

An entirely fresh perspective on the history of western architecture that uses timelines to trace the medium's development from ancient history to the present

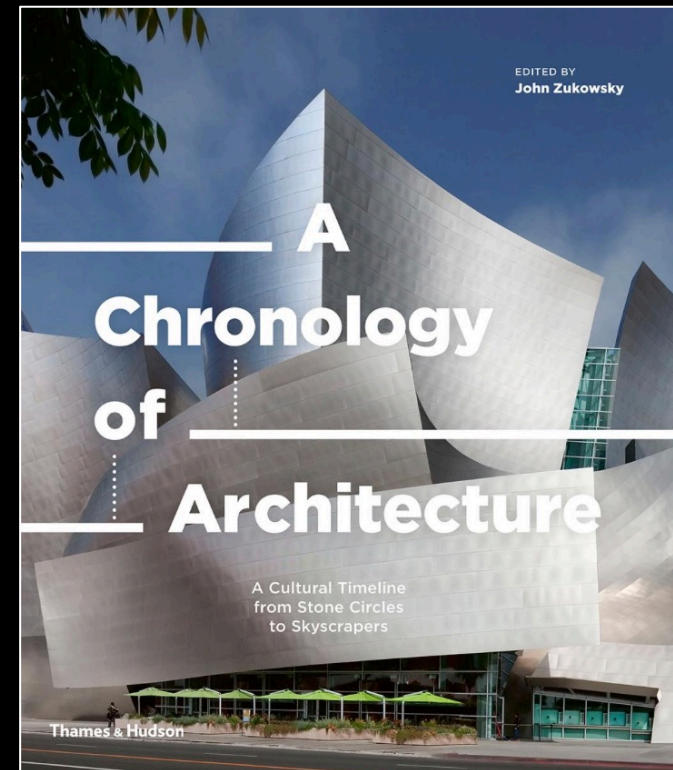
A Chronology of Architecture

John Zukowsky

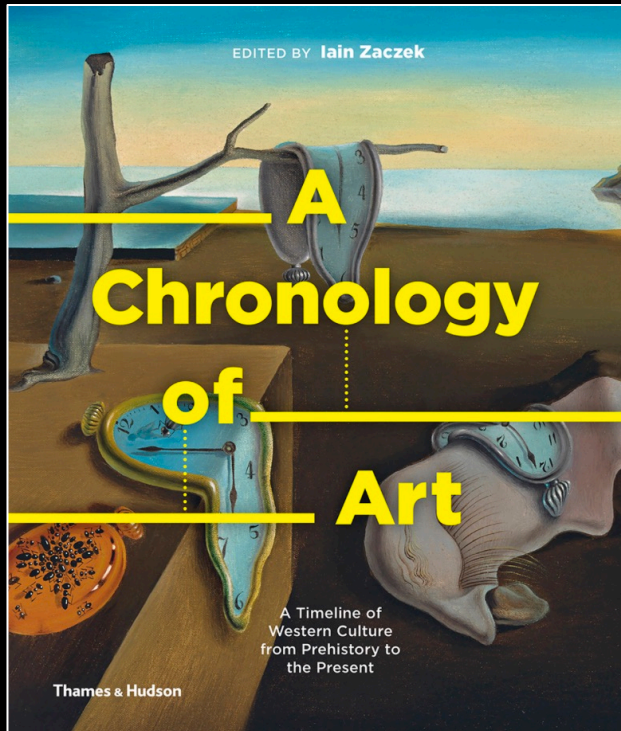
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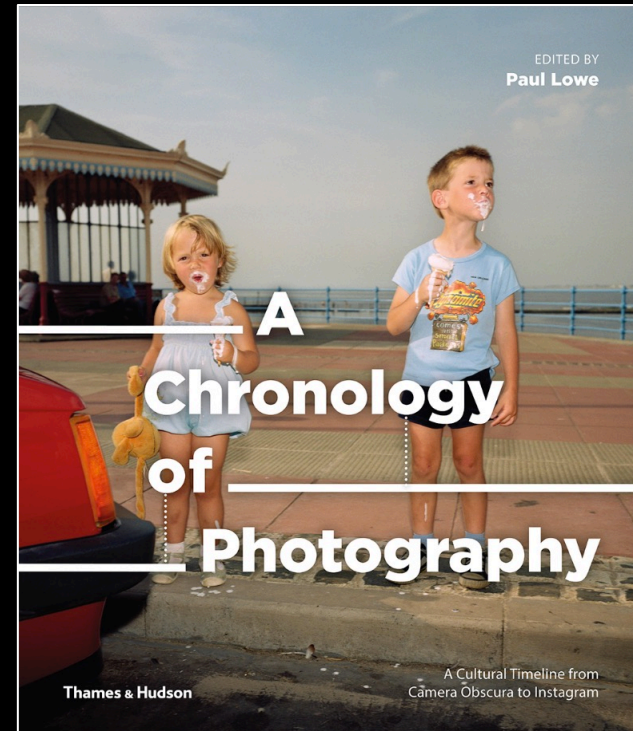
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Key Sales Points

