

Frank Lloyd Wright and the Chicago School

'Whoso would be a man must be a nonconformist
.....Nothing is at last sacred but the integrity of your
own mind.'

Ralph Waldo Emerson





Llandysul, Wales



Frank Lloyd Wright – The Welsh Connection

Origins in Llandysul

Frank Lloyd Wright's mother was Anna Lloyd Jones, she and her family lived in Blaenralltddu, a mile or so from Rhydowen. When she was 5 the family emigrated to the United States, leaving from the port of Cardigan in 1844.

<http://www.bbc.co.uk/news/uk-wales-26964709>

Mid West



The Valley of the God-Almighty Joneses



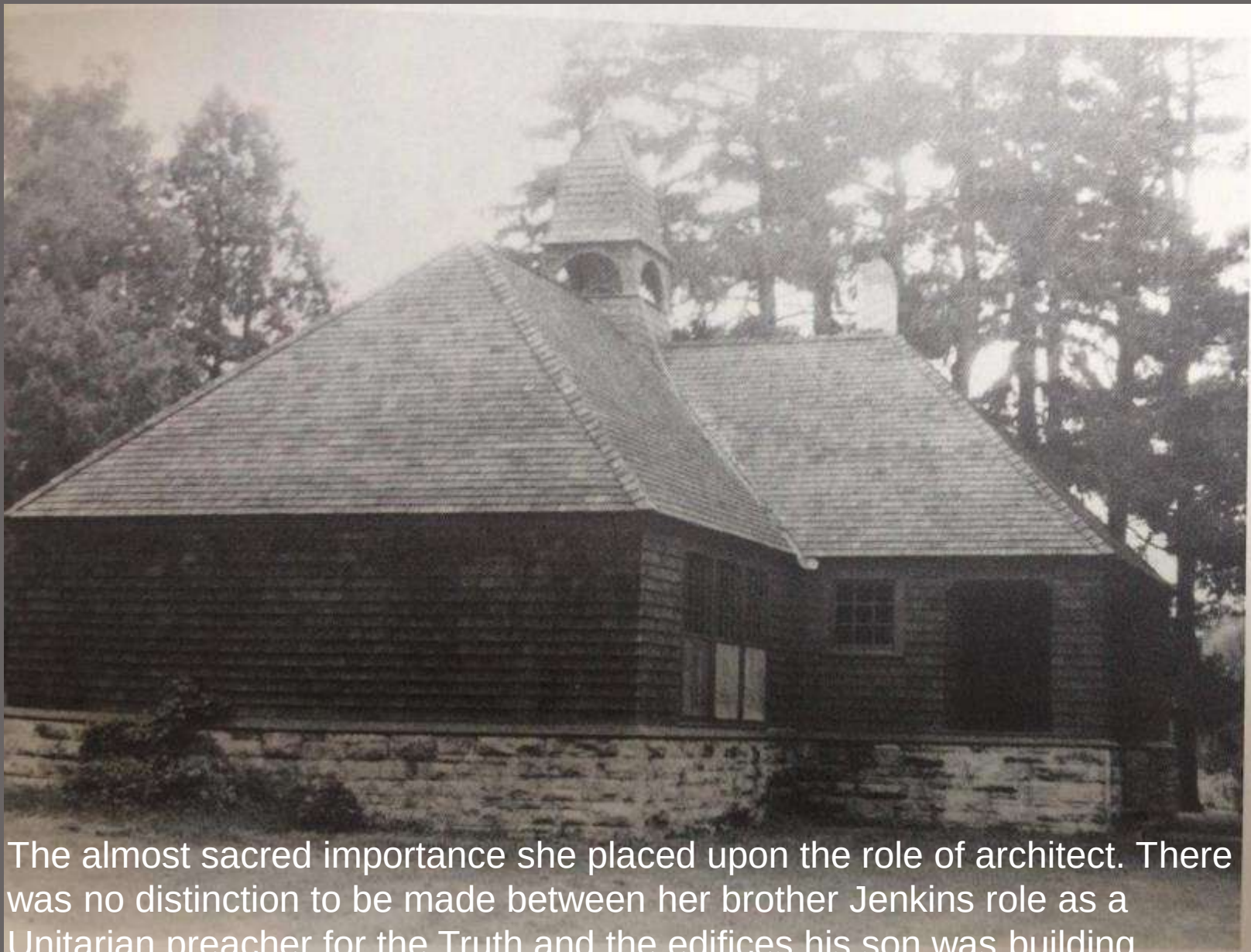
Reminiscences of Frank Lloyd Wright's Sister
Magainel Wright Barney
with Tom Burke

The Valley of the God-Almighty Joneses

The author is also the sister of Frank Lloyd Wright, and this book basically tells the story of their large extended family, who came from Wales and settled in this valley in Wisconsin.



**Taliesin East, Spring Green,
Wisconsin**



The almost sacred importance she placed upon the role of architect. There was no distinction to be made between her brother Jenkins role as a Unitarian preacher for the Truth and the edifices his son was building.

Unity Chapel, Wright's first architectural experience



CHICAGO IN 1820.

ARTIST: JAMES H. HARRIS. THE SCENE WAS PAINTED IN 1820, BASED ON A SKETCH BY JAMES H. HARRIS. THE CANOES IN THE FOREGROUND WERE PAINTED BY JAMES H. HARRIS.



Chicago in 1812



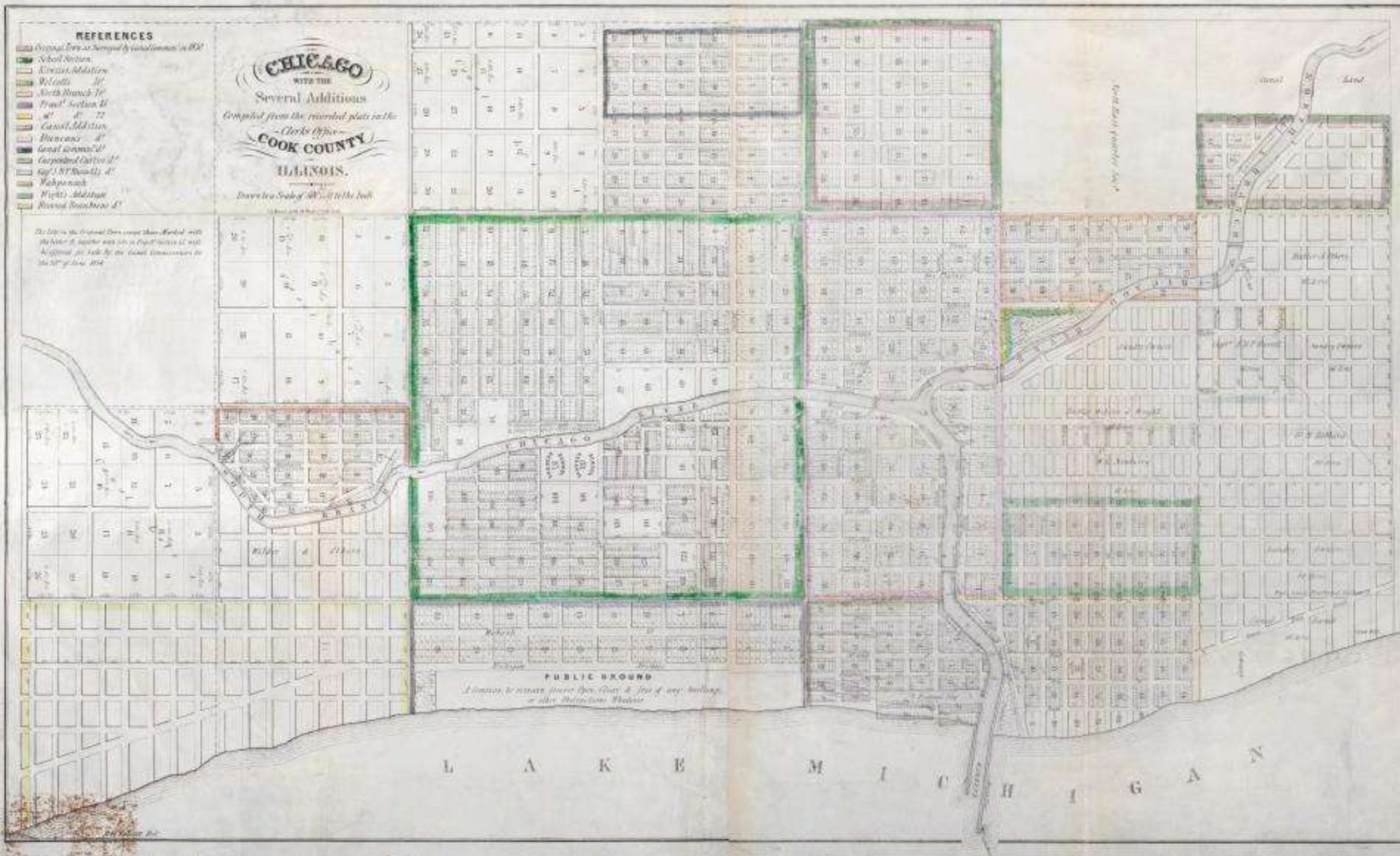


BIRD'S-EYE VIEW OF CHICAGO AS IT WAS BEFORE THE GREAT FIRE.—DRAWN BY THEODORE D. DAVID.—[SEE PAGE 560.]

- | | | | | | | | | | | |
|-----------------|---------------------|----------------------|--|--|-----------------------------|-------------------------------|----------------------|---------------------|---------------------|-----------------|
| 1. Grand River | 2. Tremont House | 3. Poplar | 4. Michigan Northern, C., R. L. and P. | 5. Berkeley's Church (Episcopal Cathedral) | 6. Drake Hotel | 7. C. C. and S. C. Co. Bldg. | 8. Washington Square | 9. Lake Shore Drive | 10. Sherman's Hotel | 11. Grand Hotel |
| 12. Grand Hotel | 13. Michigan Hotel | 14. Chicago Tribune | 15. City of Chicago Bldg. | 16. First National Church | 17. Chicago and N. W. Bldg. | 18. C. C. and S. C. Co. Bldg. | 19. Lake Shore Drive | 20. Sherman's Hotel | 21. Grand Hotel | 22. Grand Hotel |
| 23. Grand Hotel | 24. Chicago Tribune | 25. Lake Shore Drive | 26. City of Chicago Bldg. | 27. First National Church | 28. Chicago and N. W. Bldg. | 29. C. C. and S. C. Co. Bldg. | 30. Lake Shore Drive | 31. Sherman's Hotel | 32. Grand Hotel | 33. Grand Hotel |
| 34. Grand Hotel | 35. Chicago Tribune | 36. Lake Shore Drive | 37. City of Chicago Bldg. | 38. First National Church | 39. Chicago and N. W. Bldg. | 40. C. C. and S. C. Co. Bldg. | 41. Lake Shore Drive | 42. Sherman's Hotel | 43. Grand Hotel | 44. Grand Hotel |

Gift: James R. Warren, Jr.

Chicago before 1871



Chicago before 1871

- Chicago's strategic importance lay in its role as the gateway to the western United States increasingly opened up by railways from the mid-19th century.

Chicago before 1871



The Great Fire of Chicago 1871





CHICAGO IN FLAMES—BURNING OF THE CROSBY OPERA-HOUSE.—[SEE PAGE 1010.]

