the plastic cover of which caught fire during repair works in 1976 and burnt down. This meant that his plans to cover entire districts with such domes had little chance of ever being realized. The Tensile-Integrity Structures, for which Fuller obtained a patent in 1962, were supplemented in 1973 by the design of an asymmetrical supporting structure, though this has remained in model form to this day.

◂ Cardboard dome, Milan Triennale, 1954

▾ United States pavilion, World Exhibition, Montreal, 1967



Futurism

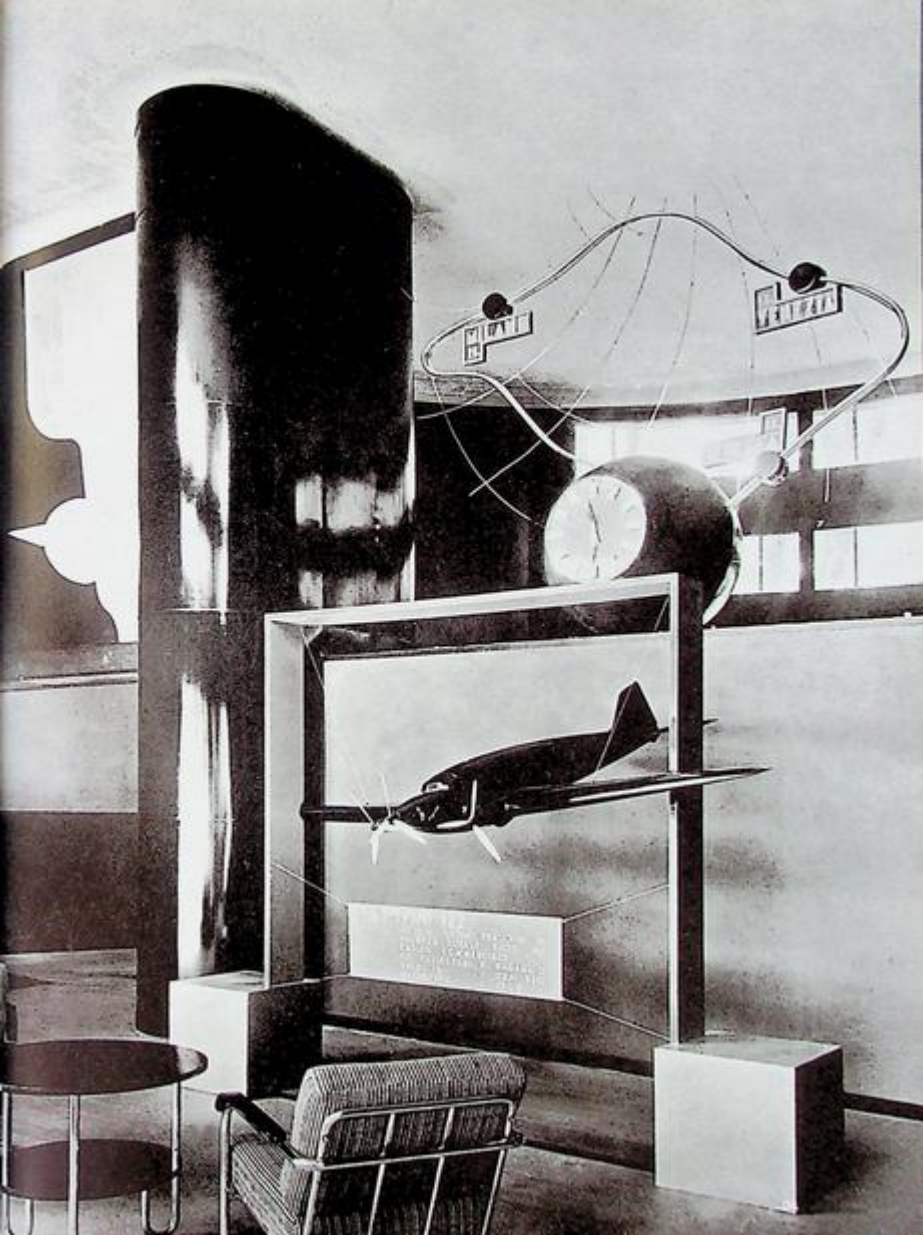
"Houses of concrete, glass and iron, stripped of paintings and sculpture, rich only in the innate beauty of their lines and relief, extraordinarily ugly in their mechanical simplicity, will be higher and wider according to need rather than the specifications of municipal laws." Antonio Sant'Elia

▼ Catalogue for the first exhibition of futuristic architecture, 1928

▼ "Bridge and Study of Volumes", 1914, perspective drawing

► Enrico Prampolini, concourse of an airport building at the V Triennale in Milan, 1933

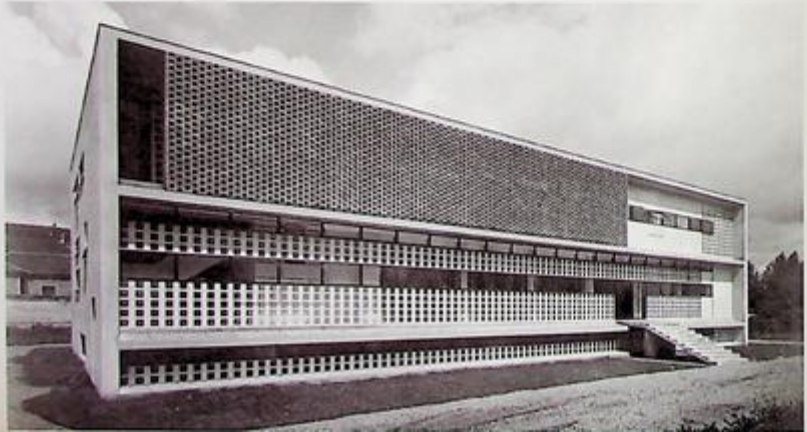
Futurism was formed in 1909 under the guidance of radical Italian poet Filippo Tommaso Marinetti, as an avant-garde movement that strived to create art that would express the technicalized life of the new age. Marinetti ascribed absolute power to technology and sang the praises of the machine and speed in an aggressively nationalistic manner. His manifesto "Le Futurisme" was initially published in the French daily *Le Figaro*. It advocated the destruction of museums and academies and promoted the modern metropolis. To circulate his ideas, Marinetti held what were known as Futuristic Evenings, which basically consisted of provocations. In 1914, Enrico Prampolini wrote the first manifesto on architecture in the pamphlet-strewn history of Futurism. In the same year, architect and poet Antonio Sant'Elia wrote his own manifesto under the title "L'Architettura futurista". Sant'Elia was of the opinion that architecture must find a rational method of design and rid itself of traditions. He proposed that the urban slums should be rebuilt, with large hotels, railway stations and boulevards and gigantic ports. He also predicted the use of new building methods and industrial materials such as steel and concrete to erect lightweight buildings, but none of his visionary designs were ever built. Mario Chiattone, who had worked with Sant'Elia from 1912 on designs for a Città Nuova (New City), turned away from the movement after Sant'Elia's death. During Mussolini's fascist dictatorship, the Futurists tried to gain a stronger influence on Italian public cultural life, but they did not succeed in having their ideas widely disseminated in building practice.



Gardella Ignazio

Tuberculosis sanatorium,
Alessandria, Italy, 1934–1938,
with Luigi Martini

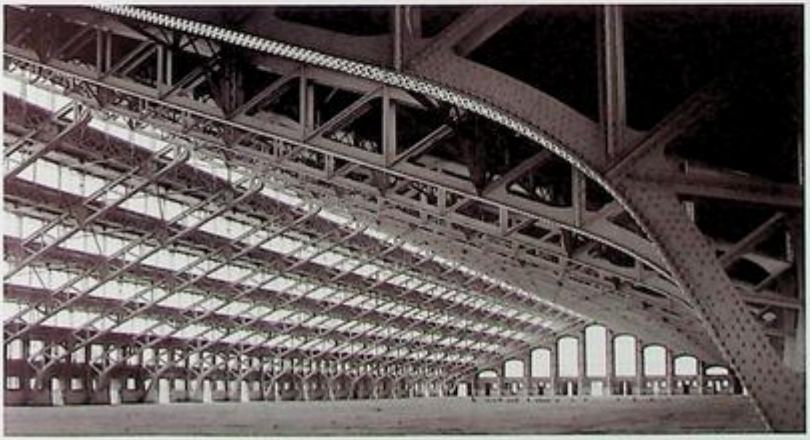
The year after Ignazio Gardella (1905–1999) graduated from the Milan Polytechnic as a structural engineer (1930), he set up his own practice there. Gardella was a supporter of Italian neo-realism, which, with its rationalistic buildings, took into account local traditions. Together with Luigi Martini, he built the box-like tuberculosis sanatorium in Alessandria, Italy (1934–1938), with its contrasting façades: the smooth rear façade in light-colored concrete is horizontally divided by varied windows; the front, with long, narrow strip windows and elegant, unrailed staircase, has a fine metal gridwork. The brick-clad multi-story residential building for the employees of the Borsalino company in Alessandria (1950–1952) has angled façades. Timber lattices serve as window blinds. The white balconies are at the back, while the thin, sharp-angled roofs project a long way beyond the building's façade. Gardella also built the thermal baths on the island of Ischia (1950–1954) and, around the same time, the Galleria d'Arte Moderna in Milan (1947–1954), which is constructed from steel and glass. With the Casa delle Zattere in Venice (1953–1962) Gardella reinterpreted the Venetian palazzo as a multi-family house, seamlessly integrated into the environment with the rhythm of its façade and its colors. Between 1983 and 1989, Gardella reconstructed the Carlo Felice Theater in Genoa, designed with Aldo Rossi, Fabio Reinhart and Angelo Sibilla. In the context of the revitalization of a war-ravaged city district, the new Faculty of Architecture in Genoa (1975–1989) became an architectural high point, in which the orange-red complex with its dividing pillars strongly emphasizing the vertical, is both independent and forceful, while seeming to grow harmoniously out of the old city.



Garnier Tony

Cattle market, Lyon, 1906-1928

After completing his studies at the École des Beaux-Arts in Lyons (1886–1890) and Paris (1890–1899), Tony Garnier (1869–1948) stayed in Rome from 1899 to 1904 after being awarded a Prix-de-Rome scholarship. Here, he started work on his urban planning project based on an ideal industrial city, which appeared in book form in 1917 entitled *Une Cité Industrielle*. In 1905, he established his own practice in Lyons, and as a professor taught at the École Régionale d'Architecture there from 1907 to 1939. His Utopian city with its linear road network separates living areas from work, industry and traffic. The project was based on socialist ideas and dispensed with prisons, barracks and churches. Steel and reinforced concrete were envisaged for the residential buildings, office buildings and factories that were, without exception, modern and uniformly designed; this was to consolidate the structural forms and to reduce costs. Typical monuments were angular, mostly cubic forms, terraced roofs, square wall openings, and rows of adjacent windows. The residential areas, only accessible on foot, were surrounded by extensive green areas. Nevertheless, the reference he made to the fine arts tradition in his use of classical forms was clear. The buildings he completed include the cattle market and abattoir in Lyon (1926–1928), a row of square, flat roof edifices arranged in a straight line and an elongated hall with a graduated glass roof, in addition to the American quarters in Lyons (1920–1935).



Gaudí i Cornet Antoni

▼ Park Güell, Barcelona, 1900-19144

► Casa Batlló, Barcelona, 1904-1906

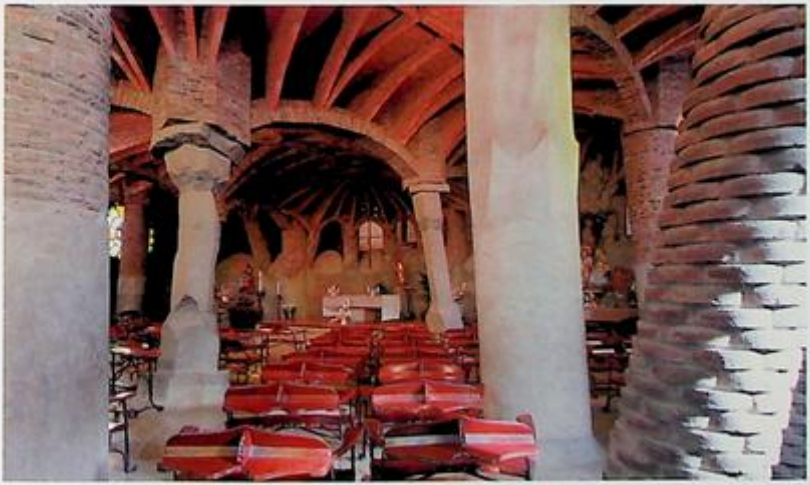
Antoni Gaudí i Cornet (1852–1926) studied in Barcelona between 1874 and 1879. At the same time he was already working in various architectural practices, including that of Francisco de Paula de Villar, whom he succeeded in 1883 as architect for the building of the Sagrada Familia (Holy Family) Cathedral. In 1878 he opened a practice of his own in the city, where he did much of his life's work. A year later, he began work on his first building, the Casa Vicens in Barcelona (1883–1888): Gaudí's predilection for rough stone and colorful ceramic tiles is in evidence here. In the textile manufacturer Eusebi Güell he found a true friend and patron, for whom, among other things, he designed a city mansion, the Palau Güell (1886–1890). Between 1889 and 1890, Gaudí undertook the extension of the College of the Teresianas. In both projects he initially used curves in parabolic form. According to his theories, the pressure of the dome could be directly supported on a correspondingly inclined pillar. In order to show distribution of the forces in the Colonia Güell Church in Barcelona, begun in 1898, he

developed a model made from twine and sandbags, to simulate the corresponding loads "in reverse". He used the same design aid in the Sagrada Familia Cathedral. Between 1900 and 1914 he created parts of Park Güell, a residential park designed for Eusebi Güell. He completed two residential buildings there, the entrance area, the terrace and a network of paths. Here again, many naturalistic, soft shapes on irregular ground plans with oblique masonry pillars were typical features of his language of form, which was also shaped to a great extent by his colleague Josep Maria Jujol. Gaudí's most important residential projects include the Casa Batlló (1904–1906) and the Casa Milà (1906–1910), both in Barcelona, with their three-dimensional façades. The Milà family themselves moved into the first floor of the luxury apartment building, with access via private stairways. Other stories can be reached only via lifts and are arranged two per story around two inner courtyards; all internal dividing walls were designed as non-loadbearing in order to make a more flexible ground plan possible. The installation of an underground garage for cars was also new. Gaudí developed a curving roof and wall structure for a small school building annexed to the Sagrada Familia Cathedral (1909). From 1914, Gaudí concentrated completely on the Sagrada Familia, a project that occupied him until the end of his life and which remains unfinished to date.

"Do you want to know where I found my model? An upright tree; it bears its branches and the branches bear the twigs and the twigs bear the leaves. And each individual part grows harmoniously together, magnificent since God the artist created it."

◂ Sagrada Familia (Holy Family) Cathedral, Barcelona, 1883–1926

▾ Colonia Güell Church, Barcelona, 1898–1915

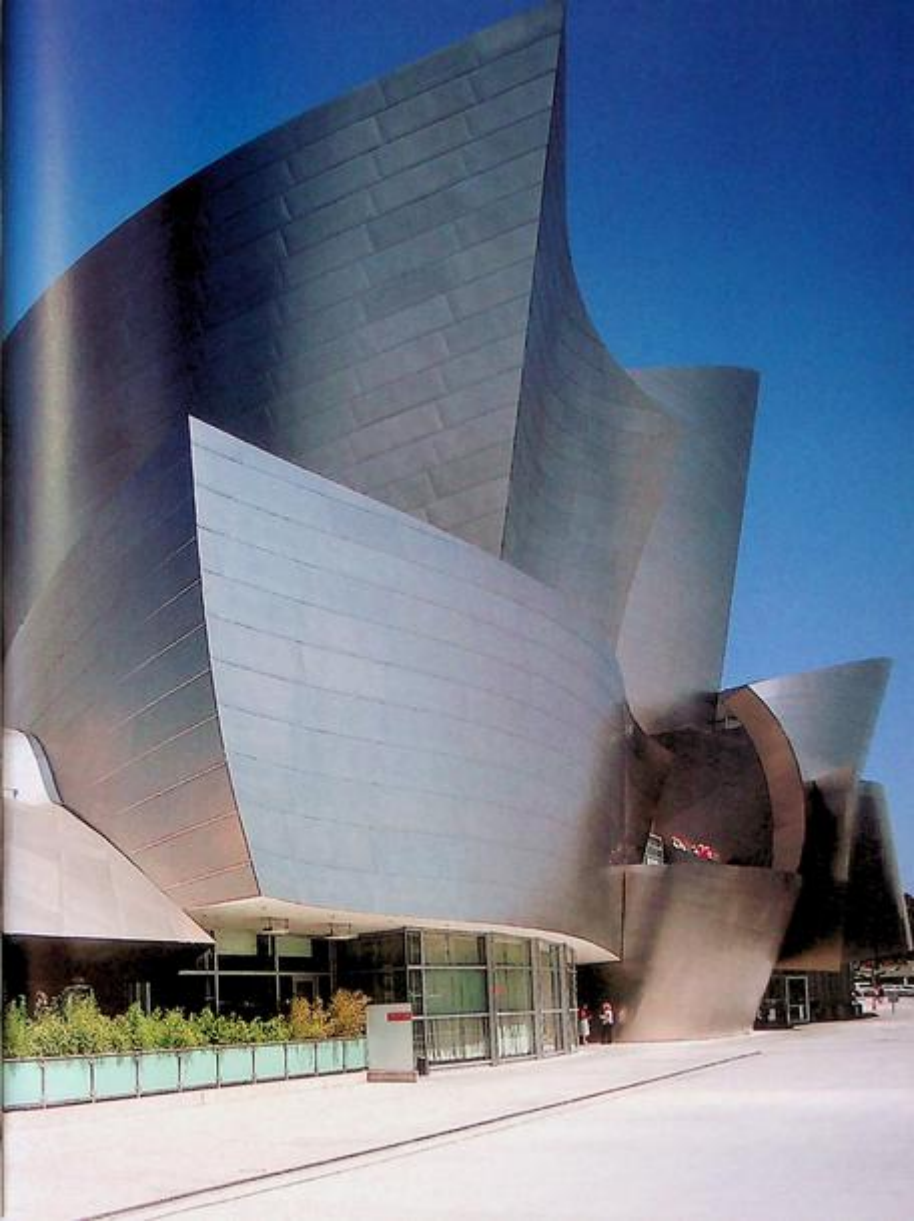


Gehry Frank Owen

▼ Schnabel House, Brentwood, California, 1986–1989

► Disney Music Concert Hall, Los Angeles, 1987–2003

Frank O. Gehry (born in 1929) attended the University of Southern California in Los Angeles until 1954 before going on to study town planning at the Harvard Graduate School of Design. Subsequent employers included the offices of Pereira and Luckman Associates (1957–1958) and Victor Gruen (1958–1961) in Los Angeles, and André Remondet in Paris (1961). In 1962 he opened his own offices in Santa Monica, California, which he still runs today as proprietor of Frank O. Gehry Associates. At the end of the 1970s he built a series of houses with broken volumina and pre-fabricated industrial components, such as the Spiller House in Venice, California (1979–1980), and his own home in Santa Monica (1978), in which the existing building was enveloped in a sheath of pink asbestos panels, corrugated sheeting and wire frames, creating the impression of something unfinished, unstable and home-made. Gehry's most remarkable early works on a large scale are in Los Angeles and include the Loyola Law School (1978–1984), the California Aerospace Museum (1982–1984) and the Francis Howard Goldwyn Regional Branch Library (1983–1986). The Fishdance Restaurant in Kobe, Japan (1986–1987), and the 1989 museum for the Vitra furnishing company in Weil am Rhein are indicative of Gehry's increasing international activity, while a number of single residences were built in California, including the Schnabel House in Brentwood (1986–1989), in which the individual rooms are independent constructions. Other projects by Gehry include the Chiat/Day Building on Main Street in Venice, California (1985–1991), where the entrance to the car park was



installed as a pair of huge binoculars by Claes Oldenburg, and the Nationale-Nederlanden Building in the old town of Prague, Czech Republic (1992–1996). The windows project from the undulating, structured façade in pre-fabricated concrete blocks; the supports are visible on one side through a glass skin. This building heralded a change in design philosophy. Where, in his earlier works, buildings were compositions consisting of individual structures in various materials and colors, Gehry was now deconstructing the constructions themselves; building surfaces began to break away and swing freely into the room. The Guggenheim Museum in Bilbao, Spain (1991–1997), which stands out as an independent work of art, makes an impression with its plastic forms, which, clad in titanium panels, kindle living, zoomorphic associations with the changing light. In the Experience Music Project in Seattle, Washington (1995–2000), a museum of pop music, Gehry used a great variety of forms and colors that almost dissolve the perception of it as a single building. In the case of the Deutsche Genossenschaftsbank in Berlin, Germany (1995–2001), building regulations brought about a reversal of principles: whereas the construction of the smooth sandstone pillars and almost frameless windows of the façade facing the Brandenburg Gate is severe yet subtle, the interior is a complex sequence of glass-roofed rooms, at the center of which is a stylized horse's head containing a conference room. After 16 years of planning and preparation, Los Angeles was finally given its own shiny, metallic landmark in the form of the Disney Music Concert Hall (1987–2003). The public attention paid to such large, prestigious buildings slightly distorts the image of the smaller, often more charming buildings in Gehry's extensive oeuvre, such as Maggie's Centre in Dundee, Scotland (1999–2003), a center for cancer sufferers and their carers, families and friends that, with a few simple acknowledgements to rural architecture and eschewing excessive technology, radiates infinite calm. Gehry is also professor of architecture at Columbia University in New York City, and lectures at Yale University.

◂ Experience Music Project, Seattle, 1995–2000

▾ Guggenheim Museum, Bilbao, 1991–1997

Geller Andrew

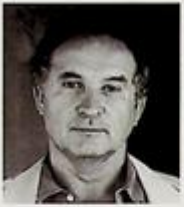
▼ Irwin and Joyce Hunt House, Fire Island, New York, 1958

► Frank House, Fire Island, New York, 1958

Andrew Geller (1924–2011) first attended the High School for Music and Art in New York (1939). Afterwards, he worked for the Navy, where he designed ships and ship's furnishings (1939–1942). He began his studies in architecture at the Cooper Union for the Advancement of the Sciences and Art in New York in 1942, though he could not complete these until 1947, as he was serving with the US Corps of Engineers during the war (1942–1945). He worked for Raymond Loewy in New York for 35 years, both in the fields of product and industrial design as well as in the department of architecture. He laid out part of the interior of Lever House in New York (1951) and designed the sculpture gardens with Isamu Noguchi. Furthermore, under his direction, various department stores for Macy & Company, the Lord & Taylor Department Store in Garden City, Long Island, New York (1956) and many other projects were realized. Geller was already starting to draw beach houses in the 1940s. From 1955, he started building them in the coastal regions of the Hamptons and on Fire Island, in his own name. The visionary design of these small, weekend residences is unique. "Reese I" in Sagaponack, New York (1955) was the first design. It is striking because of its unusual shape – it is a tent-shaped, wooden construction, with the A roof extending to the floor and covered with cedar-wood tiles. More commissions followed immediately: between 1958 and 1961, he built 15 houses, which he developed alongside his work with Loewy. The Irwin and Joyce Hunt House on Fire Island, New York was built in 1958. It consists of a wooden, rectangular solid that appears to balance on an edge. At the beginning of the 1960s, Geller developed more complex ground plans and façades from simple geometric shapes. The Elkin residence in Amagansett, New York (1966) dates from this period. The house walls appear to be unfolding, to be cut up or broken off, so that a strong, sculptural effect emerges. These houses, which are assimilated into their surroundings, also embody the dreams of their owners, who could experience their creative freedom to the full with them.

"One of the first lessons I ever learnt was: what you construct must be in keeping with what is already there It should harmonize as regards scale and from a human perspective. Scale is something that affects people."

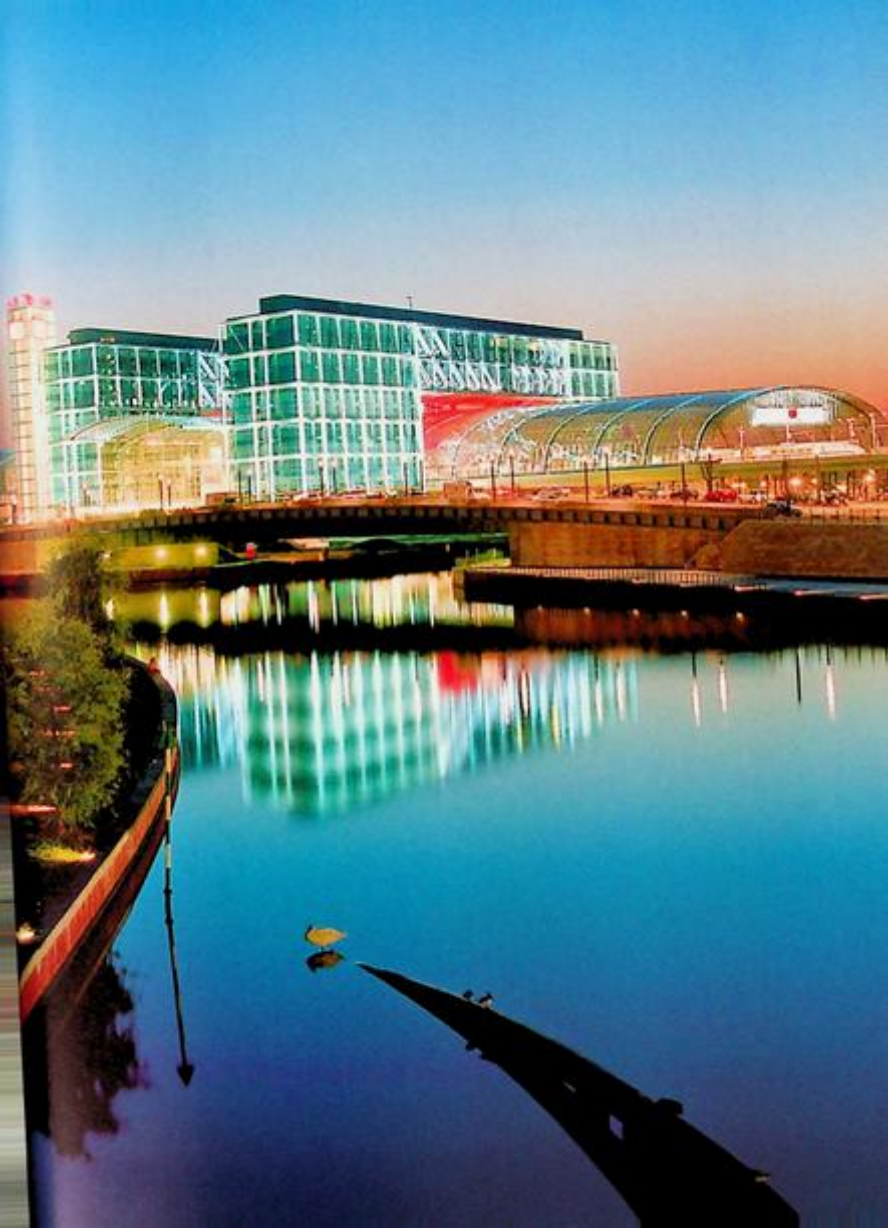
von Gerkan, Marg and Partner



▼ New trade fair site, Leipzig, 1991–1996

▶ Main railway station, Berlin, 1993–2006

Meinhard von Gerkan (born in 1935) and Volkwin Marg (born in 1936) began their collaboration after graduating in architecture in Berlin and Brunswick. They opened their first office in Hamburg in 1965. Now the company has eight premises in various locations and employs around 300 people. Over the years, the practice has undertaken countless projects. These include Terminal 4 at Hamburg Airport (1986–1993): a transparent complex with a clear, elegant interior in terrazzo, punched metal, glass and pear wood. The dynamically arched roof is a shell construction with bands of light running through it. The partnership also designed the roof cover for the courtyard of the Museum of Hamburg History (1989), in the form of a glazed, cross-corner grid shell; the music and conference hall in Lübeck (1990); and the new trade fair facility in Leipzig (1991–1996). The core of this vast trade fair site is a 243-meter-long, tunnel-shaped, glass hall, supported by an elegant steel construction. The coolness of the materials is softened on the inside by color and clever detailing; various contemporary artists were involved in the design. The spa at the Berlin Tempodrom was completed in 2002. The minimalist concrete arches are given a dramatic setting by the interplay between light and water. The practice continued a series of realized and planned projects in China with the construction of the trade fair and conference centre in Nanning (2003). A hall set at the front of the site on a circular layout has a 70-meter-high folded cupola support, the roof of which consists of a transparent membrane that shines out brightly in the night like a crown. The main railway station in Berlin was completed in 2006 but not to the original design; alterations by the client and mistakes during construction gave rise to much criticism.



Gilbert Cass

▼ Broadway Chambers Building, New York, 1897, perspective

► F. W. Woolworth Company Building, New York, 1910–1913

After studying in Massachusetts, American architect Cass Gilbert (1859–1934), became interested in western European architecture and worked for Daniel Burnham and McKim, Mead & White. Between 1885 and 1891 Gilbert worked in partnership with James Knox Taylor in a practice in St. Paul, Minnesota. His early residential buildings often adopted features typical of McKim, Mead & White, like shingle facings. In some of the churches he designed during his early work, his arrangement of the basic elements was picturesque, for example in the German Presbyterian Bethlehem Church in St. Paul, Minnesota (1890). He attained public recognition with the building of the Minnesota State Capitol (1895–1905), which he based on the National Capitol in Washington. He soon became a successful designer of public buildings in the Beaux-Arts style: in fact, an early celebrity architect. For his high-rise designs, Gilbert used many neo-Gothic motifs to "express the maximum amount of upward aspiration". In 1905 he applied this concept to the West Street Building in New York, the upper storey façades of which he decorated with neo-Gothic features. In 1909 Frank W. Woolworth purchased a plot on Broadway and commissioned Gilbert to build the highest building in the world of its time (just over 240 metres), which was completed in 1913. The design and divisional elements of the façades are historicist in style: on the front, buttresses with pinnacles link tower and base block in a unified structure. The lower block has a U-shaped ground-plan. The interior fittings too are neo-Gothic: the foyer areas are decorated with cross-ribs; the chapels and lift entrances have Gothic tracery. Gilbert went on to build the Union Central Life Building in Cincinnati, Ohio (1911–1913), and the New York Life Insurance Building (1925–1928). At the end of the First World War he built, within a very short time-frame, a US Army transhipment terminal in Brooklyn, New York (1918–1919), in which he interlinked sheds on the pier and stores one below the other, with delivery docks for ships, rail and road transport. Despite the strictly functional design, even here he could not forego a monumental arrangement of the façades.

Gill Irving

▼ Barker House, San Diego, 1911–1912

▶ Dodge House, West Hollywood, 1914–1916

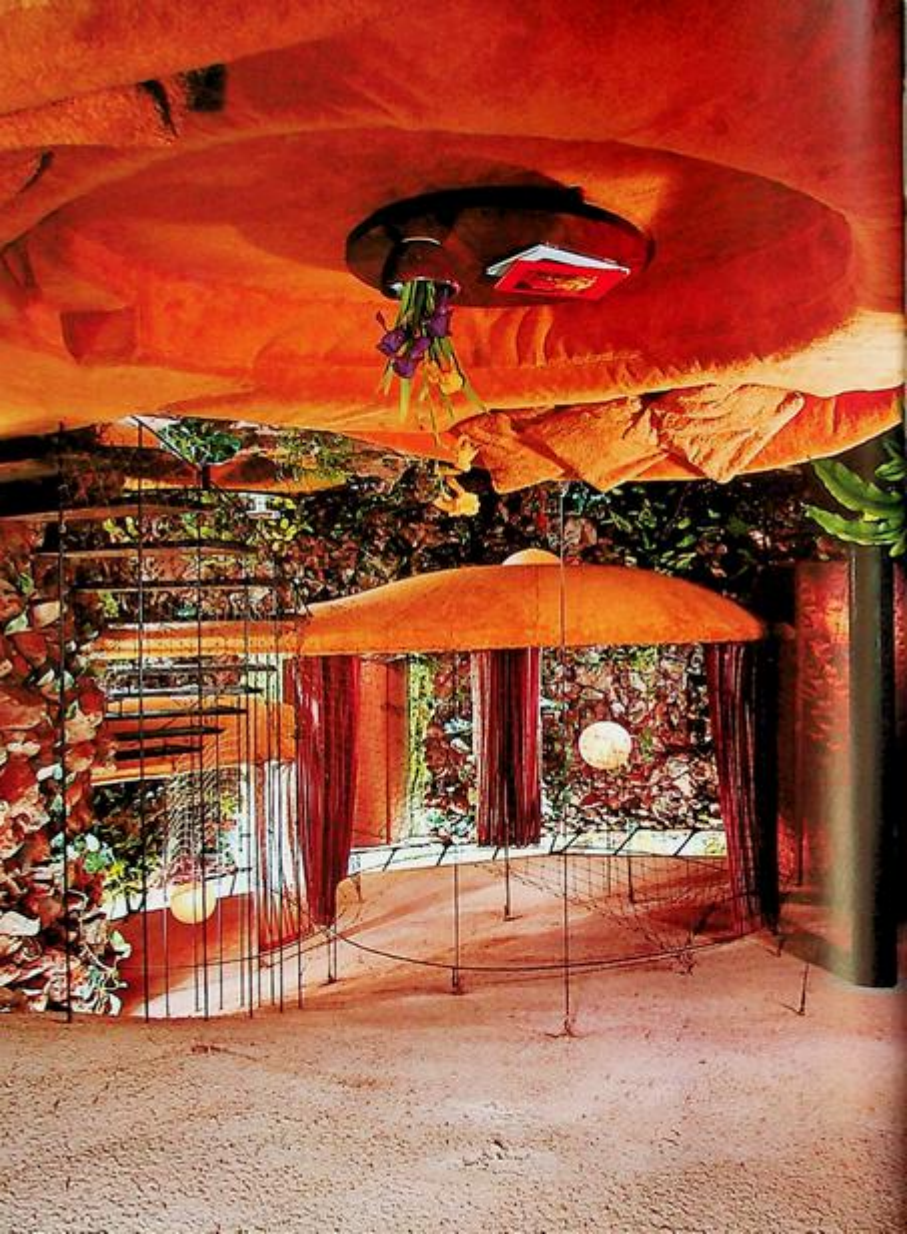
Irving John Gill (1870–1936) was the son of a building designer. In 1890, he took up employment in the offices of Dankmar Adler and Louis Sullivan in Chicago, where he worked as a draughtsman on, amongst other things, the Transportation Building for the Columbian Exposition in 1893. He also became acquainted with Frank Lloyd Wright, who was working there at the same time. Gill opened his own office in San Diego in 1896 with William S. Hebbard, who had gained his experience with Burnham & Root. Their collective works were directed towards the style of the English country house. The Mitchell House and Marston House, both in San Diego, California (1904–1905) reveal a renunciation of European exemplars. Plainer façades with corner windows and new materials held sway here, Gill also aligning himself with the tradition of the Spanish mission buildings with their white walls and rounded arches. The seven months of his partnership with Frank Mead produced the Bailey House in La Jolla (1907), the Laughlin House in Los Angeles (1907–1908), the Melville Klauber House in San Diego (1907–1908) and the Allen House in Bonita (1907). They were mostly cuboid buildings, painted white, which were first of all plastered white then concreted, like the Wilson Acton Hotel in La Jolla, California (1908), whose unadorned façade is only broken by the grids of square window sections. With the loosely grouped housing developments of Lewis Courts in Sierra Madre, California (1910), whose design resurfaces in the Horatio West Court in Santa Monica, California (1919), finished with ribbon glazing and Gill's characteristic, polished frames, the architect carried over ideas from the building of detached houses into larger projects. Also, in works such as the Bishop's School in La Jolla (1910–1916), he placed the complex flatly into the landscape in an expansive and asymmetrical manner. The La Jolla Woman's Club (1912–1914) was built using a method whereby whole walls cast in concrete were laid out flat on the floor and then slowly lifted up. The Club represents one of Gill's great works, along with the "ruined" Dodge House in West Hollywood (1914–1916). Because of Gill's work in Los Angeles, his nephew Louis took over his office in San Diego. This partnership lasted until 1919 and produced the Scripps Leisure Center (1914–1915) and Scripps apartment building (1915–1916).

Goff Bruce Alonzo

▼ Van Sickle Ford House, Aurora, Illinois, 1947–1950

► Bavinger House, Norman, Oklahoma, 1950–1955

Bruce Alonzo Goff (1904–1982) learnt building skills working for the company Rush, Endacott & Rush in Tulsa, Oklahoma and built his first house when he was just 14 years old. In the Boston Avenue Methodist Church in Tulsa, Oklahoma (1926–1929, with Adah Robinson) Goff created a church building in Art Deco style. From 1935 he ran his own practice. Before the Second World War, Goff taught at the Chicago Academy of Fine Arts, and from 1946 at the School of Architecture of the University of Oklahoma, becoming its principal in 1947. Goff was influenced by Frank Lloyd Wright and shared his ideas on the subject of organic architecture. His diverse and imaginative work cannot be pigeonholed under any specific movement: he valued individuality in design above all things. In the 1940s, Goff erected Triaero, a house in Louisville, Kentucky (1941) on a triangular ground plan, and the Van Sickle Ford House in Aurora, Illinois (1947–1950). The Bavinger House in Norman, Oklahoma (1950–1955), consists of a spiral-shaped natural stone wall encircling a steel mast. It has five open-plan levels; the roof is suspended on the mast and is held in place by struts. Goff also built a house and studio for Joe Price in Bartlesville, Oklahoma (1956, with extensions up to 1974), known as Shin'enKan, and a house for Jacob and Anna Harder in Mountain Lake, Minnesota (1970–1973). This timber-frame house with cedar-wood shingle cladding has three solid natural rough stone chimneys. The roof is covered with orange-colored weather-resistant carpeting. Colorful glass and mirror mosaics are set into the timber structure. Even insemination tubes had a place in the decor: typical of Goff, who always liked to incorporate unusual building materials. He worked with Bart Prince, who completed the project, in designing the pavilion of Japanese art in the Los Angeles County Museum of Art (1978–1988).



Graves Michael

Central Library, Denver,
1991-1996

Michael Graves (1934-2015) began his studies at the University of Cincinnati, Ohio, in conjunction with practical work with Carl A. Strauss. He graduated from Harvard University in Cambridge, Massachusetts in 1959. He then worked with the designer and architect George Nelson. A bursary from the American Academy enabled him to spend two years in Rome. On his return, he accepted a position as lecturer at Princeton University, New Jersey, where he taught as a Professor of Architecture. Graves opened his own studio in 1964. The Hanselmann residence in Fort Wayne, Indiana, was built in 1967. Graves made a name for himself in a joint exhibition at the Museum of Modern Art in New York 1969 with Peter Eisenman, Charles Gwathmey, John Hejduk and Richard Meier and also through the publication *Five Architects*. He soon distanced himself from the group's severe neomodernity, designing highly colorful houses with emphasized gables, rustic wall sections and abstract pillar motifs. This stage in his career produced the Plocek residence in Warren, New Jersey (1982) and the furnished presentation rooms for the Sunar Company (1979-1987); he also won the competition for the town administration building for Portland, Oregon (1980-1982), a cubic multistory building on a square colonnaded base in a symmetrical design. Also of note are the Library of San Juan Capistrano, realized in California in 1980-1983, and the Administration Tower for the Humana Corporation in Louisville, Kentucky (1982-1986).

"Cultural access is essential, whether you are designing for Cartier or Target. The energy is the same, even though the materials may be different. I work just as hard, and I'm not going to hold back because I'm dealing with stainless steel instead of silver."

Gray Eileen

"A house is not a machine in which people live; it is exterior to them, it represents their wider world, their being-in-the world, their spiritual emanation."

E. 1027 House, Côte d'Azur, France, 1926–1929, with Jean Badovici

Further to her painting studies at the Slade School of Art in London (1898–1902), Irish-born Eileen Gray (1878–1976) went to Paris, where she enrolled at the École Colarossi and Académie Julian to study drawing. In addition, she became familiar with the lacquer technique, exhibiting works at the 1913 Salon of the Société des Artistes Décorateurs of which she had become a member. She planned and transformed a complete interior for the apartment of Madame Mathieu-Lévy in Paris (1919–1924). In 1922, she opened her own gallery under the name Jean Désert. Her numerous pieces of furniture, made from leather, cork, wood and steel, are neither rigid nor cold, but are colorful, varied and comfortable. Comfort and the derivation of pleasure from furniture in addition to its exterior form were important considerations for her.

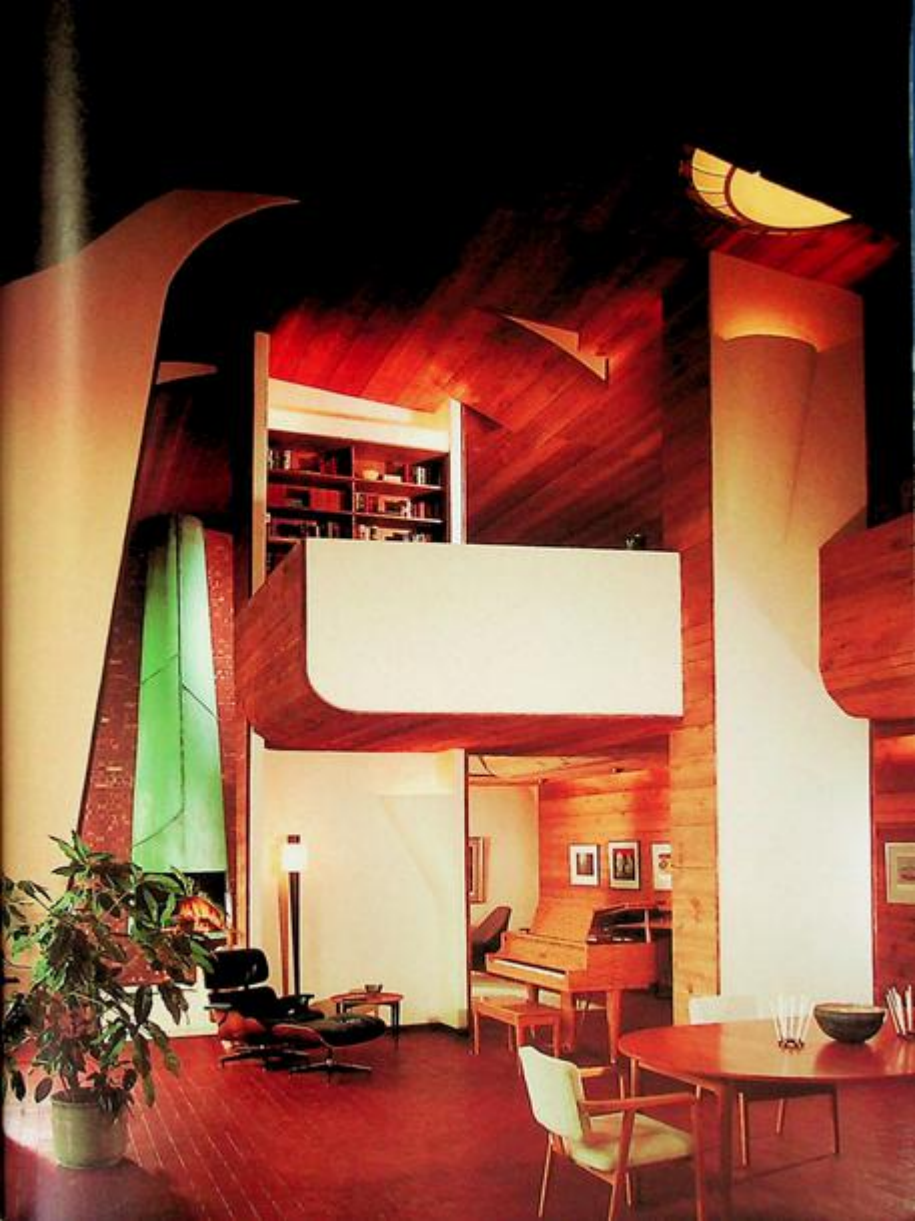
This principle was interpreted in the E. 1027 House that was built for, and in collaboration with, Jean Badovici on the Côte d'Azur (1926–1929). The white, partly freestanding, suspended building is impressive due to countless, well-considered, distinctive structures that are executed in the greatest detail. An elongated balcony is located in front of the tall, glass façade on the first floor, from which a flight of steep steps leads down into the garden. The living area faces south towards the views, while the east-facing sleeping area is protected from onlookers. In the 1930s, she began the construction of her own house, Tempe à Pailla, in Castellar, France (1932–1934), realized in white concrete into which Gray integrated the stone walls of the existing wells. At the invitation of Le Corbusier, she displayed plans – never realized – for a holiday and leisure center at his *Pavillon des Temps Nouveaux* exhibition on the occasion of the Paris Exposition in 1937. Gray built her own modest house, Lou Pérou, near St-Tropez, France (1954–1958) from an old farmhouse with a gabled roof. She added a rectangular extension with a roof terrace at the right corner, which partly consists of natural local stone.

Greene Herbert

▼ Prairie Chicken House, Norman, Oklahoma, 1960

► Cunningham House, Oklahoma City, 1963

Herbert Greene (born in 1929) began his studies at Syracuse University, New York, but changed to the University of Oklahoma after one year, so that Bruce Goff who was teaching there could introduce him to the ideas of Frank Lloyd Wright. He graduated in 1952 and worked in California and Texas. Greene shared an interest in nature with Wright and Goff and dedicated himself to the study of organisms and natural patterns. He endeavoured to reflect the region in his work. The Joyce residence in Snyder, Oklahoma (1958–1959), which he designed for a Swedish client, draws on various elements such as collage and has a low-pitched roof with Scandinavian features. The shingle roof is reminiscent of Victorian models; the porch looks like a tent, with the heritage of the original American inhabitants inscribed on it. Unlike this building, which bears a strong relation to the formal idea of the traditional detached family house with its large areas of window and roof, the house in Norman, Oklahoma (1960) commonly known as the "Prairie Chicken" is similar to the kind of dwelling constructed from a variety of found materials. Here, Greene was working experimentally. Roof tiles and wooden slats are elaborately laid in panels over a weight-bearing construction, with the window openings remaining hidden. The outline of the house looks like a bird and the diverse panelling like plumage. This is not about imitation, but a reduced abstraction of nature. With the Cunningham House in Oklahoma City (1963), Greene once again adopts the formal, basic elements of the traditional house. The façade is dominated by a vaulted roof, which juts a long way over the entrance area. Towards the garden, the house is securely contained by clinker walls, which lead from the glass façade to the space outside. Greene summarized his thoughts on architecture and society in his books *Mind & Image* (1976) and *Building to Last* (1981).



Greene Charles Sumner & Greene Henry Mather

▼ ► Gamble House, Pasadena, California, 1907-1909

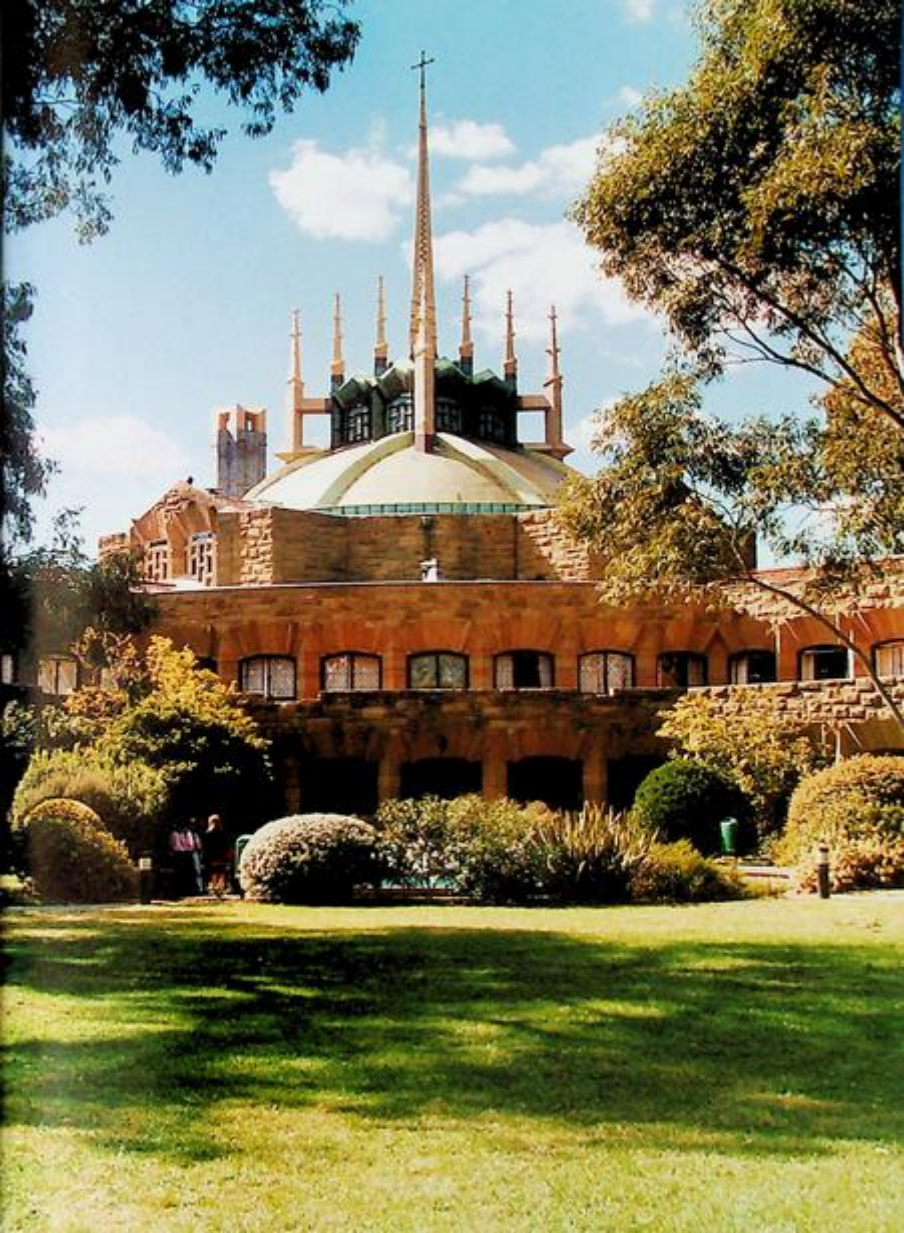
The two brothers Charles Sumner Greene (1868–1957) and Henry Mather Greene (1870–1954) attended the Manual Training High School of Washington University in St. Louis, Missouri, at the same time continuing their studies at Massachusetts Institute of Technology in Cambridge, Massachusetts. They each gained experience in different firms before opening their own joint practice in Pasadena in 1894, which they ran until 1922. During their studies, the Greene brothers became familiar with the ideas of the Arts and Crafts movement. In the early years of their career, they researched various styles of building, such as the Swiss chalet, the Italian villa, as well as Asian architecture. During the course of their work, they pioneered their own version of the Californian bungalow. They opted, in this respect, for refined combinations of materials, creating structurally sophisticated, high-quality wooden residences. The Blacker House and the Gamble House (both 1907–1909) in Pasadena, California, are among 30 American bungalows built by Greene and Greene during the first decade of the 20th century in Pasadena and Long Beach. The Gamble House is supported by a base of rough clinker and finished with shingles. Characteristic features of these houses include exposed, projecting rafters, smooth-surfaced, rounded construction elements and low-pitched roofs, which extend over large verandas. Greene and Greene also experimented later with exposed concrete, as in the Williams House (1915–1916).

Griffin Walter Burley

▼ Capitol Theatre, Melbourne, 1924

► Newman College, University of Melbourne, 1915–1917

The American architect Walter Burley Griffin (1876–1937) began his career as an employee in the Oak Park studio of Frank Lloyd Wright, before establishing his own practice in 1906 and realizing some residential buildings near Chicago. In 1911, he married Marion Lucy Mahony, who had also worked in Wright's practice and now became Griffin's business partner. Through their collaborative efforts, numerous landscape developments and building plans came to fruition. Their submission for the competition to design the new Australian capital, Canberra, won first prize and made them famous overnight. Their design showed the interweaving of the natural landscape of Australia with uniformly laid-out boulevards. In 1913, Griffin traveled to Australia and was awarded a contract to realize the design. Due to the outbreak of the First World War, however, it was reduced to such an extent that hardly anything remained of the most important elements of the proposal; Griffin resigned from the project in 1920 due to numerous disagreements. None of Griffin's building designs ever came to fruition in Canberra. Between 1916 and 1917, he had developed a construction system under the name "Knitlock" for the design of Canberra's buildings; he patented this invention and, outside Canberra, some "Knitlock" residential buildings were eventually constructed. The Griffins' Australian works also include Newman College, University of Melbourne (1915–1917) and the Capitol Theatre in Melbourne (1924). In the north of Sydney, the Griffins developed the suburb Castlecrag in a uniformly structural design (1921–1935). During the years of the Depression the practice built 13 incinerators, including those in Willoughby, New South Wales (1934) and Pyrmont, New South Wales (1935). The outstanding efficiency of these plants was supplemented by well-considered ornamentation with relief stonework. In 1935, Griffin went to India with his wife, where they designed the Library at Lucknow University; Marion Griffin continued to oversee the completion of a section after Walter's death.

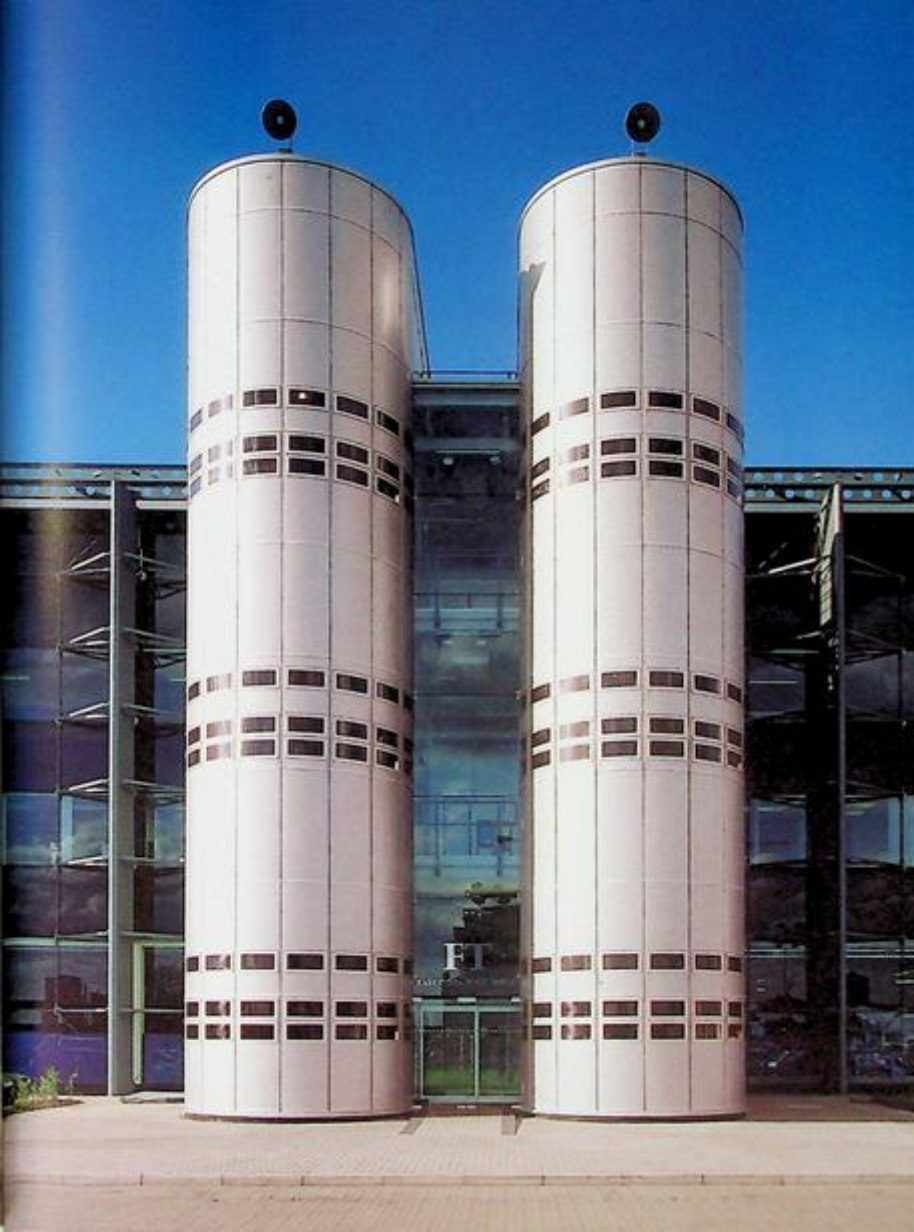


Grimshaw Nicholas

Print works for the *Financial Times*, London, 1987–1988

"We never really knew whether the word 'advanced' was meant in a technological sense or whether it meant that the buildings were on difficult terrain that had hitherto not been used – sort of like a 'modern guard'."

Nicholas Grimshaw (born in 1939) started studying at the Edinburgh School of Art and graduated in 1965 from the Architectural Association in London. He and Terry Farrell then both worked as architects, and after the two went their separate ways in 1980 he set up the offices of Grimshaw & Partners. The partnership with Farrell produced the "Service Tower" in London (1967). Six apartment blocks, to be used as student accommodation, were built, but without sanitary facilities; the missing elements were supplied by the addition of a service tower accessible via a spiral ramp. On Grand Union Walk in Camden, London (1985–1988) the lighting of the terraced houses is unusual: there are no windows on the houses' south side , but on the canal side rounded metal and glass walls and circular skylights allow sufficient light to enter. Important industrial projects were carried out for the Miller Company in Bath, UK (1976), for the Vita Furniture Factory in Weil am Rhein (1981) and for the print works of the *Financial Times* in London (1987–1988). For Expo '92 in Seville Grimshaw designed the British pavilion (1990–1992), known as the "Cathedral of Water", incorporating a waterfall, roof sails with solar cells and a futuristic and technoid interior: a combination of high tech and environmental common sense. Grimshaw likes to use pre-fabricated structural elements and to reveal the supporting structure, as in the headquarters and factory of Igus GmbH in Cologne (1993–2000). Parts of the roof construction are suspended from two yellow, banana-shaped timber-framed pylons that soar up above the façade. He also executed the *Western Morning News* building in Plymouth, UK (1993) and the extension of Waterloo Station in London (1993). The Eden Project in Cornwall, UK (1996–2001), one of the Millennium Projects, is an exhibition of many thousands of different plants in transparent, air-conditioned capsules made of stainless steel honeycomb domes and ETFE cushions. The aim of the project is to illustrate man's dependence on plants and their variety. A further administration building was completed for the Eden Foundation in 2003, as visitor numbers were far exceeding expectations. More recent projects have included a building for the art collection of the Fundación Caixa Galicia in Coruña, Spain (1996–2003), which was slotted into a gap in the old town. The façade consists of several layers of glass, thin marble panels and a wall projecting out into the road. Grimshaw also designed a new passenger hall for Zurich Airport (1996–2003).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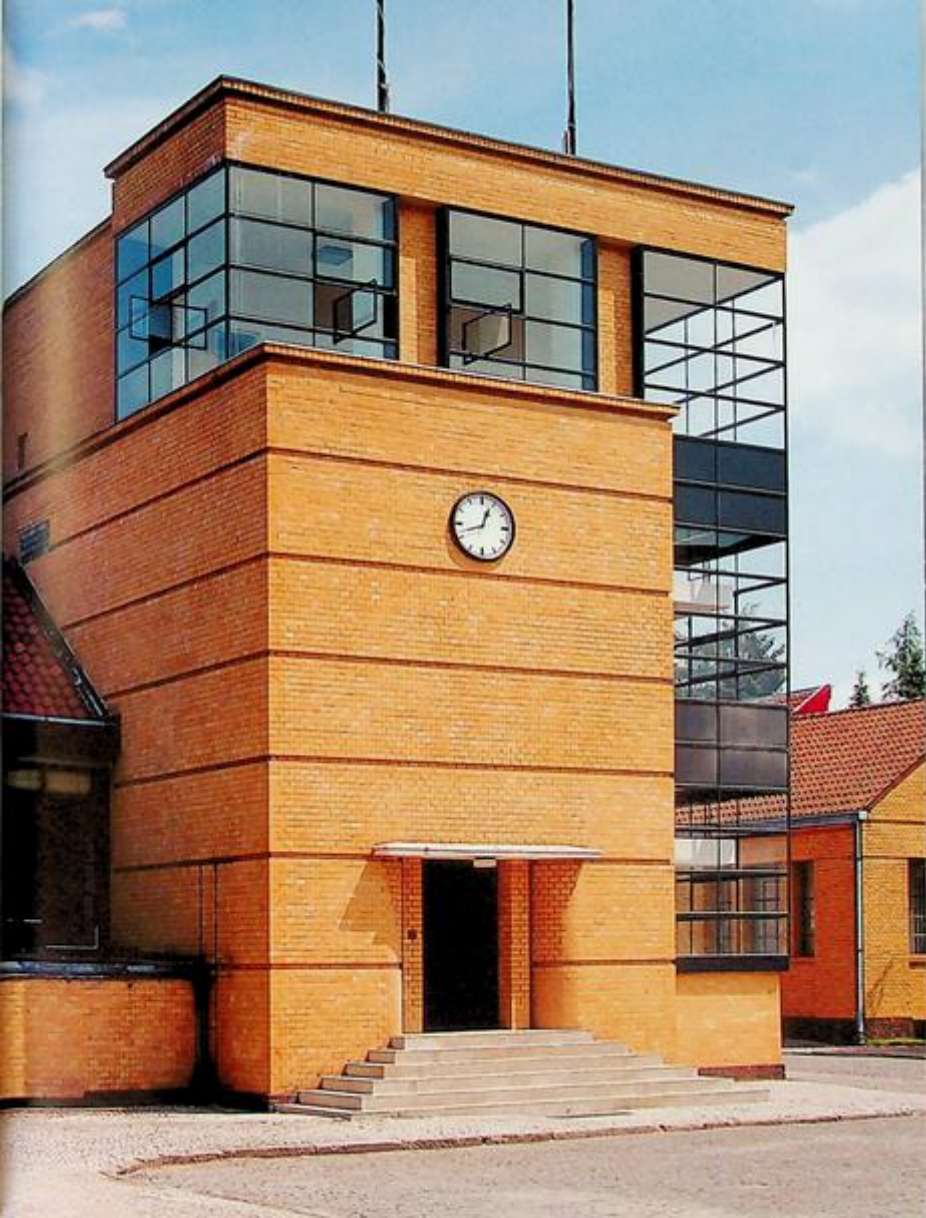
Gropius Walter

"Today, much is considered luxury that tomorrow will be the norm!"

▼ Gropius' own house, Dessau, Germany, 1925–1926

► Fagus shoe last factory, Alfeld an der Leine, Germany, 1910–1914

Walter Gropius (1883–1969) studied architecture at the Technical Colleges of Berlin and Munich from 1903 to 1907 and then – as was customary at the time – embarked on several study trips throughout Europe. He began gaining professional expertise in 1908 in the studio of Peter Behrens. In 1910 he opened an office with Adolf Meyer. This collaboration produced the design for the Fagus shoe last factory in Alfeld an der Leine in Germany (1910–1914). The cuboid main building was designed as a supporting skeleton without corner pillars and a grid façade with glass sections set in metal frames – one of the earliest examples of a curtain wall. In 1914 the two partners built a prototype factory for the Deutscher Werkbund's (German Work Federation) exhibition in Cologne, consisting of an office building and a machine shop in a strictly symmetrical layout. After the end of the First World War Gropius was made the director of the Grossherzogliche Kunstgewerbeschule (Grand Ducal School of Arts and Crafts) and the Hochschule für bildende Kunst (Grand Ducal School of Fine Arts), both in Weimar. In 1919 Gropius merged these two establishments in the state-run Bauhaus (Building House). When the institutions were obliged to relocate, he planned a new Bauhaus complex in Dessau, Germany The basic idea was to design and link together differently shaped building sections to accommodate the school's main functions. There were also houses for the staff and director. Between 1926 and 1928 Gropius undertook his first extensive residential project, the Törten estate near Dessau, which was built partly from pre-fabricated reinforced concrete



elements. This was followed in 1927 by the co-operative and labour office in Dessau (1927–1929). Other buildings followed as part of the Dammerstock model estate in Karlsruhe, Germany (1928–1929), with Gropius the overall director. At the same time, he also developed the concept for a "total theater" with a rotating stage that could be transformed into a lower stage, proscenium or central stage (1927). In 1928 he handed the directorship of the Bauhaus over to Hannes Meyer and moved to Berlin, where he became the director of the Siemensstadt project (1929–1930) and designed two blocks - disc-shaped apartment buildings with arcades. In 1934, when the National Socialists seized power, Gropius emigrated to England and worked with the architect Maxwell Fry until 1937 on various projects that included the Ben Levy House in London (1935–1936) and Impington Village College in Cambridgeshire (1936–1939). Following the offer of a professorship at the faculty of architecture at Harvard University in Cambridge, Massachusetts, Gropius moved to the USA. He then worked more closely with Marcel Breuer on projects that included a workers' housing estate in New Kensington, Pennsylvania (1941). Later he collaborated with Konrad Wachsmann on industrially manufactured houses (1943–1945). In 1946 Gropius and a number of other architects founded TAC, The Architects' Collaborative. One excellent product of this team effort was the Graduate Center at Harvard University, 1948–1950, with seven accommodation buildings and a communal center. Later major works included the 59-story prism-shaped Pan Am Building in New York (1958–1963), which was designed in collaboration with TAC, Pietro Belluschi and Emery Roth and Sons; the industrial buildings for the Rosenthal Porcelain Factory in Selb, Germany (1965–1967); and the Thomas Glassworks in Amberg, Germany (1967–1969). He has explained his architectural theories in numerous publications such as *International Architecture* (1925) and *Bauhausbauten Dessau* (1930).

◂ Terraced houses on the Jungfernheideweg, Siemensstadt estate, Berlin, 1929-1930

▾ Törten estate, Dessau, Germany, 1926-1928

Gruen Victor David

"The questions 'Can our cities be saved? Will they be saved? Are cities worth saving?' are merely academic. They not only can be saved, but they must be. The question before us is how."

▼ Northland Shopping Center, near Detroit, 1954

► Milliron's Department Store, Los Angeles, 1946-1949

Victor Grünbaum (1903-1980) studied at the State Vocational School of Structural Engineering and the Academy of Fine Arts in Vienna. He then worked in the same city for the architects Melcher and Steiner (1925-1932). He emigrated to America in 1938, and in 1939 he and Elsie Krummeck founded the New York based partnership Gruenbaum and Krummeck, and designed various store interiors together. They met the entrepreneur Walter Kirschner in 1940, and went on to design the Grayson chain of stores for him. In 1944, after gaining American citizenship, Grünbaum changed his name to Gruen, and in 1951 opened the office of Victor Gruen Associates in Los Angeles. With the Milliron's Department Store in Los Angeles (1946-1949), he created a first by using the roof for parking. He designed shopping centers outside the cities, his projects including the Northland Shopping Center near Detroit (1954) and the Southdale Shopping Center in Edina, Minnesota (1952-1956). The concept of enclosed shopping centers, or malls, situated away from the cities was a new one, and grew out of increasing suburbanization. Gruen's office was also responsible for numerous other urban planning projects for the revitalization of city centers. In 1955 he produced a design for the city center of Forth Worth in Texas. He presented his ideas on conurbations and city centers in a 1964 publication, *The Heart of our Cities. The Urban Crisis: Diagnosis and Cure*. Gruen returned to Austria in 1971, and worked on a city development plan for Vienna, which included the conversion of Kärntner Strasse (a major shopping street) into a pedestrian zone (1971-1973).

drive up
ENTRANCE

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drive up

Guimard Hector

"That which is avoided overall, without exception, is everything that is parallel and symmetrical. Nature is the greatest builder – and yet she creates nothing that is parallel or symmetrical."

▾ Métro station, Paris, 1900

▸ Coilliot residence, Lille, France, 1898–1900

Hector Guimard (1867–1942) studied at the École des Arts Décoratifs in Paris from 1882–1885, and afterwards at the École des Beaux-Arts. His first commission, in 1886, was a café on the Quai d'Auteil in Paris. He achieved greater acclaim for the Castel Béranger in Paris (1894–1898), an apartment block for 36 tenants. Guimard placed a surprising asymmetrical metalwork gate at the main entrance to the complex, partly historicizing the building. He met the architect Victor Horta on a visit to Belgium in 1895, and his impressions from this journey created an affiliation with Art Nouveau. The Coilliot residence in Lille, France (1898–1900), the Canivet residence in Garches (1898–1899) and Castel Henriette in Sèvres, France (1899–1900) followed and in 1900 the entrances and additions to Paris Métro stations: metal arches with vegetative motifs and railings with prefabricated ornamental masks. For the auditorium of the Humbert de Romans Building in Paris (1902), Guimard used a construction of tree-like branched iron supports that – placed on stone plinths – supported the central cupola. One major innovation after the First World War was his use of tubular eternite elements for a country house that he had Henri Sauvage design. Guimard ended his days in New York.

Gwathmey Siegel & Associates

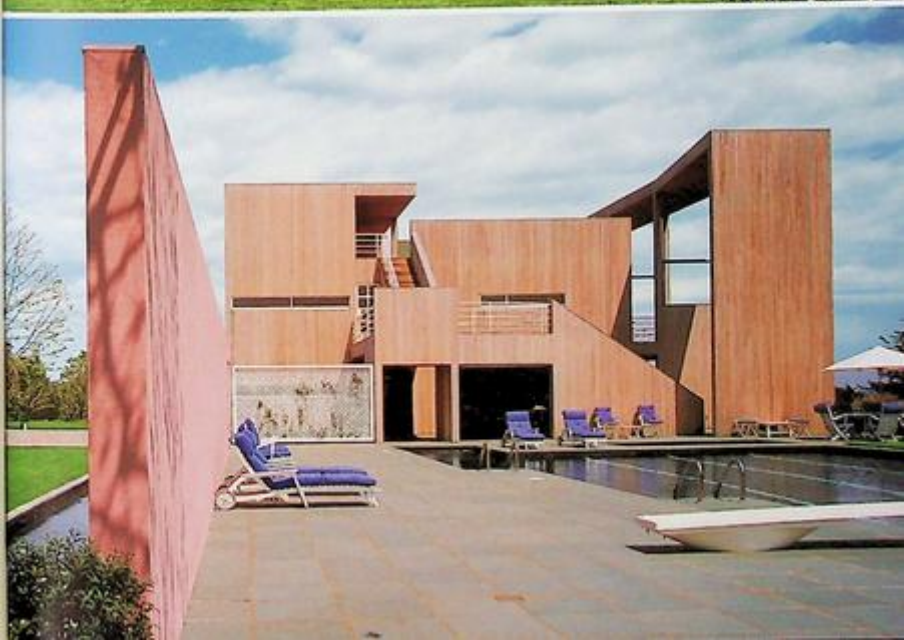
"Architecture is only as static as our perception."

▼ Villa Haupt, Amagansett, New York, 1976-1978

► Gwathmey Villa and Studio, Amagansett, New York, 1965-1967

◄ Villa de Menil, East Hampton, New York, 1979-1983

Charles Gwathmey (1938–2009) studied between 1956 and 1959 at the University of Pennsylvania and in 1962 graduated as a Master of Architecture from Yale. He lectured at Princeton, Yale; at Columbia University; and at the University of Texas. In 1968, he formed the office of Gwathmey Siegel & Associates in New York, together with Robert Siegel (born in 1939) who had studied at the Pratt Institute and Harvard University. Gwathmey is one of the "Five Architects", also known as "The Whites" because of their white façades; their work was collectively exhibited at the Museum of Modern Art in New York in 1969. Their style was directed towards that of the classical modernists, examples being the villas of Le Corbusier and Italian rationalism. The Villa Haupt in Amagansett in New York (1976–1978) is accessed via a ramp and is encased in smooth, white-stained cedar wood. Various large, frameless windows are set into the smooth façade of the building and there is a swimming pool on the south side. The asymmetric arrangement of the windows and individual, circular design elements form a counterbalance to the rigidity of the cubic form of the building. Gwathmey Siegel also built the Villa de Menil in East Hampton, New York (1979–1983), in which the architectural elements form less of an enclosed inner room but instead define various zones with frameworks that shoot out over the building itself. These are more restrained than the living areas inside. At the Villa San Onofre in Pacific Palisades, California (1993–1997) there is a contrast between the raw, limestone walls and the natural, whitewashed color of the sections of the façade. The extension to the Guggenheim Museum in New York (1982–1992), which is a right-angled building made of limestone, was directly attached to the curved building of Frank Lloyd Wright by means of a section of glass.

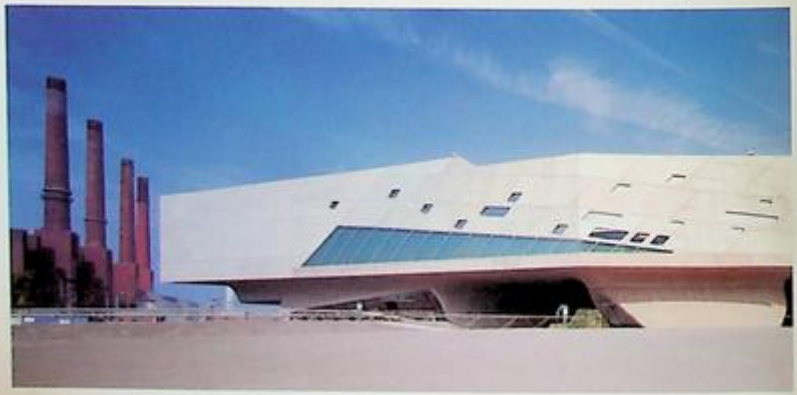


Hadid Zaha

▾ Phaeno Science Center, Wolfsburg, 1999–2005

▸ Moonsoon Bar, Sapporo, Japan, 1989–1990

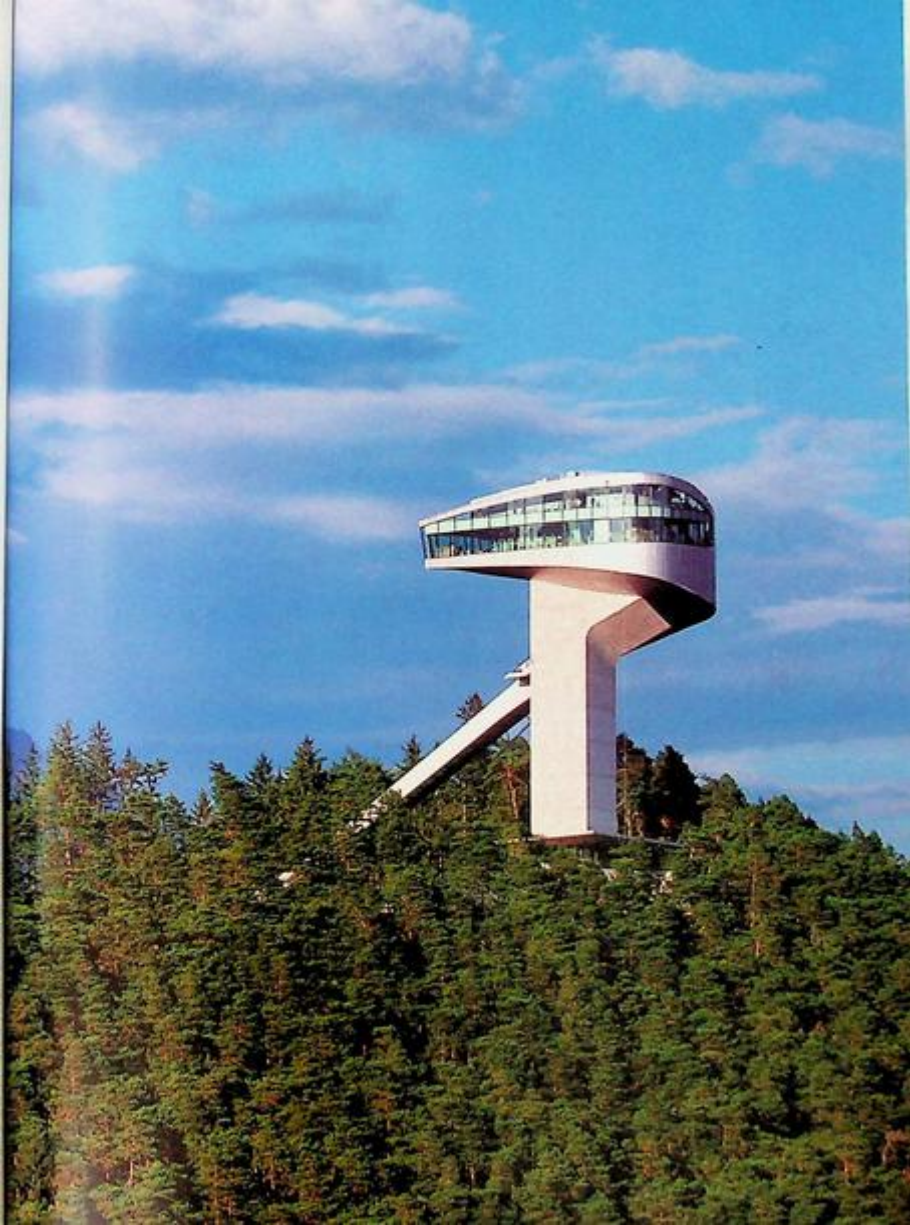
Zaha Mohammad Hadid (1950–2016) graduated in mathematics before studying at the Architectural Association in London, where she gained her diploma in 1977. She afterwards worked alongside Elia Zenghelis and Rem Koolhaas in the Office for Metropolitan Architecture and also taught at the Architectural Association. Other teaching work followed at Harvard University in Cambridge, Massachusetts; Chicago University; Columbia University in New York; and the Hochschule für Bildende Künste in Hamburg. Hadid became famous for her designs, which she presented in dynamically structured, elaborate drawings. Her works were displayed at the exhibition *Deconstructivist Architecture* in the Museum of Modern Art in New York in 1988, alongside the projects of six other architects. Asymmetrical lines, curved ground plans and oblique planes are characteristic features of her architectural style, which is very explosive. Designs that have not been realized include her competition entry for The Peak in Hong Kong (1983); the opera house in Cardiff, Wales (1994); a habitable bridge in London (1996); and a concert hall in Luxembourg (1997). Starting in 1979, Hadid ran her own, London-based practice; the first building she completed independently was a fire station for the Vitra company in Weil am Rhein, Germany (1990–1993). On one side of the reinforced concrete building a frameless row of adjacent windows is inset, with the offices radiating outwards. For the time being, the building is used for exhibition purposes, as fundamental legal conditions for working fire services have changed. Hadid used angular, cold furniture made of glass, steel and leather for the interior furnishings of the Moonsoon Bar in Sapporo, Japan (1989–1990). The floor and pillars are made of marble, while the massive steel structure beneath the ceiling is reminiscent of a coiled snake. Her realized works also include a social housing block,



which she built within the framework of the International Exhibition in Berlin (1986–1993), and the design for the exhibition *The Great Utopia* at the Guggenheim Museum in New York (1992). The new building for the Bergisel Ski Jump near Innsbruck, Austria (1999–2002) integrates in a practical way the tower, approach, ski-jump table, and landing run into a coherently designed construction. In 2003, the Modern Art Center in Cincinnati, Ohio, was completed. Primarily, the building was designed for alternating exhibitions; it also contains rooms for educational purposes at the museum, as well as offices. On the ground floor, it opens out onto the street through glass walls. The Spittelauer Lände housing scheme in Vienna (1994–2004) took a long time to complete. Fifteen luxury apartments share air space above the existing suburban railway arches in a jagged building sculpture, which is convincingly formal. An extension was built at the Ordrupgaard Museum in Copenhagen (2001–2005), which links the old building to the surrounding garden. It seems as if the concrete exterior has been folded and provided with windows at the sides. Inside, an exhibition landscape stretches across the room, reflecting the undulating garden. In 2005, Hadid realized the Phaeno Science Center in Wolfsburg, which essentially comprises an elevated hall made of exposed concrete. She also created the central building for the BMW Factory in Leipzig (2002–2005), whose open design enables visitors and office workers alike to view the ongoing production processes inside.