- A timeline runs across the middle of each double-page spread, marking and illustrating significant buildings, techniques and developments
- Feature spreads interspersed throughout the chronological narrative highlight key themes, ranging from nationalistic expressions within international styles; the importance of the industrial revolution in spearheading new ideas for construction techniques; the significance of technological, transport and computing innovations; and developments in new materials and techniques throughout the millennia
- In depth commentaries place buildings and engineering milestones in their social, historical and cultural context
- Snappy 'In Focus' sections target socio-cultural observations and technological developments related to particular sites and people
- The third book in Thames & Hudson's successful 'Chronology' series, which has seen titles on Art (978 0 500 239810) and Photography (978 0 500 545034)

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THE
INDUSTRIAL
AGE



1050-1100

Church and State.

These decades witnessed

the beginning of power struggles between European kings and Catholic popes over who has the right to appoint local church officials, with the pope temporarily regaining supremacy of church over state now. This was witnessed in Henry IV, the Holy Roman Emperor, traveling 400 miles in January 1077 to seek absolution from excommunication by Pope Gregory VII. The papacy asserted its control over Catholic Europe later in the century. Pope Urban II organized the First Crusade of 1095 to free the Holy Land and Jerusalem from control of the Seljuk Turks, who prevented Christian pilgrims from accessing religious sites there, and threatened further expansion into the Byzantine Empire. Jerusalem was taken by the Crusaders in 1099. Buildings that survive from this half century mostly represent the power of church and state, in massive cathedrals or castles.



The East West Schism

The Catholic Church splits into two rival factions, one based in Rome and the other Constantinople (now Istanbul). The rivalry also coincides with the shrinking of the Byzantine Empire headquartered in Constantinople, in part as Islamic armies expanded in the Mediterranean.

St. Andrew's Church, Greensted-juxta-Ongar, Essex, England

Curved oak wall timbers create the impression of a fort, hence the term used here to describe the building as a palisade church. Most think the church dates from before the Norman Conquest of 1066. This may well be the oldest wooden building in western Europe and perhaps the world.

Cathedral of Santiago de Compostella, Spain

Built at the legendary burial site of St. James the Apostle, this is an important Medieval pilgrimage destination back to the ninth century. The cathedral was finished and consecrated decades later, but was begun as a replacement for one sacked in 997. The measured march of the additive volumes of each nave bay is typical of later Romanesque churches. The nave has been enveloped by later Gothic and mostly Baroque additions. Interacting with one another.

White Tower, Tower of London. England

With the Norman Conquest of England in 1066, King William I sent a strong visual message to the conquered Anglo-Saxons that Normans were there to stay. Perhaps the most famous of his castles is the Tower of London, the centerpiece being the White Tower, termed so after King Henry III had it whitewashed in 1240. The castle keep was likely designed by Bishop Gundulf of Rochester.