The Great Fire of Chicago 1871

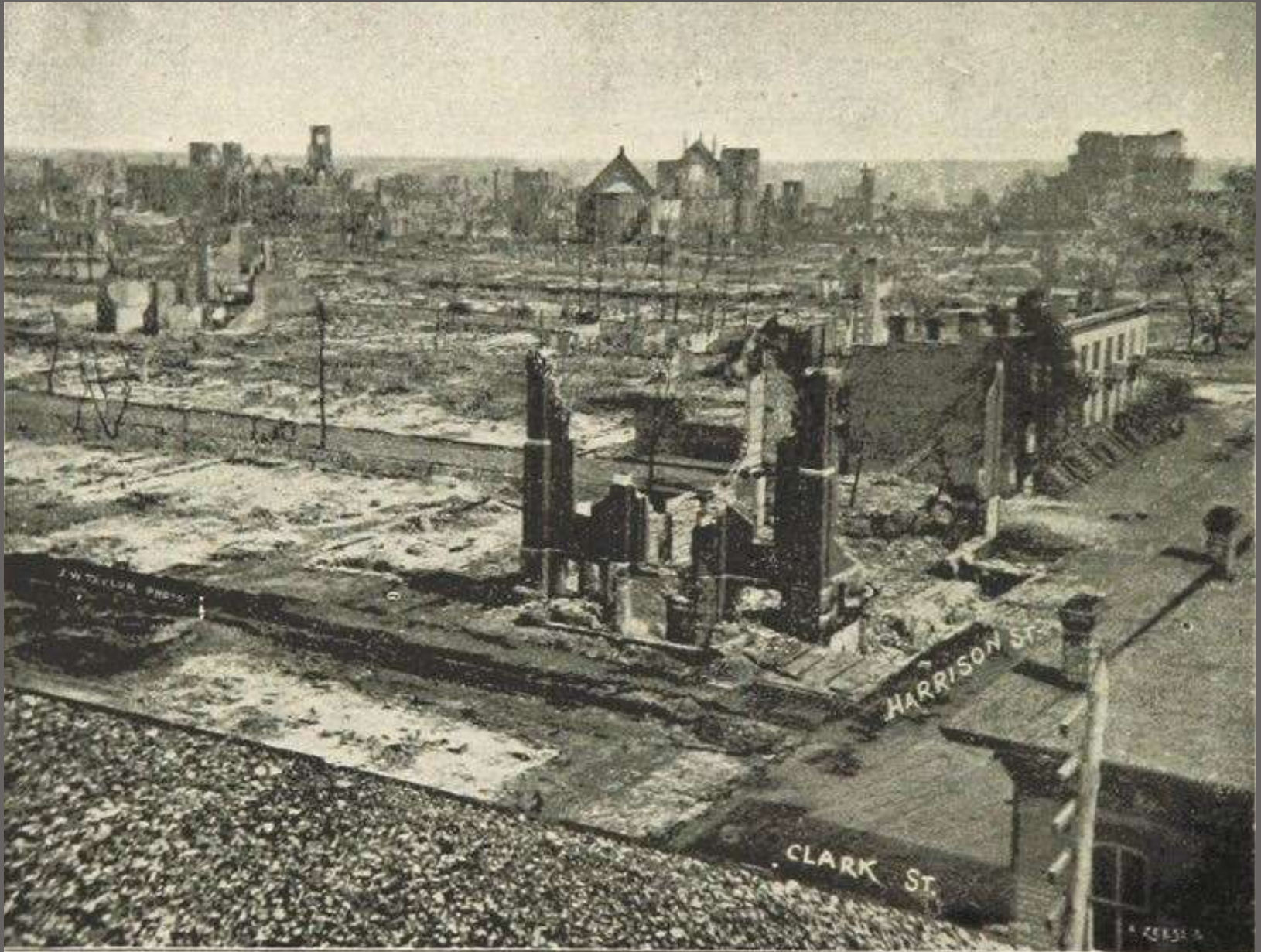


The Great Fire of Chicago 1871



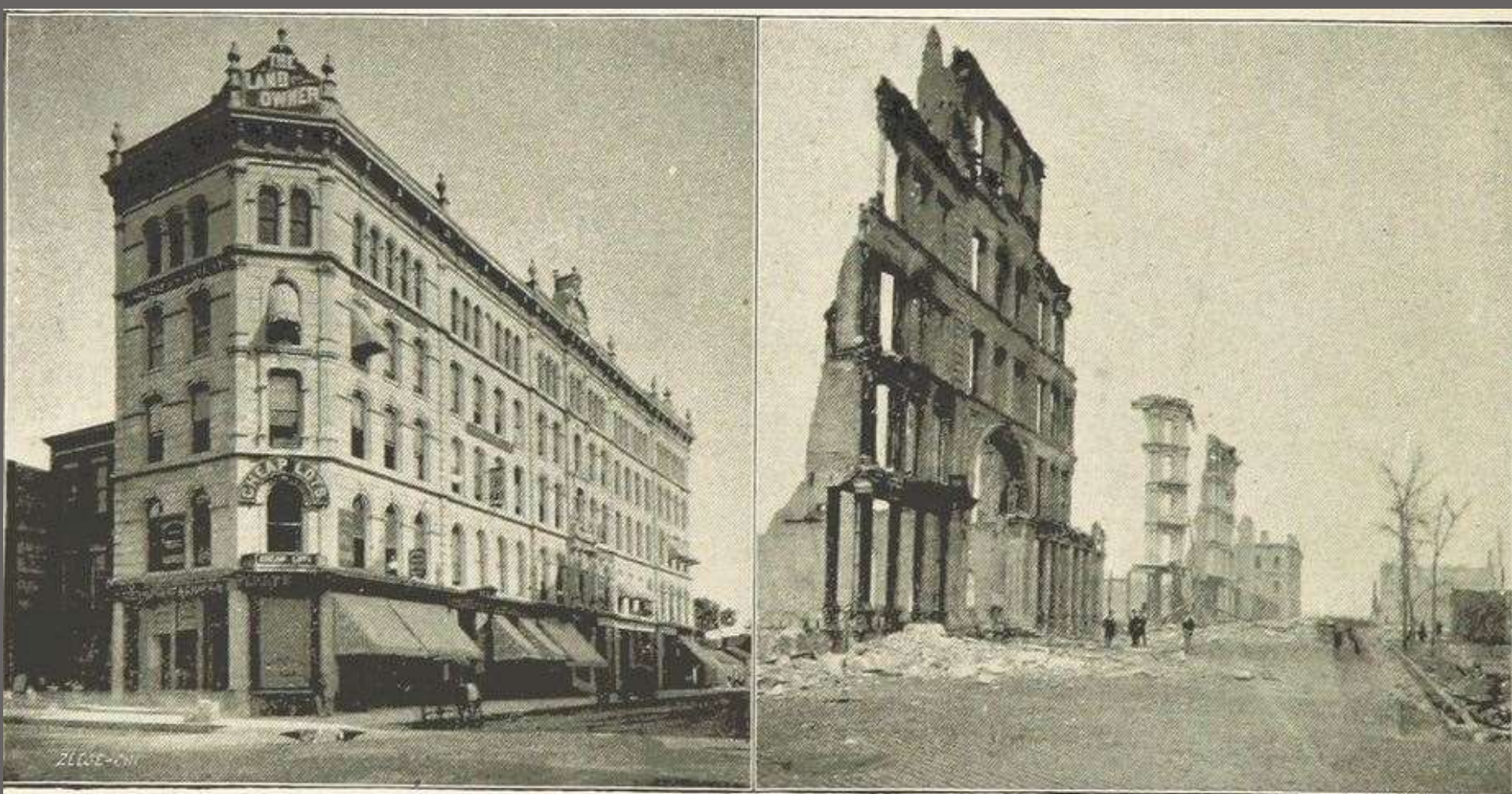
CORNER
STATE & MADISON ST
AFTER CHICAGO FIRE

The Great Fire of Chicago 1871



GENERAL RUIN; CHICAGO, OCTOBER 17, 1871

The Great Fire of Chicago 1871



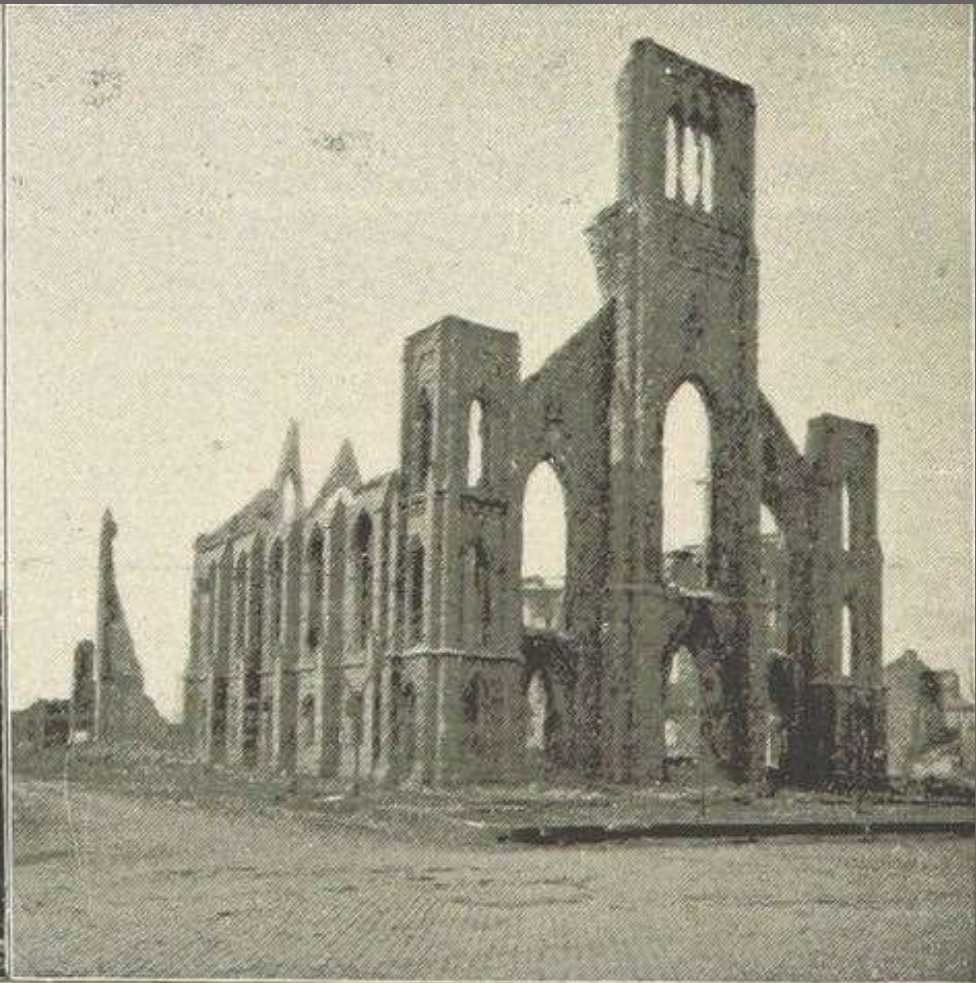
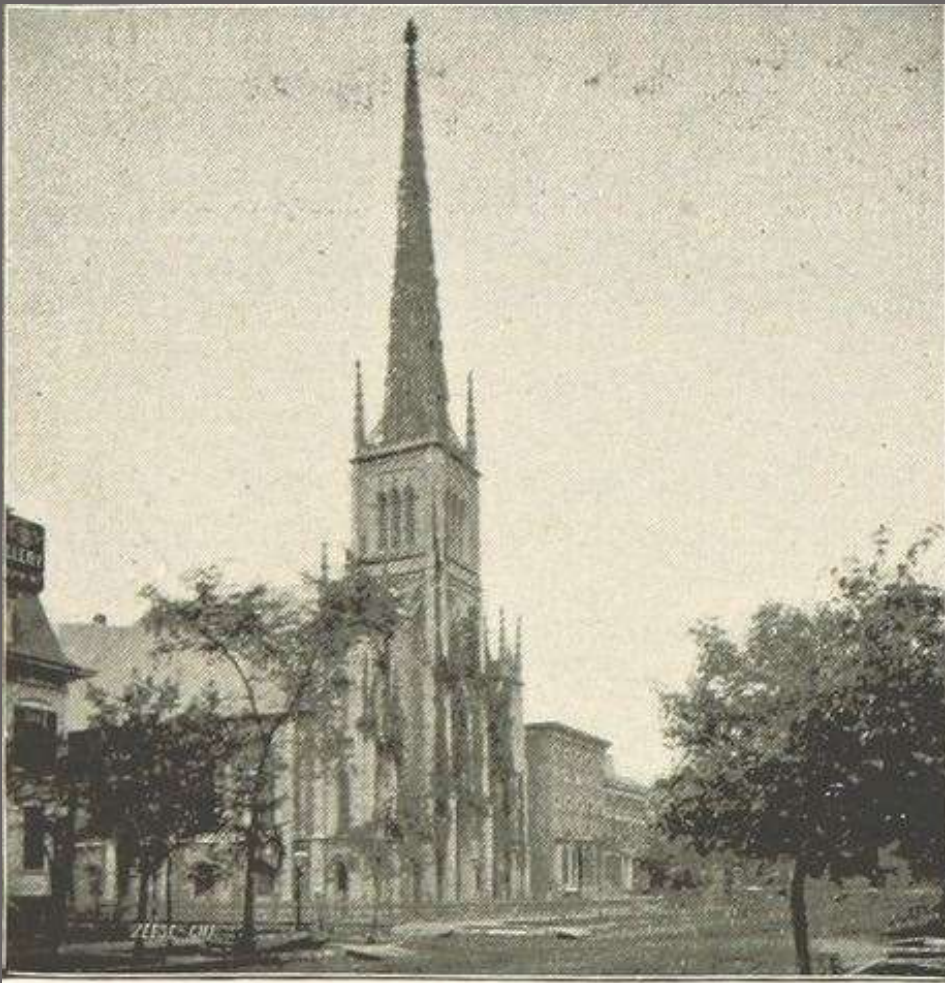
SHEPARD'S BUILDING, DEARBORN AND MONROE STS., BEFORE AND AFTER THE FIRE OF 1871.

The Great Fire of Chicago 1871



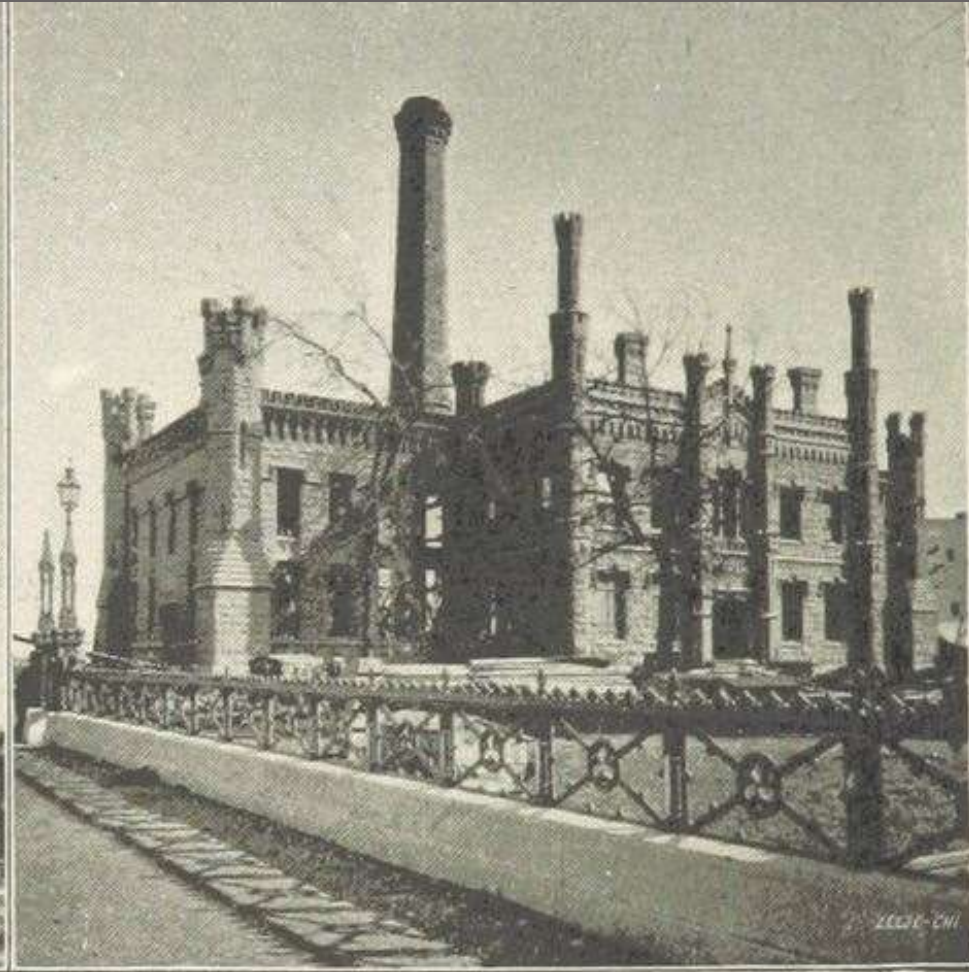
FIELD & LEITER'S STORE, BEFORE AND AFTER THE FIRE OF 1871.

The Great Fire of Chicago 1871



ST. PAUL UNIVERSALIST CHURCH, BEFORE AND AFTER THE FIRE OF 1871.

The Great Fire of Chicago 1871



CITY WATER WORKS, BEFORE AND AFTER THE FIRE OF 1871.

The Great Fire of Chicago 1871

CHEER UP.

In the midst of a calamity without parallel in the world's history, looking upon the ashes of thirty years' accumulations, the people of this once beautiful city have resolved that
CHICAGO SHALL RISE AGAIN

The Chicago School

- It was in Chicago that the archetypically modern building was born in the final decades of the nineteenth century.
- The destruction and rebuilding inadvertently provided the opportunity to cement Chicago's position as one of America's most important cities, economically and architecturally.
- The Chicago School as it is to become known were a group of leading architects working in the city from the late 19th century into the early years of the 20th century.

The Chicago School

- The challenge they faced was how to build an appropriate form of building that would reflect both modern construction and the spirit of the new age. By grappling with this problem it could be argued they were the first 'modernists'.
- The most famous architect of the Chicago School Louis Sullivan (1856-1924) argued that tall buildings should embrace this characteristic with a dominant architectural expression based on verticality.

(The Tall Office Building Artistically Considered 1896)

The Chicago School

- Many Chicago School buildings had both modern features and an abstracted, often raw classicism.
- American architects had to draw from European examples for architectural decoration but they also had freedom of expression being detached from the European tradition.



FIRST LEITER BUILDING, WELLS AND MONROE (DEMOLISHED)

Steel frames allowed for cheaper and quicker construction using many standardised components. The trabeated system of vertical columns and horizontal beam resulted in cuboidal forms with evenly spaced floors and flat roofs.

- **The First Leiter Building (1879)** by William Le Baron Jenney (1832-1907) a cuboidal composition treated as a single coherent entity with a steel frame and regular floor structure expressed on its exterior.



MARSHALL FIELD & CO.
WHOLESALE DRY GOODS, CARPETS & UPHOLSTERY,
ADAMS, QUINCY, FRANKLIN, FIFTH AVENUE.
CHICAGO.

THIS BUILDING COVERS THE ENTIRE BLOCK OF GROUND, IS SEVEN STORIES AND BASEMENT IN HEIGHT, CONSTRUCTED OF GRANITE AND BROWN STONE, AND IS THE

→ **FINEST AND LARGEST STRUCTURE** ←

IN THIS COUNTRY DESIGNED FOR COMMERCIAL USE.

DIMENSIONS 325 x 190 FEET OR ABOUT 1½ ACRES. THE TOTAL FLOOR SPACE OCCUPIED FOR SELLING GOODS, ON ALL FLOORS COMBINED IS ABOUT TWELVE ACRES.

WE SHOW THE LARGEST AND BEST SELECTED STOCK OF DRY GOODS IN THE WORLD.
PRICES ALWAYS THE LOWEST.

- Marshall Field's Wholesale Store (1885-7) by Henry Hobson Richardson matched the grid structure with a monumental abstract classicism vaguely reminiscent of a Renaissance *palazzo*. Its modernism expressed through the sheer scale of steel structure frame behind a rough-hewn stone façade.
- The rough-hewn stone of Richardson's Marshall Field building recalled the rocky outcrops of the American landscape, sitting between the vernacular tradition and modernity.