▼ Spittelauer Lände housing scheme, Vienna, 1994–2004

▶ Bergisel Ski Jump, Innsbruck, 1999 – 2002



Haerdtl Oswald

"A contemporary architect must possess an inner commitment to design something new from their own creative intuition, which reflects the habits, the technical achievements and the progress of civilization."

▼ Austrian pavilion, World Fair, Paris, 1937

► Felten & Guilleaume fair pavilion, Vienna, 1953

Oswald Haerdtl (1899–1959) studied at the Kunstgewerbeschule (1919–1921) in Vienna; afterwards, he first worked as an assistant in the offices of Josef Hoffmann and later as a partner. Among his main works dating from the inter-war years are a semi-detached house for the Wien-Lainz housing scheme (1931–1932), the layout of the Altmann & Kühne Café in Vienna, and the pavilions at the World Fairs in Brussels (1935) and Paris (1937), apart from many exhibition displays: for example, the presentation of the Austrian housing scheme at the 1930 Exhibition in Vienna. Haerdtl designed the Austrian pavilion in Paris like an oversized glass case. An enormous window frame gives an uninterrupted view over a panoramic alpine scene inside. In the immediate post-war years he completed the interior furnishings of the Café Arabia on the Kohlmarkt in Vienna (1950); in a break with tradition, curtains protect the café from the street, its glass façade providing a glimpse into the vibrant interior. The ceiling painting with its curved shapes also became an important element of style for Haerdtl in his subsequent designs. He devoted himself to the design of furnishings and utensils with the same intensity he felt for architecture. Apart from fitted furniture for the Café Arabia, he also designed kitchenware, menus and two different types of chair, while his wife designed the waiters' clothing. In 1953, he completed the Felten & Guilleaume pavilion for entry into the industrial company section of the Vienna autumn trade fair. Six supports made of reinforced concrete bear an elongated, almost completely glazed structure. The company's name was erected in large letters over the whole width of the front edge of the façade; the extensive painted logo on the ceiling was visible from the outside.

The Historische Museum der Stadt Wien (Vienna History Museum) (1953–1959) was built as a reinforced concrete construction with parapet surfaces bedded out in mortar. Four types of stone, mainly of Austrian origin, cover the extremely plain building. His plans for the development of a forecourt as a park, so that the museum could be integrated in terms of urban development, were turned down by the municipal authorities. Haerdtl also encouraged the continuity of the modern trend in Vienna in his capacity as a teacher (1935–1959).

FELTEN & GUILLEAUME
F&G

Haller Fritz

▼ Schärer residence, Münsingen, Switzerland, 1969

► USM facility, Münsingen, Switzerland, first building stage, 1963

Following on from his apprenticeship (1941–1943), Fritz Haller (1924–2012) spent several years working in various architectural studios in Switzerland and also joined Willem van Tijen and Hugh Maaskant in Rotterdam for a time. Haller opened his own studio in Solothurn in 1949, his father working with him until 1962. From 1966 to 1971, he was guest lecturer at the Konrad Wachsmann Building Research Institute at the University of Southern California, and was later appointed a full professor at the University of Karlsruhe (1977–1992). As well as realizing a number of buildings, Haller was deeply involved in the development of modular systems and in research. A great number of his buildings were made using one of the three steel construction systems he developed (MAXI, MIDI and MINI), which are now sold all over the world by USM Ulrich Scharer Söhne AG of Münsingen. The MAXI steel construction system (1961) is designed for the construction of single-storey halls with wide distances between the supports, and was used for the USM facility in Münsigen (first building stage, 1963). The Löwenberg Training Centre in Murten (1980–1982), which is based on the MIDI steel construction system, consists of two flat buildings with a rectangular layout and two cylindrical living pavilions. Much of the construction is glass and the interior is open-plan. In the Kantonsschule (canton school) in Baden (1962–1964), the supporting frame is a specially designed steel construction. The closed walls are clinker-lined. The mostly glass, square, main building looks over its neighbours, which surround it on three sides; there is a fountain on the fourth side, which is open. The basement of the Schärer residence in Münsingen (1969) is built into the mountainside. A steel frame connects it to the top floor; the ground floor is used for parking and the entrance area.

Harrison and Abramovitz

▼ Hall of Science, World Exhibition, New York, 1964

► Headquarters, United Nations, New York, 1947-1953

►► Cultural Education Center, Governor Nelson A. Rockefeller Empire State Plaza (South Mall), Albany, New York, 1963-1978

Wallace Kirkman Harrison (1895-1981) was self-taught, and from 1916 gained practical experience working for McKim, Mead & White and in the offices of Harvey Wiley Corbett. He was in partnership with the latter and William H. MacMurray from 1929 to 1934. They collaborated with other companies (Reinhard & Hofmeister, Hood & Fouilhoux) on the construction of the Rockefeller Center in New York (1929-1933). In 1936 Harrison and his then partner André Fouilhoux created the Rockefeller Apartments in New York, whose free layout and façade included vertical sections of varying height, some rectangular, others very rounded. Glass was used for the balustrade on the roof balconies. Harrison worked with Max Abramovitz (1941-1976), although Fouilhoux remained a partner in the company until his death in 1945. Max Abramovitz (1908-2004) studied at the University of Illinois in Chicago, Columbia University in New York and the École des Beaux-Arts in Paris. Abramovitz and Harrison co-operated with Le Corbusier and Oscar Niemeyer on the United Nations Building in New York (1947-1953), and were also involved in the creation of the Lincoln Center for the Performing Arts in New York (1959-1966), for which Abramovitz designed the Philharmonic Hall, now the Avery Fisher Hall (1959-1962). Harrison designed the Metropolitan Opera House (1962-1966): the front of the tall flat-roofed building is broken by five symmetrical arches, the lower quarter of which is filled by doors; the upper part is glazed, with the glazing reaching far back into the façade. Other projects are the concrete-constructed Assembly Hall at the University of Illinois in Champaign (1959-1963), the shape and grooved roof of which are like a shell, and the USX (United States Steel Building) Tower in Pittsburgh, Pennsylvania (1967-1971), a skyscraper with an open steel construction, whose supports are filled with water to protect the building against fire and regulate the temperature. Because of the extensive planning work for the Governor Nelson A. Rockefeller Empire State Plaza (South Mall), the new government complex in Albany, New York State (1963-1978), Abramovitz was frequently obliged to be absent from the office, which ultimately led to Harrison terminating the partnership.

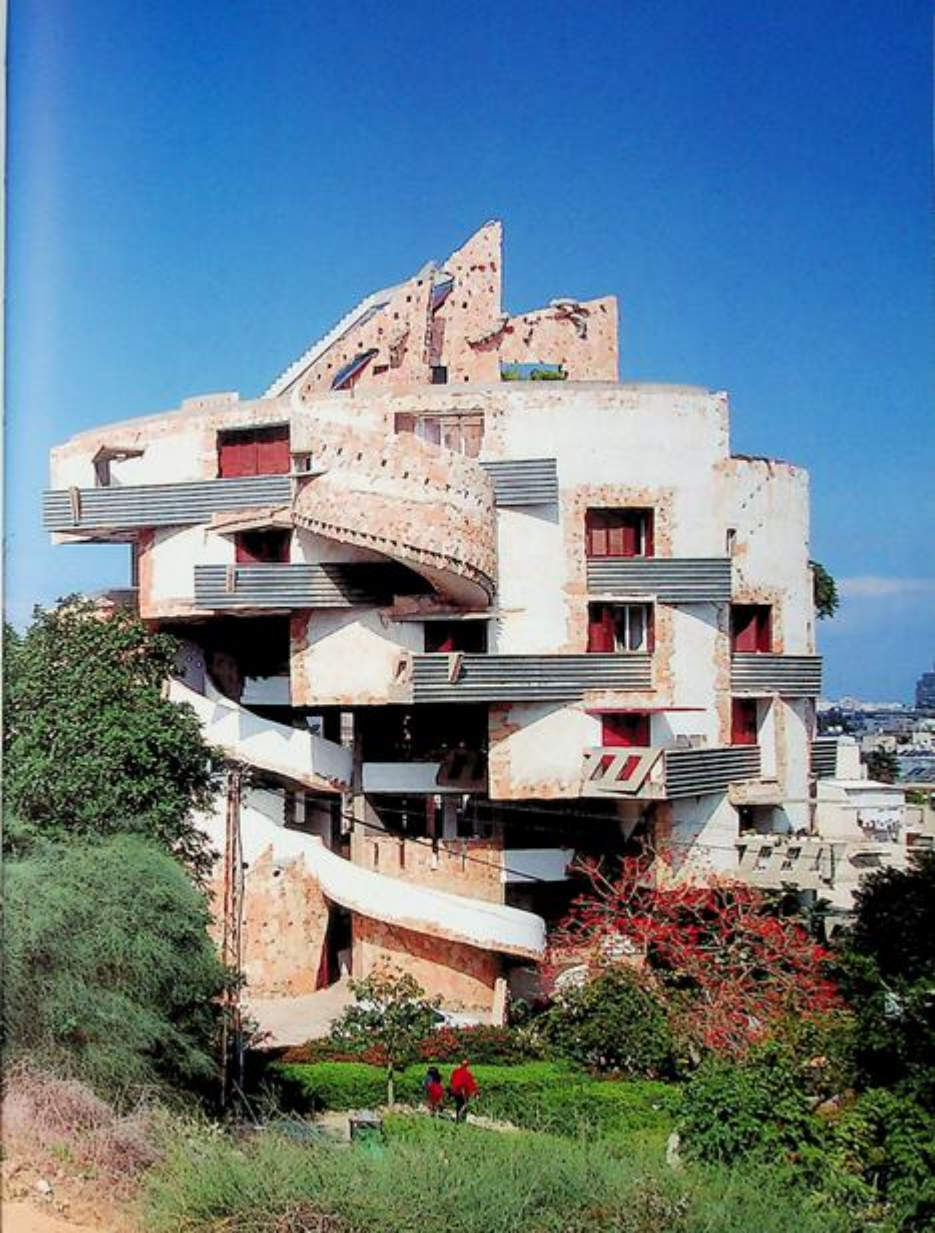
Hecker Zvi

"Architecture is an art in perpetual search of a fresh expression for the human soul. It is a human art, but never human enough."

▼ Technion, Haifa, Israel, 1964-1967

► Apartment block, Ramat Gan, Israel, 1981-1986

At the end of his architectural studies at the Polytechnic University in Kraków and at the Israeli Technology Institute (Technion) in Haifa, Zvi Hecker (born in 1931) attended the Avni Academy of Art in Tel Aviv-Yafo between 1955 and 1957, where he studied painting. In 1959 he became self-employed and worked for some years with Eldar Sharon and Alfred Neumann. His projects include the laboratory building of the Technion in Haifa, Israel (1964–1967), the Ramat Hasharon residential and business complex (1986) and the spiral apartment block in Ramat Gan, Israel (1981–1986). The latter has a round ground plan, projecting, pointed balconies and external, spiral staircases. The façades are white plastered and in places covered with natural stone tiles, decorated with mosaics. In the 1990s, the Heinz-Galinski School was completed in Berlin (1992–1995), a building for which Hecker developed complex forms by overlaying different formal elements. Various facing materials such as corrugated iron and concrete emphasize this polymorphism. Colorful window frames develop playful details. It is only on observation of the ground plan that it becomes apparent how shining an example of design and associated ordering this is. The Palmach Museum of History in Tel Aviv-Yafo (1992–1998) rises like a hill in the city. Parallels and intersecting rails make up the basic form. The façades consist of fair-faced concrete and limestone layers pressed into the mortar. Not far from the site of the synagogue destroyed in 1938, Hecker designed the Jewish Community Center in Duisburg, Germany (1997–1999). The concrete pillars and struts projecting from the building like fans are reminiscent of an open book when viewed from above. The symbolism refers to the Jewish traditions of the place and at the same time manifests the breaks with tradition that have occurred here. Hecker's expansive forms also relate to the surrounding park in which a Garden of Remembrance has been created by Dani Karavan.

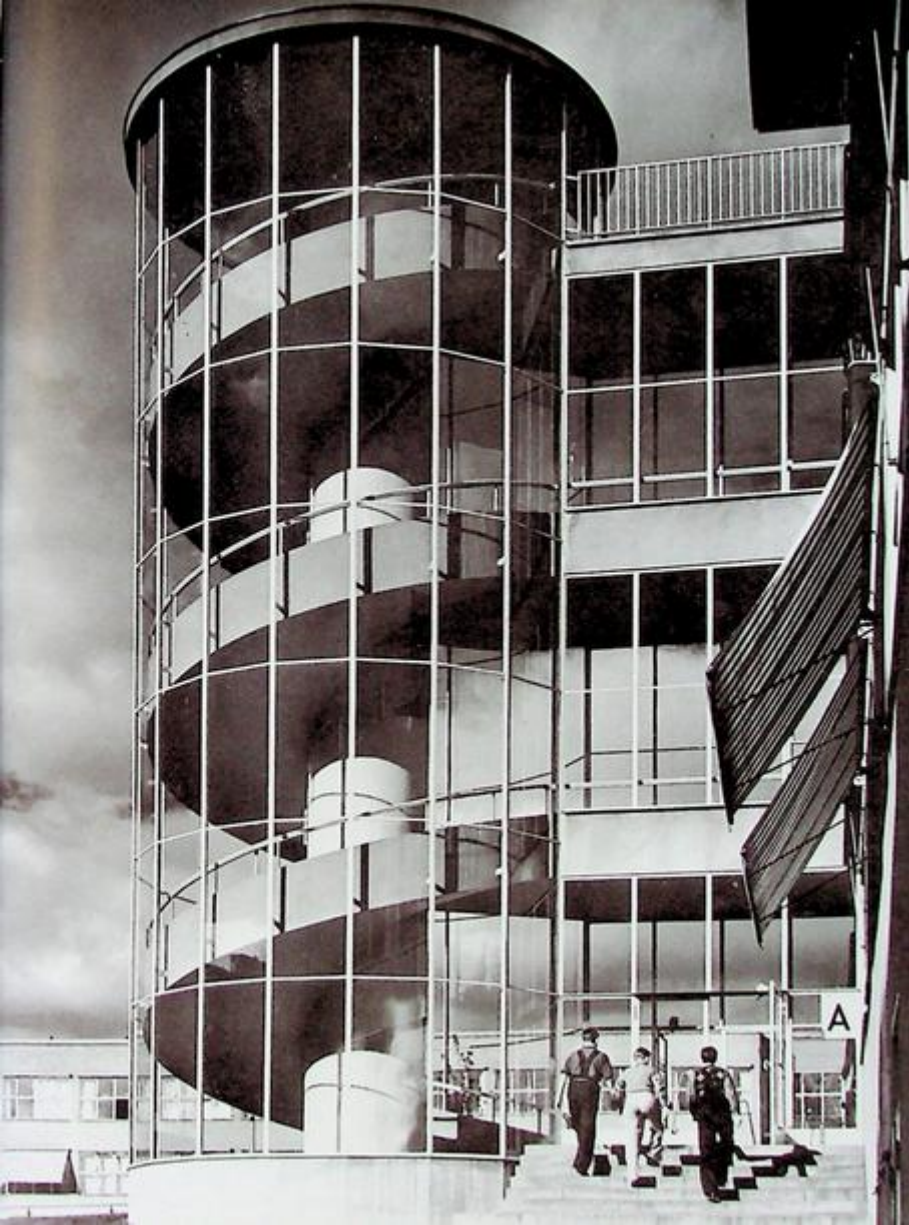


Hedqvist Paul

▼ Drottningholm Water Works, Sweden, 1931-1933

► Stockholm Municipal Vocational School, 1936

Paul Hedqvist (1895–1977) studied first in Stockholm, then won a scholarship to study abroad. He opened his own practice in 1924, and also worked at the Stockholm town planning offices (1924–1928). Hedqvist was a committed functionalist, and he managed to win numerous public contracts in a political era that favored this style. His constructions in steel, glass and white plaster with evenly rhythmic façades made him one of the leading representatives of the International Style in Sweden. He was best known for his schools, which included the Katarina School in Stockholm (1929–1931, with David Dahl). He also built a Water Works in Drottningholm, Sweden (1931–1933) and the Municipal Swimming Baths in Eskilstuna, Sweden (1930–1931), which are notable for their modern glass grid façade, while the clear lines continue through to the design of the diving platforms inside. Hedqvist's residential buildings include a group of small terraced houses in Bromma near Stockholm (1932–1933), which were staggered to give the gardens more privacy and became very well known when the then prime minister moved into one. These were followed in quick succession by the Stockholm Municipal Vocational School (1936), accessed via a round, glazed stairwell tower; Bromma Airport near Stockholm (1935–1936); and the Vanadis open-air swimming pool in Stockholm (1938). Hedqvist's post-Second World War constructions included a multi-story block for the Stockholm Tax Office (1959).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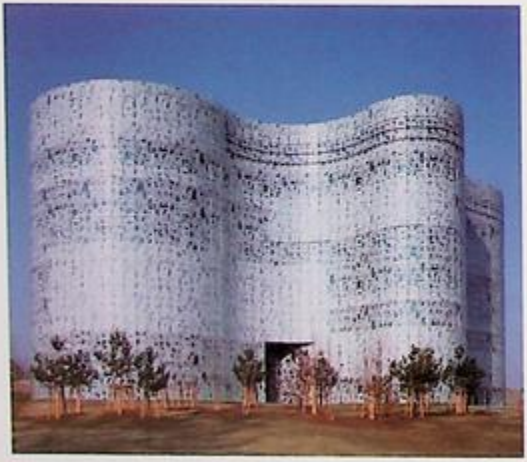
Herzog & de Meuron

▼ House, Leymen, France, 1996–1997

► Dominus Winery, Yountville, California, 1995–1998

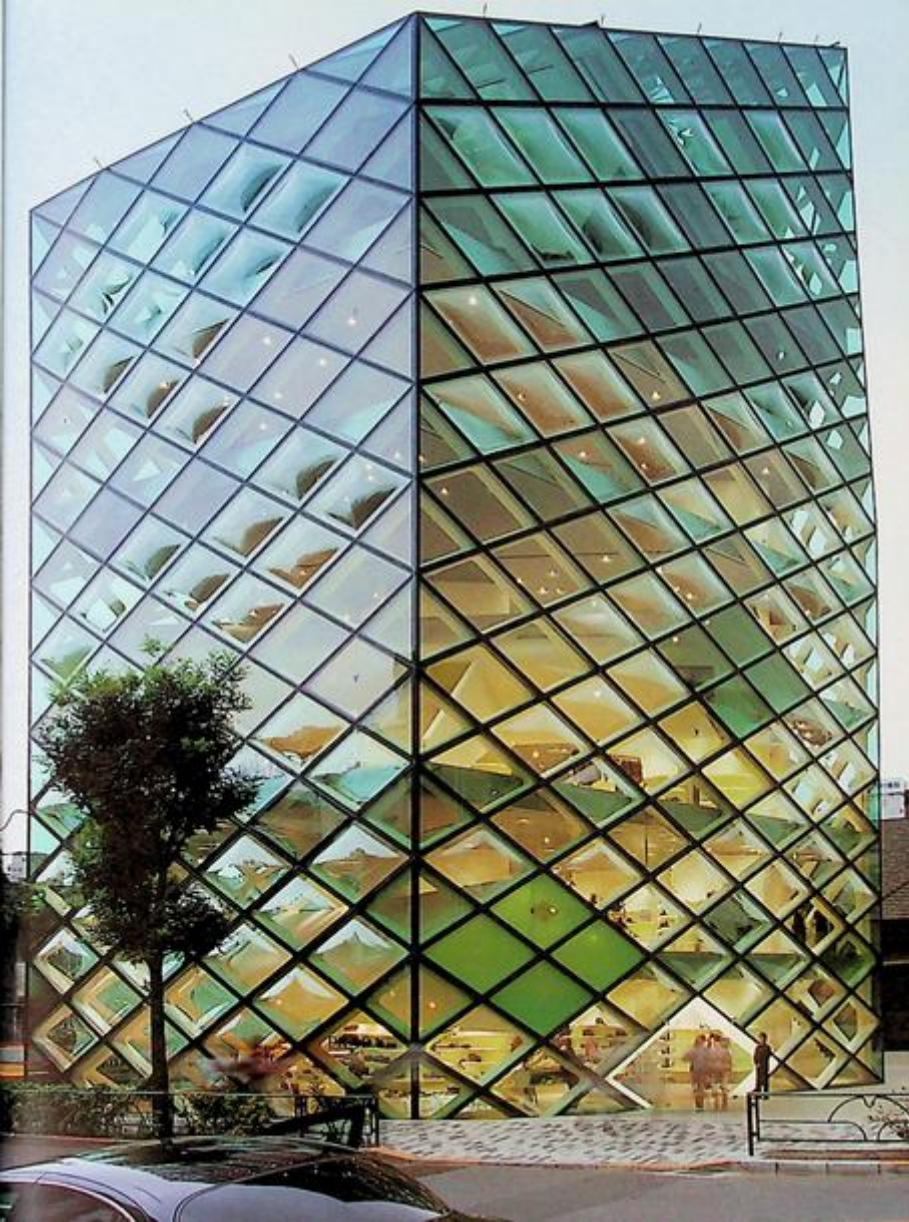
Jacques Herzog (born in 1950) and Pierre de Meuron (born in 1950) both studied architecture at ETH (the Swiss Federal Institute of Technology) in Zurich, training under Aldo Rossi. In 1978, they established the Herzog and de Meuron practice. Harry Gugger (1991) and Christine Binswanger (1994) joined them as partners, followed by Robert Hösl and Ascan Mergenthaler (both in 2004) and Stefan Marbach (2006). Jacques Herzog and Pierre de Meuron worked from 1994 as guest professors at Harvard University in Cambridge, Massachusetts. Since 1999, they have been professors of architecture at ETH Zurich. Together with Roger Diener and Marcel Meili, Jacques Herzog and Pierre de Meuron head the architecture department at the ETH Studio Basle and, in 2002, founded the Contemporary City Institute there. The practice has collaborated with international artists on many projects. Examples are its work with Thomas Ruff (Library of the Eberswalde Technical School) and Rémy Zaugg (Fünf Höfe/five courtyards for Munich city center). In the production and warehouse building of the Ricola company at Mulhouse-Brunstatt, France (1992–1993) and the Library of the Technical

School in Eberswalde, Germany (1994–1999), relationships between interior and exterior are redefined by the use of extensive silkscreen-printed glass. The Auf dem Wolf Signal Box in Basle – a railway utility building (1992–1994) – was followed between 1994 and 1999 by the Central Signal Box, a building that to some extent pursues and expands on the basic principles of its predecessor: a copper wire outer wrapping, the copper wire being partially twisted to allow light inside. The trapezoidal ground plan, which is determined by the proportions of the plot, expands on the 7th floor into a rectangle. Between 1995 and 1998, Herzog & de Meuron designed and built the Dominus Winery cellars in Yountville, California: a long, low structure made from greenish-grey basalt. Basalt stones in wire mesh gabions offer shelter from the sun. The conversion of Bankside Power Station on the Thames into London's Tate Modern (1994–2000) revitalized this industrial ruin and an entire section of the city. The brick façade, former turbine hall and chimney remain largely unaltered. The motif of the glass penthouse, which is known as the "lightbeam" and which houses a café-restaurant on its upper level, is repeated in the multi-story main hall. At the Prada Aoyama Epicentre in Tokyo, Japan (2000–2003), the lattice-effect glazed façades are not just there to create an optical illusion but are actively incorporated into the static design of the body of the building. In conjunction with the vertical service core, it supports the various floors. At the Information, Communication and Media Center of the Technical University of Cottbus, Germany (1998–2004), the double glass façade printed with stylised graffiti encircles an open-plan interior in line with the functional needs of the building. Looking self-contained but at the same time welcoming, the building is in an undistinguished urban situation. The building created for the World Cultural Forum, which took place for the first time in Barcelona in 2004, takes on the same kind of identity-establishing function in a central position in a district of the city that was newly developed after the Olympics. The triangular, deeply cleft top floor sits over an open-plan ground floor from which the underground auditorium is also reached. In 2005, the Allianz Arena stadium building was completed in Munich. Its white façade of inflated air cushions can be illuminated in various colors.



◂ Information, Communication and Media Centre, TU Cottbus, Germany, 1998–2004, ground plans

▸ Prada Aoyama Epicentre, Tokyo, 2000–2003



Hoffmann Josef

▼ Sanatorium in Purkersdorf, Austria, 1904

▶ Bergerhöhe country house, Hohenberg, Austria, 1899

After attending the State Vocational School in Brünn, Josef Hoffmann (1870–1956) worked for the military planning authority in Würzburg. He went to Vienna in 1892, and studied under Carl von Hasenauer and Otto Wagner at the Academy of Fine Arts. Winning the Prix de Rome enabled him to spend a long period of time in Italy. Once he returned home, he joined the practice of Otto Wagner, where he met Joseph Maria Olbrich. They and various other artists founded the Club of Seven in 1895, and in 1897 the Association of Austrian Artists, also known as the Secession, although Hoffmann left it in 1905 with the Klimt group. In 1899 he was appointed a professor at the University of Applied Art in Vienna, and created a room at the Paris World Exhibition of 1900. His models were initially Charles Robert Ashbee and Charles Rennie Mackintosh, and he adopted numerous motifs from their works. From then on, interior design formed a major part of his oeuvre, and his contacts with wealthy members of the middle classes enabled him to create the appropriate interiors against a backdrop of tasteful refinement. These perfect indoor settings, which in fact restricted their occupants more than anything else, inspired Hoffmann's adversary Adolf Loos to write his "Story of the Poor Rich Man", who became the victim of his own design culture. Hoffmann was finally able to work architecturally, beyond simply furnishing the interior, on several houses on the Hohe Warte – including the semi-detached house for Koloman Moser and Carl Moll (1900–1901) and the Spitzer House

(1901–1902). Together with the artist Koloman Moser and the industrialist Fritz Wärndorfer, he founded the Vienna Workshops, for which he designed countless items of furniture and consumer goods that were characterized by simple shapes, minimal decoration and geometric patterning. He constructed the sanatorium in Purkersdorf, Austria (1904), his first major building project, as a plain, elongated building, carefully proportioned with symmetrically placed windows and – surprising for the time – a flat roof. A little later, Hoffmann created one of the highlights of the sophisticated Art Nouveau era, Palais Stoclet in Brussels (1905–1911), with lavish interiors and artistic mosaics by Gustav Klimt. The villa also displays its wealth on the outside: gilt metal bands surround the white marble cladding, and the overall architecture becomes the enveloping framework to an exuberant interior. The furnishing of the Fledermaus Cabaret in Vienna (1907) was another Gesamtkunstwerk, which replaced the traditional plush interior with graphic colorfulness. The way led through the bar room, which was decorated with colorful tiles, some with figure designs, into the cellar (performance) room, all in black and white, with individual groups of chairs and tables. In 1912 Hoffmann was involved in the foundation of the Austrian Work Federation (Werkbund). After that he was more orientated towards Neo-classicism, which is evident in the columned front of the Villa Skywa-Primavesi in Vienna (1913–1915) and the Austria House at the exhibition of the German Work Federation in Cologne (1914). Hoffmann was not so committed to the new architectural departure of the 1920s; his designs for the Vienna Workshops followed the more playful Art Deco style. Hoffmann's contribution to Vienna's building program after the First World War was the Klosehof estate (1923–1925), where he complemented the block buildings with a residential tower in the courtyard. He built four terraced houses for the 1932 Work Federation exhibition in Vienna, in which he alternated tower-like stairwells with cubic structures. It was a brief excursion into a functionalist orientation, because for the Venice Biennale of 1934 Hoffmann designed a strictly Neo-classical building that was more in keeping with the prevailing spirit of the time.

◄ ► Palais Stoclet, Brussels, 1905–1911

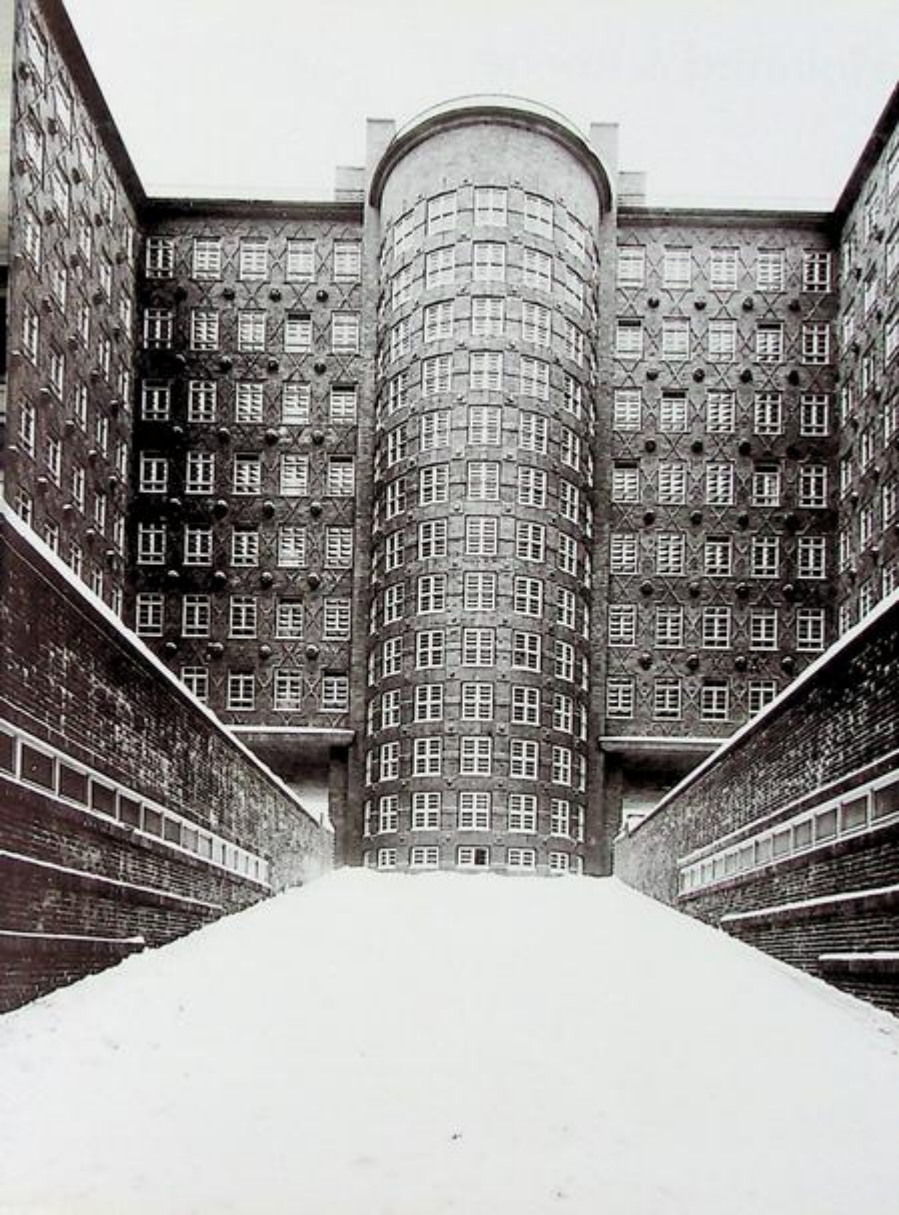
Höger Fritz

▼ Chilehaus, Hamburg, 1922–1924

► Sprinkenhof office building, Hamburg, 1927–1943, with Hans and Oskar Gerson

After completing an apprenticeship in bricklaying and carpentry, Fritz Höger (1877–1949) attended the building trade school in Hamburg (1897–1899). He set up his own practice after a period of employment in the offices of Lundt & Kallmorgen and Fritz Oldenburg. He is one of the representatives of German Expressionism, whose material of choice was brick. The layout of the Chilehaus in Hamburg (1922–1924) is largely prescribed by the course of the road. This staggered office building with a clinker façade tapers off dramatically on the east side. As in his other works, the artistic and decorative use of (usually dark) bricks determines the appearance of the elevations and provides a balance to the solidity of the building structures. This also applies in the case of the extension of the Reemtsma Cigarette Factory, formerly Haus Neuerburg, in Hamburg (1926–1929); the Tower of the Hannoversche Anzeiger in Hanover (1927–1928); and the Town Hall in Wilhelmshaven-Rüstringen (1927–1929). The Sprinkenhof office building in Hamburg (1927–1943) was constructed in collaboration with Hans and Oskar Gerson; it is decorated with lozenge-shaped brick ribbons, some with gold glazing, with colorful buttons in the centers. Although the church on Berlin's Hohenzollerndamm (1930–1933) is more severe in appearance, the details are similar. From 1934 to 1936, Höger was a professor at the Northern Art College in Bremen; although he joined the NSDAP he never received any state or party commissions.

"On the outside, the building is made naturally in clinker with some use of gold brick. The simplicity and excellent proportions of the whole are also evident on the exterior."



Holabird & Roche

"These early architects of Chicago did not belong to a particular school: they simply built what was asked of them. The new generation of architects, however, who were university educated and artistically ambitious, were ready and waiting in the wings."

▼ Marquette Building, Chicago, 1891-1895

▶ Stevens Hotel, Chicago, 1927

In the early 1880s, William Holabird (1854–1923), who had trained in the architectural practice of William LeBaron Jenney, and Martin Roche (1855–1927) co-founded a firm in Chicago. To begin with, they were both involved in designing private homes and villas, until they achieved their breakthrough with the Tacoma Building: a 13-storey business and commercial block in Chicago (1887–1889). They subsequently designed numerous multi-storey business and commercial buildings on the principle of steel frame construction. In addition the firm developed improvements in construction techniques, such as diagonal wind bracing and riveted scaffolding. With its wide, glazed windows and general lack of ornamentation, the Marquette Building (1891–1985) followed Louis Sullivan's recommendations for skyscraper construction. With the McClurg Building (1899–1900), Holabird & Roche designed the façade by simply making use of the differences and proportions of the construction features. The load-bearing and non-load-bearing parts are clearly distinguishable from each other. The structural relationship between supports, balconies and mullions is revealed through breaks in the subordinate parts. The firm also took on many commissions for well-known projects in the following years, such as the Stevens Hotel, which opened in 1927. Holabird & Roche were among the most influential representatives of the early Chicago School. During the 45 years of their professional collaboration, Holabird & Roche created over 72 buildings in the centre of Chicago, thus defining the cityscape in a significant way.

Holabird & Root

▼ General Exhibits Building, "A Century of Progress" World Fair, Chicago, 1933

► 333 North Michigan Avenue, Chicago, 1927–1928

John Augur Holabird (1886–1945) and John Wellborn Root (1887–1963) took over the Chicago business Holabird & Roche in 1928, after both senior partners had died. John A. Holabird, the son of the company's founder, traveled to Europe to study architecture after he had completed his engineering training (1907). He met John W. Root at the École des Beaux-Arts in Paris; he was the son of John Root of Burnham & Root and had completed his studies in architecture at Cornell University in 1909. When they returned to the United States, they both worked at Holabird & Roche. The 26-storey Daily News Building in Chicago (1925–1929) houses the production rooms and offices of the newspaper business. By using low side wings to the north and south of the building, a square bordering the Chicago River was created. With its height and simple elegance, the building at 333 North Michigan Avenue (1927–1928) forms a dominant feature as regards urban development, just like the Chicago Board of Trade Building (1928–1930), which at that time was the highest in the city with its 45 storeys surmounted by a 10-metre-high aluminium statue. Holabird & Root also realized the two-storey exhibition building for Chrysler, and the Travel and Transportation Building for the 1933 World Fair, "A Century of Progress", in Chicago. The Travel and Transportation Building created a support-free exhibition space with a diameter of 60 metres, its cupola construction, which consisted of twelve steel towers and a roof supported by steel cables, creating a sacred effect. In 1945, with the agreement of Joseph Z. Burgee, the office changed its name to Holabird, Root & Burgee (with William H. Holabird III). From 1957 onwards, the company traded under the name of Holabird & Root once more.

Holl Steven

St. Ignatius Chapel, Seattle,
1995-1997

Steven Holl (born in 1947) studied at the University of Washington and the Architectural Association in London until 1976 before opening his own studio in New York. After teaching at the universities in Washington and Pennsylvania, Holl became a professor at Columbia University, New York in 1981. His early works include the Hybrid Building in Seaside, Florida (1988), an experimental residential construction in Fukuoka, Japan (1989-1991) and the Stretto House in Dallas, Texas (1990-1992). Playing with the different ways light falls in and on a building is typical of his work; it is used to particularly striking effect in the offices of the Shaw Real Estate Agency in New York (1991-1992). Cleverly positioned, pigmented surfaces color the light that penetrates the economical openings in the cube-shaped entrance area. In 1994, Holl collaborated with artist Vito Acconci for the design of the window- and door-less façade of the gallery Art & Architecture in New York (1992-1993). The façade is opened by means of differently sized panels that tilt vertically and horizontally. He also created the Chapel of St. Ignatius in Seattle, Washington (1995-1997) and the Kiasma Museum of Contemporary Art in Helsinki (1993-1998), an unusual design resulting from the penetration of two structures, one strictly orthogonal and one with a rounded outer wall. The offices on Sarphatisstraat in Amsterdam (1996-2000) were added to an existing brick building that dates back to the nineteenth century. The façade is clad in perforated copper and presents a charming contrast to the old building. Inside, the perforated pattern is continued in the design of the walls. Window openings are partly covered by the permeable copper sheet; some of the windows have colored panes. The Bellevue Art Museum in Washington was realized between 1997 and 2001. Here, Holl has designed a building with exhibition areas on three levels. The bright red of the façades is interrupted by deep incisions. Although the structure of the student halls of residence at Simmons Hall in Cambridge, Massachusetts (1999-2002), the result of a long design process and called the "Sponge", was retained visually, the functional core was vitiated by various safety requirements; this meant that hardly any of the areas required for informal encounters were left.

"Ideas, not shapes or styles, are the most promising heritage of 20th-century architecture."

Hollein Hans

"Form does not follow function. Form does not happen by itself. Whether to design a building as a cube, a pyramid or a sphere is the biggest decision we make. Form in architecture is the form determined and constructed by the individual."

Retti Candle Shop, Vienna, 1964–1965

Hans Hollein (1934–2014) first studied in Vienna at the Federal Academy. Until 1956 he was studying at the Academy of Fine Arts, under Clemens Holzmeister, before continuing his studies at the Illinois Institute of Technology in Chicago. He graduated in architecture from the University of California in Berkeley in 1960. Over the following years, he created a series of visionary color collages in which stone structures and over-sized construction machinery on stilts rise up over the cityscapes of Vienna and New York. The drawings from his collaboration with Walter Pichler also contain approaches towards a new, autonomous architecture. His first practical works were renovations and conversions, such as for the Retti Candle Shop in Vienna (1964–1965). His façades, which are often slender, contrast quite spectacularly with their environment. The eye-catching entrance of the Richard Feigen Gallery in New York (1967–1969), for instance, is a chrome-plated double column on the asymmetric section of the smooth façade. Between 1967 and 1976, Hollein lectured at the State Academy in Düsseldorf. He designed the interior of the main Siemens subsidiary in Munich (1970–1972). The Schullin Jewellery Shop in Vienna was completed in 1974: a "crack" in the external façade that continued to the entrance door proved a visual sensation. Hollein sank a number of structural compartments into a slope to create a complex for the city museum Abteiberg in Mönchengladbach (1972–1982). The interconnecting exhibition areas with open corners not only created a highly exciting series of rooms, but also entirely new functional solutions that were planned down to the smallest detail. Between 1976 and 1978 he realized the main offices for the tourist information center in Vienna, which included amusing touches such as golden palm trees and broken antique columns in a glass-covered pavilion. The same was true of the New York subsidiary of Munich fashion house Ludwig Beck in Trump Tower (1981–1983), but this interior has now been destroyed. In the Museum of Modern Art in Frankfurt, Hessen (1982–1991), a large piece of cake with decoratively placed windows covers the triangular site. The Cathedral of St. Stephen is reflected in the façades of the fan-shaped layout of the Haas Building in Vienna (1985–1990). The interior of this multi-story building with shops, offices and a restaurant is lavishly decorated. The period 1996–2001 saw the construction of the Interbank Building in Lima, Peru; between 1994 and 2002 he created the buildings for the Vulcania theme park at St.-Ours-les-Roches, France. Hollein not only works in architecture, design and art, but also designs exhibitions, including the paper exhibition at the Design Centre in Vienna (1971–1972); "Man Transforms", at the Cooper-Hewitt Museum in New York (1974–1976); and "The Turks before Vienna" (1983) and "Dream and Reality" (1985), both at the Wiener Künstlerhaus.

Hood Raymond

▼ Rex Cole Exhibition Rooms, New York, 1929-1933

► Rockefeller Center, New York, 1931-1940, with Reinhard & Hofmeister, Corbett, Godley, Harrison & MacMurray

Raymond Hood (1881-1934) studied at the Massachusetts Institute of Technology in Cambridge and at the École des Beaux-Arts in Paris. The offices he set up with Frederick A. Godley and Jacques André Fouilhoux (1924-1931) were later run by Hood and Fouilhoux alone. In 1922 Hood and John Mead Howells won the competition to design the Chicago Tribune Tower (1922-1925). The neo-Gothic, steeply vertical building is crowned by a playful top section with little towers and arched windows. Gothic ornamentation in shades of gold were also used on John Mead Howells' 1924 American Radiator Building in New York, most of which was clad with black tiles. Hood's style changed fundamentally over the following period, and the McGraw-Hill Building in New York (1928-1931), designed with Fouilhoux, was presented in 1932 at the exhibition of International Style at the Museum of Modern Art in New York. The simple façade of the horizontally emphasized skyscraper consists of ceramic plates and metal panels, interrupted by ribbon windows. The Daily News Building in New York (1929-1930) was also unadorned and clearly structured, its steel-framed construction filled with white brickwork, terracotta and glass. Hood's oeuvre also includes the Rockefeller Center in New York (1931-1940), created in collaboration with Reinhard & Hofmeister, Corbett, Godley, Harrison & MacMurray. The complex of several discoidal skyscrapers, all with façades in limestone with aluminium glazing bars and glass, was highly significant in the further development of New York because of its pedestrian zones and squares. The artistic finish in the Art Deco style includes a number of remarkable murals.

Horta Victor

"If you look at composition, then it really does start with the house, or, more precisely, with the architecture, and moves to the furniture – and that is so pleasing that you can forget about the annoyances of building."

▼ Grand Bazar Anspach, Brussels, 1903

► Tassel residence, Brussels, 1892-1893

Victor Horta (1861-1947) studied in Ghent and Brussels at the Académies des Beaux-Arts. He joined the architectural offices of Alphonse Balat in 1880. Following a number of minor works, he designed the Tassel residence in Brussels in 1892-1893, one of the major works of early Art Nouveau. This was the first time that iron had been used both as a construction and a design element in a private residential building. Instead of the usual hall, or corridor, the house had an eight-cornered room; access to the upper storys was via an iron staircase. Similar works followed, such as the Autrique (1893) and Winssinger residences (1895-1896). The turn of the century saw the completion of the Solvay residence (1895-1900), the interior of which was also all by Horta, and the town-house for Baron van Eetvelde (1897-1900). He then undertook several new large projects: the administration and meeting building for the Belgian Socialist Party, the Maison du Peuple (1896-1899) and the "A l'Innovation" Department Store (1901-1903). All these buildings were in Brussels. From 1897 Horta taught at the Free University there; in 1912 he was appointed professor at the Académie des Beaux-Arts and became its director in 1927. In his later years he followed a more severe direction, as demonstrated by the reinforced concrete of the Palais des Beaux-Arts in Brussels (1922-1928).

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◂ Van Eetvelde residence, Brussels, 1897-1900

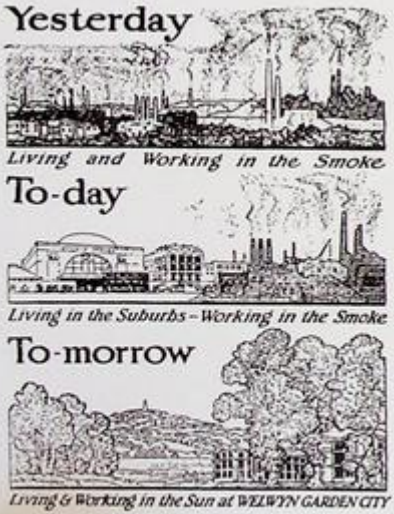
▾ A l'Innovation Department Store, Brussels, 1901-1903

Howard Ebenezer

▼ Advertisement for Welwyn Garden City, undated

► Sollershot Hall, Letchworth, England, 1911

Ebenezer Howard (1850–1928) emigrated to America at the age of 21, tried unsuccessfully to make a living as a farmer, then worked as a reporter, and became acquainted with the writings of Walt Whitman and Ralph Waldo Emerson. In 1876 he returned to England and found a job with Hansard, the publishing house that produces records of sessions in the Houses of Parliament. He continued to work there throughout his life. In addition, Howard was preoccupied with ideas of utopian societies such as those in Edward Bellam's novel *Looking Backward*. With his book *Tomorrow: A Peaceful Path to Real Reform*, written in 1898 and published in 1902 as *Garden Cities of Tomorrow*, Howard put forward the case for new cities intended to counteract the threats to the quality of life posed by the radical changes brought about by industrialization. Howard's ideal cities would avoid air pollution, oppressive constrictions of space, and criminality as side-effects of city life. In his diagram "The Three Magnets" he contrasted the advantages and disadvantages of city and countryside. "Town-Country" represented the third "magnet". The suburbs or garden cities which, according to his concept, should be arranged in a circle around a centre, were within areas used for agriculture, restricted in size and fully planned. A central business and cultural district was intended to be surrounded by residential buildings and crossed with access routes and green spaces. The maximum size of a garden city was taken by Howard to be 32,000 inhabitants; an optimum density, 30 homes per hectare. In 1899 Howard founded the Garden Cities Association to disseminate the idea and Letchworth Garden City was created as the first model north of London planned at Howard's recommendation by Barry Parker and Raymond Unwin. In 1919 Welwyn Garden City followed as a successor project, planned by Louis de Soissons.



HPP (Hentrich-Petschnigg & Partner)

Helmut Hentrich (1905–2001) studied in Vienna and at the Technische Hochschule in Berlin. Before establishing his own practice in Düsseldorf in 1933, he lived for two years in Paris and New York, where he worked for Norman Bel Geddes. Between 1935 and 1953, he maintained a partnership with Hans Heuser, and then with Hubert Petschnigg (1913–1997). They realized the high-rise building for Phoenix-Rheinrohr AG in Düsseldorf (1956–1960), consisting of three, offset disks at varying heights. The Standard Bank Building in Johannesburg, South Africa (1965–1970), a 139-meter-high suspended structure, was built in collaboration with Ove Arup.

◂ Standard Bank, Johannesburg, 1965–1970, with Ove Arup

▸ Administrative building for Phoenix-Rheinrohr AG, Dusseldorf, 1956–1960

International Style

Alongside the stylistic architectural debates of the 19th century, there developed in parallel the belief that the adherence to and incorporation of functional aspects in building design were a means of achieving architectural quality. This was advocated by Eugène-Emanuel Viollet-le-Duc in his influential book *Entretiens sur l'architecture*, which was published in 1881. He was asking for architecture that made use of the physical properties and constructive possibilities of new building materials like, for example, iron. Louis Sullivan maintained in 1896 that "form follows function" and views about the actual function of a building always were and still are totally varied. A further theory arose in the 20th century that it was possible to come to necessary, correct building solutions purely from the point of view of functional thinking and with a "scientific" design (Hannes Meyer). Functionalist buildings, however, demonstrate that the designer actually brings other aspects into the plan, without admitting it: for example, the "picturesque" arrangement of building elements seen in the Bauhaus style of Walter Gropius in Dessau. Alongside this, the word rationalism was used in its plainest sense to describe an understanding of architecture that wanted to break away from the principle of the individual in the belief of a better society and aimed to use design in the service of social progress. Industrial building methods, façades without ornamentation and standardized plans were thought to contribute to this. Given the fact that that the best modern buildings of their time contained many more cultural aspects than functional thinking would suggest, Henry-Russell Hitchcock and Philip Johnson came to the definition of a new style, which could be described in a broad sense as being independent of national movements. The term "International Style" was first used on May 1, 1932 in the title of their book, *The International Style: Architecture since 1922*, which appeared at the same time at a mobile exhibition at the Museum of Modern Art. Aesthetic features of the International Style were: patterns in straight lines, asymmetry, steel and glass constructions (often with large, horizontal ribbon windows), lack of ornamentation, white, plaster façades, free outlines and flat roofs. Even if the formulation of a style concept scarcely reflected the intentions of the modern movement in the 1920s and 1930s, Hitchcock and Johnson succeeded in disassociating themselves from the broad European discussion about theory, in which concepts such as neo-plasticism, futurism, constructivism and rationalism crossed over with "New Building" and "New Objectivity". After 1945, the International Style further developed through the widespread use of the curtain wall, mostly in glass.

◂ Walter Gropius, Törten housing estate, near Dessau, Germany, 1926–1928

▸ Ludvík Kysela, Bata Shoe Shop, Prague, 1927–1929

▸▸ Le Corbusier, Villa Stein-de-Monzie, Vaucresson, France, 1926–1928

Iofan Boris Mihailovich

▼ Sanatorium, Barvikha, Russia, 1929-1933

► Soviet pavilion, New York World Fair, 1939

Boris Mihailovich Iofan (1891-1976) began his training at Odessa Art School. In 1914 he moved to Rome, where he studied at the Accademia delle belle Arti. In 1923, he produced the design for the Soviet Embassy in Rome in Neo-classical style. After his return home in 1924, personal contacts brought him several government commissions, including a functional and modern housing complex, incorporating its own cinema, near the Kremlin (1928-1931). His penchant for the grandiose, monumentalist style meant he was able to continue working under Stalin's government. Iofan designed the Soviet pavilion for the Paris World Fair (1937), featuring a sculptural tower, topped with a statue by Vera Muchina. With its position directly opposite Albert Speer's German pavilion, openly symbolizing confrontation, its contrived style of presentation and pointed display of the leadership cult reflected the altered conditions in the Soviet Union under Stalin. From 1931 to 1956, he worked in collaboration with Vladimir Shchuko and Vladimir Gelfreikh on a monumental design for the Palace of Soviets. The impact of its Neo-classical elements was intensified by its huge dimensions. This tall, cylindrical structure, rising from a massive base, was intended to be surmounted by a giant statue of Stalin. Construction work on this personality cult building began in 1937 but the project was abandoned after the foundations had been completed. Iofan's design for the Soviet pavilion at the New York World Fair (1939), however, did reach fruition: it was Art Deco on a monumental scale. His work also included a rather less picturesque building for the Central Committee in Moscow (1930-1950).

Isozaki Arata

"All the buildings, which I feel have turned out particularly well, have caused fierce controversy."

▼ Iwata High School, Oita, Japan, 1963-1964

▶ Art Tower, Mito, Japan, 1990

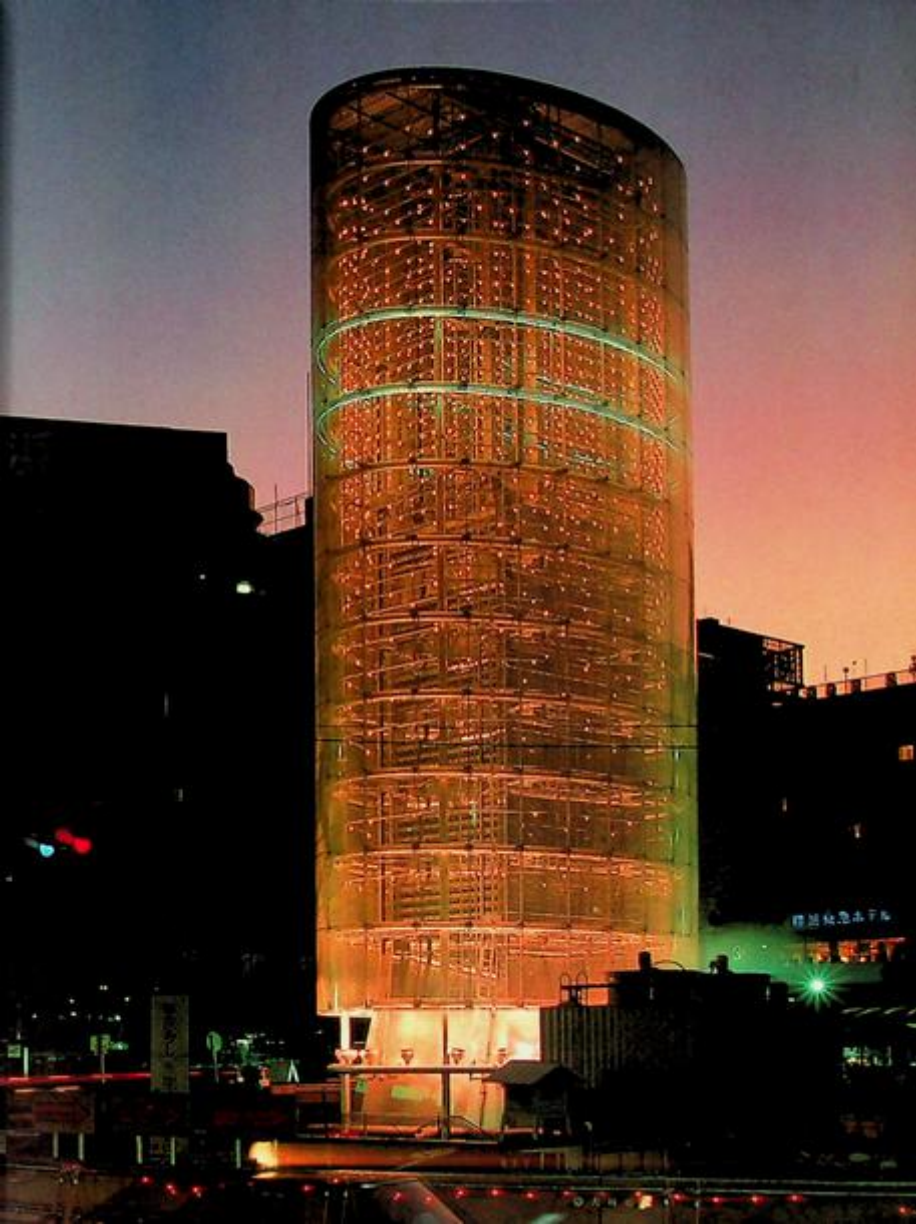
After studying under Kenzo Tange at the University of Tokyo (until 1954), Arata Isozaki (born in 1931) continued accumulating practical experience working in Tange's practice. In 1963, he opened his own office in Tokyo, while continuing to work for Tange on various projects, such as designing the Festival Plaza at Expo '70 in Osaka, Japan (1966–1970). The first art museum to be built by Isozaki was the Museum of Modern Art in Takasaki, Japan (1971–1974), a basic rectangular structure consisting of 12 meter cubes. Angled diagonally to these is a projecting wing, surrounded by water, with an open area at first-floor level. Among Isozaki's best-known works are the Tsukuba Center Building in Tsukuba (1979–1983), the Art Tower, Mito (1986–1990), an aluminium tower in the form of a double helix, the B-con Plaza in Oita (1991–1995) and the Museum of Contemporary Art, Nagi (1991–1994). Combining wood, stone and metal, this museum comprises three parts: a cylinder, a semi-circular area and a long flat building, originally designed to house the exhibitions of three different artists. Isozaki also carried out several major projects abroad, including the Museum of Contemporary Art in Los Angeles (1981–1986), the Centre for Japanese Art and Technology in Krakow, Poland (1990–1994) and the Palau Sant Jordi (1983–1992) for the 1992 Olympic Games in Barcelona. The Higashi Shizuoka Cultural Complex in Shizuoka, Japan (1993–1998), with its high, sloping side walls and rounded rear section is a mixture of Japanese tradition and modern art. Isozaki also designed the Center of Science and Industry in Columbus, Ohio (1993–1999), as well as the Berlin Volksbank Building (1993–1998) near Potsdamer Platz. Since 1964, he has lectured at Tokyo University, with guest professorships at Harvard University, Yale, UCLA among others.

Ito Toyo

"Microchips produce images, which differ clearly from those of mechanical objects. These images are not of forms but of spaces in which invisible things flow. These spaces could be described as a transparent field, from which – as a result of this fluidity – various forms of significance materialize."

Tower of the Winds, Yokohama, Japan, 1986

After graduating from the University of Tokyo in 1965, Toyo Ito (born in 1941) spent four years working for Kyonori Kikutake, before opening his own office in Tokyo in 1971. The hallmark of his work is transparency and ephemerality. His ability to create a light, uncomplicated style of architecture is evident in all his projects.
At the start of his career, he designed his own house, the Silver Hut Residence in Tokyo (1984) and the Tower of the Winds, Yokohama (1986), a ventilation shaft constructed of aluminium and acrylic glass panels, 21 meters in height.
At the beginning of the 1990s, Ito designed several buildings in Yatsushiro, Kumamoto: the Municipal Museum (1989–1991), an old people's home (1992–1993) and a fire station (1995). He also built the Shimosuwa Lake Suwa Museum in Nagano (1993), its concrete construction reminiscent of an upturned boat. Advanced CAD technology was needed to produce the aluminium panels cladding the building. In the case of the Nagaoka Lyric Hall in Nagaoka, Niigata (1996), with its undulating and gently curving roof line, together with the futuristic Odate Jukai Dome Park in Odate (1997) with its translucent dome, the lower edges of which almost extend down to ground level, it is the roof outlines that determine the overall impression.
The Ota-Ku-Resort Complex in Nagano (1998) is situated on a gentle slope and built around a semi-circular curve, following the outline of the half moon; Ito was not afraid to finish the building with a lean-to, corrugated iron roof.
The Sendai Mediatheque, Miyagi, was created between 1995 and 2000. Its transparent glass façade permits glimpses of the white steel structural tubes within, which snake through the interior of the building. The open-style structural design represented a new departure for Ito, which he likewise adopted for the Serpentine Gallery pavilion in London (1995–2000). The traditional distinction between supporting structure and façade, usually seen in the modernist movement, was abandoned in this instance: windows were not set into the walls but filled residual spaces between the structural elements. The inspiration for such designs was rooted in nature. The façades of Tod's Department Store in Tokyo (2002–2004), for example, were inspired by the image of overlapping tree branches, while the windows of the Mikimoto store in Tokyo (2003–2005) resemble falling leaves.

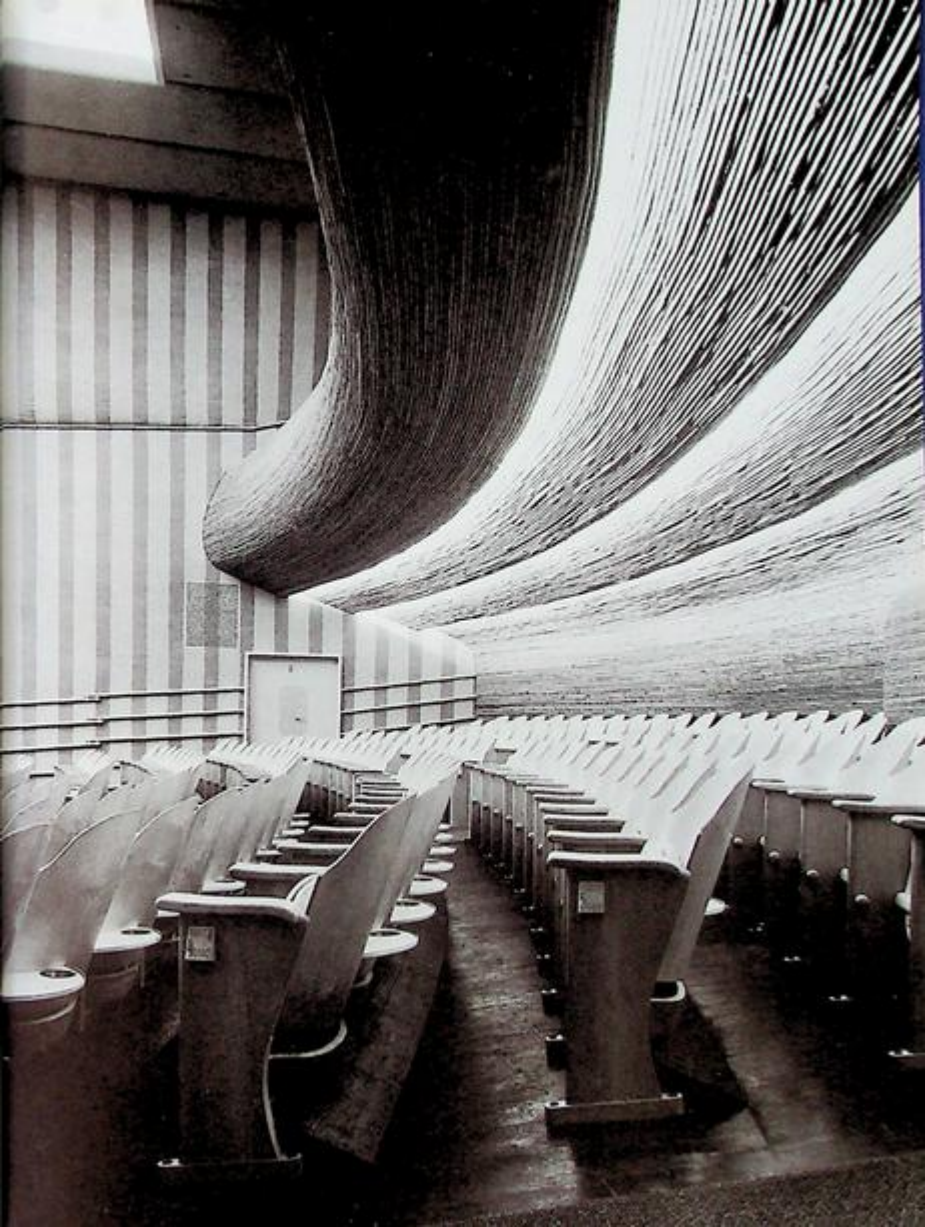


Jacobsen Arne Emil

▼ Bellavista housing estate, Klampenborg, Denmark, 1934–1935

► Bellevue Theater, Klampenborg, Denmark, 1935–1937

After training as a bricklayer, Arne Jacobsen (1902–1971) attended the Royal Academy of Art in Copenhagen until 1928, where he later taught as a lecturer, (1956–1962). He was instrumental in the success of the Danish modernist movement and, in addition to numerous houses, schools, factories and public buildings, he also designed furniture, lamps, cutlery and textiles. As well as his preference for the International Style, Jacobsen also reintroduced various typical traditional processes, such as brick-making. He made a name for himself with his circular House of the Future, including a helipad on its roof, which he designed for a Copenhagen exhibition (1929) in collaboration with Flemming Lassen. The white three- to four-story Bellavista housing project in Klampenborg, Denmark (1934–1935), features flat roofs and a staggered façade, and a series of balconies running around the cuboid blocks at each end of the row of houses. The effect is softened by shade-giving grilles above the balconies. The Søholm row of houses in Klampenborg (1946–1951) is likewise cleverly staggered. Jacobsen's works also include the Town Hall in Rødovre, Denmark (1952–1956) with its smooth glass façade, as well as the Carl Christensen



Factory in Aalborg, Denmark (1956), combining angular, closed sections of masonry and a tall, round steel chimney. A distinctive feature of the Munkegård School (1948–1957) in Gentofte, built of yellow brick, is the inclusion of paved courtyard areas, adjoining the ground-floor classrooms. The slender skyscraper of the SAS Royal Hotel in Copenhagen (1958–1960) has a façade of grey-blue glass between aluminium profiles. Jacobsen also designed many details of its interior design, ranging from ashtrays to his famous "Egg" and "Swan" chairs. His international commissions include St. Catherine's College in Oxford, UK (1959–1964) and two buildings in Germany designed in collaboration with Otto Weitling: the administrative offices of Hamburg Electricity Works (HEW), a high-rise building with a glass façade consisting of several panels in a staggered arrangement (1963-1968), and Mainz Town Hall (1970-1973), finished in natural stone.

"Of primary importance are the proportions – proportions are what make the ancient Greek temples classic in their beauty. They are like great blocks, in which the air seems to have been literally carved out from between the columns."

▸ SAS Royal Hotel, Copenhagen, 1955-1960

▾ Rodovre Town Hall, Denmark, 1952-1956

SAS
SAS

Jensen-Klint
Peder Vilhelm

▼ Design for a national monument, 1907, perspective

► Grundtvig Church, Copenhagen, 1921-1940, with Kaare Klint

After qualifying as an engineer (1878–1885) Peder Vilhelm Jensen-Klint (1853–1930) studied art at the Academy in Copenhagen. After graduating, he built the Holm residence in Hellerup, Denmark (1896). Other villas in the clinker method followed, such as the Estate Manager's residence in Nykøbing Falster (1905–1906) and the home of composer Thorvald Aagaard in Ryslinge (1907), both in Denmark. In 1913, Jensen-Klint was awarded second prize in a competition to build a monument for Nikolai Frederik Severin Grundtvig; as his design included a church, however, he won the commission. Work on this church in Copenhagen finally began in 1921 and continued until 1940, by which time Jensen-Klint's son, Kaare Klint, was in charge. The pilaster strips on the brick façade reach up towards the sky like organ pipes, towering above the triangular, stepped entrance area with its arched doors. Handmade yellow bricks were used. The surrounding houses were designed and built (1924–1926) by Jensen-Klint with Charles I. Schou and Georg Gøssel. The Church of Peace in Odense, Denmark (1913–1920), which was finished earlier, displays scaled-down versions of many of the design features of the Grundtvig Church.

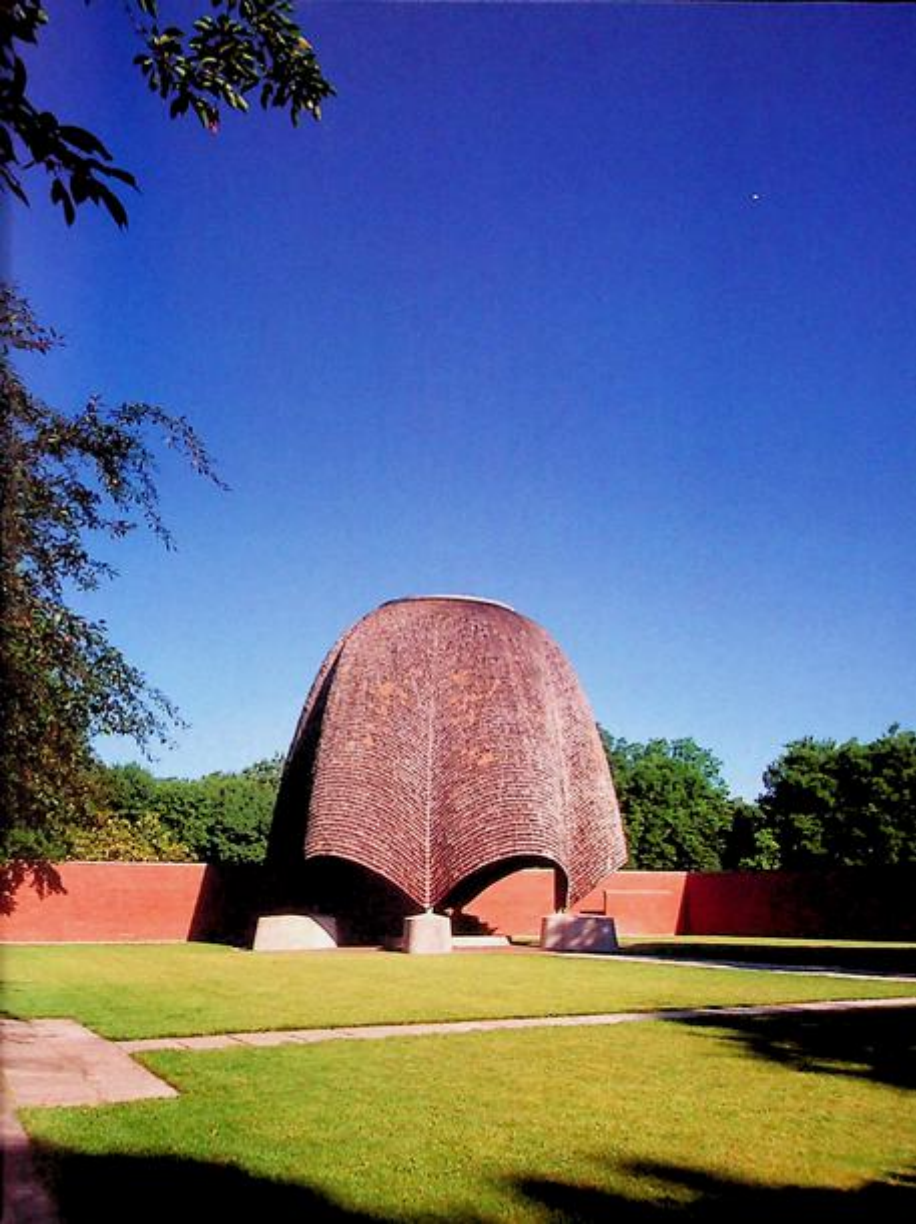
"I must strongly advise you against roofing felt, which in my opinion is one of the nastiest materials there is, even though it can be used on wooden shacks, where there is definitely no demand for a robust appearance, which is precisely what I have attached great importance to."

Johnson Philip Cortelyou

▼ Glass House, New Canaan, Connecticut, 1949

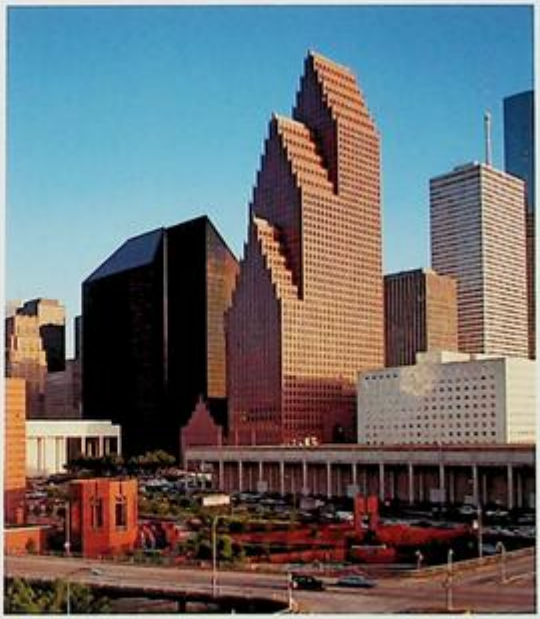
▶ Roofless Church, New Harmony, Indiana, 1960

Philip Cortelyou Johnson (1906–2005) first studied philology at Harvard University in Cambridge, Massachusetts. From 1930 to 1936, he ran the architecture department at the Museum of Modern Art in New York, and in 1932 he and Henry-Russell Hitchcock published the influential *The International Style: Architecture since 1922* to accompany the exhibition of the same name. In 1940, Johnson began a three-year architectural course under Walter Gropius and Marcel Breuer at Harvard, where he also worked as a freelance architect from 1942. In 1946, he again took over the direction of the architecture department at the New York Museum of Modern Art, and in 1947 organized an exhibition on Mies van der Rohe, with whom he had maintained a close friendship since his visit to Germany in 1930. It was instantly obvious that his own home, the Glass House in New Canaan, Connecticut (1949), which he designed soon after Mies van der Rohe's Farnsworth residence, was closely modelled on the latter. Other residences in New Canaan were those of Hodgson (1951) and Wiley (1953). 1953 saw the successful design of the Sculptural Courtyard at the Museum of Modern Art in New York. While Johnson



was still working on the Seagram Building in New York (1954–1958) with Mies van der Rohe, he grew impatient with functional seriousness and moved instead to a more Mannerist, playful style. He gave the main room of the Synagogue in Port Chester (1954–1956) butterfly vaulting and colored window slits, while the Sheldon Art Gallery of the University of Nebraska (1963) features rows of symmetrical arches. Closed, heavy bodies are the key feature in his works of the 60s, which include the Art Hall (Kunsthalle) in Bielefeld (1968). Then came glass skyscrapers, such as the IDS Center in Minneapolis (1973) and Pennzoil Place in Houston (1970–1976). Johnson's highly controversial design for the American Telephone and Telegraph (AT&T) Building in New York (1978–1982), with its arched portals and broken pediment top, marked his shift to a decidedly post-modernist design language and added an identity-defining symbolism to companies' corporate designs. In the neo-Gothic Pittsburgh Plate Glass Building in Pennsylvania (1979–1984), he also used architectural quotations to manipulate the façades of the otherwise standardized administration building. Johnson used atrium courtyards and other Roman architectural features for public buildings such as the City Library of Miami, Florida (1985). In the 90s, he designed the Gate House in New Canaan, Connecticut (1995), with smooth façades in a bright red and grey that, apart from a few, unusually cut apertures, are closed. With no right angles and only a few straight lines, the house looks like a sculpture.

"Architects are pretty much high-class whores. We can turn down projects the way they can turn down some clients, but we've both got to say 'yes' to someone if we want to stay in business."



◄ Pittsburgh Plate Glass Building, Pittsburgh, 1979–1984

► Republican Bank Center, Houston, 1983

Jones Archibald Quincy

▼ Jones House No. 3, Los Angeles, 1965

► Model 301x for the Mutual Housing Association, Los Angeles, 1946–1950, with Whitney R. Smith

Between 1931 and 1936, Archibald Quincy Jones (1913–1979) attended the architectural faculty of the University of Washington in Seattle. Until the foundation of his own company in 1945, he gathered experience with two architects' practices in Los Angeles. He established a joint partnership with Frederick E. Emmons between 1950 and 1969. His interest, apart from designing individual buildings, was in designing innovative settlements equipped with central communal facilities and unconventional road networks. Jones and Emmons were co-authors of the book *Builders' Homes for Better Living*, which was published in 1957. The progressive building entrepreneur, Joseph Eichler, whose attention had been attracted by Jones when his family house in San Diego was awarded the title "House of the Year" in 1950, appointed Jones and Emmons to plan his housing estates alongside some other architects' practices. Between 1951 and 1964, Jones and Emmons were involved in the construction of numerous Eichler Homes in various parts of California. The steel-framed houses open through glass walls onto tranquil, inner courtyards. The interiors are open-plan, with some of them being divided only by partitions or curtains. It might be seen as a gesture of reconciliation with the opponents of modern architecture that the flat roof in places is raised into a side-glazed, pointed gable. Jones House, the amply glazed steel structure with a flat, metal roof, was built in Los Angeles at the same time (1954). Nature is brought into the house in a gardened inner courtyard. Case Study House No. 24 in the San Fernando Valley (1961), a model for 260 planned houses, is embedded in the earth. Unfortunately, the full project was never realized. Earth embankments and numerous trees guard against the intrusive gaze and create a sense of privacy. Jones' extensive works include the Church of St. Michael and All Angels in Studio City, California (1962), with a sophisticated wooden roof structure that admits the light; the Mandeville Center for the Arts (1968–1975); and the Annenberg School of Communications (1972–1976), University of Southern California. From the façade of the Warner Bros. Records Inc. building in Burbank, California (1971–1975) projects an extension that is suspended over the entrance with a slanting glass front.

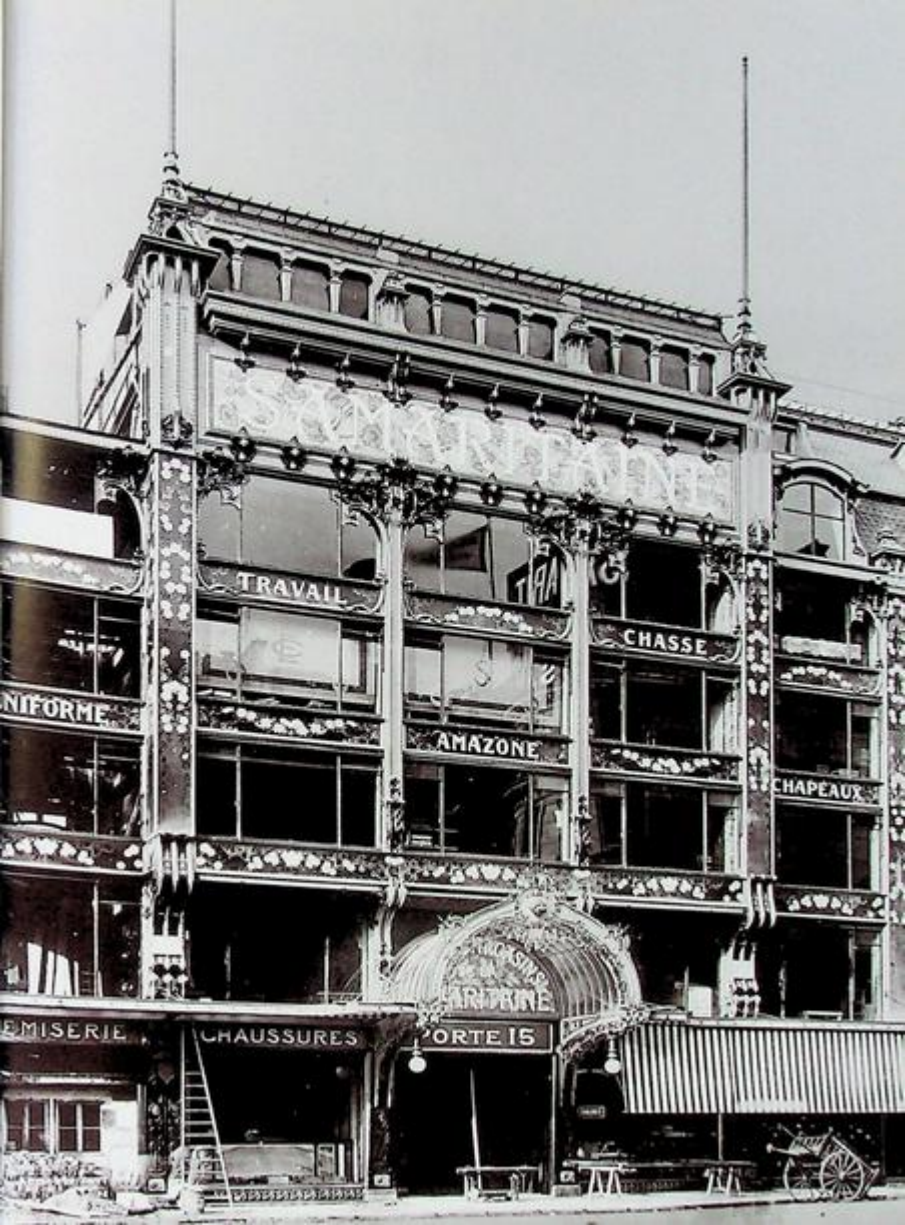
Jourdain Frantz

"Our modern architecture is vegetating because it refuses to pay attention to the evolution of societies and the new needs, because it wantonly violates the laws of location, it claims to be a luxury art and a blinding arrogance leads it into anachronisms, to nonsense, whereas, in fact, it should be seen as a utility art."