Speyer Cathedral, Germany

Begun 1030, it was consecrated 1061 with the east end completed by 1090. Its blind arcades of red sandstone project the image of masonry massiveness as much as castles and other Romanesque buildings of Northern Europe. The spacious nave has vaults that each span two bays. The entire cathedral completed in 1106 was the world's largest at almost 441 feet long by 141 feet wide (134 x 43 m), intended to be so by Henry IV in his rivalry with the papacy.

The Domesday Book

William the Conqueror initiated this series of county-wide surveys of all the properties in the newly conquered England, organized by feudal dependencies and tax values, and summarized in this report for the king. The actual original bound parchment manuscript survives within the National Archives, London.

University of Bologna, Italy

The University of Bologna was founded then, the first such European institution and the oldest continually operating one. This university had no buildings until the eighteenth century, holding sessions in a variety of spaces within the city.

Cistercian Order

Saint Robert of Molesme (1028 - 1111) founded a reform order that eschewed the wealth and excesses of many Benedictine monasteries. This was further developed by St. Bernard of Clairvaux (1090-1153). This Cistercian order favored austere, unornamented buildings. Cistercian simplicity prefigured some early Gothic churches, particularly in the clear articulation of architectural forms.

1050-60

1054

1075

1078

1086

1088

1090

1098

1880-1890

A Decade of Engineering Marvels. The 1880s witnessed an amazing advance in building and engineering. Skyscrapers of ten or more stories, having iron and steel frames covered by

masonry and terra cotta, were being constructed in cities like New York and Chicago. Massive suspension bridges were being built as well, secured with the earliest caissons. Enormous shopping arcades in Europe and North America with skeletal glazed roofs were becoming the world's cathedrals of commerce. Of the many international expositions of this decade, there was even one even dedicated solely to electricity in 1881 – the first International Exposition of Electricity, Paris. Electrical inventions alone would wow crowds in later World's Fairs, from Chicago in 1893 to Brussels in 1897 and Paris in 1900. And inventions were being conceived that would forever reshape our world, from electric lights to automobiles. This decade laid the groundwork for the next.



Brooklyn Bridge, New York NY, USA

Civil engineers and bridge builders John Augustus Roebling (1806-69) and his son Washington Augustus Roebling (1837-1926) created this masterwork that connects Manhattan Island to Brooklyn. Begun 1869 and opened 24 May 1883, this was the first steel wire suspension bridge in the world, its span being 1595.5 feet (486.3 m). The towers of limestone and granite are supported by an early use of caissons that went to bedrock 44-78 feet below.

Electric Lighting

Thomas Edison's (1847-1931) experiments with electric illumination from 1879 blossomed into the first commercial application of incandescent electric lighting within the steamboat *Columbia*. A dynamo aboard provided electricity for the lights, its use reported in *Scientific American* (May 1880).

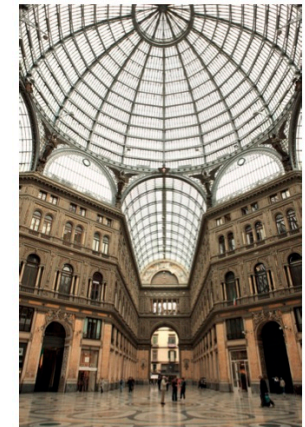
Completion of Cologne Cathedral, Germany

Begun 1248, Cologne Cathedral was finally finished after work stopped 1473. Work recommenced 1842, following the original Medieval drawings, particularly for the West facade. The grand reopening was an event led by Kaiser Wilhelm I on 14 August 1880. Heavily damaged in World War II (1939-45), the cathedral was repaired 1956.



Home Insurance Building, Chicago, IL, USA (demolished)

Parisian-trained architect and veteran Union Army engineer, William Le Baron Jenney (1832-1907) is credited with creating the world's first skyscraper. The ten-story, elevator-accessed Home Insurance Building had an iron and steel frame, reinforced by, and clad in, masonry. It took the building to a height of 138 feet (42 m.). A two-story level atop was added 1891. The building was demolished 1931 and thoroughly documented for its importance to architectural history.