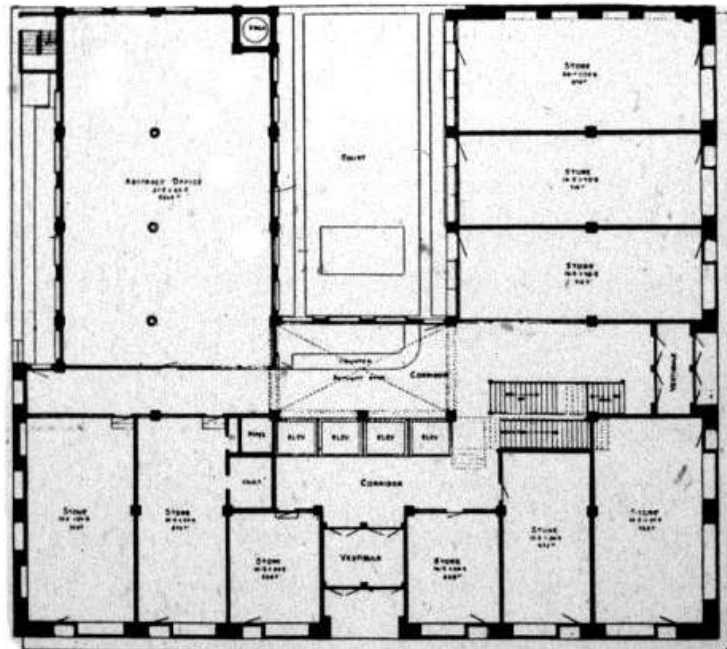


Sullivan expresses its underlying, vertical steel frame externally in a repeating grid to which all other elements including loosely classical detailing are subservient. This building set in place a recurring theme of Modernist architecture with its expression of the new possibilities of modern construction.

The Wainwright Building
(1890-91) in St Louis
Missouri by Adler & Sullivan



Sullivan expresses it underlying, vertical steel frame externally in a repeating grid.



Floor Plans

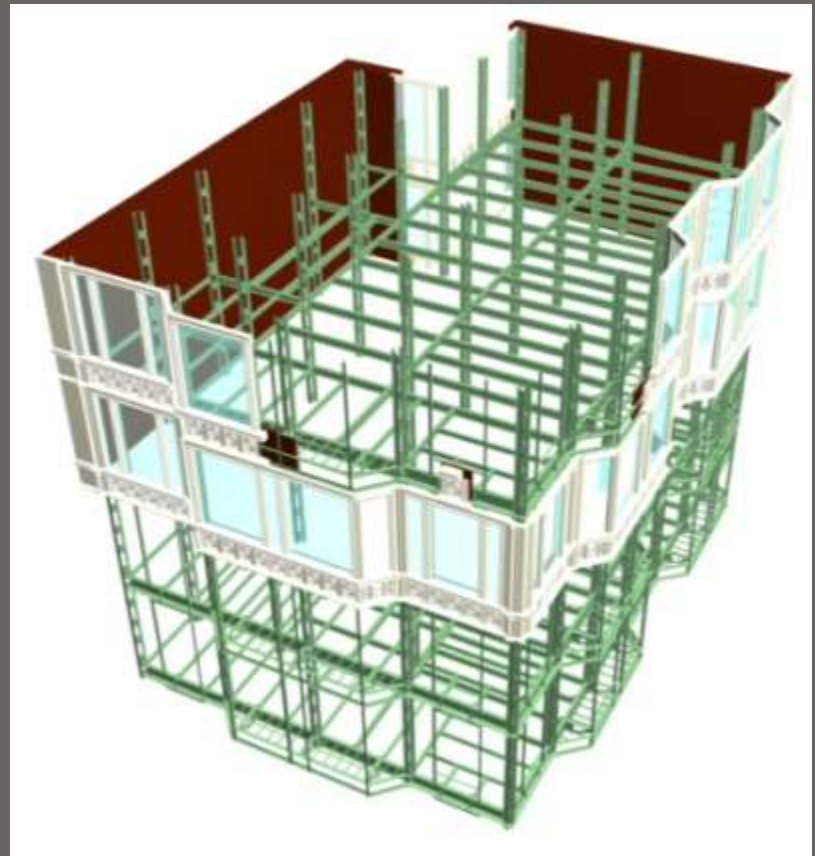
The Wainwright Building
(1890-91) in St Louis
Missouri by Adler&Sullivan



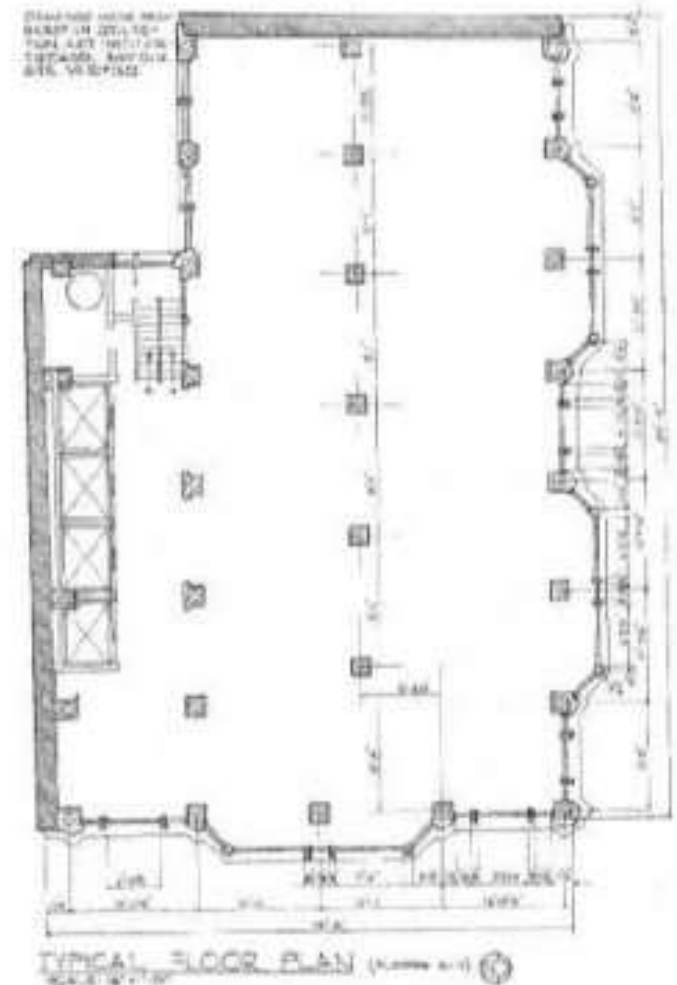
Reliance Building Chicago
1890-94 by Burnham and Root
(Charles Atwood) facilitated the early use of a glass curtain wall. This was made possible by the use of steel column and beam structures. Interior walls were no longer the main load-bearing elements so that plans could be configured with more freedom.

Despite their steel frames, stone, brick and moulded terracotta were commonly used on the facades of Chicago School buildings and were combined with increasing and unprecedented use of glass

Reliance Building, Burnham and Root 1890-94



Reliance Building, Burnham and Root 1890-94



Reliance Building, Burnham and Root 1890-94



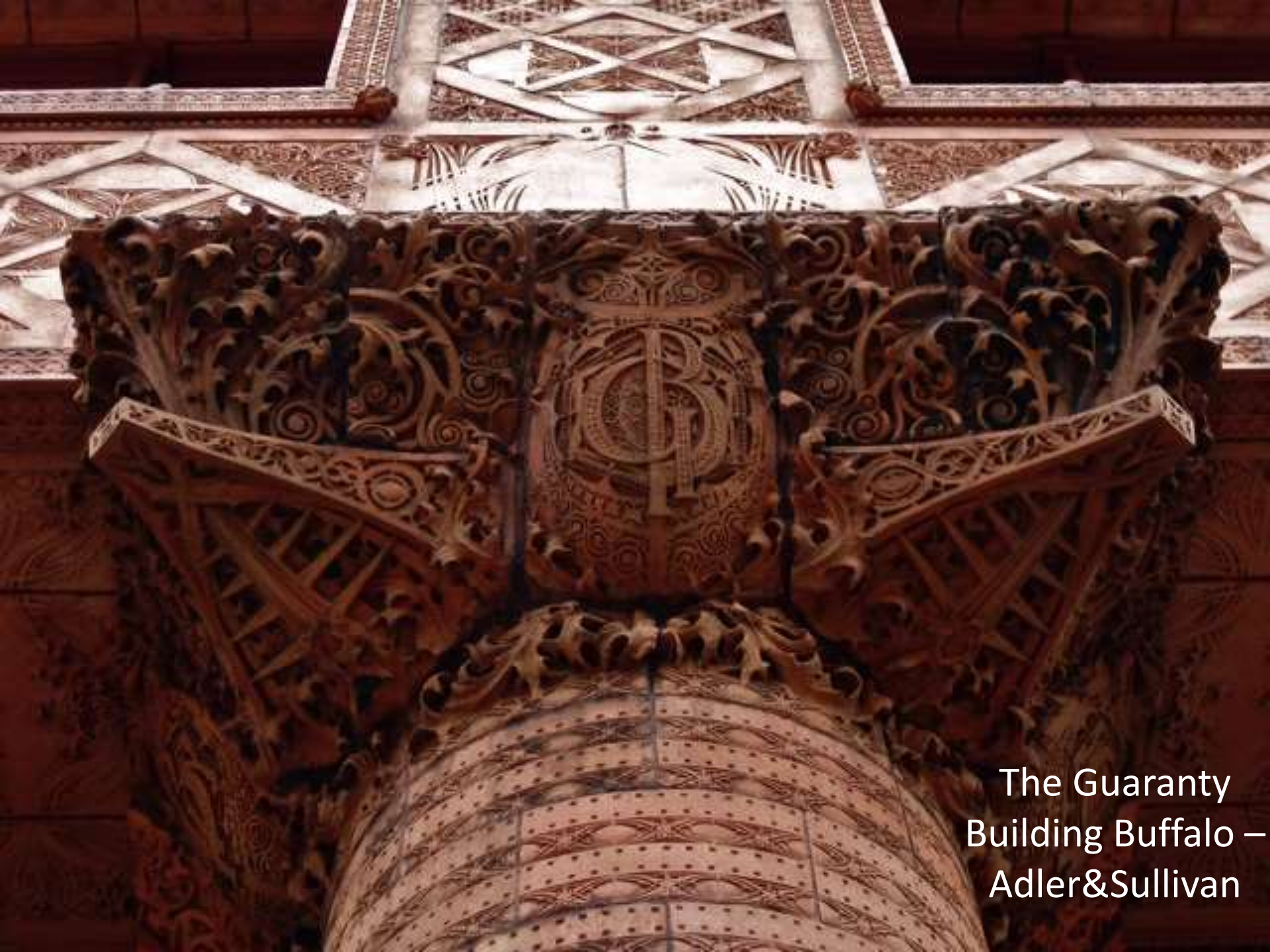
Guaranty Building, Buffalo, New York 1894-5 by Adler and Sullivan is an early example of a multi-use building containing different functions. Sullivan compartmentalized the grid structure so that the retail space occupied the building's base level and offices stacked above introducing a central core for circulation and a lift (elevator) turn around at the top.

The Guaranty Building
Buffalo – Adler&Sullivan
1896

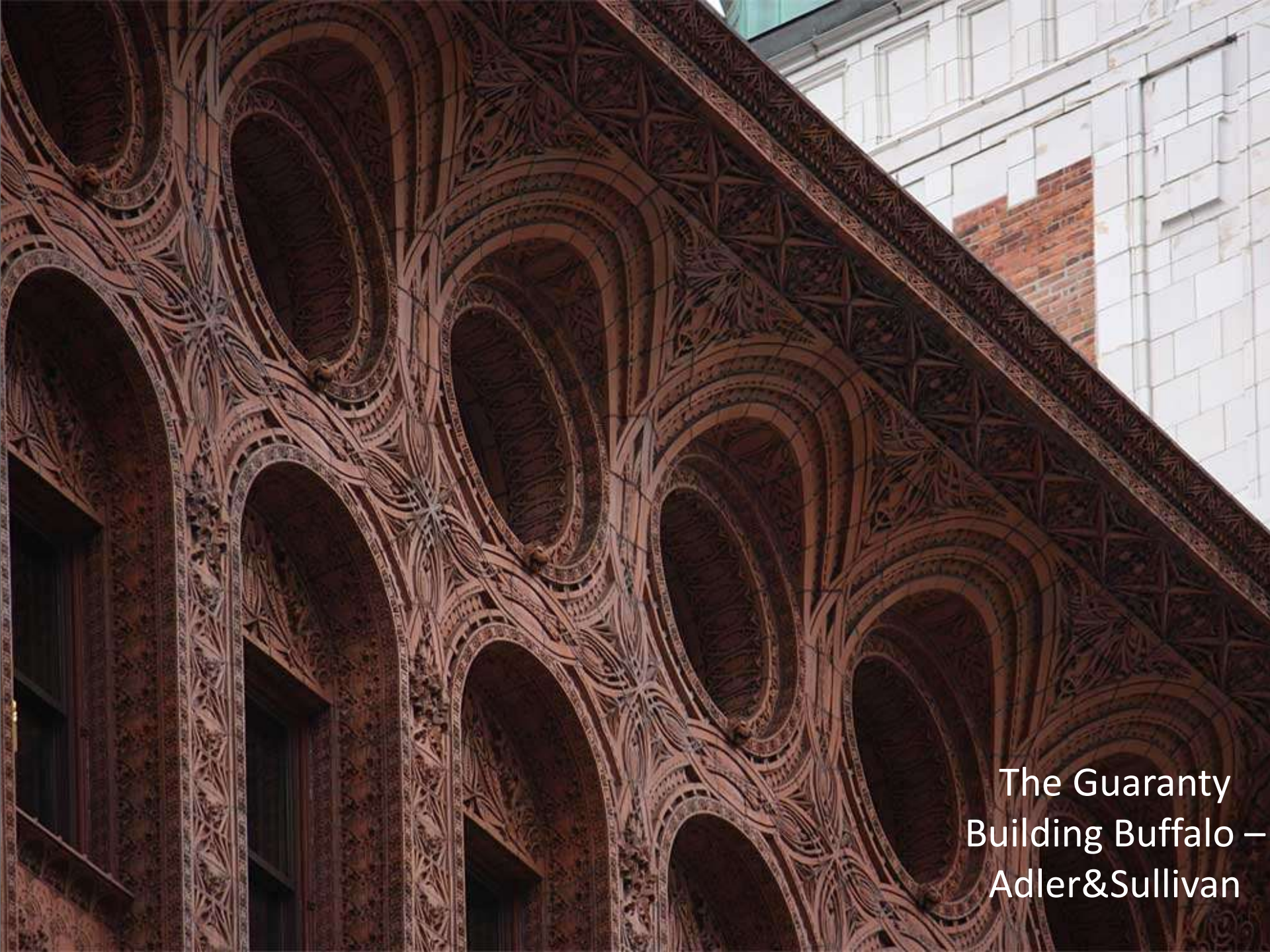


The trabeated steel frame reflected in the exterior producing rectilinear building and façade. The grid structure of horizontal floor lines and vertical supports with windows set between becoming a common feature of these buildings

The Guaranty Building
Buffalo – Adler&Sullivan
1896



The Guaranty
Building Buffalo –
Adler&Sullivan



The Guaranty
Building Buffalo –
Adler&Sullivan



**Home Insurance Building,
Chicago 1884** William Le
Baron Jenney

The advent of the elevator (lift) from a relatively small ground floor area could realise a large amount of useable space on upper floors, providing an economic advantage where land prices were high such as in the Chicago Loop the location of many early skyscrapers.