▼ Exhibition pavilion, World Exhibition, Paris, 1900, presentation sheet

► La Samaritaine Department Store, Paris, 1905-1907

Frantz Jourdain (1847-1935) studied at the École des Beaux-Arts in Paris from 1867 to 1870. As well as being an architect he was a writer and journalist, proving a keen advocate of Art Nouveau in his publications. He was one of the co-founders of the Société du Nouveau Paris (1902) and the Salon d'Automne (1903). A native of Belgium, he was frequently the victim of nationalistic resentment. Jourdain realized a factory in Pantin, France (1888) and the concrete Schenck residence in Paris (1894); he also refurbished the Palace of Verteuil, France (1893). His best known building is the La Samaritaine Department Store in Paris (1905-1907), which is made of steel and glass and has extensive decorations on the façade and inside. Floral motifs in glazed ceramic by his son Francis Jourdain (1876-1958) feature significantly in the colorful adornment of the façade. In addition to the breathtaking frescoes within, there is delicate decorative ironwork on the staircases and balustrades and floors made of glass tiles. Between 1925 and 1929, Jourdain created the final significant extensions to La Samaritaine on the Quai du Louvre in Paris, in collaboration with Henri Sauvage. His son, Francis Jourdain (1876-1958), was the painter and interior designer. After being involved in designing the interior of the Villa Majorelle for Henri Sauvage, he turned away from Art Nouveau, and from 1929 was involved in setting up the UAM.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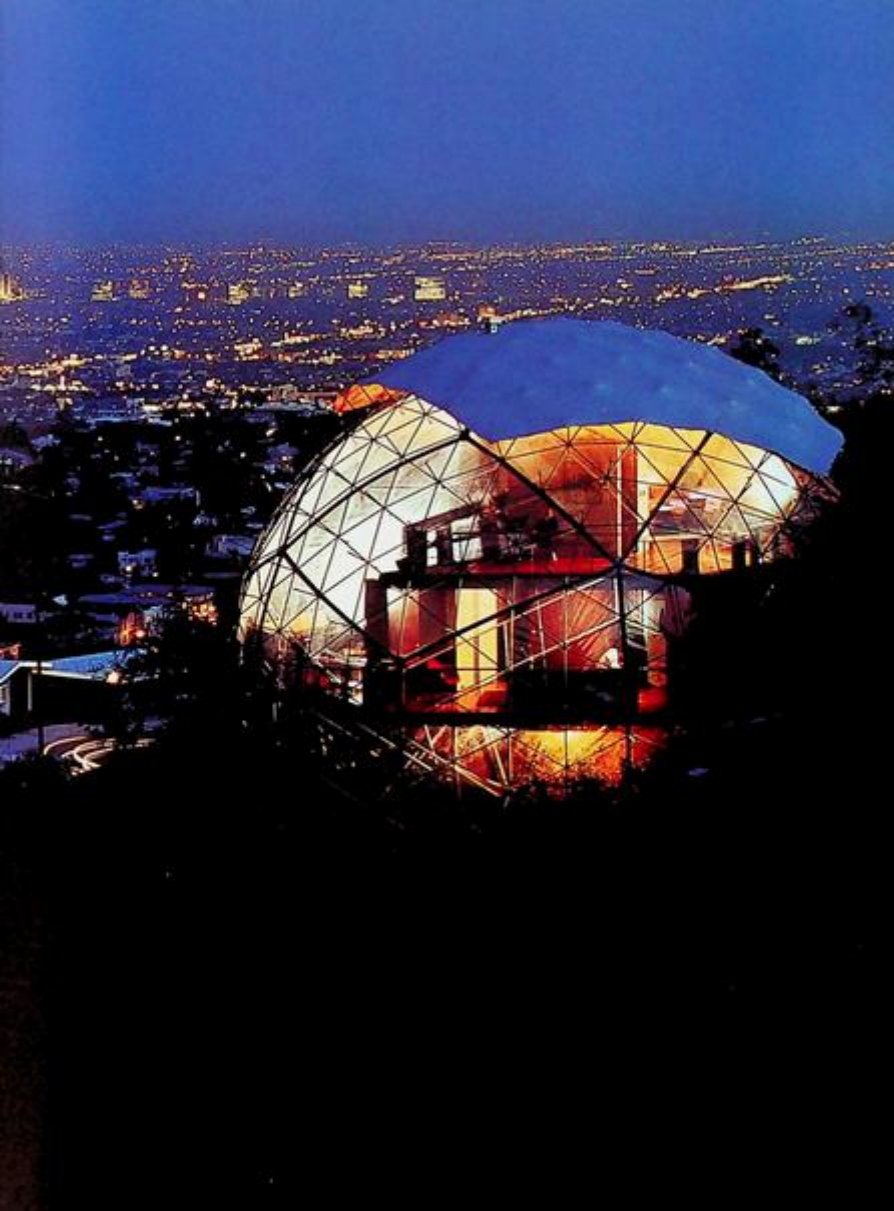
ORTE 15

Judge Bernard

"Never say never."

▾ ▸ Dome House, Hollywood, 1960

Bernard Judge (born in 1931) attended the École des Beaux-Arts in Paris and the University of Southern California, from where he graduated in 1960. His studio, the "Environment Systems Group", has been in existence since 1965 and is involved above all in the design and construction of private homes, hotels and holiday resorts. His Dome House in Los Angeles, a spherical residence with several levels and an exterior divided into small triangles, was built in 1960. The basic structure is a geodetic cupola by Buckminster Fuller that Judge, as something of an experiment, developed into a private home. The experiment was demolished in 1970. In 1971, in the interests of sustainable planning and building, he developed a master plan for Marlon Brando's Tetiaroa Atoll in Polynesia. His own home, built in 1975, was also conceived as a model house. Specially designed for hillside situations, it is based on a pillar construction that requires little excavation. Four concrete cassette panels form the base and carry the four fifteen-meter-high main supports for the wood frame construction. The non-load-bearing interior walls can be moved as required.



Jujol Josep Maria

▼ Casa Planells, Barcelona, 1923

► Torre de la Creu, Sant Joan Despi, Spain, 1913–1916

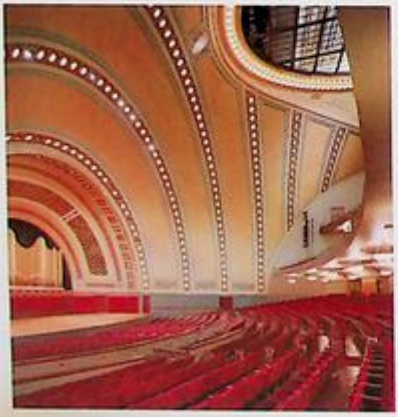
During his course of studies in architecture in Barcelona between 1897 and 1906, Josep Maria Jujol (1879–1949) acquired his practical knowledge by working on projects with Antoni Maria Gallissàs and Josep Font i Gumàs. Subsequently, he formed a close collaboration with Antoni Gaudí (1906–1926) and collaborated in, amongst other things, the building of the Casa Milà and the Sagrada Familia in Barcelona. From 1909, he was acting lecturer at the University of Architecture in Barcelona, and from 1913 became a lecturer proper. His own, individual work comprises a number of decorative building modifications. The number of new buildings he produced is small but, nevertheless, characterized by his own, very personal style. His expressive architecture, accentuated by technical details, bears the stamp of a close connection to nature. He often makes use of and forms details from the remnants of metals, of stone, ceramics and glass, and, for example, smashed up agricultural implements. Exposed plaster surfaces are often adorned with graffiti. The form and method of his work are closely bound together. Instead of planning at the drawing board, he preferred the inspiration of the site itself. This can be seen on the area of the roof of the Casa Bofarull near Tarragona (1914–1931), where the remains of the crockery used for breakfast at the start of the day are embedded into the concrete. The façades of the Torre de la Creu in Sant Joan Despí, Spain (1913–1916), whose outline is reminiscent of a rodent, are rounded apart from a few small sections; one axis splits the building into two halves. The roof construction is made up of five elevated domes, originally decorated with pieces of glass. These are partly on open, accessible levels and partly lying above on the roof. The church he realized in Vistabella, Spain (1918–1924) is made of irregularly arranged stones and climaxes in a sharply tapering bell tower, adorned with a cross. The walls of the various areas of the church, which are at different heights, culminate in a row of stones placed upright. A rolling, metal balustrade borders the way up to the bell tower and the interior of the church is adorned with wall paintings in natural colors. In 1926, Jujol was appointed as town architect for Sant Joan Despi but his works from this era lack his usual, sparkling sense of fantasy.

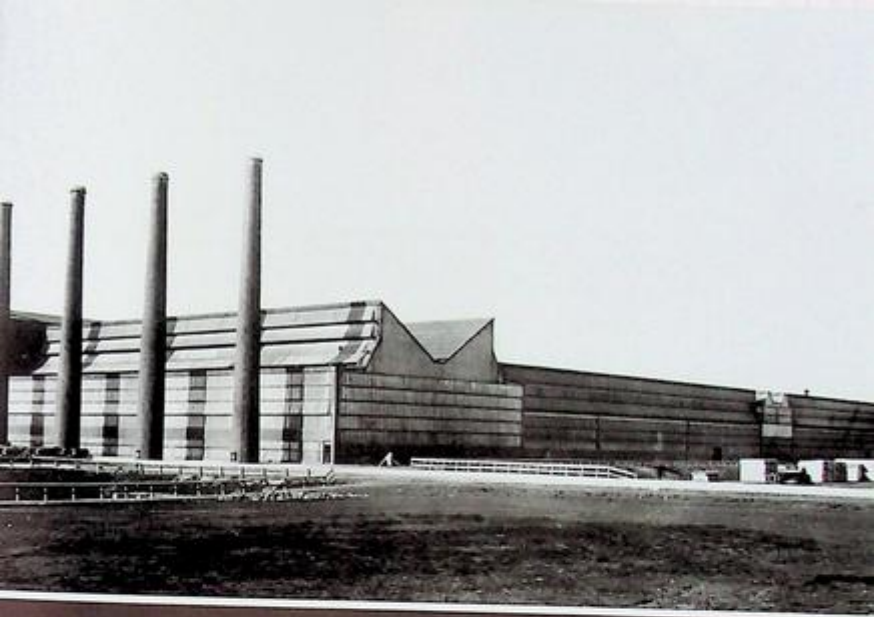
Kahn Albert

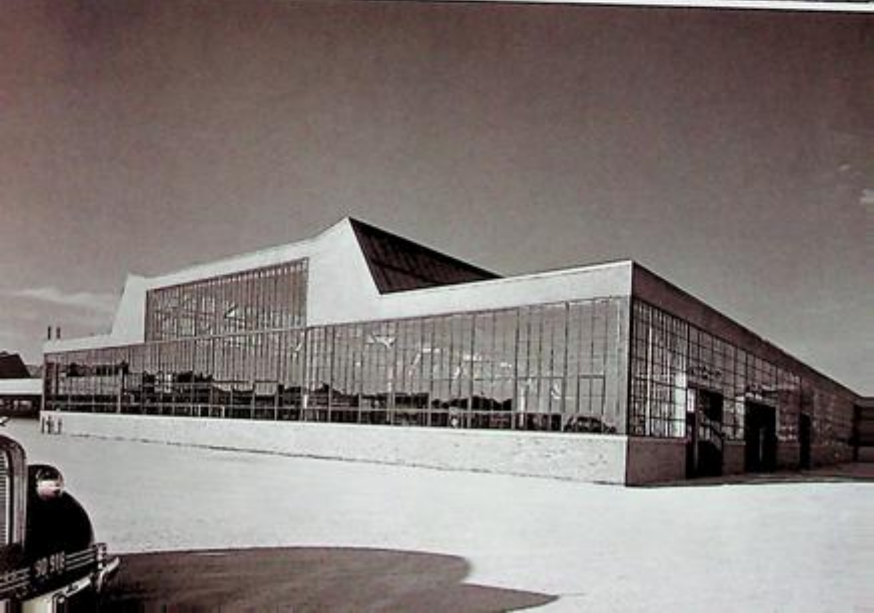
▼ ▲ Hill Auditorium, University of Michigan, Ann Arbor, 1913

► Glass Plant, Ford Motor Company, Dearborn, Michigan, 1924

Albert Kahn (1869–1942) was born in Germany and moved to Detroit with his parents in 1880. He was employed there in the offices of various architects, firstly with John Scott and later with Mason and Rice, where he was promoted to draughtsman in 1885. He acquired his theoretical knowledge of architecture in the firm's well-stocked library. In 1891 he was awarded a foreign study bursary by the magazine *American Architect* and visited innumerable European cities with a fellow architect. He founded his own firm in 1896 with George W. Nettleton and Alexander Trowbridge. One of their first contracts was a children's hospital in Detroit (1896). After Trowbridge's retirement and the death of Nettleton, he worked for a time with George D. Mason, his previous employer. Together they built the Palms apartment building in Detroit (1901–1902). In 1903, he employed his brother Julius Kahn as his chief engineer and developed with him the concrete construction that is Michigan University in Detroit. Albert Kahn became recognized above all for his large number of factory buildings. For Henry B. Joy he realized the site of the Packard Motor Car Company in Detroit. The most innovative building in this complex was Building Number 10 (1903–1910), a steel and concrete construction with a plain, screened glass façade. At the same time there came a variety of production and storage buildings for the Ford Motor Company. In 1924, Kahn produced for them the new works site in Dearborn, Michigan, its Glass Plant featuring an enormous hall, and in 1928 the Plymouth Factory for the Chrysler Corporation in Detroit. After a Russian delegation had visited the factory halls in Detroit, Kahn won the contract for a tractor factory in Volgograd (then Stalingrad), which was completed in 1930. Subsequently, he was assigned control of the overhead cables in all the industrial buildings in the Soviet Union. A vast number of Russian workers were trained with the help of his brother Moritz Kahn and, within two years, 521 factory designs had been produced. Even after his return to the USA, industrial sites remained the focus of Kahn's work. One need only mention here, as a particularly successful example, the roll and heavy machine shop of the Ohio Steel Foundry Company in Lima (1938). By the end of the 1930s, Kahn had realized 19 percent of all the industrial buildings in America. During World War II, the buildings of hangars for the aviation industry became of paramount importance, as was the bomber factory for the Glenn L. Martin Company in Omaha, which was built in 1943. After the death of Albert Kahn, his brother Louis took over the firm of Albert Kahn Associates.







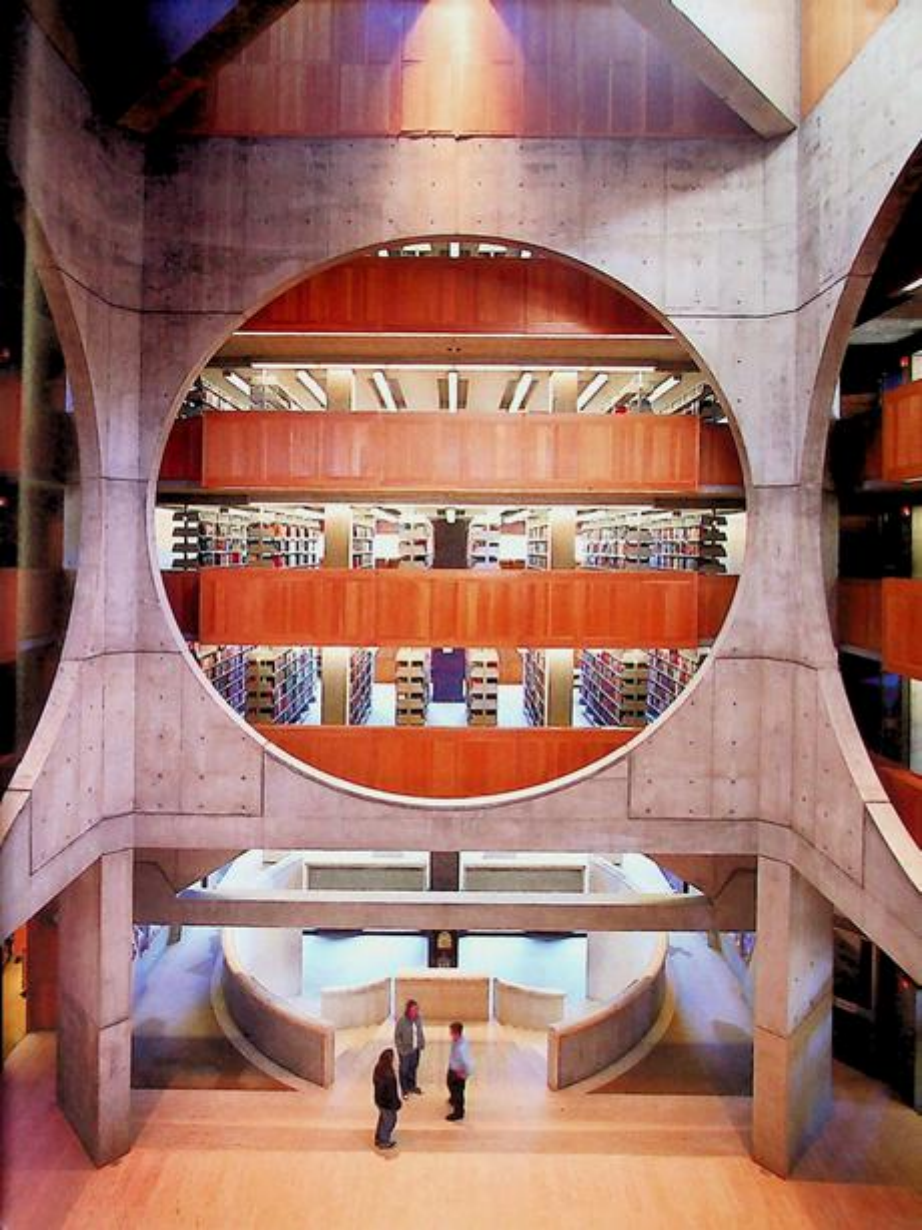
Kahn Louis Isidore

"When you decide on the structure you're deciding on light. In the old buildings, the columns were an expression of light, no light, light, no light, light, no light, light, you see."

▼ Alfred Newton Richards Medical Research Center, University of Pennsylvania, Philadelphia, 1957-1961

► Library at Phillips Exeter Academy, Exeter, New Hampshire, 1965-1971

From 1920 to 1924 Louis Isidore Kahn (1901-1974) studied at the University of Pennsylvania in Philadelphia, and worked there under Paul Philippe Cret (1929-1930) and Zantzinger, Boire and Medary (1930-1932). He then travelled to Europe before opening his own studio in Philadelphia in 1937, and entering into a partnership with George Howe and Oscar Stonorov in 1941. Together they built the Carver Court residential estate in Coatesville, Pennsylvania (1941-1944). He accepted a teaching position at Yale University in New Haven, Connecticut, in 1947, where he also constructed the extension of the Art Gallery (1951-1953): the exposed frame construction is a notable feature of what was the first modern building in New Haven. Between 1952 and 1957 he and Ann Tyng developed various construction methods for serial elements, which were later incorporated in the plan for the Midtown City Center Forum in Philadelphia (1956-1962). He built the bathhouse of the Jewish Community Center in Trenton, New Jersey (1954-1959) with four pyramid roofs. His greatest successes include the laboratory buildings of the Jonas Salk Institute in La Jolla, California (1959-1965), which are grouped around a central courtyard and the mezzanines of which have supply systems under the room as an aid to more efficient operation, and the Library at the Phillips Exeter Academy in New Hampshire (1965-1971). He built the Kimbell Art Museum in Fort Worth (1966-1972) in collaboration with Preston Geme and Associates. Extensive city planning work was associated with the concept for the government quarters in Dacca, Bangladesh (1962-1983); at the same time he also worked on the construction of the Indian Institute of Management in Ahmedabad, India (1962-1974).

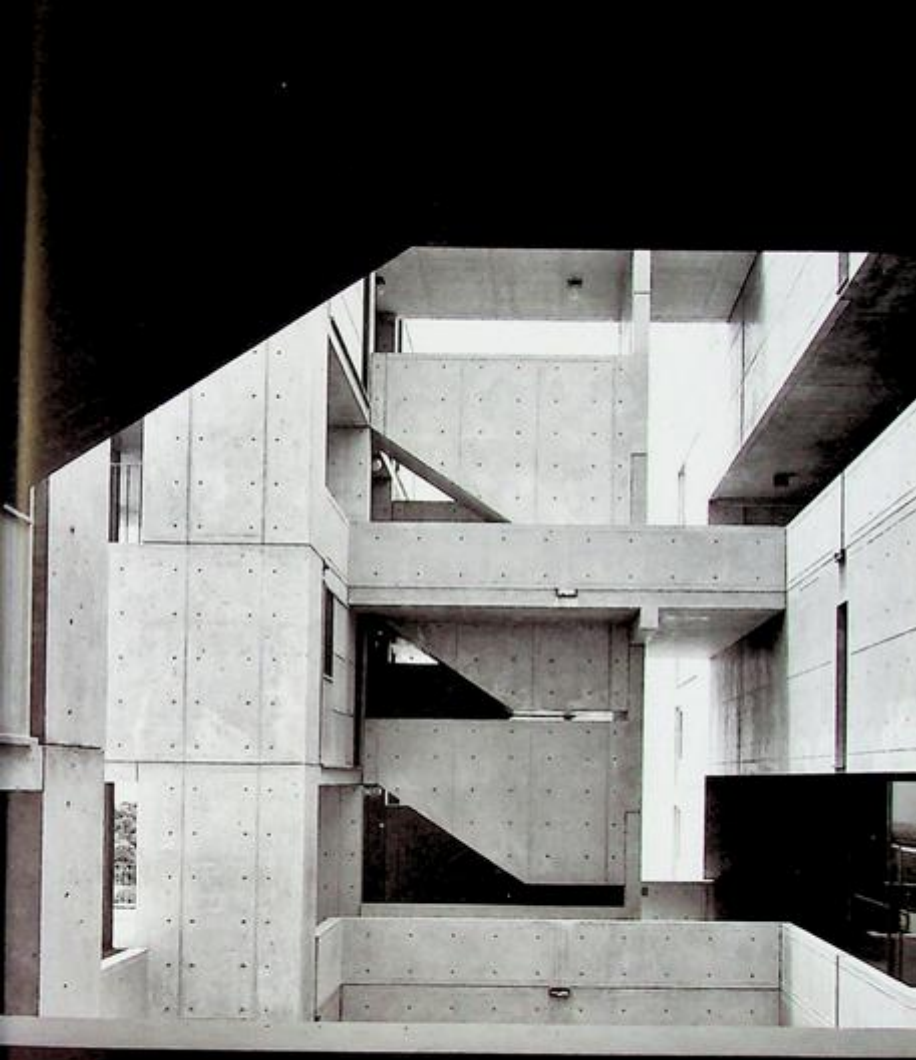


◄ ◄ ▼ Jonas Salk Institute,
La Jolla, California, 1959-1965

▲ Government quarters, Dacca, Bangladesh, 1962-1983

▼ Student accommodation, Indian Institute of Management, Ahmedabad, India, 1962-1974

► Jonas Salk Institute, La Jolla, California, 1959-1965

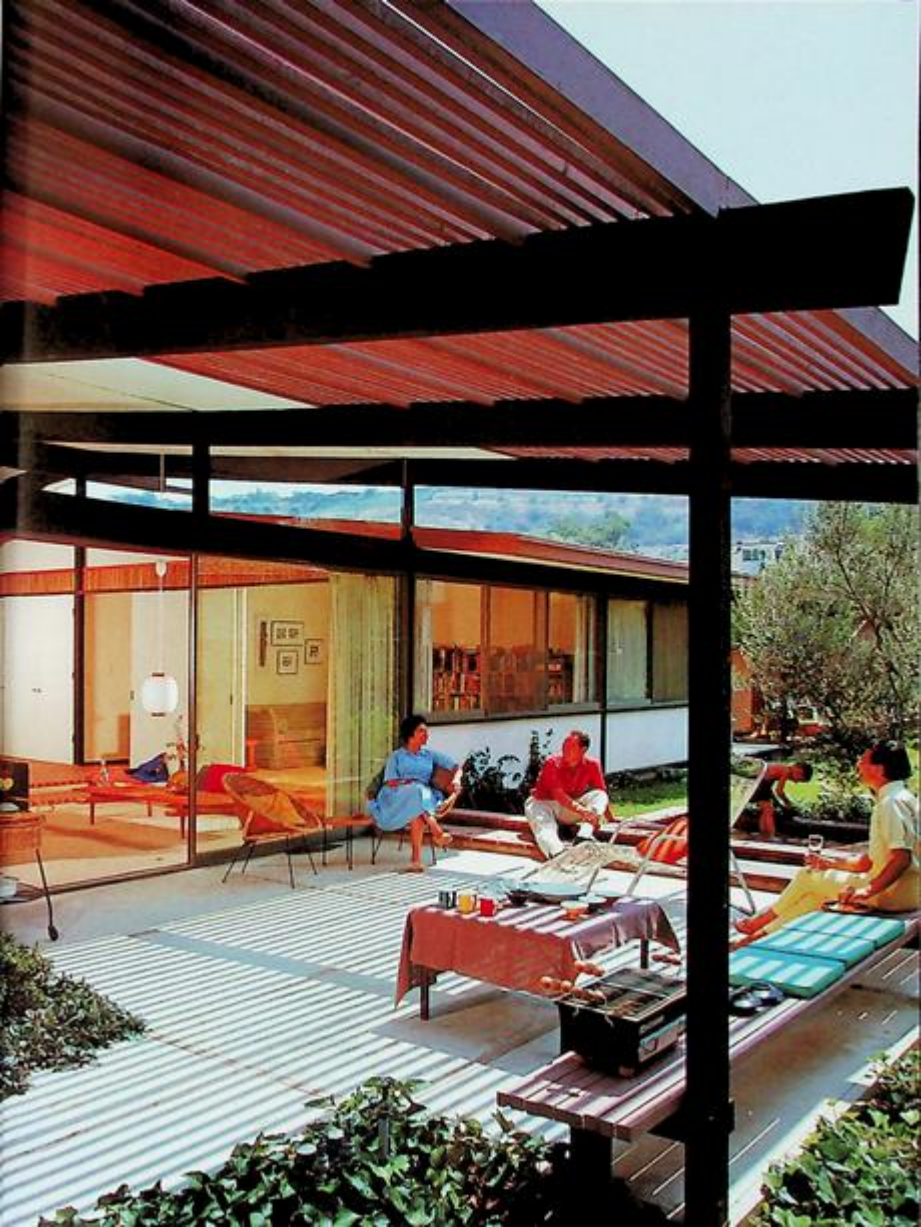


Kappe Ray

▼ Sultan residence, Los Angeles, 1972-1976

▶ Hayes residence, Sherman Oaks, California, 1959

On graduating from the University of California in Berkeley, Raymond Kappe (born in 1927) studied under Carl Maston before going on to open his own studio in Brentwood in 1954. He was director of the Department of Architecture at California State Polytechnic University in Pomona and, in 1972, founded the Southern California Institute of Architecture. Many of his houses are based on a modular system; the combination of modern shapes and natural materials, often used in traditional ways, is typical of his architecture. He later turned to pre-fabrication in order to gain additional design choices. His own home in Pacific Palisades, California (1968), with its clear lines and abundance of wood, is surrounded by rich nature, as is the Hattenbach residence in Santa Monica Canyon (1973). This was constructed from standard, 6-meter-wide modules that are grouped around a corridor. Kitchen, bathrooms, workshop and chimney are added to the modules as small extensions. The stepped Sultan residence in Los Angeles (1976), with its vast expanses of glass on the façades, is situated on a slope and surrounded by large eucalyptus trees. The individual levels all have their own balconies, so every area is in direct contact with surrounding nature. Rounded shapes that continue through to the interior with its semi-circular bar and kitchen dominate in the open-plan Scheimer residence in Manhattan Beach, California (1982-1988). Here, Kappe combined many different materials including teak, steel, glass and concrete. He also constructed the vertically emphasized Melcher residence in Pacific Palisades (1986-1989), featuring a gallery with a skylight that runs through the middle of the house.



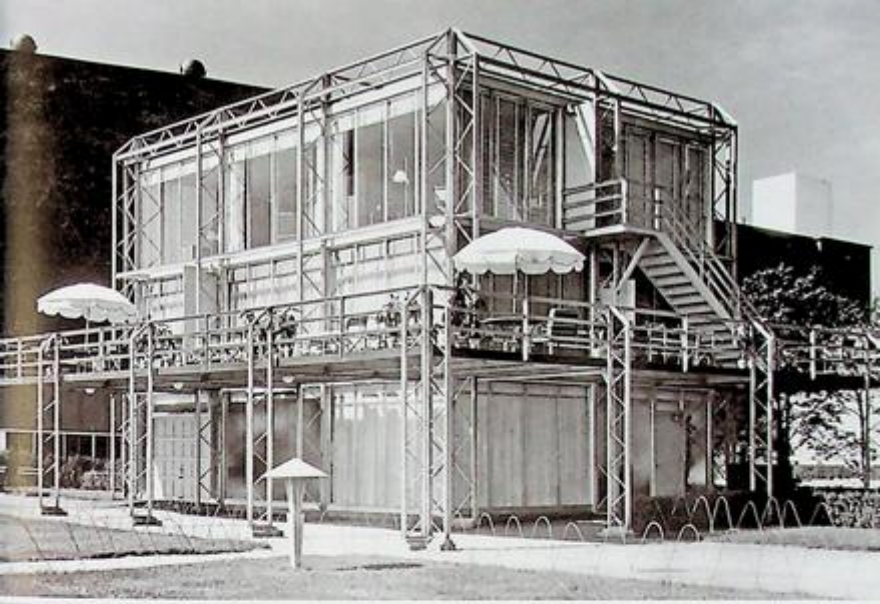
Keck & Keck

▼ Bloom House, Muskegon, Michigan, 1959

► Crystal House, Chicago, 1934

◄ Bruning House, Wilmotte, Illinois, 1935–1936

George Fred Keck (1895–1980) attended the University of Illinois, where he graduated as a building engineer in 1920. After working for several years in a number of offices in Chicago, Keck opened his own practice in 1926, joined in 1931 by his brother William. His modern style of architecture, using advanced technology and modern materials, was directed towards offering the customer as much comfort as possible, instead of offering an impersonal unit in which to live. Built-in kitchens and cupboards, generous glazing to the southern side with adjustable ventilation slits, roof areas covered with water for cooling and the use of solar energy are typical of his residential buildings. At first, his formal building approach was analogous with International Style and Art Deco. For the international exhibition *A Century of Progress* in 1933 in Chicago he designed two houses that, almost without exception, consisted of prefabricated building parts. The twelve-sided House of Tomorrow (1933), whose steel frame is filled with glass, is made up of three floors. The two-storey living area, the upper floor of which has a small surface area, lies above the ground level garage for car and airplane, whose roof serves also as a terrace and is surrounded by a metal balustrade. Within the framework of this exhibition, he also completed the Crystal House (1934), with façades of both clear and frosted glass and lattice, steel girders to the exterior. Keck also built the two-storey Bruning House in Wilmotte, Illinois (1935–1936) with a flat roof and bright cement plaster. Its particular feature is a circular stairwell tower made of glass bricks for the elegant, spiral staircase. The plain and yet seemingly extravagant detached houses of the post-war era, such as the Bloom residence (1959), show a rhythmic placement of wall-height glazing with inlaid panels of ventilation plates; together with the dimensions of the various building parts, the impression is almost one of fragility. Larger buildings like the three-storey Child Care Society in Chicago in 1959 are just as understated in their appearance.

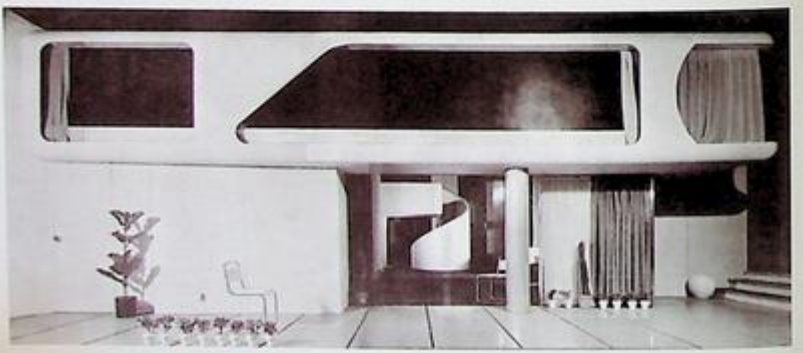


Kiesler Friedrich

▾ Space House, Modernage Furniture Company, New York, 1933

▸ Shrine of the Book, Jerusalem, 1957–1965

Friedrich Kiesler (1890–1965) attended the Technical University in Vienna between 1908 and 1913 and taught at the faculty of painting and printing there within the academy of visual arts. He worked from 1923 as a stage designer; his association with followers of De Stijl and also the Russian constructivist movement, had a lasting effect on his work. In 1924, he produced his so-called "Raumbühne" (spatial stage) for the International Exhibition of New Theatrical Technology in Vienna, which earned high praise from the avant-garde movement. This was followed the next year by "Raumstadt" (spatial city), within the context of a theater section at an exhibition at the Grand Palais in Paris. It was just at this time that his projects began to exhibit flowing and spiral-shaped elements of style. These reached their peak in the fifties with the designs of an Endless House along with the Endless Theatre and a corkscrew-shaped department store, which only touches the ground at its central axis. In 1926, Kiesler emigrated to America to develop his idea of prefabricated individual houses that could nevertheless combine their own, unique elements. This never came to fruition, however. In 1933, he realized the Space House in New York for the Modernage Furniture Company as an exhibition building, with modern, built-in furniture and a new system of lighting. After lecturing at Columbia University he was appointed Associate Professor in 1937. His furnishings for the 1942 exhibition *Art of This Century!* in New York consisted of rolling shapes that served as furniture or as a base for the exhibits, along with pictures hanging freely at the sides. From 1947, he was involved with studies on the Endless House: a cavernous, organic building, without beginning or end, with an area that was continuous but could be divided into sections. His final realized project was the Shrine of the Book in Jerusalem (1957–1965): an area sunk into the ground for the preservation of Old Testament scrolls. The central building on the site, which is surrounded by bare walls of stone, is crowned with an onion-shaped roof.



Kikutake Kiyonori

▼ Edo-Tokyo Museum, Tokyo, 1989-1993

▶ Hotel Tokoen, Yonago, Japan, 1964

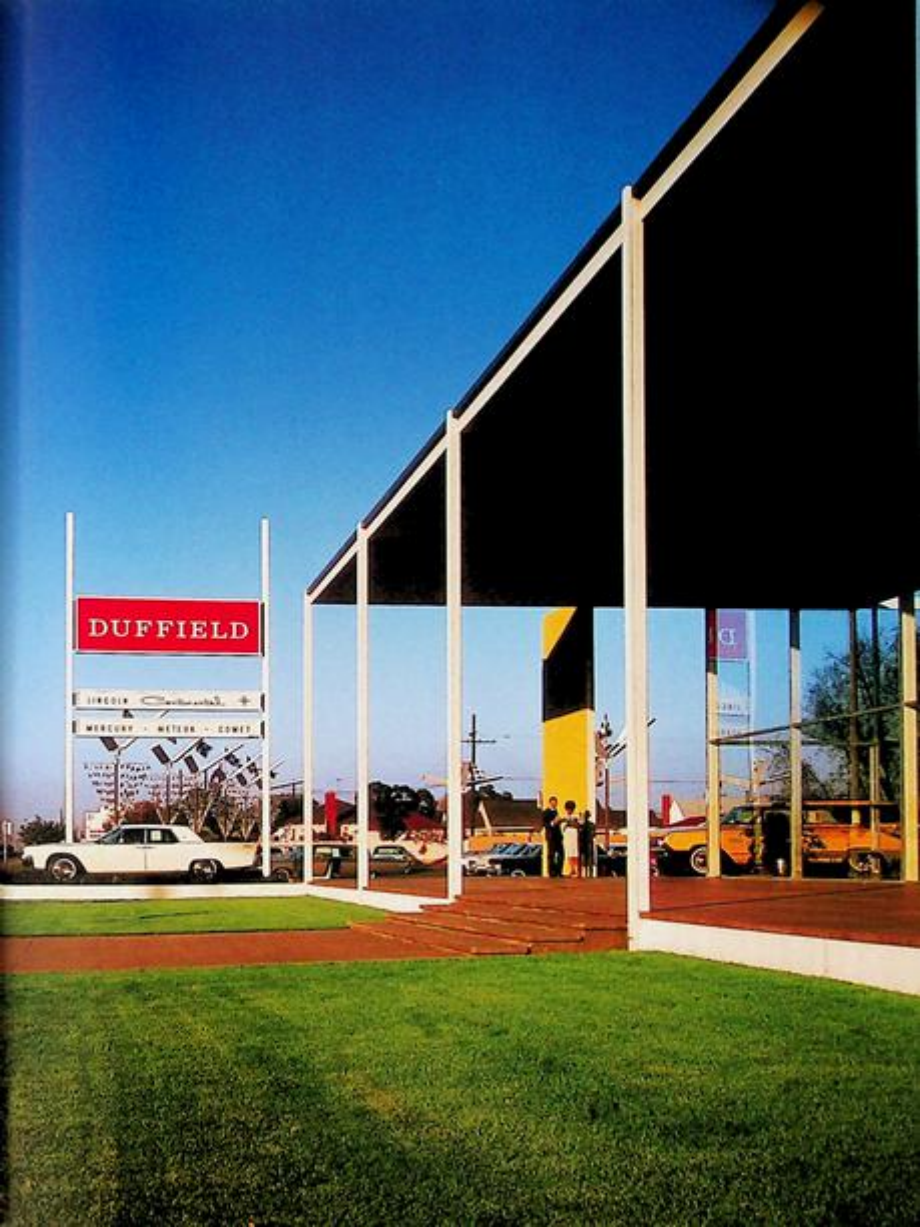
Kiyonori Kikutake (1928–2011) graduated in 1950 from Waseda University in Tokyo and has had an office there since 1953. In 1958, he presented his Marine City Project, pursuing the concept of an artificial city in the water later on in his career. In 1959, he founded an architectural group that brought the idea of Metabolism into building concepts with Kisho Kurukawa, Fumihiko Maki, Sachio Otaka and Noboin Kawazoe. Apart from the Utopian projects that arose from this, Kikutake designed a whole series of buildings. Instead of rigid forms and functions, his goal was to create a variable, moving style of architecture, which could adapt itself to the pace, rapid changes and demands of the time. The Sky House in Tokyo (1958) is surrounded by four broad, 30-centimeter-thick, reinforced concrete pillars, which raise it 6 meters off the ground. The empty area that thus appears under the building can later be used for extra rooms, if required. An angular, flat roof towers above the one-story, rectangular building. From the point of view of elements of style, many of his buildings fall back on traditional Japanese building methods. There is, for example, the modern technology used in the Izumo Temple administration building in Taisha (1963) and the Hotel Tokoen in Yonago (1964). The significant feature here is the splitting of the building into two halves, with a free area in between. Pillars support the lower part, while walls and girders support the upper. For the Ocean Exposition of 1975 in Okinawa, Japan he realized the Aquapolis Pavilion. His other works include the Tanabe Museum in Matsue, Japan (1979), with a deeply plunging, gable roof made of steel panels, and the Edo-Tokyo Museum in Tokyo (1989–1993). A broad stairway leads up to the monumental building, which rests on four enormous pillars.

Killingsworth Edward

"Good buildings can result when using dynamic forms if they are handled by masters, but generally only the clean, simple forms produce good buildings when handled by lesser architects."

Duffield Lincoln Mercury dealership, Long Beach, California, 1963

Edward Killingsworth (1917–2004) attended the School of Architecture at the University of Southern California, where he graduated in 1940. From 1945 to 1953, he worked with Kenneth S. Wing in Long Beach, and in 1953 the partnership of Killingsworth, Brady and Smith was established with Jules Brady and Waugh Smith. After Smith retired in 1963, the firm was renamed Killingsworth, Brady & Associates. Following Brady's departure in 1977, it then became known as Killingsworth, Stricker, Lindgren, Wilson & Associates. In the early years, they realized mainly apartment blocks and fairly small office buildings, nearly all of them open-plan and separated from garden courtyards by large expanses of glass. The buildings are characterized by clear, straight lines, while reflective pools of water feature widely. A group of three houses was designed in La Jolla, California (1959–1960) for the Case Study House Program. Each has its own individual characteristics but is connected to the other two by their shared materials and recurring motifs. Case Study House No. 25 in Long Beach, California (1962) is accessed through a door that stretches the entire height of the two-story house and leads into an inner courtyard covered with wooden latticework. The Kahala Hilton Hotel in Honolulu, Hawaii (1964) was the firm's first skyscraper. The ensuing positive international acclaim led to numerous larger architectural projects. The Kahala Hilton has a rangy appearance as the load-bearing concrete frames protrude externally, supporting a pergola on the rooftop. Hotel buildings soon became a mainstay of the practice. With Sam Hurst, Killingsworth completed an important university project, the School of Architecture at the University of Southern California (1973). In addition, Killingsworth was the project manager responsible for all building projects of the California State University at Long Beach for over 40 years.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Kishi Waro

"I am now just an architect from Kyoto and therefore there is nothing left for me to do, other than concern myself with the juxtaposition of tradition and present."

Luna-di-Miele Omotesando Building, Tokyo, 2004

In 1973, Waro Kishi (born in 1950) was awarded his first degree at Kyoto University, afterwards resuming his studies there until 1978. He gained his initial experience at Masayuki Kurokawa's office in Tokyo. In 1993, Kishi set up his own practice, Waro Kishi + K. Associates. In 1997, he realized a reception facility for the University of Yamaguchi. It is situated in a garden, which is incorporated into the overall concept of this simple building by virtue of the fully glazed façade. A residence in Karakuen II, Nishinomiya, Hyogo, Japan (2000–2001), constructed with a steel frame and reinforced concrete with a metal casing, is situated on a slope with a view of the sea. The house is subdivided into two blocks, connected by a ramp: in one block are the private rooms and, in the other, the living and eating areas. A residential building in Fukaya, Saitama, Japan (2000–2001) is laid out around an inner courtyard, which – unusually for Japan – contains a swimming pool and glows entirely in white. The exterior of the house is covered with metal and shimmers like silver. Kishi favours industrially manufactured materials, which remain uncovered and thus reveal their functional aspects. The living area with its 4.5-meter-high ceilings is located behind a glass wall on one side of the courtyard. Opposite, there are two levels with bedrooms, beneath which are the garages. The development continues over a flight of stairs in the courtyard. The house in Suzaku, Nara (1997–1998) also consists of two halves. In addition, Kishi returns here to exposed concrete and steel over wood elements, creating a minimalist style that does not only refer to Japanese tradition in the tea ceremony room. The Luna-di-Miele Omotesando Building (2004) is located in a central district of Tokyo. It is part of the shopping mile, which is illuminated with advertisement hoardings at night, and consists of a narrow five-story business premises and office block. Kishi has here created a light construction, without the need for internal supports. Each floor consists of a room and the stairwell. The black façade is formed with elements of glass, grey frosted glass, and wire netting, which partly overlap.

細身美人に、
なりましょう。
TOU

de Klerk Michel

"The real building is all round restriction, which is connected to the advantage of revealing characteristic building."

▼ Het Schip apartment block for Eigen Haard, Amsterdam, 1917–1921

▶ ◀ De Dageraad apartment complex, Amsterdam, 1918–1923, with Pieter L. Kramer

Michel de Klerk (1884–1923) acquired his knowledge through practical experience, when attending evening classes at the Industrieschool in Amsterdam. Between 1898 and 1910 he worked for Eduard Cuypers and undertook journeys to Germany, England and Scandinavia. Between 1912 and 1914 he worked together with Johan van der Mey and Pieter Lodewijk Kramer at the Scheepvaarthuis in Amsterdam (1911–1916) and subsequently set up his own office. De Klerk was a prominent representative of the Amsterdam School. Characteristic of his expressionist architecture are individual brick façades that are full of fantasy. Among de Klerk's works are the Hillehuis, Amsterdam (1911–1912) and an apartment block on the Spaarndammerplatsoen, Amsterdam (1913–1914). The staircases are distinctive because of the projections on the façade, into which bricks are built in the shape of cylinders and arches, giving it a rhythmic effect. The Het Schip apartment block, Amsterdam (1917–1921), is built on a sharply tapering area of land and adheres to the consistent principle of emphasizing individual parts of the building in a fantasy style. A retracted forecourt looks up to a towering roof cap. The variation of sharp and circular corners, gable and mansard roofs, and bay windows, which arch forward and push out over the edge of the eaves, is resolved in each case by the contrasted planning of the street corners. De Klerk built another apartment block in the south of Amsterdam (1921–1923), also the Bootsklub de Hoop in Amsterdam (1922–1924) and he designed a never-completed villa for Wassenaar, the Netherlands (1923). He designed furniture for the 't Woonhuys company: in contrast to his exterior façades, the interior rooms he designed are melancholy and dark.

DE DOMINEES

Klotz Mathias

"I think a good detail is a detail that you do not see, which easily happens when the materials and structure are logical and they are brought together in the simplest possible way."

▼ School, Altamira, Santiago de Chile, 1999-2000

► Ponce House, Buenos Aires, 2001-2002

Mathias Klotz (born in 1965) graduated in architectural studies in 1991 from the Catholic University of Chile. He gained contracts as a lecturer both at the Federico Santa Maria University in Valparaiso and at the University of Santiago. His realized works to date include a whole series of individual, detached houses in Chile, for whose construction he relied on a variety of materials and forms. The Klotz House on the Playa Grande de Tongoy (1991) consists of a bright, rectangular box, whose western side opens out onto the water. He also built the Grudsky House in La Dehesa (1996), made of exposed concrete and concrete blocks and with sections of the façade in frosted glass. There was also the Lavados House, made of wood and glass, in Volcán Villarrica (1995): its inclined roof juts over the front of the house and reaches a projecting stone wall, forming by this means a covered gallery. The Reutter holiday home in Cantagua, Chile (1999) is elevated by a basement storey to the level of the surrounding trees. Two rectangular boxes compacted in on one another split the accommodation into a variety of areas of use. Their coverings are also different. The outer box is covered with wood and the inner with copper. Altamira School in Santiago de Chile (1999–2000) was designed for 1400 pupils and consists of four buildings, shaped around an inner courtyard on a large area of land. The one to the northern side features coloured panels, which lend it a cheerful air.

Koenig Pierre

▾ Seidel House, Los Angeles, 1960

▸ Case Study House No. 22 (Steel House), Hollywood, 1960

Pierre Koenig (1925–2004) studied architecture at the University of Southern California between 1948 and 1952. He realized his first house while still a student, after working for a short time in the office of Raphael Soriano. It was called Koenig House No. 1 and was constructed of steel and glass in Glendale, California (1950). Koenig lectured at the USC from 1961, and became a professor in 1966. Koenig almost exclusively used steel for the framework construction of his buildings, which were highly effective due to their style elements. The steel girders, which were actually welded on site, are exactly proportioned in their dimensions, so that extremely elegant, yet functional, details in the construction can be seen. The designs of both the buildings he realized for the Case Study House Program were frequently published. The steel framework for the Case Study House No. 21 in Los Angeles, California (1956–1958) is filled on the entrance side with plates of corrugated iron and at the back with sliding doors made of glass. A stream runs around the house, its water pumped up to the roof to improve the climatic conditions. Case Study House No. 22 in Hollywood (1960) is situated in a spectacular position with its pronounced, projecting, steel roof. The photograph by Julius Shulman of the two young women sitting in the darkness above the city became iconic for both photography and architecture. Between 1972 and 1978, Koenig directed a program of planning for the Chemehuevi Indian Reservation, but in spite of a great deal of personal input on his part, could not realize his ideas for the improvement of living conditions on the reservation. Notably, he gave an illustration of this in a built example, the Seidel House in Los Angeles, California (1960). Further works included his own, second house in Los Angeles (1985) and the Schwartz House, also in Los Angeles (1994–1996) where the rectangle of the house itself is twisted and suspended in a steel framework.

de Koninck Louis Herman

"It is by total simplification that one draws attention to something that would not otherwise have been noticed."

▼ Dotrement House, Uccle, Belgium, 1932

► Dr. Ley House, Uccle, Belgium, 1934

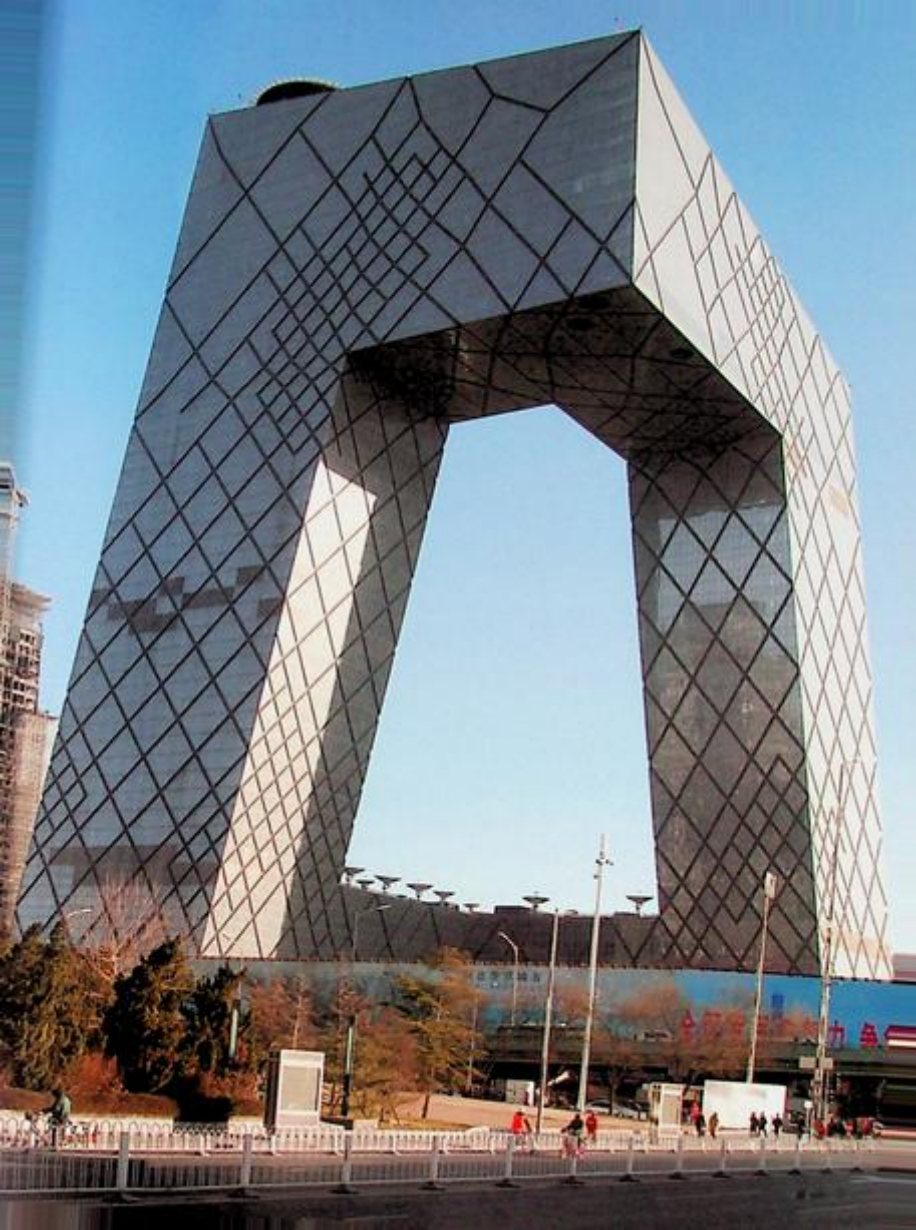
Louis Herman de Koninck (1896–1984) graduated in architecture in 1916 from the Académie Royale des Beaux-Arts in Brussels. The basis of his architecture was the International Style. His house for the artist Lenglet in Uccle, Belgium (1926) was represented in 1932 at the exhibition *The International Style* at the Museum of Modern Art in New York. This white, cuboid building, with windows wrapped around corners and façades that are opened up by means of projections, has an angular, projecting roof above the entrance area. In 1927 Koninck built his own house just next door, which was rather smaller in size. In 1930 he exhibited his show kitchen, put together using standardized elements, at the 3rd CIAM congress in Brussels at the Palais des Beaux-Arts. De Koninck also built the two-storey, white terraced houses with workers' flats with dark window frames in Liège, Belgium (1930) and the Canneel Building in Auderghem near Brussels (1931), whose façades are interrupted by large windows. The first floor with its roof terrace and fitted gymnasium equipment recedes, creating an extra terrace. The client, Jean Canneel-Claes, was a landscape architect and worked together with de Koninck on further projects. In 1932, Koninck designed an exhibition stand for the "Brant Graindorge" in Brussels, in which typographical elements played an important part in the design. That same year, he realized a residential building for the collector Philippe Dotrement in Uccle. The three-storey house with a roof terrace has a split-level living room with a large façade giving onto the garden. Inside, there is a flue made of glass bricks that admits further light into the adjoining rooms. The Dr. Ley residence in Brussels (1934) is split into two parts. There is a base made of concrete blocks and a raised section of white plaster, which in parts juts out over the base. At the entrance one finds a rounded, glazed extension, while an outside staircase leads up to the roof terrace. Little was heard of Koninck in the post-war years and the buildings he was still producing failed to match the conciseness of his early years.

Koolhaas Rem

"Architecture limits and exhausts possibilities, while urbanism generates potentials."

Headquarters of China Central Television (CCTV), Beijing, 2005-2008

Before Rem Koolhaas (born in 1944) commenced his studies at the Architectural Association in London in 1968, he was a journalist and scriptwriter. While still a student he published "The Berlin Wall as Architecture" (1970) and "Exodus, or the Voluntary Prisoners of Architecture" (1972). Koolhaas then went to New York. There and in London he opened the Office for Metropolitan Architecture with Madelon Vriesendorp, Elia and Zoe Zenghelis in 1975, and wrote *Delirious New York* (1978), which brought him international acclaim. In this book, Koolhaas, who is fascinated by New York, examines the influence of the city's culture on its architecture, and turns against the attempt to control the development of major cities through construction. *S, M, L, XL* was published in 1995. Koolhaas lectured at several American universities, at the Technical University of Delft, and at the Architectural Association in London. In the 1980s he designed the Arts Centre in Rotterdam (1987-1992) and the Nederlands Dans Theater in The Hague (1984-1987). The various parts of the building are composed of different materials and shapes: an angled roof construction contrasts with undulating, straight and round roof areas. The Villa dall'Ava in Saint-Cloud, France (1985-1991), is a combination of corrugated metal, glass, marble and concrete; it has a roof terrace with a pool, and part of the top floor is held by slender, angled supports. As part of the Euralille urban expansion project, which Koolhaas directed, he designed the oval Grand Palais in Lille, France (1990-1994) out of inexpensive materials such as plastic and MDF. 1991 saw the construction of the Nexus World apartment blocks in Fukuoka, Japan, which were followed by the Educatorium of Utrecht University, the Netherlands (1993-1997), notable for its sloping stories and the rounded wall in the lecture hall on the top floor. In a house that he designed near Bordeaux, France (1994-1998), the lower part is built into a mountain, and leads into the garden. The middle floor is a glass box with wonderful views of Bordeaux; the top floor is fitted irregularly with round windows in copper cladding. An element of the floor in the center moves hydraulically up and down the stories, offering easy access to the various levels and the adjoining bookshelves. With the construction of the Guggenheim Las Vegas and the Guggenheim Hermitage Museum in Las Vegas, Nevada (1999-2001), Koolhaas was commissioned to



integrate two exhibition rooms in The Venetian Hotel Casino; the larger museum is in glass and steel, and has plenty of space for major exhibitions. His buildings grew in sculptural independence with the Public Library in Seattle, Washington (1999–2004), and the Casa da Musica in Porto, Portugal (1999–2005). This is also demonstrated by the Dutch Embassy in Berlin (1997–2003): instead of consisting of the usual stacked façades with separate stairwells, the levels are created in an ascending, spiral arrangement, with calculated views part of the overall setting, beginning in the sloping courtyard.

▼ Seattle Public Library, 1999–2004

► Casa Da Musica, Porto, 1999–2005

Kuma Kengo

"I want to 'erase architecture'. I have always wanted to do so."

▼ Forest/Floor Villa, Nagano, 2003

► Great (Bamboo) Wall Guesthouse, Badaling, near Bejing, 2000-2002

Kengo Kuma (born in 1954) studied architecture at the University of Tokyo. For two years in the middle of the 1980s, he was a Visiting Fellow at the University of Columbia in New York, before founding the Spatial Design Studio in Tokyo in 1987. In 1991, he formed the office Kengo Kuma & Associates. That year he also created the M2 multi-purpose building in Tokyo for the car producers, Mazda. With its overtones of portals, immensely high "Ionic" pillar, inner courtyard and lift it is very different from the projects that followed, such as the Noh Stage, built on a wooded area in Toyama, Japan (1996), and the River/Filter Restaurant in Fukushima, Japan (1996). The contours of this latter building are dissolved by layers of wooden lattices, which are made up of rows of slats of varying breadth and thickness set close together. Further designs produced by Kuma include the Kitakami Canal Museum in Miyagi, Japan (1999), which is fused into a hillside and whose architectural form is subjugated to its surroundings, and a school in Kanagawa, Japan (1999), whose walls of vertically arranged slats enable those inside to look out at nature. He completed the Stone Museum in 2000 in Nasu, Japan, in which the building materials form part of the exhibits. For the Lotus House in Kamakura, Japan (2003-2005) he used a mixture of materials, including bamboo, glass, stone, plastic and metal. The façade comprises a mesh made up of thin, stainless steel struts with white, travertine plates hung on them.

Kurokawa Kisho

▼ Apartment corridor, Nagaskin Capsule Tower, Tokyo, 1969-1972

► Nagakin Capsule Tower, Tokyo, 1969-1972

Kisho Kurokawa (1934–2007) attended the universities of Kyoto and Tokyo and was employed by Kenzo Tange. His office has been in existence in Tokyo since 1962. He was an advocate of Metabolism and gained recognition through such projects as his helix city plan (1961). At Expo 1970 in Osaka he was able to put his ideas into practice, as with the Nagakin Kapselturm (Capsule Tower). Uniform, white, living units with circular window openings are fitted to two black, core buildings in a loose arrangement. The units were to be produced in modules so that they could be replaced, in order to remain up-to-date and responsive to change. The architecture that Kurokawa has produced since the 1980s is characterized by the combining of modern with traditional Japanese styles, as with the Museum for Contemporary Art in Hiroshima, Japan (1984–1988). Its façades are made of ceramic, stone and aluminium. Circular and square pillars carry roofs and segments of façade, while a large part of the museum lies underground and is illuminated by large, glass surfaces. The Museum of Modern Art in Wakayama, Japan (1990–1994) occupies the site of the fifteenth-century Wakayama Castle and adopts the principles of the traditional, bourgeois architecture of Japan with its black and white colors and a shape of the roof and the eaves. There is a striking play of light across a variety of colors. Between 1992 and 1998, and in cooperation with the Jururancang office, he realized the international airport at Kuala Lumpur.

"I consider architecture as part of a space opened to society, rather than as a work of art."

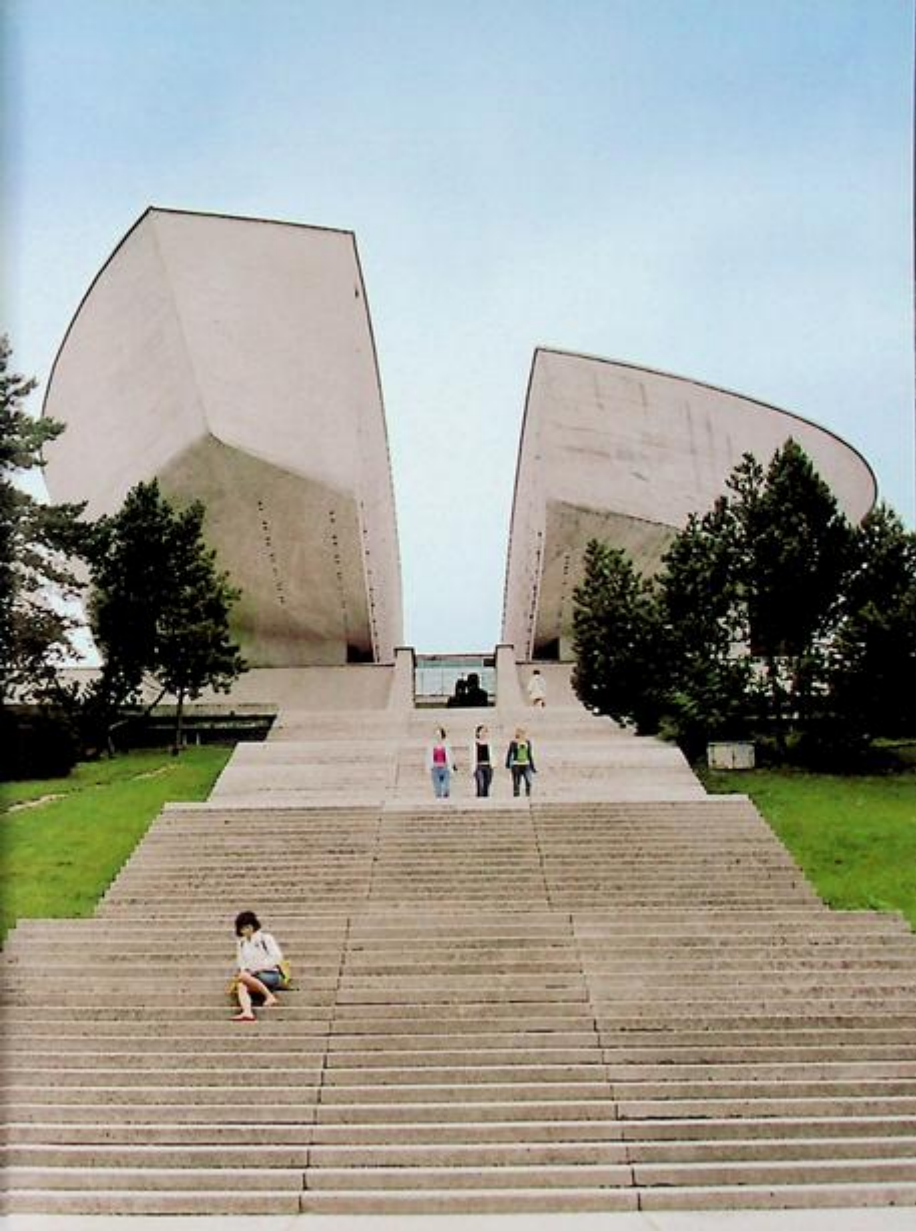
中銀
中銀
DAIICHI HOTEL

Kuzma Dušan

▼ Chalet, Podbanske, Slovak Republic, 1964

▶ Memorial to the Czechoslovakian National Uprising of 1944, Banská Bystrica, Slovak Republic, 1964–1969

Dušan Kuzma (1927–2008) studied at the Technical University in Bratislava (1947–1952). He gained his first architectural experiences during a stay in Paris at the office of Auguste Perret. Between 1952 and 1954 he worked as an assistant to Emil Belluš. In 1964, he built the Chalet in Podbankse in the Slovak Republic (then Slovakia): a small house with an asymmetrical, drooping roof, a natural stone wall and a triangular awning that can be drawn up by means of a rope and thus close off the glazed façade of the house. He became famous for his design for the Memorial to the Czechoslovakian National Uprising of 1944. It was realized in Banská Bystrica in the Slovak Republic (1964–1969), in collaboration with the sculptor Josef Jankovic. The rectangular base holds workrooms, a lecture hall and service rooms; above this rises a great, towering, sculptural shape that is divided in the middle. The interior sides of the hollow building are glazed, with exhibition rooms inside both wings. Together with Anton Cimmermann he completed the building for the Slovakia Society (Matica slovenská) and the National Institute for Slovakian Culture in Martin (1964–1975). A two-storey section forms the extended base for this narrow, high-rise building that is set on top. Elements made of concrete are integrated into a regular pattern to form the façade. Kuzma lectured between 1960 and 1990 at the University of Art in Bratislava, giving a course of studies in architecture that he had founded himself.



Lasdun Denys Louis

▼ Halls of residence, University of East Anglia, Norwich, England, 1962–1968

► Cluster Blocks, London, 1952–1954

Denys Louis Lasdun (1914–2001) graduated from the Architectural Association in London and was employed by Wells Coates (1935–1937). In 1937, he was awarded the contract for a house with studio for the painter J. F. Conway in London, which was completed in 1938. The studio on the fourth floor received sufficient daylight through an extensively glazed façade that opens out onto a balcony with overhead lighting. The ribbon glazing on the first and second floors reduces the effect of the height of the building by stressing the horizontal aspect. The influence of Le Corbusier is clear in this project. Subsequently, Lasdun applied to become a member of the Tecton group and was accepted in 1938. Apart from this, he was also involved with the MARS group. When Tecton broke up in 1948, he founded a partnership with Lindsay Drake.

From 1960 he ran a practice in London with a variety of partners. The Cluster Blocks in Bethnal Green, London consist of four wings of buildings attached to a core service building. All the flats were designed to have access to light, air and a view. Lasdun had formerly studied the structure of plants and cells, which influenced his thinking. He designed the Royal College of Physicians in London (1960–1961), the University of East Anglia in Norwich, England (1962–1968) and the National Theatre in London (1967–1976). These two latter buildings also typify some of Lasdun's fundamental thinking: that architecture provides a framework within which some further development must be possible and must find a unified form over and above the simply functional. In 1984, Lasdun published *Architecture in the Age of Scepticism*.

"Buildings should speak for themselves but they are motivated by ideas. In turn, buildings impose their own laws to which the ideas must submit."

Lassen Mogens

▼ Sølystvej 9-11, Copenhagen, 1939

► Sølystvej 7, Copenhagen, 1935-1936

Mogens Lassen (1901-1987) studied architecture at the Technological University in Copenhagen (1919-1923). During the college holidays, he acquired practical skills in building. As his parents could not afford for him to continue his studies at the Royal Danish Academy for the Fine Arts, he began his career with hands-on experience in various architects' practices. Apart from working with Tyge Hvass (1925-1934) for many years, his path also led him to the Parisian offices of Christiani & Nielson (1927-1928). In Paris, he got to know Le Corbusier's work and was offered the chance to work in his practice. However, in 1935 he decided to found his own firm in Denmark instead. Lassen is regarded as one of the pioneers of Danish functionalism. Together with the building engineer, Ernst Ishøy, who had developed a building system from concrete and steel sheets, he realized some detached family houses. The garden elevations of the houses in the Sølystvej 9-11 development in Copenhagen (1939) are distinguished by the varying sizes of window, at times very deep and wide. The impression of the three dwellings is further enhanced by the different roof shapes. Lassen's own, three-story house with its roof terrace sheltered by a high wall, Sølystvej 5 in Copenhagen (1936), is reached via a small bridge. The inspiration he drew from Le Corbusier's architecture is particularly recognizable in the Frugtparken 22 House in Copenhagen (1939). Here, he used barrel-vaults made of prefabricated concrete elements, determining the light atmosphere of the houses. Lassen's work also includes numerous furniture designs.

László Paul

"I don't try to design look-at-me houses. I try to give the modern style an ageless importance, to be ahead of my time and yet build a comfortable home."

▼ Crenshaw Theater, Los Angeles, 1941

▶ László House, Beverly Hills, 1955

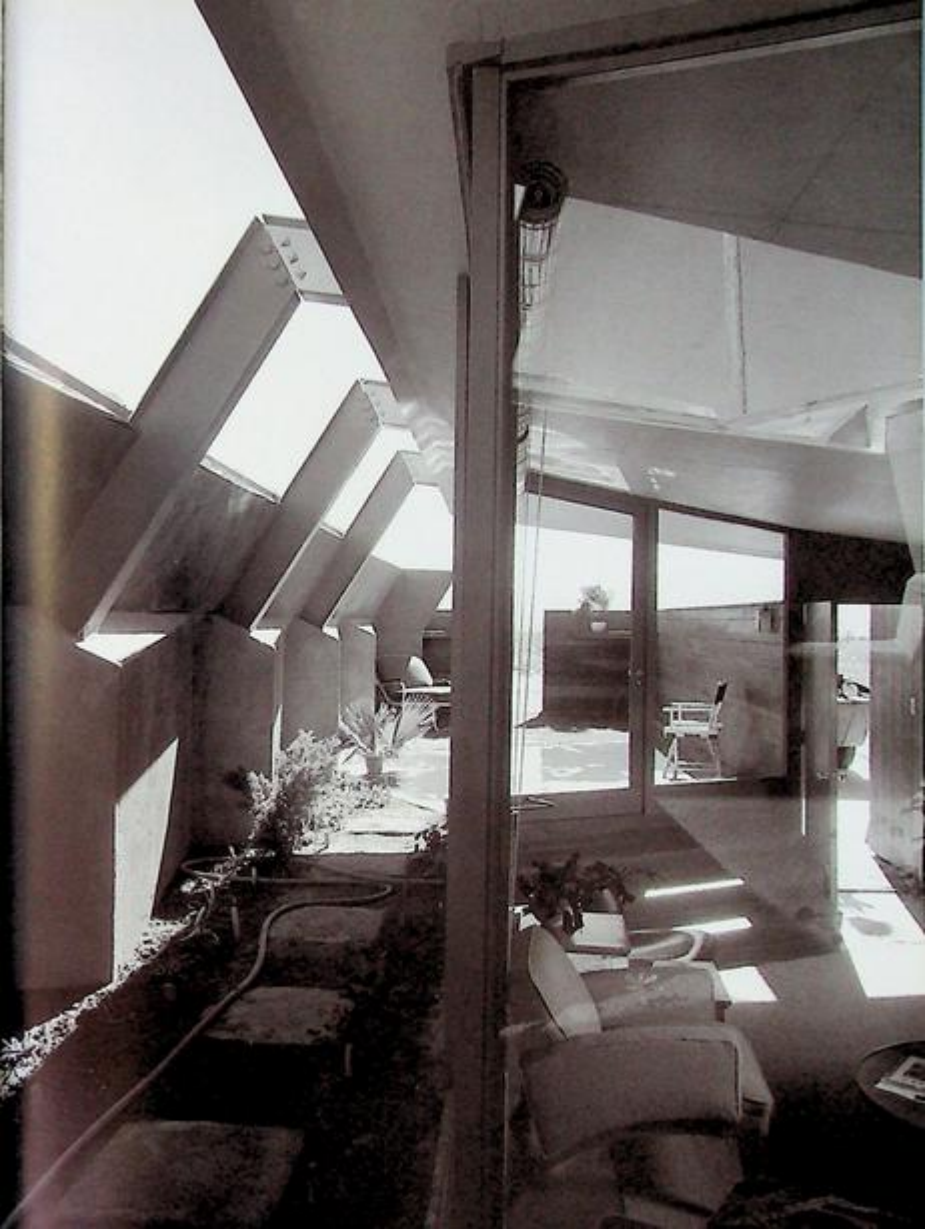
Hungarian Paul László (1900–1993) moved to Vienna in 1924 to open his first practice. He then moved on to Stuttgart, before emigrating to the USA in 1936. In California he undertook a great many building commissions, including family houses, restaurants, luxury boutiques, showrooms and casinos. Shop fittings were the commercial focus of his practice. From 1948, he worked for four years as a designer for Herman Miller. His first house, in Brentwood, California (1948), is L-shaped and built around a circular pool. A roofed veranda forms a third side. His second house, in Beverly Hills (1955), also has a partially roofed inner courtyard, onto which all the living areas open. From the exterior, the house has a closed appearance. Rusticated ashlar is combined with black steel tubing 'Y' columns, white walls and ceilings, and generously sized, glass sliding doors. His luxurious residential buildings generally offered technical conveniences and comforts. In Los Angeles, he designed a sales showroom for McCulloch Motors (1957) with a rounded metal presentation wall and back-lit wall units. László also worked as a film set designer: Cary Grant, Elizabeth Taylor, Barbara Stanwyck, Robert Taylor and Barbara Hutton were among his clients.

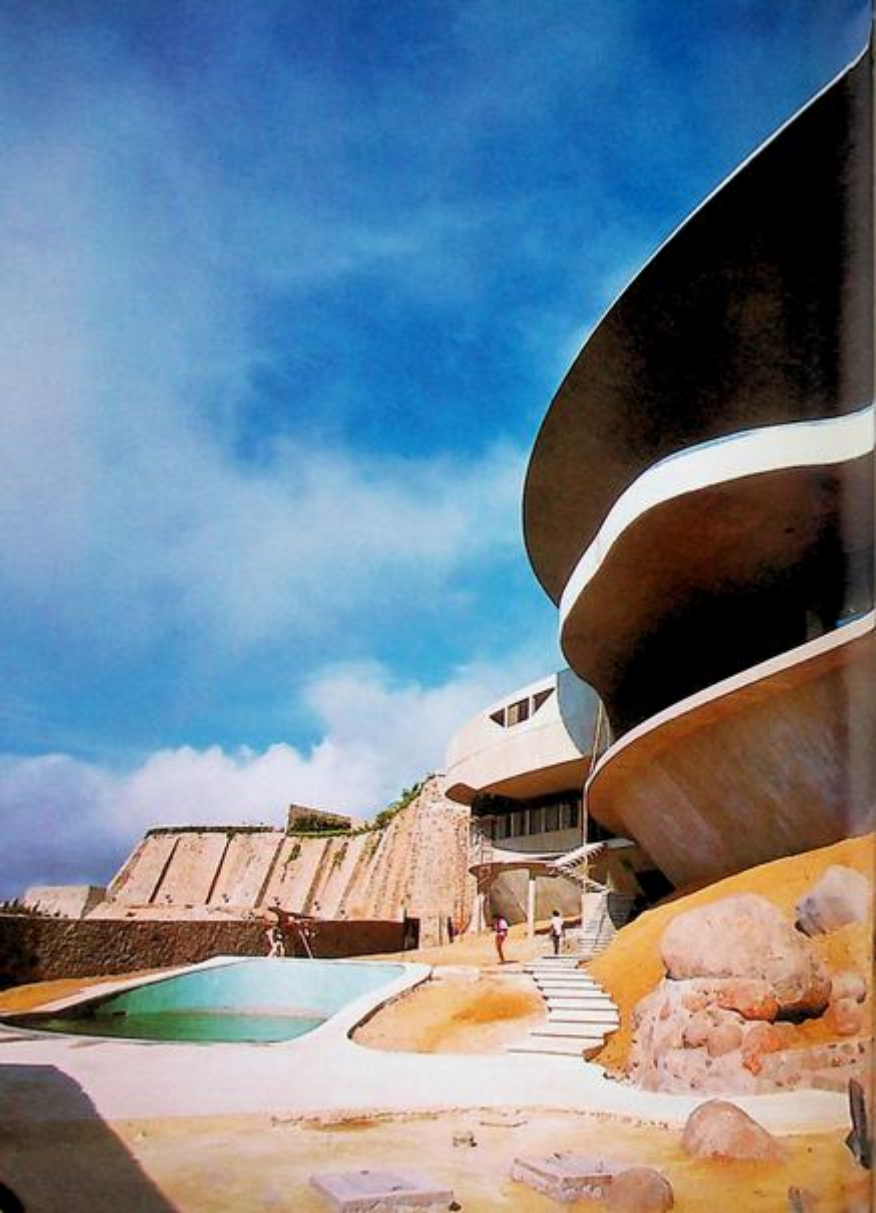
Lautner John

▼ Malin House, "Chemosphere", Los Angeles, 1960

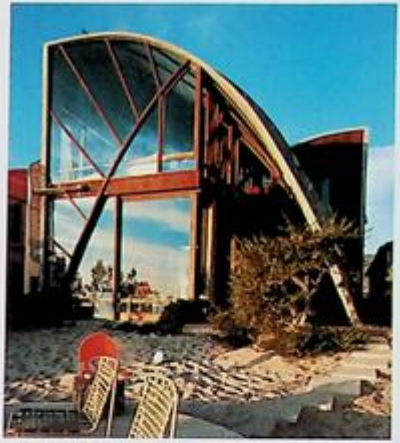
▶ Motel in Desert Hot Springs, California, 1947

Before establishing his own practice in Los Angeles in 1940, John Lautner (1911–1994) was a student of Frank Lloyd Wright, who employed him in 1933 to work with him at Taliesin West. More than 100 buildings realized by Lautner, mainly private houses, are distinguished by their great individuality and experimentalism. Throughout his lifetime, Lautner sought new forms and modes of construction. He believed that a house should be suited to its occupants and enhance their quality of life through light and air. Harmony is created by the fact that, despite the more spectacular elements, the occupants always feel a sense of security. His early houses included one that was built around a pool which actually flowed into the living room: the Carling residence in Los Angeles (1947), with floor-to-ceiling glass sliding doors and a retractable wall with integrated seating arrangement. There was also the Foster House in Sherman Oaks, California (1950). A round, in some places freestanding structure with roofed terrace opens up into a rectangular part of the building, which is also timber-clad. The street front is only broken by narrow slit windows. Lautner created a particularly bold construction for the octagonal Malin residence ("Chemosphere") in Los Angeles (1960): it rests on a central, concrete post. Like an umbrella, the low-sweeping roof turns up over the building, which is glazed on all sides. Lautner also built the Sheats/Goldstein House in Los Angeles (1963; converted in 1989), with a rooflight over the kitchen that can be opened and integral glass, concrete and leather furniture.





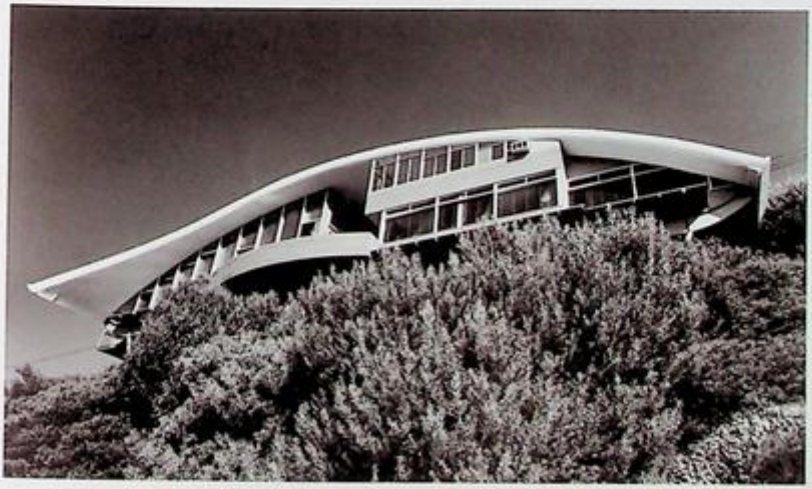
and the Stevens residence in Malibu Bay Colony, California (1968). The two building units are formed from opposite concrete domes and open towards the ocean on the narrowest side. In 1973, the Arango House in Acapulco, Mexico was built. The main living room on the top floor has no walls, just a wide-spanning roof, in the form of an arching hat brim. Instead of a railing, the living terrace is surrounded by a moat, so that foreground and the distant sea blend into one another visually.



◂ Arango House, Acapulco, 1973

◂ Stevens House, Malibu, 1968

▾ Garcia House, Los Angeles, 1962



Lechner Ödön

▾ Geological Institute, Budapest, 1899

▸ Post Office Savings Bank, Budapest, 1899-1902

Odön Lechner (1845-1914) studied in Pest (now Budapest) until 1865 then went to Berlin to continue his studies (1866-1868). Afterwards, he traveled around Italy. He found his first position at the offices of Clément Parent in Paris (1875-1878) before establishing himself as an independent architect in Hungary. At an early age, Lechner was a critic of the prevailing historicism. A preoccupation with the Hungarian craft tradition and its Middle Eastern origins influenced his architecture and paved the way for his development of a Hungarian national style. At the turn of the century, he developed an individual use of forms that borrowed from the ornamental elements of folk art. Colorful roofs decorated in a highly imaginative way and richly embellished façades distinguish his buildings. The Arts and Crafts Museum (1893-1897), the Geological Institute (1899), and the Post Office Savings Bank (1899-1902), which are all in Budapest, are among his principal works. The green-yellow patterned roofs covered with pyro-granite tiles and towers with glazed tiles are visible from some distance. "Pyro-granite" was the proprietary name of a grey-green artificial stone that Lechner developed with Vilmos Zsolnay, the manufacturer who produced ceramics for buildings. A glass dome spans the central hall of the museum. Moorish arches shape the arcades on the ground floor and those in the gallery on the first floor. The Villa Balás in Budapest was completed in 1905. The lack of symmetry is its distinguishing feature. Just as with his other buildings, Lechner assembled a wealth of ornamental features with the intention of creating a Hungarian national style.