Galleria Umberto I, Naples, Italy

Gallerias such as this, designed by Emanuele Rocco and Ernesto di Mauro, are multi-storied retail spaces that are spectacularly roofed with iron and glass. They prefigure shopping malls of today. Perhaps the most famous is the Galleria Vittorio Emanuele II in Milan from 1877, but others can be found as far away as the Arcade in Cleveland, Ohio from 1890. These grand spaces are descendants

1880

1893

1885

1890

HOUSING THE MASSES



Even before the 11 November 1918 armistice silenced guns on the western front, German cities had witnessed the beginnings of the November Revolution. The result of food and housing hardships experienced on the home front in the latter stages of the war and after, it lasted until the establishment of the constitutional democracy of the Weimar Republic, on 11 August 1919. Subsequently, Germany in the 1920s experienced a blossoming of design creativity that spearheaded what many consider the epitome of European International Style. Buildings such as the expressionist Einstein Tower in Potsdam in 1920 by Erich Mendelsohn (1887-1953), the industrial-looking Bauhaus in Dessau of 1925 by Walter Gropius (1883-1969), and the elegantly minimalist German Pavilion at the Barcelona World's Fair of

1929 (demolished and rebuilt) by Ludwig Mies van der Rohe (1886-1969), are among those considered to be landmarks of this progressive political and design era.

Beyond individual creations, city governments and unions supported subsidized housing developments. Contemporary affordable rental units for urban dwellers filled the need for workers accommodations. These projects spanned Germany, mostly in larger cities such as Berlin, Frankfurt am Main, Hamburg, and Hanover, but also in smaller sites that were more towns than cities, such as Celle northeast of Hanover. A key component of this revolution in multi-family housing was the Frankfurt Kitchen.

Austrian architect Margarete "Grete" Schütte-Lihotzky (1897-2000) was its designer. Inspired by railroad dining car kitchens, she created a compact, efficient, and ergonomic kitchen in 1926 that

ABOVE LEFT. Altamira, bison

Although many animals are depicted on the cave walls at Altamira, images of bison predominate. On the ceiling, a herd of steppe bison are depicted in different life-like poses. They were painted about 14,000 years ago.

BELOW. Altamira, bison

Although many animals are depicted on the cave walls at Altamira, images of bison predominate. On the ceiling, a herd of steppe bison are depicted in different life-like poses. They were painted about 14,000 years ago.

became a model for many to follow. More than 10,000 were installed in newly built residential units within Frankfurt alone, spearheaded by architect Ernst May (1886-1970) in his Neue Frankfurt housing. These apartment blocks projected an image of industrialized, flat-planned and roofed Modernism for a new postwar Germany. They also often include park spaces within their planning. Architects across the newly democratized nation also did their share of extensive complexes. Perhaps the most famous of these are units created by Bruno Taut (1880-1938) and Martin Wagner (1885-1957).

Wagner was Berlin's City Architect and Taut chief architect for the housing cooperative that built his famed Hufeisensiedlung or Horseshoe Housing Estate. This stands at the center of a massive complex in Berlin-Britz from 1924-27. The Horseshoe building alone



housed 3,000 occupants who were trade union members. The low-rise buildings throughout contained two to four-bedroom apartments, and balconies facing gardens. Attic spaces atop were used for storage and laundry. Taut completed some 12,000 units until the Nazis came to power in 1933, forcing him to flee to Switzerland and then Japan and Turkey. Even after, Taut-designed housing blocks continued to be constructed in Berlin-Zehlendorf, ca. 1935, though now with mandated peaked roofs as deemed appropriate for residences under the Nazis. Taut's design colleagues such as Gropius, Erwin Gutkind (1886-1968), Paul Mebes (1872-1938) and others created thousands of similar apartments in Berlin during the 1920s -- some estimate over 140,000 units -- to house its burgeoning population which reached well over 3 million. As with Taut's work, many of these Modernist blocks are brick and stucco with color highlights.