The Home Insurance
Building Chicago –
Adler&Sullivan



Auditorium Building, Chicago by Adler & Sullivan 1886-9

- Auditorium Building(1886–90, opened in stages — 4 years to design and build) in Chicago largest permanent concert hall to that date
- 10 storey mixed-use building that included a 4,000-seat theatre
- 400 room hotel
- 136 offices and shops with a 17-storey tower with commercial storefronts at the ground level of the building, fronting Congress and Wabash Avenues.
- 63,350 sq ft

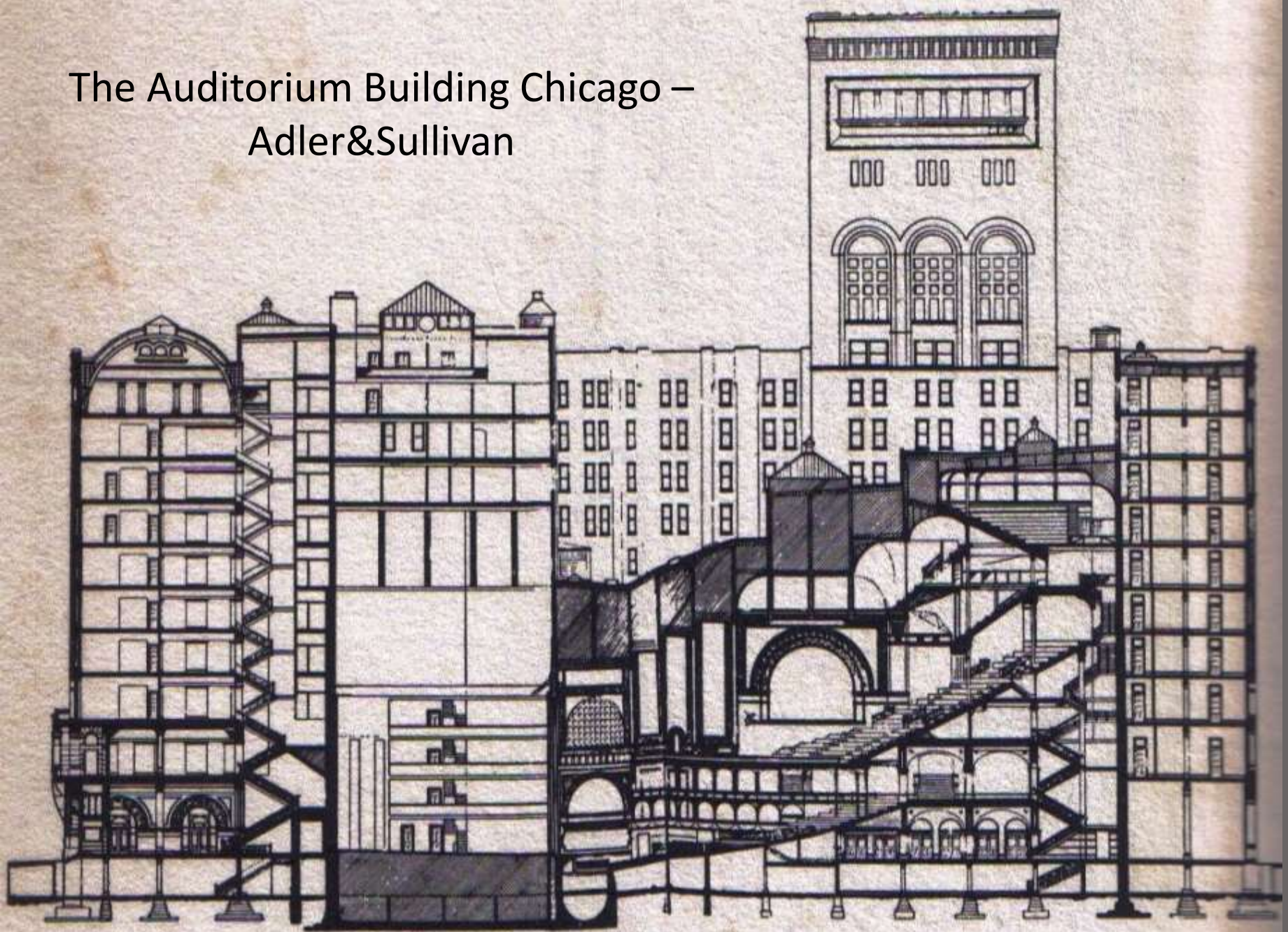


The Auditorium Building Chicago – Adler&Sullivan

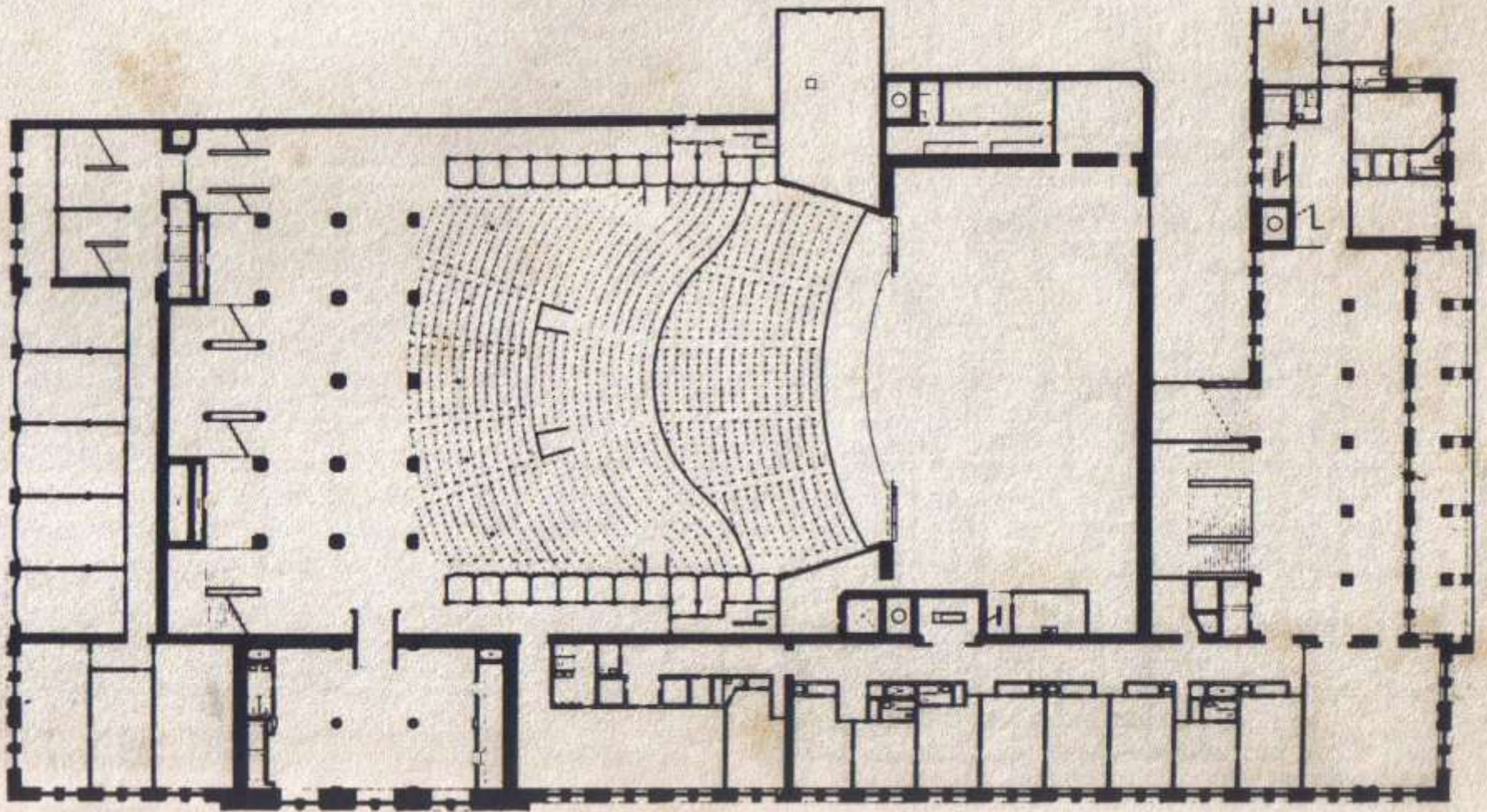


The Auditorium Building Chicago – Adler&Sullivan

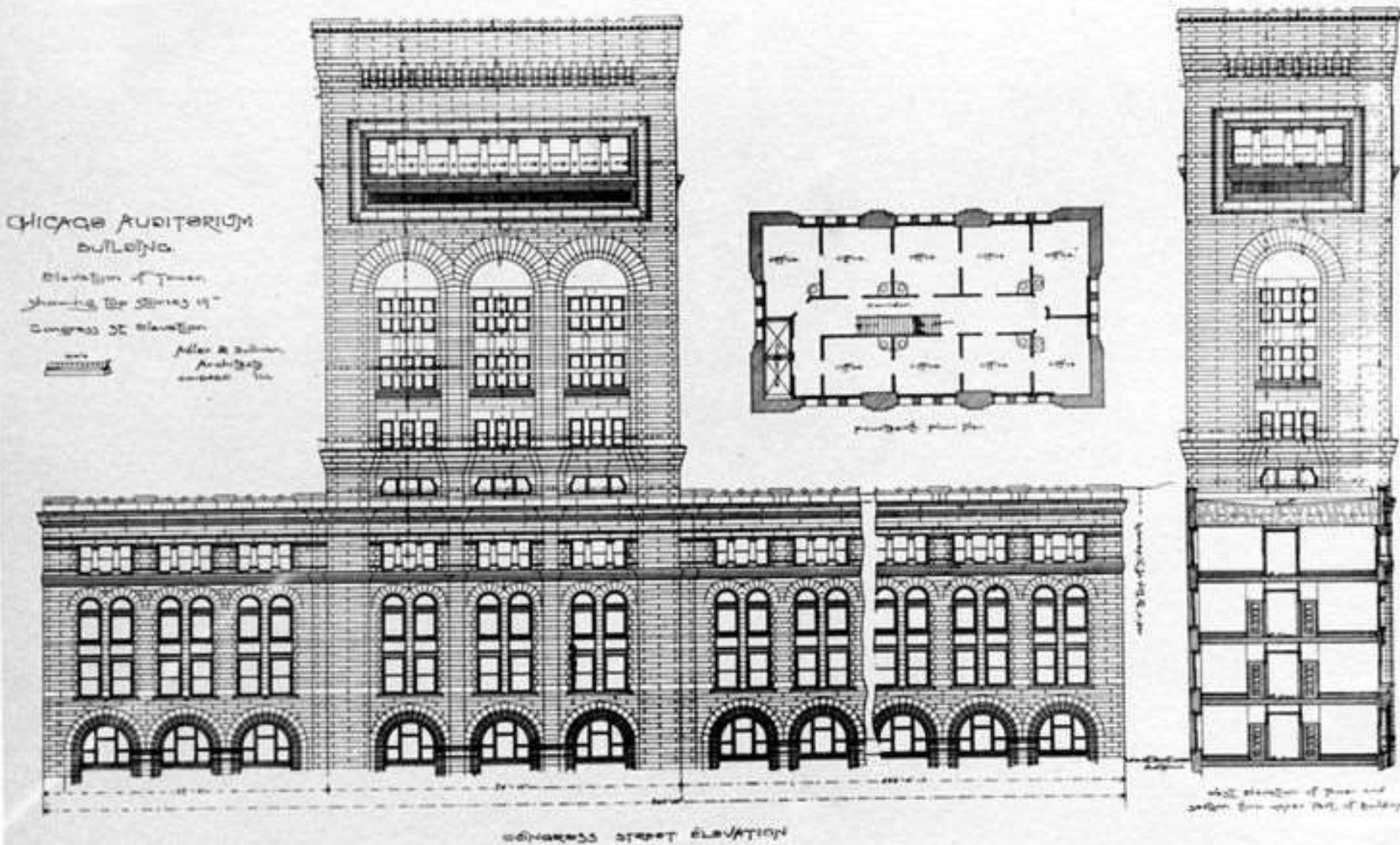
The Auditorium Building Chicago – Adler&Sullivan



The Auditorium Building Chicago – Adler&Sullivan



The Auditorium Building Chicago – Adler&Sullivan



The Auditorium Building Chicago – Adler&Sullivan

In 1888 Frank Lloyd Wright, then in his twenties went to work for Louis Sullivan and was deeply influenced by Louis Sullivan's attempts to forge an architecture that would embody America's frontier spirit.

Dankmar Adler



Frank Lloyd Wright aged 20

Louis Sullivan worked for William LeBaron Jenney, the architect often credited with erecting the first steel frame building. After less than a year with Jenney, Sullivan moved to Paris and studied at the École des Beaux-Arts in Paris for a year.



Louis Sullivan (Lieber meister)

The Columbian Exposition of 1893, Chicago

The World's Columbian Exposition (the official shortened name for the World's Fair: Columbian Exposition, also known as the Chicago World's Fair and Chicago Columbian Exposition) was a world's fair held in Chicago in 1893 to celebrate the 400th anniversary of Christopher Columbus's arrival in the New World in 1492.



OFFICIAL BIRDSEYE VIEW—WORLD'S COLUMBIAN EXPOSITION, CHICAGO, 1893.

The 1893 World's Columbian Exposition was the prototypical World's Fair. It brought together wonders of engineering, the latest technologies and consumer products, and music and art from far-off lands.



Golden door of the Transportation Building by Louis Sullivan



The Columbian Exposition of 1893, Chicago

- The layout of the Chicago Columbian Exposition was, in large part, designed by John Wellborn Root, Daniel Burnham, Frederick Law Olmsted and Charles B. Atwood.
- It was the prototype of what Burnham and his colleagues thought a city should be.
- It was designed to follow Beaux Arts principles of design, namely French neoclassical architecture principles based on symmetry, balance, and splendour.
- The colour of the material generally used to cover the buildings facades gave the fairgrounds its nickname, the White City. Many prominent architects designed its 14 "great buildings".

Ho-o-den, or the Hall of the Phoenix, and was built by a group of Japanese craftsmen





Ho-o-den



Ho-o-den



Ho-o-den Interior View

Frank Lloyd Wright

born 1867 died 1959

A personal viewpoint





Katsura Imperial Villa, Japan 17th Century



Shoken Tei, Katsura, Japan 17th Century



Taiyu-in Temple, Japan 1653

His architecture is not in the present regime any more than Walt Whitman's writings were in the current of the Gilded Age: hence his value is not that he has dominated the scene and made it over in his image, but that he has kept the way open for a type of architecture which can come into existence only in a much more humanized and socially adept generation than our own.

Lewis Mumford, 1929

Friedrich Froebel

First text book in English appeared in 1874 – Wright was however 9 years old before being introduced to these training aids



Froebel Games and exercises 'gifts' most associated with Wright's development as an architect.