Le Corbusier

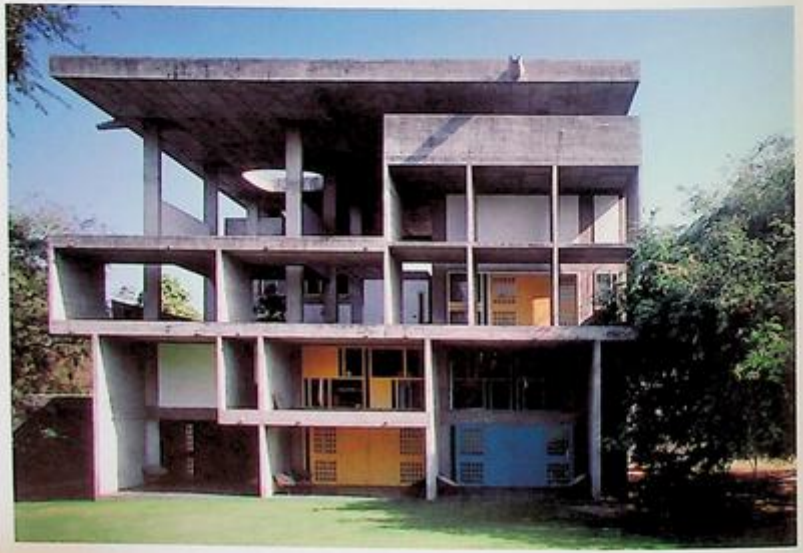
"The primary forms are the beautiful forms, as they are clear to read."

Charles-Édouard Jeanneret-Gris (1887–1965) started out in 1900 as an apprentice engraver and chaser, studying under Charles L'Eplattenier at the School of Applied Arts in the town of his birth, La Chaux-de-Fonds in Switzerland. In 1905, he realized his first building there, the Villa Fallet, for a member of the school of art. He then visited Italy, Budapest and Vienna, before receiving an insight into the possibilities of reinforced concrete construction from Auguste Perret in Paris (1908–1909) and gathering further experiences with Peter Behrens in Berlin (1910–1911). His early works include the design for the Domino Houses, a building system developed between 1914 and 1915 for industrial mass production in reinforced concrete, and Villa Schwob in La Chaux-de-Fonds (1916), a reinforced concrete structure in classicist guise. In 1917, Jeanneret settled in Paris and changed his name to Le Corbusier. Here he also made the acquaintance of painter Amédée Ozenfant, with whom he published the manifesto "Après

◂ "L'Esprit Nouveau", Paris, 1925, with Pierre Jeanneret

▴ Semi-detached house 14/15, Weißenhof estate, Stuttgart, 1927, with Pierre Jeanneret

le cubisme" (After Cubism) (1918) and from 1920 published the journal *L'Esprit Nouveau* (New Spirit). Between 1920 and 1922 he developed the Citrohan Houses, box-like structures with supporting walls on the longitudinal sides, the second version of which were raised on supports. The name is intended to be reminiscent of the functional nature of Citroen cars, which, like airplanes and ships, he saw as a design alternative to the rigidity of architecture. In 1922, he joined his cousin Pierre Jeanneret and worked at the Villa Ozenfant in Paris, where he designed his concept for a city with three million inhabitants. In 1923, Le Corbusier republished his collected articles from *L'Esprit Nouveau* under the title *Vers une Architecture* (Towards an Architecture). In the subsequent period, his buildings in France included the pair of houses La Roche-Jeanneret in Paris (1923), a residential estate in Pessac (1924–1926), the Cook House in Boulogne-sur-Seine (1926) and the Villa Stein in Garches (1926–1928). His pavilion "L'Esprit Nouveau" at the Paris Exhibition of 1925 presented a large apartment block in model form. Skyscrapers dominated his "Plan Voisin" (Neighbourhood Plan) for a new Paris (1925). In 1927 he entered the Geneva Völkerbundpalast (People's Palace) competition and the Deutsche Werkbund (German Association of Craftsmen) exhibition in Stuttgart-Weißenhof with two residential houses in which he tried to translate his five-point program for new contemporary architecture: supports (pilotis), roof gardens, free ground plan, long windows and free-form façades. A year later, Le Corbusier would become a founder member of the Congrès Internationaux d'Architecture Moderne (CIAM). At the 1929 Paris autumn exhibition, he presented various furniture designs that he had created together with Pierre Jeanneret and Charlotte Perriand. Slender supports hold up the Villa Savoye in Poissy, France (1928–1931), a white prism with ramps and surprising views through into the interior, followed by the Salvation Army Cité de Refuge in Paris (1929–1933) and the Swiss student residence of the Cité

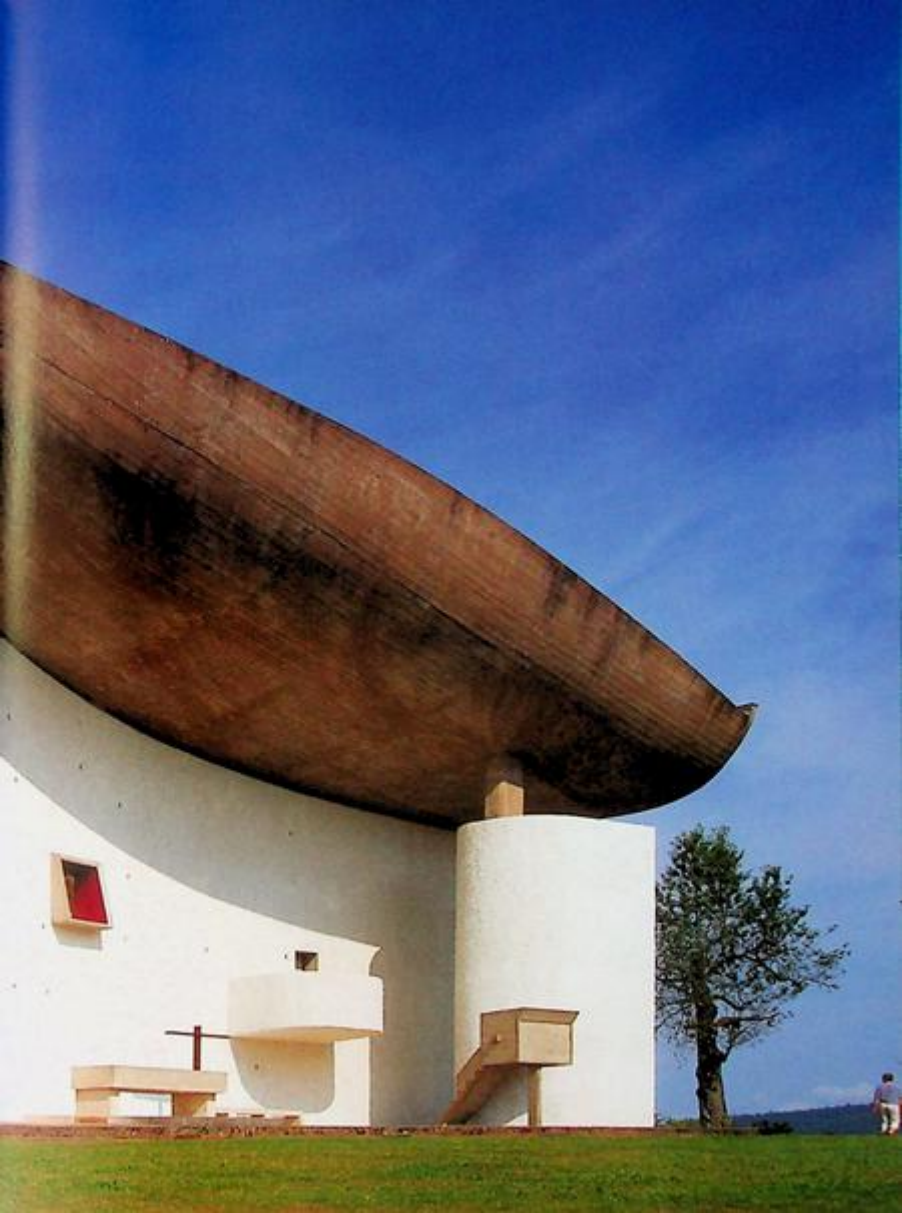


▸ Shodan House, Ahmedabad, India, 1951–1956

▸ Swiss student residence, Cité Universitaire, Paris, 1930–1932

▸▸ Notre-Dame-du-Haut Church of Pilgrimage, Ronchamp, France, 1951–1955

Universitaire in Paris (1930–1932). For the Palace of Soviets project in Moscow (1931) he designed a hall suspended from a wide, covering, parabolic arch. In 1935 he travelled to the USA for the first time and published another city planning concept under the title *La Ville radieuse* (The Radiant City). His plans for a ministry building in Rio de Janeiro and the central offices of the United Nations in New York were finally executed by Costa, Niemeyer and Reidy as well as Harrison and Abramowitz. In 1942, the preparatory work for "Le Modulor" (the Modulor), a system using standard-sized units whose proportions are calculated according to those of the human figure, was carried out. In 1948 he published the system. It is based on a human height of 1.75 meters, which Le Corbusier would later alter to 1.83 meters, and results in a room height of 2.26 meters. In 1944, he published the Athens Charter, reflections and requirements for a contemporary functional city that had been compiled in 1933 at CIAM IV and which he had further developed in 1941. The Unité d'habitation in Marseilles (1945–1952) represented a significant experiment in mass domestic housing. It was a high-rise complex on pilotis, consisting of 337 residential units, a parade of shops, and leisure and communication facilities, built to Modulor proportions. Similar developments followed, including those in Nantes-Rezé, France (1952–1957), Berlin (1956–1957) and Meaux, France (1957–1959). Le Corbusier's late works, expressively formed, sculptural structures that no longer had the prototypical aspirations of his pre-war buildings, included the Notre-Dame-du-Haut Church of Pilgrimage in Ronchamp, France (1951–1955), the La Tourette Dominican Monastery in Évreux near L'Arbresle, France (1957–1960), and the Law Courts in Chandigarh (1951–1955). Between 1950 and 1951 he worked with Edwin Maxwell Fry and Jane Drew on a zoning plan in this Indian city. In America he realized the Visual Arts Center in Cambridge, Massachusetts, completed in 1964. Le Corbusier is not only one of the most important architects of the 20th century, but was also a significant theoretician and painter.



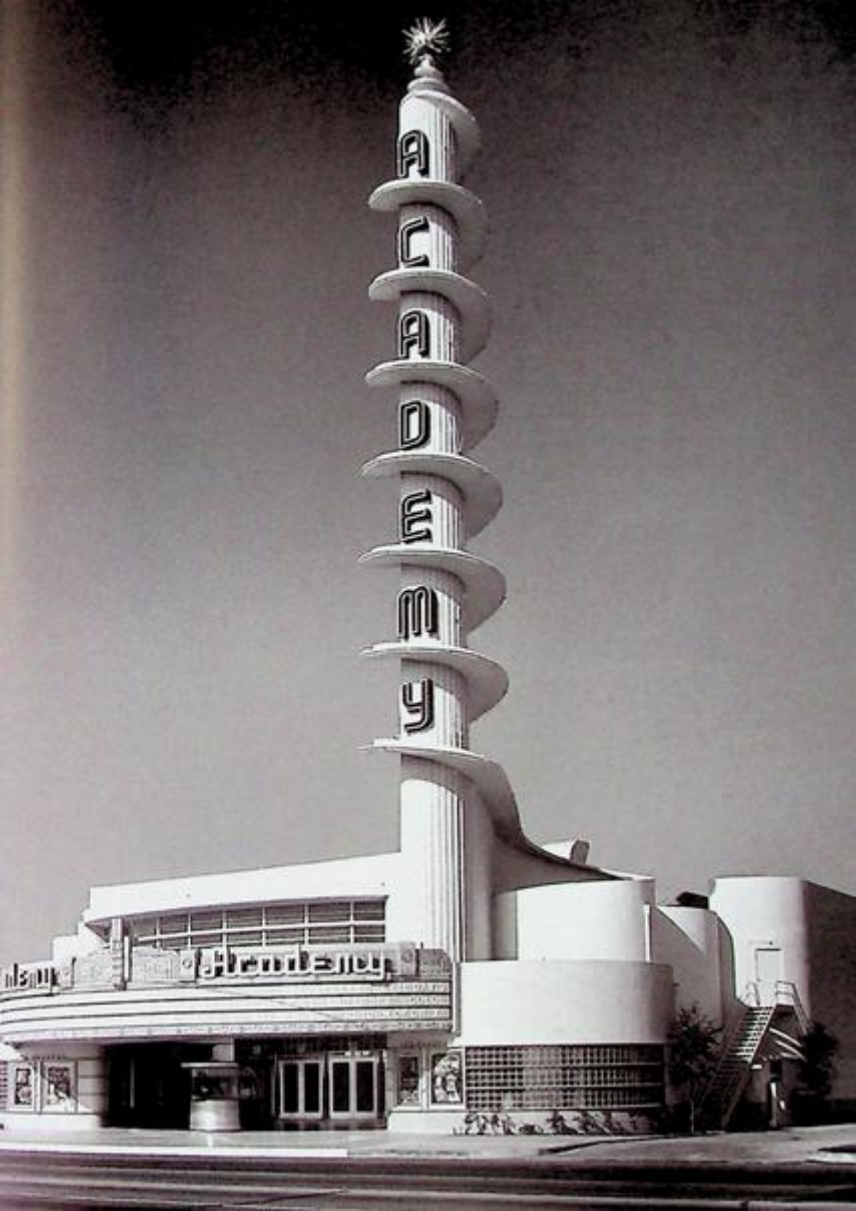
Lee Simeon Charles

"For 50 cents we took the middle-class man out of his home and gave him an environment that only the Church had given before."

▼ Municipal Light Water and Power Building, Los Angeles, 1942

► Academy Theater, Inglewood, California, 1939

Simeon Charles Lee (1899–1990) studied at Chicago Technical College, where he graduated in 1918. While still studying, he worked in the Chicago office of architect Henry Newhouse, who specialized in building small motion-picture houses. After completing his first commission for the city of Chicago, he entered the Armour Institute of Technology there to study architecture. At that time, the course followed the principles of the Ecole des Beaux-Arts, which can be clearly seen in his early drawings. In 1922, Lee moved to Los Angeles. The beauty specialist's building, Max Factor, in Hollywood, California (1931) reflects a melancholy Art Deco style. In the following period, Lee's work became more playful and more exciting. During the 1930s he realized numerous motion-picture houses and theater buildings, including for example the Bruin Theater in Los Angeles. The corner building is distinguished by an inward-curving façade to which a perfectly circular, projecting roof is attached. In 1939, the Academy Theater in Inglewood, California, was built. When designing his motion-picture houses, Lee took into consideration the increasing importance of motorcar traffic. He used substantial shapes to attract the attention of passing motorists; the few steps to the entrance were supposed to be quite an experience for them. Inside, this kind of decoration was repeated in the form of ceiling paintings. For the streamlined frontage of the Academy Theater, he used glass blocks and aluminum sections for the first time. A spiral tower, painted with luminous colors, became a largely radiant sign by night under ultraviolet lighting. The Municipal Light Water and Power Building (1942) in Los Angeles is designed on the basis of the effect it has by night as well. Backlit sheets of glass covering a large area of the modern façade effectively reflect the company's product. He completed additional theater buildings in Mexico City (1942).


ACADEMY
Broadway

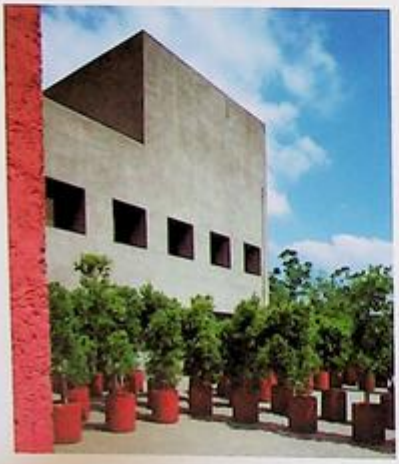
Legorreta Ricardo

"Mexico is a country of architects. We Mexicans are builders; we are all architects. I am not an exception."

▼ IBM Technical Centre, Mexico City, 1977

► IBM factory building, Guadalajara, 1975

Ricardo Legorreta (1931–2011) studied at the architectural faculty of the University of Mexico City from 1948 to 1952. Whilst still a student, he was also employed as a draftsman by José Villagrán García, who later became his partner (1955–1960). Legorreta opened his first studio in Mexico City in 1961, and a second one in Los Angeles in 1985. Key features of his architecture are modern shapes and functionality in conjunction with traditional Mexican materials and building styles. Characteristics of his constructions – which are redolent of the works of Luis Barragán – are strong colors, solid walls with clear geometric shapes, controlled perspectives and the inclusion of water. The buildings of the Hotel Camino Real in Mexico City (1967–1968) open up onto inner courtyards, and are closed to the outside with plain elevations. The clear, sober geometry is enlivened by colored grids, some coarsely structured, others finer. Angled walls with cut-in balconies and a sparkling fountain at the entrance to the hotel are other features. The red-brown walls of the Marco Contemporary Art Museum in Monterrey, Mexico (1991) rise up from a light stone foundation. Right-angled openings break through the partly angled façades of the museum, which is designed around a central courtyard. Stone steps lead up to the entrance: a rectangular opening with three, lilac-colored pillars. The 1990s saw the construction of the Cathedral in Managua, Nicaragua (1993) and the mainly brick-clad Monterrey Central Library in San Nicolás de los Garza, Mexico (1994). The latter consists of two imposing geometrical shapes: a cube, joined at the corners and surrounded by an open circular structure that, rather than closing in a circle, leaves a view of the cube on one side. Legorreta developed the master plan for a new Fine Art Center at the College of Santa Fe, and designed this new area of the campus with a number of buildings. He did the same for the Art Institute (1996–2000), which has three pyramid-shaped roofs that are visible from a great distance.



Lescaze William

▼ CBS Studio, Los Angeles, 1936–1938, with Earl Heitschmidt

► High-rise building, Philadelphia Saving Fund Society, 1929–1932, with George Howe

William Lescaze (1896–1969) studied at the Contemporary Technical University in Zurich. Subsequently, he worked for a short time for Henri Sauvage in Paris before emigrating to America. Between 1929 and 1934 he ran a partnership with George Howe in Philadelphia and later set up his own office in New York. Together with Howe, he built the high-rise office block for the Philadelphia Saving Fund Society in Philadelphia, Pennsylvania (1929–1932). Escalators lead to the banking hall, which serves as a basement with its crooked façade, and the firm's logo appears in big letters on the roof of this 32-storey, reinforced concrete building. Marble, stainless steel and aluminum were used for the fully air-conditioned interior. Other works realized by Lescaze include a condominium in Churston (1932–1936) and Dartington Hall School in Devon, both in England (1931–1935), as well as several apartment blocks in America, including the building in Harvey Cedars, New Jersey (ca. 1935). The garden of this building, which is built on a slope on an open plan, is protected from the wind by a great, glass façade. Between 1933 and 1934, he built his own apartment block in New York. The façade of this flat-roofed building, which is several stories high, fronts the street and consists to a great extent of glass bricks. Access is gained through an integrated staircase in the lower, open part of the building. Lescaze also designed studios in Los Angeles, California, for the radio broadcaster CBS (1936–1938). One part of this square building is carried on pillars and horizontal ribbon glazing runs along the whole façade. At the same time (1935–1938), Lescaze realized the residential development Ten Eyck in New York.

Lewerentz Sigurd

▼ Chapel of St. Knut and St. Gertrud, Eastern Cemetery, Malmö, 1939-1943

▶ Chapel of the Resurrection, Woodland Cemetery, Stockholm, 1921-1925

After completing his studies at the Chalmers Technical Institute in Gothenburg in 1908, Sigurd Lewerentz (1885-1975) gathered practical experience working with Theodor Fischer and Richard Riemerschmid. He ran a joint practice with Torsten Stubelius between 1911 and 1916. With Gunnar Asplund, he won the competition to design the Woodland Cemetery in Stockholm, Sweden in 1916 (1921-1925), for which Lewerentz designed the Chapel of the Resurrection. These somewhat classical beginnings were followed by the functional seven-story National Insurance Institution in Stockholm (1928-1932). The structure, with its sleek, hollow-brick street front and rectangular windows, has generously sized areas of glass looking onto an oval inner courtyard. Due to a series of disappointments, in 1940 Lewerentz gave up architecture for ten years and devoted himself to his company, Idesta, which designed modern fittings. His later work, including the Swedish churches of St. Mark in Björkhagen (1956-1960) and St. Peter in Klippan (1962-1966), both built from brick and steel, is distinctive for its outstanding attention to detail. At the Church of St. Peter, Lewerentz placed frameless glazing into mountings on the outer walls, giving an impression inside of glassless window openings.

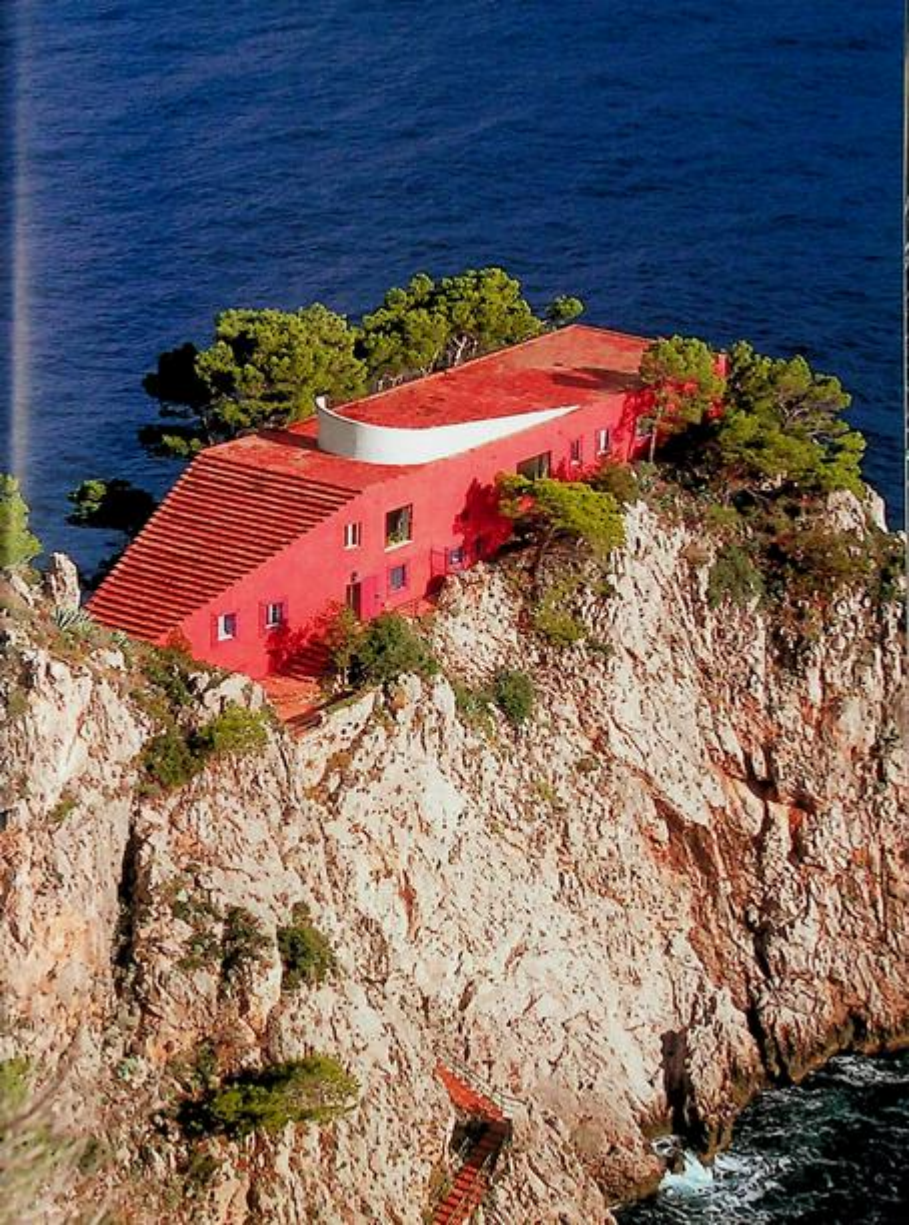
Libera Adalberto

"Residential houses must seek to that human dignity which the modern world has rightly aroused in many social classes. So we have to deny the artistic character to residential houses and aim instead to the aesthetic and human one."

▼ Italian pavilion, World Exhibition, Chicago, 1933, with Mario de Renzi and A. Valente

► Malaparte residence, Capri, Italy, 1938–1940

Adalberto Libera (1903–1963) studied at the Istituto statale d'Arte in Parma and the Faculty of Architecture of the University of Rome. In 1927 he joined Gruppo 7, which represented an Italian rationalism, and together with Gaetano Minnucci organized the following year's Esposizione dell'architettura razionale. In 1930, he ran the secretariat of the MIAR movement. Malaparte, a Mediterranean house on Capri, Italy (1938–1940), was built in close creative co-operation with the client. This elongated, red building is situated on a rock in the sea; a wide staircase leads up to the roof terrace, which has no balustrades but a curved white wall winding around part of it. As part of the complex of the Esposizione universale di Roma, Libera designed the monumental congress center (1937–1942) with E. La Padula and G. Guerrini. During the post-war period, Libera honed his skills with freer, more open designs such as the Ticket Pavilion at the Regional Trade Fair of Cagliari (1953) and won several major contracts, including the administration building for the Region Trentino-Alto Adige in Trento (1953–1963) and the Olympic Village in Rome (1957–1960, with V. Cafiero, A. Luccichenti, V. Monaco and L. Moretti).

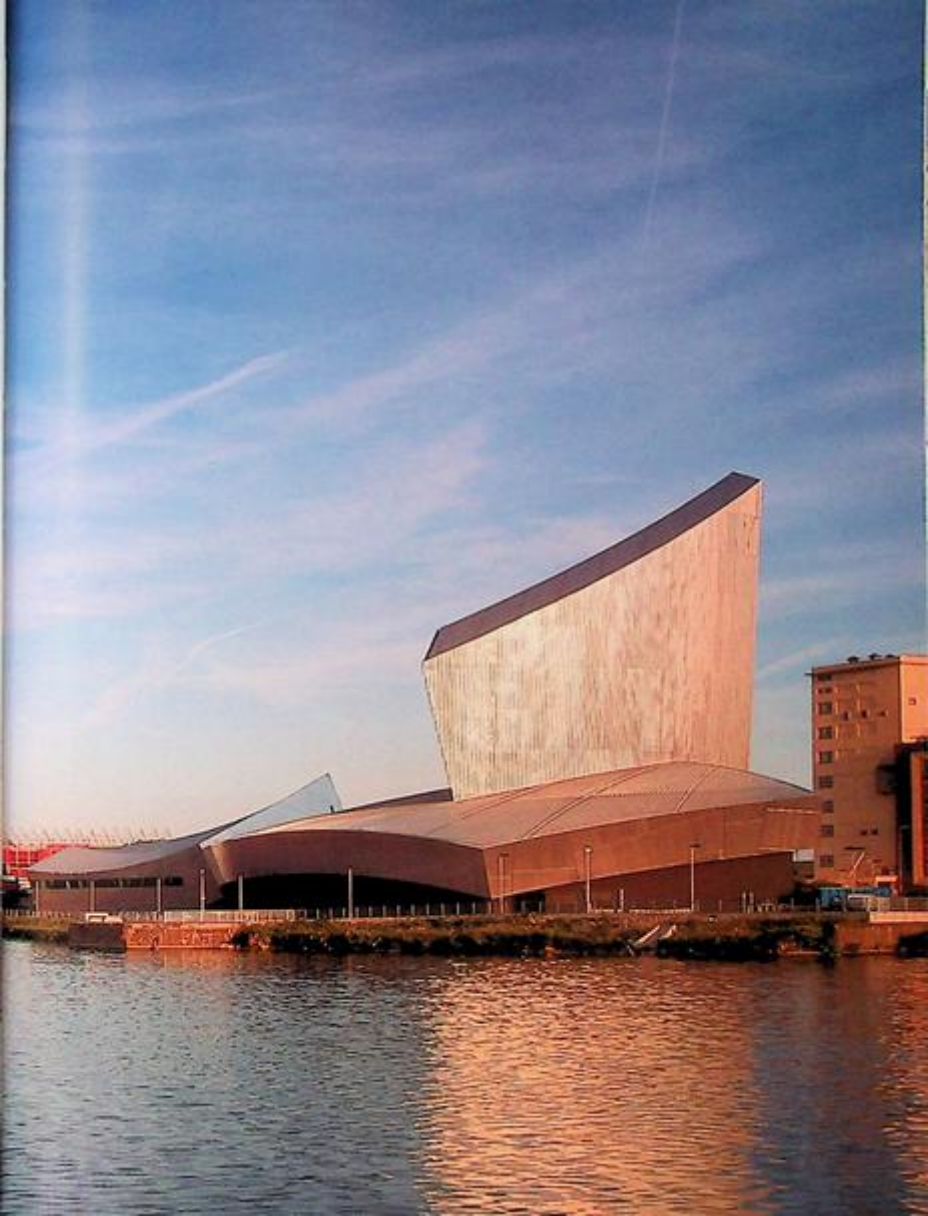


Libeskind Daniel

Imperial War Museum, Manchester, 2000–2002

Daniel Libeskind was born in Poland in 1946 and first studied music there. Then, between 1965 and 1970, he became a student of architecture at the Cooper Union School in New York, following this with a course of study in the history and theory of architecture at the University of Essex in England. Amongst other things he has lectured at the Architectural Association in London and at Yale, Hamburg and Harvard and, since 1994, has held a professorship at the University of California in Los Angeles. Until 2003 he had offices in Berlin and Santa Monica, California; he then moved to New York. Libeskind is one of the representatives of Deconstructivism and initially became well known for his designs and writings rather than projects he had actually realized. With the Jewish Museum in Berlin (1989–1999) he created a structure as statement, in which the "voids", or gaps, that have arisen in European history due to the annihilation of Jewish life appear as empty rooms, which permeate the building. The outline of the museum, which is encased in metal, reminds one of a bolt of lighting. Below ground, the neighbouring collegiate house encloses it, while a separate, five-sided holocaust tower stands adjacent. For the town of Osnabrück he built the Felix-Nussbaum-Museum (1995–1998) as an extension to the existing museum dedicated to cultural history. It is made up of three sections, which push in on one another. A narrow corridor in the center shows the paintings of the murdered Jewish artist Felix Nussbaum. The Imperial War Museum in Manchester, England (2000–2002) gives the effect of being made from fragments of the globe; the original plan was for pictures to be projected onto the outside of the building at night. His earlier projects include the Hamilton Building of the Denver Art Museum (2000–2006) and the building extension to the Royal Ontario Museum, known as The Crystal, in Toronto (2002–2007). Further planning for his successful competition design for rebuilding the World Trade Center was unfortunately denied.

"To create significant architecture does not mean parodying history, but rather to articulate it. It does not mean extinguishing history, but rather to dispute it."



Lindegren Yrjö

▼ Olympic Stadium, Helsinki, 1952, with Toivo Jäntti

▶ Olympic Stadium, Helsinki, 1934–1940, with Toivo Jäntti

Yrjö Lindegren (1900–1952) is one of the Finnish architects who made a significant contribution to Functionalism in the 1930s. In 1930, he designed a building for the Elonvera Insurance Society in Helsinki. Together with Toivo Jäntti, he designed the Olympic Stadium in Helsinki (1934–1940; extended in 1952). The structure, with its clear, angular forms, large surfaces of glass and dark metal railings, was originally planned for the 1940 Olympics; due to the Second World War, however, the Games did not take place. It was not until 1952 that the Olympics were held here, with the completed buildings being extended for the occasion. Lindegren continued to work as a city planner and, together with Alvar Aalto, drew up new plans for the centre of the town of Rovaniemi (1945), which had been badly bombed during the war. He also designed buildings in Helsinki for a large, state-financed, residential building project: a broken terrace of houses was built in three sections with outward and inward projecting façades on a serpentine ground plan (1949–1951). The development contains a total of 190 apartments. He avoided monotony by varying the ground plans. Sheltered, green areas were created by the form and arrangement of the housing units, which gave children space to play. The complex also included communal facilities, a nursery, sauna and swimming pool.

Lingeri Pietro

▼ AMILA Yacht Club building, Tremezzo, Italy, 1927–1930

► La Centrale office building, Milan, 1960

Pietro Lingeri (1894–1968) first graduated as a stonemason in Brera, Italy and worked occasionally with Antonio Sant'Elia. After he had received his diploma for architectural drawing in 1922 from the Accademia di Brera, he opened his own studio in Milan. At first, he dealt mainly with the décor of shops in the city, but later became involved in theoretical debate and joined the Comer Group and MIAR (Movimento Italiano per L'Architettura Razionale). With this latter group he won the architecture prize at the 5th Milan Triennale for his House for an Artist by the Sea (1933). His well-known works in collaboration with Giuseppe Terragni include the Casa Rustici (1933–1936), with its open corridors that separate the inner courtyard from the street, and the Casa Lavezzari (1934–1937), both in Milan. In 1934 he belonged to the group that won the competition to plan the development of Como. As well as this, he was also a member of the group that won the competition for the Palazzo del Littorio (1934–1937). This was a design that, with the attitude of the governmental regime in mind, bears witness to a movement towards a monumental style of architecture. Important evidence of his individual works can be found in the headquarters of the AMILA (Associazione Motonautica Italiana Lario) Yacht Club in Tremezzo (1927–1930) and the Villa Leoni in Ospedaletto di Occuccio (1938–1942). His notable works post-Second World War include the eleven-story QT8 Building (1949–1950, with Luigi Zuccoli), the office building De Angeli-Frua (1949) and apartment buildings in the Via Legnano and Via Melchiorre Gioia in Milan (1950). One of his last projects to be realized was the head office of the financial company La Centrale in Milan in 1960.

Lissitzky El

▼ Cabinet of the Abstract, Provincial Museum Hanover, 1927, design

▶ Wolkenbügel, 1924–1925, perspective

Whilst studying architecture at the Darmstadt Technical College (1909–1914), Lazar Markovic Lissitzky (1890–1941) travelled to Italy, France and through Germany; from 1914 to 1918 he attended Riga Polytechnic. There, in addition to studying, he worked in various architectural offices and as a painter and illustrator. In 1919, El Lissitzky was awarded the Chair of Graphics, Printing and Architecture at the Volkskunstschule in Vitebsk, where he met Casimir Malevich and produced the first Supremacist posters and Prouns (spatial constructions). During a further stay in Germany and Switzerland (1921–1925), El Lissitzky met followers of the group De Stijl and was published in the eponymous magazine. He participated in the Weimar Constructivist Congress and First Russian Art Exhibition in Berlin (1922), while his 1923 lecture on modern Russian art in the Netherlands and Germany helped to spread Soviet Constructivism. He also created the abstract Proun Room for the Great Art Exhibition of Berlin in 1923. Then followed two well-known, programmatic architectural projects: Lenin Tribune (1924), an angled, soaring tower with two protruding speaker's lecterns at different heights; and Wolkenbugel (1924–1925), a multi-storey building consisting of three supports with two joined horizontal structures. Back in the Soviet Union (1925) he designed exhibition projects such as the Soviet pavilion for the 1928 International Press Exhibition in Cologne, and from 1930 he was chief architect at the Central Park for Culture and Relaxation in Moscow.

"Every form is the frozen, momentary picture of a process; thus the work is a stopping point in the process of becoming, rather than the frozen destination."

Loewy Raymond

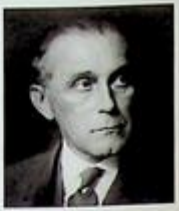
"Good design doesn't just pay in terms of aesthetic effect. It is also good business, as it helps sales growth."

▼ TWA (Trans World Airlines) travel agency, 1947

▶ "Designer's Office and Studio", Metropolitan Museum, New York, 1934, with Lee Simonson

The Parisian Raymond Loewy (1893–1986) studied at the University of Paris and the École de Laneau until 1918. The following year, he emigrated to America, where he worked as a fashion journal illustrator until the opening of his New York studio of industrial design in 1929. In the same year he designed a new duplicating machine for Sigmund Gestetner. In 1934, his "Designer's Office and Studio", created with Lee Simonson, was presented at the New York exhibition *Contemporary American Industrial Art*. The walls were clad in HPL laminate coating and mounted in aluminium, while the flooring was blue linoleum. The creativity of Loewy was determined by his work in industrial design, in which a technical interior was frequently concealed by a relatively freely designed outer shell. His solutions sought to achieve functionality and comprehensibility with an appealing exterior and brand identity. He designed logos and packaging for the corporate branding of many companies. Among these were Coca-Cola, Lucky Strike and Pepsodent. He also designed aircraft fittings, locomotives and cars such as the Studebaker "Champion" (1947). He translated his streamlined modern designs into shop fronts such as Cushman's Bakery in New York City (1937). Loewy also set up a department for architecture and interior design in 1937 to undertake a commission from the fashion house Lord & Taylor for the modernization of its sales rooms in New York. The new building for a Lord & Taylor Department Store in Manhasset on Long Island, New York State (1941) followed. The elegant, white building with its glazed entrance and natural stone sections accommodated smaller, individual shops inside. With other partners, Loewy founded the eponymous Raymond Loewy Corporation in 1949. With Allmon Fordyce and William Hamby he realized the Stratos Plant, a formally structured factory for the Fairchild Engine and Airplane Corporation in Bay Shore, New York State (1952). He then redesigned the presidential aircraft Air Force One for John F. Kennedy and interior fittings (1969–1972) for NASA spacecraft.

Loos Adolf



"The evolution of culture is synonymous with the removal of ornamental elements from the object of utility."

▼ Kärntner Bar, Vienna, 1908

► Villa Karma, Clarens, Switzerland, 1903-1906

Adolf Loos (1870-1933) attended the State Vocational School in Reichenberg before taking up a course of study at the Technical University in Dresden in 1890. After this, he spent three years in the United States visiting the World Exhibition in Chicago and eking out a living doing a variety of jobs. In 1896 he settled in Vienna. He initially began to gain influence through his writings, which were chiefly published in the Viennese *Neuen Freien Presse* (New Free Press). These articles were later published as a collection *Ins Leere gesprochen* (Spoken into emptiness) in 1921 and *Trotzdem* (Nevertheless) in 1931. He always showed himself to be against overlaid, decorative ornamentation, which he found superfluous and no longer contemporary. The radical advocacy of his theories and his polemic "Die Potemkinsche Stadt" (Potemkin City) eventually led to a split with the leading architects of the Viennese Secession, Josef Hoffmann and Joseph Maria Olbrich. In 1903, he became publisher of the magazine *Das andere - ein blatt zur einführung abendländischer kultur in österreich* (The other way - a paper for the introduction of occidental culture into Austria). His first successes of note were the refurbishment of the Café Museum in Vienna, which attracted the nickname "Café Nihilismus"

because of its total lack of anything decorative. There was also the elegantly disciplined interior design for Knize Outfitters. In 1907 he was awarded the contract for the Kärntner Bar, a small pub whose interior seemed to expand through the skilful use of mirrors and which came to be known as the "American Bar" because of its spectacular façade. Four marble pillars carried the sloping roof with a star-spangled banner made of colored glass. In 1908, he published his famous "Ornament und Verbrechen" (Ornament and Crime), a passionate plea for a beautiful, purposeful form. He demonstrated what he meant with the building on the Michaelerplatz (1909–1911). The business area in the lower part of the building was encased in green and white Cipollino marble, whilst the living area above was plainly plastered with lime cement. The windows had no framework at all and looked as if they had been simply punched out. This project was heavily criticized and, on the orders of the city development office, construction was suspended time and again. At the same time, Loos was working on the Villa Steiner in Vienna, which hid its size from the street perspective behind a deeply lowered, barrel roof. Without official authorization, Loos founded a building school in 1912 in which his pupils, including Richard Neutra and Rudolf M. Schindler, were taught for nothing. In 1920, Loos became the chief architect for the housing office in Vienna, but left in 1922 for Paris. He gave lectures at the Sorbonne and designed the residential and studio building for the Dadaist Tristan Tzara (1926). In 1927 he designed a corner house for Joséphine Baker that was encased in black and white marble stripes. This project, however, was not realized. Some of Loos' most significant later works include the Moller House in Vienna (1927–1928) and the Villa Müller in Prague (1928–1930), combining pure materials and rigid form.

◂ Tzara House, Paris, 1926

▾ Villa Steiner, Vienna, 1910

Lubetkin Berthold

▼ Mobile exhibition pavilion, 1926, serial version

► Holly Frindle Bungalow (House B), Whipsnade, England, 1933-1936

Georgia-born Berthold Lubetkin (1901-1990) studied in Moscow, St. Petersburg and Berlin from 1920 to 1925. After working in the studio of Auguste Perret in Paris (1926-1927), where he learned about concrete steel constructions, he studied at the Sorbonne for two years. In 1931, he moved to London, where he founded the Tecton Group (1932-1948). The group consisted of many members of the Architectural Association: Anthony Chitty, Lindsay Drake, Michael Dugdale, Valentine Harding, Godfrey Samuel and Francis Skinner. Denys Lasdun joined in 1938. The group's architectural ideas were rationalistic. Lubetkin was also involved in founding the MARS Group (1933), which represented continental modernity in England. He was heavily influenced by the architecture of Le Corbusier and Russian Constructivism. Lubetkin worked with Tecton on the design for the gorilla enclosure at London Zoo (1932-1937) and the oval penguin pool (1933-1934) in white reinforced concrete, with steep stairs on one side. The two, rounded ramps that cross each other are particularly striking. The Highpoint I (1933-1935) and neighbouring Highpoint II (1935-1938) tower blocks were constructed in London at about the same time. The eight-story Highpoint I with roof terrace rests partly on supports; the white façades are broken by ribbon glazing above elongated balconies and individual, rectangular windows. Lubetkin designed a more ornate façade in various materials for the apartment building Highpoint II. The materials include glass blocks and clinker. The entrance situation is surprising, with two caryatids under the porch of this modern building. Inside, he created luxurious apartments with features including double-height living rooms. Elegant, winding staircases connect the levels inside the apartments, while large windows offer unobstructed views of the park. The penthouse, which he furnished for himself, has a vaulted ceiling.

Luckhardt
Hans & Wassili

▼ Villa F., Velten, Germany, 1932 ▶ Telschow residence, Berlin, 1928

Hans Luckhardt (1890–1954) studied at the Technical College of Karlsruhe and his brother, Wassili (1889–1972), in Berlin-Charlottenburg. They were both in the Arts Council, the November Group and The Ring association of architects. They worked closely together from 1921 and, in the immediate post-WWI period, collaborated on projects such as the Museum of Hygiene in Dresden (1921) and the competition for a skyscraper on the Friedrichstrasse in Berlin (1922). Both of these designs were still highly expressionistic. In 1924, the Luckhardt brothers joined forces with Alfons Anker. Over the following years they created numerous works, mainly in Berlin: terraced houses on the Schorlemer Allee, built in three stages between 1925 and 1929 as an experimental estate; the Hirsch store (1926–1927); and the Telschow residence on the Potsdamer Platz in Berlin (1928), with a rounded façade that follows the road. The smooth front was made of opaque white glass, while the window opening with intermediate elements in shiny black glass created a striking band. Two of the three villas originally planned on the Rupenhorn in Berlin (1928) were built. The Villa Kluge is widely regarded as the perfect example of a detached house in the New Factuality. The white cube is broken by the black-framed ribbon windows, terraces and balconies. Other projects included the renovation of the Alexanderplatz (1929) and the Medical School in Pressburg (1933, now Bratislava, Slovak Republic). The Luckhardt brothers were forced to take a break after 1933 and, in 1937, Alfons Anker emigrated to Sweden. The Luckhardts developed the Berlin pavilion for the 1951 Constructa Exhibition in Hanover. In 1952, Hans Luckhardt followed his calling as a professor at the Berlin Academy of Visual Arts. After his brother's death in 1954, Wassili continued to run the studio on his own, his projects including a residential complex in the Hansa quarter for the Interbau in Berlin (1957). Wassili's final works include the House of the Populace in Bremen (1962–1969) and the Institute of Plant Physiology at the Free University in Berlin-Dahlem (1962–1970).

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Lutyens Sir Edwin Landseer

▼ Bank, Manchester, 1928

► Tigbourne Court, Witley, England, 1899

◄ Castle Drogo, Drewsteignton, England, 1910–1930

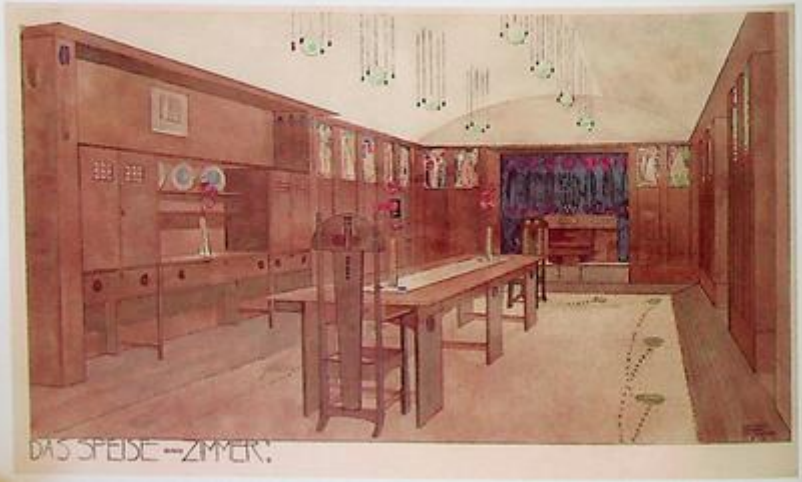
Edwin Landseer Lutyens (1869–1944) attended the South Kensington School of Art in London between 1885 and 1887 and subsequently trained for a year in the offices of Ernest George and Harold Peto. He ran his own practice from 1889. In 1900, he designed the British pavilion for the World Exhibition in Paris. He realized a number of country houses using local materials and traditional handcraft techniques and worked closely with the garden designer Gertrude Jekyll. The buildings are set out partly in the regional style and partly in the classical; each was designed specifically both for its surroundings and its owner. Amongst them are Tigbourne Court in Witley, England (1899); Heathcote Villa in Ilkley, England (1906); and Castle Drogo in Devon, England (1910–1930). Tigbourne Court is built of brick and laid out in a rigid, symmetrical manner. It has a very plain style, apart from the four pillars at the entrance. Heathcote Villa is made of local stone and has a much more majestic aspect through its cornices, pillars, stairways and balconies. Together with Herbert Baker, Lutyens was responsible for the planning and realization of the state building in New Delhi, which was the capital of British India from 1911. Lutyens designed the Residence of the Viceroy (1912–1929) in a combination of traditional Indian and Western European architecture. This monumental building is made of local materials and, at the end of a long axis, is crowned in the middle by a grand dome, set between the symmetrical wings. Flat steps lead up to the entrance, which is flanked by rows of pillars. Along the top of the building runs a broad cornice, providing shade. After the First World War, Lutyens was given the task of designing over 130 cemeteries and memorials, including the Cenotaph in London in 1919. He accepted an unusual contract in 1924 when he designed the famous doll's house for Queen Mary. This was not a toy, but a miniature exhibition of British handicraft. His design for a cathedral in Liverpool (1929–1940) was never realized.

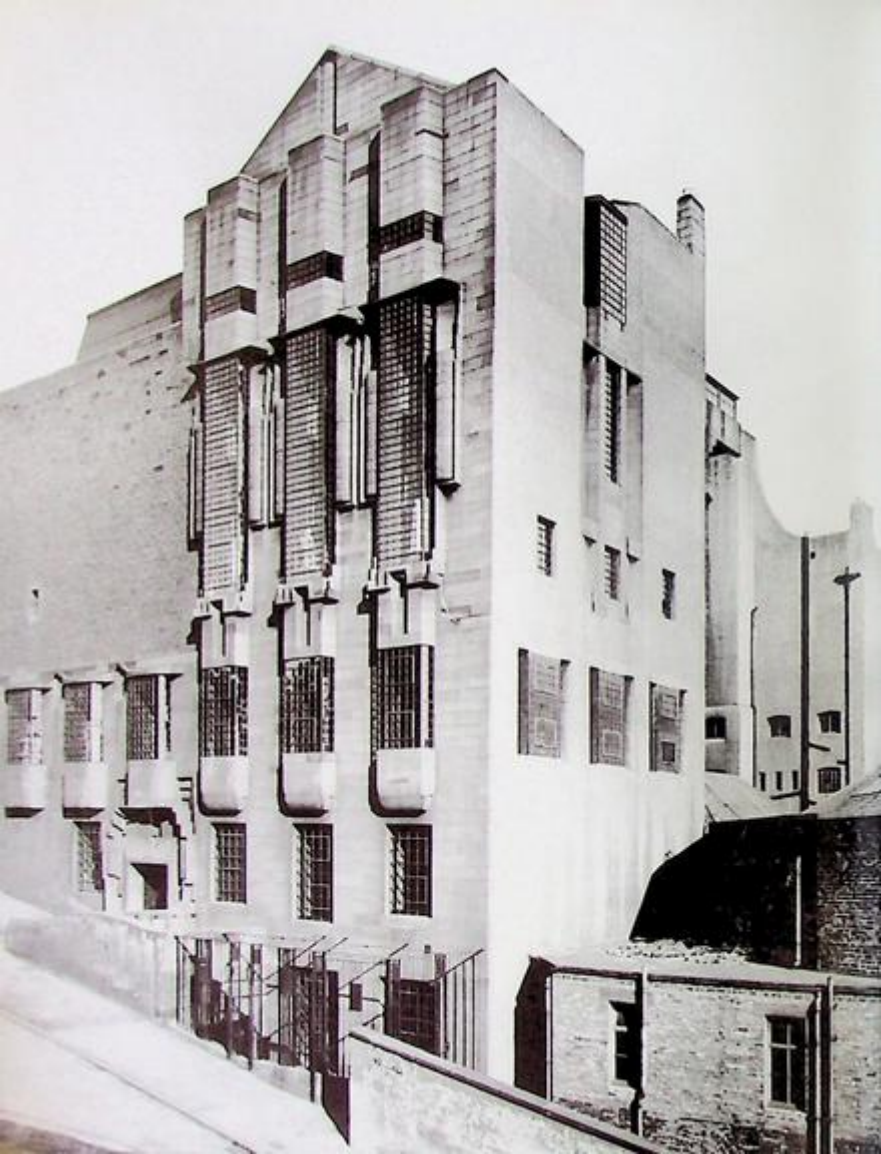
Mackintosh Charles Rennie

▼ House for an Art Lover, dining room, 1901, perspective drawing

► Hill House, Helensburgh, Scotland, 1902-1903

After attending Allan Glen's School in Glasgow, Charles Rennie Mackintosh (1868–1928) began work in 1884, at the age of 16, in the architectural practice of John Hutchison. After 1885, he continued his studies at evening classes at the Glasgow School of Art. In 1889, he accepted a position as draughtsman with the architects Honeyman & Keppie. There, he met the architect Herbert Macnair, who would later become his brother-in-law. Among the prizes and honors Mackintosh won at this time was a travel scholarship that enabled him to visit Italy, France and Belgium. His first building was an extension to the *Glasgow Herald* premises (1893–1895). In 1897, he won first prize in the competition for the new buildings of the Glasgow School of Art. They were realized in two phases: 1897–1899 and 1907–1909. The asymmetrical division of the façade and the large windows give this plain, rectangular, brick building its special character. The outlines of the block shape are softened by delicate, ornamental ironwork. At around the same time, Mackintosh was working on the furnishings and fittings for the Willow Tea Rooms in Buchanan Street (1896) and Argyle Street (1897–1898), commissioned by Catherine Cranston. The only religious building he designed was Queen's Cross Church in Glasgow (1897–1899). Following this, he worked on the country house of Windy Hill in Kilmacolm (1899–1901)





and the extensive Hill House complex in Helensburgh (1902–1903) for the publisher Walter Blackie. The international attention attracted by the work of Mackintosh around the turn of the century is mainly attributable to his furniture and interior fittings. Fritz Wärndorfer invited him to Vienna to furnish a music room. Mackintosh created a room clad with white panelling and also designed the matching furnishings. In 1902, he showed the panelling he had created for the Cranston Tearooms at the International Arts and Crafts Exhibition in Turin, for which he also realized the Scottish pavilion. In 1913, Mackintosh left the firm of Honeyman, Keppie & Mackintosh, but had relatively little success working on his own. From 1923 he lived in Port Vendres, in France, where he devoted himself to watercolor painting.

◂ Extension, School of Art, Glasgow, 1907–1909

▾ Reconstruction of the Mackintosh House, Glasgow, 1906–1914

Maki Fumihiko

▼ Kirishima Concert Hall, Kagoshima, Japan, 1994

► "Spiral", Wacoal Media Center, Tokyo, 1985

Fumihiko Maki (born in 1928) graduated from the Harvard Graduate School of Design in 1954 after receiving a Bachelor of Architecture from the University of Tokyo in 1952 and a Master of Architecture from Cranbrook Academy of Art, Michigan, in 1953. Before opening his studio in Tokyo in 1965, he worked with Skidmore, Owings & Merrill in New York, and lectured at Washington University and Harvard University in Cambridge, Massachusetts. Maki is one of the founders of the Metabolism group. His early designs include the Hillside Terrace Apartments in Tokyo (1966–1979), built in several stages, the Municipal Gym in Fujisawa, Japan (1984) and the Museum of Modern Art in Kyoto, Japan (1986). His Tepia Building, completed in 1989, and the Metropolitan Gymnasium (1990), both in Tokyo, testify to Maki's ability to combine Japanese architectural traditions with modern lifestyles. His most important building outside Japan is the Center for the Arts in San Francisco (1993). The special feature of Maki's futuristic Kirishima Concert Hall in Kagoshima, Japan (1994), which is built in the midst of a volcanic mountain landscape, is its aluminium roof of irregularly joined triangles. He was also responsible for the Kazeno-Oka Crematorium in Nakatsu, Japan (1997) and the final construction stage of the Nippon Conference Center at the Makuhari Trade Fair in Chiba, Japan (1996–1997). The TRIAD, headquarters of the Harmonic Drive Company in Nagano, Japan (2000–2002), consists of three buildings: as well as the research center, there is a gallery for the company director's art collection and a small house for security staff.

Mallet-Stevens Robert

▼ Villa Cavrois, Croix, France, 1929-1932

► Allatini and Dreyfus residences, rue Mallet-Stevens, Paris, 1926-1927

Robert Mallet-Stevens (1886–1945) was a graduate of the École Spéciale d'Architecture in Paris. He began his career by producing interior designs and furniture that showed a strong alliance to Josef Hoffmann. Mallet-Stevens also created film sets, including buildings for *L'inhumaine* by Marcel L'Herbier (1924), as a highly effective contribution towards the spread of modern architecture. From 1923 to 1928, in collaboration with Theo van Doesburg, he realized the Villa Noailles in Hyères, France, with furniture by Pierre Chareau. The villa's gardens, which were later used in Man Ray's film *Les Mystères du Château du Dé* (1929), were designed by Gabriel Guévrékian. In the mid-1920s, there were contacts with De Stijl, and in 1925 Mallet-Stevens designed a number of pavilions for the Paris Exposition internationale des arts décoratifs et industriels modernes. He was also responsible for a number of private homes on the rue Mallet-Stevens in Paris (1926–1927). The ensemble can be described as the manifestation of modern architecture. The buildings are notable for their cubic shapes and white façades, which are divided into clear horizontal and vertical surfaces. He built one house for himself, which also housed his studio. The graphic elements of the façades continue in the design of the interior. Windows, floors and carpets are adorned with geometric shapes, while cubic chairs and matching fabrics, lamps and shelves create a uniform interior. In 1929, Mallet-Stevens was one of the founders of the Union des Artistes Modernes. The Villa Cavrois in Croix, France (1929–1932) is impressive for its size alone – 2400 m². The various levels of the villa are staggered in depth and height, yet the overall effect brings to mind the 'artistic' compositions of early modernism. At its center, the cube of the large salon is flanked by a circular stairwell and tower. In 1937, Mallet-Stevens erected three pavilions for the Exposition des Arts et des Techniques in Paris.

5

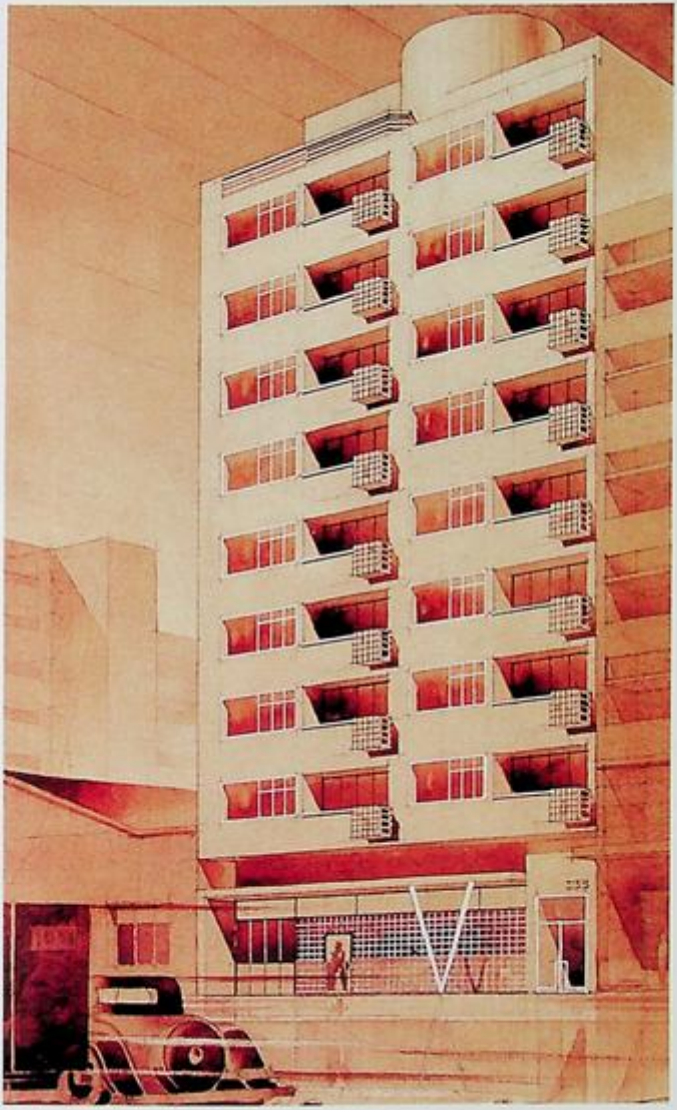
Martienssen Rex

▼ Martienssen House, Greenside, South Africa, 1939-1940

▶ Peterhouse Flats, Johannesburg, 1934-1938, with John Fassler and Bernard Cooke

Rex Martienssen (1905-1942) began his studies at the first South African School of Architecture in 1923. From 1925, the school was influenced by Le Corbusier's *Vers une Architecture*. Study tours through Europe gave Martienssen a deeper interest in modern buildings. He completed his studies in 1929. In 1932, he was the sole editor of the *South African Architectural Record*. He summarized his thoughts in the book *Zero Hour*. In 1934, he met Le Corbusier in Paris and had the opportunity of visiting two of his houses. Back in South Africa that same year, Martienssen realized the Stern House in Johannesburg (1934-1935, with John Fassler and Bernard Cooke), in which individual blocks are grouped around a circular tower housing a staircase, with a roof garden on top. For the Peterhouse Flats in Johannesburg (1934-1938, also with Fassler and Cooke), the outlines of the severe, nine-story apartment building are softened by free forms. Martienssen's own house (1939-1940) has a two-story living room and a façade that is separated from the ground by a projecting frame. His connections with the International Modernist movement helped to create a young South African avant-garde.

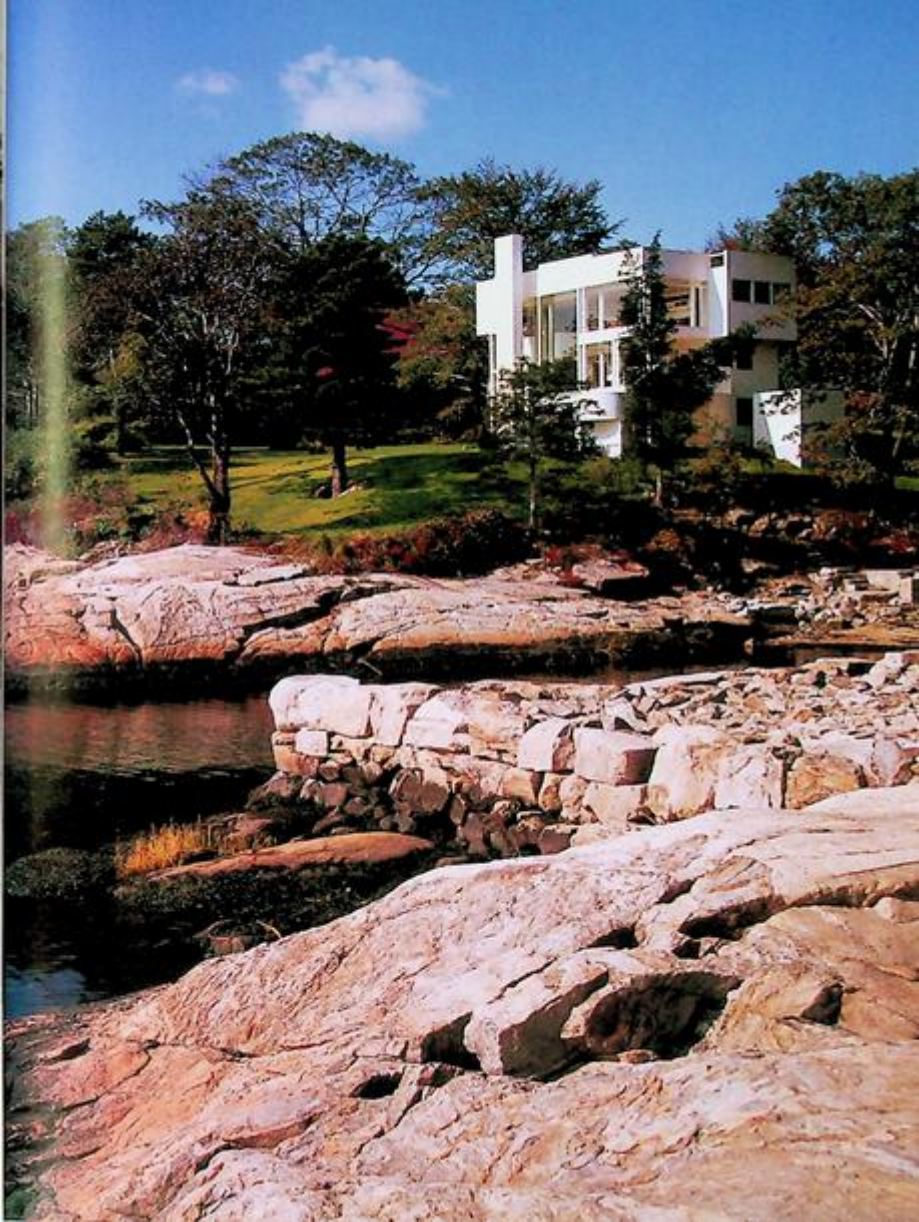
"No work may justify a claim to permanent significance that does not reflect the spirit of its own time."



Meier Richard Alan

Smith House, Darien, Connecticut, 1965-1967

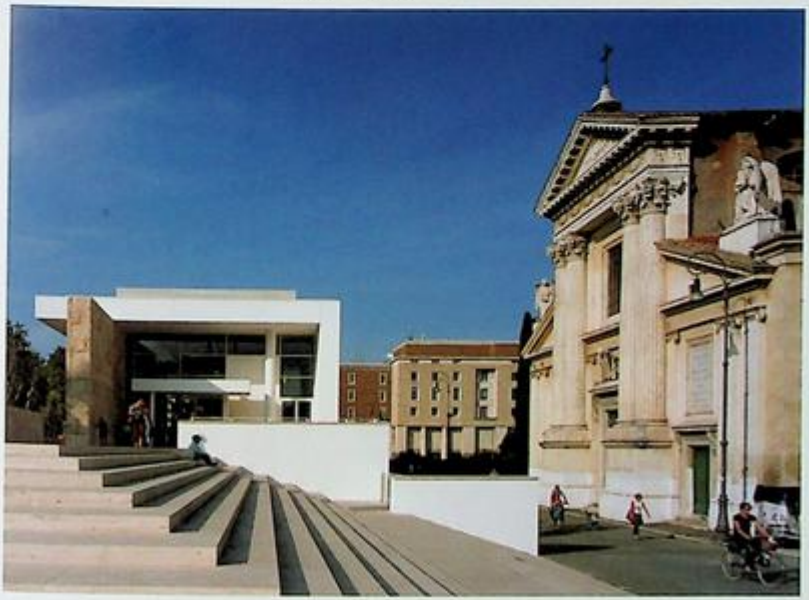
Richard Alan Meier (born in 1934) completed his studies at Cornell University in 1957 and then worked for Skidmore, Owings & Merrill and Marcel Breuer, among others. On a trip to Europe, he got to know Le Corbusier. In 1963, he opened his architectural practice in New York. At first Meier built mainly detached houses reminiscent of the easy elegance of the "white villas" of the 1920s and 1930s. Among the most important are the Smith House in Darien, Connecticut (1965-1967); the Saltzman House in East Hampton, New York (1967-1969); the Weinstein House in Old Westbury, New York (1969-1971); and the Douglas House on a steep site in Harbor Springs, Michigan (1971-1973). Meier became famous as a result of the group exhibition *Five Architects* in the Museum of Modern Art in 1969, where his works were shown alongside those of Peter Eisenman, Michael Graves, Charles Gwathmey and John Hejduk. He was able to design larger projects in New York, as seen in the estates of Twin Parks Northeast Housing (1969-1974) and the Bronx Developmental Center (1970-1977). One of Meier's most successful works is the Atheneum in New Harmony, Indiana, realized between 1975 and 1979. He has been a professor at the American Academy and the Institute of Arts and Letters since 1983. Since the 1980s, he has been much occupied with museum buildings such as the High Museum of Art in Atlanta, Georgia (1980-1983); the Arts and Crafts Museum in Frankfurt, Hessen (1979-1984); the Museum of Contemporary Art in Barcelona (1987-1995), in which white once again predominates alongside large areas of glass; and the Getty Center in Los Angeles (1984-1997). The extensive complex of buildings of highly diverse designs includes green spaces and open squares. Here, rough travertine surfaces contrast with the smooth sections of the walls in glass and white panelling. In 1998-2000, with Langdon Wilson, he built the courthouse in Phoenix, Arizona: flooded with light, this building has a large atrium and spectacular, round courtroom with a glass ceiling. With its steeply rising, sail-like, curved walls, the Jubilee Church in Rome (1996-2003) looks like a freestanding sculpture standing on a smooth plinth.



"For me, white is the most beautiful color, because all the colors of the rainbow can be found in it .. And the play of light and shade, of surfaces and indents, can best be understood against the background of a white surface."

◂ Getty Center, Los Angeles, 1984-1997

▾ Ara Pacis Museum, Rome, 1995-2006

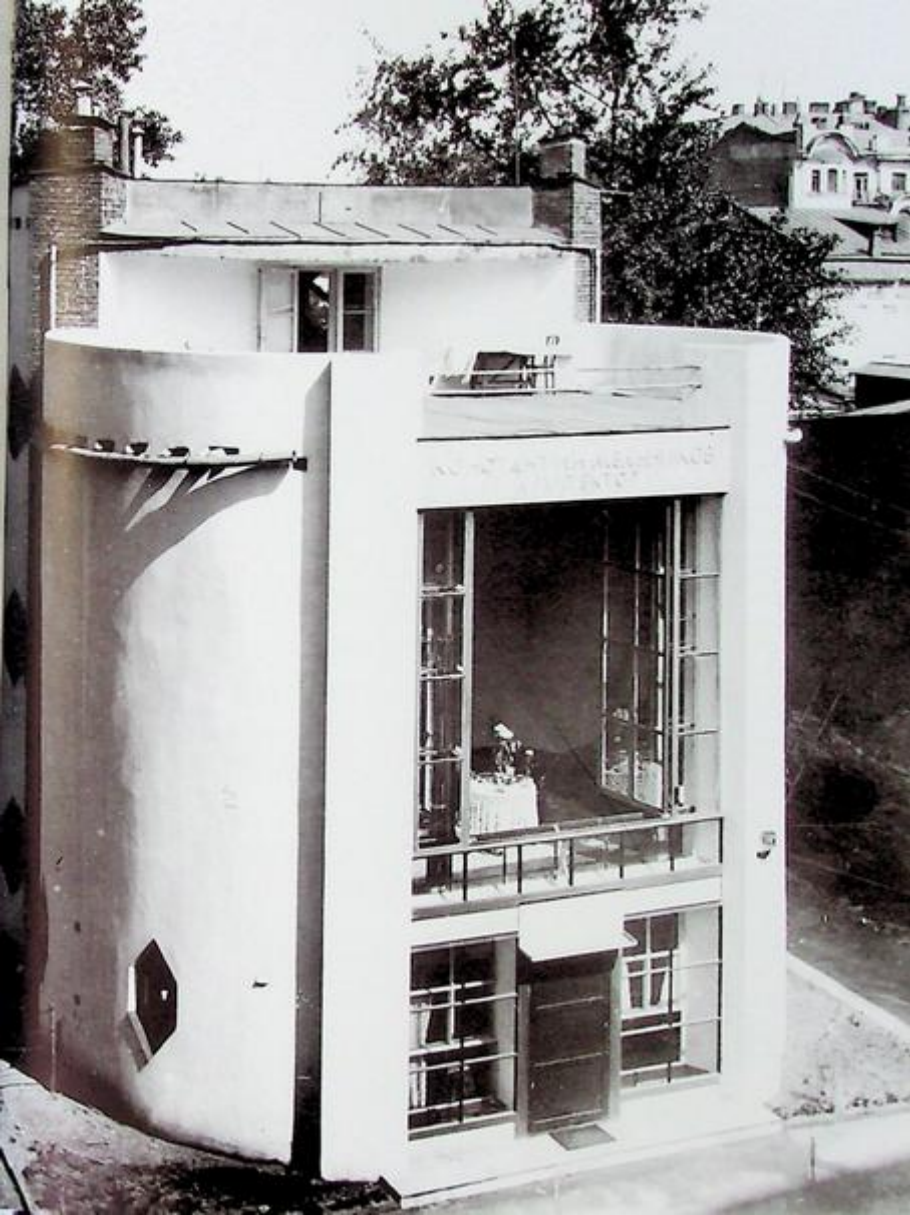


Melnikov Konstantin

▼ Soviet pavilion, International Exhibition of Decorative Arts and Modern Manufactures, Paris, 1925

► Melnikov residence, Moscow, 1927–1929

Konstantin Stepanovich Melnikov (1890–1974) first trained as a painter of icons. He then studied at the School of Painting, Sculpture and Architecture in Moscow, receiving his diploma in painting in 1914 and architecture in 1917, when he also designed an automobile factory in Moscow. After the revolution, he worked in the architectural workshop of the Moscow Soviet in the USSR and joined the department of architecture of the People's Commissariat for Education. From 1920 to 1929 he was professor at the VKhUTEMAS (higher artistic/technical workshops). In 1923, Melnikov developed plans for a workers' housing area; in 1924 he designed the market at Sucharevsk, and in 1924 an exhibition pavilion for the Machorka Tobacco Company, also in Sucharevsk: its rectangular wooden frame was an important step in his research into the possibilities of design. Melnikov built the Soviet pavilion for the International Exhibition of Decorative Arts and Modern Manufactures in 1925 in Paris: Alexander Rodchenko supplied the color concept for the wooden construction. A diagonal staircase was cut through the cube up to the top floor, while the ceilings and external walls were made almost entirely of glass. His design of the same year for a multi- story car park over the Seine in Paris was not realized. His own home in Moscow (1927–1929) consisted of two, intersecting, cylindrical towers: one with a large glass section, the other with hexagonal windows. Work on six workers' clubhouses commenced at the same time: the club for the Svoboda Factory ("Liberty", 1927–1929), the Frunze Club (1927), the Rusakov Club (1927–1929), Pravda Club (1927–1928), the Kauchuk Factory Club (1927–1931) and the Burevestnik Club ("Stormbird", 1928–1930). Melnikov built four garages in Moscow between 1926 and 1936. In 1929, he designed a memorial for Christopher Columbus in Santo Domingo, which was never realized, as well as a union theater and the People's Commissariat for Moscow Heavy Industry in 1934. His independent feeling for form led to a criticism of formalism, and he subsequently received no commissions apart from a few interior conversions: from 1937 to 1953, he was not even allowed to use the title of architect.



Mendelsohn Erich

"No Rococo palace for Buster Keaton or stucco confections for Potemkin. No dry factuality; no agoraphobia of suicidal mental acrobats. Imagination. But not a madhouse. All surface, curves... hurtle forth into the universe."
(on the Universum Cinema in Berlin)

▼ Schocken Department Store, Stuttgart, 1926–1928

► Einstein Tower, Observatory and Astrophysical Institute, Potsdam, 1920–1921

Erich Mendelsohn (1887–1953) studied at the Technical College in Berlin-Charlottenburg from 1908 to 1910 and then, until 1912, under Theodor Fischer at the Technical University of Munich. His first projects were drawings of fantastical architectural visions in steel and glass, as well as costume and poster designs. His friends included the Expressionist artists of the group Der blaue Reiter – Paul Klee, Wassily Kandinsky, Franz Marc and Hugo Ball, the poet. After serving in Russia and on the Western Front, Mendelsohn opened his own studio in Berlin in 1918; he was a founder member of the November Group and a member of the Works Council for Art. His first, much-admired construction was the Einstein Tower, the Observatory and Astrophysical Institute in Potsdam (1920–1921). Open-minded individuals such as the manufacturer Gustav Herrmann, publisher Rudolf Lachmann-Mosse and department store owner Salman Schocken also commissioned projects by him. In 1921, he worked on the construction of a new hat factory for Friedrich Steinberg, Herrmann & Co. in Luckenwalde and, together with Richard Neutra and the sculptor, Rudolf Genning, undertook the conversion of the Rudolf Mosse Publishing House (1921–1923). He also created the Dr. Sternefeld Villa in Berlin (1923–1924) as a dynamic-orthogonal composition. In 1924, Mendelsohn became a co-founder of The Ring association of architects. He met Frank Lloyd Wright on a trip to the United States financed by the Mosse Publishing House, a trip that was followed by others to the Soviet Union. Dynamically composed streamlined volumes, horizontal masonry, ribbon windows and rounded corner solutions are key features of his design language. Some of the main examples are the buildings for Schocken, such as a department store in Stuttgart (1926–1928), demolished in 1960, and a building in Chemnitz (1927–1930). Between 1926 and 1931 he realized a project at the Kurfürstendamm in Berlin for the Wolunhausgrundstücksverwertungs-AG, including a café, restaurant, shops, theater, hotel, apartment block and the Universum Cinema, on which countless others were based. Also of note are the Rudolf-Mosse-Pavillon for the 1928 *Pressa* in Cologne, his own home Am Rupenhorn in Berlin (1928–1930) and the Columbus-Haus in Berlin (1931–1932). In 1933, he emigrated to England via the Netherlands, working there with Serge

N ROOF

Chermayeff on projects that included the De La Warr Pavilion in Bexhill-on-Sea (1934–1935). He also had an office in Palestine from 1935, which was responsible for the hospital in Haifa, Israel between 1937 and 1938 and buildings for the Hebrew University in Jerusalem (1937–1939). In 1941, he moved to America. He spent the last years of his life in San Francisco, working mainly for Jewish communities.

◂ De La Warr Pavilion, Bexhill-on-Sea, England, 1934-1935, with Serge Chermayeff

▾ Medical Centre, Hadassah University, Jerusalem, 1934-1939

▾▾ Universum Cinema, Lehniner Platz, Berlin, 1926-1928

Mendes da Rocha
Paulo

▼ Club Athletico Paulistano, São Paulo, 1958-1961

► Masetti residence, Cava Estate, Cabreuva, Brazil, 1995

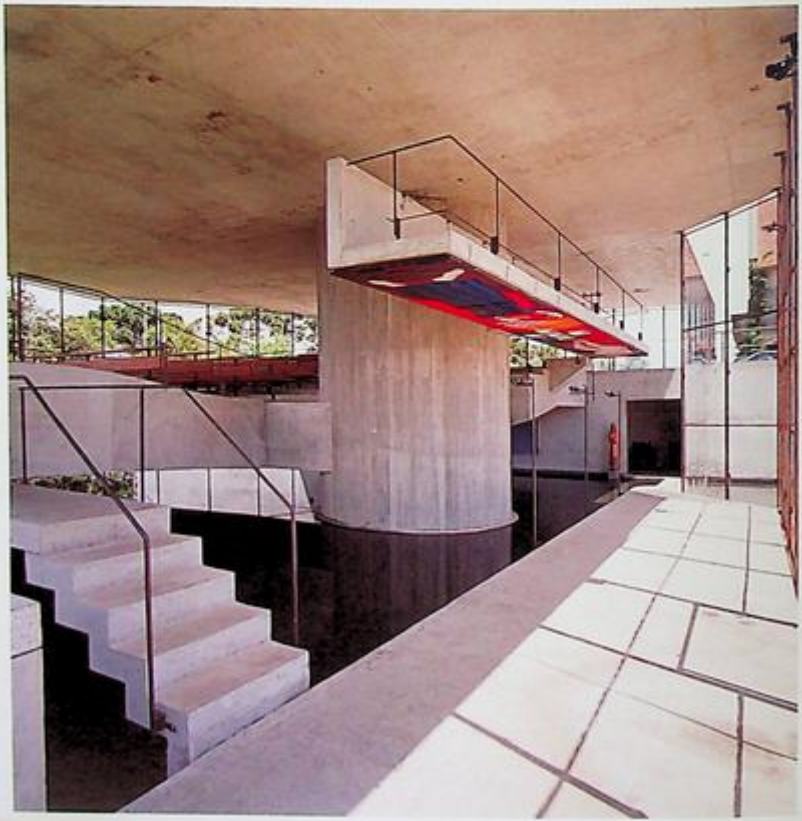
Paulo Archias Mendes da Rocha (born in 1928) graduated in 1954 from the Mackenzie University School of Architecture in São Paulo. From 1959, he lectured at São Paulo University, where he was appointed a professor in 1998. Until 1968, he shared offices with João de Gennaro. The two architects collaborated on a number of projects that were their own, independent interpretations of the principles of Brutalism, propagated throughout Brazil by the school of São Paulo. In 1958, they won the competition for the Club Athletico Paulistano sports center in São Paulo. The construction consists of a reinforced concrete ring resting on six pilotis. These are based on a rectangular structure that contains the sports facilities. Light is able to flood the arena between the individual elements. Over the following years, Mendes da Rocha and

de Gennaro worked with Shiguero Mitsutani on other buildings in which concrete is used, not only as a structural element, but also as a cover. Other projects include single-family homes in Miani (1962), Mendes de Rocha (1964), Secco (1964) and Mario Masetto (1968), all in São Paulo; the 23-story Guaimbê apartment block (1964-1966); and the Silvia Telles School (1967).