Beyond the many thousands of new apartments created across Germany, architects and developers spearheaded housing exhibitions to make the public aware of their latest ideas, designed by a variety of architects. Perhaps the most famous of these is the Weissenhof Siedlung in Stuttgart from 1927, with twenty-seven buildings (eleven have survived today) created by Gropius, Mies van der Rohe, Taut, as well as others such as Le Corbusier (1887-1965), Ludwig Hilberseimer (1885-1967), J.J.P. Oud (1890-1963), and Mart Stam (1899-1986) -- all movers and shakers of European Modernism. Although the complex was lampooned by Nazi critics in a photomontage that suggested the buildings are Arabic and not German, the housing exhibit spawned like developments throughout Europe during the interwar years and even after World War II (1939-45). Arguably, the most famous of these were in

1995-2000

The End of the Twentieth Century. The end of the century and also the second millennium witnessed dramatic firsts and record-breaking structures, both on the earth,

below, and above. Trans-Pacific fiber optic cables set records in 1996, as did a suspension bridge and skyscraper slightly later. The mid to later 1990s witnessed the first mass-produced electric car for our age, and the ultimate in orbital research facilities. Computer-aided-design certainly played a part in all of this as well as creating an airliner for the 21st century. Millennial fears regarding the time and clock changes that might spark massive electronic failures and the end of our world as we know it, dissipated after 1 January 2001. Those last years of the twentieth century pushed the bar forward a bit, witnessing new landmarks of architecture and engineering coordination in Berlin, Bilbao, Kuala Lumpur, London, and some 250 miles (402 km) above the earth.



Petronas Towers, Kuala Lumpur, Malaysia

Architect Cesar Pelli (b. 1926) with engineers Thornton-Tomasetti created the world's tallest building at 1,483 feet (451.9 m.) high, taking that record away from the 1974 Sears Tower in Chicago at 1,454 feet (443.18 m.). Petronas began to be occupied in 1997 though they were not officially dedicated until 1999. Designed with a nod to Islamic forms found in Malaysian architecture, this held the world's tallest building until Taipei 101 in 2004 and then Burj Khalifa in Dubai from 2010.

Boeing 777 Airliner
Responding to technical advances and successes of Airbus airliners, the 777 incorporated technical advances in computer-design as well as newer titanium and aluminum alloys and increased use of carbon fiber composites above previous Boeing aircraft.

EV1 by General Motors
This first purpose built contemporary electric car was manufactured in 1,117 units from 1996-99. The car helped pave the way for hybrid and electric cars today.



Guggenheim Museum Bilbao, Spain

Frank Gehry (b. 1929) designed this with his own adaptation of CATIA aerospace design software that was originally developed by Dassault Aviation in 1977. Gehry's dramatically curved forms of titanium here helped make this an international icon of the museum to top in terms of design for the next millennium. The building is one of a number created by leading designers to help remake Bilbao from a declining industrial city into one related to cultural tourism.

International Space Station/ISS
An outgrowth of NASA's planned Space Station Freedom during the Cold War, the first two modules of the ISS were joined on orbit in December 1998. The tinker-toy-like modules were designed mostly to fit within the cargo bay of the space shuttle for in-space final assembly.

Akashi Kaikyo Suspension Bridge, Japan
This bridge was one of three constructed over ten years to connect the Japanese mainland of Honshu with Shikoku island. Designed by civil engineer Satoshi Kashima, its main span of 6532 feet (1,991 m.) and overall length of more than 12,831 feet (3,911 m.) makes it the longest in the world.

The Eye, London, England

When the first Ferris Wheel appeared at the 1893 World's Fair it was a success. Subsequent ones are descendants of that, but the Eye goes well beyond. When built it was the largest in the world at 443 feet high with a 394 foot diameter (135 m.; 120 m.), though it has been superseded by wheels in Singapore, Nanchang, and Las Vegas. Marks Barfield Architects and engineer Arup have created an urban icon visited by more than 3.75 million people annually.



Jewish Museum, Berlin, Germany
Architect Daniel Libeskind (b. 1946) created an angular concrete building with unsettling visitor navigation that included voids or non-exhibit spaces.

1995 1996 1997 1998 1999 2000

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