Anatomy of form
Site and context
Use of natural light
and environment
Materials and detail

Early Period 1892-1914

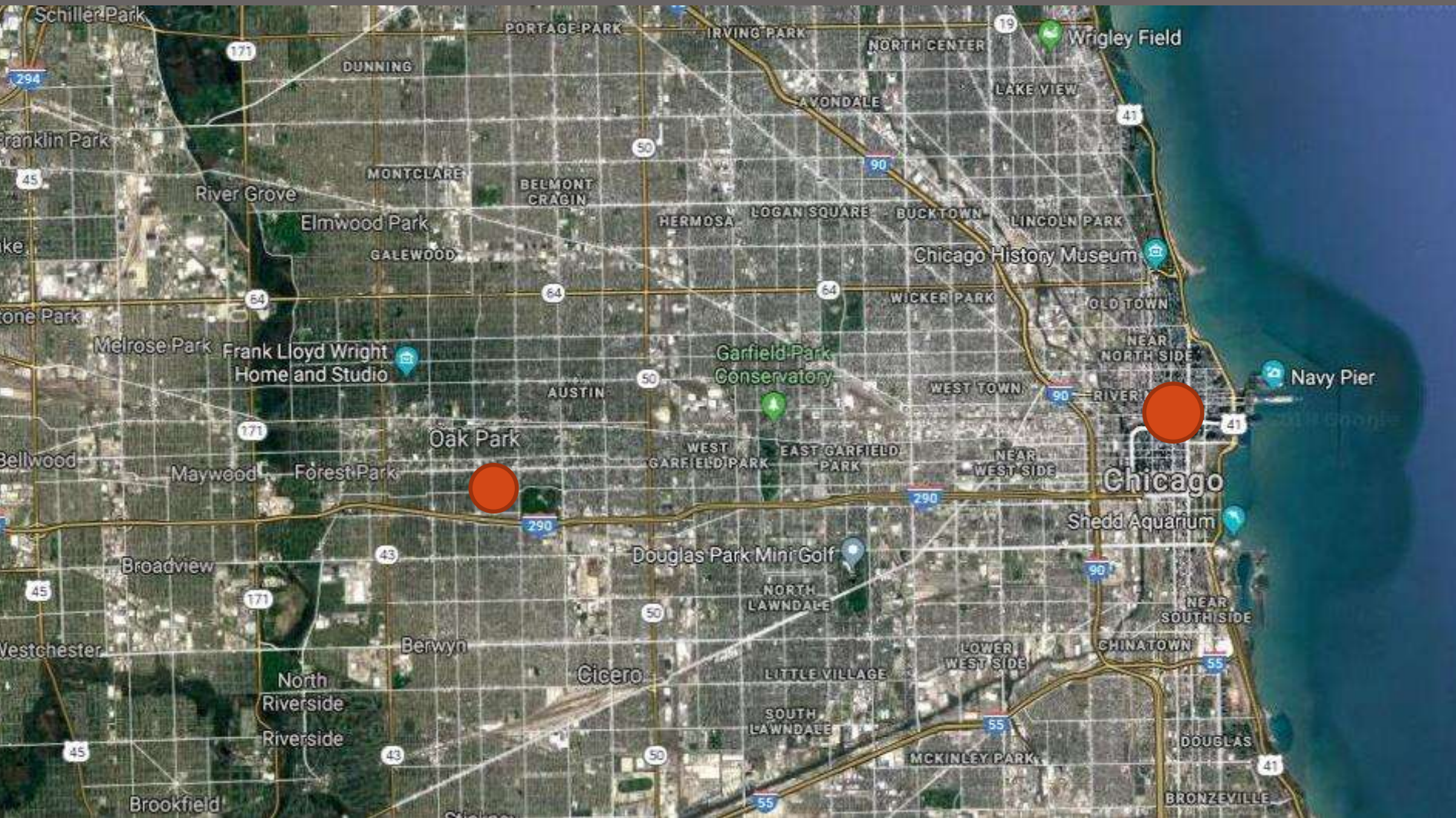
Falling Water, Pennsylvania 1936
for Edgar Kaufman



Prairie Houses

- When he left Adler & Sullivan's office to set up his own practice Wright received numerous commissions for houses in and around Chicago in which he refined his architectural philosophy culminating in the Prairie Houses built in the early years of the 20th century.
- In the Prairie Houses Wright aspired to meld Arts and Crafts values strongly influenced by traditional Japanese architecture with the creative possibilities of the machine age, to create modern spaces suitable for the distinctly modern class of people who commissioned them.
- The Prairie House plans typically radiate out from a central hearth with other rooms arranged loosely around this spiritual centre.
- Walls and windows were generally downplayed as the interior became a fluid ensemble of intersecting and overlapping spaces.

Chicago and Oak Park



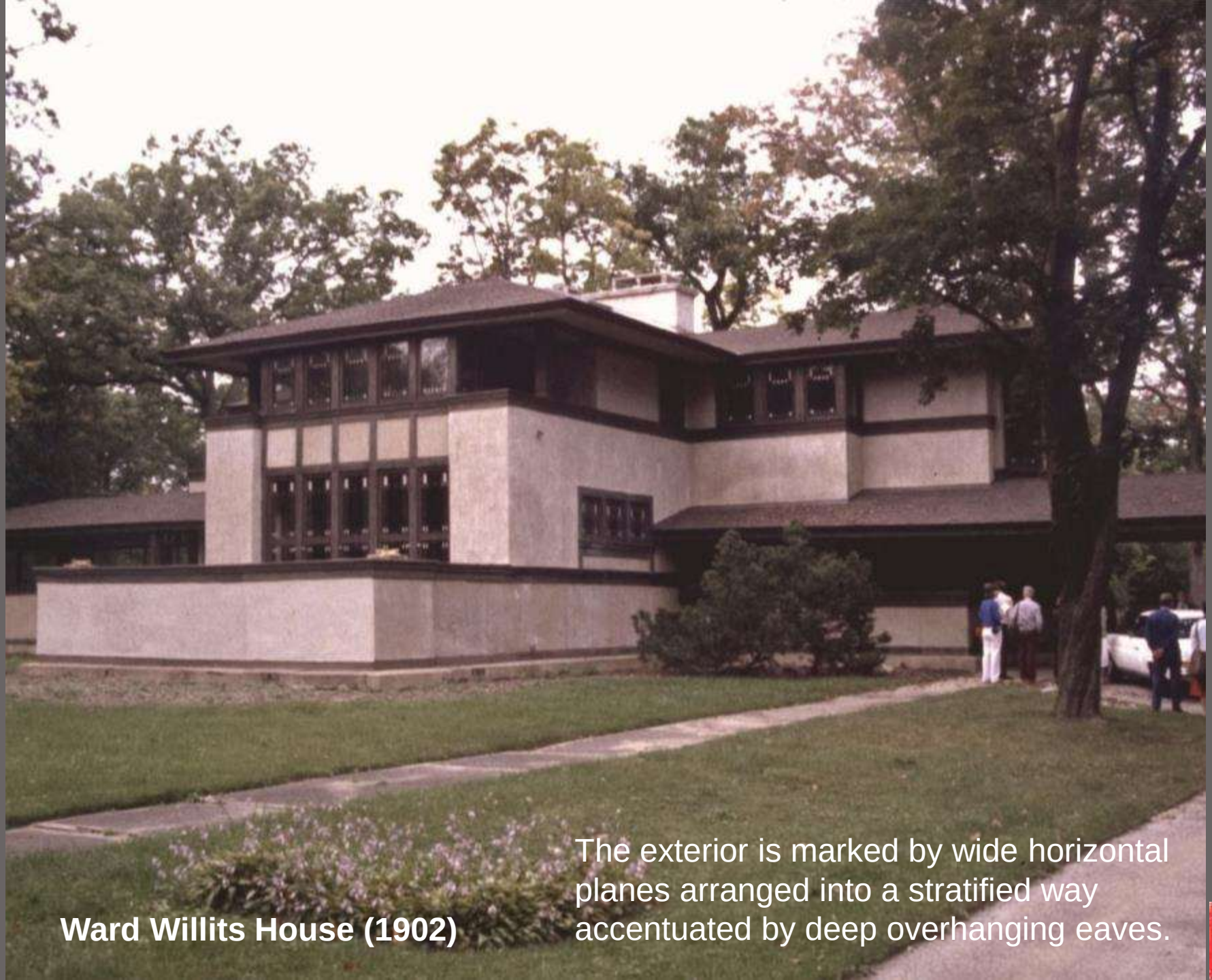
Oak Park 1889 had a population 4000 which doubled in the next 10 years

Chicago and Oak Park



Frank Lloyd Wright Home and Studio last lived in 1909

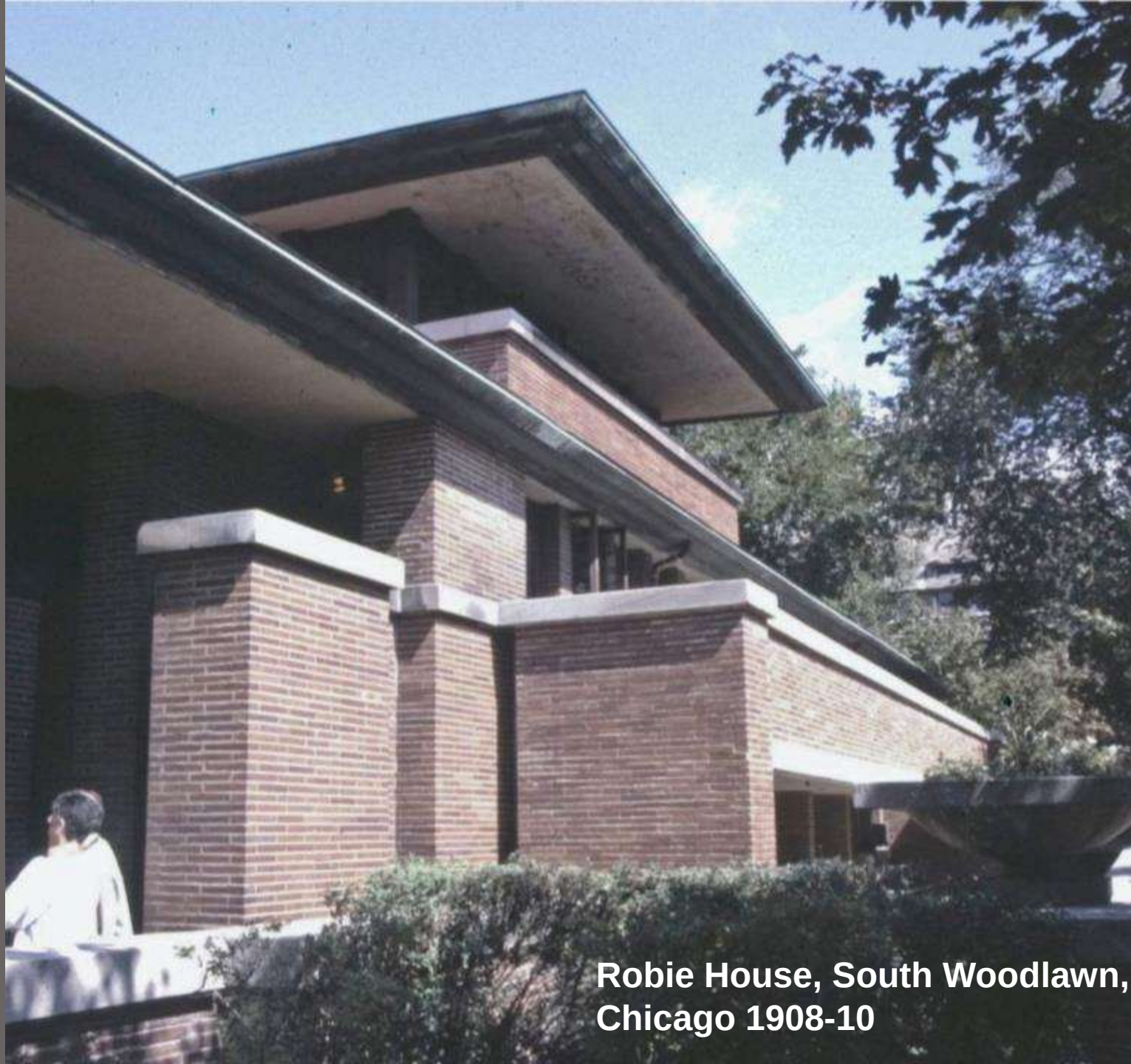




Ward Willits House (1902)

The exterior is marked by wide horizontal planes arranged into a stratified way accentuated by deep overhanging eaves.

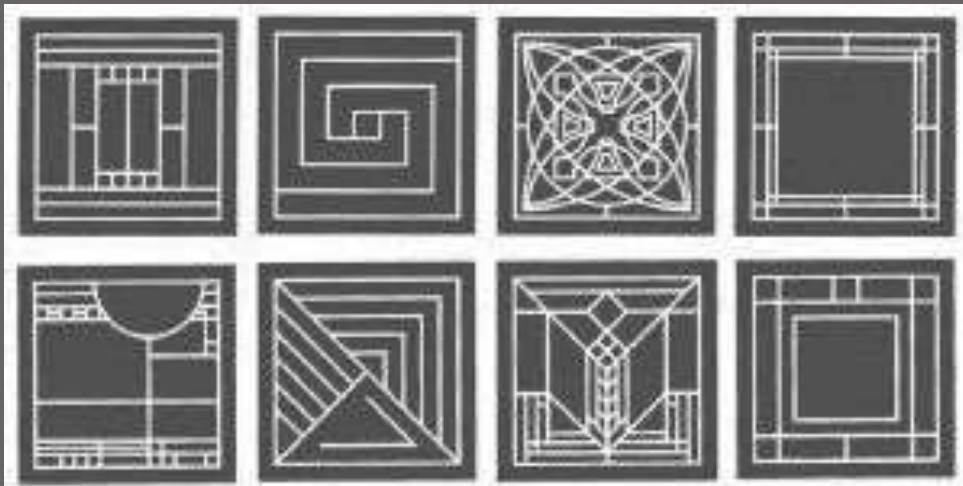




**Robie House, South Woodlawn,
Chicago 1908-10**



- **History** - Wright had a deep but subtle relationship with history linking concepts of Truth Beauty Simplicity and Nature with the idea of home.
- *The Anatomy of Wright's Aesthetic (1968)* by Richard C. MacCormac first published in the Architectural Review 143, February 1968



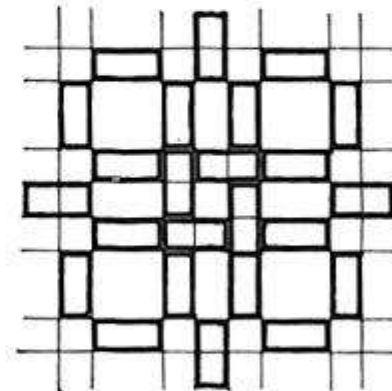
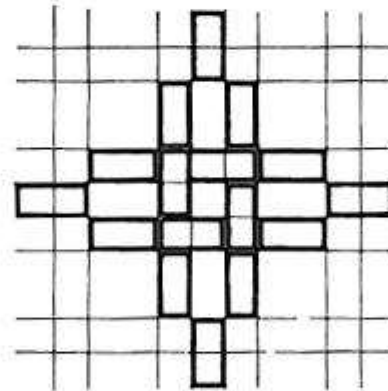
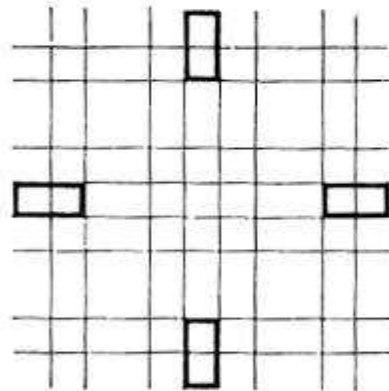
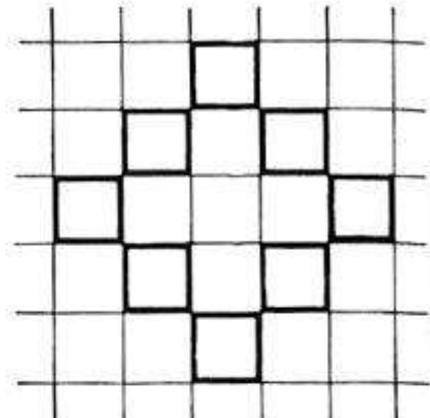
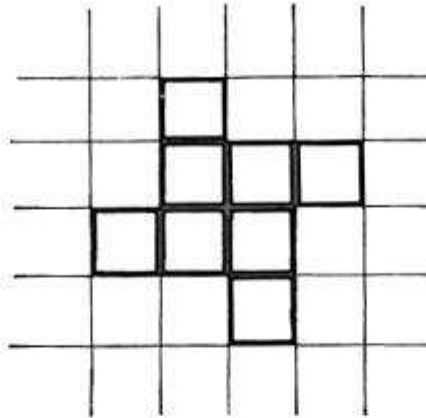
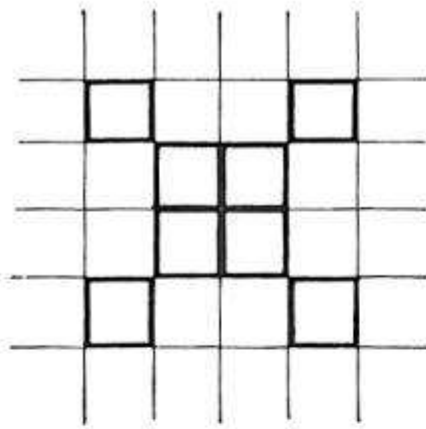


Diagram 1 (Top) In the Froebel patterns the parts have . . . surrendered their identity to the whole.

Diagram 2 (Bottom) A typical pattern consists of two interpenetrating cruciforms breaking through a square.