The offices were dissolved at the end of the 1960s, after which Mendes da Rocha worked on his own projects in São Paulo: these included single-family homes in Millan (1970), King (1972) and Azevedo (1975). As a result of his success, he headed the group of architects that was responsible for the Brazilian pavilion for the 1970 World Exhibition in Osaka, Japan.

▼ St. Peter's Chapel, Campos do Jordão, Brazil, 1987–1988

▶ Mendes da Rocha residence, São Paulo, 1964



Fundamentally, this pavilion consists of two concrete plates: a base and a roof. The dominant horizontal of the roof is held secure at four points. Three supporting points are subtly shaped as hills, to blend with the surrounding topography. This enables the otherwise rigid construction to echo the movements of the landscape. The visible column is shaped with two crossover arches; as the only vertical element, it symbolizes the meeting of city and country. The design of the Museum of Sculptures in São Paulo (1987) is equally minimalist and effective. The enclosed space is mainly below ground, so that only some of the horizontal building elements are obvious on the outside. The public space above the museum was designed as a park landscape to designs by Roberto Burle Marx. In 2002, Mendes da Rocha refurbished the State Art Gallery in São Paulo.

"Architecture must respond with absolute clarity to pressing issues, all related to the fundamental situations that sustain human life."

Metabolism

"Unlike the buildings of the past, contemporary buildings must be adaptable, moveable... and capable of meeting the changing needs of the times." Kiyonori Kikutake

▼ Kenzo Tange, Megastructure, Expo 1970, Osaka, 1970

► Kisho Kurokawa, Nakagin Capsule Tower, Tokyo, 1969-1972

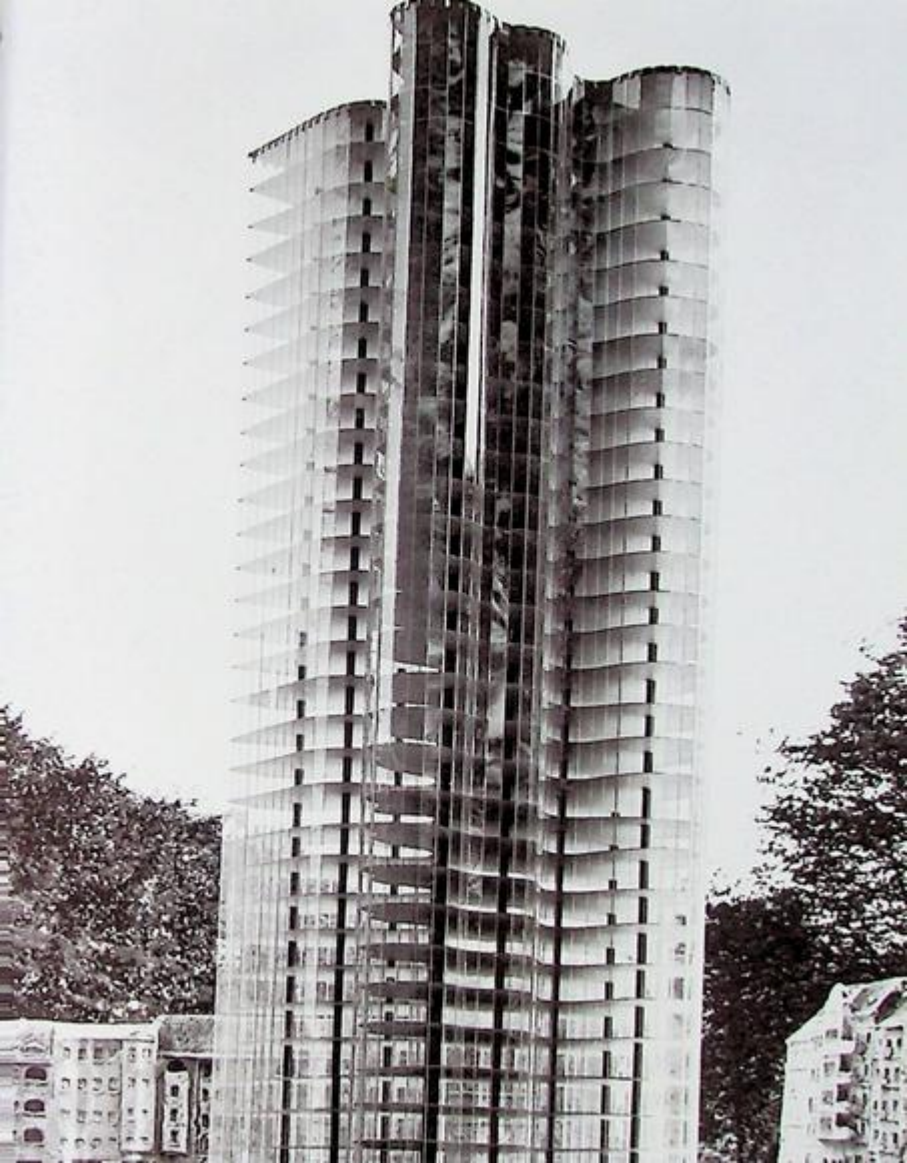
Kenzo Tange was a major proponent of the Metabolism movement that started among Japanese architects around 1960 with the objective of creating liveable environments and future-oriented city developments based on reusable elements. In 1960, he created an urban design project for Tokyo Bay in the form of a flexible-function grid plan. High-rise residential blocks with variable ground plans were a significant feature in this. A group of young architects who described themselves as Metabolists were meeting around this time to exchange views on issues of residential building and urban densification. These included Kiyonori Kikutake and Kisho Kurokawa and (later) Fumihiko Maki. They published the manifesto "Metabolism 1960" and discussed the applicability of the natural processes of birth and growth to the urban planning environment. Their proposals included a city floating in the sea, a helix city, and a tower city. They also investigated various alternatives to Tange's Megastructures for Tokyo Bay. With Tange, they associated the concept of adaptability with the changeable functions of a growing metropolis. From basic cell structures developed prototypes such as the Nagakin Capsule Tower in Tokyo (1969-1972) with its tiny living compartments.

Mies van der Rohe
Ludwig

▼ Esters House, Krefeld, Germany, 1927–1930

▶ Glass high-rise building, Berlin, 1922, model

After attending the Aachen Cathedral School and the Aachen Vocational School (1899–1901), the young Ludwig Mies (1886–1969) worked initially as a designer of stucco ornaments. In 1905, he moved to Berlin, where he worked first with Bruno Paul and then Peter Behrens (1908–1911). At that time, Walter Gropius and Le Corbusier were also working with Behrens. In 1911, Ludwig Mies took the post of building works supervisor at the German Embassy in St. Petersburg. In the same year he moved to The Hague, planned a country house for the Kröller-Müllers (which was never built) and made the acquaintance of Hendrik Petrus Berlage. In 1913 he returned to Berlin, where he opened his own practice, but the war took him to Romania. In 1921, he submitted a competition design for a glass high-rise building for the Turmhaus (tower block) for Friedrichstraße in Berlin. His design placed three wings with an approximately triangular ground plan around a circular service shaft. It was a steel skeleton, the outside walls of which were entirely glazed without any vertical division. Immediately after this he designed a model 30-story glass high-rise on an irregular, curving ground plan and sketches for an office building made from steel-reinforced concrete with encircling ribbon windows. In 1922, he became a member of the November Group, and now called himself Mies van der Rohe. Together with Theo van Doesburg, El Lissitzky and Hans Richter, he published the journal *G* (Gestaltung, or Form) in 1923 and occupied himself with the designs for two brick country houses that, with their extensive walls and broken ground plans, revolutionized the typology of residential buildings. In 1926 he became vice president of the Deutsche Werkbund (German Association of



Craftsmen), took over the management of the exhibition in Stuttgart-Weißenhof in 1927 and designed for it a residential block with a steel skeleton. He realized a villa for the Hermann Lange silk manufacturer in Krefeld (1927–1930) and, around the same time, the German pavilion at the 1929 International Exhibition in Barcelona: a spatial continuum in cool materials such as marble, travertine, glass and steel. In 1930 he completed Villa Tugendhat in Brno, Czechoslovakia (now Brno, Czech Republic), in which for the first time he implemented the free-flowing spatial solution of the Barcelona pavilion in a residential building. As in the Stuttgart exhibition and in Barcelona, tubular and flat steel furniture designed by him completed the creation. After 1930 he led the Bauhaus in Dessau until its closure in October 1932. In 1938, he emigrated to the USA, and became director of the architectural department at what would later be the Illinois Institute of Technology in Chicago. In 1940 he completed the overall plan for the redesign of the IIT campus – an austere, rectangular facility with different individual teaching and research structures arranged on a grid and realized in succession up to the end of the 1950s: the Metal Research Building was finished in 1943, the Chemistry Building and the Alumni Memorial Hall in 1945 and the Crown Hall in 1956. He planned an outer shell for the Edith Farnsworth Weekend House in Plano, Illinois (1945–1951) completely in glass: terrace, floor and ceiling units were held "floating" above the ground by white-painted pillars. Other designs for glass dwellings included the Caine residence (1950) and the square 50 x 50 House (1952). He also produced steel and glass skyscrapers such as the famous apartment blocks on Lake Shore Drive in Chicago with grid-structure curtain walls, which was followed by the Commonwealth-Promenade apartment block and the 900 Esplanade Apartments. Mies van der Rohe's most significant achievements also include the Seagram Building in New York (1954–1958), created with Philip Johnson, and the New National Gallery in Berlin (1962–1968).

"Architecture is not the working through of particular problems of form, although that is a part of it. It is always... the implementation in spatial terms of intellectual decisions."

◂◂ Villa Tugendhat, Brno, Czech Republic, 1928–1930

◂ Seagram Building, New York, 1954–1958, with Philip Johnson

▾ Farnsworth House, Plano, Illinois, 1945–1951

Mollino Carlo

"Everything is permissible as long as it is fantastic."

▼ Società Ippica clubroom, Turin, 1937

◀ Ski lift station, Lago Nero, Sauze d'Oulx, Italy, 1946–1947

▲ Seaside residence, Positano, Italy, 1948

Carlo Mollino (1905–1973) studied architecture at the Torino Politecnico (Turin Polytechnic), where he graduated in 1931. After his studies, he gained experience in the construction trade with his father's civil engineering company. The interests of Mollino extended to many other fields apart from architecture: photography, art and literature were just as much his hobbies as flying, motor racing and skiing. This wide range of interests was directly reflected in his work. One example is the interior design for his apartment in the Via Talucchi in Turin (1938). He fitted out the two-room flat, known as the Casa Miller, as the backdrop for the life he led there. Using mirrors, semi-transparent partitions, rich velvet fabrics and unusual furniture, Mollino created a fantasy room that was easily transformed into a studio for his centerfolds using a lamp attached to a track. He took many photos here in the surrealist idiom. His unusual design style included organically shaped tables and chairs as well as lamps and display cabinets. Shapes based on the human body found their way into his furniture designs in wood and glass. When it came to his designs for technical objects, it was also a matter of optimizing the aerodynamic form. Mollino designed the Bisiluro racing car and drove it at the Le Mans 24 Hours in 1954. His architectural works include the ski lift station and hotel at Lago Nero in Italy (1946–1947). During the 1930s he made an extensive study of the Aosta Valley alpine architecture, an influence evident in his later designs. He combined a foundation of reinforced concrete with a structure made of traditional timber façades. He went on to complete the riding stables (1937–1940) and the Teatro Regio opera house (1965–1973) in Turin. An opponent of any kind of uniformity in design, he shocked many of his contemporaries with his extravagant lifestyle. In 1950, Mollino was appointed to a teaching post at the Torino Politecnico, initially for interior and furniture design then later for architectural composition.

Molnár Farkas

Villa Dálnoki-Kováts, Budapest, 1932

Farkas Molnár (1897–1945) attended the Technical University and School of Art in Budapest. At the beginning of the 1920s he moved to Germany, where he studied at the Bauhaus and worked with Walter Gropius. During this time, he designed a red, cuboid dwelling-house (1923). He wanted to represent typical programmatic requirements in modern architecture, such as reduction to simple, stereometric forms. This was not to be pure theorization, but specific proposals for an estate house for the consumer cooperative GEG. In the mid-1920s, he returned to Hungary, and worked with both Pál Ligeti and József Fischer before opening his own practice. Together with Ligeti, he designed the Villa Delej in Budapest (1929). The two wings of this apartment house telescope into one another, forming a courtyard. Molnár had an apartment of his own here and opened it up to the public on Sundays, in order to promote the principles of modern domestic construction. He was involved in the foundation of CIAM, in which he represented Hungary in subsequent years. The International Style came to Hungary in the 1930s, in particular through the many villas Molnár built. His designs included the Villa Dálnoki-Kováts in Budapest (1932), which had a round living room projection made from reinforced concrete and was awarded a prize at the Milan Triennale. He also realized a horizontal, multi-story, residential building, the Villa Balla in Budapest (1932), with strip windows, projecting oriels and a generous roof terrace. Inside, Molnár's houses allow the occupants to design their own living spaces by movable wall units or sliding doors. The outside is incorporated by means of terraces and balconies, both roofed and open.

Moneo Rafael

Atocha Station, Madrid, 1984–1992

Until 1961, Rafael Moneo (born in 1937) studied at the Escuela Técnica Superior de Arquitectura in Madrid, after which he moved to Denmark and worked for a year with Jørn Utzon. Between 1970 and 1980, Moneo taught at the Escuela de Arquitectura in Barcelona, and between 1980 and 1985 at the Escuela de Arquitectura in Madrid. Until 1990, he headed the Department of Architecture at Harvard University in Cambridge, Massachusetts. The National Museum for Roman Art in Mérida, Spain (1980–1986) is a monumental brick construction with a main hall where ancient marble artefacts are exhibited; it is divided by arched wall openings almost at ceiling height. Glazed strips in the roof and high, square, side windows provide natural light. The new architecture harmonizes with the archaeological finds instead of contrasting with them. Other examples of Moneo's work are Atocha Station in Madrid (1984–1992) and the San Pablo air terminal for Expo '92 in Seville (1987–1992). The building for the Miró Institute in Palma, Spain (1992) has a rather cold appearance from the outside with its jagged, fortress-like construction. The steep, sloping situation and pool of water on the roof of the main building restore the link with the sea that is otherwise lost due to the increasingly built-up surrounding. The cuboid main building of the Davis Museum in Wellesley, Massachusetts (1989–1993) has an enclosed appearance and is largely lit by skylights. The spa room and congress hall in Donostia-San Sebastián, Spain (1989–1999) take the form of two prismatic, autonomous bodies from which well-calculated views over to mountains and sea are only possible from a few windows. Otherwise, light falls softly through the multi-story, translucent façade to the interior.

Moretti Luigi

"An elementary form on its own and therefore without differences is indistinguishable, and so unthinkable and not apprehensible, it is nothing. The continuous vision of a single color would equal blindness, just as the hearing of only one continuous tone would equal deafness."

▼ Villa La Saracena, Rome, 1953–1957

▶ San Maurizio apartment building, Rome, 1961–1965

Luigi Moretti (1907–1973) was a student at the Scuola Superiore di Architettura in Rome, where he graduated in 1930. His 1930s buildings were products of the 'rational architecture' circle: functionally designed to suit the needs of the Italian fascists, while at the same time resisting the monumental style. By 1934 he was teaching the history of architecture and art of restoration at the Faculty of Architecture in Rome. Moretti made his name for, among other things, the Casa delle Armi, a fencing school in the Forum Mussolini (now the Forum Italico) in Rome (1933–1936). A training center for the "Balilla", the youth organization of the Fascist party, equipped with a fencing hall, a library and reception rooms. Its bare, marble-panelled exterior gives this modern, angular building an elegant, grandiose appearance. Its visual presence is defined by horizontal lines of ribbon glazing and broad stairways leading up to it. His décor for Il Duce Sports Hall in the Forum Mussolini (1936–1937) was very elaborate indeed, with marble and mosaics on the floors and walls. Moretti combined fine materials with a minimalist formal language, demonstrating his primary concern of achieving well-balanced proportions. At the end of the Second World War he worked initially in Milan, where he completed several housing and office projects. Moretti gave the buildings highly structured window recesses, creating a visual play with large areas; this approach would continue through his later commercial building designs. In the early 1960s rounded shapes begin to appear in his work. In the San Maurizio apartment building in Rome (1961–1965), large, round balconies are randomly layered above and beside each other, giving an overall impression of dynamism to the façade. During this period, Moretti also completed a building in the USA: the Watergate Hotel complex in Washington D.C., which was realized between 1960 and 1965. The austere-looking façades feature all-round ribbon glazing at each floor level, giving the building a distinctly horizontal directionality. Moretti also built the Stock Exchange Tower in Montréal with Pier Luigi Nervi. He founded the periodical *Spazio* and was its editor from 1950 to 1952.

Morgan William

▼ Goodloe House, Ponte Vedra Beach, Florida, 1965

▶ Pyramid Condominium residential complex, Ocean City, Maryland, 1971-1975

William Morgan (1930–2016) studied between 1948 and 1958 at the Graduate School of Design at Harvard University, Cambridge, Massachusetts under Walter Gropius and Josep Lluis Sert. After travelling in Europe and working with Reynolds, Smith and Hills in Jacksonville, he began working for himself as an architect there in 1961. He also studied pre-Columbian architecture in depth, publishing some of his research. One of the lessons Morgan drew from these studies was responsibility for the environment of the building, the quality of which is all too often severely damaged by radical economic exploitation of the terrain. Examples of his prolific work, which covers many family houses and public buildings, include Goodloe House, which is raised on supports in Ponte Vedra Beach, Florida (1965), and his own house in Atlantic Beach, Florida (1971–1972), built onto and against a dune. During the 1970s, he created more concrete underground dune houses in Atlantic Beach (1974–1975). Between 1971 and 1975, Morgan Architects built the pyramid-shaped residential complex in Ocean City, Maryland. The police administration building in Jacksonville, Florida (1971–1975) was designed as a stepped construction, the façades of which consist of rough-worked concrete run through with smooth, horizontal areas. A large roof garden creates additional communal space. To allow a view over the surrounding oak woodland, the Drysdale residence in Atlantic Beach, Florida (1995–1996) was designed as a four-story structure with the balcony sited on the top level.

Morphosis Architects

▼ Thom Mayne

▼ House Venice III, Venice, California, 1982

▶ Crawford residence, Montecito, California, 1987–1990

Thom Mayne (born in 1944), founder (1971) of the architectural group Morphosis in Santa Monica, studied at the University of Southern California and at Harvard. From 1976 until 1991 Michael Rotondi (born in 1949), who now has his own practice RoTo, was his partner. Mayne taught at the University of California in Los Angeles, at Yale, Harvard and at the Southern California Institute of Architecture, of which he was co-founder. With its frequently confusing designs, Morphosis Architects rejects the simplification and unification of architecture: rather, its aim is to dissolve the boundaries between interior and exterior. The company is unusual in that it analyzes and revises designs after completion of the projects. Works by Morphosis include the Lawrence residence in California (1981–1984), the Cedar's Sinai Comprehensive Cancer Care Center in Beverly Hills, California (1986–1988) and the Crawford residence in Montecito, California (1987–1990). The unassuming exterior of the Kate Mantilini Restaurant in Beverly Hills, California (1986) conceals a number of surprises within. A large, circular opening with a model of the solar system has been set into the ceiling. The steel construction, which is frozen in movement, culminates in a sharp point on the floor of the restaurant, which indicates its position on a map. The association between nature and building is particularly clear in the Blades residence in Santa Barbara, California (1995). The layout extends, randomly, in all directions. Some parts of the angular building are sunk into the earth, while one side rises up at an angle without having any contact with the ground. Other projects include the Sun Tower in Seoul, South Korea (1995–1997) and the Hypo Alpe Adria Center in Klagenfurt, Austria (1996–2001). The Diamond Ranch High School in Pomona, California (1993–2000) consists of 50 classrooms, a sports hall and offices. The individual buildings are grouped around an elongated courtyard; with their random, pointed shapes they resemble a craggy, mountain landscape. The Caltrans (California Department of Transportation) District 7 building in Los Angeles (2004) was commissioned by the public authorities.

Morris William

"My work is the embodiment of dreams in one form or another."

▼ Red House, Bexley Heath, England, 1858-1860, with Philip Webb

▶ Ceiling decoration, Oxford Union Library, 1857, with Dante Gabriel Rosetti and Sir Edward Burne-Jones

William Morris (1834-1896) studied theology before turning to the fine arts. Aged 22, he briefly joined the architectural studio of George Edmund Street. In 1859, Philip Webb designed a house for him in Bexley Heath, where he and his family took up residence in 1860. Morris designed the interior of what became known as the Red House with friends, a collaboration that resulted in the company Morris, Marshall, Faulkner & Company, which produced carpets, wallpapers, furniture and glassware. In 1875, Morris became sole proprietor of the business and its skilfully made products, which bucked the trend for commercially manufactured, mass-produced items. In 1877, he and Philip Webb established the Society for the Protection of Ancient Buildings. During the 1880s he became deeply involved in the British labor organization and joined various liberal parties; in 1884 he founded the Socialist League. In 1888, he organized a number of events under the heading of "Arts and Crafts". Even in the last years of his life, Morris fought for reformation of the printing arts, and in 1890 founded the Kelmscott Press to carry through some of his ideas about them. In his prose romance, *News from Nowhere*, published in 1890, the author shares his political Utopias, thoughts on life and interpretations of the theory of art. His concepts, which are also rooted in a confrontation with Victorian society in England, attest to complete designs for life that seemed to dissolve the distinction between art, work and everyday life.

His ideals were orientated to a skilled, artistic populace that sought to express itself through its work and achievements. In this respect, he was influenced by John Ruskin, whom he greatly admired; in turn, Morris had a considerable influence on the Arts and Crafts movement. Although his political ideas remained a Utopia, there was a tremendous response to his efforts for reformation of the applied arts, which influenced later architects and style movements such as Art Nouveau.

Moss Eric Owen

"The majority of this work is a socio-political commentary on the world and its processes."

The Box, Culver City, California, 1990-1994

In 1968, Eric Owen Moss (born in 1943) graduated as a Master of Architecture from the University of California, Los Angeles, and in 1972 from Harvard. He has been Professor of Design at the Southern California Institute of Architecture since 1974. In 1976, he set up his own studio in Culver City, California, where most of his projects were created. Spatial intersections and restrictions that, particularly when working with existing older buildings, result in exciting sculptural highlights are key features of his architecture. In the latter half of the 1980s, he created the Central Housing Office of the University of California in Irvine (1986-1989); this was followed by numerous projects in Culver City. Most of his projects for the renovation of existing buildings and construction of new ones came from the builder Frederick Norton Smith; they include the Lindblade Tower (1987-1989), the Paramount Laundry (1987-1989), the Gary Group (1988-1990), the IRS Building (1993-1994) and The Box (1990-1994), an addition to the roof of an ordinary warehouse. Moss carried out an unusual renovation program on the Samitaur Building (1989-1995) by converting an existing warehouse. The new facilities are stacked like a long bar above the road, while a stairwell on the corner and a tiny, central courtyard break sharply from the rational development of the structure. Again in the case of the Pittard Sullivan Building (1994-1997), a former warehouse was heightened and converted for office use: the historic wooden binders break through the new office ensemble as decorative elements. The Beehive was built on the same site between 1994 and 2001. The shape of the Stealth Building (1993-2001) was produced by transforming a triangular cross-section along one side of the long block into a rectangular cross-section on the other side. The building measures in Culver City are intended by Eric Owen Moss as an urban development plan with the title "Conjunctive Points development", in a greater association that integrates individual adjustments to the existing block structure into a bigger picture.

Müther Ulrich

"With shells and shotcrete we can build free surfaces with interesting architecture, which can become distinctive visual features in our landscapes and cities."

Teepott Restaurant, Warnemünde, Germany, 1968, with Erich Kaufmann and Hans Fleischhauer

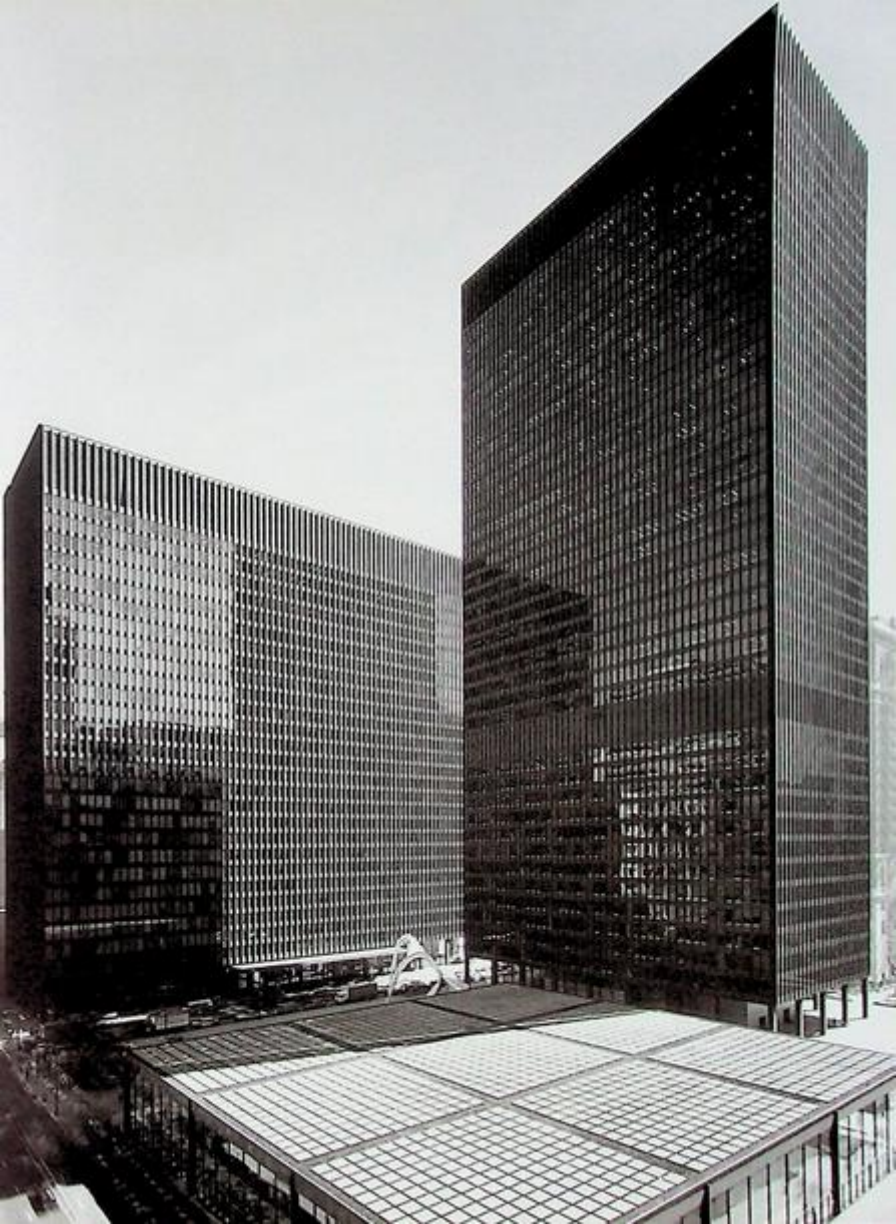
Following a joinery apprenticeship, Ulrich Müther (1935–2007) studied mechanical engineering at the Technical University in Dresden. As both architect and engineer, he designed and built audacious shell constructions that were based in part on the work of Félix Candela. His first major project was the Teepott (1968), a tourist restaurant in Warnemünde. The thin-shell structure of the massive, 1000-square-meter, sprayed concrete roof has three support points that are load bearing. Its gentle, wave-like sweep reflects its seaside context. The Ahornblatt (1972–1973) – a restaurant in Berlin's Mitte district that was demolished in 2000 in spite of being a listed building – had a roof constructed in five hyperboloid segments whose outer points projected skywards. The white lifeguard station (1968) among the dunes of Binz on Rügen – a collaboration between Müther and Dietrich Otto – looks like a UFO that has landed. Elliptical, glazed façades ensure the best possible visibility. Two reinforced concrete shells form the structure, while even the roof and elevated floor are rounded. Müther also built a space center and planetarium with a 17.8-meter-diameter sprayed-concrete dome in Tripoli, Libya (1979), as well as other planetariums in Wolfsburg (1981–1983) and Berlin (1986). In 1987, a music pavilion was realized in Sassnitz, whose cantilever roof looks like an open mussel.

Murphy Charles Francis

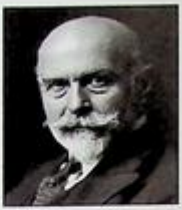
▼ McCormick Place, Chicago, 1967, design model

► Chicago Federal Center, 1960–1974, with Ludwig Mies van der Rohe, Schmidt, Garden & Erikson, A. Epstein & Sons

Charles Francis Murphy (1890–1985) studied at the De La Salle Institute Business School in Chicago. He began his career in 1911, when he joined the office of Daniel Hudson Burnham as a secretary. After Burnham's death, Murphy worked for Ernest R. Graham. He was officially licensed as an architect purely on the basis of his practical experience. In 1937 he opened his first office with partners Shaw, Naess and Murphy and, after various partnership combinations, the practice finally became the eponymous C. F. Murphy Associates. Many important building projects were completed in the 1960s, including the Chicago Civic Center (1965, renamed in 1976 as the Richard J. Daley Center) and the McCormick Place exhibition building in Chicago, Illinois (1967–1971). The wide support bay of the Civic Center (Richard J. Daley Center) and its dull surface of Cor-Ten steel lend a particular elegance to this administrative building: a refreshing change from the often cold verticality of other high-rise buildings in the International Style. Under the direction of Mies van der Rohe, a team of four architectural firms came together to build the Chicago Federal Center (1960–1974). Those involved in the project were Schmidt, Garden & Erikson, A. Epstein & Sons and C. F. Murphy and Associates. They realized a complex consisting of three buildings grouped around a plaza. The US Courthouse was completed in 1964 and the Post Office and federal buildings in 1973 and 1974. The simple and perfectly proportioned steel and glass architecture is typical of Mies van der Rohe – a masterpiece of the International Style. The two slender skyscrapers, 42 and 30 stories high, are built on piers, opening out to visitors at plaza level. The one-story Post Office building was separated off in order to distance its necessary loading and unloading functions from the public plaza. After Helmut Jahn joined the firm in 1967 (it was renamed Murphy and Jahn in 1981), there was a noticeable change in its approach, with post-modern design concepts finding their way into the architectural practice.



Muthesius Hermann



▼ Freudenberg residence, Berlin, 1906–1908

▶ Michels & Cie. Silk Weaving Mill, near Potsdam, 1912, with Karl Bernhard

Hermann Muthesius (1861–1927) learnt the craft of bricklaying from his father; he then went on to spend two years studying philosophy in Berlin and, from 1883 to 1886, to study architecture at the Technical College. Before he opened his own studio, he worked with Paul Wallot; from 1887 to 1891 he was in Tokyo; and from 1896 to 1903 he was in England as attaché for building at the German Embassy in London. His many publications on English architecture date from this time and, on his return to Berlin, he published *The English House* in three volumes. With the aim of injecting new life into German architecture and breaking free from historicism, he implemented the English country-house style in the residences he built in Germany. The main focus was on factuality and simple shapes. In 1907, Muthesius was considered one of the driving forces behind the Deutsche Werkbund (German Association of Craftsmen). In its ongoing debate on typification, he favoured the prototypes developed in collaboration with industry, whereas Henry van de Velde saw the designer as the individual artistic creator. Muthesius's own house was built around this time in Berlin-Nikolassee (1906–1909), as was the symmetrical Freudenberg residence (1906–1908), built on an angular plot with an oval central hall, white-framed lattice windows and a brick façade. A sharp, timber-framed gable soars over the entrance. He also collaborated with engineer Karl Bernhard on the Michels & Cie. Silk Weaving Mill near Potsdam (1912). An elongated administration area with a brickwork façade, the windows divided vertically, is connected to the iron framework of the light and airy production hall with generously proportioned skylights. A marble-clad vestibule gives the observer a view of the hall through a rounded, glass wall. The radio station built in Nahen between 1917 and 1919 consists of a number of cubic buildings of different heights. Angular corners dominate the site, which has a simple tiled façade with long windows.

Neorationalism

▼ Aurelio Galfetti, Rotaliniti House, Bellinzona, Switzerland, 1959–1961

► Aldo Rossi, Cemetry of San Cataldo, Modena, Italy, 1971–1984

The rise of the Neorationalist movement dates back to the 1960s, when a few young architects including Carlo Aymonino, Giorgio Grassi, Massimo Scolari and Aldo Rossi, at university in Milan and Venice, were discussing the relationship between society and architecture. At a time of political extremism in Italy, they called for a new order and regularity in architecture. Massimo Scolari, in his manifesto published in 1973 under the title "Architettura Razionale" (Rational Architecture), used the term "Tendenza" to describe this movement. Its architectural language emphasizes simple geometrical and axially symmetrical units; resorts to earlier architectural movements such as the Italian rationalism of the 1930s; and is distinctive for the combination of contemporary functions and requirements with the characteristics of typical regional architecture, but rejects the functionalistic and technological focus of modern architecture. The architectural philosophy of the Neorationalists also followed the model of the "simple cottage" of the architects of the eighteenth century (for example, Etienne-Louis Boullée and Claude-Nicolas Ledoux) with the basic architectural elements of pillars, architrave, hall and roof. In 1966, in his book *L'architettura della città* (Architecture of the City), Aldo Rossi wrote: "The relationship between geometry and history, i.e. the use of historical forms, is a recurring feature in architecture". In the 1970s and 1980s, these concepts began to be recognized internationally. It was particularly in architectural criticism that the term "neorationalism" was used for architects such as Oswald Mathias Ungers or Josef Paul Kleihues. An exhibition in Zurich in 1975 entitled *Tendenza* presented new buildings from Ticino, whose architects, including Aurelio Galfetti, Mario Botta, Luigi Snozzi and Livio Vacchini, were often subsumed under the term "Ticino School". They not only rejected a non-local adaptation of International Style, but also a backward-looking preoccupation with the protection of local heritage. Aurelio Galfetti expressed this neatly: "Using forms that connect with every period in history other than the current one means working outside the context."

Nervi Pier Luigi

"A good structural organism, planned with passion for the detail and for the whole, is the essential – indeed, perhaps the only – prerequisite for good architecture."

▼ Giovanni Berta Stadium, Florence, 1932

► ◄ Palazzetto dello Sporto, Rome, 1958–1959, with Annibale Vitellozzi

In 1913, Pier Luigi Nervi (1891–1979) graduated in structural engineering from the University of Bologna, then worked in the technical department of the Concrete Construction Company in Bologna and Florence. In 1920, he founded his own company, the Società Ing. Nervi e Nebbiosi. His first work to achieve international acclaim was the municipal stadium of Florence with seating for 35,000: an inexpensive, open concrete construction with cantilevered spiral staircases. From 1932 he ran his office with Giovanni Bartoli. In 1935, he won the competition for aircraft hangars in Orvieto: designed as geodetic structures and researched on celluloid models, these were completed in 1938. He continued developing these lightweight constructions, including prefabricated concrete elements in his materials, with aircraft hangars in Orbetello and Torre del Lago (1939–1942). From 1946 to 1961 he held the Chair of Construction Technology and Material Science within the Faculty of Architecture of the University of Rome. During 1948 and 1949 he planned and built an exhibition hall in Turin. The building is designed in two joined parts, one rectangular with a slightly rounded butt and one semi-circular with a semi-dome. The room itself is not supported. This was where Nervi first used his mobile tubular scaffolding frame, which he registered for patent. Other major constructions include the Festival Hall in the Chianciano Spa with its net-like arches (1950–1952), the UNESCO Headquarters in Paris (1953–1958) – produced in collaboration with Marcel Breuer and Bernard Zehrfuss – and the Pirelli Tower in Milan (1955–1958), which he created with Gio Ponti. Also of note are the Flaminio Stadium (1957–1959) and two sports centers for the 1960 Olympics in Rome. Whereas the smaller one – the Palazzetto dello Sporto (1958–1959) – re-defines the supporting structure as a grandiose architectural gesture, the mesh structure and flow of forces of the bearing structure of the larger one (1959–1960) are concealed on the outside by a sober, glass rotunda. Nervi also published numerous papers, including "The Art and Science of Construction" (1945), "The Architectural Language" (1950) and "New Constructions" (1963).

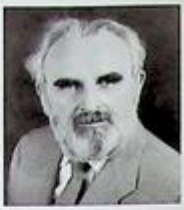
Neufeld Josef

▼ Saslavsky House, Tel Aviv, 1938

► Hadassah Medical Center, Jerusalem, 1956-1960

Josef Neufeld (1899–1980), who originally came from East Galicia (now in the Ukraine), emigrated to Palestine in 1920. Until 1926, he studied first at the Academy of Art in Vienna then at the Accademia di Belle Arti in Rome. Before opening his office in Palestine in 1932, he worked for Erich Mendelsohn in Berlin and as assistant to Bruno Taut in Moscow. The majority of his work, which is attributed to the International Style, dates from the first half of the 1930s. The long buildings of the Children's Home in Mishmar Ha'Emek near Haifa (1932–1935), arranged in a staggered formation, have white walls divided horizontally. Between broad bands of white plaster lie the recessed rows of windows, subdivided evenly into groups of four. Angular shapes and clean lines are also characteristic of the low building of a private clinic in Tel Aviv (1935). In addition, Neufeld built workers' estates and private houses there, mostly designed as blocks with rhythmically arranged openings in the walls. In 1941, he emigrated to America, where he worked for the US Department of Health during the war. Later on, he opened a private architectural practice in New York and also taught for some time at Yale University. When the Hadassah Medical Center in East Jerusalem planned by Erich Mendelsohn became inaccessible after 1948, Neufeld built a replacement of the same name in West Jerusalem (1956–1960).

Neutra Richard



▼ ► "Health House", Lovell House, Los Angeles, 1927–1929

Richard Joseph Neutra (1892–1970) attended the Technische Hochschule (Technical University) in Vienna between 1911 and 1917 and, at the same time, the Bauschule (School of Architecture) of Adolf Loos. In the immediate post-war years he worked with a landscape gardener in Zurich. In 1921, he was employed by the Luckenwalde city construction office, where he made the acquaintance of Erich Mendelsohn. He moved with him to Berlin and became an assistant in his practice. In 1923, Neutra emigrated to the USA, where he worked first at Holabird and Roche in Chicago and then with Frank Lloyd Wright in Taliesin. In Los Angeles he worked with Rudolf Schindler, among other things on the competitive project for the League of Nations Building in Geneva (1925), and realized the reinforced concrete Jardinette Apartments in Los Angeles (1926–1927). He also designed prefabricated houses, which he called "One Plus Two", and worked on the "Rush City Reformed" future city project. In 1927 he published his book *Wie baut Amerika?* (How does America build?) and received the commission for the Lovell House in Los Angeles (1927–1929). The steel skeleton he developed for this project could be erected in just 40 hours. In 1929, Neutra was the American delegate at the 3rd CIAM congress in Brussels. In 1932 he realized his own residence, the Van der Leeuw Research House, named after Dutch entrepreneur Kees van der Leeuw who gave Neutra financial support for the

construction. In 1936, he built a plywood model house and the Josef von Sternberg House in the San Fernando Valley in California, now destroyed, the terrace of which was surrounded by a high, sheet-metal fence and an encircling pool of water. Water was to remain an important design feature in the work of Neutra. He was convinced that people are still bound to follow ancient instincts and that architecture must take into account human nature and adequately appeal to human senses. Nature was not something external, but a factor that was fully part of the person and his or her dwelling place. Neutra himself called this philosophy "biorealism". During the Second World War, when no modern materials were to be obtained, Neutra used Norway spruce with brick and glass for the Nesbitt House in Los Angeles (1941–1942) and the Channel Heights estate in San Pedro (1941–1943). Significant works by Neutra from the 1940s are the Kaufmann House (a desert house) in Palm Springs (1946–1947) and the Tremaine House in Santa Barbara (1947–1948). Between 1949 and 1959 he worked with Robert E. Alexander on major public projects such as schools, churches and business buildings, including the Miramar Chapel in La Jolla, California (1957), and the Ferro Chemical Company Building in Cleveland, Ohio (1957), with its cantilevered roofing and the long portal frame girders that had become characteristic of Neutra and were known as "spider legs". He wrote about his concept of human-friendly architecture in several books, including *Survival through Design* in 1954. In 1965 his son, Dion Neutra, became a partner in his architectural practice.

"While I have experimented more than many architects with all kinds of material, I feel increasingly that human material is the most interesting of all."

◄ Von Sternberg House, Northridge, California, 1935–1936

► E. J. Kaufmann House, Palm Springs, 1946–1947

◂ Haus Tremaine, Santa Barbara, 1947–1948

▸ Case Study House No. 20, Bailey House, Pacific Palisades, California, 1946–1948

▾ Gettysburg Cyclorama Center, Gettysburg, 1958–1961, with Robert E. Alexander and Thaddeus Longstreth

Niemeyer Oscar

"It is not feminine architecture; it is architecture by an architect who loves women."

▼ Church of St. Francis, Pampúlha, Belo Horizonte, 1940–1943

► Niemeyer residence, Canoas, Rio de Janeiro, 1953–1954

►► Cathedral, Brasília, 1958–1970

Oscar Ribeiro de Almeida Niemeyer Soares Filho (1907–2012) studied architecture from 1930 to 1934 at the Escola Nacional de Belas Artes (National School of Fine Arts) in Rio de Janeiro. He then worked under Lúcio Costa and Carlos Leão in Rio. In 1936, Niemeyer joined the studio of Le Corbusier, whose influence is particularly evident in his early work. He has been freelance since 1937, with his office in Rio de Janeiro. His early work included the Brazilian pavilion at the New York World Fair (1939), which he designed with Lúcio Costa, and a residential estate with yacht club, casino and restaurant in Pampúlha, Belo Horizonte, Brazil (1940–1942). Here, and in many other projects, he collaborated with the landscape architect and artist Roberto Burle Marx. In 1943, he realized the Church of São Francisco de Assis (St. Francis of Assisi) in Pampúlha. He built his own house in Canoas, Rio de Janeiro (1953–1954): rounded, concrete

walls and large, glazed areas alternate beneath an expansive flat roof, while a boulder between the living room and pool breaks the smooth aesthetic and passes through the wall into the interior. The Copan building in São Paulo (1951–1957) is a 30-floor apartment block on an S-shaped layout, with horizontal sunshades on the entire façade. He was the supervising architect for the building for the new capital, Brasília: his designs include the Presidential Palace, the Supreme Court and the National Congress (1958–1960). On the roof of the flat building are a cupola and a shell that house the Senate and the Chamber of Deputies. In the overall structure, the cupola and shell create a formal contrast to the disc-like skyscrapers of the administration in the neighborhood. The Cathedral of Brasília was constructed between 1958 and 1970. The building is supported by a framework of tapering ribs that soar above the roof. In 1964, following the military coup in Brazil, Niemeyer went into exile in France, where he designed a number of impressive buildings such as the Mondadori Publishing Offices in Milan (1968–1975); Constantine University in Algiers, Algeria (1969–1984); the Headquarters of the Communist Party in Paris (1967–1980), in collaboration with José Luis Pinho, Paul Chemetov, Jean Deroche and Jean Prouvé; and a cultural center in Le Havre, France (1982). He finally returned to Brazil in the 1980s, his subsequent designs including the Museum of Modern Art in Niterói, Brazil (1991–1996). This is set in a dramatic position on a cliff, directly beside the sea in the Bay of Guanabara. The UFO-like building rises up from a small base in a pool. The visitor approaches the structure via a winding ramp. The Ibirapuera Auditorium in São Paulo was completed in 2005.

◂ Congress and Administration, Brasília, 1958–1960

▾ Presidential Palace, Brasília, 1956–1958

Nouvel Jean

"I hate it, when I can detect the camera and the use of technology in a film. Technology must be invisible."

▼ Nemausus residential area, Nimes, 1985-1987

▶ Agbar Tower, Barcelona, 2000-2005

Jean Nouvel (born in 1945) studied from 1964 to 1971 at the École des Beaux-Arts in Bordeaux. While still a student, he started a practice in 1970 together with François Seigneur; his current firm, Nouvel, Cattani et Associés, was set up in Paris in 1988. At the age of only 23, he was responsible for the construction of a large number of apartments in Neuilly, France, and he achieved international fame for the Institut du Monde Arabe in Paris (1981-1987), designed in collaboration with Architecture Studio. Diaphragms in the façade of this glass and aluminium structure can be altered, allowing the amount of light entering the building to be controlled. After the highly experimental residential area of Nemausus in Nimes, France (1985-1987), in 1993 he completed the rebuild of the Lyon Opera House, which dated from 1831. The fully glazed, domed roof that glows red by night serves as a rehearsal room for the

ballet. Among Nouvel's other noteworthy projects are the Vinci Congress Centre in Tours, France (1993), with a transparent glass façade and widely overhanging roof; the 16-story office building of the Fondation Cartier in Paris (1991–1994); Galeries Lafayette in Berlin (1991–1995); and the Culture and Congress Centre in Lucerne, Switzerland (1993–2000). The thin, angular, widely overhanging roof shades the walls of this three-part building with concert, art and exhibition halls. An independent roof structure also characterizes the extension of the Reina Sofia Museum in Madrid, Spain (1999–2005). The Agbar Tower (2000–2005), the 142-meter-high tower block of the Barcelona waterworks, is constructed with a load-bearing outer shell, with the openings placed irregularly in the square grid. The multi-shell wall structure creates an external appearance of delightfully varied colors.

◂ Monolith, Expo 2002, Morat, Switzerland, 1999-2002

▾ Samsung Art Museum, Seoul, 1995-2004

O'Gorman Juan

"The principle is to have the most comfort and least cost."

▼ University Library, Mexico City, 1952-1953

► O'Gorman House, Mexico City, 1953-1956

Juan O'Gorman (1905-1982) attended the faculty of architecture at the University of Mexico City and studied painting with Diego Rivera, Antonio Ruiz and Ramón Alba Guedarrama. He led the city planning and building committee for two years before opening his practice in Mexico City in 1934. Between 1932 and 1948, O'Gorman taught at the National Polytechnical Institute. His early work, such as the studio houses for Diego Rivera and Frida Kahlo in San Angel, Mexico City (1929-1930), clearly define his position as a representative of the modern style. The colorful, angular, concrete façades of the studio houses are interrupted by delicately latticed glass. Characteristic features include a spiral staircase with a continuous concrete parapet, a saw-tooth roof and an enclosure of cactus plants. His later works revisit Mexican tradition and art. The façades of the Library of the University of Mexico City (1952-1953) are clad with bright mosaics, some of which represent ancient motifs. His own, highly artistic, stone-built house in El Pedregal, Mexico (1953-1956) constitutes a complete departure from the conventions of the International Style.

Olbrich Joseph Maria

▼ Exhibition Building, Vienna Secession, Austria, 1897–1898

▶ Olbrich House, Darmstadt, Germany, Lithograph, 1901

Joseph Maria Olbrich (1867–1908) undertook his training with Camillo Sitte and Julius Deininger at the Staatsgewerbeschule (State Trade School) in Vienna, graduating in 1886. He then worked as an architect and contract manager for the building company August Bartel in the town of his birth, Troppau. In 1890, he went on to study architecture with Carl von Hasenauer at the Academy of Fine Arts in Vienna. The crowning achievement of this period was winning the Prix de Rome in 1893. After returning from Italy and North Africa, he worked until 1898 in the practice of Otto Wagner, among other things planning the buildings for the Stadtbahn (urban railway) in Wien. He was also involved in the founding of the Wien Secession in 1897. He designed its Exhibition Building (1897–1898), a simple structure embellished at the top with a filigree sphere of gilded iron laurel leaves. He exhibited a "Viennese interior" at the World Exhibition in Paris in 1900. When in 1899 Grand Duke Ernst Ludwig appointed him to the Darmstädter Künstlerkolonie (Darmstadt Artists' Colony) he moved to Hessen, where he became leading architect at the Mathildenhöhe for eight years. By 1901, he had designed seven houses, among them his own residence, Glückert Houses I and II, the building for Flächenkunst (planar art), and temporary exhibition structures. In 1908, he built the Wedding Tower – a present from the city of Darmstadt to Grand Duke Ernst Ludwig, to which an extensive exhibition building was annexed. Retaining his Darmstadt studio, Olbrich moved to Düsseldorf in the same year. There he turned, with his plan for the Tietz Department Store, to a restrained, monumental neoclassicism. Shortly before the building was completed, however, he died of leukaemia.

Otto Frei

Diplomatic Club, Riyadh, Saudi Arabia, 1980-1986, with Omrania, interior view of membrane roof construction

Frei Otto (1925–2015) enrolled as a student of architecture at the Technical University in Berlin in 1947. He travelled to the USA on a study trip in 1950, during which he received a scholarship from the University of Virginia in Charlottesville. After graduating, he worked as a freelance architect in Berlin from 1952, where he was deeply involved in research into lightweight constructions: in 1954, he published his dissertation on "The Hanging Ceiling". He tried out his new architectural shapes using tent constructions at the German Horticultural Shows of 1955 and 1957. In particular, the "Dancing Fountain" for the German Horticultural Show in Cologne (1955–1957), which was built in collaboration with Ewald Bubner, Siegfried Lohs and Dieter R. Frank, caused much excitement: it consisted of a round, open-air dance area that was made of concrete, positioned over a decorative pond and covered by a star-shaped, fabric roof. In 1957, Otto founded the Institute for Lightweight Structures in Berlin. In 1961, he met the biologist and anthropologist Johann-Gerhard Helmcke. Together, they set up the Biology and Nature Research Group, with the aim of studying the many and varied biomorphic constructions of the diatom, which became an important impulse for Otto's own structures and constructions. From 1961 to 1962 he worked as an assistant lecturer at the Technical University of Berlin. This was followed by visiting professorships, mainly to the USA. From 1964, he lectured at the Technical University of Stuttgart, later founding there an Institute for Lightweight Structures specializing in membrane constructions. The Institute's building in Stuttgart-Vaihingen, realized in 1966–1967, was a remodelled version of the design that was produced as a trial for the German pavilion at the Expo 1967 in Montreal. In 1969 he founded the Warmbronn practice with Ewald Bubner. Otto developed the convertible, movable roof for swimming pools and open-air theaters: a combination of fabric cover, hollow mast and steel cable construction that could be opened or closed according to the weather. One example of this is the roof over the open-air theater in the abbey ruins at Bad Hersfeld (1967–1969), which was designed in collaboration with Bernd-Friedrich Romberg and Uwe Röder. Another line of development involved making living and working conditions as pleasant as possible despite extreme climate conditions. This resulted in the project studies for the "City in Antarctica" (1971), a town under a pneumatic cover, and "Shadows in the Desert" (1972). From 1967 to 1972, he produced the roof over the main Olympic Stadium in Munich in collaboration with Günther Behnisch and Leonhardt + Andrä. The Otto offices also produced a membrane roofing construction for the Diplomatic Club in Riyadh, Saudi Arabia (1980–1986); the project was planned by the Omrania office. Inside the rounded, fort-like walls is another tent with a ceiling of glass panels that have been colored with ceramic enamel hues in several annealing processes.

Oud Jacobus Johannes Pieter

▼ Children's Home, Arnhem, Netherlands, 1952-1960

► De Unie Café, Rotterdam, 1925

Jacobus Johannes Pieter Oud (1890–1963) attended the Quellinus School of Applied Art in Amsterdam from 1904 to 1907, subsequently joining the offices of Petrus J. H. Cuypers. He later completed his training at the State School of Drawing in Amsterdam and, finally, the Technical University of Delft. On the advice of Hendrik Petrus Berlage he went to work for Theodor Fischer in Munich before setting up as a freelance architect in Purmerend and later in Leiden, both in the Netherlands. He and his friend, the artist and architect Theo van Doesburg, designed the Geus House in 1916 and founded the workshop De Sphinx. In 1917, these two architects together with Piet Mondrian, Vilmos Huszár and Antony Kok co-founded the famous artist group and magazine De Stijl, although Oud left in 1920 because of disagreements with van Doesburg. Attempts to put the De Stijl theories into practice included, for instance, a project of terraced houses in Scheveningen (1917) and the De Unie Café in Rotterdam (1925), where he treated the façade like a graphic composition, coloring it in bright primary colors of red, yellow and blue, plus black and white. In 1918, Oud was appointed municipal housing architect of Rotterdam, and in that capacity carried out a number of extensive residential estate projects: for example, the Oud-Mathenesse estate (1922–1924) with 343 dwellings on a layout in the shape of an isosceles triangle, and De Kiefhoek (1925–1930), as well as a residential complex in the Hook of Holland (1924–1927). His terraced houses for the Weissenhof residential estate in Stuttgart (1926–1927) are among a number of buildings that specialists use as examples of solid construction. Subsquently, less was heard of Oud, and he turned down an invitation to go to Harvard in Cambridge, Massachusetts. Walter Gropius took the chair there instead. The Shell Building in The Hague (1937–1942), which was realized after a long period with no commissions, sadly lacked the clarity of his earlier works. The architect's later projects included the simple complex of the Children's Home at Arnhem (1952–1960). In 1954, Oud received an honorary doctorate from the Technical University of Delft.

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Parisi Ico

▼ ► Pavilion, 10th Milan Triennale, 1854, with Silvio Longhi and Luigi Antonietti

In connection with his architectural studies, Domenico, known as Ico, Parisi (1916–1996) worked for Giuseppe Terragni in Como (1935–1936). Although he was born in Palermo, Parisi was well known as a representative at an international level of the cultural scene of Como. He studied in Lausanne and was active in areas such as architecture, painting, stage design, the cinema, photography and industrial design. He was employed from 1936 in the practice of Giuseppe Terragni and established the group Alta Quota. In 1948, with his wife Luisa Ainia, he set up the office La Ruota in Como, which was also used for art exhibitions. In 1949, he continued his studies in architecture at the Institute Atheneum in Lausanne under Alberto Sartoris. Because of his belief that the arts and architecture should complement one another, Parisi founded the Club dell'Arte in Milan, the Associazione di Belle Arte di Como and the ADI, the Associazione Disegno Industriale. His creative oeuvre ranged from detached and semi-detached houses to the designing of shops in Como, Milan, Sondrio and Rome. At first, his works reflected the teachings of rationalistic exemplars, but Parisi soon presented his own, poetic style, in which light and color formation played a central role. In 1954, he was awarded the gold medal for his pavilion at the Milan Triennale. His 1978 text "Utopia realizabile attraverso l'integrazione delle arti" (Utopia can be realized through integration of the arts) collected proofs of his theory: from the Casa Esistenziale, which was exhibited at international gatherings in Venice, Rome and Brussels, to Utopia for Como and the Operazione Arcevia, with which he encouraged the foundation of a village for a Comunità Esistenziale (subsistence community) in central Italy. He realized the Lenno residence on Lake Como, Italy (1972), featuring curved walls, ceilings and doorways and a black-and-white interior, and a holiday home in Montorfano, Italy (1974), which had outside rooms with umbrella-shaped roofs and plastic furniture.

Pawson John

"When you design private houses, you cannot just follow a linear, logical process. You cannot assume that, just because you have performed as well as you possibly can as an architect, the client will necessarily go along with what you suggest, because they don't."

▼ Hotel Puerta America, Madrid, 2005

▶ Calvin Klein Store, Seoul, 1996

After John Pawson (born in 1949) left school and had worked for a while in his father's textile company, he moved to Japan (1974–1978), where he gathered experience in the studio of designer Kuramata. He then returned to the UK, where he enrolled with the Architectural Association in London. He was commissioned to design a London gallery for Leslie Waddington, after which he was able to open his own practice in London. Further commissions for galleries followed. He designed the interior fittings for many Calvin Klein boutiques, designed interiors for family houses and also worked as an architect. During a two-year partnership with Claudio Silvestrin, he built Villa Neuendorf on Majorca in 1991. Pawson's rooms are simple, almost frugal, allowing the clear forms, surfaces of materials and play of light to come to the fore with even greater effect. Pawson House in London (1994–1996), a traditional London house that he gutted leaving only the front elevation standing, clearly shows the interplay between simple rooms and minimalist fittings. The kitchen on the ground floor opens through a sliding glass wall into the garden. The same paving is used inside and out, and the thick marble worktop continues to the end of the terrace, making the latter appear as a mirror image of the kitchen. Within this aesthetic of elimination, details take on great importance. Pawson therefore puts great emphasis on high quality materials. He likes to use marble, natural stone, cedar and oak. The Calvin Klein Store in Seoul (1996) was realized as a completely new building, with a monolithic, grey-stone façade. In 2004, the first two wings of the Cistercian Monastery in Novy Dvur near Prague in the Czech Republic were completed and inhabited. This was Pawson's renovation and extension of an existing Baroque site. In 2005, the Hotel Puerta America in Madrid commissioned 19 renowned architects and designers to convert its building. Pawson was asked to fit out the foyer and conference rooms. Amidst a multitude of styles, he created a tranquil and elegant reception area.

Calvin Klein

Pei Ieoh Ming

"Geometry has always been the basis of my architecture."

▼ Mile High Center, Denver, 1952–1956

► Fountain Place, Dallas, 1984–1986

►► Rock and Roll Hall of Fame, Cleveland, 1993–1995

Ieoh Ming Pei (born in 1917) was born in China and studied at the Massachusetts Institute of Technology, where he received his Bachelor of Architecture in 1940. In 1946, he gained his doctorate from Harvard University in Cambridge, Massachusetts. In 1955, he founded his own office, the eponymous I. M. Pei & Associates in New York. Characteristic of his architecture are the clear shapes of the buildings, although his modern style does respect traditional ideas. Early examples of his oeuvre, which adhere rigidly to the International Style, include the Mile High Center (Colorado, 1952–1956). Later, however, his works would adopt a more independent stance and become clearer in their expression. Following the understated style of the John F. Kennedy Library in Boston (1965–1979), Pei realized the east wing of the National Gallery of Art in Washington (1968–1978). This is an exhibition building, which is externally striking due to its acutely angled contours at a crossroads and the economy of glazing throughout. The central focus and refinement of the building lie in its atrium, around which the rooms are grouped. The building for the Bank of China in Hong Kong (1982–1990) is constructed on a square outline, has 78 floors and consists of four triangular sections, which vary in height. These are each finished off by a sloping, towering triangle, thus giving the effect of a series of tetrahedrons. At the beginning of the 1980s, Pei was awarded the commission to extend the Louvre in Paris (1983–1993). In a central position between the side wings of the building lies a Pyramid: a glazed, steel construction that covers the new, underground entrance area to the museum. Water basins surround the Pyramid, whose surface reflects the sky. The Miho Museum of Art in Shigaraki, Japan (1992–1996) is built in the middle of a nature reserve and made of limestone, glass and steel. It is testimony to the respect for nature and is a combination of modern and Japanese temple architecture. The Rock and Roll Hall of Fame in Cleveland, Ohio (1993–1995) is formed by a combination of geometric shapes that partly protrude from the 150-meter-high, central, concrete tower. The extension to the German Museum of History in Berlin (1998–2003) opens up to the visitor via a glass staircase, which spirals slowly upwards, and a glass façade.

Pelli Cesar

"Architecture is not painting. It is about extraordinary creative responses to specific situations."

▼ American Embassy, Tokyo, 1972-1975

▶ World Financial Center, New York, 1981-1987

Cesar Pelli (born in 1926) first studied architecture in Tucumán, Argentina. In 1952, he emigrated to America, graduating from the University of Illinois in 1954 with a Master's degree in architecture. He has been Dean of the School of Architecture at Yale since 1977. Between 1954 and 1964, he was employed by Eero Saarinen, before working in the offices of Daniel, Mann, Johnson and Mendenhall (1964-1968). He was subsequently appointed project manager at Victor Gruen Associates in Los Angeles until he founded his own practice, Cesar Pelli and Associates, in 1977 in New Haven, Connecticut. During this period he realized the American Embassy in Tokyo (1972-1975) and the Pacific Design Center in Los Angeles, California (Phase I 1971-1975, Phase II 1984-1988). The shell of the Phase I building, which is blue and made of glass, shows the profile of a gigantic ornament; it calls to mind a strange spaceship, because of the diminutive structure of the neighbouring town. After the foundation of his office came the residential tower and extension of the Museum of Modern Art in New York (1977-1983), a clinic in Cleveland, Ohio (1980-1984), the World Financial Center in New York (1981-1987) and Canary Wharf in London (1988-1991). Pelli completed a project of enormous significance with the Petronas Twin Towers in Kuala Lumpur, Malaysia (1991-1997). The high-rise blocks consist of 88 floors that taper upwards, a steel sphere with a long point forming the summit in each case. A 58-meter bridge connects these identical towers at their mid point. Between 2001 and 2004, Pelli realized the residential and office building of 731 Lexington Avenue in New York.

Pereira William

▼ Theme Building, Los Angeles International Airport, 1961, with Welton Becket, James Langenheim, Charles Luckman and Paul Williams

► Convair Astronautics, San Diego, 1958

William Leonard Pereira (1909–1985) studied at the University of Illinois School of Architecture and graduated in 1931. He had been able to work for a year for Holabird and Root in Chicago even before he had completed his studies. At first, he worked under the name of William L. Pereira (1931–1950), then with his partner Charles Luckman as Pereira and Luckman (1950–1958) and finally as William L. Pereira Associates (1958–1985). From 1949 onwards he lectured at various universities. During the fifties his works included the Firestone factory site in Los Angeles (1958) and the business complex of Convair Astronautics in San Diego (1958). A more recent project is a research, development and production site for the aviation industry that is split into several buildings and uses overhead, external walkways for access instead of long, interior halls. The foyer is dominated by a 75-meter, spiral staircase, suspended on aluminium beams. The Theme Building at the Los Angeles International Airport (1961), which Pereira built with Luckman, Becket, Langenheim and Williams, illustrates his search for a design identity. The panoramic

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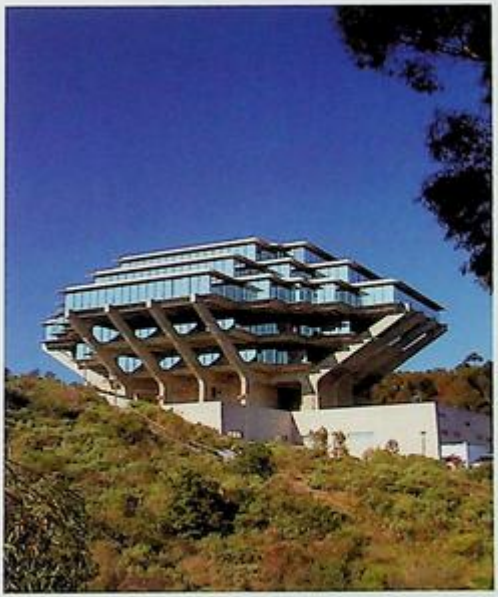
restaurant is suspended like a spaceship in front of the terminal buildings. The University Library of the UCSD in San Diego, California (1968–1970) was first designed by Pereira as a spiral tower but, when it became apparent that this would take up too much space, he changed the tower to its current form, with its support structure on the outside. The Transamerica Corporation Building (1973) forms an important part of the skyline of San Francisco. In the basic form of a pyramid, this 48-story office building rises up into the sky. This design has several advantages: the building takes less light from the street and maintains good stability during earthquakes. Nevertheless, there was a great deal of protest in the run up to this project.

"While nature can and does renew itself if it is allowed, the city cannot. It is the work of mankind and we must consistently apply ourselves to the task of strengthening the cities' capacity to serve, understanding that the integrity of the city is only as true as the integrity of its residents."



◂ Firestone factory site, Los Angeles, 1958

▸ University Library, UCSD, San Diego, 1968–1970

Perrault Dominique

Town Hall, Innsbruck, 1996–2002

Dominique Perrault (born in 1953) studied architecture until 1978 at the École Nationale Supérieure des Beaux-Arts in Paris. He graduated in Urbanistics in 1979 from the École Nationale des Ponts et Chaussées, also in Paris, and in 1981 opened his own office there. His works include the Hôtel industriel Jean-Baptiste Berlier in Paris (1986–1990) and the Hôtel du département de la Meuse in Bar-le-Duc, France (1994). The original design of his most significant building up until now, the Bibliothèque nationale de France in Paris, was in parts heavily criticized and he had to modify it. Four 80-meter-high towers on an L-shaped outline symmetrically frame a sunken garden. The façades of the towers are made entirely of glass; the interior is a combination of metal, red carpets and wood panelling. The impractical glazing led quickly to damage being caused, not only to the books but also to the interior furnishings, which were made of wood and were exposed to the light. He recently built a square swimming baths and a circular velodrome in Berlin (1992–1999). The buildings are set in the ground and covered with an outer membrane of wire mesh. The roof of the velodrome spans 115 meters without supports, its weight being distributed through beams arranged in the form of spokes. Between 1996 and 2002 Perrault completed an extension to the Town Hall in Innsbruck. The frontage of the old building, which lies opposite, is reflected in the glass façade.

"The architecture of the library illustrates an attempt to create a work which corresponds to its time. The artistic trends that have inspired me are country art or minimalist art."

Perret Auguste

Garage, rue de Ponthieu,
Paris, 1906-1907

Auguste Perret (1874-1954) attended the École des Beaux-Arts in Paris before founding the building business Perret Frères Entrepreneurs with his brothers Gustave and Claude in 1905. His first important work was the apartment building in the rue Franklin in Paris (1903-1904), a steel frame construction featuring a decorative tile covering with patterns of flowers. He also used a frame construction and large panes of glass on the garage in the rue Ponthieu (1906-1907). The façade is rigidly divided and linear surface ornamentation is limited to the entrance and the middle window. Other notable projects include the Théâtre des Champs-Elysées in Paris (1910-1913), originally the concept of Henry van der Velde, and the workshop of Esders Tailors, which is spanned by 20-meter-wide arches, also in Paris (1919-1920). Perret realized the outer walls of the Church of Notre-Dame-de-la-Consolation in Le Raincy (1922-1923) in pre-fabricated concrete units with filigree window grilles. After this, he took part in the competition for the designs of the Geneva Völkerbundpalast (1926-1928) and the Soviet Palace in Moscow (1931) and built the Musée des Travaux Publics (1936-1948) with a rolling, cantilever staircase. In the post-war years he was involved principally with the rebuilding of Le Havre, including the Town Hall (1952-1958) and the Church of St. Joseph (1951-1957).

"The architect, for his part, is not content just to locate them rationally; he combines their volumes to create an overall effect. He performs a work of synthesis."

Piano Renzo

▼ Modification and extension, Fiat Factory, Lingotto, Turin, 1983-2003

► Centre Georges Pompidou, Paris, 1971-1977

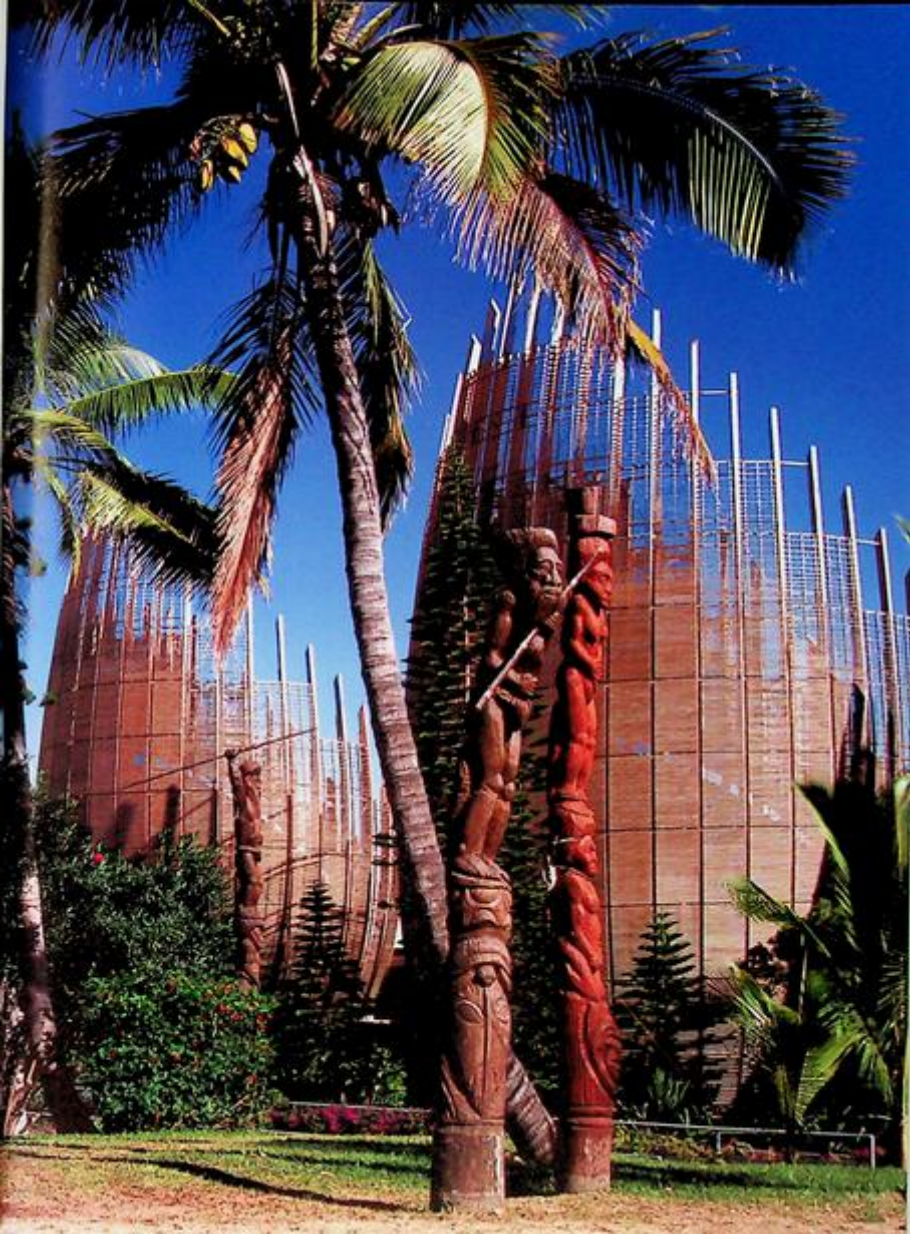
After studying architecture, Renzo Piano (born in 1937) was employed as a lecturer from 1965-1968 at the Milan Politecnico. His father's building company in Genoa gave him the opportunity to put his theories into practice. Through his teaching he came into contact with Richard Rogers. A number of projects on which Piano and Rogers collaborated remained at the design stage until they won the competition in 1971 to design the Centre Georges Pompidou (1971-1977) in Paris. As a precursor to the Centre Pompidou, they realized the B&B Italia office building in Novedrate near Como (1973). This was shaped like a box suspended in the open structure of the building, whose service pipes were laid pointing outwards. In 1977, Piano opened an office in Genoa with the engineer Peter Rice. Projects included the Urban Regeneration Workshop in Otranto, Italy (1979) and the Museum for the Menil Collection in Houston, Texas (1982-1987). Further commissions in the eighties included a sports hall in Ravenna (1986-1993), a stadium in Bari (1987-1990) and the Synchroton in Grenoble (1987). The Fondation Beyeler (1991-1997) was built in Riehen near Basle. They realized the Kansai Airport Terminal in Osaka (1988-1994), and the "New Metropolis" (today the Science Center NEMO) in Amsterdam (1992-1997). At about the same time, the Cultural Center of Jean-Marie Tjibaou in Nouméa, New Caledonia was built (1991-1998), which complements the tradition and climate of the region. Later works, such as the Parco della Musica in Rome (1994-2002) and the Paul Klee Center in Berne, Switzerland (1999-2005), show Piano still seeking a definitive way to design a large building.

"With no other art form can one have such a great effect on people's actual lives and, also, with no other form can one cause so much damage."

▲ NEMO "New Metropolis", National Center for Science and Technology, Amsterdam, 1992-1997

▼ Building for the Menil Collection, Houston, 1982-1987

► Jean-Marí Tjibaou Cultural Center, Nouméa, New Caledonia, 1991-1998



Pietilä Reima

▼ Shopping, leisure and community centre, Tampere, Finland, 1975–1979

► Kaleva Church, Tampere, Finland, 1959–1966, with Raali Paateleinen

"What I am trying to find is cultural symbiosis, without committing any sin against modernism."

Reima Pietilä (1923–1993) was a graduate of the Technical University in Helsinki and subsequently kept an office there with his wife, Raali Paateleinen. Between 1973 and 1979, he lectured at the university of Oulu as a professor. He was a critic of an internationally uniform style of architecture and laid emphasis in his projects on traditional and regional trends. He designed the sculptural Kaleva Church in Tampere, Finland (1959–1966); despite its monumental size, the interior of the building conveys a playful and light impression of space. Inwardly arched, concrete walls are set off against vertical ribbon glazing, creating a bright atmosphere. Unfortunately, Pietilä was forced to adopt a rather unsuitable external lining for the building, which contradicts its sculptural character. When realizing the students' residence at Dipoli in Otaniemi, Finland (1961–1966), he combined natural stone and wood with copper and large, glass surfaces. The main structure is surrounded to the south and west by an irregular group of buildings. Inside, there is a succession of rooms that provides the student accommodation. The roof of the front building undulates like a hilly landscape and blends in with the surrounding wood. For the new town of Hervanta near Tampere (1975–1979), Pietilä built a shopping, leisure and community center. In Kuwait he realized an extension to the old Sief Palace and also the administration complex for the Emir of Kuwait (1973–1982). The buildings, which are in a prominent position by the sea, were designed to fit in with the historic surroundings. They resemble the old buildings in color and form, without denying their modern aspect. Pietilä brings a certain rhythm to the façades of the palace extension using windows, which are unusually deep set; there are also fixtures to protect the building from the sun, which create a continually changing pattern of shadows.

Plečnik Jože

"I have so little love for riches in the church – I am only interested in the form to the extent that it is supposed to be the most important vessel of thought and purpose."

▼ Zacherl House, Vienna, 1900–1905

► Church of the Sacred Heart, Prague, 1928–1931

After training as a joiner, Jože Plečnik (1872–1957) studied between 1894 and 1898 at the Academy of Fine Arts in Vienna under Otto Wagner. He then worked for Wagner for two years, becoming strongly influenced by the theories of Gottfried Semper. In 1900 he founded his own practice in Vienna and realized some buildings there. In 1901 he also became a member of the Vienna Secession. He designed the Langer multiple-family house (1900–1901), whose unconventional façade has windows that curve outwards. One notable feature is that the floral ornaments do not frame the windows or relate to the vertical elevation, but rather form an even texture. Between 1900 and 1905, Plec˘nik realized the Zacherl House in Vienna. It was clad with polished granite sheets, while the loft featured a strip of convex windows and Atlantes by sculptor Franz Metzler. The staircase on its oval ground plan formed a separate unit at the back of the building. The slender columns of the crypt of the Heilig-Geist-Kirche (Church of the Holy Spirit) in Vienna (1908–1911) were possible due to the reinforced concrete structure of the building. This also enabled Plec˘nik to open up the side aisles by omitting further rows of pillars, replacing these by girders spanning 20 meters. Between 1911 and 1921, he taught at the School of Applied Arts in Prague, and from 1921 at the newly established Faculty of Architecture at the University of Ljubljana. In Prague he was responsible for the reconstruction of the Castle (1920–1934) and the building of the Herz-Jesu-Kirche (Church of the Sacred Heart) (1928–1931). Light-colored granite squares are built in a regular vertical pattern into its clinker façade. The east end of the nave is white-rendered and decorated with stylized garlands. His later work in Ljubljana, such as the University Library (1936–1941), the Church of St. Michael (1937–1938) and several bridges and promenades on the river, in particular features a regional architecture in which the history and mythology of Slovenia play a significant role.

Poelzig Hans

"For me it is a question of form, and only of form."

▸ Großes Schauspielhaus (Great Theater), Berlin, 1919

◂ Administrative building for IG Farben, Frankfurt/Main, 1928–1931

While studying at the Technical University in Berlin-Charlottenburg, Hans Poelzig (1869–1936) worked in the construction practice of Hugo Hartung. After his final examination in 1899, he took a job with the Prussian State Construction Office. A year later, he became Professor of Design at the Art and Trade School in Breslau, Silesia (now Wroclaw, Poland) of which he was Principal between 1903 and 1916. His early buildings such as the Zwirner House in Lowenberg (1909–1910) emphasized the protective nature of the roof. The house, presented at the Breslau Industry Exhibition in 1904, had the walls from its first story upwards and throughout the gable area clad with roofing tiles. Between 1910 and 1911, Poelzig realized an office block in Breslau with very strong lines. The corner on the crossroads is rounded and there are continuous strip windows throughout: a prototypical solution for a large, all-concrete, inner-city building. In the same year he converted a water tower in Posen, Germany (now Poznan, Poland) into a market hall on a sixteen-sided ground plan. Between 1911 and 1912 he built a chemicals factory in Luban, also now in Poland. Its brick walls are in some places load bearing, while in others they are designed as reinforced masonry block partitions. The difference can be seen in the windows: semicircular for the true masonry bond and rectangular, without lintels, for the reinforced block partitions. Low domes defined his extensive display structures at the Century Exhibition in Breslau in 1913. A semi-elliptical, pillared portico invited browsers to stroll through. In 1916, Poelzig moved to Dresden to take up posts as municipal building surveyor and professor at the Technical University. His most significant achievements include the conversion of the old Berlin market hall used by the Schuhmann Circus into Max Reinhardt's Großes Schauspielhaus (Great Theater) (1919). Using the existing steel skeleton, he created an auditorium dramatically framed by rows of hanging stalactites. From 1920 he taught at the Prussian Academy of Arts and, from 1924, also at the Technical University in Berlin-Charlottenburg. At the beginning of the 1920s, he created some stage and film sets: for example, for the expressionist film *The Golem*. In 1924 he built the Berlin Capitol Cinema and, at the end of the 1920s and together with Martin Wagner, the fair and exhibition area in Berlin and the new broadcasting center opposite. At around the same time, he designed the monumental administration complex of IG Farben in Frankfurt. While many plans were on display at the 1932 *Das wachsende Haus* (The Growing House) exhibition in Berlin, Poelzig presented the only show house. The concept of the protective roof re-emerged, here reaching down to the ground. In the middle of the 1930s, he completed some projects in Turkey. He would, however, die before his planned emigration to Ankara.

Ponti Gio

"It is not enough for the architect to create admirable spaces, lines and volumes – but also he must imagine, or discover, or suggest choices about a way of life, marvellous refuges – not so much distant, maybe, but passed over – to the friends who put their trust in them."

▼ "Small, ideal house" overlooking the sea, 1939, design sketch

▶ Catholic Press World Exhibition, Vatican State, 1936

Gio Ponti (1891–1979) studied architecture at the Politecnico in Milan and taught there between 1936 and 1961. Between 1923 and 1930 he designed porcelain for the Richard Ginori factory in Doccia, Italy. In 1928 he founded the journal *Domus* for which he worked as editor – except between 1941 and 1948 – until his death. This versatile architect and painter also designed furniture and ships' fittings. During the 1930s, Ponti realized the Faculty of Mathematics of the University of Rome (1934) and an office building for the company Montecatini in Milan (1936). In 1952, he entered into partnership with Alberto Rosselli and Antonio Fornaroli. After the construction of two apartment blocks in Milan, Ponti became a member of the building commission there between 1952 and 1955. He created the Pirelli Tower in Milan (1955–1958) with its segmented façade and tapered ground plan, together with Pier Luigi Nervi and other architects. The use of strong colors in geometric patterns on walls, ceilings and floors characterized many buildings realized by Ponti: Villa Planchart in Caracas, Venezuela (1954–1955), with its two-story rooms; Villa Arreaza, known as "La Diamantina", in Caracas (1956); and the Parco dei Principi Hotel in Sorrento, Italy (1960–1964). Ponti furnished his own apartment in Milan (1957) down to the smallest detail: movable partitions, backlit shelving and other built-in furniture provided its character.

