

Decimus Burton and Richard Turner
Palm House in the Royal Botanical Gardens
in Kew/Surrey, England, 1844–1848
View from the south-west
Photo Stefan Koppelmann



The exotic plants of the Royal Botanical Gardens were housed within a miracle of iron and glass 110 metres in length. Twelve boilers supplied warm water for the heating pipes and guaranteed an indoor temperature of 27 degrees even in winter. Rain water was channelled to an underground reservoir via hollow cast-iron pillars and collecting pipes in the stone base. A spoil car for transporting coal, the smoke outlet and the feed pipes for the sprinker system were housed in a tunnel, which surfaced into a smokestack and campanile style water tower at a visually acceptable distance.

Greenhouse construction had reached technical maturity in as early as the seventeenth and eighteenth centuries. The use of iron long remained a matter of controversy, since it is a good conductor of heat and hence brings with it the problem of dripping condensation. Construction with iron only became popular around 1830 due to its light weight and the narrow struts it made possible. The easier methods of wood processing led Joseph Paxton to employ a new type of arched truss made of glued laminated wood. Successful solutions were applied to other areas, such as the glass roofing of shopping malls. The gap to be spanned in such arcades was usually small, posing little challenge to the engineer.

The development of large-area covered halls was furthered in England in the Royal Navy dockyards. Since a warship took up to 13 years to build, it was necessary to protect the unfinished hull from the weather and – as the Venetians had long been doing – to build a hall to house the ship during construction. Wooden versions of such covered berths were built in Portsmouth in 1814 and in Chatham in 1817. The first corrugated-plated iron constructions were introduced in 1845.

Exhibition halls had other specifications and design criteria. Emphasis lay not

Opposite page:
Interior view
Photo Stefan Koppelmann
This photograph was taken before the start of restoration in 1985, while the Palm House was entirely empty.



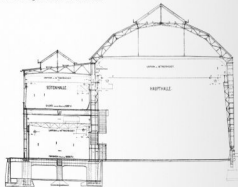


Peter Behrens (arch.), Karl Bernhard (eng.)
AEG Turbine Factory Assembly Hall in Berlin,
1908-1909

Bildarchiv Foto Marburg

The supporting system of three-ripped arches with beam ties has an open height of some 25 metres. The supports appear in the side facade as full-wall gilder sections, with the large glazed areas between them then slightly recessed. The gable front is flanked by two corner pylons which narrow towards the top. The polygonal gable zone displaying the company emblem seems to sit outside the central window, but the apparently weighty, solid facade elements are in fact composed of only a thin concrete skin held by a steel lattice. They represent spatial conclusions, not load-bearing elements. The slim bands in the joints of the corner pylons and the fine metal framing of the tympansum point to the artificiality of the materials used.

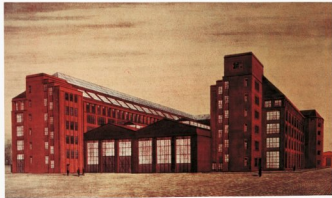
Cross-section through the main and side halls



Peter Behrens
AEG High-tension Plant in Berlin, 1909-1910
Perspective drawing

From: Der Industriebau 6/1911

A glass-roofed double hall was inserted between the two parallel, six-storey wing buildings. A four-storey crossbar containing administrative offices runs across the top of the halls to connect the two main sections.





Henry Hohauser
 "Essex House" Hotel, Miami Beach, Florida,
 1938
 Miami Dade Public Library

Henry Hohauser
 Century Hotel, Miami Beach, Florida, 1939
 Photo Peter Gössel



Carpenter's Restaurant, Los Angeles,
 California, 1925
 Sower Center for Western History Research,
 Los Angeles County Museum of Natural
 History

Several chains of drive-in restaurants followed the idea of placing a small octagonal building in the middle of a parking lot on a main street. Other features of this architectural fashion-food menu were a vertical, towering sign in the middle advertising the restaurant, lots of neon and glass, and a sit-down counter with clean tiling running around the periphery.

Optimistic visions of the future once again reached a high point at the New York World's Fair held in Flushing Meadow Park in 1939. Automobile companies in particular took centre stage. In the "Highways and Horizons" pavilion of General Motors, designer Norman Bel Geddes exhibited the giant model of his "Metropolis of Tomorrow" – no longer the horrific vision of Fritz Lang's film "Metropolis", but a radiant city organism, flooded with pulsating traffic. America here demonstrated that it had finally freed itself from its oh-quoted "colonial" dependence on Europe.



Pietro Belluschi
Equitable Savings and Loan Association
Building, Portland, Oregon, 1945-1948
Photo Enzo Stokler/Esto



Opposite page:
Skidmore, Owings & Merrill, Gordon Bushnell
Administration Building for the Lever Brothers
Company in New York, 1951-1952
View from Park Avenue

Photo Julius Shulman/Getty Research Institute
A low building with an inner courtyard reaches to the very boundary of the site. Out of it grow the 21 office stories of a second, steeply-sloping architectural body. Lifts, stairs and secondary rooms are concentrated within the narrow end of the building facing away from the street. The curtain wall of green insulating glass and slender, stainless-steel girders embraces the steel skeleton without projections or other forms of differentiation. The opaque parapet bands identify the individual floors, while the coils for the window-cleaning basket emphasize the verticals.

open plans, recollecting the Barcelona Pavilion, too daring; he felt the small rooms of the traditional apartment block would sell better. What appeared springily economical in Chicago became, in the office tower built for Distillers Corporation Seagrams Limited in New York, a luxurious and expensive masterpiece. It was the daughter of the company president himself who halted existing plans for a new building and, following consultations with Philip Johnson, then Director of the Architecture Department of the Museum of Modern Art, put forward the name of Mies van der Rohe. The Seagram Building was markedly different from any other previous New York skyscraper. It stood back from busy Park Avenue, creating an open urban space before it. This "plaza" emerged at both homeless and windy, however, and only really served to introduce and reinforce the towering glass front with its strictly axial entrance. Unlike Chicago, the structural sections were laid not on but in the glass plane and were emphasized via shadow joints. Nor were they the products of serial manufacturing, but special fabrications in bronzes. Mies was thus able to modify their profiles. He strengthened the visible, thin edge of the I-beams to give them more optical weight and moved the vertical joints closer



Peter Zumthor
Thermal Baths in Vals, Switzerland,
1990–1996
View of the central bath
Photo Margherita Spalutini

Outer corner
Photo Peter Glösel

Opposite page:
Peter Zumthor
Swiss Pavilion of Expo 2000, Hannover,
Germany
View from an inner courtyard through the
corridors
Photo Roland Holbe/arte
Stacks of wooden beams were arranged
upon a built-up surface amounting 3,000
square metres. No holes were drilled into
the wood, since this would have prevented
it from being used again. In place of a roof,
individual gutters drained off rainwater; for
this reason, the entire floor was given a slight
incline.





Frank O. Gehry
Disney Music Concert Hall, Los Angeles,
California, 1987-2003
Exterior view
Photo Jürgen Nagas/Julia Schulman

Entrance hall
Photo Peter Gössel

Opposite page:
Frank O. Gehry
Deutsche Genossenschafts Bank, Berlin,
1995-2000

Photo Roland Heib/arkur
While the main facade looking towards the
Brandenburg Gate is at once severe and
subtle in its combination of smooth sandstone
columns and seemingly frameless glazing, the
interior is organized into a complex sequence
of glass-roofed spaces, at the centre of which
a stylized horse's head houses a conference
room.