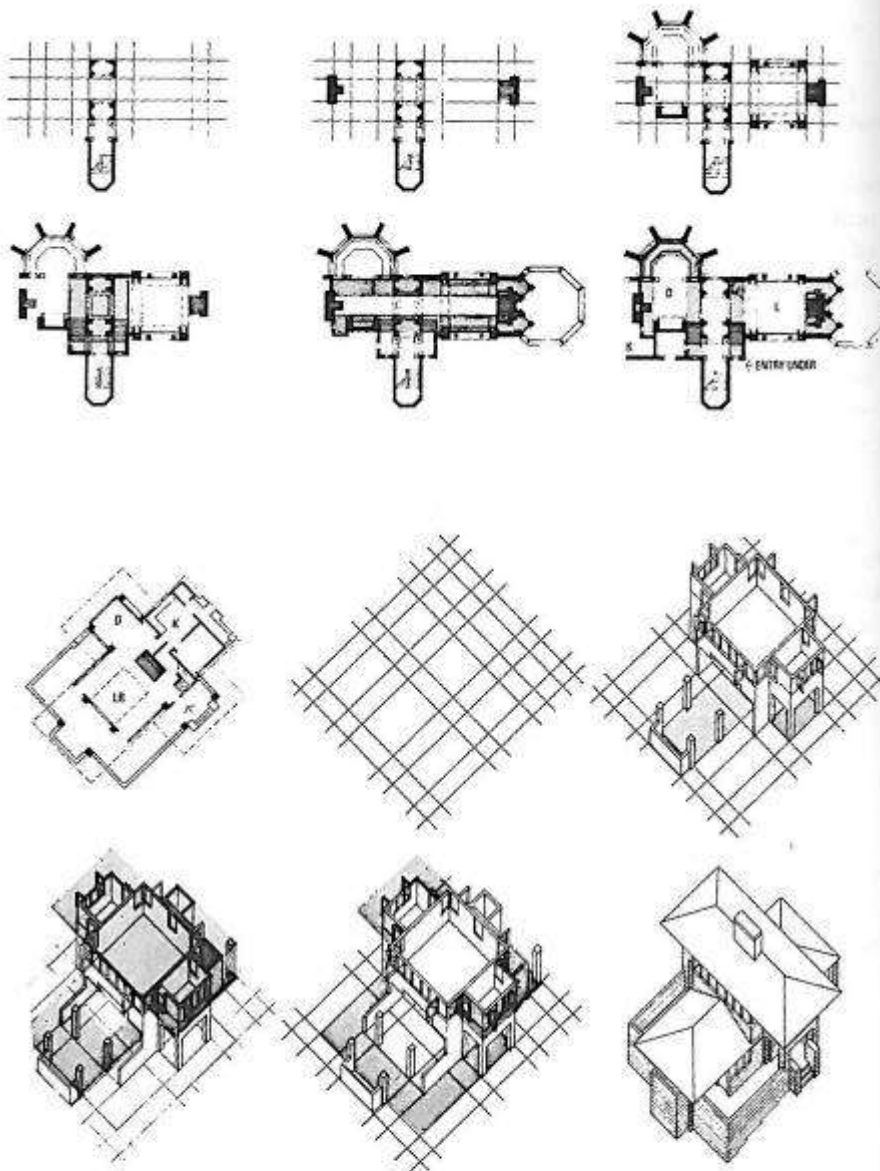


Diagram 5 (Top) The exterior of the Husser house . . . is no longer conceived as a separate entity wrapped around the plan.

Diagram 6 (Bottom) From the plan of the Charles S. Ross house of 1902 it is possible to abstract a perfect tartan.'

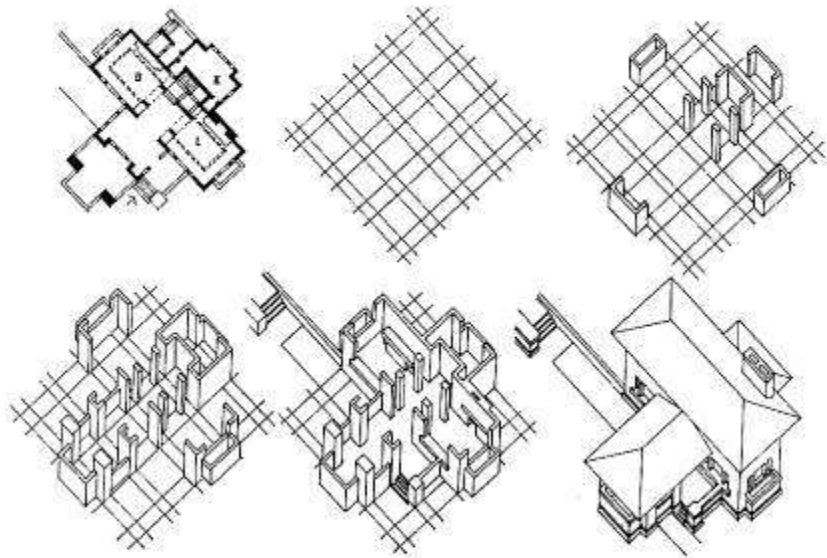


Diagram 7 The same grid underlies the little Barton house of the following year.

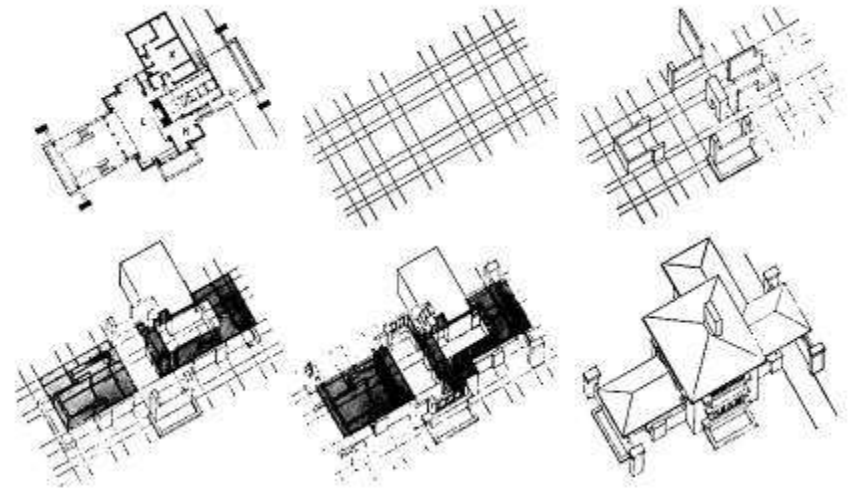


Diagram 8 The detached corner piers of the Robert Evans house of 1908 . . . suggest that the main volume of the building 'stands' within the grid rather than around it.



Winslow House 1892





Winslow House 1892





Isodor Heller House 1896





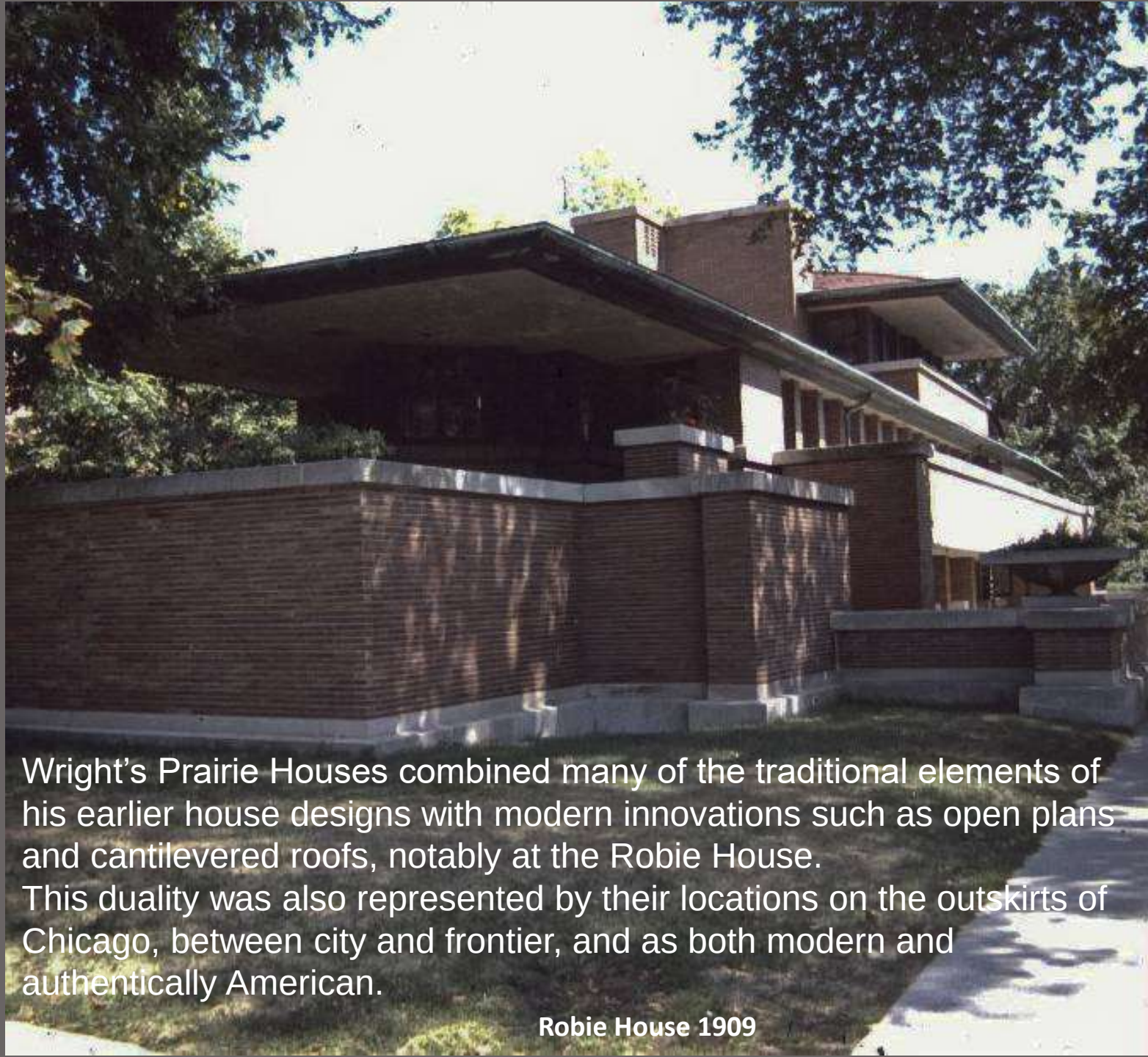
Willets House 1902





Willets House 1902





Wright's Prairie Houses combined many of the traditional elements of his earlier house designs with modern innovations such as open plans and cantilevered roofs, notably at the Robie House. This duality was also represented by their locations on the outskirts of Chicago, between city and frontier, and as both modern and authentically American.

Robie House 1909





Wright saw Architecture as continuous with its surroundings; even his suburban Prairie Houses appear to emerge from the ground.

Robie House 1909



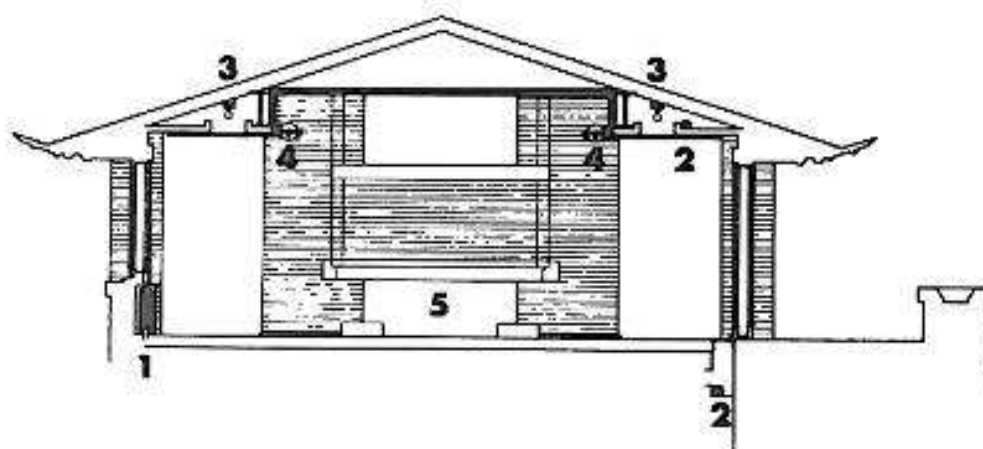


Diagram 2 F. C. Robie house, Chicago, Illinois. Section through living room. 1. Boxed radiators under windows 2. Hot water pipes 3. Concealed lights in roof-space 4. Glass lighting globes 5. Central fireplace

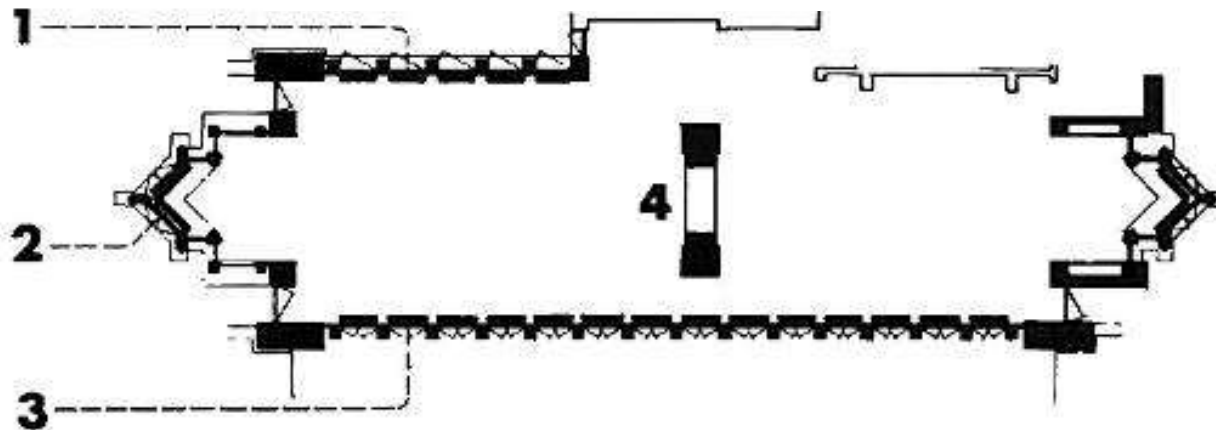


Diagram 1 F. C. Robie house, Chicago, Illinois. Plan showing heating elements and window openings. 1. Boxed radiators under rear windows 2. Hot pipes concealed behind cupboards 3. Heaters under brass grilles in floor 4. Central fireplace