◂ Villa Planchart, Caracas, 1953-1960

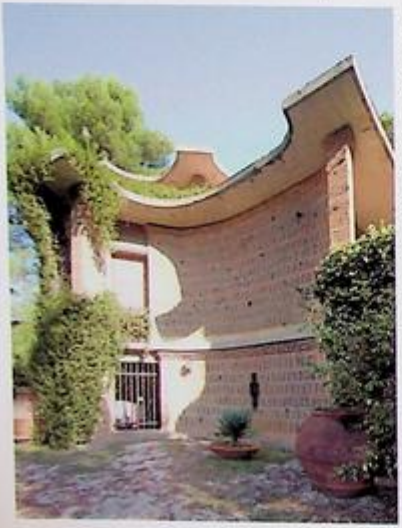
◂ ▾ "La Diamantina", Villa Arreaza, Caracas, 1956

Portoghesi Paolo

"Architecture is a typical example of the effect of bodies at a distance: as we approach a building, it continuously yields pieces of information involving our body."

Baldi House, Rome, 1959-1962

During his university studies in Rome, Paolo Portoghesi (born in 1931) developed a deep interest in the baroque architecture of his home city. After graduating in 1957, he established his own architectural practice in 1958 and a joint office with Vittorio Gigliotti from 1964. The role played by Robert Venturi in American postmodernism was taken up by Portoghesi in Italy. At the end of the 1950s, he was one of the first architects to oppose strict functionalism and look more to the examples of history. He allowed influences from the various architectural traditions of Gothic, Baroque or Jugendstil (Art Nouveau) to contribute to his design work, mixing them with modern elements. One of his major works is the Baldi House in Rome (1959-1962), which contains elements of both baroque and De Stijl and adopts a playful attitude towards them. There then followed the Andreis residence in Scandriglia (1964-1967), Papanice House in Rome (1967) and the Church of the Sacra Famiglia in Salerno (1968-1974). With the Mosque and Islamic Cultural Centre in Rome (1975-1995) Portoghesi succeeded, in grand style, in reintegrating a traditional sense of common property into modern architecture. In the central worship area, vaulted structures are treated with exuberance and pillars are lavishly decorated. As director of the 1980 biennial architectural convention in Venice he had great success with his design of the Via Novissima. After 1962, Portoghesi taught at Rome University, and since 1995 has held the position of Professor of Urban Development at La Sapienza University in Rome.



Portzamparc Christian de

Hautes Formes residential buildings, Paris, 1975-1979

Christian de Portzamparc (born in 1944) studied between 1962 and 1969 at the École Nationale Supérieure des Beaux-Arts in Paris. His early projects include a water tower in Marne-la-Vallée near Paris (1975–1979). His modern

architecture is recognizable by its expressive, lyrical shapes, while the façades often invite one to surmise the actual function of the building. Projects realized during the eighties and nineties include the dance school of the Paris Opera in Nanterre, France (1983–1987) and, at the edge of the Parc de la Villette, the Cité de la Musique in Paris, consisting of a section to the west with a conservatory (1984–1990) and an eastern section with an area for musical events (1985–1995). Portzamparc also designed the high-rise bank building above the TGV railway station of the Euralille complex in Lille, France (1991–1995) and the LVMH Tower in New York (1995–1999). The façade of this 32-story building on a spare outline is encased in different sized fragments of clear and opal glass, which light up at night in a variety of colors. Between 1994 and 1999 he worked on the extension to the Palais de Congrès in Paris, which was made possible by shifting the front façade. The French Embassy in Berlin (1997–2003) is in line with the building specifications of the city, a recessed façade opening onto the Pariser Platz whilst the courtyard side is divided up in a modern and playful way.

Postmodernism

"To give a brief definition, a postmodern building addresses at least two groups at the same time: architects and an engaged minority concerned with specific architectural problems, and the general public or visitors to the site concerned with questions of comfort, traditional building, and their own lifestyles." Charles Jencks

Charles Moore, Piazza d'Italia in New Orleans, 1974–1978

In the face of growing criticism of the uniformity of many modernist buildings, marked also by the blowing up of Minoru Yamasaki's Pruitt-Igoe residential complex in St. Louis (1950–1954) as it had become uninhabitable, the search for architecture that could offer its inhabitants a sense of identification intensified. As early as 1961 Jane Jacobs, in her book *The Death and Life of Great American Cities*, had criticized the soullessness of the urban environment. In 1966, Robert Venturi wrote *Complexity and Contradiction in Architecture*, using the dictum "less is a bore" to indicate that modernists had often become too simplistic. Charles Jencks, too, gave a major impetus to this movement with his book *The Language of Post-Modern Architecture* (1977). Jencks also interpreted the pop art of the 1960s as an indication of the emergence of "fragmentary pluralism" in mass culture and a counter-reflex against the elite-conscious avant-garde. He sees in historicizing trends the positive achievement of the free right to choose. He uses the term "double coding" to describe the ambiguity of architectural signals and contrasts this as a postmodern phenomenon with the supposed levelling of the modernists. Architectural phenomena were the reintroduction of historical references, typical regional building styles and decorative and small-scale elements. The following characteristics are of particular note: the division of high-rise buildings into clearly accentuated zones for pedestal, body and façades; the use of "quotes" from other building styles in often witty set pieces seemingly detached from their historical context; and finally an ironic anthropomorphic approach. Examples are the Portland Public Service Building in Portland, Oregon (1980–1982) by Michael Graves, the Piazza d'Italia in New Orleans (1974–1980) by Charles W. Moore and the AT&T Building in New York (1978–1984) by Philip Johnson and John Burgee. In the European context, however, the emphasis was more on a discussion of the city and living environment, historical links and the scale of planning and development in urban renewal measures: for example, as undertaken by Rob Krier. The reawakened interest in traditional patterns of city design led to the New Urbanist movement in America. The American architects and authors Andres Duany and Elizabeth Plater-Zyberk initiated this movement and created, with the planning of Seaside in Florida at the beginning of the 1980s, proof of commercial feasibility. Its basis combined higher-density residential development than usual in American suburbs, with arterial roads and various uses mixed in so that the main traffic routes were also used by pedestrians. The New Urbanists were convinced that a city functions when greater importance is attached to public life and neighborhood than private needs.

Predock Antoine

Winandy House, Desert Highlands, Arizona, 1988–1991

Antoine Predock (born in 1936) attended the University of New Mexico in Albuquerque and Columbia University, New York. Since 1967, he has been the principal of his own firm in Albuquerque as well as lecturing at the University of California at Los Angeles and at California State Polytechnic University in Pomona. A distinctive feature of his architectural style is his preference for unusual stereometric forms and for integrating local traditions. The natural colors, pyramid and cube shapes, which characterize the structural elements of the Fuller House in Scottsdale, Arizona (1984–1987) are sensitively blended into the desert landscape. Water flows right through the house and into a circular pool. The Nelson Fine Arts Center of Arizona State University at Tempe (1985–1989) with its smooth brick and concrete façades was likewise built during the eighties, as was the cone-shaped, copper-clad American Heritage Center in Laramie, Wyoming (1986–1993). Working in collaboration with Gensler & Associates, Predock also produced a multi-functional building for California State Polytechnic University in Pomona (1987–1992). The stone tower, triangular in design, which houses the Social Sciences and Humanities faculties, forms a distinctive landmark on the horizon. Some of his other projects include the Euro Disney Santa Fe Hotel in Marne-la-Vallée, France (1992), featuring tiered, pastel-colored façades, as well as the Ventana Vista Elementary School in Tucson, Arizona (1992–1994). The latter, constructed in natural stone and echoing the hues of the desert and nearby mountains, almost melts into the surrounding landscape. In addition to numerous individual residential houses, he also produced a large number of public buildings. In many cases, his structures became landmarks in their own right: for example, the Spencer Theater for Performing Arts in Ruidoso, New Mexico (1994–1996) and the Green Valley Center for Performing Arts in Arizona (1996–2004). The Gateway Center of the University of Minnesota in Minneapolis (1996–2004) was designed and built in collaboration with Korsunsky Krank Erickson Architects Inc.

Prince Bart

"Architecture is a sculptural biography."

Julia Fu House, Rio Rancho, New Mexico, 1999-2001

Bart Prince (born in 1947) from New Mexico studied at Arizona State University, from where he graduated in 1970 as a Bachelor of Architecture. Between 1968 and 1973 he assisted Bruce Goff in designing the Pavilion for Japanese Art at the Los Angeles County Museum of Art in Los Angeles (1978–1989) and completed the building after Goff's death in 1982. In 1973, Prince established his own practice. Frequent distinctive features of his architecture are the division of the structure into individual units, the unbridled elaboration of structural details into decorative elements that accentuate areas and, particularly in the early works, an organic development of forms that occurs less from the ground upwards than through being raised on supports. His work also includes his own house and studio in Albuquerque, New Mexico (1983), the Bradford Prince House (1987–1988), also in Albuquerque, and the residence for Joe and Etsuko Price in Corona del Mar, California (1984–1989). This creative structure made from laminated wood with colored mosaic windows extends around a central inner courtyard with pool. With the building of the Mead/Penhall House in Albuquerque (1992–1993), Prince showed that it was possible to build very cheaply, even with modern materials. In 1996, the Hight House was built near Mendocino, California, with an undulating shingle roof that reaches right down to the ground in some places. There are ceiling-high windows, between which the wooden beams supporting the roof permit a clear view over the Pacific. The inside of the house is in light wood, glass and stone. Metal is barely used at all. Among more recent buildings, such as the houses for Julia Fu in Rio Rancho (1999–2001) and Jane Whitmore in Glorieta (2002–2004) and the Scherger-Kolberg residence in Albuquerque (2002–2005), all in New Mexico, Prince increasingly uses concrete and natural stone.

Prouvé Jean

▾ Aluminium Centenary Pavilion, Paris, 1954

Trained artist-blacksmith Jean Prouvé (1901–1984) opened his own studio in Nancy in 1924, where he produced lights, banisters and gates. In 1927 he constructed a grid for the entrance to the Villa Reifenberg in Paris for Robert Mallet-Stevens, and soon became known to Pierre Chareau and Le Corbusier. He also began to work with stainless steel and folded sheet steel and, in 1930, was a founder member of the Union des Artistes Modernes (UAM). Following a competition, he was commissioned in 1931 to create room interiors for the Cité Universitaire in Nancy, France. The Roland Garros Flying Club in Buc, France (1935–1936) was realized from steel sheet of various diameters and in collaboration with Eugène Beaudouin and Marcel Lods, with whom Prouvé also constructed the Maison du Peuple in Clichy, France (1935–1939): a steel frame made of pre-fabricated façade sections in steel sheet and with large cut-outs filled with glass. In 1939, Prouvé constructed removable barracks to accommodate soldiers, which he continued to develop after the war. For the emergency accommodation in Lorraine (1945–1947), no section was to be longer than four meters, so the backbone of the building was shaped from central 'A' supports with suspended carriers. The standard housing in steel, aluminium and wood for the residential area in Meudon, France (1949–1952) is built on foundations of natural stone. A further variation was the "Maison tropicale" for use in the Tropics, although only three prototypes were constructed. His works included various types of schoolhouses, including ones in Vantoux, France (1950) and Villejeuf (1957). His suspended façades in metal were used on numerous buildings within and outside France in the 1950s and 1960s. Prouvé also produced a large range of furniture from steel sheet, including the standard chair of 1934, the "Guéridon" table of 1949, various items for schools, and the "Compas" table of 1953.

▸ ▾ Residential estate, Meudon, France, 1949–1952 (furniture also by Prouvé), with Henri Prouvé and André Sive

"There is no need for a design of Utopia, becouse progress only results from practical experience."

ling Adolf

"Art is not merely a decorative – and therefore possibly superfluous – accessory to life, but the interpretation of the life of mankind, the embodiment of its culmination."

. 25, Werkbund
ng exhibition,
27

▸ Rabe residence, Zwenkau, Germany, 1929–1930

ing at the Städtische Baugewerkschule dolf Rading (1888–1957) worked from August Endell, from 1919 in the off- er Behrens and eventually with Albert rom 1923 to 1932, he lectured as a pro- rchtecture in Breslau, Germany, (now Poland). Before emigrating to France became a member of The Ring in 1926 7, joined Hans Scharoun in a joint Berlin. From 1936 to 1950 he lived in ere he became Director of Urban Plan- 3 until he eventually moved to Eng- vas one of the architects involved in enhof settlement in Stuttgart (1925– ch was realized as part of the Deutsche Werkbund *Die Wohnung* exhibition. His house reflected his idea of keeping the areas important to everyday requirements together on one floor, thereby reducing the distances the housewife had to cover. Rading designed a high-rise building for the *Wohnung und Werkraum* Werkbund exhibition in Breslau (1929), of which only four stories were developed. The two, symmetrically positioned wings of the building are linked by the stairwell with its front elevation of glass blocks. Rading's cube-shaped Rabe residence in Zwenkau (1929–1930) has a central entrance hall rising two stories in height, with paintings by Oskar Schlemmer, which constitutes the center of the building.

Raymond Antonin

Church of St. Anselm,
Tokyo, 1954

After his studies at the Technical University in what is now Prague (1906–1909), Antonin Raymond (1888–1976) emigrated to America in 1910. He first worked for Cass Gilbert in New York and in 1916 began collaborating with Frank Lloyd Wright, whom he helped in realizing the Imperial Hotel in Tokyo between 1919 and 1920. He founded his own practice in Tokyo in 1923, where he worked with his wife, Noemi. With the Reinanzaka Building in Tokyo (1924) he created a courageous, cubist statement in exposed concrete. After his return to the United States, he opened an office in New York in 1938 and a design studio in New Hope, Pennsylvania and, in the same year, published his book *Architectural Details*. Raymond finally went back to Japan in 1948, where he continued to work out of his Tokyo office. With regard to form and the materials he used, Raymond's work is very diverse – from simple, at times traditional, Japanese wooden constructions to buildings realized with reference to International Style: for example, the Shiro Akaboshi Building in Tokyo (1931), which has an open, angular structure with ribbon glazing made from bright concrete, and the Tokyo Golf Club (1930–1932). In stark contrast are St. Paul's Catholic Church in Karuizawa, Japan (1934–1935), a wooden construction of Slavonic character in blue and brown tones, with bright, wooden interior panelling and paper windows, and also the Chapel of the Christian Women's College in Tokyo (1935–1937), which is constructed of white concrete. Diamond shapes, circles and crosses adorn the walls, which are arranged in little box sections. During the fifties, he created the box-shaped, generously glazed Reader's Digest Building of reinforced concrete, also in Tokyo (1951). Apart from his works in this city, others of note include his studio made of wood in Karuizawa, Japan (1962), which features a protruding, umbrella-shaped roof above the central, rounded part of the building, to which two square, angular structures are attached, and also the Catholic Church in Shibata, Japan (1965).

"Imagine my surprise on arriving in Japan to find farms and Shinto shrines... containing all the features which we so ardently desired to create in the new architecture."

Reidy Affonso Eduardo

Museum of Modern Art,
Rio de Janeiro, 1954–1958

Affonso Eduardo Reidy (1909–1964) was a graduate of the Escola Nacional de Belas Artes in Rio de Janeiro. He taught between 1930 and 1931 as an assistant to Gregori Warchavchik, before being appointed a professor of architecture and urban development at the university in Rio. From 1932, Reidy worked as chief architect of Rio de Janeiro, where he was involved in the construction of the Ministry for Education and Health (1936–1943) in collaboration with Oscar Niemeyer, Le Corbusier and others. At the end of the 1940s, Reidy designed the Pedregulho residential estate on a slope in Rio de Janeiro (1947–1952) in the form of an elongated, curved line of houses. Round pillars support the multistory units, the third story being set back. The complex includes a school with sports facilities, a health center and some other community facilities. Reidy's work also includes the Armando Gonzaga Folk Theater in Rio (1950). Its double pent roof and inclined walls appear to fit together to form a folded surface. The Museum of Modern Art in Rio de Janeiro (1954–1958) was built in a prominent position, in a park next to the sea. With its horizontal structure, Reidy intended to create as little impact as possible on the surrounding landscape, and he constructed the building on supports so as not to interrupt access to the water. The museum has large windows looking out over the park. The façades are characterized by massive, inclined, projecting, concrete pillars creating wide, unsupported spaces inside. The surrounding gardens were designed by Roberto Burle Marx. In addition to many public sector buildings, Reidy also created a large number of private residences.

"In those times it was impossible for an architect just starting out to live exclusively from the product of his atelier work, especially when this architect defended, in an intransigent manner, ideas considered insensate and subversive."

Rewal Raj

Village for the Asiatic Games,
New Delhi, 1982

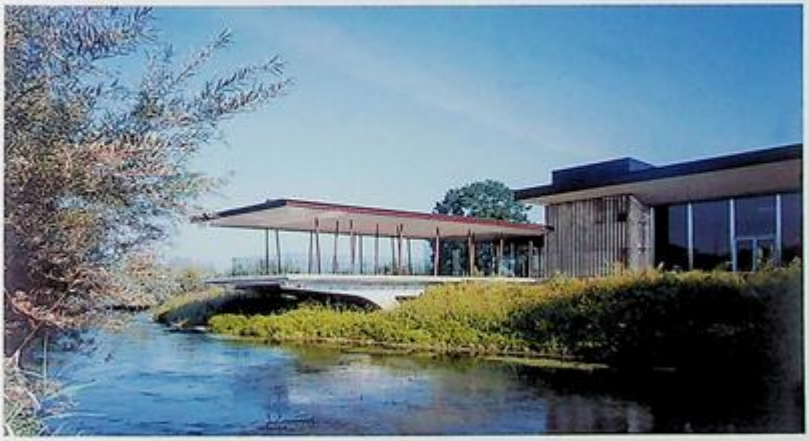
Raj Rewal (born in 1934) began his studies in New Delhi and completed them in London in 1961. He subsequently spent a year in France before he began to work independently in New Delhi in 1962, where he lectured at the School of Architecture. The exhibition buildings in New Delhi (1970–1974) consist of several halls, which are connected via ramps and corridors. The actual area of the building is made up of exposed concrete, which also determines the shape of the façades and is uniquely, to a great extent, cast in the traditional way using local concrete. The village for the Asiatic Games in New Delhi (1982) contains in its labyrinthine design 200 buildings with roof terraces grouped around inner courtyards and 500 apartments in the typical, historical structure of the towns of northern India. Similarly in New Delhi, he built the National Institute for Immunology (1984–1990), a complex whose beige and red surfaces are made of plaster and sandstone, and also the office building of the World Bank (1993). The latter, in natural-colored limestone, features sections of its façades jutting outwards and inwards, along with a variety of sizes of balcony that are carried on supports and have ornamented balustrades. The Library for the Indian Parliament in New Delhi was completed by Rewal in 2002. This structure with its copper roofs adheres to local building traditions, whilst simultaneously making use of high-tech materials. Parts of the Library were sunk into the ground; only the glazed roof constructions are visible, leaving the view open to the monumental, old parliament building of Sir Edwin Lutyens.

Ricciotti Rudy

"I am mannerist from 8 a.m. to 8 p.m., while I am baroque from 8 p.m. to 8 a.m."

Les Tanzmatten events center, Selestat, France, 1996

Rudy Ricciotti (born 1952) is a native of Algeria; he received his education at the École Supérieure Technique in Geneva and at the UPAM in Marseilles. He opened an office in Bandol, France in 1980. His works include a youth center in Bandol (1986) and the École Côte Bleue in Sausset-les-Pins (1994). Le Stadium, a massive, enclosed concert hall in Vitrolles, France (1994–1885), is constructed of dark, exposed concrete, whose surface is studded with incised triangles that light up red in the darkness. Lamps are sunk into the floor in front of the entrance so that the area sparkles like an upside-down, starry sky. Ricciotti left the bare ground around the concert hall untouched, apart from a tall, aluminium palm tree. He has also realized a nautical center in Bandol (1996) and the motorway maintenance building near Uzerche (1993–1996). The latter is of minimalist design. The body of the structure is flat and long and completely covered with wood. Between 1998 and 2000 he modified and added new buildings to Nicolai Hall, the concerts and events facility for the Brandenburg Philharmonic in Potsdam, Germany. In order to create a large room free of supports for the theater auditorium of the Centre Chorèographique in Aix-en-Provence, France (2003–2004), the building loads were, to a great extent, shifted outwards. A framework of inclined, concrete girders that cross over each other surround the building in irregular formation. A further, outer skin was rejected, so that the character of scaffolding is dominant and there is a view of the staircases and levels.



Rietveld Gerrit Thomas

▼ Schröder-Schräder House, Utrecht, Netherlands, 1924

▲ Garage with flat for chauffeur, Utrecht, Netherlands, 1927–1928

Gerrit Thomas Rietveld (1888–1964) began his training in his father's joinery workshop in Utrecht, before becoming apprentice to a jewellery studio. He continued his studies at evening class under P. J. C. Kaarhammer, an architect who was part of the Hendrik Petrus Berlage circle. In 1917, he opened his own joinery business, experimenting with new forms of furniture. Robert van't Hoff introduced him to the De Stijl movement, of which he remained a member until it was disbanded in 1931. His "Red and Blue Chair" of 1918 was celebrated by the De Stilj group as summarizing the movement's principles. The Schröder-Schräder House in Utrecht (1924) – his first architectural commission, in which he joined forces with interior designer and client, Truus Schröder-Schräder – represents the one project in which he succeeded in realizing the architectonic design principles held by the De Stijl group. As far as interior design was concerned, he believed that all the activities in a home should necessitate a small

"The greatest change that architecture has gone through in recent times has been its liberation, its separation from the plastic dimension. The latter encircles itself. Architecture becomes an environment and nothing more."

measure of assembly: setting up a bed settee, opening out a folding dining table, etc. The size of the room in question was determined by the relative amount of time spent in it. Another unusual aspect of his work was that Rietveld did not leave the original surfaces of materials exposed; instead, they were painted or varnished, with each object given its own, single color. Between 1927 and 1928, using pre-fabricated concrete panels in colored steel frames, Rietveld constructed a cube-shaped garage with flat for a chauffeur in Utrecht. In 1928, he became a founding member of CIAM. In subsequent years, he carried out several housing commissions. In 1932, his row of terraced houses for four families was exhibited at the Werkbund exhibition in Vienna. His summer house for Verrijn Stuart in Breukelen St. Pieters (1940-1941) is another example of a masterpiece demonstrating his free use of space. His designs for post-war houses tend to be rather less remarkable.

Riphahn Wilhelm

▼ Die Bastei Restaurant, Cologne, 1921-1924

► Office and business building, F. W. Brügelmann & Söhne, Cologne, 1950-1953

Wilhelm Riphahn (1889–1963) studied at the Baugewerkschule (School of Architecture and Civil Engineering) in Cologne and at the Technical Universities in Munich, Berlin-Charlottenburg and Dresden. In 1913, after working in the construction office of Siemens & Halske in Berlin and the practice of Max and Bruno Taut, he opened his own office in Cologne. Between 1919 and 1931 he worked with Caspar Maria Grod. An old fortification served them as the foundation of Die Bastei Restaurant in Cologne (1921–1924). The round, reinforced concrete structure has a folded roof, projecting over and through the encircling glazing that gives a view over the Rhine and Cathedral. For the international press exhibition, *Pressa*, the architects designed and built the pavilion for the *Kölnische Zeitung* (newspaper) (1927–1928). The façade was in a strict geometric design and characterized by a central tower forming a steeple at the front. To the right and left of the tower were the entrance and exit. Inside was a three-aisle, pillarless hall. The higher central aisle had under the roof an encircling strip window, while the two side aisles had skylights. The exhibition hall bore the publishers' colors: black, silver, blue and white. Riphahn and Grod gave a clear, simple design to what was known as the "White City", part of the Kalkerfeld estate in Cologne (1926–1932): the long-drawn-out, white rows of houses with cuboid balconies face the sun. Special features are the end walls of the individual residential blocks, set at an angle to the street. In addition to some shops, there are also a community building and the Church of St. Canisius.

BIERGANS

Kevin Roche John Dinkeloo and Associates

▼ Extension to the Metropolitan Museum of Art, New York, 1967–1985

► College Life Insurance Building, Indianapolis, 1967–1971

◄ General Foods Corporation Headquarters, Rye, New York, 1977–1982

Kevin Eamonn Roche (born in 1922) studied at the Faculty of Architecture within the National University of Ireland, Dublin, until 1945. He gained practical experience while working for Michael Scott and Partners in Dublin, as well as at the London office of Edwin Maxwell Fray and Jane Drew. In 1948 he went to America, where he worked at the Illinois Institute of Technology in Chicago (1948–1949) and then at the UN Planning Office (1949). From 1950 to 1954, Roche was employed by Eero Saarinen and Associates in Bloomfield Hills, Michigan, heading the planning department from 1954 to 1961. John Gerard Dinkeloo (1918–1981) studied construction engineering until 1942 at the University of Michigan in Ann Arbor, after which he worked in the design department of Skidmore, Owings & Merrill in Chicago. He became department head in 1946. In 1950, Dinkeloo joined the practice of Eero Saarinen, becoming a partner in 1956. Following Saarinen's death in 1961, he and Roche continued to run the practice in Hamden, Connecticut. Together, they ensured that Saarinen's projects reached fruition. In 1966, they changed the firm's name to Kevin Roche John Dinkeloo and Associates. The terraced development for the Oakland Museum in Oakland, California, was completed between 1961 and 1968. The Ford Foundation's administrative building in New York (1963–1968) has a twelve-story, glazed courtyard. The fortress-like tower building belonging to the Order of the "Knights of Columbus" in New Haven, Connecticut (1965–1969), in which four mighty corner cylinders support the floor levels, flanks the stadium of the New Haven Veterans, its roof also serving as a car park. Kevin Roche John Dinkeloo and Associates also realized the pyramid-shaped glass and concrete buildings of the headquarters of the College Life Insurance Company of America in Indianapolis (1967–1971) as well as the extension to the Metropolitan Museum of Art in New York (1967–1985). The white, twin wings of the General Foods Corporation Headquarters in Rye, New York (1977–1982) are reflected in the man-made lake. Kevin Roche continued to run the practice alone after Dinkeloo's death in 1981.

Rogers Richard

▼ Industrial buildings, Maidenhead, England, 1984-1985 ► Lloyd's Building, London, 1979-1986

Richard Rogers (born in 1933) studied at the Architectural Association in London and at Yale University, New Haven, Connecticut under Serge Chermayeff. In 1963, Rogers, his then wife Su and the Fosters founded Team 4, whose most important industrial construction was the Reliance Electronics Factory in Swindon, England (1967). That same year, Rogers represented British architects at the Paris Biennale for the second time. He also lectured at Cambridge, the Architectural Association and the London Polytechnic. In the late 1960s, he and his wife designed a lightweight, flexible building made of plastic rings; in 1971, he developed it further under the title of "Zip-up". He also built his own house in Wimbledon (1968-1969): a lacquered steel frame with plastic in-fills. In addition to teaching at Yale University, the Massachusetts Institute of Technology and Princeton University, from 1969 he collaborated with Renzo Piano on a number of projects that were never realized. In 1971, they won the competition for the Centre National d'Arts et de Culture Georges Pompidou in Paris (1971-1977). The appearance of the six-story complex is determined by the exposed technology, including construction grids, brightly colored supply elements and transparent traffic tubes. After separating from Piano in 1977, Rogers moved his office back to London, where he designed and built the Lloyd's Building (1979-1986). At the same time, he also created the Inmos microprocessor factory in Newport, South Wales; the PA Technology Center in Princeton, New Jersey (1982-1985); and the

PA Technology Centre in Cambridge, England (1975–1983). Other projects include the European Court of Human Rights in Strasbourg (1989–1995) and the Courthouse in Bordeaux (1993–1996). Closed, cedar-clad spheres rise up from behind the long, glass façade, penetrating the undulating roof and enclosing the courtrooms. At one point, the roof of the Welsh Assembly in Cardiff (1998–2005) reaches down into the assembly hall and illuminates it in a grandiose gesture.

"We have reached the future, but we are only just beginning to see its influence on architecture."

◂ Millennium Dome, London, 1996–1999

▸ PA Technology Centre, Cambridge, England, 1975–1983

Rossi Aldo

▼ Teatro del Mondo, Venice Biennale, 1979-1980

► Ambiente International Showroom, Tokyo, 1991

Aldo Rossi (1931–1997) studied until 1959 at the Politecnico in Milan, while working for the publications *Casabella-continuità* and *Il Contemporaneo*. During the early sixties, he produced designs for the redevelopment of the Via Sarini district in Milan and a commercial center in Turin (1962). These design sketches are in themselves an indication of Rossi's architectural language, which reduces everything to basic forms. In collaboration with Luca Meda, he took over the planning in 1964 of the 13th Triennale in Milan and built an access bridge with a triangular-shaped cross-section. A similar motif can be seen in the Town Hall Square and Monument in Segrate, Fuerteventura (1965) in which chiaroscuro (the effect of light and shade) play a dominant role. His thoughts on architecture are contained in a book entitled *L'Architettura della Città*, published in 1966, and he is regarded as a founder of Neo-rationalism. In 1969 he was appointed Professor at the Milan Politecnico and he designed a four-story residential block in the Gallarate district, which was completed in 1973. In 1971, Rossi, with Gianni Braghieri, won the national competition to produce a design for the San Cataldo Cemetery in Modena. In 1972, he was appointed Professor at the Eidgenössische Technische Hochschule in Zurich, as well as Director of the International Department of Architecture at the Milan Triennale. Rossi built the school in Broni, Italy (1979–1982) and the floating Teatro del Mondo in 1980. He took part in the International Building Exhibition in Berlin 1984, building an apartment block in the southern Friedrichstadt district. He designed the Carlo Felice Theater in Genoa (1983–1991) to blend in with its neighboring buildings, with the aid of classicist forms and appropriate coloring. The symmetrical design of the Bonnefanten Museum in Maastricht (1990–1994) includes a zinc-clad dome towering above the main museum building.

Rudolph Paul Marvin

▼ Park Building, New Haven, Connecticut, 1960-1962

► Cocoon House, Sarasota, Florida 1948-1950, with Ralph Spencer Twitchell

►► Milam House, Jacksonville, Florida, 1959-1961

Paul Marvin Rudolph (1918–1997) began his studies at Alabama Polytechnic Institute in Auburn then continued, first of all, under Walter Gropius and Marcel Breuer at Harvard University, Cambridge, and later under the tutelage of Ralph Spencer Twitchell in Sarasota, Florida. It was during this time that he designed the Healy Beach House in Sarasota (1948–1950), a raised construction with one side projecting over the water, known as the Cocoon House. In the case of the Hook Guest House on Siesta Key, Florida (1952–1953), which was realized on the same design principle, the concave roof was replaced by three convex arches. Soon after setting up his own firm (1952), Rudolph began to move away from simple post-and-beam constructions in wood and focused instead on more expressive designs featuring orthogonally positioned, concrete panels. In the Milam House in Jacksonville, Florida (1959–1961), these constitute a shade-dispensing framework that forms a second layer in front of the building. From 1958, Rudolph was head of the School of Architecture of Yale University, New Haven, Connecticut, and also designed the new building for the Faculty of Art and Architecture at Yale (1958–1964), the nine floors of which are arranged around a large central space. The unique design of the façade makes the building appear smaller than it is. The ambivalence of this style of architecture is demonstrated by the huge, almost intimidating multistory car park, designed at the same time, in Temple Street, New Haven (1960–1962). In 1965, Rudolph moved to New York, where he devoted himself to his own practice. His designs for the State Service Center in the Boston administration complex (1967–1972) comprised terrace-style buildings surrounding a public atrium. His later work focused on urban planning projects and modular systems. During his later years Rudolph also realized several major projects in Asia. The Colonnade Condomium high-rise residential block in Singapore was built between 1980 and 1987. The original intention was to suspend prefabricated units, which Rudolph termed "bricks of the twentieth century," within a framework structure. The structure, when it was eventually built, however, was constructed in the conventional manner using cast concrete.

Rural Studio

▼ Lucy House, Mason's Bend, Alabama, 2001-2002, with Samuel Mockbee

► Antioch Baptist Church, Perry County, Alabama, 2001-2002, with Andrew Freear

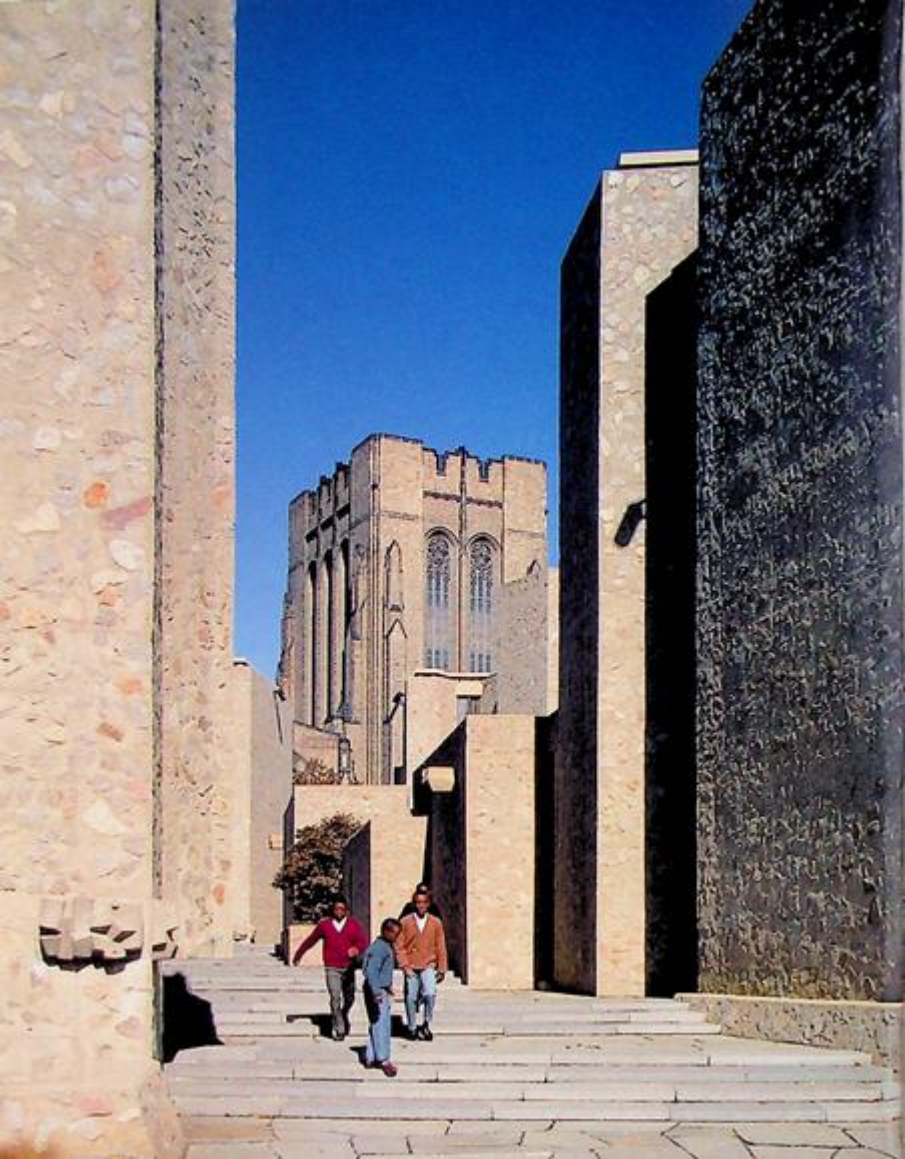
Rural Studio was founded in the early 1990s by Samuel Mockbee at Auburn University, Alabama, as a protest against the trend towards superficiality in architecture. It had the clearly defined social aim of improving, through architecture, the living conditions of the poor. The projects were carried out in cooperation with students, who designed and built the houses under the direction of Mockbee. Despite their innovative designs and elements, the houses still manage to blend well with their surroundings. They are constructed out of readily available, low-cost – often recycled or donated – materials and even make use of unlikely building stuffs such as bottles, tires, and cardboard. An unusual student hostel was created by Mockbee and his students in Newbern, Alabama (1997-2001). A large shelter provides room for nine small houses for eighteen students. The wealth of ideas is reflected in the diversity of materials used: printing plates, traffic signs and railway tracks have all been utilized. Since its construction, the "Cardboard Pod" (1997-2001), a student hostel made of bales of waste paper impregnated with wax, is still undergoing the test of time as to its durability. The rest-room is finished in car registration plates. Lucy House, the Mason's Bend Community Center in Alabama (1999-2000), includes an open-air assembly room, which can also be used as a chapel. The large roof over the low retaining wall rests on a wooden construction. It consists of aluminium sheeting and the metal frames of car windshields, providing protection from the sun and good ventilation as well as contemporary design. It was realized as their thesis project by a team of four students. The Antioch Baptist Church in Perry County, Alabama was built between 2001 and 2002. Eighty per cent of the new building was constructed of material reclaimed from the demolished church. The work of Rural Studio still continues in the spirit of its late founder, Samuel Mockbee, and is now under the direction of Andrew Freear.

Saarinen Eero

▼ War Memorial Center, Milwaukee, 1953-1959

► Trans World Airlines Terminal Building, John F. Kennedy International Airport, New York, 1956-1962

Eero Saarinen (1910-1961) was born in Finland and emigrated to America with his family in 1923. In 1929, he began his studies to become a sculptor at the Parisian Académie de la Grande Chaumière, and between 1930 and 1934 studied architecture at Yale University in New Haven, Connecticut. After this he worked in the architectural practice of his father, Eliel Saarinen, in Ann Arbor, becoming his partner in 1941 along with J. Robert Swanson. He opened his own office in 1950 in Birmingham, Alabama, under the eponymous name Eero Saarinen and Associates. He first came to prominence when he won the competition for the Jefferson National Expansion Memorial near St. Louis (1947). This 192-meter-high concrete, parabolic arch encased in stainless steel was actually only completed in 1968, after his death. Along with linear steel and glass cubes, as seen in the General Motors Technical Center in Warren, Michigan (1948-1956), Saarinen was fascinated by expressive forms that were in a position to define the skyline. Thus the Kresge Auditorium at the Institute of Technology in Cambridge, Massachusetts (1950-1955) had a roof constructed from concrete sheets in the shape of a spherically arched triangle and the Institute chapel a cylinder made of bricks. With the David S. Ingalls Ice-hockey Hall at Yale University, New Haven (1953-1959), Saarinen found



new methods for the building of halls. The ridge arch of the hall leads over and beyond the two support points and finishes on the entrance side in a lustre designed by the sculptor Oliver Andrews. From this, cables are stretched to two edging strips and carry both of the roof areas. The shell support structure dominating the Trans World Airlines Terminal at John F. Kennedy Airport in New York (1956–1962) surrounds a complex, central area. Bridges lead to the satellites, from which access is gained to the airplanes. From the outside it looks like a bird and, in this way, the building constitutes a kind of allegorical poetry that remains unrivalled. The design solution was quite different, however, at the Dulles International Airport in Chantilly, Virginia (1958–1962), with its suspended roof. The area, which is open, has no supports and is completely glazed and, behind a row of inclined pillars that give a monumental effect, rests on a larger base floor, which stretches out under the vehicle access drive. A new solution was found for the problem of separating arriving from departing passengers: so-called "Mobile Lounges" were used to convey departing passengers to the aircraft. Whilst the administration center for John Deere and Company in Moline, Illinois (1957–1963) seems to refer to a thoroughly shaped landscape with its solid, technical functionality, a façade of aeruginous steel and symmetrical design, the Ezra Stiles and Samuel F. B. Morse Colleges at Yale University, New Haven, Connecticut (1958–1962) represent a model of urbane, Mediterranean building, in spite of their green areas; contributing to this are the natural stone façades and the almost picturesquely shaped building blocks. Following the death of Saarinen, his colleagues John Dinkeloo and Kevin Roche took over the completion of projects in hand and continued to run the office under his name in Hamden, Connecticut until 1966.

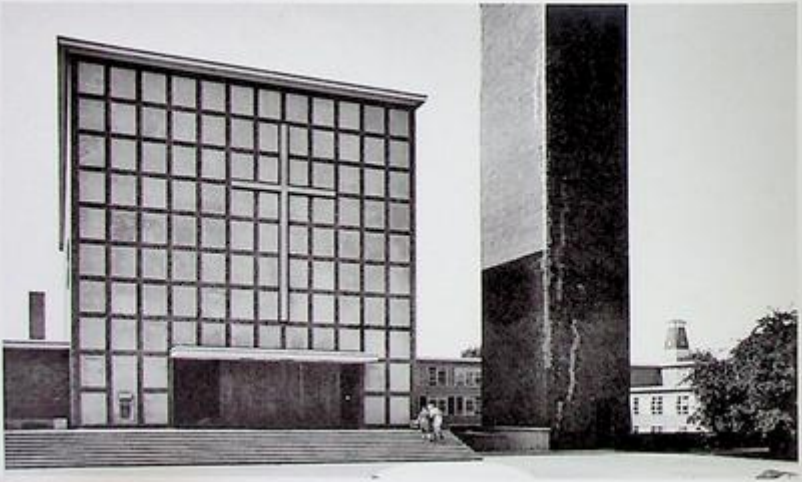
◂ Ezra Stiles & Morse College, Yale University, New Haven, 1958–1962

▾ Jefferson National Expansion Memorial, St. Louis, 1947–1968

Saarinen Eliel

"Always design a thing by considering it in its immediate, larger context – a chair in a room, a room in a house, a house in an environment, an environment in a city plan."

Eliel Saarinen (1873–1950) studied painting at the university in Helsinki (1893–1897) while also following a course in architecture at the Polytechnic Institute. From 1896 to 1923, he worked as a freelance architect in Helsinki, and until 1905 was in partnership with Herman Gesellius and Armas Lindgren. Together they built the Hvittrask Studio House in Kirkkonummi near Helsinki (1902–1903), where they also lived until 1904. In his early works, Saarinen embraced the national romantic style that was beginning to establish itself in Finland under the influence of the Arts and Crafts movement and the Vienna Secession. In 1904, he won the competition to design the main railway station in Helsinki. With this design, which underwent considerable changes and was eventually realized between 1911 and 1919, he turned towards a more functional approach to architecture. The station's vast area of brickwork is audaciously segmented and terminates in round arched roofs. On the main façade, the round roof shape becomes the dominant design feature. Between 1910 and 1915 he produced the urban development plan for Munkkiniemi-Haaga, which is distinguished by blocks of buildings interspersed with soft land-



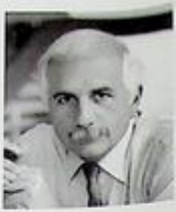
▸ First Christian Church, Columbus, Indiana, 1942

▸ Hvitträsk Studio House, Kirkkonummi, Finland, 1902-1903, with Herman Gesellius and Armas Lindgren

▾ Main railway station, Helsinki, 1904-1919

scaping. His competition design for the Chicago Tribune Tower (1922) won him not only second prize but also widespread recognition in the United States. The skyscraper design incorporated historical features without indulging in an excess of historicism. In 1923, Saarinen moved to the USA, where he set up his own offices in Evanston, Illinois and Ann Arbor, Michigan. The same year, his services were engaged by George and Ellen Scripps Booth to design the whole complex for the newly established Cranbrook Academy of Art in Bloomfield Hills, Michigan. Saarinen completed the various buildings between 1926 and 1943, in collaboration with his wife, Louise Gesellius, and the Swedish sculptor, Carl Milles. From 1937 he worked with his son Eero Saarinen; from 1941 to 1947, J. Robert Swanson was also part of the team. From 1924 onwards, Saarinen also lectured at the University of Michigan.

fdie Moshe



"Only originality born in the resolution of truly architectural issues contributes to great design."

67 Montreal Expo, 1967

oern architect Moshe Safdie (born in 1938) under Louis Isidore Kahn. Since 1964, he d in Canada, where in 1967 he designed ous multi-family complex Habitat 67 for ntreal Expo: 158 pre-fabricated rectangu- es stacked on top of each other in a con- shion, rising up to create the impression town. The flat roofs serve a dual purpose, one provides a balcony for a neighbour- Different sizes of window, some of which d across the corners of the modules, lend ding an even more distinctive appear- fdie also realized the Yeshivat Porat Yosef Rabbinical College (1971–1979) as well as the Mamilla Project (1972) in Jerusalem. Both building projects reflect the type of building design that is traditional for the region. Salt Lake City Library, Utah (1999–2003) was generously designed to serve other public functions. A public plaza, for example, was incorporated behind the five-story building on its triangular plot. One of its three façades has a curved wall that embraces the outdoor area, inviting visitors into the park. Safdie has also published several works, including *Beyond Habitat* (1970), *For Everyone a Garden* (1974), and *Form and Purpose* (1982).

Sakakura Junzo

"This function finds clear expression in the outward form."

Iwate Broadcasting Station, Morioka, Japan, 1964

Japanese architect Junzo Sakakura (1904–1968) was born in Hashima City, near Gifu. After completing his studies at the Faculty of Art of the Tokyo Imperial University, he switched to architecture in 1927. From 1929, he worked in the studio of Le Corbusier in Paris, first as an apprentice then as an assistant, before opening his own practice in 1937. In 1940, he founded the J.S. Architectural Institute. His international reputation was established with his design for the Japanese pavilion at the Paris World Fair (1937). In 1951, he designed the Franco-Japonais Institute in Tokyo and the Museum of Modern Art in Kamakura. The latter is a light and airy atrium-style building, opening out onto a pool, with space for sculptures in its interior courtyard. The museum rests on slender steel supports that allow the building to project out over the water. A short flight of steps links the exhibition building with Sakakura's Annexe, a construction of exposed rust-red steel. Large glazed areas fill the rooms with light and encourage an intimate visual relationship between the architecture, garden and pool area. His name remained closely linked with his famous colleague when he became involved in building the National Museum of Western Art, Taito-Ku, Tokyo (1959) to Le Corbusier's design. Sakakura designed a large number of warehouses, administrative buildings and single-family homes, as well as furniture. His early designs are characterized by his preference for visible concrete, whereas his later projects also utilized synthetic materials. Like Kunio Mayekawa and Kenzo Tange, he was one of the outstanding post-war architects whose blend of Western and Japanese building traditions provided a major source of inspiration for Japanese architecture.

SANAA

"We are minimalists, but we're not rigid. What matters most to us is that people enjoy the rooms we design."

▼ Glass Pavilion, Toledo Museum of Art, Toledo, Ohio, 2000–2006

► Zollverein School of Management and Design, Essen, 2002–2006

Kazuyo Sejima (born in 1956) studied at the Women's University of Japan. She worked at Toyo Ito before opening her own studio in 1987. Ryue Nishizawa (born in 1966) studied at Yokohama National University. He and Sejima founded SANAA in 1995; he has also had his own studio since 1997. The first joint commission was the O-Museum in Lida, Nagano Prefecture, Japan (1995–1999). The Kanazawa Museum of Contemporary Art of the XXI Century, Ishikawa, Japan (1999–2004) was constructed on a circular layout. Some of the 44 rooms (they are all of different sizes) break through the ceiling in varying heights. SANAA created a cube of reinforced concrete with irregular windows for the Zollverein School of Management and Design in Essen, Germany (2002–2006). The SANAA design for the EPFL Lausanne Training Center in Switzerland (2005–2008) is for a large, open-plan structure with no enclosed rooms.

Sauerbruch Hutton

"Architecture can only be sustainable if it addresses and stimulates the senses."

GSW Headquarters, Berlin, 1995–1999

After studying architectural drawing, Matthias Sauerbruch (born in 1955) went on to study at the Berlin School of Arts and the Architectural Association in London. He worked for several years in the Office for Metropolitan Architecture (OMA) in London and in 1987 opened his own practice, with branches in London and Berlin, together with Louisa Hutton (born in 1957). She had studied at Bristol University and the Architectural Association, where both of them lectured towards the end of the eighties. Two of their Berlin projects are particularly noteworthy: first, the two buildings of the Photonics Centre, which were realized in 1998 and for which Sauerbruch and Hutton created an outline without right angles. The blinds behind the curved glass façades and supporting columns in the interior cover a rich spectrum of color. The curved, high-rise panel construction of the new GSW Headquarters (1995–1999), which they placed directly adjacent to the old square building, stands cross-wise on two dark-colored base structures. The sunshade panels in red, orange and yellow make the double glass façade positively glow. The Experimental Factory in Magdeburg (2001) houses a research center for the development of production processes and methods. This irregularly shaped building looks as if it has been draped in a brightly colored blanket. The north and south elevations are glazed, with the striated and colored façades consisting of sheet aluminium cladding with a baked enamel finish. This color concept continues on the inside. In keeping with its ecology-based function, the Federal Environment Agency building in Dessau (2001–2005) was intended to demonstrate the possibilities of designing buildings to last. The selected site was a former industrial area, with the building situated in a newly landscaped public park. Following an organically shaped ground plan, it curves its way around a large, covered interior courtyard. The façades have horizontal, timber-clad bands. Vertical panels in subdued colors separate the windows. The new Hennigsdorf Town Hall (2002–2003) was conceived as a tangible link between the historical town, a new center by the railway station and a small park. Glazed areas on the ground floor invite the public to make use of the forum within.

Scarpa Carlo

▼ Museo Castelvecchio, Verona, 1956–1964, with Carlo Maschietto and Arrigo Rudi

► Brion Family Tomb, San Vito d'Altivole Cemetery, Treviso, 1969–1978, with Carlo Maschietto and Guido Pietropoli

Carlo Scarpa (1906–1978) studied at the Accademia di Belle Arti in Venice until 1926, whilst also working in the practice of Vincenzo Rinaldo. He then took up a position as assistant to Guido Cirilli at the newly established Istituto Universitario di Architettura in Venice. One of his first projects was to design the Florence branch of the Maestri Vetrai Muranesi Cappellin & Co. glass-manufacturing firm. Over the course of the next 30 years, Scarpa remained a frequent designer for the Venice Biennale. Of particular note in this respect was his design for the 1948 Paul Klee exhibition and pavilion for the 1950 *Art Book* exhibition. Between 1955 and 1961, he worked on the Veritti residence in Udine. He was particularly praised for his work on the conversion of the Museo Correr (1953–1960) and the Ca'Foscari (1954–1956), both in Venice. At the same time, he was collaborating with Ignazio Gardella and Giovanni Michelucci in designing the first six rooms of the Uffizi in Florence (1954–1956) and planning the extension to the Canova Museum in Possagno (1955–1957). By introducing unorthodox window solutions, openings and light shafts, Scarpa found clever ways of introducing light into the gallery to display the sculptures to their best possible advantage. One of his subsequent projects was to design the Olivetti display and sales rooms in his hometown of Venice (1957–1958). In 1962, he was appointed Associate Professor of Interior Architecture. Two years later, he completed the rebuilding of the Museo Castelvecchio in Verona (1956–1964), a project in which he not only marked the difference between his own conversion work and the original, but also the previous rebuilding phase by "peeling back" the roof and exterior layers. After spending time travelling in the USA and Japan, he was commissioned by Rino Brion to design a family tomb complex on the periphery of San Vito d'Altivole Cemetery near Treviso (1969–1978). On a plot comprising an area of 2,000 square meters, Scarpa designed an entire artistic masterpiece comprising gateway, chapel, tomb and meditation pavilion, enclosed by a sloping wall reminiscent of a bastion. In 1972, he became head of the Istituto Universitario di Architettura in Venice, where he lectured until 1977. In 1973 he started his last major project, the Banca Popolare in Verona, in collaboration with Arrigo Rudi, who completed the project in 1981. Scarpa died without ever quite managing to gain full recognition as an architect.

Scharoun Hans

▼ Schminke residence, Löbau, Germany, 1930-1933

► Residential buildings, Siemensstadt housing development, Berlin, 1929-1931

Hans Scharoun (1893–1972) studied between 1912 and 1914 at the Technical College in Berlin. There he got to know one of his colleagues, Paul Kruchen, and began to collaborate with him in his architectural practice. Kruchen persuaded him to work for the military building unit concerned with the rebuilding of East Prussia between 1915 and 1918 and, afterwards, as a leading representative in the building offices in Insterburg. Eventually he took over Kruchen's office there as an independent architect (1919–1925) and completed the Kamswyken housing development in 1920, which was known as "Die Bunte Reihe" (the colorful row). He also developed a great number of designs for competitions: for example, the high-rise apartment block in the Friedrichstrasse in Berlin (1922).

Scharoun was a member of the Glass Chain, which was formed by Bruno Taut, and like Taut himself sketched Utopian, architectural fantasies. Between 1925 and 1932 he taught at the Staatlichen Akademie in Breslau (now Wroclaw, Poland) and in 1926 became a member of the architectural group The Ring. He took part in the design of a detached house on the Weissenhof housing development in Stuttgart between 1926 and 1927, which was the only building to display curved forms and thus signal the path Scharoun was following. This became even clearer between 1928 and 1929 with the building at the Deutsche Werkbund Exhibition in Breslau. A central, communal area with a large hall on an almost S-shaped outline connected two wings with small apartments. In Berlin he

DROGEN
FOTO

worked on a number of developments and was also responsible for the building plans for the Siemensstadt development (1929–1931). This differed, in a pleasing way, from the more strictly formal exemplars. His own contribution to this large project was the residential buildings on the Jungfernheideweg and Mäckeritzstrasse, whose façades were developed using powerful reliefs. From 1932, he had his own office in Berlin. His most successful buildings include those elegant villas from the thirties that include the Schminke residence in Löbau (1930–1933), the Mattern House in Potsdam (1932–1934), the residence of Dr. Baensch in Berlin-Spandau (1934–1935) and also the Moll House in Berlin (1936–1937). The design of the Schminke House put high demands on Scharoun. The land sloped away to the north, there was a garden already there and there was the client's own, neighboring factory. Scharoun solved these problems with a complex outline consisting of a two-story, steel frame building with three sections pushing in on each other at the corner. After the war, Scharoun became director for general and residential building in Berlin and designed a reconstruction plan with a group of architects: the so-called "Collective Plan" (1946). In the same year he accepted a professorship in municipal building at the Technical University in Berlin, which he held until 1958. Alongside this, between 1947 and 1950 he led the Institute of Building of the German Academy of Sciences in East Berlin. He had the idea of putting a variety of design preferences into school buildings according to the age groups of the pupils and managed to realize this at the Geschwister-Scholl Gymnasium in Lünen (1955–1962). Again, at the same time, he developed one of his most significant projects: the Philarmonia Concert Hall in Berlin (1956–1963). In the seventies Scharoun realized some more notable works, such as the Town Theater in Wolfsburg (1965–1973) and the State Library for Prussian Cultural Possessions in Berlin (1964–1978), which was completed by his partner Edgar Wisniewski.

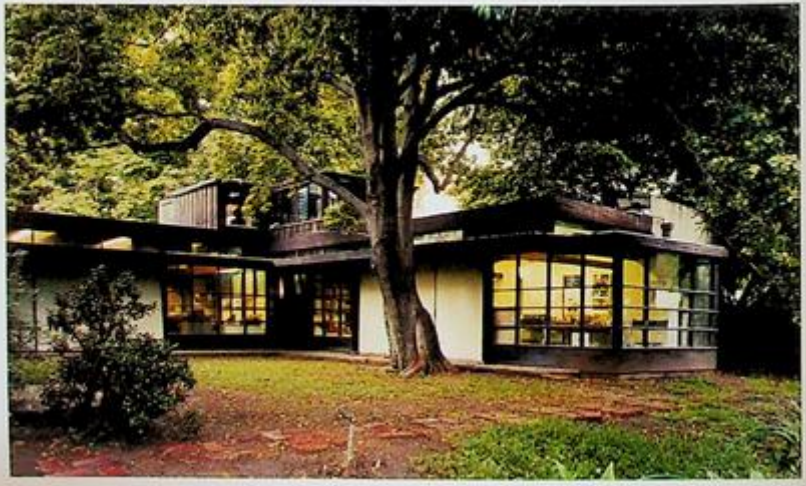
◂ Apartment building, Hohenzollerndamm, Berlin, 1929–1930

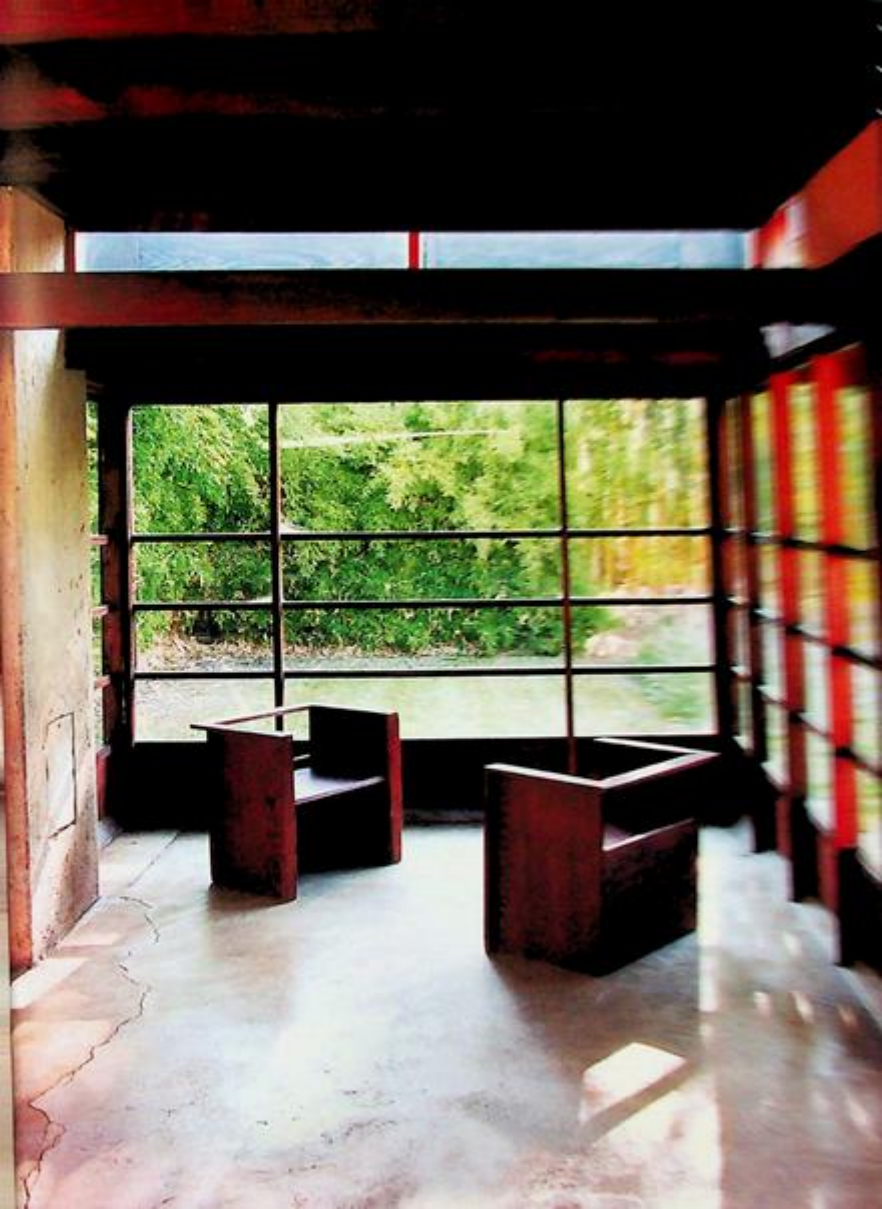
▾ Philarmonia, Berlin, 1956–1963

Schindler Rudolf Michael

▾ ▸ Schindler/Chace House, West Hollywood, 1921-1922

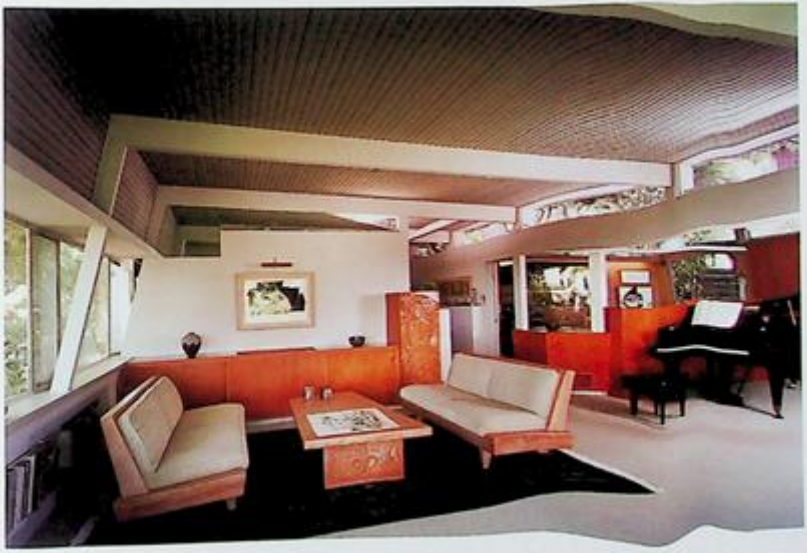
Rudolf Michael Schindler (1887–1953) began his studies in 1906 at the Wien Technischen Hochschule (Vienna Technical University), graduating from there in 1911 with a degree in building engineering. As a student of Otto Wagner, he continued his education in Vienna at the Academy for Visual Arts. In 1913 he became a member of the free architectural school of Adolf Loos. In addition, he worked from 1911 to 1914 in the office of Hans Mayr and Theodor Mayer. He subsequently moved to Chicago, where he found a position as a draughtsman within the practice of Henry A. Ottenheimer, Stern and Reichert. From 1917, he worked for Frank Lloyd Wright, chiefly on the project of the Imperial Hotel in Tokyo. At Wright's request, he moved to Los Angeles in 1920 and took over the building management of Barnsdall House. He opened his own office there in 1921. Here he became acquainted with the works of Irving Gill, who had a great influence on him with his style elements: these were clear, and designed to fit any particular region. His first building, the Schindler/Chace semi-detached house in West Hollywood (1921–1922), already represents a summation of Schindler's design principles. These included economic building methods, visibility of building materials and the actual construction, with connection of interior and the exterior rooms through ceiling high glazing, protected inner courtyards and an open distribution of rooms with no separate kitchen. His first contracts





included the Lowes House in Los Angeles (1923), the Packard House in South Pasadena, California (1924) and the holiday homes development of Pueblo Rivera Court in La Jolla, California. Realized between 1923 and 1925, these were made of concrete with a sliding casing. One of his most important apartment buildings from this period was the holiday home for Philip M. Lovell in Newport Beach, California (1922–1926) that shows, rather unusually for Schindler, accentuation of the visible support structure, which is made of five reinforced concrete frames. The generous glazing of the living rooms covers two floors and has a kind of irregular, broken effect due to the arrangement of the small, varied, sash bar windows. Together with Richard Neutra, whom he had known since 1912, he founded the workers' community "Architectural Group for Industry and Commerce" (AGIC). Under the eponymous name "Schindler Shelter", he developed a concept in 1933 for prefabricated houses made of reinforced concrete. During the following years he realized a great number of apartment buildings, especially in Los Angeles. These included the Oliver (1933–1934) and Buck (1934) Houses, the Slope House for Ralph C. Walker (1935–1936), the Viktoria McAlmon (1935–1936) and Wilson Houses (1935–1939). These were all wooden, plastered constructions. This "Plaster Skin Design" was better value for money than concrete and more in keeping with the traditional American way of building with wood. Schindler was also involved in designing larger buildings, such as the Bubeshko (1937–1938) and Falk (1940) Apartments. He wrote many articles putting forward his concept of architecture. His basic treatise "Space Architecture" was published in the journal *Dune Forum* in 1934 and in the *Los Angeles Times* in 1935.

◄ ▼ Kallis House and Studio, Studio City, California, 1946



Schneider-Esleben Paul

▼ Rolandschule, Düsseldorf, 1959–1961

► Haniel Garage, Düsseldorf, 1949–1950, with Egon Schneider

Paul Maximilian Heinrich Schneider von Esleben (1915–2005), known as Schneider-Esleben, studied in Darmstadt and Stuttgart and was a professor at the Academy of Art in Hamburg. From 1947 to 1948 he worked for Rudolf Schwarz. He made his name with the transparent Haniel Garage in Düsseldorf, Germany (1949–1950), created in co-operation with Egon Schneider, with external ramps suspended from the cantilevered, reinforced concrete structure. This glass construction was Germany's first post-war car park. For the Church of St. Rochus in Düsseldorf (1954–1955), which had been almost completely destroyed in World War II, he created a new building with a concrete dome of three parabolic sections, resembling a trefoil clover, clad in copper. These concrete "leaves" are connected to each other by soaring *Lichtbänder* (light bands) – curving panels of toughened glass especially designed to flood an interior with natural overhead light. The dome is supported by twelve concrete pillars and encircled by a gallery covered in flat shells. Other projects included the 22-story Mannesmann

"Architecture comes from excess."

Building (1951–1956), which has a pre-fabricated façade of glass with white and blue panels, and the Commerzbank (1959–1962), both in Düsseldorf. He designed a four-story house for the 1957 International Building Exhibition in Berlin. A chapel and living accommodation were added to the Jesuit Building in Munich (1962–1965), as were editorial offices for the Order's *Stimmen der Zeit* magazine. The building, which also houses the library, has an unadorned concrete façade that is emphatic in its simplicity, with steep towers dominating the overall appearance. Cologne/Bonn Airport (1962–1970) was built as an open pentagon on the principle of short routes and distances. As one of the first so-called "drive-in airports" in Europe, it was arranged around a central car park. The original plan was for four satellites to be constructed around the airfield so that all the handling could take place close to aircraft. Only two of these satellites were actually built, however. Each had six handling positions with their own check-in desks, waiting and security areas. Key features of the design are the surrounding concrete parapets and a central tower in the car park for ventilation.

Seidler Harry

"The challenge is to elevate commercial building into significant architecture. It was my first chance to work with Nervi in Rome. He taught me how to build – construction took only four working days per floor including the exterior!"

▼ Berman House, Joadja, New South Wales, Australia, 1996-2000

► Condominium Apartments, Acapulco, 1969-1970

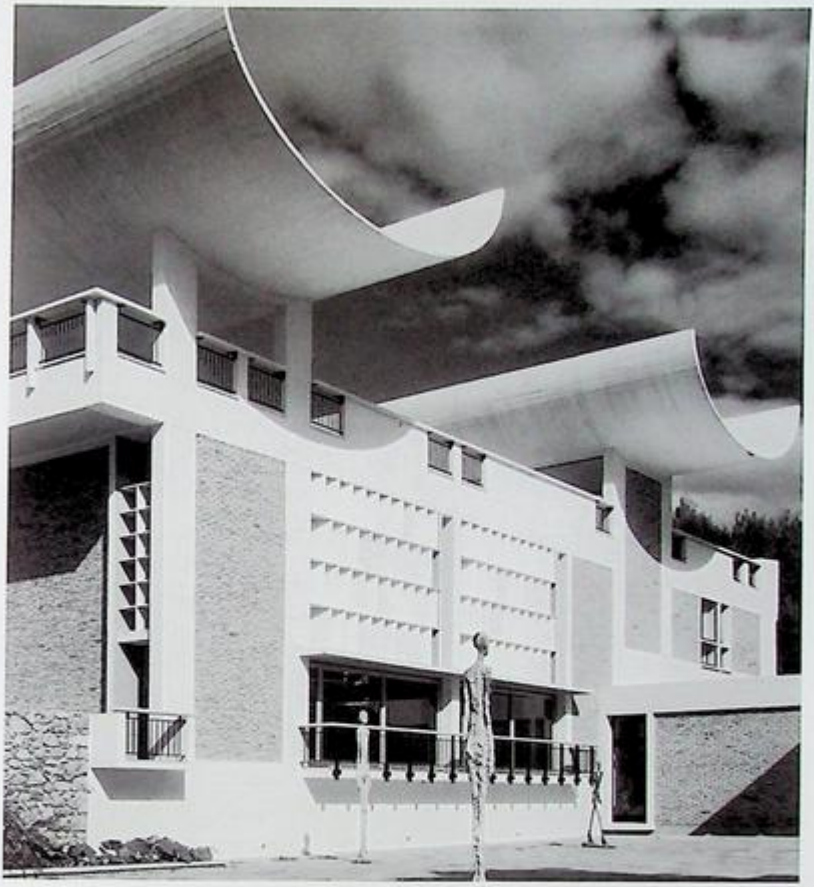
Harry Seidler (1923–2006) was born in Vienna, attended the University of Manitoba in Winnipeg (1941–1944) and studied at Harvard University, Cambridge, Massachusetts under Walter Gropius and Marcel Breuer (1945–1946). Following this, he worked for Breuer in New York and with Oscar Niemeyer in Rio de Janeiro. In 1948, he moved to Sydney, where he set new standards with his single-family houses and extremely modern architecture. He built the Fink House in Newport, Australia (1949) and the Rose Seidler House in Sydney (1948–1950). This white, rectangular building with its generous expanses of glass rises from a basement of natural stone and is supported in part on delicate struts. A straight, walled ramp leads into the garden. With Pier Luigi Nervi, Seidler also developed the Australia Square Tower in Sydney (1961–1967), a circular structure with contrasting curved and straight forms, as well as the Australian Embassy in Paris (1973–1977) and the Riverside Centre in Brisbane (1983–1986). Between 1996 and 1999, he was responsible for the building of the Berman House in Joadja, Australia, with its wave-shaped roof and balcony projecting over the edge of a cliff into emptiness. The Neue Donau residential estate was created between 1996 and 2001, an ambitious social housing project in Vienna that also incorporates a cinema and entertainment complex.

Sert Josep Lluís

▼ Studio for the painter Joan Miró, Palma de Mallorca, 1955

► Foundation Maeght, St-Paul-de-Vence, France, 1959–1964

Josep Lluís Sert (1902–1983) studied until 1929 at the Escuela Superior de Arquitectura in Barcelona. After training under Le Corbusier and Pierre Jeanneret in Paris, he opened a practice of his own in Barcelona in 1931. In 1937, he returned to Paris, subsequently moving to the USA in 1939. Sert was an advocate of rational, contemporary architecture, which reflected regional conditions. In 1930, he founded GATCPAC (Grup d'Artistes i Tècnics Catalans per al Progrés d l'Arquitectura Contemporànea), and the *A.C. Documentos de Actividad Contemporánea* journal in 1931. From 1947 to 1956 he acted as President of the CIAM. He also taught at Yale University and was Dean of the Graduate School of Design at Harvard University (1953–1969). Sert was deeply involved in city planning: he took part in drafting the Barcelona development plan (1933–1935) and drew up plans for several South American cities (Lima, Havana, Chimbote and others), aimed at improving urban living conditions. In 1942, he published *Can Our Cities Survive?* The steel framework of the Spanish pavilion for the Paris World Fair in 1937 was mainly filled with glass, with a curved ramp leading to the interior courtyard with its large awning. This pavilion seemed light and airy in contrast to some of the other, monumental exhibition structures. The Fondation Maeght in St-Paul-de-Vence (1959–1964), consisting of several galleries and courtyards, successfully combines the straight lines of the façade with the rounded, part shell-shaped, part quadrant-shaped structures on top of the roof. The Peabody Terrace student hostel of Harvard University in Cambridge, Massachusetts (1963–1965) consists of three high-rise blocks and several low buildings, linked to each other by means of bridges. Sert succeeded here in creating a homely style of architecture in a limited space. In the case of the Fondación Joan Miró in Barcelona, the peaceful areas of the complex with its accessible roof provide a fitting background for the art works on display, yet the architectural style retains its formal individuality, which is on a more compact and solid scale here than in earlier works.



"The frustrating thing about planning work is that a city takes much longer to develop than a building, and controls are very difficult, some elements of the plan are used, other misused, and many things are changed."

Silvestrin Claudio

Interior design of Barker Mill Apartments, London, 1993

After his training with A. G. Fronzoni in Milan and further studies at the Architectural Association in London, Claudio Silvestrin (born in 1954) settled in the latter city. His individual buildings and rooms have a gentle power of expression and are designed to give the effect of simple space. A long, stone path leads to the entrance of the Villa Neuendorf (1991) in Majorca, which he designed in collaboration with John Pawson. The sun and moon throw precisely calculated figures of light into the rooms. The fitted tables, benches and floors are made from the local stone. The Barker Mill Apartments in London, for which Silvestrin did the interior design (1993), are flooded with light and have angular furnishings and curving, ceiling-height partition walls made of shimmering glass. Silvestrin also restored the Restaurant Johan in Graz (1997), an historic, sand-colored arch carried on massive columns with square windows high up in the building and an elegant interior. He also designed the interior, limestone furnishings for the Giorgio Armani Store in London (2003) and the Princi Bakery in Milan (2004). The panoramic windows in the bakery kitchen along with open fires and a balanced color scheme present the viewer with a complete picture of the baking process. The success of the business has led to the opening of another branch, set up by Silvestrin in Milan in 2006.

SITE Projects Inc.

"This period begins as the age of information and develops into the age of ecology." James Wines

◂ James Wines

▾ "Indeterminate Façade", Houston, 1974, with Maples-Jones Associates

James Wines (born in 1932) studied at Syracuse University in Chicago and worked as a sculptor between 1955 and 1968 before founding, with Alison Sky (born in 1946), the multidiscipline organization SITE (Sculpture in the Environment) in 1970 in New York. Michelle Stone and Emilio Sousa also joined them. The goal of this collaboration was to combine art and architecture into an entity for which Wines coined the term "De-architecture". He was appointed a professor at the New Jersey School of Architecture in New York in 1975. For the Best Products business enterprise the SITE group redesigned several supermarkets, including the Peeling Projects Building in Richmond, Virginia, (1972), where the brick façade peels away from the foundations. The "Indeterminate Façade" of the Houston Showroom (1974) looks like a crumbling ruin. For the Notch Showroom in the Arden Fair Shopping Center in Sacramento, California (1977), the space for the entrance is made by the setting of the corner of the building on an extended set of rails. The project "Highrise of Homes" (1981) is intended to accommodate apartment blocks, including the garden area, in a high-rise skeleton, in order to save space. On the occasion of the World Exhibition in 1986 in Vancouver, SITE designed a 217-meter-long undulating street called Highway '86, which plunges into the sea at one end and towers up into the sky at the other. In 2004, the Madison Square Garden Kiosk Shake Shack in New York was built.

Siza Vieira Álvaro

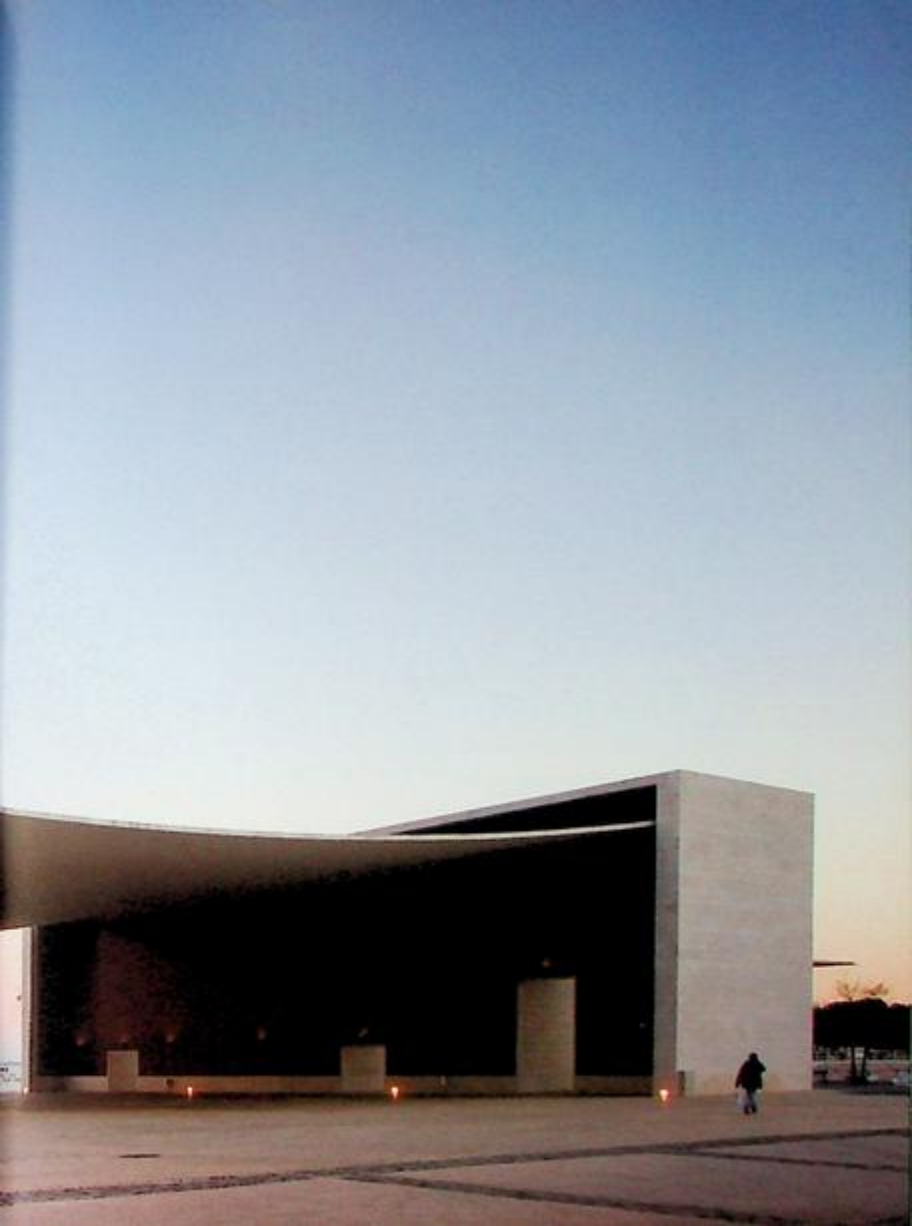
"There has to be a distance between what is natural and what is created by man, but there also has to be dialogue."

► Galician Center of Modern Art, Santiago de Compostela, 1988-1993

◄ Edificio Zaida, Granada, 2006

►► Portuguese pavilion, Expo '98, Lisbon, 1995-1998

After studying architecture at the Academy of Fine Art in Porto from 1949 to 1955, Álvaro Siza Vieira (born in 1933) spent several years working with Fernando Távora (1955-1958) before opening his own studio in 1958. He has been a professor at the School of Architecture in Porto since 1976 and, as a visiting professor, has lectured in Switzerland, the USA and Colombia amongst other places. His ability to incorporate existing features into his designs was demonstrated with particular success in his swimming pool at Leça da Palmeira, Portugal (1961-1966). The partly wood-clad, concrete construction is adapted to an existing cement wall. The beach is interspersed with massive rocks, the form and course of which Siza incorporated into the design of his sea swimming pools. Other major projects include the School of Architecture at the University of Porto, Portugal (1987-1993), the University Library at Aveiro (1988-1995) and the Galician Center of Modern Art in Santiago de Compostela, Spain (1988- 1993). This building is made of light granite blocks with smooth façades that are broken only by occasional windows; it harmonizes well with the neighborhood's historic buildings. The structure of the museum, which was built on a triangular layout, is of two, overlapping, L-shaped volumes. Since 1988, Siza has also been responsible for rebuilding the suburb of Chiado in Lisbon. Another structure that dates back to the 1990s is the production hall for Vitra in Weil am Rhein, Germany (1991-1994), a plain building with a red-brick façade on a light granite plinth; the Boavista Building in Porto (1991-1998); and the Church of St. Mary in Marco de Canavezes, Portugal (1990- 1996). His design for the Portuguese pavilion at Expo '98 in Lisbon (1995-1998) was spectacular. Its most striking feature was a concrete roof sail, suspended on steel ropes between the main building, in natural stone, and a solid supporting construction. The pavilions for Expo 2000 in Hanover and the Serpentine Gallery in London were created in co-operation with Eduardo Souto de Moura. Cecil Balmond Arup was also involved in this experimental construction.