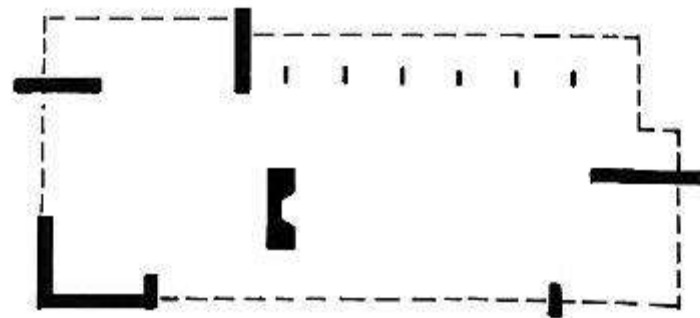
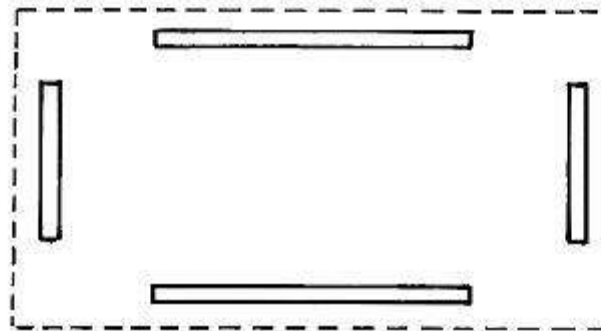
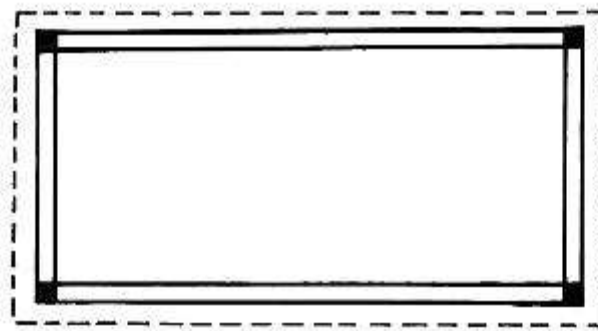
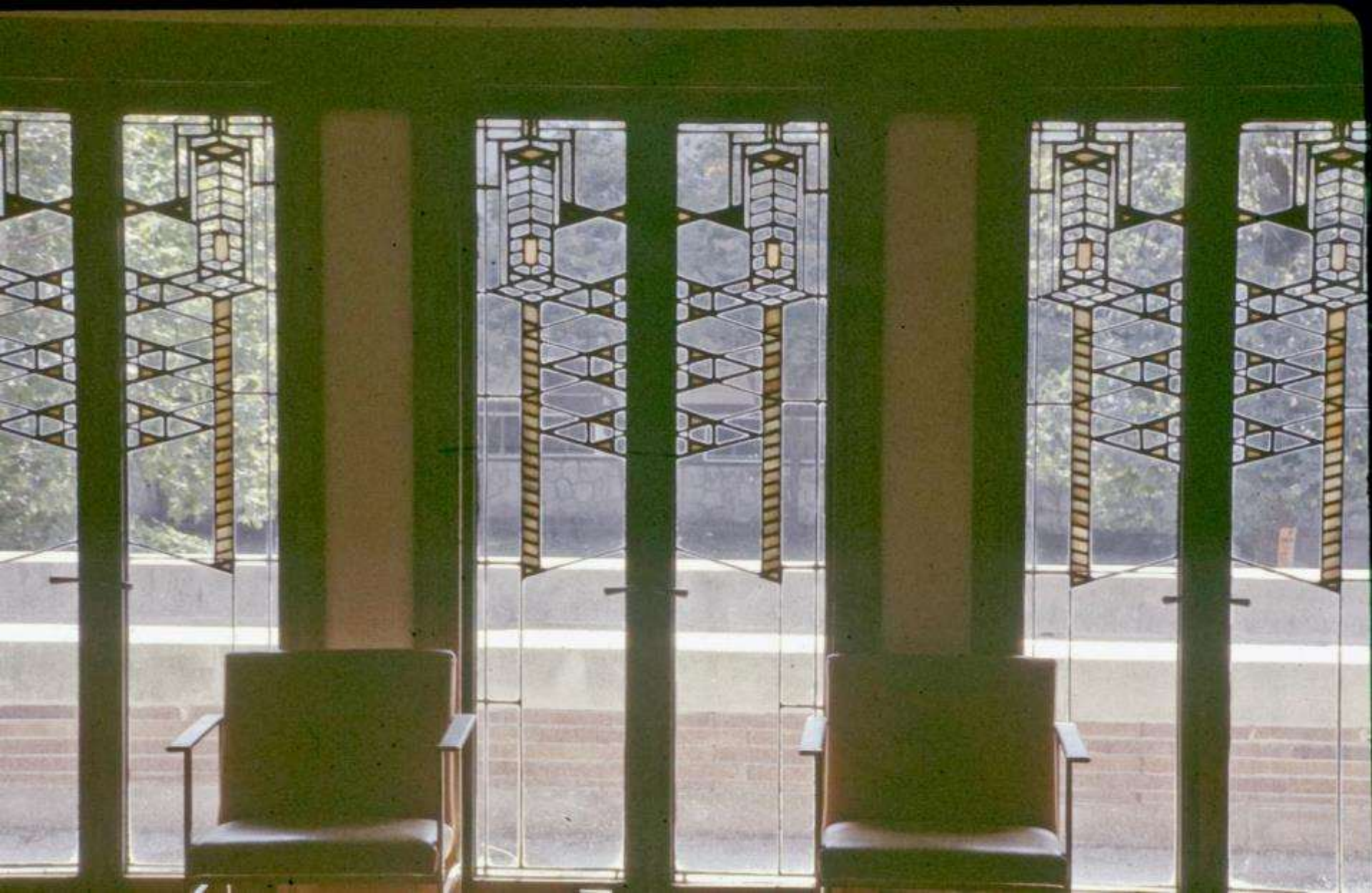


Diagram 5 A: typical room with walls joined at four corners. B: Wright's first step—eliminate the corners, thus turning the walls into freestanding, movable slabs. C: Wright's second step—define, by reassembling segments of these slabs, a new spatial context that integrates the former functions of the demolished rooms; this is a schematic plan of a Usonian house (author after Wright).



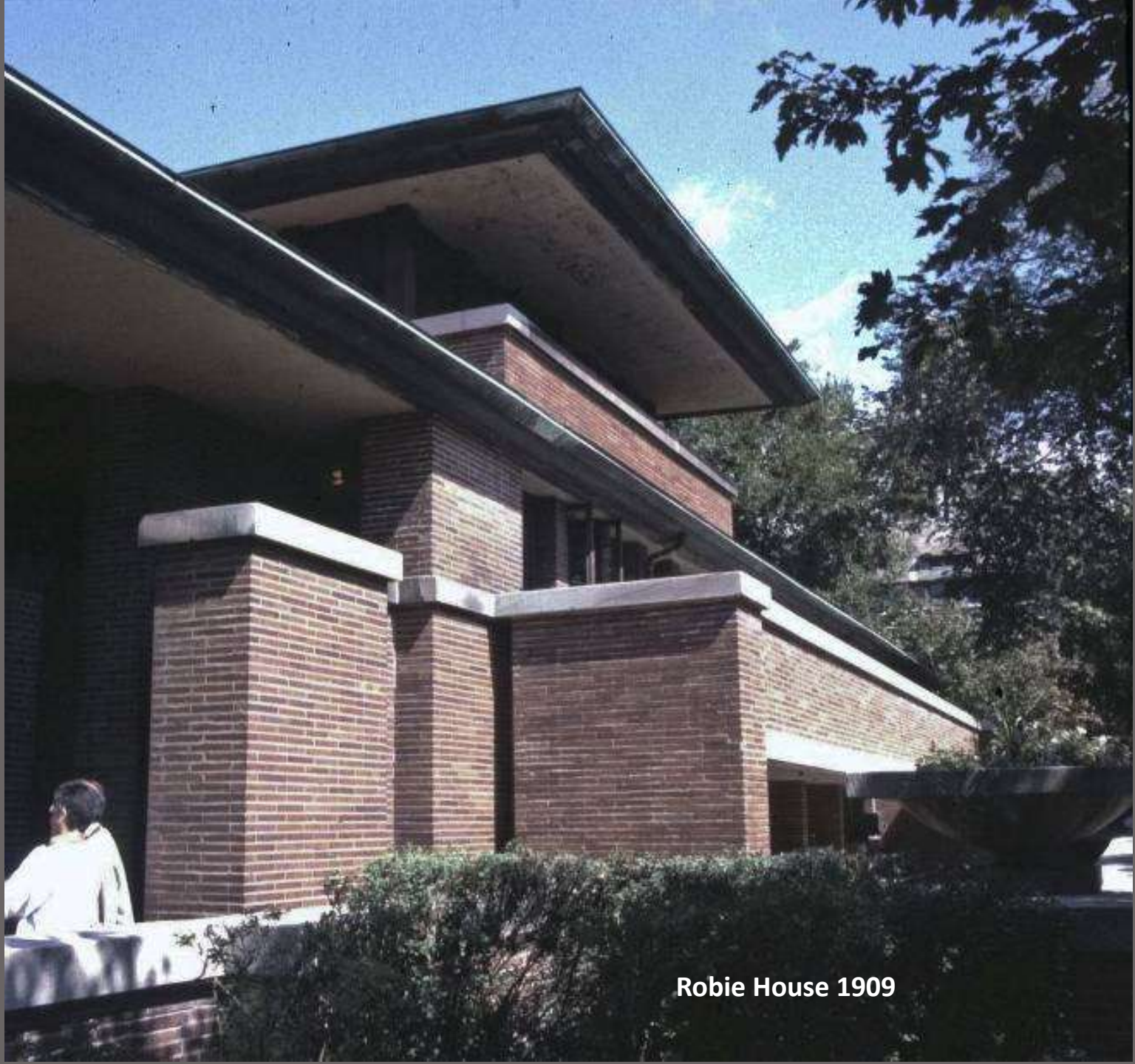
Robie House 1909





Robie House 1909





Robie House 1909



Later Period 1935 -1957

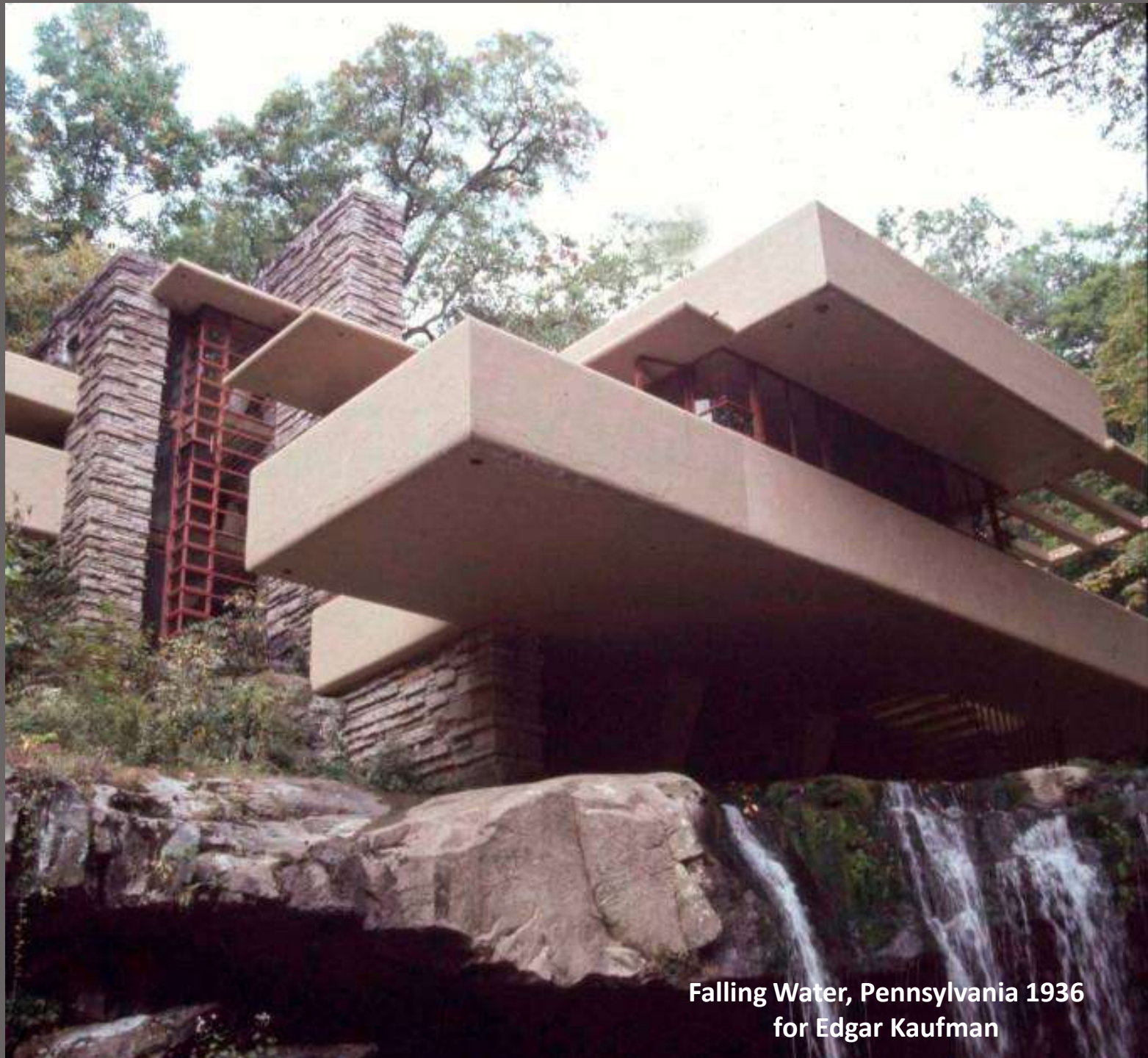
Falling Water, Pennsylvania 1936
for Edgar Kaufman





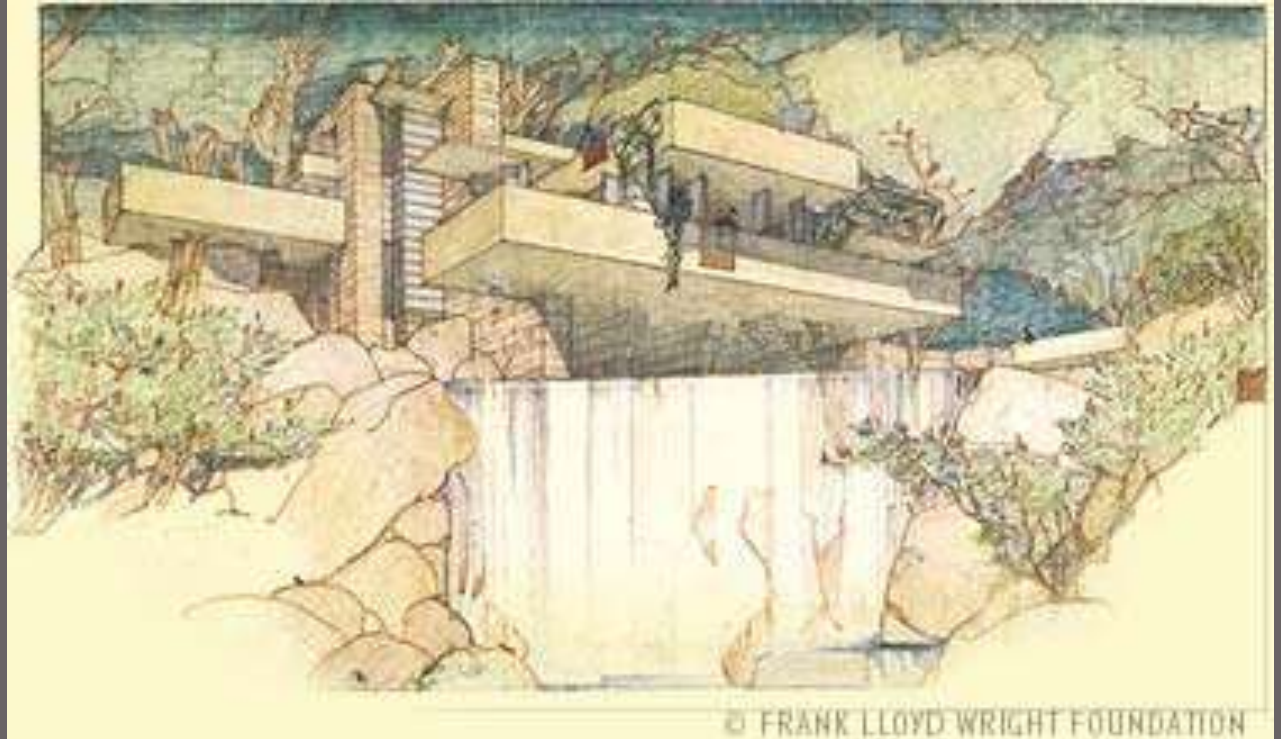
Falling Water, Pennsylvania 1936
for Edgar Kaufman