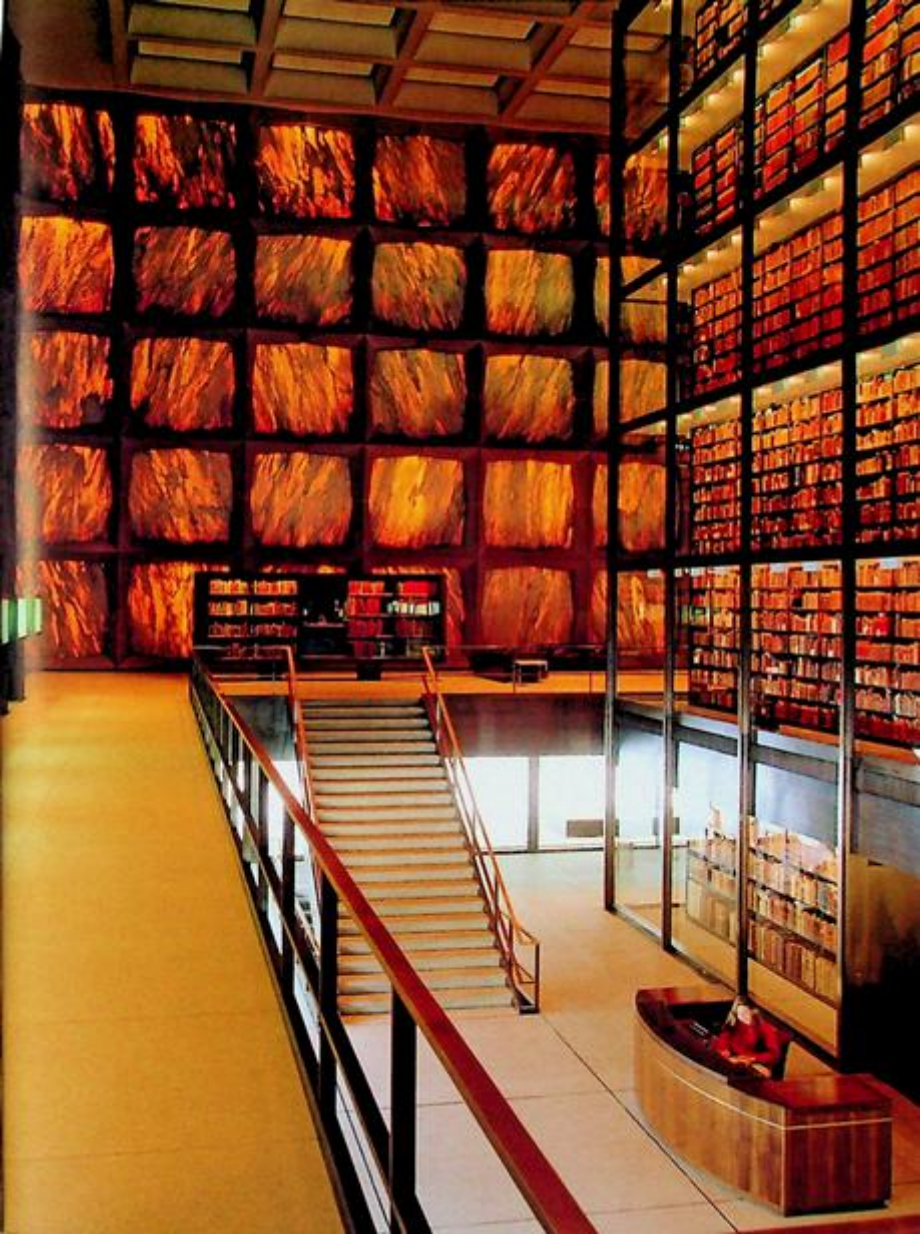


Skidmore, Owings & Merrill (SOM)

▼ Church, US Air Force Academy, Colorado Springs, 1956–1962

► Beinecke Rare Book and Manuscript Library, Yale University, New Haven, Connecticut, 1963

Louis Skidmore (1897–1962) and Nathaniel Owings (1903–1984) co-founded their architects' practice in Chicago in 1936 and by 1937 another branch had already opened in New York. John Merrill (1896–1975) became a partner in 1939, when the firm was already working on a large number of pavilions for the World Exhibition in New York. With the 21-story administration building for Lever Brothers in New York (1951–1952), a new prototype came into being for the design of inner-city business buildings. This was the skyscraper building on a flat base construction. The office building of the Connecticut General Life Insurance Company in Bloomfield (1957), on the other hand, was placed as a cuboid, transparent, flat building into an area like a park. The partnership also used this style of building for the Upjohn Company in Kalamazoo, Michigan (1961). A significant, further development in the use of a framework construction was the chief administration building of the Business Men's Assurance Co. of America in Kansas City, Missouri (1963), with its accentuated steel rafters and recessed glass covering. Skidmore, Owings & Merrill also developed new methods of construction, such as the so-called "tube construction" of Fazlur Khan. The weight-bearing parts of a skyscraper were strutted out diagonally, so that, for the same price, significantly greater building heights could be achieved. For example, the John Hancock Center in Chicago (1970) is 340 meters high. The Sears Tower in Chicago (1970–1974) attains its height of 442 meters by means of a "bundle" of nine shafts of varying height. Other noteworthy buildings, their roofs adorned with greenery, are the Fourth Financial Center in Wichita, Kansas (1974), the First Wisconsin Plaza Building in Madison, realized at around the same time, and the 33 West Monroe Building in Chicago (1982). For the National Commercial Bank in Jeddah, Saudi Arabia (1982), SOM developed a type of skyscraper that was suitable for extreme climatic conditions. The smooth façade is only interrupted by two squares, which give a view of the luxuriant vegetation. Also realized there, as a pavilion roof construction, was the Hajj Terminal of King



Abdul Aziz International Airport (1982). The AT&T building in Chicago (1986–1989) takes into consideration the emblematically decorative trends of Postmodernism. Later, as happens in many big offices, the stylistic direction of the projects changed a great deal. SOM made its impression on the skyline of the city of Shanghai, China (1999) with the 421-meter-high Jin Mao Tower, which accommodates the Grand Hyatt Shanghai Hotel on floors 53 to 87; from a studio on the 53rd floor, the view is open to the sky. The international terminal of the airport in San Francisco (2001) shows a symbolic connection to flying with its roof, which is in the shape of wings. The newly built faculty buildings for the Greenwich Academy Upper School in Connecticut (2002) merge into the campus with their construction of wood and glass. There are 30 partners working for the firm today, in eight sites across the world.

"We make it clear to a client from the outset that we expect a building to fulfil certain social obligations and make certain gestures towards its urban context." Edward Charles Bassett

◂ Sears Tower, Chicago, 1970–1974 ▸ Jin Mao Tower, Shanghai, 1999

Soleri Paolo

"True conservation is impossible on a planet that denies the city, but the existence of the city/town is dependent on ecological sanity."

▾ Dome House, Cave Creek, Arizona, 1949–1951, with Mark Mills

▸ Ceramics factory, Vietri sul Mare, Italy, 1953–1954

After studying at the Politecnico in Turin, Paolo Soleri (1919–2013) moved to America in 1947, where he studied until 1948 under Frank Lloyd Wright. Before returning to Italy in 1950, he collaborated with Mark Mills in creating the Dome House in Cave Creek, Arizona (1949–1951). One of the distinctive features of this stone house, which is embedded in the ground, is a glass and aluminium dome that spans the living area and can be partially opened. In Italy, his projects included the Ceramica Artistica Solmene ceramics factory in Vietri sul Mare (1953–1954). In 1955, he moved permanently to America where, in 1956, he established the Cosanti Foundation in Scottsdale, Arizona, with the aim of turning into reality his ideas on architecture and urban planning, which he summarized under the term "arcology" (architecture and ecology). His work *Arcology: The City in the Image of Man* was published in 1969. Since 1970, he has been involved in building the Arcosanti experimental town in the Arizona desert, a project aimed at creating a sensitive and close fusion between man, architecture and nature. These imaginative complexes for working, living and recreational activities are designed in such a way as to minimize the use of energy and valuable raw materials.

Soriano Raphael

▾ Case Study House, Pacific Palisades, California, 1950

▸ Julius Shulman House and Studio, Los Angeles, 1950

Raphael S. Soriano (1907–1988) was born on Rhodes and emigrated to America in 1904. In 1934, he graduated in architectural studies from the University of Southern California. He worked for a time for Rudolf Schindler and Richard Neutra, before setting up his own practice in 1936 in Los Angeles. That same year, he realized the Lipetz residence, which was one of three houses selected for presentation at the World Exhibition in Paris in 1937. The most striking characteristic is the projecting music room, which has a continuous front window that describes an oval. The Koosis residence in Los Angeles (1941), with its two-story façade fronting the street, was built by Soriano as a wooden frame construction. A staircase leads to the projecting balcony and front door. To the rear, the house opens up via fully glazed walls towards the garden. After the war, Soriano shifted almost exclusively to building with steel frames. Amongst other things, he completed a Case Study House in Pacific Palisades, California (1950), which featured a rectangular outline with ceiling-height glazing. He also built a house and studio for Julius Shulman in Los Angeles (1950). The arrangement of living quarters, studio and garage allows for a number of terraces to lead out onto the courtyard. The hallway, which is separated from the living room and is only half as high, tapers towards the back of the building. In 1953, Soriano moved his office to the vicinity of San Francisco, where he was able to realize shops, schools and hospitals as well as many detached houses. Furthermore, he conceived the idea of a mass-produced house, featuring a light, steel support structure, a roof made of moulded, steel plates and sliding, glass doors. He found a sponsor for his innovative designs in Joseph Eichler and awarded him the contract in 1955 for his residential prototype, the Eichler House in Palo Alto. The building was first open to public viewing before being sold.

Sottsass Ettore

Villa, Maui, Hawaii, 1995-1997

Austrian-born Ettore Sottsass (1917–2007) completed his architectural studies at the Politecnico in Turin in 1939. He worked first for Giuseppe Pagano before setting up his own practice in Milan in 1947. In addition to his work as an architect, he designed furniture and items of daily use. In 1956, he worked for a short time in the USA at the offices of George Nelson. As design consultant for Olivetti from 1958 he created innovative products such as the computer Elea 9003 (1959), the portable typewriter "Valentine" (1969) and the office chair "Synthesis 45" (1973). In 1972, he was represented at the exhibition *Italy: The New Domestic Landscape* at the Museum of Modern Art. He was an exponent of the Radical Design movement, which he wanted to reinvigorate with the founding of the Memphis design group in 1981. The Esprit fashion group furnished its shops with items from the Memphis collection, giving its brand a distinctive aura. After the establishment of Sottsass Associati in Milan, he created interior designs (together with Michele de Lucchi) for Fiorucci boutiques, the Zibibbo Bar in the Aldo Rossi Hotel Il Palazzo in Fukuoka, Japan (1988) and the Wolf House in Ridgeway, Colorado (1987–1988), a two-story house with a gabled roof and angular extensions projecting from the façade. In the villa on Maui, Hawaii (1995–1997), too, the architect plays with the composition of various geometrical forms and colors. The design is reminiscent of an oversized set of children's building blocks.

Souto de Moura
Edouardo

House, Moledo,
Portugal, 1991-1998

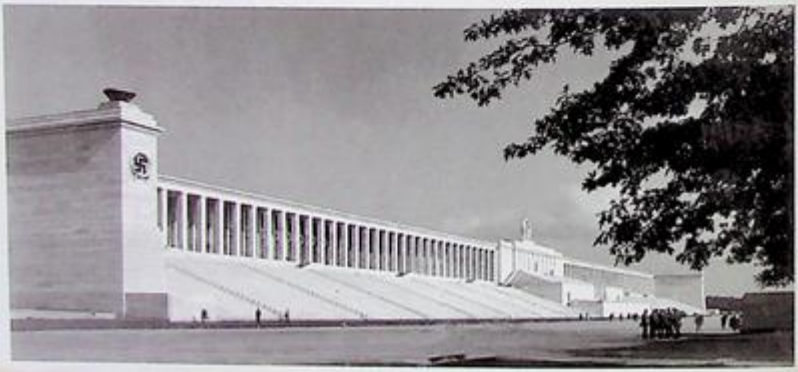
During his studies at the Escola Superoir de Belas Artes in Porto, Edouardo Souto de Moura (born in 1952) worked for Álvaro Siza Vieira. He founded his own practice in Porto in 1980 and was a lecturer at the university there between 1981 and 1991. His work is recognizable through its clear, architectural forms without superfluous decor and rooms that come to life through their widely contrasting materials. During the early part of his career he realized the market in Braga, Portugal (1980-1984) and the market café there (1982-1984), integrating the walls that have remained from an old building. The house in Moledo, Portugal (1991-1998), which is sympathetically integrated into the landscape, combines a variety of materials such as wood, glass and stone. Souto de Moura has also created a cylindrical building with an auditorium and art gallery on the site of the shopping center in Silo Norte near Porto (1998), with a spiral winding its way up around this from floor to ceiling. Together with Álvaro Siza Vieira, he built the Portugese pavilion for Expo 2000 in Hanover. Souto de Moura presents two variations on the theme "House on a slope" in Ponte de Lima, Portugal (2001-2002). One of these large, rectangular blocks, which are of equal size, juts out and is held by an invisible, Z-shaped sub-structure. The other house looks as if it has been turned upside down. In fact, a two-story, stepped building is hidden behind the white façade and the front windows remain invisible, although they extend over the surrounding wall. The bewilderingly twisted windows that jut from the Caso do Cinema in Porto (1998-2002) can be seen from the sightlines that run between the neighboring apartment blocks.

Speer Albert

Zeppelin Field before the main tribune, Reich party convention ground, Nuremberg, 1934–1937

After studying at the technical universities in Munich and Berlin, Albert Speer (1905–1981) worked until 1931 as an assistant to Heinrich Tessenow in Berlin. In 1932, Speer received a commission to convert the Berlin Gauhaus, the district headquarters of the NSDAP (National Socialist Party), and in 1933 designed Joseph Goebbels' ministerial apartment and organized a backdrop to the Berlin May Day celebrations, which prefigured certain elements of later party convention backdrops. He was appointed by Goebbels as "official in charge of artistic design for the mass rallies", after which his rise in the National Socialist regime was marked by the titles "architect to the Führer", "general inspector of buildings for Berlin, capital of the Reich" and finally, in 1942, "Reich minister for armament and munitions." For party conventions, he designed the Zeppelin Field in Nuremberg (1934–1937) with tribunes and parade grounds. He designed the stone and marble New Reich Chancellery (1938–1939) in Berlin.

The planned north-south axis through Berlin was never finished. It was to have had government buildings right and left and, at the end of it, the Great Hall, crowned by a colossal dome. In his written works, Speer developed some far-fetched theories, such as that of the "ruin value" of the architecture of the Third Reich, in which he sought to draw links with ancient architecture even when the buildings had fallen into ruin. The botched Neoclassicism practised in his buildings was distinguished not only by a lack of scale, but also by the theatrical incorporation of human beings – usually lined up in rank and file. Through Deutsche Erd- und Steinwerke, the earth and stoneworks company run by the SS, Speer obtained material from 1938 for his mammoth plans. At least 40,000 people died in the concentration camps set up by Speer at Natzweiler and Flossenburg to realize his and Hitler's building ideas. When WWII ended, Speer was imprisoned until 1966 as a war criminal.



Stam Mart

Hellerhof development, Frankfurt/Main, 1928–1932

After following a course of studies in design in Amsterdam between 1917 and 1919, Mart Stam (1899–1986), worked between 1919 and 1924 for Marinus Jan Granpré Molière in Rotterdam, Max Taut and Hans Poelzig in Berlin and Karl Moser in Zurich. Together with Hans Schmidt, he published the magazine *ABC: Contributions to building*, with articles on design, architecture and furniture and also perspective drawings of functional buildings. During his time in the office of Johannes Andreas Brinkman and Leendert Cornelis van der Vlugt (1925–1928), he collaborated in the building of the Van Nelle Tobacco Factory in Rotterdam (1925–1930). At the same time, on the invitation of Ludwig Mies van der Rohe, he completed a tightly knit row of terraced houses with flat roofs for the Weissenhof development in Stuttgart (1927). The Hellerhof development (1928–1932) and a retirement home (1928–1930), both in Frankfurt, also date from this period. The latter was a white, two-story building on an H-shaped outline, with generous glazing to the southern elevations. Whilst functional buildings were normally realized on a north-south axis, in order to optimize the amount of sunlight in the mornings and evenings, Stam planned for the retirement home to meet other considerations as well. Together with Ernst May and other architects, he emigrated to the Soviet Union in 1930, where he worked as a town planner and, amongst other things, designed a plan for Magnitogorsk. In 1934, when it had become clear that the Soviet Union had little interest in visionary ideas, Stam returned to the Netherlands with his wife, Lotte Stam-Beese. Between 1939 and 1953 he was director of, and presided over, planning for schools in Amsterdam, Dresden and East Berlin. His work in the 1950s included, for example, the Geillustreerde Pers office building in Amsterdam (1957–1959).

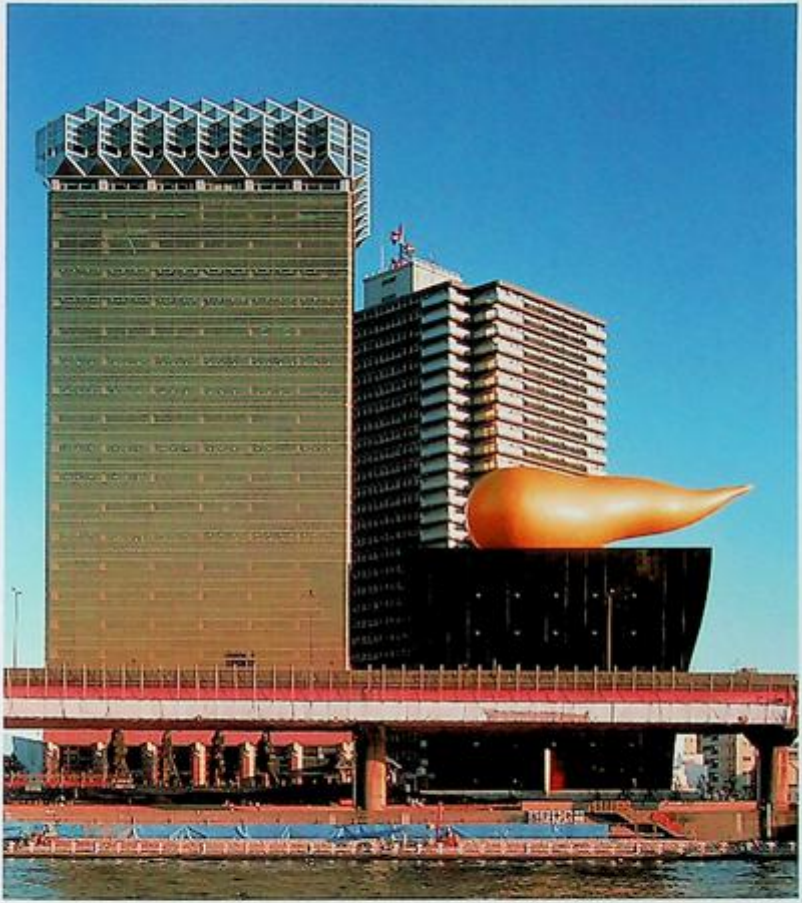
Starck Philippe

"The designer can and should participate in the search for meaning, in the construction of a civilized world."

▼ Interior furnishing of the Delano Hotel, Miami, 1995

▶ Asahi Brewery, Tokyo, 1990

Philippe Starck (born in 1949) attended the École Nissin de Camondo in Paris. His career began with the designing of furniture and interior fittings for, among other places, French nightclubs. From 1969, as the artistic director for the Pierre Cardin Studio, he produced 65 furniture designs. In 1980 he set up the firm Starck Products. His numerous contracts have included elegant and eccentric, often futuristic interiors like the Café Costes in Paris (1984). Along with his function as a designer, he was also an architect. In Japan he designed the Nani nani Building (1989) and the Asahi Brewery (1990), both in Tokyo. These were architectural objects with no reference to their surroundings, self-sufficient because of their objective reference. In collaboration with Alessandro Mendini and Coop Himmelblau, he took part in the building of Groningen Museum in the Netherlands (1990-1994). For this he designed a wing covered in silver sheets on a circular outline, which was placed on a massive base with a clinker coating. Vases fixed on to the façade hint at the collection of porcelain kept inside. In 1994 Starck built a house for himself near to Paris. It was predominantly glazed and built of wood with a roof



jutting out over the surrounding terrace. From the mail-order company "3 Suisses", one can order a building kit that contains the construction plans and building components for a model of the house on the scale of 1:50. In the meantime Starck furnished innumerable luxury restaurants, designer hotels and boutiques. In 1995 he designed the interior furnishings for the Delano Hotel (1937 by B. Robert Swartburg) in Miami, Florida; in 1999 came the St. Martins Lane Hotel in London; and in 2001 the Mikli Boutique Marunouchi in Tokyo. In Paris, on the uppermost floors of the Art Deco department store by Frantz Jourdain and Henri Sauvage, he installed the Kong Restaurant in 2002 and in 2004 lavishly furnished the Baccarat House.

Steiner Rudolf

Second Goetheanum,
Dornach, Switzerland, 1924-1928

Rudolf Steiner (1861–1925) began his studies at the technological university in Vienna in 1879. From 1883 onwards he was intensively occupied with the study of Goethe's scientific writings. For an understanding of his aesthetics, the paper "Goethe as father of a new aesthetic" is of central importance: the purpose of art is to bridge the gap between the physical and the metaphysical. In 1902, Steiner joined the theosophy society and started busying himself with the concrete translation of his ideas. In 1907, he designed column capitals, which were later used in the first Goetheanum. By his own account, he produced a model of a Rosicrucian temple in Malsch in 1908 and 1909. Between 1911 and 1913, he was in charge of the planning of the "Johannesbaus" in Munich, the completion of which was defeated because of the resistance of the authorities and churches. In 1913, Steiner founded the Anthroposophical Society. The Goetheanum buildings, which were completed in Dornach over the following years, were to offer the Anthroposophists rooms for their work. Resuming his interest in Goethe's ideas about the metamorphosis of plants, in his first Goetheanum (1913–1920) Steiner tried to translate that "inner growth pattern of nature" described by Goethe into architecture. He produced drawings and models, which were used at lectures on architecture. Over a concrete base, a wooden structure with two domes rose up, which was primarily meant to suggest a place of safety. As in the mother's womb, which represented the "elemental house" for Steiner, there were no straight angles, as everything was rounded inside the building. The roof, which was made of Norwegian slates from Voss, curved protectively over the building. For Anthroposophists who settled in Dornach, Steiner designed residential buildings such as the Duldeck House (1915–1916). Stylistically, it occupies a mid position between the first Goetheanum and the second. It seems a little over-theatrical. Primarily it gives this impression on account of the massive roof, which is reminiscent of Gaudi's apartment blocks in Barcelona. The first Goetheanum was still strongly influenced by Jugendstil (Art Nouveau) and the second, which Steiner designed in 1923 after the first Goetheanum had gone up in flames, was a masterpiece of Expressionism. Steiner planned the second Goetheanum in concrete. He made reference to it – the external appearance should generally result from moulding the material – and promoted a new style of concrete cast into forms. As Steiner died before its completion (1924–1928), the second Goetheanum was built in accordance with one of his finished exterior models. The monumental nature of the building is one of the characteristics of the remarkable architectural style. At the same time, the whole building is cast throughout into such intricate forms due to the curvature of the exposed concrete surfaces that, with the changing light, new shapes constantly appear. Steiner was regarded as the founder of Anthroposophist architecture. It has spread to many parts of the world in different forms, yet is always committed to Steiner's basic ideas, which is to say, the abandonment of straight angles and in their place the use of curves, polygons and sloping planes as well as the emphasis on detailed craftsmanship. In essence, Anthroposophist architecture is similar to organic building.

Stirling James

"Box-style architecture, more than anything else, was responsible for destroying cities after the war."

History Faculty, Cambridge University, England, 1964–1967

James Stirling (1926–1992) studied architecture at Liverpool University from 1945 to 1950, after which he attended the School of Town Planning and Regional Research in London until 1952. Between 1953 and 1956, he worked as an assistant to Lyons, Israel and Ellis. It was here that he met James Gowan, with whom he set up a practice in 1956 and designed the Leicester University Faculty of Engineering (1959–1963). In the early sixties, he was also invited to lecture at Yale University. From 1963, he assumed sole control of the practice. His most important works in the years that followed included the Cambridge University History Faculty (1964–1967); the student hostel of St. Andrew's University (1964–1968); the Dorman Long main administration headquarters in Middlesbrough (1965); Queen's College, Oxford (1966–1971), which is grouped around a hexagonal courtyard; the somewhat unwelcoming housing complex in Runcorn New Town (1967–1976); and a new training center for Olivetti in Haslemere (1969–1972), a building comprising two wings of pastel-colored synthetic sections reinforced with fiberglass, which are united via a glazed linking structure. In 1971, Stirling joined forces with Michael Wilford, who became a partner in the firm. Together they designed the Olivetti Headquarters in Milton Keynes. His social housing project in Runcorn New Town, England (1972–1977), features brightly colored housing units that are clad in synthetic material and feature mullioned windows; the remote heating pipes, which are supported by a system of metal struts, are, for reasons of cost, exposed and located at ceiling height. The newly extended Stuttgart Staatsgalerie with new Kammertheater Building of the Württemberg Staatstheater (1977–1983) represent one of Germany's most daring cultural realizations. The new Arthur M. Sackler Museum of Harvard University in Cambridge, Massachusetts (1979–1984) was rather less successful. After a ten-year period, during which Stirling, like many other British colleagues, worked exclusively on overseas projects, he suddenly received a commission to extend the Tate Gallery (now Tate Britain) in London (1980–1986). Around the same time, he also designed the Performing Arts Center of Cornell University in Ithaca, New York (1983–1988) and the Science Center in Berlin (1979–1987). The complex, the façade of which is finished in alternating bands of salmon-pink and pale blue, consists of four separate buildings clustered around a central inner courtyard: they take the form of an amphitheater, a church, a fortress and a bell tower.

Stone Edward Durell

▼ Beckman Auditorium, California Institute of Technology, Pasadena, 1962

► Museum of Modern Art, New York, 1938-1939, with Philip L. Goodwin

Edward Durell Stone (1902–1978) graduated from Harvard University and the Massachusetts Institute of Technology in Cambridge, Massachusetts. Before establishing his New York practice in 1935, he was involved from 1929 in the construction of the Rockefeller Center by Raymond Hood and Wallace K. Harrison. During the 1930s, Stone designed a series of houses in the International Style, with white stucco façades, porches made from structural glass and flat roofs without eaves. The Museum of Modern Art in New York (1938–1939), realized in collaboration with Philip L. Goodwin, is considered to be the first public building in the International Style in the USA. In the thin, far-reaching roofs of the Goodyear residence in Old Westbury, New York (1938) and the open ground plan of Thurnauer House in Englewood, New Jersey (1949), specifically American construction solutions are in evidence. For the Stuart Pharmaceutical Company Building in Pasadena, California (1956) and the American Embassy in New Delhi, India (1956–1958), Stone used extensive "grills" that would become one of his trademarks as vertical room dividers. His work also includes the American pavilion for the World Exhibition in Brussels (1957–1958) and the Beckman Auditorium of the California Institute of Technology in Pasadena, California (1962). During the 1960s, his buildings became increasingly interspersed with semicircular arches and pillars, as seen, for example, in the Waite Phillips Hall of the University of Southern California at Los Angeles (1966–1968). With his Neo-classical aesthetic, Stone criticized the glass buildings that were created in emulation of Mies van der Rohe as ostensibly timeless and characterless.

"There is too much conformity in contemporary architecture. I like to think of architecture as an individual creative expression; I get more pleasure out of my work if I carry through my own convictions rather than pursue a dogma outlined by some other architect."

THE MUSEUM OF MODERN ART

TAC
(The Architects Collaborative)

▼ Clockwise from bottom center: Walter Gropius, Robert McMillan, Benjamin Thompson, Louis McMillan, John Harkness, and Arthur Niggli

► Johns-Manville Headquarters, Jefferson County, Colorado, 1973–1976

In 1945, Walter Gropius founded TAC (The Architects Collaborative) in Cambridge, Massachusetts. This partnership, which continued until 1996, consisted initially of Jean Bodman Fletcher, Norman Fletcher, John Harkness, Sarah Harkness, Louis McMillen and Benjamin Thompson. Their modern architecture brought the office numerous contracts, not only in America, but internationally as well. One of the early works was the Graduate Center of Harvard University in Cambridge, Massachusetts (1948–1950), built in the International Style: it comprised seven residences and the Harkness Commons Building, the campus refectory. This flat-roofed, cubic building is partially freestanding on piers and has horizontal ribbon glazing. In terms of international commissions, the American Embassy in Athens (1956–1961) and buildings for the University in Baghdad, Iraq (1957–1960) were realized. The interior of the Anita Tuvin Schlecter Auditorium in Carlyle, Pennsylvania (1971) is built on rotationally symmetrical lines with flexible partition walls. During the 1970s, TAC completed the Johns-Manville Headquarters in Jefferson County, Colorado (1973–1976). The two elongated, flat office buildings lie at the foot of the Rocky Mountains. A bridge connects the aluminium-clad structures, which sit partially on piers and are segmented into austere, horizontally organized façades.

Takamatsu Shin

▼ Kirin Plaza Business Centre, Osaka, 1985–1987

► Seirei Prayer Hall, Kawanishi, Japan, 1996–1998

Shin Takamatsu (born in 1948) studied at Kyoto University, where he opened his own office in 1975. He taught at the Technical University in Kyoto and the Osaka University of Arts. During the 1980s, Takamatsu realized the office buildings Origin I, II and III in Kyoto, Japan (1980–1986) and the Kirin Plaza Business Center in Osaka, Japan (1985–1987). His buildings from the 1990s are quite different from his earlier works, particularly those indebted to postmodernism, as well as being substantially different from each other. The Shoji Ueda Museum for Photography in Kishimoto, Japan (1993–1995) consists of four square-edged structures with narrow façades of reinforced concrete in front of a curved wall. He also created the futuristic Meteor Plaza in Mihonoseki, Japan (1994–1995) and the octagonal Seirei Prayer Hall in Kawanishi, Japan (1996–1998). In 2001, the Tianjin Museum in China was completed, which is seen to best effect at night when the interior is illuminated. The building has a crescent-shaped ground plan. The rear elevation is completely glazed and opens out to a circular plaza with round water basins. The National Theater in Okinawa, Japan was realized between 2000 and 2003.

"The joy that emanates from physical existence is capable of spontaneously producing carnal desire."

Tange Kenzo

▼ Cathedral of Saint Mary, Tokyo, 1962–1964

► Kagawa Prefectural Offices, Takamatsu, Japan, 1956–1958

Kenzo Tange (1913–2005) began his studies in 1935 at Tokyo University, graduating in 1938 with the Tatsuno prize. He gained practical experience in the office of Kunio Mayekawa, a former colleague of Le Corbusier. After the war, he worked as a freelance architect and taught at Tokyo University after 1946, successfully combining a teaching contract with private work. In 1949, he won the competition for the Peace Center in Hiroshima. The long, flat hall of the memorial museum sits on recessed concrete stilts, while the glass façade is divided by vertical concrete strips and horizontal slats. In 1951, Tange was invited to give a presentation on this project to the CIAM Congress on "The heart of the city". Many public building projects followed: the Tsuda College Library in Tokyo (1953/1954), with its square-shaped ground plan; the three-story Shimizu Town Hall realized around the same time; town halls for Kurayoshi (1956) and Tokyo (1957); and the Kagawa Prefectural Offices in Takamatsu, made up of two structures. Characteristic of much of his work is the predominance of horizontal and vertical structural elements. Alongside this, however, Tange designed plenty of buildings using free forms, such as the sports complexes for the Tokyo Olympics (1961–1964). The composition of the two stadium buildings

features soaring pillars that support suspended roofs, which are vaulted in both spiral and tent forms that gently curve outwards to the edge of the arena. Tange pursued research primarily in the field of town planning. In 1959 he had written a dissertation on the topic of "The reorganization of the city of Tokyo" and, a year later, produced a blueprint for expanding the city above the water surface of Tokyo Bay. The model of cellular structures addressed by this plan, which were to be made accessible by a linked infrastructure network, also found their way into the design for the Press and Broadcasting Center in Kofu (1964–1966). With structures hung between concrete cylindrical towers, it was regarded as the realization of the neo-Metabolist school – flexible and expandable. His works completely lost their Japanese identity in later years, becoming increasingly oriented towards an international style of architectural practice.

"We believe, after all, that developing this 'structuring' process is the fundamental task of urban planning."

◂ Yamanashi Press and Broadcasting Center, Kofu, Japan, 1964–1967

▾ Kagawa Prefectural Offices, Takamatsu, Japan, 1956–1958

Taniguchi Yoshio

▼ Shiseido Art Museum, Kakegawa, Japan, 1978

► Extension of the Museum of Modern Art, New York, 2003-2004

Yoshio Taniguchi (born in 1937) studied mechanical engineering at the University of Keoi in Tokyo. After he graduated, he went to study architecture at Harvard University in 1960, where he was awarded his Masters in 1964. He then worked for Kenzo Tange until 1972. He opened his first office in 1975, under the name Taniguchi, Takamiya and Associates; Taniguchi and Associates was founded in 1979. The Shiseido Art Museum in Kakegawa in the Shizuoka prefecture (1978) is distinguished by its simple geometric forms, which turn this building into a place of contemplation. Taniguchi frequently works with the pattern effects of areas of water, onto which the buildings are reflected. The same applies to the Ken Domon Museum of Photography in Sakata in the Yamagata prefecture (1983). The rooms in the museum partly lie underground, to protect the photo collection from natural light. The Horiyuji Natural Resources Gallery at Tokyo National Museum (1999) has clear and ordered forms that contrast with the confusion of the city. Its dual function of preservation and presentation is portrayed in two highly contrasting parts of the building. Whilst the archives are concealed behind a stone wall, the bright exhibition rooms are located behind a glass façade that is built with a steel frame and opens out onto a flat pool of water. The extension of the Museum of Modern Art in New York (MoMA, 2003-2004) was not only meant to create more space, but also to connect the existing buildings and to integrate them into a new overall concept. The new Peggy and David Rockefeller Building almost doubles the size of the MoMA. In this instance, too, the façade is dominated by a frame, which protects the interior glass cube from the street. Taniguchi has also been a lecturer since 1970.

Taut Bruno

▸ Pavilion, German Steel Federation, Leipzig, 1913

▸▸ Uncle Tom's Cabin housing estate, Berlin-Zehlendorf, 1926-1931

Bruno Taut (1880–1938) attended the Baugewerkschule (Building Trades School) in Königsberg until 1901 and then worked in various architectural offices: with Fabry in Wiesbaden in 1902, with Bruno Möhring in Berlin a year later, and with Theodor Fischer in Stuttgart from 1904 to 1908. He received his first commission in 1908, to build a turbine house in Wetter in the Ruhr. He opened an architectural office in partnership with Franz Hoffmann the following year; his brother Max Taut joined them at a later stage. In 1909, they built a convalescent home for the Siemens Company in Bad Harzburg. As consultant to the German Garden Cities Association, Taut was commissioned to design the garden suburb estate "Reform" in Magdeburg (1913–1921) and "Am Falkenberg" in Berlin-Grünau (1912–1915), though these were only partially realized. He was best known for two exhibition buildings: he designed the pavilion known as the "Monument to Iron" for the Leipzig Construction Fair in 1913 (for the German Steel Federation and the German Association of Bridge and Rail Manufacturers), which was an octagonal steel frame construction consisting of four floors tapering up telescopically; he also designed the glass industry pavilion for the Werkbund (German Association of Craftsmen) exhibition in Cologne in 1914, which had a dome made of colored rhombic glass panels. After the war, Taut published works on expressionist architectural Utopias - *Alpine Architecture* (1918) and *City Crown* (1919) – and wrote articles for the journal *Frühlicht* which he later co-edited. In 1918, he was responsible for the radical Arbeitsrat für Kunst (Worker's Council for the Arts), as well as the Gläserne Kette (Glass Chain) the following year: a circle of artists and architects who communicated with each other using so-called chain letters. From 1921 to 1923, Taut was the city architect of Magdeburg, causing quite a lively debate by initiating brightly colored façade designs. As advisor to a not-for-profit housing association in Berlin, he was busy in the years from 1924 to 1932 with the issue of mass housing. Two of his most important works in this period were the horseshoe-shaped Britz housing estate in Berlin (1925–1930), which he realized with Martin Wagner, and the forest estate known as Uncle Tom's Cabin in Berlin-Zehlendorf (1926–1931). In 1926 he became a member of the architectural association The Ring. In 1927 he took part in the Werkbund exhibition in Stuttgart and taught as a professor at the university in Berlin-Charlottenburg from 1930 to 1932. In 1933, Taut travelled to Moscow, and finally emigrated to Japan, where he worked at the Crafts Research Institute in Sendai. In 1936, he was appointed Professor of the Art Academy in Istanbul, Turkey, succeeding Hans Poelzig, who died before being able to take up the position.

"We believe that the immediate surroundings of a residence are vitally important to the residence itself, and can raise or lower the quality of life it offers."

Teague Walter Dorwin

▼ Exhibition pavilion, National Cash Register Co., World Fair, New York, 1939, with Ely Jacques Kahn

▶ Ford pavilion, "Century of Progress" World Fair, Chicago, 1933

After completing his studies at the Art Students League in New York (1903–1907), Walter Dorwin Teague (1883–1960) worked as a graphic designer for an advertising agency. He then went on to open his own studio in the city in 1912, working as a typographer and graphic designer. In 1926, he established Walter Dorwin Teague Associates and made a name for himself as an innovative industrial designer. He designed cameras for Kodak, the streamlined "Marmon" car (1930) and many other products, including kitchen utensils, lamps and cigarette lighters. His piano for Steinway became famous, as did his round, bright blue "Bluebird" radio for Sparton (1934–1936). His larger projects included the interior design for the Boeing 707, petrol stations for Texaco and various exhibition buildings for Ford, such as the one for the 1939 World Fair in New York. In 1940, he published *Design This Day – The Technique of Order in The Machine Age*. Together with Henry Dreyfuss and Raymond Loewy, he co-founded the American Society of Industrial Designers in 1944, and became its president.

Ford

Terragni Giuseppe

▾ Casa del Fascio, Como, Italy, 1932-1936

▸ Novocomum residential complex, Como, Italy, 1927-1929

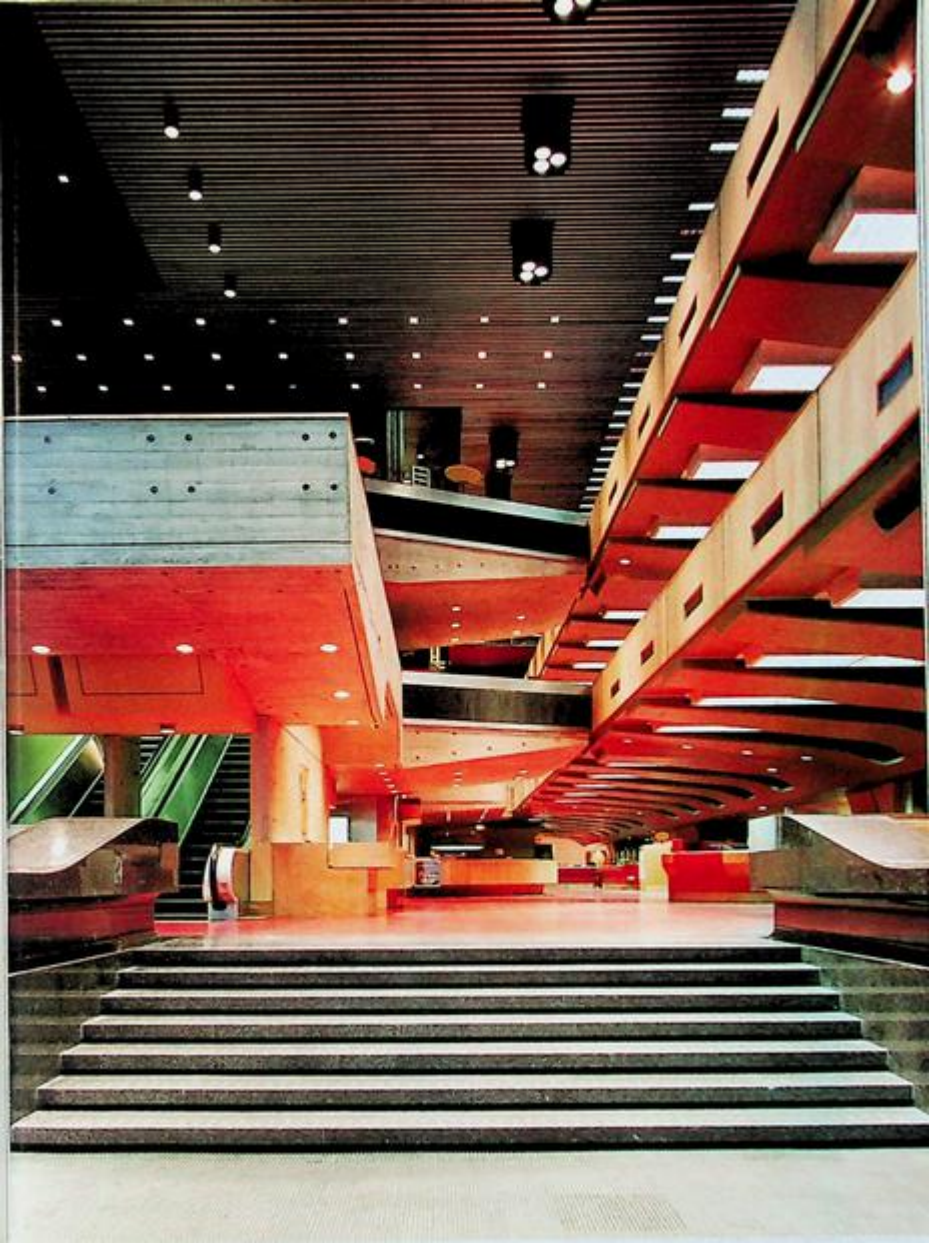
After graduating from the Technical University in Como, Giuseppe Terragni (1904-1943) studied at the Politecnico in Milan. He then opened an architectural practice in Como with his brother (1927). He was a co-founder of "Gruppa 7", which was committed to a contemporary rational Italian architecture, together with Luigi Figini, Gino Pollini, Sebastiano Larco, Ubaldo Castagnoli, Guido Frette and Carlo Enrico Rava. That same year he presented his greatly admired design for a gas works at the Biennale in Monza. Against the vehement resistance of traditionalists such as Marcello Piacentini, he implemented the realization of the five-story Novocomum residential complex in Como, Italy (1927-1929), the severity of which is relieved by a constructivist corner solution. In 1928, he joined the movement M.I.A.R. (Movimento Italiano per L'Architettura Razionale). The main work by Terragni is generally considered to be the Fascist party building (Casa del Fascio) in Como (1932-1936): a white marble cuboid where dramatic light and shadow effects are created through geometric breaks in the façade. In 1933, working in collaboration with various other M.I.A.R. architects, he constructed a lakeside house for an artist for the first Milan Triennale. From 1934 to 1935 he worked on the commission from Margherita Sarfatti to produce a memorial for her son, the formal appearance of which is wholly in line with the rationalistic spirit. He realized the nursery school Antonio Sant'Elia in Como (1934-1937) and the Villa Bianchi in Rebbio (1935-1937). Together with Pietro Lingeri he created the Casa Rustici (1933-1936) and Casa Lavezzari (1934-1937), both in Milan. He also collaborated with Lingeri on the project for the Danteum in Rome: rooms for each chapter in the "Commedia" were designed to create similar feelings to those engendered by the text. In 1938, with Antonio Carminati, Terragni designed another Fascist party building, for the city of Lissone. The Frigerio House in Como (1939-1940) is generally held to be his last significant work.

Testa Clorindo

▾ ▸ Bank of London and South America, Buenos Aires, 1959–1966, with Santiago Sánchez Elía, Federico Peralta Ramos and Alfredo Agostini (SEPRA)

Clorindo Testa (1923–2013) studied at the National University of Buenos Aires, graduating in 1948. Together with Santiago Sánchez Elía, Federico Peralta Ramos and Alfredo Agostini (SEPRA), he built the headquarters of the Banco de Londres y América del Sud in Buenos Aires, Argentina (1959–1966). It is an impressive example of brutalism. The supporting façade is futuristic, made of pre-fabricated concrete elements with round openings. A huge entrance area emphasizes the access position. The top storys are suspended from the roof, while the lower ones are stacked. The interior contains a large, concrete, spiral staircase. An association with human scale and proportion is not achieved until the realization of the workplaces on the office floors. The Biblioteca Nacional de Buenos Aires, Argentina (1962–1995), which he created with Francisco Bullrich and Alicia Cazzaniga de Bullrich, has a very long history. The competition took place in 1962. The realization of the project was delayed for a while, partly for political reasons. Thus the aesthetics of the construction – which was not completed until the 1990s – are undeniably of the 1970s. The expressive structure sits like a monument in the surrounding park, positioned on a plinth made of four columns to avoid interruption to the pathways. The storerooms are underground. The reading rooms are above the treetops.

La Perla is a beach complex in Mar del Plata, Argentina (1985–1990), created in collaboration with Juan Genoud and Osvaldo Álvarez Rojas. This single-story structure, which is made of concrete and brick, houses sanitary facilities and shops, and links the promenade to the beach with steps and terraces. Testa's buildings, with his uncompromising use of exposed concrete, have had a significant influence on the understanding of architecture in Argentina. In recent years, his designs have become more fragmented and colorful. The office building of the Colegio de Escribanos de la Capital Federal in Buenos Aires, Argentina (1998), which he designed in collaboration with Juan Fontana and the Sevi Studio, seeks visual connection to the neighboring buildings; an art gallery in Pinamar, Argentina (1997–1998) appears to dissolve into single structures.



Tezuka Architects

"Architecture is about life – that is, the quality of life."
Takaharu Tezuka

▼ House to Catch the Forest, Chino, Japan, 2004

► Wall-less House, Tokyo, 2001

Takaharu Tezuka (born in 1964) and Yui Tezuka (born in 1969) both graduated in architectural studies from the Musashi Institute of Technology in Tokyo. Takaharu Tezuka gained a Masters degree at the University of Pennsylvania before he found a position with Richard Rogers. Yui Tezuka continued her studies at the Bartlett School of Architecture in London. In 1994, they co-founded the architectural practice Tezuka Architects in Tokyo. Both are in the teaching profession. With the Wall-less House in Setagaya-ku, Tokyo (2001), the whole edifice is supported by a stable core and extremely thin pillars. The ground floor manages without any walls at all and, with the glass walls pushed aside, merges directly into the large garden. On a small plot of land in this densely populated neighbourhood, the Thin Wall Office in Shibuya-ku, Tokyo (2004) makes efficient use of the available space with thin walls and the permissible roof height. Nine-millimeter-thick sheets of steel and narrow pillars support the structure. The glass elevations to the front and rear give an insight into office life. The basement, however, together with the bathroom and kitchen, remains out of sight. The Engawa House in Adachi-ku, Tokyo (2003) was erected as an additional building in the garden of a detached family house. The façade extending to the long, narrow courtyard and the main house is completely glazed, so that the building can be transformed into a 16-meter-long, roofed veranda, with the help of the nine sliding glass doors. Like a display window, all the rooms are clearly visible from the courtyard – even the bathroom and bedrooms. A narrow band of ribbon windows, which extends over the entire length of the rear of the building, guarantees enough daylight. The House to Catch the Forest in Chino in the Nagano prefecture (2004) is mounted on three plinths in a pine forest. The acutely raised, glazed frontage of this holiday house offers beautiful views of the surrounding treetops. The steeply sloping roof prevents too much snow accumulating.

Thorne Beverley

▼ Nail House, Atherton, California, 1954

► Sequoya House, Oakland, 1957

Beverley Thorne (born in 1924) graduated in architectural studies from the University of California at Berkeley in 1950. Afterwards, he was employed by David S. Johnson, and stayed in Europe for a number of years before setting up his own practice in 1954, under the name David Thorne. In many of his buildings, Thorne used steel frame constructions. He designed the house for Dave Brubeck in Oakland, California (1954), to be built on an inhabitable plot of land on a steep slope. He created a three-storey building with a steel construction partly embedded in the rock. The top floor is located at the level of the treetops and, with its glass walls and sliding windows, offers views in all directions. A projecting part of the top floor houses the bedroom; the second floor opens out onto a large terrace. With the Nail House in Atherton, California (1954), Thorne abandoned his usual modular building method. As the client wanted to see the old trees from the living room, the architect designed the roof to rise at an angle. The parking space is located underneath. With its steel skeleton, Thorne's Case Study House No. 26 in San Rafael, California (1962–1963) is, for the most part, mounted freely on supports on a sloping plot of land and juts out some distance. The flat roof serves as a parking space.

UNStudio

▼ Ben van Berkel

► La Defense office building, Almere, the Netherlands, 1999–2004

Ben van Berkel (born in 1957) studied at the Rietveld Academy in Amsterdam and then at the Architectural Association in London, receiving his diploma in 1987. Before founding UNStudio in Amsterdam with Caroline Bos (1988), he worked for Santiago Calatrava in Zurich. In 1994, he was a guest lecturer at Columbia University in New York. On a search for new spatial solutions that, on the one hand, went beyond the familiar repertoire based on fundamentalism, while on the other also had that sensual and artistic quality that is today often required for public buildings, the architects at UNStudio apply mathematical models that can be researched through computer-aided design. The development of their constructed works is to be read as a research project in the regions of the folded, wound and devoured space. The Wilbrink residence in Amersfoort, the Netherlands was realized between 1992 and 1994 and has a gently sloping roof that seems to grow up out of the ground. Top and bottom, inside and out, are mixed and redefined. The city was given a strong landmark in the Erasmus Bridge (1990–1996) that connect the new parts of the city – created by converting old harbour facilities – with the center. The concept behind the Möbius House in Het Gooi, the Netherlands (1993–1998) is the Möbius Loop, in which the conventional uses of glass and concrete are exchanged and material contrasts achieved between solid concrete areas and ceiling-high, tinted windows. For the NMR Laboratory Building at the University of Utrecht (1997–2000), the architects folded exposed concrete sections around the central laboratory area. Specific cut outs around La Defense, the large office block in Almere, the Netherlands (1999–2004), create courtyards with façades that are coated with a colored, shimmering film to create an incorporeal vision of the building. The highlight of the group's achievements to date is the new Mercedes Benz Museum in Stuttgart, Germany (2001–2006), whose winding spirals create a continuous route through the building whilst setting new boundaries in the design vocabulary of the constructed room.

"I am always worried about a very artistic architect becoming very academic. Architects cannot only be artists. Ours is a tremendous responsibility."
Ben van Berkel

Utzon Jørn

"The true essence of architecture can be compared to the origin of nature, and the inevitability of growth as a principle of nature should be a fundamental concept of nature."

▼ ► Sydney Opera House, 1957–1973

Jørn Utzon (1918–2008) was a graduate of the Academy of Art in Copenhagen. Until he opened his own office in Copenhagen in 1950, he worked with Paul Hedqvist in Stockholm and Alvar Aalto in Helsinki. He then travelled, gathering ideas, throughout Europe, North Africa and America, where he visited, among others, Frank Lloyd Wright. In the 1950s, Utzon built his own house in Hellebæk, Denmark (1952) and the Kingo-husene project in Helsingør, Denmark (1956–1960), a serpentine formation of housing blocks. These flat, single-family units constructed of yellow brick are closed on the street elevation, opening out onto enclosed garden courtyards. Among his other works are terraced houses in Fredensborg, Denmark (1962–1963) and the Birkehoj Houses in Elsinore, Denmark (1963).

The Sydney Opera House (1957–1973), located on a peninsula in the harbour, consists of striking concrete domes shaped like mussel shells that are completely clad in bright tiles: these shells are staggered across two platforms, under which the main halls are accommodated. The completed interior of the opera house differed to some extent from the designs of Utzon, who only supervised the construction for a few years. He also designed Bagsvaerd Church in Copenhagen (1969–1976), a stepped structure with glazed triangular louvers that features undulating ceiling panels within. The Utzon House in Porto Petro, Majorca (1971–1972) is once again a collection of small individual buildings. Utzon was also frequently involved in the design of furniture and lighting.

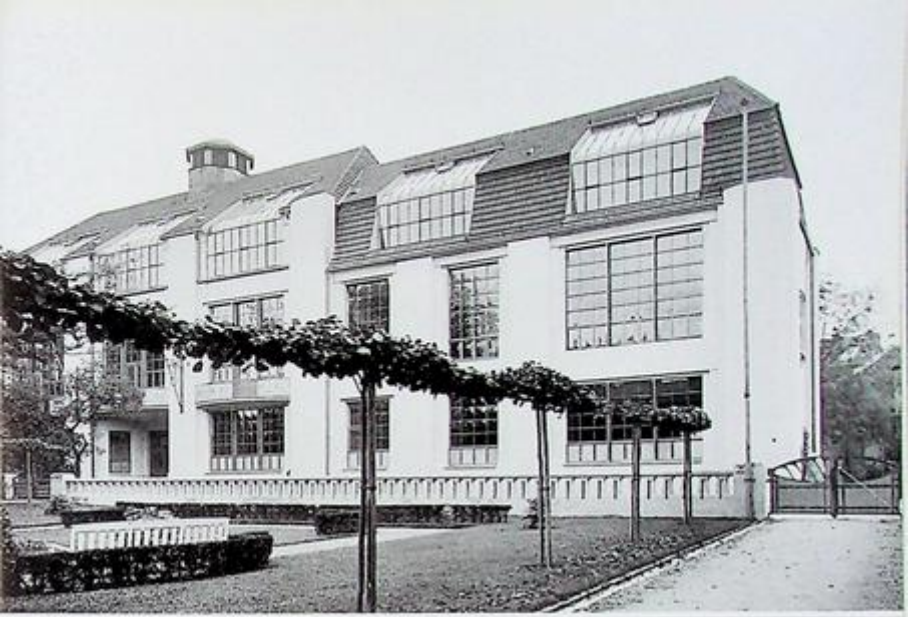
van de Velde Henry

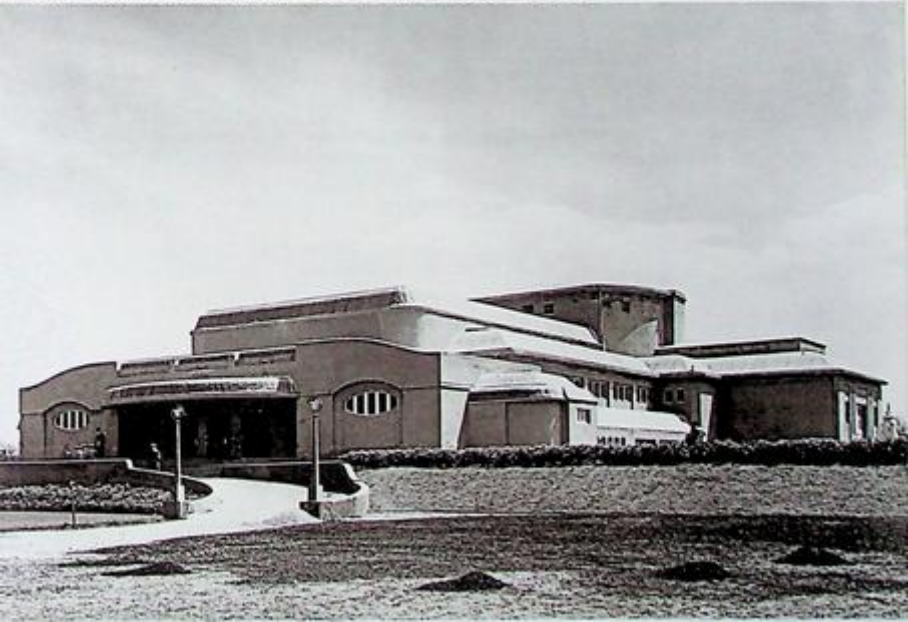
"A line is a force that operates in a similar way to all elementary forces ..."

► Kunstgewerbeschule in Weimar, Germany, 1904–1911

◄ Werkbund Theater for the Werkbund exhibition in Cologne, 1914

Henry-Clément van de Velde (1863–1957) studied painting from 1880 to 1883 at the Académie des Beaux-Arts in Antwerp, and with Corolus Duran in Paris for the next two years. He became active in a number of different artists' associations: he was instrumental in co-founding "L'Art Indépendant" in 1887, and became a member of the Brussels avant-garde group "Les XX" in 1889. Van de Velde's first building project was his own home, Bloemenwerf House, in Uccle near Brussels (1895). He was commissioned to fit out four rooms for the art collector Samuel Bing's Paris gallery, L'Art Nouveau, which were showcased in 1897 as part of the applied arts exhibition in Dresden. The strong constructivist curves of his furniture designs constituted one of the most significant contributions to Art Nouveau. He started up his own company, Henry van de Velde, in 1898 for the manufacture of furniture and other objects, and opened another branch in Berlin the following year. Soon after, however, in 1900 he sold the firm to Wilhelm Hirschwald, the owner of the Hohenzollern Kunstgewerbehaus arts and crafts shop. Other works he completed in Berlin were a tobacconist shop for the Havana Compagnie (1899) and the Haby Hair Salon (1901). At Karl Ernst Osthaus' request, he took on the interior renovation of the Folkwang Museum in Hagen (1900–1902). In 1901 he was called to the court of Grand Duke Wilhelm Ernst in Weimar as an artistic adviser and commissioned to build the Kunstgewerbeschule (School of Applied Arts), which he directed until 1914. Van de Velde completed a theater building for the Werkbund exhibition in Cologne in 1914, which had a new type of stage area within the form of an amphitheater; the exterior was defined by solid wall masses. He had already produced designs for the Théâtre des Champs-Elysées in Paris in 1910 and 1911, but the project was eventually assigned to Auguste Perret. He lived in Switzerland from 1917 until his move to the Netherlands in 1921. There he succeeded Hendrik Petrus Berlage as adviser to husband and wife Kröller-Müller, and began sketches for the present Rijksmuseum in Otterlo in the Netherlands, which was built in a simplified version between 1937 and 1954. Back in Brussels he took over as director of the Institut Supérieur d'Architecture et des Arts Décoratifs until 1935, while also holding a teaching professorship in architecture at Ghent University (1925–1936). Together with Victor Bourgeois and Léon Stijnen, he built the Belgian pavilion for the New York World's Fair in 1939. He moved back to Switzerland to live in 1947.





Venturi Robert & Scott Brown Denise

▼ Coxe-Hayden House, Block Island, Massachusetts, 1981

► Brant House in Greenwich, Connecticut, 1970-1973

◄ Headquarters of the Institute of Scientific Information, Philadelphia, 1970-1978

Following architectural studies at Princeton University, New Jersey, Robert Venturi (born 1925) held a scholarship at the American Academy in Rome from 1954 to 1956. He then went on to work in the architectural offices of Eero Saarinen and Louis I. Kahn until 1958, as well as lecturing at Princeton and Yale Universities. Of particular note among his early works are the Guild House home for the elderly in Philadelphia, which he built with fellow architects Cope and Lippincott (1960-1963), and the house for his mother in Chestnut Hill, Philadelphia (1962-1964). Both buildings became icons of post-modern architecture. From 1964 to 1987 he worked in partnership with John Rauch, and they were later joined by Denise Scott Brown, Steven Izenour and David Vaugham. Many different projects were completed, such as the Humanities Building of the State University of New York in Purchase (1968-1973), Dixwell Fire Station in New Haven, Connecticut (1967-1974), the Brant House in Greenwich, Connecticut (1970-1973), Franklin Court in Philadelphia (1972-1976), the extension to the Allen Memorial Art Museum in Oberlin, Ohio (1973-1976), the Institute of Scientific Information in Philadelphia (1970-1978), with its façade of mosaic-like colored wall panels, and the Gordon Wu Hall of Princeton University (1980-1983). In contrast to the highly symbolic façades of his urban projects, which comply with his designation of "shelters with decoration", the holiday homes he built on Nantucket Island, Block Island or in Vail, Colorado have timber and shingle surfaces that fit in with the landscape, with windows cut out in unusual configurations that create surprising settings. In the publications *Complexity and Contradiction in Architecture* (1966), *Learning from Las Vegas*, with Denise Scott Brown and Steven Izenour (1972), and *A View from the Campidoglio* with Denise Scott Brown (1985), Venturi reinforced his view that even modern building work exists through historical references and has to acknowledge the messy everyday architecture of "Las Vegas-style" strips as a competing reality.

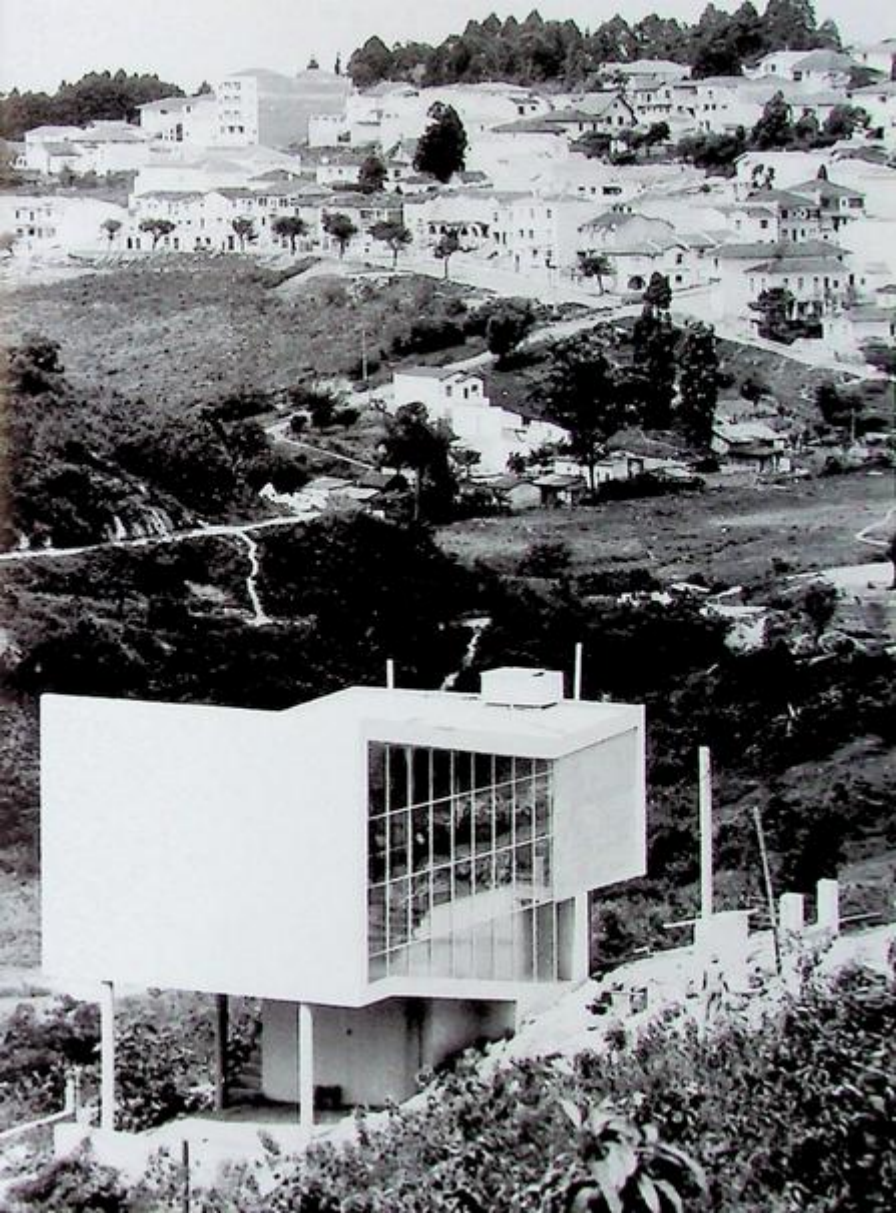
Vilanova Artigas João

"I admire the poets. What they say with two words, we must express with thousands of bricks."

▼ Swimming pool in Jaú, Brazil, 1975

► Czapski House, São Paulo, 1949

João Vilanova Artigas (1915–1985) studied architecture and engineering at the Escola Politécnica da USP in São Paulo. While still a student, he gained practical experience in various architects' practices. In 1937, he graduated; afterwards, he worked for Gregori Warchavchik. Vilanova Artigas taught at the University of São Paulo from 1941 to 1947. In 1948, he co-founded the new course of studies in architecture and fundamentally reformed study in the 1960s. For political reasons, however, he was forced to leave the university in 1969. In 1980, he returned as an advisor. Vilanova Artigas is regarded as a prominent architect of the São Paulo School. The Louveira Apartments on the Praça Vilaboim in São Paulo (1946–1949) consist of two high-rise, glazed structures, one of seven stories and one of eight stories, in the middle of a small square. The space under these blocks of flats, which is raised above the ground on pilotis, is used as a parking area. The façades are equipped with wooden slats as protection against the sun. The architect's own house in São Paulo (1949) demonstrates a far more personal approach to forms, distinguished by precision and clarity in the use of concrete and glass. The roof rises at an angle and frames the large window areas. Originally, his office was elevated above the terrace. At the beginning of the 1960s, Vilanova Artigas realized two schools in São Paulo, alongside Carlos Cascaldi; one is in Guarulhos and the other in Itanhaém. The school in Itanhaém marks the beginning of his brutalism phase, discernible in the trapeziform concrete frames that jut half a meter over the roof at the front. The school in Guarulhos is designed with a color concept using primary colors, both internally and externally. The use of color together with expressive construction materials for his wide-ranging buildings characterize the architect's work. In his later phase, Vilanova Artigas completed a series of public buildings, from a swimming pool to an art museum.



◂ Louveira apartment block, São Paulo, 1946–1949

▾ São Paulo University, 1961, with Carlos Cascaldi

▸ Tennis Club Anhembi, São Paulo, 1961, with Carlos Cascaldi

▾ The architect's house, São Paulo, 1949

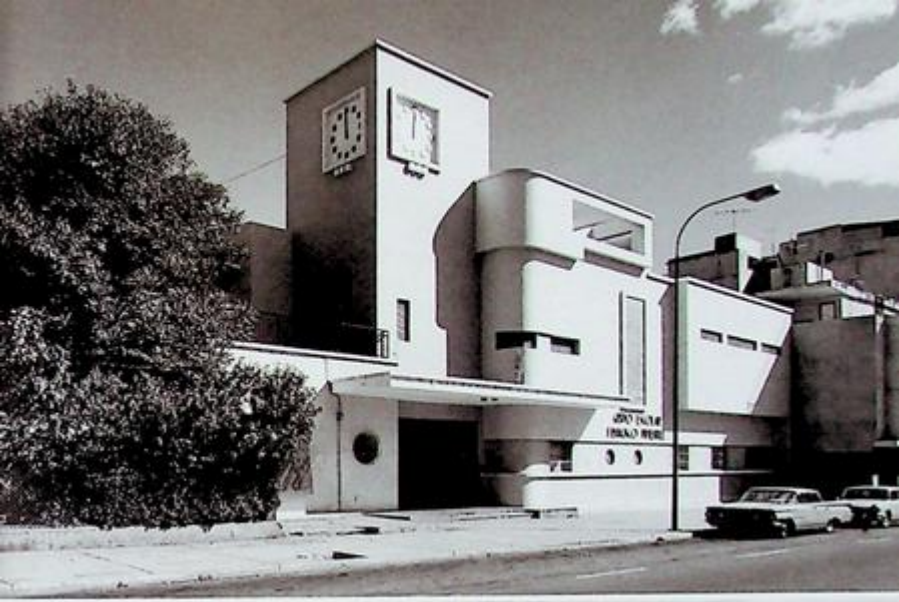
Villanueva Carlos Raúl

▼ Olympic Stadium, Caracas, 1949-1950

► Gran Colombia School, Caracas, 1939-1942, bas-reliefs by Francisco Narváez

▲ South façade of the university vice-chancellor's office, Caracas, 1952-1953

Carlos Raúl Villanueva (1900-1975) studied at the École des Beaux-Arts in Paris and then went on to open an office in Caracas in 1929. He was one of the founder members of the Faculty of Architecture at the University of Venezuela in Caracas, where he held a teaching post from 1944 onwards. His architecture combines notions of the International Style with South American traditions, with great importance being attached to regional needs such as climatic conditions. His works include the bullfighting arena in Maracay, Venezuela (1931), the Olympic Stadium (1949-1950) and the university campus (1944-1970), the latter two in Caracas. Made out of reinforced concrete, the buildings have trellises, window blinds and curved awnings to provide shelter from the sun. Villanueva worked closely with the artists Alexander Calder and Fernand Léger on the color schemes for the university campus: he knew them from his period as a student in Paris. Among other things, Calder was responsible for designing freestanding panels to improve the acoustics in the main auditorium. The university stadium consists of a reinforced concrete shell that is given a relaxed elegance by the comb-like supports running around it. Together with Ricardo de Sola Ricardo and Arthur Erickson he built the Venezuela pavilion for Expo 67 in Montreal, Canada, which was made up of three colored cubes. Villanueva's last work, built 1970-1972, was the Jesús Soto Museum in Bolívar, Venezuela. Its six blocks containing exhibition areas, administration areas and a cafeteria are grouped loosely around a courtyard, and joined together by low galleries. The buildings are partially equipped with adjustable, vertical sunshields that create plays of light and shade.



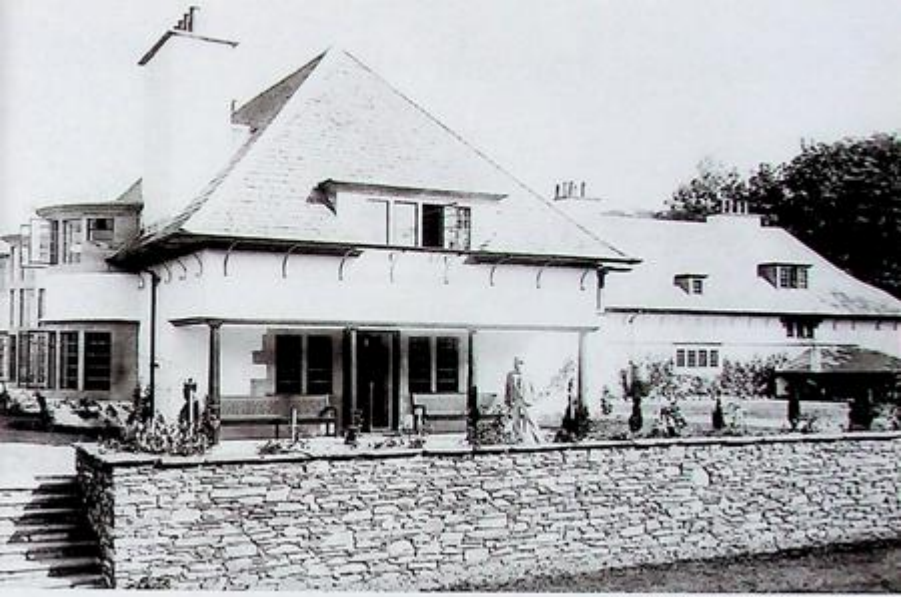
Voysey Charles Francis Annesley

▼ Moorcrag, Gillhead, England, 1898–1899

► Broadleys House, Lake Windermere, England, 1898–1899

▲ The Pastures, Rutland, England, 1901

After gaining experience in the London offices of J. P. Seddon and George Devey, Charles Francis Annesley Voysey (1857–1941) set up on his own in 1882. Although he was much influenced by the Arts and Crafts movement, he followed his own, less backward-looking style, which was orientated more towards the functional than the ornamental. Apart from building houses, he was also interested in their interiors, the simplicity of which was further highlighted by his preference for unpainted wood surfaces. His desire was for everything, right down to the toothbrushes (although they were something Voysey does not appear to have designed), to be chosen by the architect. He also designed furniture and textiles for Alexander Morton & Co. and wallpapers for Essex & Co. His extensive oeuvre consists mainly of English country houses, often with slate roofs, rough plasterwork, ribbon windows and high saddle and hipped roofs. The section of the middle classes that prospered with industrialization wanted the kind of comfortable home that had previously been the preserve of the aristocracy; they were now the clientele, and Voysey provided the setting for their lifestyle. Perrycroft House (1893) was realized in Malvern for J. W. Wilson, Greyfriars House in Surrey (1896) for Julian Sturgis, and Annesley Lodge in Hampstead, London (1895–1897) was built for Voysey's father. Although the L-shaped Annesley Lodge has the same angled wall protrusions as Perrycroft House, it lacks the latter's details, such as the tower and round windows. The white-painted pebbledash Broadleys House on Lake Windermere (1898–1899) was built for Arthur Currer Briggs, who brought weekend guests over the lake by boat. On the west side, three large bay windows with horizontally latticed glazing offer panoramic views, while relieving the 60-centimeter-thick walls. At the same time, Voysey designed Moorcrag for J. W. Buckley, the clear, almost rectangular layout of which is covered by an elaborate roof landscape. In 1899, he built The Orchard for himself, a country house near a railway station that incorporated all of his developments.



Wachsmann Konrad

Prefabricated house assembled using the "General Panel System", 1942–1947, with Walter Gropius

A trained carpenter and cabinet maker, Konrad Wachsmann (1901–1980) attended the Academy of Arts in Dresden from 1923 to 1924. He then studied under Hans Poelzig at the Prussian Academy of Arts in Berlin. From an early stage Wachsmann was involved in the prefabrication of structural components: as chief architect at Christoph & Unmack, a company producing prefabricated timber in Niesky, he built a tuberculosis sanatorium in Spremberg (1927) and Albert Einstein's summer house in Caputh (1928–1929). The two-story, half-timbered house has a cladding of prefabricated timber boards and is constructed on a flat, brick base. The terrace at the side of the house is accessed by a right-angled staircase and is supported on stilts. For Wachsmann, Einstein's house meant the first step to autonomy. Following a lengthy stay in Rome from 1932 to 1938, Wachsmann emigrated to America, where he developed various building kit systems. He produced the first of these with Walter Gropius between 1942 and 1943, the "General Panel System", which enabled unskilled labour to assemble wall panels quickly and without the use of tools. After 1944 he developed a whole factory with a machine train for the industrial-scale assembly of mass-produced houses. The General Panel Corporation produced less than 200 houses, however, and the company was forced to close as it was not economically viable. He then went on to develop the "Mobilar Structure" (1945) for hangars for the Atlas Aircraft Corporation. The design of spatial structures made of steel tubing and joints defined Wachsmann's later theoretical work. Wachsmann took up teaching posts: first, in 1949, at the Institute of Design of the Illinois Institute of Technology in Chicago, then, in 1964, with the University of Southern California.

Wagner Martin

Wannsee Lido, Berlin, 1929-1930, with Richard Ermisch

While studying at the Technical Universities in Berlin and Dresden, Martin Wagner (1885–1957) was apprenticed to Hermann Muthesius between 1905 and 1910. In a memorandum in 1917 he advocated state control of housebuilding and focused his attention on residential estates with the aim of replacing grim apartment blocks with landscaped communal houses in which tenants could enjoy living. From 1918 to 1920 he was head of planning for the district of Schöneberg, then from 1926 to 1933 for all of Berlin. He published the journal *Das neue Berlin* with Adolf Behne in 1929. In collaboration with Bruno Taut he built the Lindenhof housing estate in Berlin-Schöneberg (1918–1920) and the Britz estate in Berlin (1925–1930), of which the center is a white, horseshoe-shaped apartment block built around a pond. On the other side it is adjoined by terraced housing with red and blue façades that form a diamond shape. The houses are located right next to a traditional-style housing estate. Wagner was also involved with other architects in developing the Uncle Tom's Cabin estate in Berlin (1926–1931) and the Wannsee Lido in Berlin (1929–1930). He worked with Hans Poelzig on the Haus des Rundfunks (Broadcasting House) in the grounds of the Berlin Trade Fair (1929–1930). During the Nazi period, he emigrated to Turkey and then on to America, where he taught urban planning at Harvard University in Cambridge, Massachusetts.

Wagner Otto

▼ ► The Church of St. Leopold
at Steinhof, Vienna, 1902–1907

Otto Koloman Wagner (1841–1918) studied from 1857 at the Polytechnikum in Vienna and between 1860 and 1861 attended the Royal Building Academy in Berlin. He continued his training at the Viennese Academy of Visual Arts, before he began to work in the studio of Ludwig von Förster. His own house in Vienna (1886) reminds one of the work of Palladio, in its symmetrical arrangement, columns and steps. With its flexible separating walls in the rooms and its glass floors, the Austrian Länderbank in Vienna (1882–1884) was much more innovative than its façade would lead one to believe. In 1893 Wagner won the competition for the municipal redesign of the city of Vienna. In 1894 he was appointed to the office of chief building adviser and his most important areas of work included the building of the city railway and the regulation of the Danube. By the completion of the railway in 1901, 34 stations and innumerable bridges and viaducts had been completed. In 1894 Wagner became professor of architecture at the Viennese Academy of the Visual Arts. One year later he published his acceptance speech under the title "Moderne Architektur" (Modern architecture). In 1898 Wagner completed the rented houses to the left of the Wienzeile. No. 40 became famous as the Majolica House because of the decorative features of its façade. What is more significant, however, is the well thought out design of the outline itself and the modern idea of furnishing all the accommodation with baths. In 1899 he became a member of the Viennese Secession artists' association. With the telegram office of the *Zeit* newspaper in 1902, he designed an uncompromisingly modern work. The Post Office Bank Building was constructed between 1903 and 1912 and to a great extent conveys his theories. Beginning with the façade of marble slabs held on by visible bolts fixed at regular intervals, right up to the highlight, the large service hall with the vaulted glass arch above it, the design adheres completely to the concept of functional necessity. The Church of St. Leopold at Steinhof in Vienna (1902–1907), with its impressive dome encased in what were originally gilded copper sheets, served as the institutional church for the county hospitals and care homes in Lower Austria. Buildings of note from Wagner's last, creative phase of work include the rented houses in the Neustiftgasse in Vienna (1909–1911) and in the Döblergasse (1912), as well as the second Villa Wagner (1912–1913).

◄ ▼ Austrian Post Office Bank, Vienna, 1903-1912

▸ ▾ Villa Wagner II,
Vienna, 1912–1913

Werkbund

► Peter Behrens, poster, Werkbund exhibition, Cologne, 1914

►► J. J. P. Oud, terraced houses, Werkbund exhibition, Stuttgart, 1927

▼ Walter Gropius and Adolf Meyer, factory and office building, Werkbund exhibition, Cologne, 1914

◄ Heinrich Lauterbach, apartment building, Werkbund exhibition, Wroclaw, Poland, 1929

The Deutsche Werkbund (German Association of Craftsmen) was founded in 1907 by twelve artists, including Peter Behrens, Josef Hoffmann, Herman Muthesius and Richard Riemerschmied, and twelve companies. The aim was to "purify commercial work", which included all products associated in any way with art, crafts and industry, right through to town planning. At first, yearbooks were used to propagate ideas, but later they were increasingly replaced by exhibitions. The first one, in Cologne in 1914, consisted of more than 50 buildings, although only those by Walter Gropius, Bruno Taut and Henry van de Velde were worthy of mention; others favored a fussy Neoclassicism. When Hermann Muthesius made typification the main topic in a talk on the Association's further work, this led to what became known as the Werkbund controversy, in which Henry van de Velde in particular adopted an artistically orientated contraposition. In 1913, the Swiss and Austrian associations were founded. Industry lost its role in the Deutsche Werkbund during World War I (1914–1918), which now adopted a function that was more philosophical than economic. It gained further recognition with the exhibition *Form without ornament* (1924). The exhibition *The apartment* took place in Stuttgart in 1927, under the leadership of Mies van der Rohe, and included the Weissenhof estate with houses by Le Corbusier, J. J. P. Oud, Mart Stam and others. The common theme was the industrialization of residential building.

There followed further building exhibitions in neighboring countries, including Brünn in the Czech Republic (1928), Breslau (now Wroclaw, Poland) (1929), and Vienna (1932), which pursued this line of thought in various directions. The houses on the estate of the Czech association "Baba" in Prague (1932) were specially built for specific clients. The Werkbund estate Neubühl (1932) was notable for its very well-planned design, which was also evident in many types of home. In 1949, after the war, an exhibition was staged in Cologne that covered rebuilding and redevelopment. It included "Good Form", a composition by Max Brill whose title neatly summarized the ongoing work of the association. Ten years later, however, new problems such as urban sprawl and the destruction of the environment were coming to the fore.

"The decline of quality in commercial production is due largely to the public's inexperience and lack of knowledge of technical matters... In addition, as is already the case, commercial exhibitions will have to make sure that the public is constantly presented with the best products in appealing formats."

▼ Felix Augenfeld, Karl Hofmann, espresso bar, Werkbund exhibition, Vienna, 1930

► André Lurçat, terraced houses, Werkbund exhibition, Vienna, 1932

WERKBUND
SIEDLUNG
1932

Williams Amancio

"I have not built many of my projects, but others will."

Father's house in Mar del Plata, Argentina, 1943–1945

Amancio Williams (1913–1989) studied at the School of Architecture of the University of Buenos Aires, where he graduated in 1941. Only a few of his many projects were actually realized. As a proponent of modern architecture, he represented Argentina at the CIAM congress, where he made important contacts. The house built for his father, the composer Alberto Williams, in Parque Pereyra Iraola, Mar del Plata, Argentina (1943–1945) is conceived as a bridge. A broad concrete arch with two supports spanning a stream contains the flat, one-story construction bar. Ribbon glazing throughout emphasizes the horizontal directionality of this unusual house. There is an accessible terrace on top of the roof. Le Corbusier, for whom Williams later completed the Curutchet House in La Plata, Argentina (1950–1951), dedicated an exhibition to him in Paris in 1947. His design for a cultural events building (1942–1953) was spectacular: to present it, Williams placed the ellipse-shaped, silver model in a kind of moon landscape. For this design he received the gold medal from the World's Fair in Brussels in 1958. From 1961 onwards, Williams was a member of the National Academy of Fine Arts in Argentina. In 1963 he planned a memorial to his late father on the Rio de la Plata, Buenos Aires, although it was not built until 2000. The architectural feature of a roof that seems to be gently quivering on a support also found its way into the exhibition pavilion that he built for the Bunge and Born Company for the 1966 Regional Exhibition in Buenos Aires.

Williams Owen

"The object of the factory builder should therefore be fitness for purpose at minimum cost in a combination with complete flexibility for replanning and alteration."

After qualifying as a civil engineer, Owen Williams (1890–1969) gained experience with the Indented Bar and Concrete Engineering Company and the Trussed Concrete Steel Company, two American firms involved in reinforced concrete construction work. During the First World War he produced ships made of concrete for the British Admiralty and then established Williams Concrete Structures Ltd. The company, responsible for several industrial buildings using prefabricated concrete parts, soon set up an engineering consultancy service that also took on architectural assignments. His first major project as an architect was the Dorchester Hotel in London (1929–1930), a multi-story concrete building whose individual wings point in different directions. The Daily Express Building in London (1929–1931) has a smooth curtain-wall façade and rounded corners in an uncompromisingly modern style – a design that was adopted virtually unchanged for the Daily Express Building in Manchester (1935–1939). The interior of the London building is astonishing, with its imaginative fittings in the Art Deco style. The Boots Packed Wet Goods Factory in Beeston, UK (1930–1932) represented an icon of functionalist architecture. Here Williams abandoned the early idea of the continuous curtain-wall façade; instead he made the concrete floor levels jut out visibly on the outside and filled the spaces between them with glass, recessed by 10 centimeters. The central, multi-story packing shed that unites the production flow with the point of delivery is reminiscent of American models. Other completed projects included the Sainsbury Factory and Warehouse in London (1931–1933) and the Empire Pool in Wembley, UK (1933–1934). The Dollis Hill Synagogue (1936–1938) was based on the idea of constructing flat, thin shear walls in exposed concrete, broken up by a grid-like arrangement of windows derived from the shape of seven-branched candlesticks or the Star of David. A lack of precision in the formwork led to an uneven appearance that left the clients dissatisfied, but above all it showed the limitations of rationalist design for such an architectural project. In the post-war period Williams worked mainly on the construction of the motorway network.

Daily Express Building, London, 1929–1931

Williams Tod & Tsien Billie

House for William Tarlo in Sagaponack, New York, 1978

After graduating from Princeton University in New Jersey, Tod Williams (born in 1943) worked with Richard Meier. In 1974 he opened his New York office, which since 1986 he has run in partnership with Billie Tsien (born in 1949): a graduate of Yale University and UCLA, she had worked previously as an artist and graphic designer. Both of them have since undertaken numerous teaching commitments, among others at Harvard and Yale. Tarlo House in Sagaponack, New York (1978) is one of Williams' designs that predate the joint office. Built in wood and glass, the house consists of three slanted structures that are terraced vertically. It sits facing a north wall, sheltering it from the wind, and the south-facing windows are screened by a blind. Joint projects include the Feinberg Hall in Princeton, New Jersey (1986), the renovation of the Museum of Fine Arts in Phoenix, Arizona (1992–1996) and the intricate Neuroscience Institute in San Diego, California (1993–1995), which is made of concrete slabs, marble, stainless steel and laminated glass. The Museum of American Folk Art (1999–2001) was built in New York City on 53rd Street right next to the Museum of Modern Art, where the eight-story building stands out by virtue of its irregular metal façade.

"Whatever we design must be of use, but at the same time transcend its use. It must be rooted in time and site and client needs but it must transcend time and site and client needs."

Wittgenstein Ludwig

Stonborough-Wittgenstein House, Vienna, 1926-1928, with Paul Engelmann

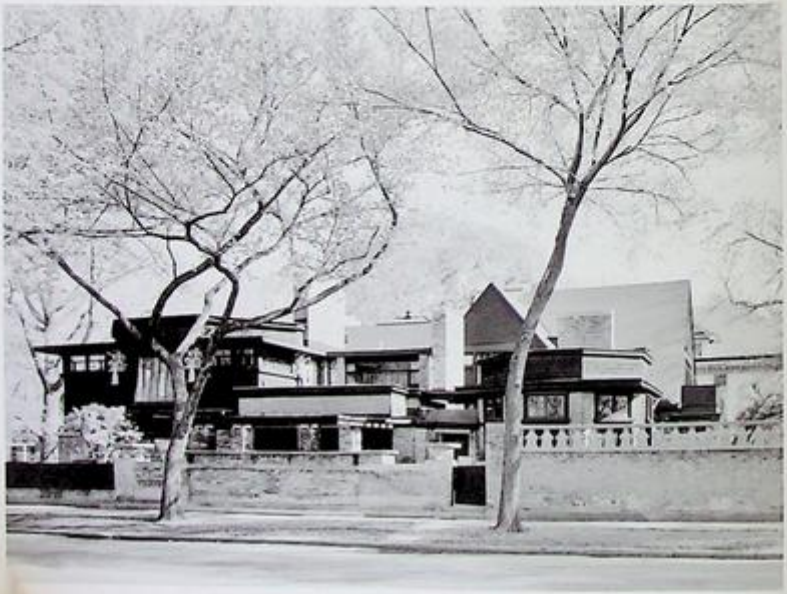
Ludwig Wittgenstein (1889–1951) began his studies in engineering at the Technical University in Berlin-Charlottenburg and continued them at the University of Manchester. From 1912, he studied mathematical logic at Cambridge University and was also very interested in philosophy and architecture, whilst being a friend of Adolf Loos. The main criterion for good architecture in his eyes was uncompromising simplicity and clarity. Although he had no qualifications as an architect, Wittgenstein designed and completed two houses. There was his own house in Skjolden, Norway (1914) and a house for his sister Margarethe Stonborough-Wittgenstein in Vienna (1926–1928), which he realized together with Paul Engelmann, a pupil of Adolf Loos. Jacques Grog, an experienced builder, also worked with him on the design plans. Engelmann's contribution is unclear. Margarethe appointed him to do the work but he was increasingly pushed aside by Wittgenstein. The finished house shows little relation to Engelmann's other works. It is made up of several, angular buildings with flat roofs and light grey, sober façades, which are interrupted in a regular fashion by high windows with narrow, steel frames. A section added at the side is covered by a glazed shed roof. The interior is determined by the play between symmetry and asymmetry, whereby the considered and carefully constructed details help lend a rich tone to the simple shapes. The development of the outline corresponds to the ideas of the aristocratic owner and does not follow the modern trend concerning room space and an open outline. The value of the house lies much more in the strict economy and perfection of craftsmanship, whereby simple, technical objects such as the handle of a garden gate are transformed into noble details. The metal doors of the ground floor have no dress plates and the handles are stuck directly into holes in the door; even the keyhole has been notched straight in. The interior door handles are shaped differently to those on the exterior. Parquet floors are used on the upper storeys, while the ground floor and staircase feature dark, artificial stone. The walls are mostly adorned with stucco lustro.

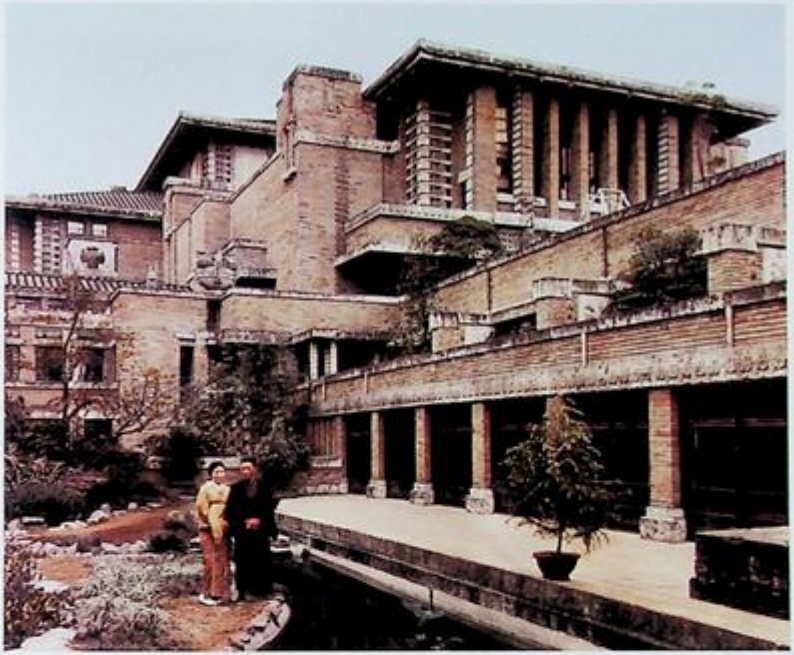
Wright Frank Lloyd

▼ Wright residence, Oak Park, Illinois, with extension of 1895

► Hotel Imperial, Tokyo, 1915-1922

Frank Lloyd Wright (1867-1959) studied engineering from 1885 to 1887 at the University of Wisconsin at Madison, and at the same time worked for D. Conover. From 1887, Wright worked in the offices of Joseph L. Silsbee in Chicago, and later went to Adler and Sullivan, where he mainly designed residential houses and soon received his own commissions. He opened his own office in 1893. What became known as his series of "Prairie" houses began with the Winslow House in River Forest, Illinois (1893-1894). With its strong fireplace, flat roof and distinctly horizontal façade, the house was such a radical deviation from the customary look of suburban buildings that it caused a tremendous stir among its neighbors. In his 1900 article "A Home in a Prairie Town" in the *Ladies' Home Journal*, he compared the features with the vastness of the prairie and presented a layout in which the buildings were arranged in blocks of four to give all the residents as much space as possible. Typical Prairie dwellings are the Willitts House in Highland Park, Illinois (1902-1903) and the Martin House in Buffalo,



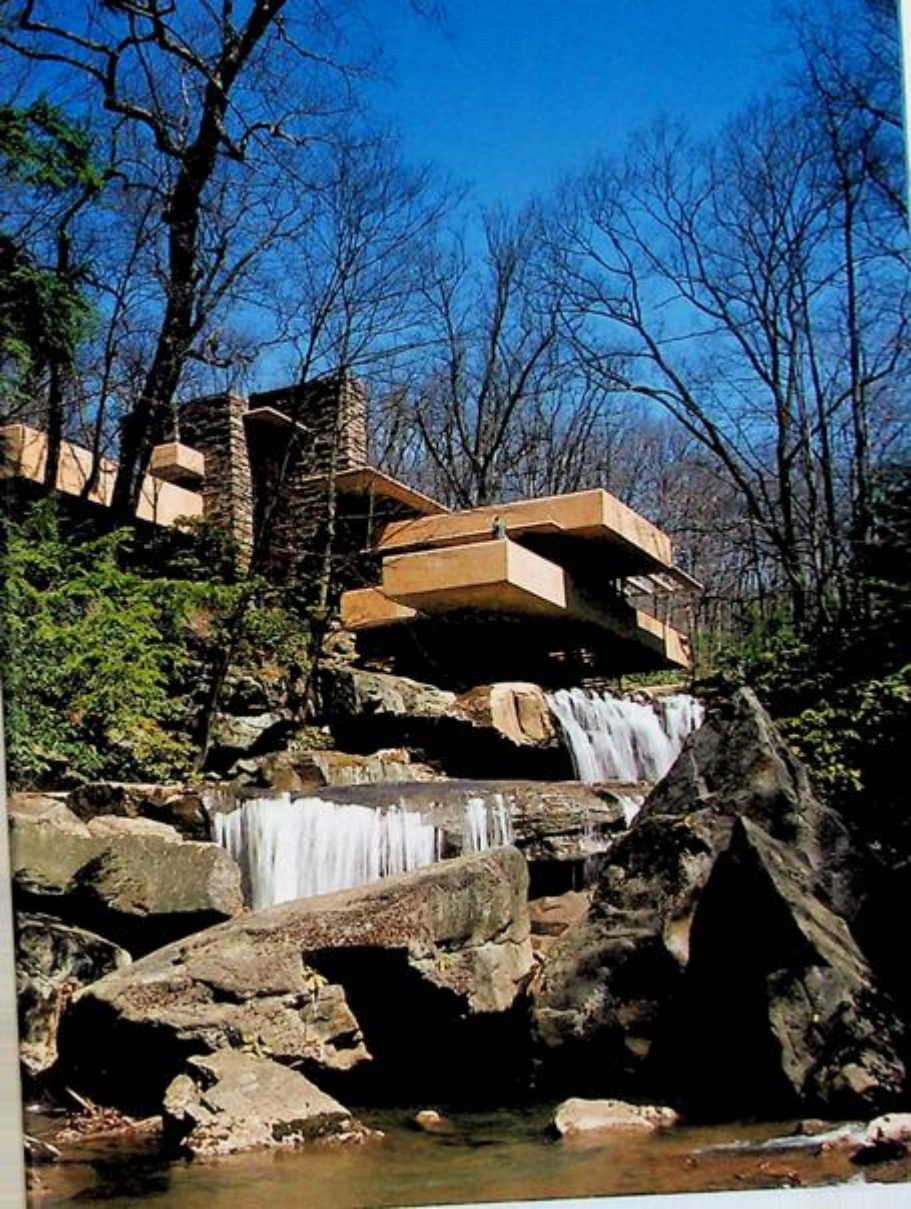


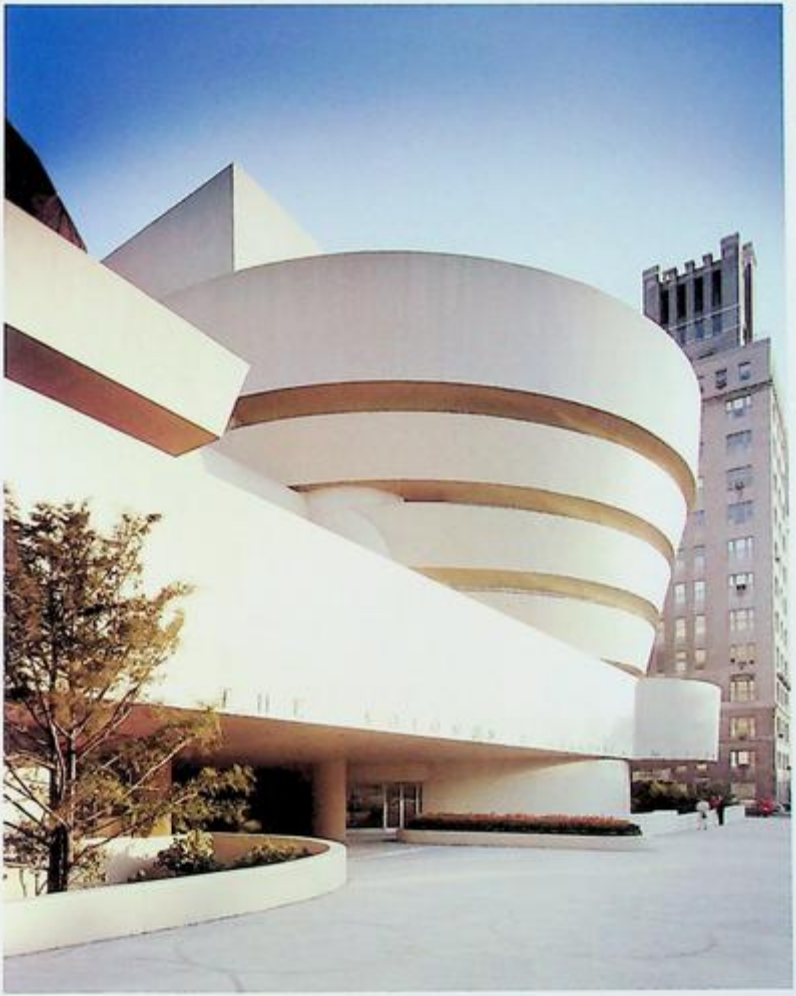
New York (1904). There, he also realized a fully air-conditioned office block, the Larkin Building (1903-1905), a "cliff of bricks" with open galleries around a high central hall, creating a single open-plan office that was filled with desks and chairs made of steel sheet. From outside, the reinforced concrete of the Unity Temple in Oak Park, Illinois (1905-1907) looks uninviting, but inside the clever filtering of natural light through skylights creates a warm, friendly ambience. Masterpieces among the Prairie houses were the Robie House in Chicago (1908-1909) and the Coonley House in Riverside, Illinois (1907-1908). In 1909, Frank Lloyd Wright left his family and traveled to Europe, where he became an important exponent of European architecture with the exhibition of his works in Berlin (1910) and the publication of *The Early Work of Frank Lloyd Wright*. In 1911, having returned to America, he began building his own house and studio "Taliesin" in Spring Green, Wisconsin, which burnt down three times over the years and was rebuilt by Wright on each occasion. Between 1915 and 1922, he and Antonin Raymond developed the Imperial Hotel in Tokyo, using an earthquake-proof construction principle. Massive and closed, with ornamental motifs based on Mayan culture, the Barnsdall House ("Hollyhock House") was realized in Los Angeles (1917-1920). Wright developed and then used pre-fabricated concrete blocks - "textile blocks" - on the Millard and Ennis Houses (1923-1924), both in Pasadena, California. The blocks, which were usually graphically designed, were combined with structural steel and cast in concrete. During a quiet phase with little work, he summarized his ideas on urban planning under the title "Broadacre City" (1934),

the model of an urban development populated by auto-mobilized people. One of his most brilliant works is the Kaufmann House ("Fallingwater") in Pennsylvania (1935–1939), which was built on a cliff directly over a waterfall. Wright changed directions with the Willey House in Minneapolis (1934–1935), which ultimately led to the Usonian House: an inexpensive, flat single dwelling of which he created numerous different versions. "Usonia" was Wright's personal synonym for America. After 1937, Wright built himself a satellite studio with residence, which he named Taliesin West, in Scottsdale, Arizona, to avoid the harsh winters in Wisconsin. From then onwards, there was a twice-yearly procession of vehicles from one base to the other. For the S. C. Johnson & Son Chemical Company in Racine, Wisconsin, he created an administration building that was closed on the outside and had mushroom-shaped reinforced concrete supports on the inside (1936–1939). Instead of windows, Wright used parallel glass tubes to provide the lighting. An adjoining laboratory tower with the same glass enclosures was built between 1943 and 1950, on which every second floor was designed as a circular disc between the contour-forming storys. He then built his only skyscraper, the Price Tower in Bartlesville, Oklahoma (1952–1956). Wright had already had several attempts at a spiral glass building; he was finally able to realize it in the Solomon R. Guggenheim Museum in New York (1943–1959). It may be that not all artists fully appreciated the way the walls were angled and sloped to the outside, but the end result was a completely unique open museum area that was a more than equal match for the modern art within. Similarly, a large shape based on triangles formed the basic idea behind the Beth Sholom Synagogue in Philadelphia (1958–1959). Wright designed more than 800 buildings and explained his theses on organic architecture in democratic America in countless articles, such as "In the Cause of Architecture" in *Architectural Record*, and in the publications *When Democracy Builds* (1945), *The Future of Architecture* (1953) and *The Living City* (1958).

▼ Taliesin West, Scottsdale, Arizona, 1937–1959

► "Fallingwater", Kaufmann House, Mill Run, Pennsylvania, 1935–1939





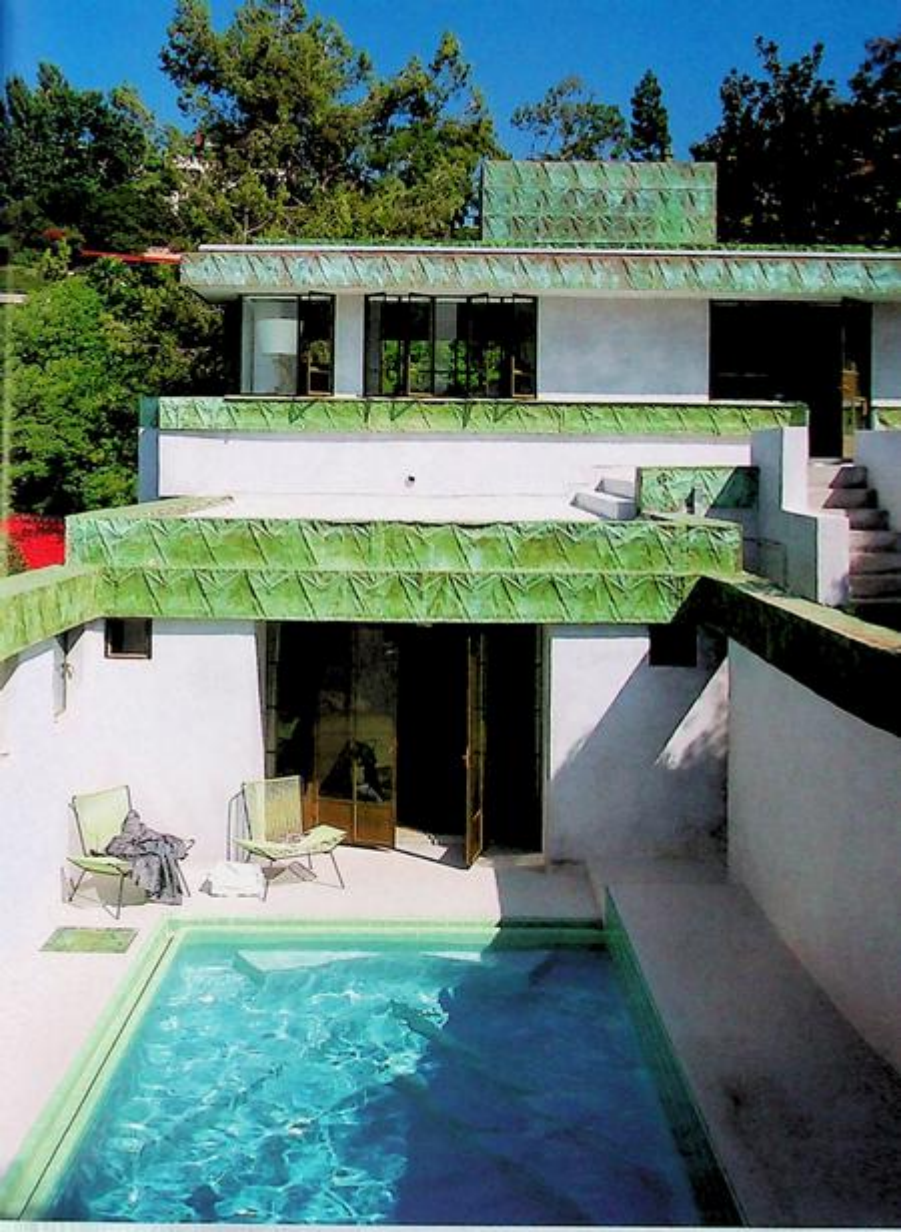
◂ Research Tower, S. C. Johnson & Son, Racine, Wisconsin, 1943-1950 ▸ Guggenheim Museum, New York, 1943-1959

Wright Lloyd

▼ Lombardi House, Palos Verdes, California, 1965

► Samuel-Navarro House, Los Angeles, 1928

Frank Lloyd Wright Jr. (1890–1978) studied engineering and agriculture between 1907 and 1909 at the University of Wisconsin in Madison. He then became a draughtsman at Olmsted and Olmsted and, from 1912 to 1913, for Irving Gill in San Diego. In 1916, he set up his own practice in Los Angeles. At the same time, he worked as a landscape architect in the practice of his father, Frank Lloyd Wright, first in Chicago and then from 1919 in Los Angeles. Most of his prolific works were created in South California, his architecture focusing on regional characteristics and drawing on the lessons he learnt from his father. For photographer John Sowden he built a house out of concrete blocks in 1926 that resembles a theatrical, romantic party backdrop, the high point of which is an inner courtyard only accessible by means of a dark stairway, to high dramatic effect. Parts of the light concrete façade of the Samuel-Navarro House in Los Angeles (1928) are clad in copper with an arrowhead motif. A contrast with the cuboid, angular building sections of varying heights and sizes is formed by the stairway, which curves upwards to the entrance. The Wayfarer's Chapel in Palos Verdes, California (1946–1951) is an intimate symbiosis between architecture and nature. The triangle, a dominant geometrical form, also characterizes the roof, which is made of alternating glazed and opaque triangles. The glass walls give the impression of sitting amidst nature. The Bowler House in Palos Verdes (1963) with its surrounding terrace is made of concrete, natural stone and blue, corrugated fiberglass. A more compact section, with an unusual roof that slopes downwards in some places and ascends in others, adjoins a long, narrow part of the building.



Wurster William Wilson

Coleman House, San Francisco, 1957–1962

William Wilson Wurster (1895–1973) was a student of architecture at the University of California at Berkeley until 1919 and for a time also studied shipbuilding. Between 1923 and 1926 he worked in the office of Delano and Aldrich in New York and subsequently opened his own office in San Francisco. Theodore Bernardi and Donn Emmons joined him as partners during the period 1945–1946. Between 1944 and 1950, Wurster was Dean of the School of Architecture and Planning at the Massachusetts Institute of Technology and subsequently Dean of the Faculties of Architecture and Environmental Design at the University of California at Berkeley (1950–1963). He rejected the International Style as dogmatic. His modern architecture was suited to conditions in the coastal region around San Francisco and defined, to a great extent, the so-called Bay Region style, which stands out, paradoxically, because of a certain understatement. Typical features are overhanging roofs and a wooden framework. Wurster realized the Gregory Farmhouse in Santa Cruz, California (1927–1928) and the Clark Beach House in Aptos, California (1937). Clear shapes dominate this house with its smooth, vertically arranged wooden covering. Wurster gave as many rooms as possible a door facing outwards and created terraces and courtyards that were encompassed within the development of the outline: an example is the Saxton Pope II House in Orinda, California (1939–1940). Precisely calculated views over the surrounding landscape were another element that helped to integrate the houses into their environment in a natural way. With Theodore Bernardi, Wurster designed the Case Study House No. 3 in West Los Angeles (1945–1949), a one-story building with a partly glazed, flat roof. The living and sleeping quarters are to be found in two separate parts of the building, which are connected. Projects from the 1950s include the George Pope House in Madera, California (1956), whose gable roof is built from airbricks as a protection against the searing sun and heat. A covered veranda supported by pillars surrounds the entire house. Along with houses there were other larger projects, such as the American Consulate in Hong Kong (1957–1963) and the First Unitarian Church in Berkeley, California (1962).

"Architecture is not a goal. Architecture is for life and pleasure and work and people. The picture frame, not the picture."

Yamasaki Minoru

▼ Lambert-St. Louis Airport Terminal Building, 1953–1956, with George Hellmuth and Joseph Leinweber

► Century City Plaza Hotel, Los Angeles, 1962–1966

►► World Trade Center, New York, 1968–1974, with Emery Roth & Sons

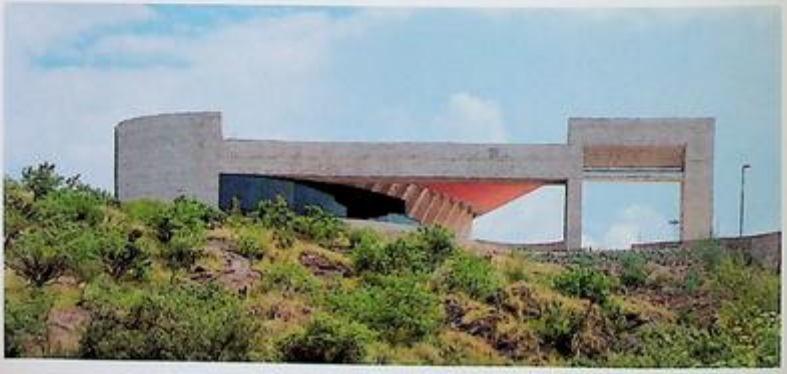
After graduating from the University of Washington in Seattle (1930–1934), Minoru Yamasaki (1912–1987) attended New York University for one year. He worked for several architect offices, including Harrison, Fouilhoux & Abramovitz and Raymond Loewy. When the city planners of St. Louis, Missouri, decided to create another Manhattan on the Mississippi River, thereby replacing an entire district of old buildings with high-rise dwellings, Yamasaki was commissioned to design the project. Thirty-three, identically shaped, eleven-story buildings yielding 2,870 social housing apartments comprised the Pruitt-Igoe settlement (1950–1956). The Igoe section was intended for white inhabitants, while the Pruitt section was destined for black residents. The white population could not, however, be persuaded to take up residence. The buildings were equipped with lifts, which only stopped on every third floor, where spacious areas were designed to encourage social get-togethers. Dark stairwells led from these areas to the floors above and below. The lack of visibility and element of uncertainty in semi-public rooms, together with other unfortunate circumstances, led to the ultimate collapse of this development project. The estate was demolished in 1972 because of its high crime rate. Working in collaboration with George Hellmuth and Joseph Leinweber, Yamasaki also designed the St. Louis Airport Terminal Building (1953–1956) with its curved, concrete ceiling. Other major projects by Minoru Yamasaki include the Century City Plaza in Los Angeles (1962–1966), the Pacific Science Center in Seattle (1961–1964) and Dhahran Airport, Saudi Arabia (1959–1962). The 110-story Twin Towers of the World Trade Center in New York (1968–1974), the highest buildings in New York at the time, were fronted by a plaza and formed a single entity. Yamasaki designed the gaps between the steel tubes that formed the vertical façade profiles to be spaced so closely together that, despite the ceiling-high glass windows, there was no sense of insecurity even on the upper floors. In order to ensure the necessary circulation space in the entrance area, three profiles at a time merged together into a single support, thus creating a Gothic Revivalist pattern that contributed greatly to the particular elegance of the Twin Towers. Since the towers were not a "World Trade Center" as such, but normal office buildings accommodating a variety of different users, it was perhaps their aesthetic-based myth that made them a target for the terrorist attack of 9/11/2001.

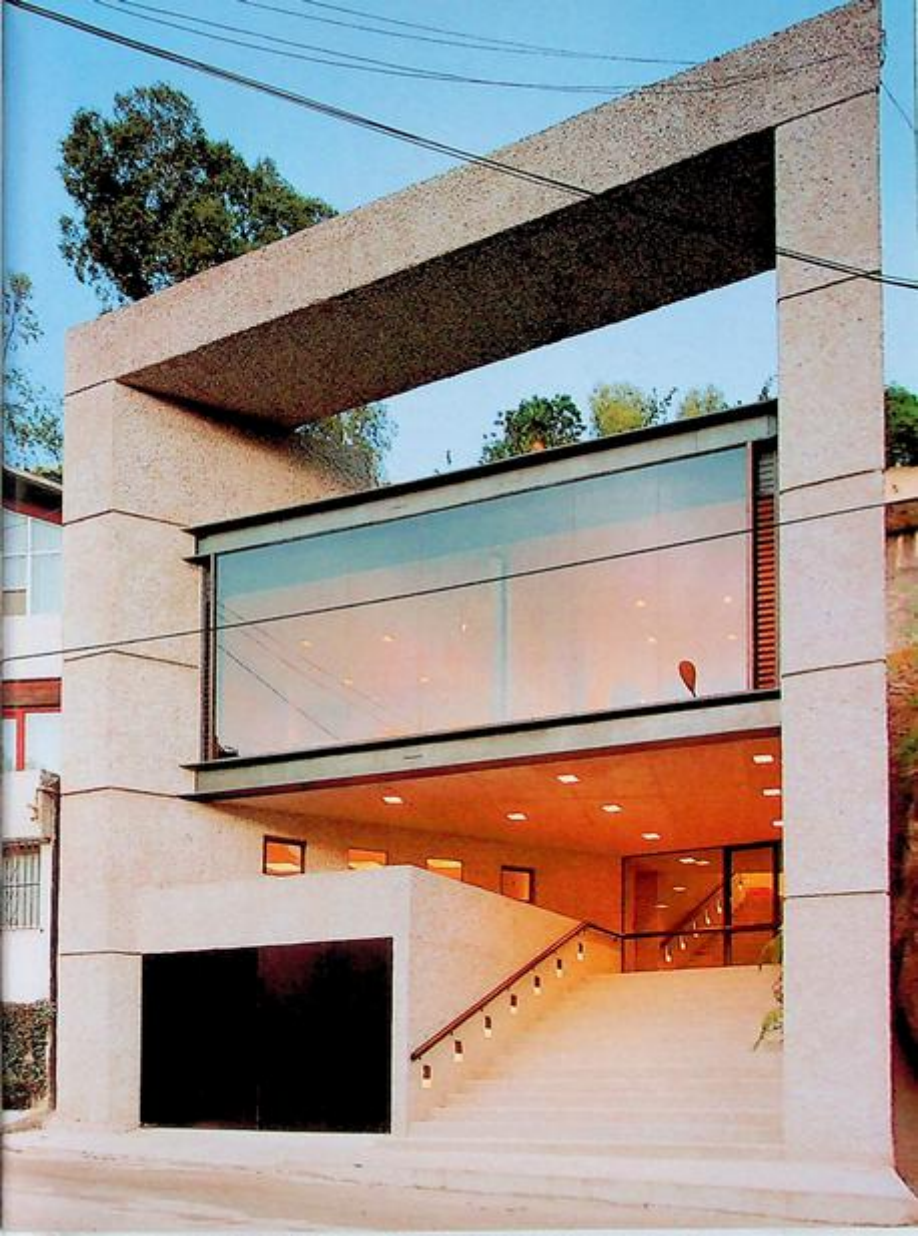
Zabludovsky Abraham

▼ Guanajuato State Auditorium, Guanajuato, Mexico, 1991

► Architect's private studio, Mexico City, 1993

Abraham Zabludovsky (1924–2003) studied at the Universidad Nacional Autónoma de México. Before opening his own office in 1950, he worked with Mario Pani. He built El Colegio de México in Ajusco with Teodoro González de León in 1975. The straggly, modern campus building makes use of the traditional idea of the patio, so characteristic of the region. The geometrically arranged wings of the building have three floors, layered on top of each other in such a way as to create spacious terraces and arcades. Along with the inner courtyard that lies between them, these open spaces perform a basic function of communication. In the case of the Emilio Rabasa City Theater, in Tuxtla Gutiérrez, Chiapas (1979), Zabludovsky treats the concrete elements as parts of a huge sculpture. As in most of his buildings, he plays here with creating and building up different geometric shapes. A monumental entrance area is formed by a massive concrete slab, one corner of which juts out over the broad staircase. Only at this point does the structure unfold to the visitor with a glass wall. The Rufino Tamayo Museum in Mexico City was built in 1981. The building opens out onto an adjoining square that acts as an open-air sculpture park. The museum complex is composed of huge concrete walls driven into each other. Likewise the headquarters of the Multibanco Mercantil de México, Mexico City (1982) plays with the connection between public and private spaces: a portico 10 meters high marking the main entrance became a much frequented urban space after it was completed. Concrete as a building material became Zabludovsky's hallmark. He varied it by blending in different admixes such as marble powder and other forms of structuring, and in particular he developed the technically elaborate method of chipping off the whole surface area with a chisel in order to create a consistent structure.





Zehrfuss Bernard

UNESCO Building in Paris, 1952–1958, with Marcel Breuer and Pier Luigi Nervi

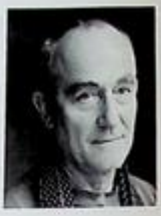
Bernard Henri Zehrfuss (1911–1996) studied at the École des Beaux-Arts in Paris. He then went on to work as an architect for the French government in the protectorate of Tunisia, where he completed public buildings and residences. On his return to France, he worked with Jean Prouvé and Jean Drieu-La-Rochelle on the printing firm Mame in Tours (1950–1952) and the Renault car plant in Flins, France (1950–1952). With Pier Luigi Nervi and Marcel Breuer he was responsible for the UNESCO Building in Paris (1952–1958), whose Y-shaped ground plan involved a complex construction job that fits well into the urban architectural context, while still maintaining its formal autonomy. Around the same time, he collaborated with Robert Camelot and Jean de Mailly on the Centre National des Industries et Techniques in Paris (1953–1958). The shape of the building is defined by the massive vaulted roof construction, which is supported at three apexes: curtain-wall façades of glass and steel fill the cut ends of this large shape. The Archaeological Museum in Lyon-Fourvière, France (1972–1975), designed by Zehrfuss, is partially located underground, as is an extension for UNESCO in Paris (1965–1978), whose two office levels are hidden under a lawn out of respect for the original building. Six deep-set, inner courtyards cut into the extension ensure exposure to light.

Zévaco Jean-François

Petrol station, Marrakech, 1958

Jean-François Zévaco (1916–2003) studied at the École des Beaux-Arts in Paris, where he was awarded his diploma in 1945. Afterwards, he worked in the office of Eugène Beaudouin. In 1947, he set up his first practice in Agadir, Morocco. In 1949, he completed his first house – the Villa Craig. The color scheme of this modern building included grey sandstone, yellow slats as protection against the sun, green and orange camouflage elements and a red front door; with its traditional, whitewashed surroundings, it was strikingly different. The Villa Sami Suissa in Casablanca, Morocco (1947–1949), was both a scandal and a great success. Here, a rectangular solid of dark stone was moved to the top floor based on an effusive design of a balcony that encompassed the property. The rooms on the floor underneath could be rearranged into one large area through the use of movable glass walls. Modern and traditional elements were combined, such as the adjacent round pool inlaid with mosaic tiles. Between 1953 and 1960, the physiotherapy center in Tit Mellil was realized. With its towering sections of exposed concrete, it attempts an extravagant gesture. The expressive staircase structures are particularly impressive. Zévaco liked using exposed concrete for his powerfully sculptural buildings, in which sharp shadow play breaks up the clear and basic forms. His architectonic landscapes are combined with native plants. With the Villa Zniber in Rabat, Morocco (1970), the structure is broken down into numerous small fragments that are only technically held together by the roof. Irregularly formed, terracotta-colored walls made of exposed concrete seem to be pushed inwards into the largely glazed, flat building.

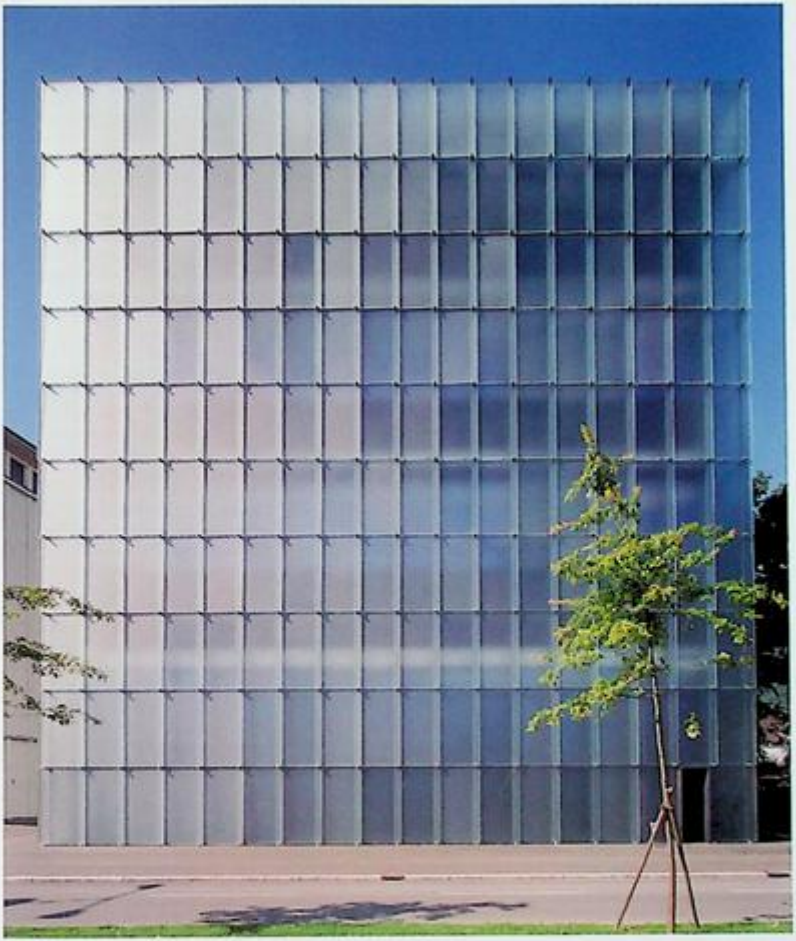
Zumthor Peter



"I try to make something as whole and complete and simple as possible in expectation of the future life of the building, or the use of the building to come."

▼ ► Sogn Benedetg Chapel in Sumvitg, Switzerland, 1987-1989

After studying interior design at the Design School in Basle (1963-1966), Peter Zumthor (born in 1943) attended the Pratt Institute in New York, where he studied architecture and design. He worked in the Swiss canton of Graubünden on the preservation of monuments before establishing his own office in Haldenstein in 1979. In 1996 he held a professorship in the Università della Svizzera Italiana's school of architecture in Mendrisio. His works include a school in Churwalden, Switzerland (1979-1983), the Zumthor Studio in Haldenstein, Switzerland (1985-1986), structures to protect Roman finds in Chur, Switzerland (1985-1986) and the Sogn Benedetg Chapel in Sumvitg, Switzerland (1987-1989). The ground plan of this flat-roofed, timber chapel looks like an eye, with one tapered and one round end. The clearly defined interior structure is also built of wood, and a ribbon of glass running under the roof allows daylight to enter. Dating from the 1990s, the thermal baths in Vals, Switzerland (1990-1996) are built into the mountainside, a concrete structure of horizontally layered stone from the region, with a flat roof covered in greenery. There is a sophisticated play of natural and artificial light within the baths; a circular central area is adjoined all round by the many meditation and changing booths. This interplay of narrow and wide spaces, and tranquillity and activity, conflicts with the heavy client usage, however. Other projects included the Spittelhof residential complex in Biel-Benken, Switzerland (1989-1996), and the Kunsthaus in Bregenz, Austria (1990-1997). This square-shaped building is defined on the inside by exposed concrete surfaces and on the outside by a curtain façade of overlapping frosted glass sheets. Through this translucent shell, the interior structures have an unreal appearance. Zumthor built the Swiss pavilion for Expo 2000 in Hanover, which functioned as a synthesis of the arts in time and space: a musical score directed the movements and actions of musicians throughout the 12-hour opening time. Text beamed onto the huge stacks of larch wood that shaped the space represented the thematic vision.



◂ Thermal baths in Vals, Switzerland, 1990-1996

▴ Kunsthaus in Bregenz, Austria, 1990-1997

INDEX

A

Aalto, Hugo Alvar Henrik 8, 394, 634
Abell, Thornton Montaigne 14, 114
Abramovitz, Max 262
Acconci, Vito 284
Adler & Sullivan 16, 126, 662
Adler, Dankmar 16, 126, 230
Agostini, Alfredo 626
Ain, Gregory 20
Albers, Josef 60
Albini, Franco 21
Alen, William van 28, 30
Alexander, Robert E. 471
Amsterdam School 22, 158, 346
Ando, Tadao 24
Anker, Alfons 408
Art Deco 28, 232, 277, 302, 336, 288, 601, 659, 382
Artigas, João Vilanova 640
Art Nouveau 34, 250, 320
Arts and Crafts 37, 38, 238, 454, 558, 646
Arup, Cecil Balmond 584
Arup, Ove 191, 242, 296
Ashbee, Charles Robert 38, 274
Asplund, Erik Gunnar 42, 388
Atwood, Charles B. 106
Auer, Fritz 65
Augenfeld, Felix 656
Avmonino, Carlo 462

B

Baker, Herbert 410
Baldessari, Luciano 44
Baltard, Victor 46
Ban, Shigeru 48
Barclay & Crousse 52
Barclay, Sandra 52
Barnes, Edward Larrabee 54
Barragan, Luis 56, 119, 384
Barioli, Giovanni 464
Bascaïno, Dominique 679
Bauhaus 6, 60, 74, 92, 150, 244, 296, 443, 446
Bawa, Geoffrey 64
Bayer, Herbert 60, 63
Beaudouin, Eugène 528, 679
Behnisch, Günter 65, 488
Behrens, Peter 37, 66, 181, 244, 376, 448, 540, 634
Belloeil, Pierre 70, 247
Benaïm, Bernard 632
Berlage, Hendrik Petrus 22, 72, 438, 490, 536, 636
Bernardi, Theodore 670
Bernhard, Karl 460
Bijvoet, Bernard 120
Bill, Max 74, 656
Binswanger, Christine 270
Blaauw, Cornelis Jonke 22
Blomfield, Reginald 134
Bo, Jørgen 76
Bo Bardi, Lina 78
Bofill, Ricardo 82
Böhm, Dominikus 84
Bonatz, Paul 86
Bonet Castellana, Antoni 88
Bos, Caroline 632
Botta, Mario 90, 462
Boullée, Etienne-Louis 462
Boyer, Léon 168
Brady, Jules 342
Braghieri, Gianni 546
Brandt, Marianne 63
Breuer, Marcel 54, 60, 63, 92, 164, 194, 247, 314, 422, 464, 548, 578, 678
Brinkman, Johannes Andreas 96, 98, 599
Brinkman, Michiel 96
Broek, Johannes Hendrik van den 96, 98
Brooks, Borg & Skiles 144
Brown, Denise Scott 638
Brutalism 432, 626, 640
Bubner, Ewald 488
Buff III, Conrad 100
Buff, Straub & Hensman 100, 114
Bullrich, Alicia Cazzaniga de 626
Bullrich, Francisco 626
Bunshaft, Gordon 104
Burgee, John 324
Burke, Jon Nelson 170
Burnet, Sir John 174
Burnham, Daniel Hudson 106, 126, 228, 438
Burnham & Root 106, 126, 230, 282
Buxel, Winfried 63

C

Cabero, V. 390
Calatrava, Santiago 108, 632
Calder, Alexander 644
Callet, Felix 46
Cameiot, Robert 678
Camenisch, Luigi 90
Camus, Renato 27
Candela, Felix 112, 487
Carloni, Tito 90
Carminati, Antonio 624
Cascaldi, Carlos 640
Case Study House Program 20, 48, 51, 100, 114, 160, 170, 318, 342, 350, 472
Castagnoli, Ubaldo 624
Castiglioni, Enrico 118
Cetto, Max 56, 119
Chareau, Pierre 30, 120, 418, 528
Chemetov, Paul 479
Chermayeff, Serge Ivan 124, 431, 542
Chiattone, Mario 212
Chicago School 19, 106, 126, 280
Chipperfield, David 128
Chitty, Anthony 406
Chochol, Josef 130
Christiani & Nielson 366
CIAM 6, 8, 74, 88, 119, 120, 131, 132, 186, 192, 352, 378, 446, 468, 537, 580, 612, 658
Cirilli, Guido 566
Clark, John Porter 196
Clave, José Torres 88
Coates, Wells 131, 364
Coderch i de Sentmenat, Josep Antoni 132
Connell, Amyas Douglas 134
Connell, Ward & Lucas 134
Constructivism 136, 148, 298, 338, 398, 406
Coop Himmelblau 138, 148, 600
Corbett, Harvey Wiley 262, 288
Correa, Charles Mark 140
Costa, Lúcio 78, 142, 179, 474
Cret, Paul Philippe 328
Crites & McConnell 144
Crites, Raymond David 144
Crousse, Jean Pierre 52
Crouwel, Joseph 22
Cuypers, Eduard 346
Cuypers, Pierre Lin. 490

D

Dahl, David 268
Daibet, Louis 120
Daniel, Mann, Johnson and Mendenhall 400
Davidson, Julius Ralph 114
Deininger, Julius 486
Deconstructivism 138, 148, 392
Derrida, Jacques 148
De Stijl 130, 138, 198, 418, 490, 522, 576
Deves, George 646
Diener, Roger 270

Diller, Elizabeth 152
Diller + Scofidio 152
Dinkeloo, John Gerard 540, 557
Doesburg, Theo van 150, 418, 438, 490
Domenech i Montaner, Lluis 154
Doshi, Balkrishna 156
Doyle, A.E. 70
Drake, Lindsay 364, 406
Drew, Jane 379, 540
Dreyfuss, Henry 622
Drieu-La-Rochelle, Jean 678
Duany, Andres 524
Duchamp, Marcel 74
Dudok, Willem Marinus 158
Dugdale, Michael 406

E

Eames, Charles und Ray 114, 160, 170
Edwards, Reid and Begg 64
Eesteren, Cornelis van 150
Eibink, Adolf 22
Eiermann, Egon 164
Eiffel, Alexandre Gustave 168
Eisenman, Peter 148, 234, 422
Eldem, Sedad Hakkı 104
Elia, Santiago Sánchez 626
Ellis, Harvey 40
Ellwood, Craig 114, 170
Elsaesser, Martin 172
Emberton, Joseph 174
Emmons, Donn 670
Emmons, Frederick E. 318
Endell, August 530
Engelmann, Paul 661
Entenza, John 114, 170
Epstein & Sons 458
Erickson, Arthur 176, 644
Erskine, Ralph 178
Expressionism 180, 182, 278, 602

F

Fahrenkamp, Emil 182
Farrell, Terry 242
Fathy, Hassan 184
Feininger, Lyonel 60, 63
Fernadez, Fernando 112
Figini, Luigi 44, 186, 624
Finsterlin, Hermann 180
Fischer, József 446
Fischer, Theodor 84, 86, 172, 388, 428, 490, 618
Flachat, Eugène 168
Fletcher, Jean Bodman 608
Fletcher, Norman 608
Fontana, Juan 626
Fordyce, Allmon 400
Fornaroli, Antonio 518
Foster, Norman 128, 188
Fouilhoux, Jacques André 262, 288
Frank, Dieter R 488
Frank, Josef 192
Franzen, Ulrich 194
Freear, Andrew 552
Frette, Guido 624
Frey, Albert 196
Freyssinet, Eugene 200
Fry, Edwin Maxwell 131, 201, 247, 379, 540
Fuchs, Bohuslav 202
Fuente, Juhan de le 90
Fuksas, Massimiliano 204
Fuller, Richard Buckminster 206
Future Systems 191, 210
Futurism 212, 298

G

Galfetti, Aurelio 462
Gallissà, Antoni Maria 324
Garcia, José Villagrán 384
Gardella, Ignazio 214, 566
Garnier, Tony 215
Gaudí i Cornet, Antoni 34, 37, 82, 216, 324, 602
Geddes, Norman Bel 296
Gehry, Frank Owen 148, 220
Gelfreich, Wladimir 302
Geller, Andrew 224
Gennaro, João de 432
Genoud, Juan 626
Gensler & Associates 526
George, Ernest 410
Gerkan, Marg & Partner 226
Gesellius, Herman 558
Gessner, Albert 530
Gilbert, Cass 228, 532
Gill, Irving John 230
Ginzburg, Moisei 136
Godley, Frederick A. 288
Goff, Bruce Alonzo 232, 236, 527
Golosov, Ilia Alexandrovic 136
Goodwin, Philip L. 606
Gossel, Georg 312
Gowan, James 604
Graham, Ernest R. 458
Grassi, Giorgio 462
Graves, Michael 234, 422, 524
Gray, Eileen 30, 235
Greene, Charles Sumner 238
Greene, Henry Mather 238
Greene, Herbert 236
Griffin, Walter Burley 240
Grimshaw, Nicholas 242
Grod, Caspar Maria 538
Gropius, Walter 6, 44, 54, 60, 69, 74, 92, 164, 194, 201, 244, 298, 314, 438, 446, 450, 490, 548, 578, 608, 648, 654
Gruen, Victor 54, 220, 248, 500
Gruppo 7 186, 390
Guerrini, G. 390
Gugger, Harry 270
Guimard, Hector 37, 250
Gwathmey, Charles 234, 252, 422
Gwathmey Siegel & Associates 252

H

Hadid, Zaha 148, 254
Haerdtl, Oswald 258
Hahl, Nils Gustav 8
Haller, Fritz 260
Hamby, William 400
Hankar, Paul 37
Harding, Valentine 406
Harkness, John 608
Harkness, Sarah 608
Harrison, Fouilhoux & Abramovitz 672
Harrison and Abramovitz 262, 379
Harrison, Wallace Kirkman 262, 606
Hartung, Hugo 516
Hasenaue, Carl von 274
Hebbard, William S. 230
Hecker, Zvi 266
Hedqvist, Paul 268, 634
Hejduk, John 48, 234, 422
Helg, Franca 21
Hellmuth, George 672
Hensman, Donald Charles 100
Hentrich, Helmut 296
Herzog & de Meuron 270
Herzog, Jacques 270
Heuser, Hans 296
Hewlett, J.M. 206
Hitchcock, Henry-Russell 298, 314
Hoff, Robert van't 150, 536
Hoffmann, Franz 618
Hoffmann, Josef 37, 258, 274, 402, 418, 654
Hofmann, Karl 656
Hoger, Fritz 278
Holabird & Roche 19, 126, 280, 468
Holabird & Root 282, 502
Holabird, William 126, 280
Hollein, Hans 286

Holl, Steven 284
Holzer, Rainer Michael 138
Honeyman & Keppie 412
Hood, Raymond 288, 606
Horta, Victor 37, 250, 290
Hosl, Robert 270
Howard, Ebenezer 294
Howe, George 328, 386
Howells, John Mead 288
HPP 296
Huszár, Vilmos 150, 490
Hutton, Louisa 564
Hvass, Tyge 366

I

International Style 6, 8, 70, 84, 96, 96, 134, 174, 184, 201, 288, 298, 308, 314, 336, 352, 446, 458, 462, 484, 496, 532, 606, 608, 644, 670
Iofan, Boris Mihailovich 302
Ishoy, Ernst 366
Isozaki, Arata 48, 304
Ito, Toyo 306
Itten, Johannes 60
Izenour, Steven 638

J

Jacobs, Jane 524
Jacobsen, Arne 308
Jaenecke, Fritz 164
Jahn, Helmut 458
Jeanneret, Pierre 377, 580
Jeanneret-Gris, Charles-Édouard see Le Corbusier
Jencks, Charles 524
Jenney, William Le Baron 16, 106, 126, 280
Jensen-Klint, Peder Vilhelm 312
Johnson, Philip Cortelyou 314
Jones, Archibald Quincy 114, 318
Jourdain, Francis 320
Jourdain, Frantz 320, 601
Judge, Bernard 322
Jujol, Josep Maria 219, 324

K

Kaarhammer, P.J.C. 536
Kahn, Albert 326
Kahn, Louis Isidore 328, 560
Kandinsky, Wassily 428
Kaplicky, Jan 210
Kappe, Raymond 334
Kawazoe, Noboin 340
Keck & Keck 336
Kevin Roche John Dinkeloo and Associates 540
Kiesler, Friedrich 338
Kikutake, Kiyonori 306, 340, 436
Killingsworth, Brady & Smith 114, 342
Killingsworth, Edward 342
Kishi, Waro 344
Kizak, Kriz 583
Klee, Paul 60, 63, 74, 428, 508, 566
Klerk, Michel de 22, 346
Klint, Kaare 312
Klotz, Mathias 348
Kocher, Lawrence 196
Koechlin, Maurice 168
Koenig, Pierre 114, 350
Kok, Antony 150, 490
Koninck, Louis Herman de 352
Koolhaas, Rem 148, 254, 354
Korsunsky Krank Erickson Architects 526
Kramer, Pieter Lodewijk 22, 346
Kreis, Wilhelm 182
Krier, Rob 524
Kropholler, Margaret 22
Kruchen, Paul 568
Krummeck, Elsie 248
Kucera, Joseph J. 14
Kuma, Kengo 358
Kurokawa, Kisho 340, 360, 436
Kurokawa, Masayuki 344
Kuzma, Dušan 362

L

La Croix, Guillaume Frédéric 22
Lambart, Bruno 65
Larco, Sebastiano 624
Lasdun, Denys Louis 131, 210, 364, 406
Lassen, Mogens 366
László, Paul 368
Lauterbach, Heinrich 654
Lautner, John 370
Lauweriks, Johannes Ludovicus Mathieu 66
Lechner, Odon 374
Leck, Bart van der 150
Le Corbusier 6, 69, 74, 88, 90, 131, 142, 156, 196, 201, 235, 252, 262, 299, 364, 366, 376, 406, 420, 422, 438, 474, 528, 533, 561, 580, 612, 654, 658
Ledoux, Claude-Nicolas 462
Lee, Denise M.C. 583
Lee, John M.Y. 54
Lee, Simeon Charles 382
Léger, Fernand 644
Legorreta, Ricardo 384
Leinweber, Joseph 672
León, Teodoro González de 676
L'Eplattenier, Charles 376
Lescaze, William 386
Levete, Amanda 210
Lewerentz, Sigurd 388
Libera, Adalberto 390
Libeskind, Daniel 148, 392
Ligeti, Pál 446
Lindegren, Yrjö 394
Lindgren, Armas 558
Lingeri, Pietro 396, 624
Lissitzky, El 136, 398, 438
Lods, Marcel 528
Loewy, Raymond 196, 224, 400, 622, 672
Lohs, Siegfried 488
Loos, Adolf 44, 192, 274, 402, 468, 572, 661
Lubetkin, Berthold 406
Lucas, Colin Anderson 134
Luccichenti, A. 390
Luckhardt, Hans 408
Luckhardt, Wassili 408
Luckman, Charles 502
Lundt & Kallmorgen 278
Lutyens, Edwin Landseer 410, 534
Lyons, Israel and Ellis 604

M

Mackintosh, Charles Rennie 37, 274, 412
MacMurray, William H. 262
Mailly, Jean de 678
Maki, Fumihiko 340, 416, 436
Mallet-Stevens, Robert 418, 528
Marbach, Stefan 270
Marg, Volkwin 226
Marg and Partner 226
Marinetti, Filippo Tommaso 212
MARS 131, 364, 406
Marsh, Smith and Powell 14
Martienssen, Rex 420
Martini, Luigi 214
Maston, Carl 334
Mayekawa, Kunio 561, 612
May, Ernst 98, 119, 599
Mayer, Theodor 572
Mayne, Thom 452
Mayr, Hans 572
McConnell, Richard Duncan 144
McKim, Mead & White 228
Mc Millen, Louis 608
McNair, Herbert 412
Meda, Luca 546
Meier, Richard 234, 660

Meili, Marcel 270
Melnikov, Konstantin Stepanovic 136, 426
Memphis 596
Mendelsohn, Erich 124, 180, 428, 466, 468
Mendini, Alessandro 600
Mergenthaler, Ascan 270
Merrill, John 588
Messina, Paul 679
Metabolism 340, 360, 416, 436
Meuron, Pierre de 270
Meyer, Adolf 63, 244, 654
Meyer, Hannes 63, 74, 247, 298
Mey, Johan van der 22, 346
M.I.A.R. 186, 390, 396, 624
Michelucci, Giovanni 566
Mies van der Rohe, Ludwig 44, 63, 69, 150, 164, 170, 314, 438, 458, 599, 606, 654
Miller, Herman 368
Mills, Mark 592
Minnucci, Gaetano 390
Mitsutani, Shiguero 434
Miyazaki, Stomu 583
Mockbee, Samuel 552
Moholy-Nagy, László 60, 63, 74
Möhring, Bruno 618
Mollino, Carlo 444
Molnár, Farkas 446
Monaco, V. 390
Mondrian, Piet 74, 150, 490
Moneo, Rafael 447
Moore, Charles W. 524
Moretti, Luigi 390, 448
Morgan, William 450
Morphosis Architects 452
Morris, William 38, 454
Moser, Karl 599
Moss, Eric Owen 456
Moura, Eduardo Souto de 584, 597
Muche, Georg 60, 63
Murphy, Charles Francis 458
Müther, Ulrich 457
Muthesius, Hermann 460, 649, 654

N

Neo-classicism 42, 277, 486, 598, 654
Neorationalism 462, 546
Nervi, Pier Luigi 92, 95, 448, 464, 518, 578, 678
Neufeld, Josef 466
Neutra, Dion 471
Neutra, Richard 5, 20, 114, 119, 170, 405, 428, 468, 575, 594
Newhouse, Henry 382
Niemeyer, Oscar 78, 142, 262, 379, 474, 533, 578
Nishizawa, Ryue 562
Nixon, David 210
Nordling, Wilhelm 168
Nouguier, Émile 168
Nouvel, Jean 480

O

Obrist, Hermann 37
Office for Metropolitan Architecture 254, 354, 564,
O'Gorman, Juan 484
Olbrich, Joseph Maria 37, 274, 402, 486
Oldenburg, Fritz 278
Otaka, Sachio 340
Otto, Dietrich 457
Otto, Frei 65, 488
Oubrerie, José 90
Oud, Jacobus Johannes Pieter 150, 158, 490, 654
Ouendag, B. J. 98
Owings, Nathaniel 588
Ozenfant, Amédée 376, 378

P

Padula, E. La 390
Pagani, Carlo 78
Pagano, Giuseppe 21, 596
Palanti, Giancarlo 21
Pankok, Bernhard 37
Parent, Clément 374
Parisi, Ico 492
Paul, Bruno 438
Pawson, John 494, 582
Peche, Dagobert 28
Pei, Ieoh Ming 496
Pelli, Cesar 500
Pereira and Luckman 220, 502
Pereira, William Leonard 502
Perrault, Dominique 506
Perret, Auguste 362, 376, 406, 507, 636
Perriand, Charlotte 378
Peto, Harold 410
Petschnigg, Hubert 296
Pevsner, Antoine 34, 74
Piacentini, Marcello 78, 624
Piano, Renzo 508, 542
Pichler, Walter 286
Pietilä, Reima 512
Pinho, José Luis 479
Plater-Zyberk, Elizabeth 524
Plečnik, Jože 514
Plesner, Ulrik 64
Poelzig, Hans 44, 119, 164, 180, 516, 599, 618, 648, 649
Pollini, Gino 44, 624
Ponti, Gio 21, 78, 204, 464, 518
Portoghesi, Paolo 522
Portzamparc, Christian de 523
Postmodernism 524, 591, 610, 638
Prampolini, Enrico 212
Predock, Antoine 526
Prince, Bart 232, 527
Printz, Eugène 30
Prix, Wolf D. 138
Prouvé, Jean 479, 528, 678

Q

Quota, Alta 492

R

Rading, Adolf 530
Ramos, Federico Peralta 626
Rapson, Ralph 114
Rauch, John 638
Rava, Carlo Enrico 624
Raymond, Antonin 532, 663
Regnauld, Paul 168
Reidy, Affonso Eduardo 142, 379, 533
Reinhart, Fabio 214
Remondet, André 220
Renwick, James 106
Rewal, Raj 534
Reyna, Jorge Gonzales 112
Reynolds, Smith and Hills 450
Ricardo, Ricardo de Sola 644
Ricciotti, Rudy 535
Rice, Peter 508
Riemerschmid, Richard 37, 388, 654
Rietveld, Gerrit Thomas 150, 536
Rinaldo, Vincenzo 566
Riphahn, Wilhelm 538
Rocha, Paulo Archias Mendes da 432
Roche, Jean de 479
Roche, Kevin Lamonn 540, 557
Roche, Martin 126, 280
Rodchenko, Alexander 136, 426
Röder, Uwe 488
Rogers, Richard 128, 188, 508, 542, 628
Rojas, Osvaldo Álvarez 626
Romberg, Bernd-Friedrich 488
Root, John Wellborn 106, 282
Rosenvold, Aage 178
Rosselli, Alberto 518

Rossi, Aldo 214, 270, 462, 546, 596
Roth, Alfred and Emil 92
Roth, Emery 247, 672
Rotondi, Michael 452
Rudi, Arrigo 566
Rudolph, Paul Marvin 548
Ruf, Sep 164
Ruhlmann, Jacques-Émile 30
Rural Studio 552
Ruskin, John 38, 454

S

Saarinen, Eero 114, 160, 500, 540, 554, 559, 638
Saarinen, Eliel 160, 554, 558
Sabatke, Manfred 65
Safdie, Moshe 560
Sakakura, Junzo 561
Salard, G. 168
Samuel, Godfrey 406
SANAA 562
Sanders, Theodorus 72
Sant'Elia, Antonio 212, 396, 624
Sartoris, Alberto 492
Sauerbruch Hutton 564
Sauerbruch, Matthias 564
Sauvage, Henri 250, 320, 386, 601
Sauvestre, Stephen 168
Scarpa, Carlo 90, 566
Scharoun, Hans 530, 568
Scheerbart, Paul 180
Scheper, Hinnerk 60
Schindler, Rudolf Michael 405, 468, 572, 594
Schlemmer, Oskar 60, 63, 530
Schmidt, Garden & Erikson 458
Schmidt, Joost 60
Schneider, Egon 576
Schneider-Esleben, Paul 576
Scholer, Friedrich Eugen 86
Schou, Charles I. 312
Schtschuko, Wladimir 302
Schwarz, Rudolf 576
Scofidio, Ricardo 152
Scolari, Massimo 462
Scott, Michael 540
Seddon, J.P. 646
Seidler, Harry 578
Seigneur, François 480
Sejima, Kazuyo 562
Sert, Josep Lluis 88, 450, 580
Sevi Studio 626
Seyrig, Théophile 168
Shreve, Lamb & Harmon 30
Sibilla, Angelo 214
Siegel, Robert 252
Siemens & Halske 538
Silsbee, Joseph L. 662
Silvestrin, Claudio 494, 582
Simonson, Lee 400
SITE 583
Sitte, Camillo 486
Siza Vieira, Álvaro 584
Skidmore, Owings & Merrill 104, 416, 422, 540, 588
Skidmore, Louis 588
Skinner, Francis 406
Sky, Alison 583
Smith, Waugh 342
Snellebrand, Jan Antoine 22
Snook, John Butler 106
Snozzi, Luigi 462
Soleri, Paolo 592
Soriano, Raphael 114, 170, 350, 594
Sottsass, Ettore 596
Sousa, Emilio 583
Speer, Albert 302, 598
Staal, Jan Frederic 22
Stam, Mart 96, 599, 654
Starck, Philippe 600
Steiner, Rudolf 602
Stirling, James 604
Stolzl, Gunta 60, 63
Stone, Edward Durell 606
Stone, Michelle 583
Stonorov, Oscar 328
Stracey, Sarah 583
Straub, Calvin 100
Street, George Edmund 454
Sullivan, Louis 16, 37, 72, 126, 230, 280, 298
Swanson, J. Robert 554, 559
Swiczinsky, Helmut 138

T

TAC 247, 608
Takamatsu, Shin 610
Taller de Arquitectura 82
Tange, Kenzo 304, 360, 436, 561, 612, 616
Taniguchi, Yoshio 616
Tatlin, Vladimir 136
Taut, Bruno 180, 466, 538, 568, 618, 649, 654
Taut, Max 538, 599, 618
Tavora, Fernando 584
Teague, Walter Dorwin 622
Team 4 188, 542
Tecton 364, 406
Terragni, Attilio 624
Terragni, Giuseppe 396, 492, 624
Tessenow, Heinrich 598
Testa, Clorindo 626
Tezuka Architects 628
Tezuka, Takaharu 628
Tezuka, Yui 628
Thompson, Benjamin 608
Thorne, Beverly 114, 630
Tijen, Willem van 96, 98, 260
Tod Williams Billie Tsien 660
Tolay, Stanislas de la Roche 168
Torné, Josep Puig 88
Townsend, Charles Harrison 39
Trankner, Erhard 65
Tschumi, Bernard 148
Tsien, Billie 660
Tyng, Ann 328

U

UAM 120, 320, 418, 528
UNStudio 632
Utzon, Jørn 447, 634

V

Vacchini, Livio 462
Vallin, Eugène 34
Vantongerloo, Georges 150
Vaugham, David 638
Velde, Henry van de 6, 37, 60, 460, 507, 636, 654
Venturi, Robert 522, 534, 638
Vesnin, Aleksandr 136
Vesnin, Leonid 136
Vesnin, Viktor 136
Villanueva, Carlos Raúl 644
VKhUTEMAS 6, 136, 426
Vlugt, Leendert Cornelis van der 96, 599
Vorkink, Pieter 22
Voysey, Charles Francis Annesley 38, 41, 646
Vriesendorp, Madelon 354

W

Wachsmann, Konrad 124, 164, 247, 648
Wagner, Martin 516, 618, 649
Wagner, Otto 69, 130, 274, 486, 514, 572, 650
Walker, Rodney 114
Wallis Gilbert & Partners 30
Wallot, Paul 460
Warchavchik, Gregori 142, 533, 640
Ward, Basil Robert 134
Webb, Philip 38, 454
Weber, Karlheinz 65
Weijke & Odeen 178
Weinstein, Joshua 583

Werkbund 74, 180, 186, 192, 244, 258, 277, 378, 438, 460, 530, 537, 568, 618, 636, 654
Wijdeveld, Hendricus Theodorus 22
Wilford, Michael 604
Williams, Amancio 658
Williams, Owen 659
Williams, Tod 660
Wils, Jan 150
Wines, James 583
Wing, Kenneth S. 342
Wisniewski, Edgar 571
Wittgenstein, Ludwig 661
Wohlert, Vilhelm 76
Wormser, Jacques Ph. 22
Wright, Frank Lloyd 72, 150, 230, 232, 236, 240, 252, 370, 428, 468, 532, 572, 592, 634, 662, 668
Wright, Lloyd 668
Wurdeman & Becket 30
Wurster, William Wilson 114, 670

Y

Yamasaki, Minoru 524, 672

Z

Zabludovsky, Abraham 676
Zantzinger, Borie and Medary 328
Zehrfuss, Bernard Henri 464, 678
Zenghelis, Elia 254, 354
Zenghelis, Zoe 354
Zevaco, Jean-François 679
Zuccoli, Luigi 396
Zumthor, Peter 680

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Paulo Mendes da Rocha Arquitetos Associados: 434; Photo Ana Ottoni: 432 t.
Mercedes-Benz Heritage Information Center, Stuttgart: 377
Moderne Bauformen, Stuttgart, 1925: 182 c.
Moderne Städtebilder I. Neubauten in Brüssel, Berlin, 1900: 291
Bruno Mohring, *Architektonische Charakterbilder*, 1900–1901: 250 b.
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Gustav Adolf Platz, *Die Baukunst der neuesten Zeit*, Berlin, 1927: 182 b., 619, 650 b., 654 b.
Paolo Portoghesi: 522 b.; Photo Moreno Maggi: 522 t.
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Alberto Sartoris, *Encyclopédie de l'Architecture Nouvelle. Ordre et climat méditerranéens*, Milan, 1957: 492 b., 493, 659 b.
Alberto Sartoris, *Gli Elementi dell' Architettura Funzionale*, Milan, 1941: 464 b.
Sauerbruch Hutton Architects, Photo Erik-Jan Ouwerkerk: 564
Photo SCALA, Florence: 439
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Jason Schmidt: 520
Joachim Schumacher: 573, 574, 575
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Harry Seidler & Associates, Photo Harry Seidler: 094, 378, 465 t., 578 t.
Shigeru Ban Architects: 048 t.
Shinkenchiku-sha: 025, 307, 436, 532 b., 614
Eric Sierins, Milsons Point: 578 b.
Claudio Silvestrin Architects: Photo M. Mazza: 582 t.
SITE Environmental Design: 583 t., 583 b.
Álvaro Siza: 586/587
Skidmore, Owings & Merrill: 588 t.
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Sprengel Museum Hannover: Photo Michael Herling/Aline Gwose: 398 b.
Staatliches Bauhaus Weimar: 1919-1923, Weimar, 1923: 063
Philippe Starck/Presse Starck: 601; Photo Marie Françoise Prybys: 600 t.
Stiftung Archiv Akademie der Kunste, Berlin: 296 t.l., 296 t.r., 408 t.l., 408 t.r., 461, 530 t., 531, 618, 620/621, 648 t., 649 t.; Photo Fritz Eschen: 568 t.; Photo Arthur Köster: 246, 408 b., 409, 568 b., 569, 570, 649 b., © Werkbundarchiv: 460 b.; Photo Dick Whittington: 648 b.
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Syracuse University Library, Special Collections Research Center: 386 b.
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Tange Associates: 612 t.
Taniguchi Associates: 616 t.
Walter Dorwin Teague Associates: 622 t
Clorindo Testa: 626 t
Tezuka Architects: 628 t.
Beverly Thorne: 630 t., 630 b., 631
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Judith Turner, New York: 121
United States General Services Administration: Photo Hedrich-Blessing: 459
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University of California Los Angeles, Charles E. Young Research Library Department of Special Collections: S. Charles Lee Papers: 382 t., 382 b.; A.Q. Jones Papers: 318 t.
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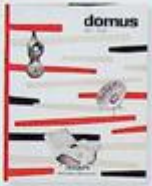

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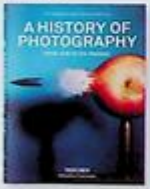

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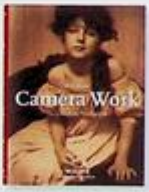

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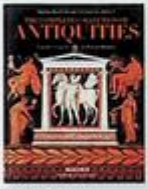

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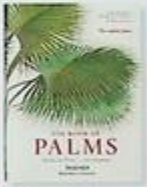

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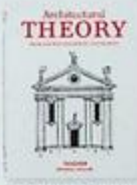

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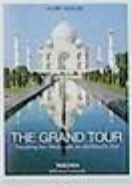

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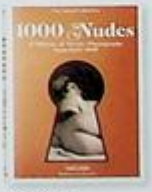

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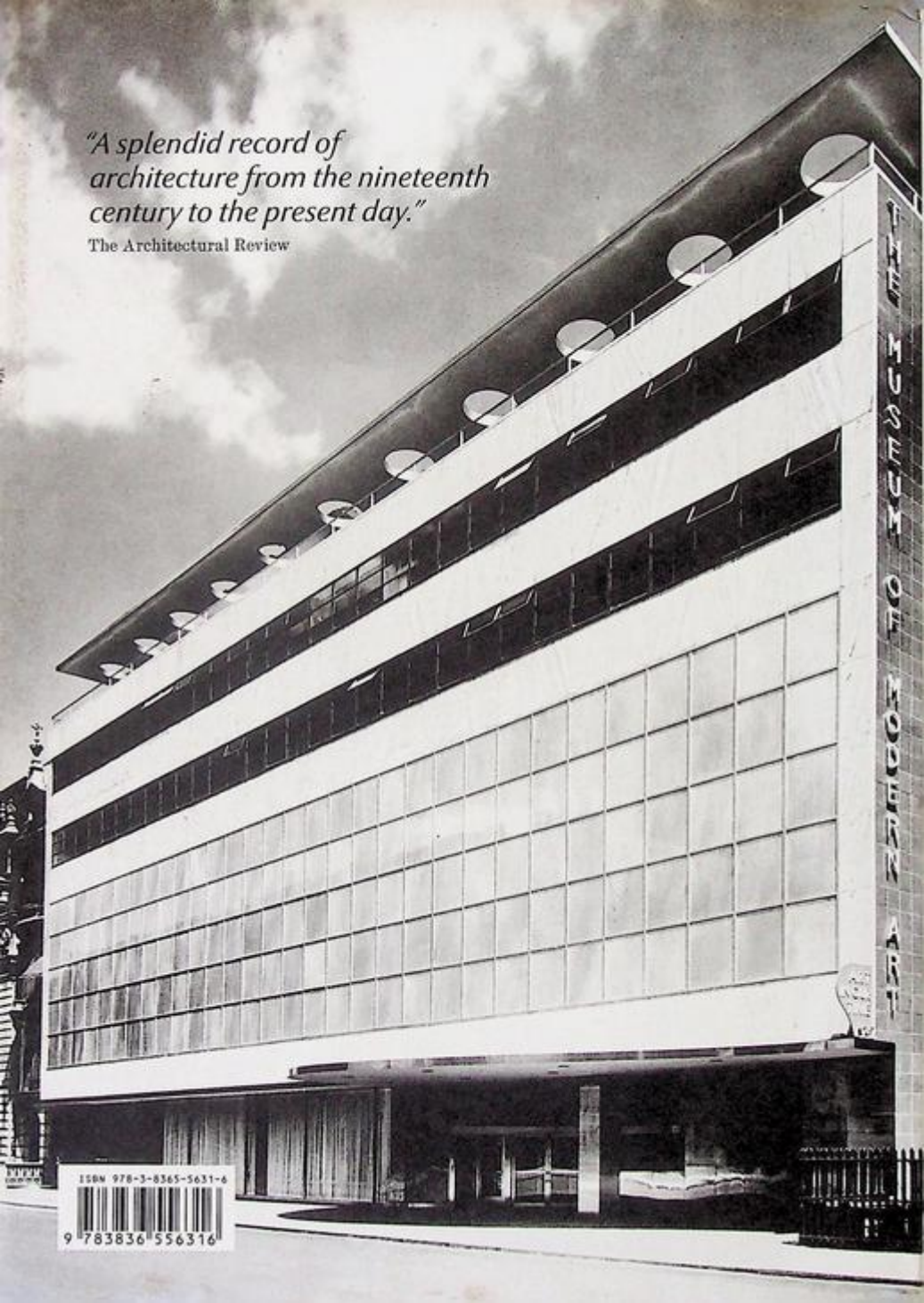

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