Falling Water, Pennsylvania 1936
for Edgar Kaufman

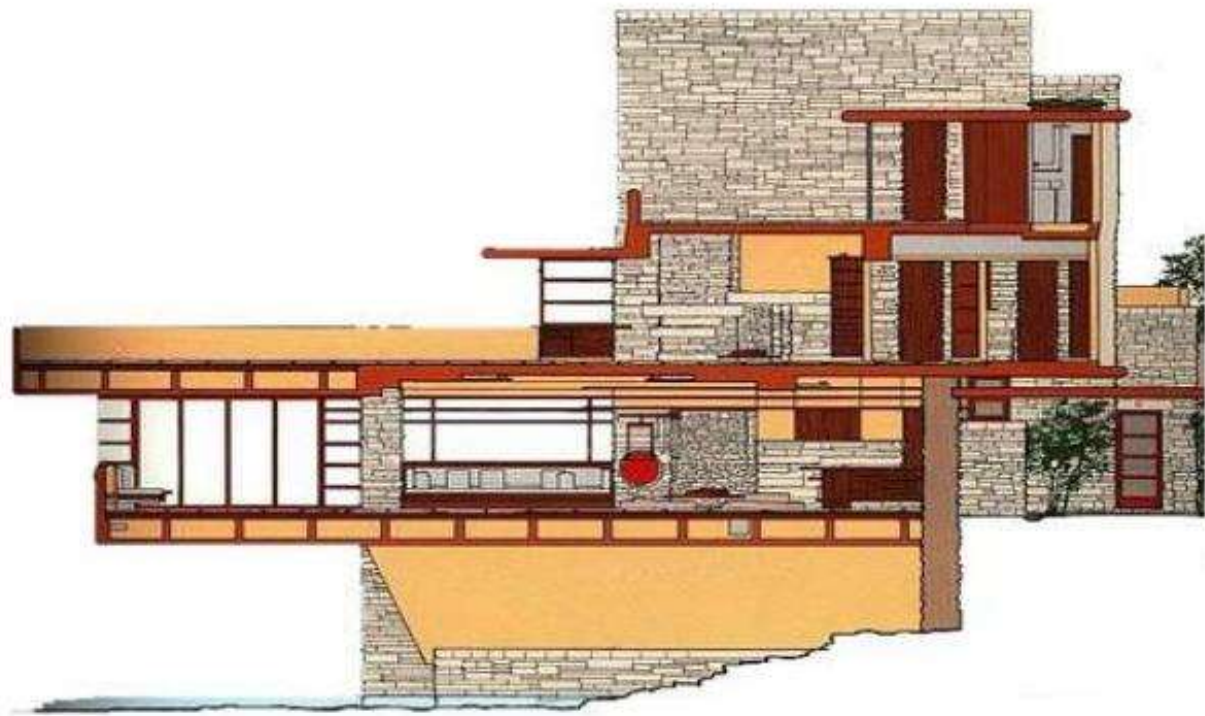




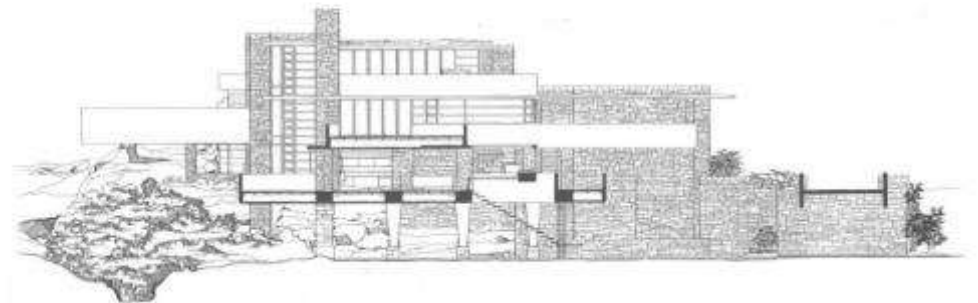
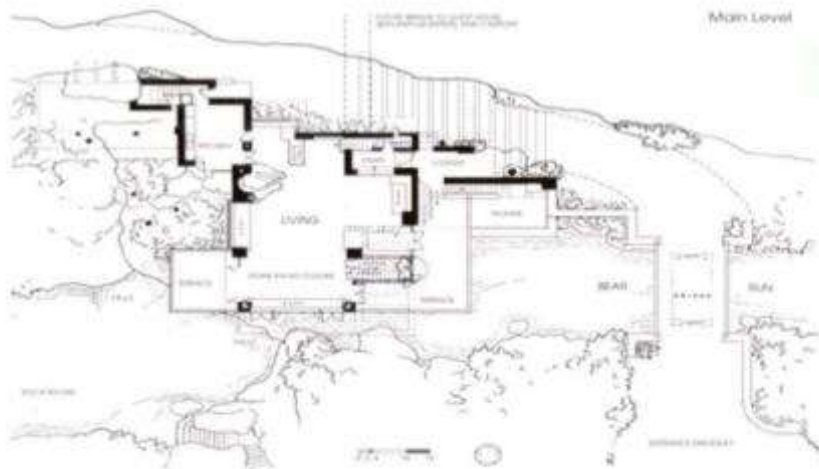
Wright saw Architecture as continuous with its surroundings. One of his best known works at Fallingwater he pushed this idea to its limits. Situated above a ravine the house features concrete cantilevers that appear to emerge from a central core of local stone, merging interior and exterior to create an almost complete integration of architecture and nature.

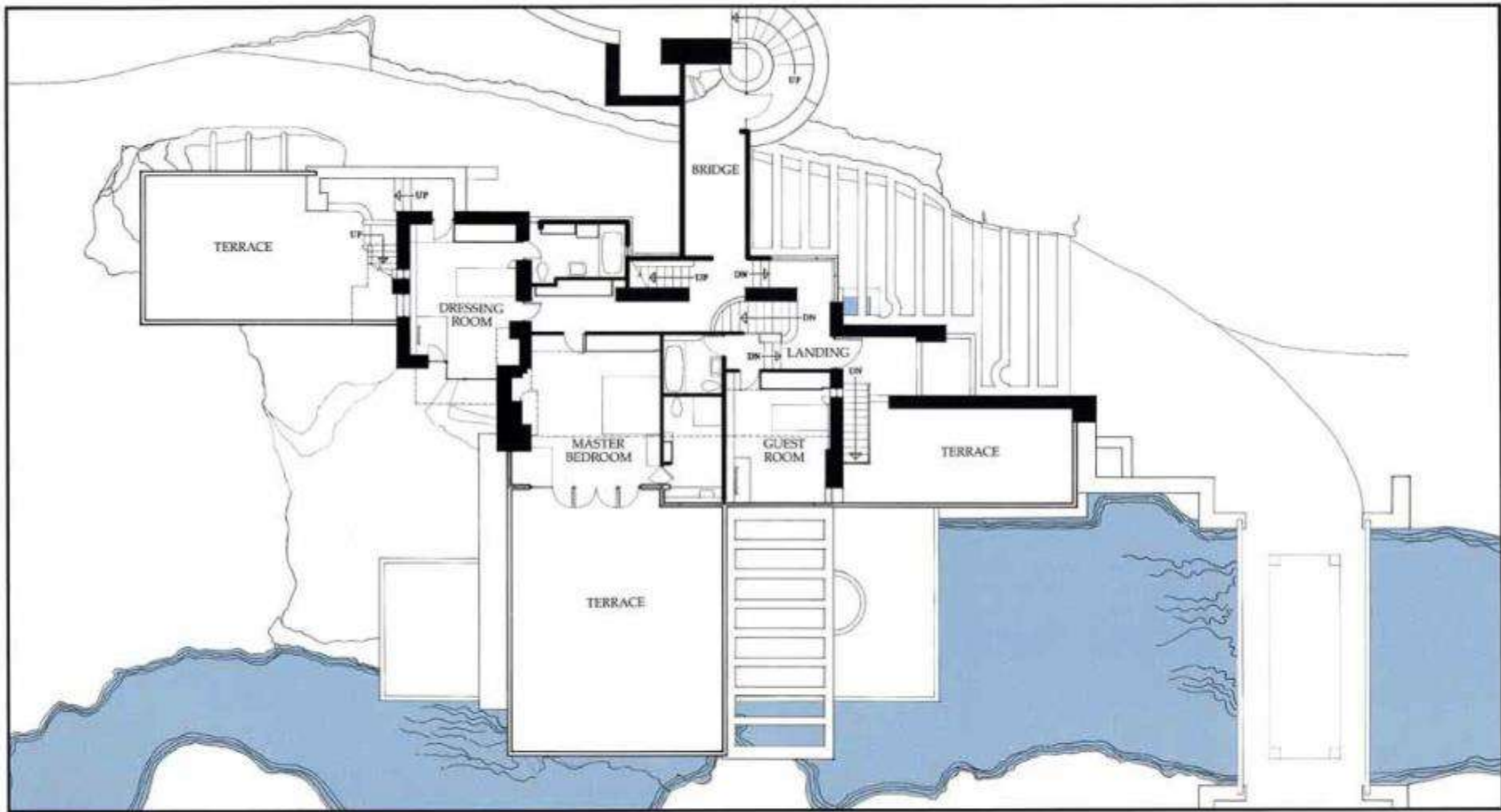
**Fallingwater, Bear Run, Pennsylvania
1934-37**





MAIN FLOOR PLAN:





FALLINGWATER

SECOND FLOOR PLAN





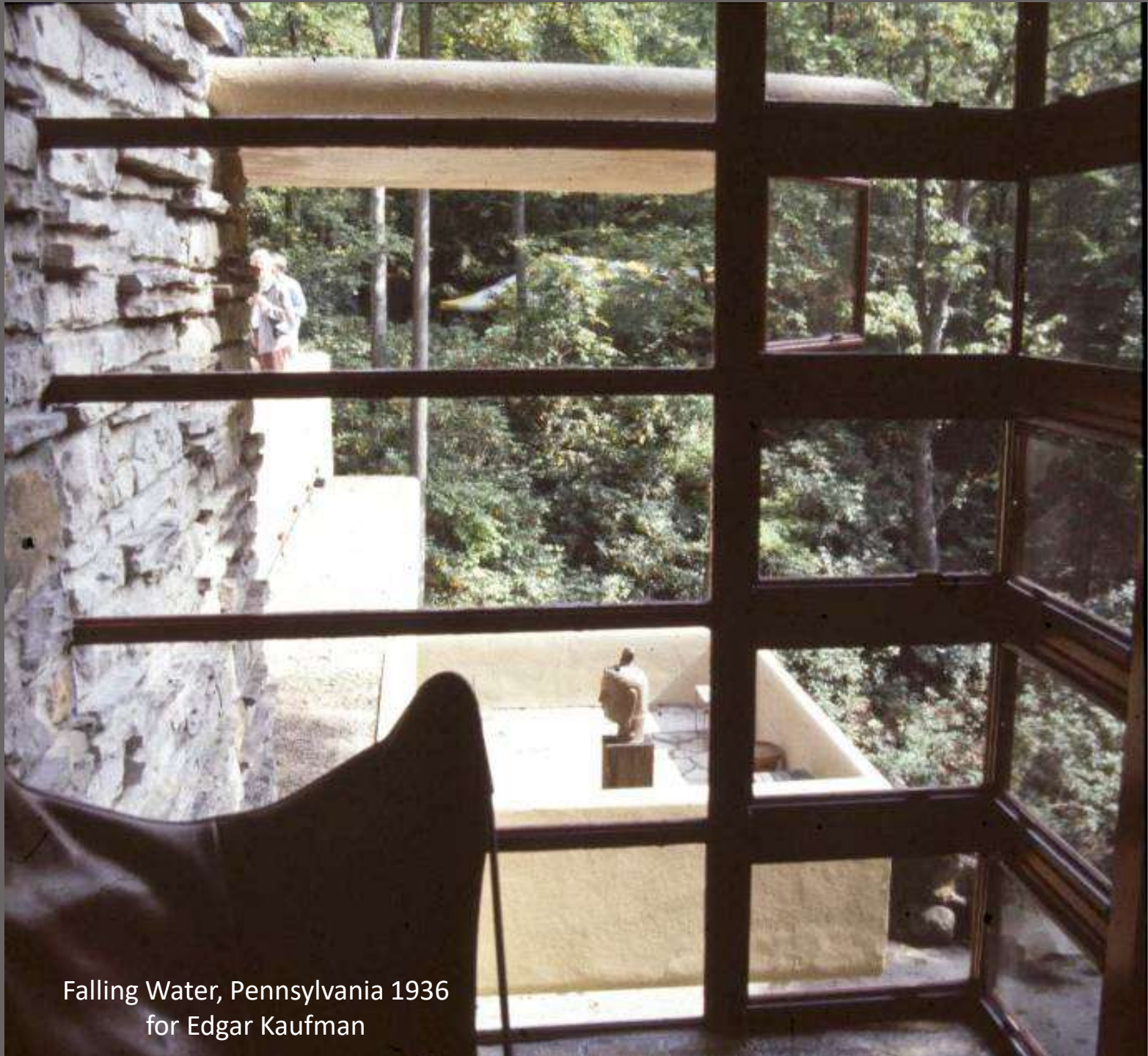
Falling Water, Pennsylvania 1936
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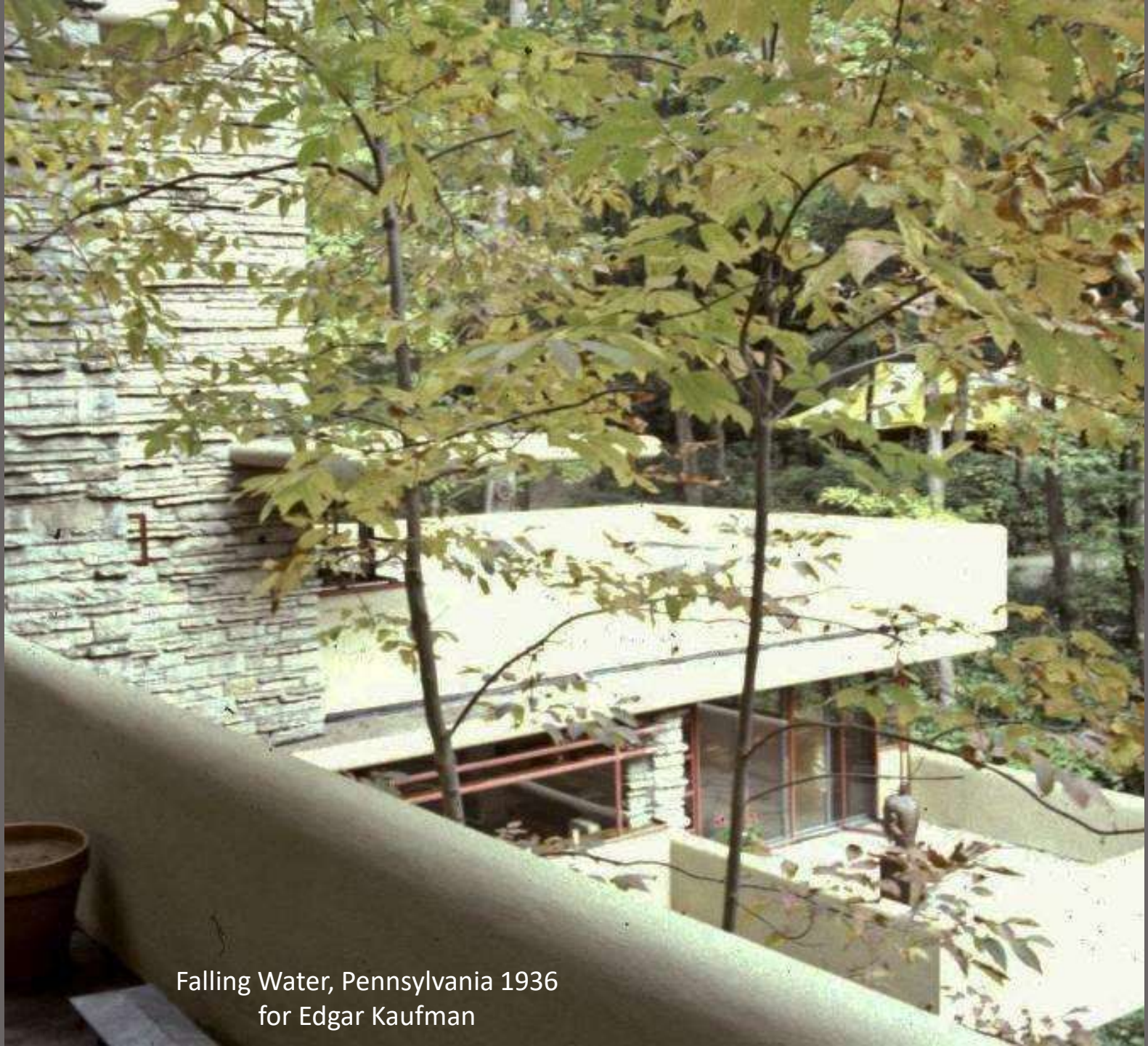
Falling Water, Pennsylvania 1936
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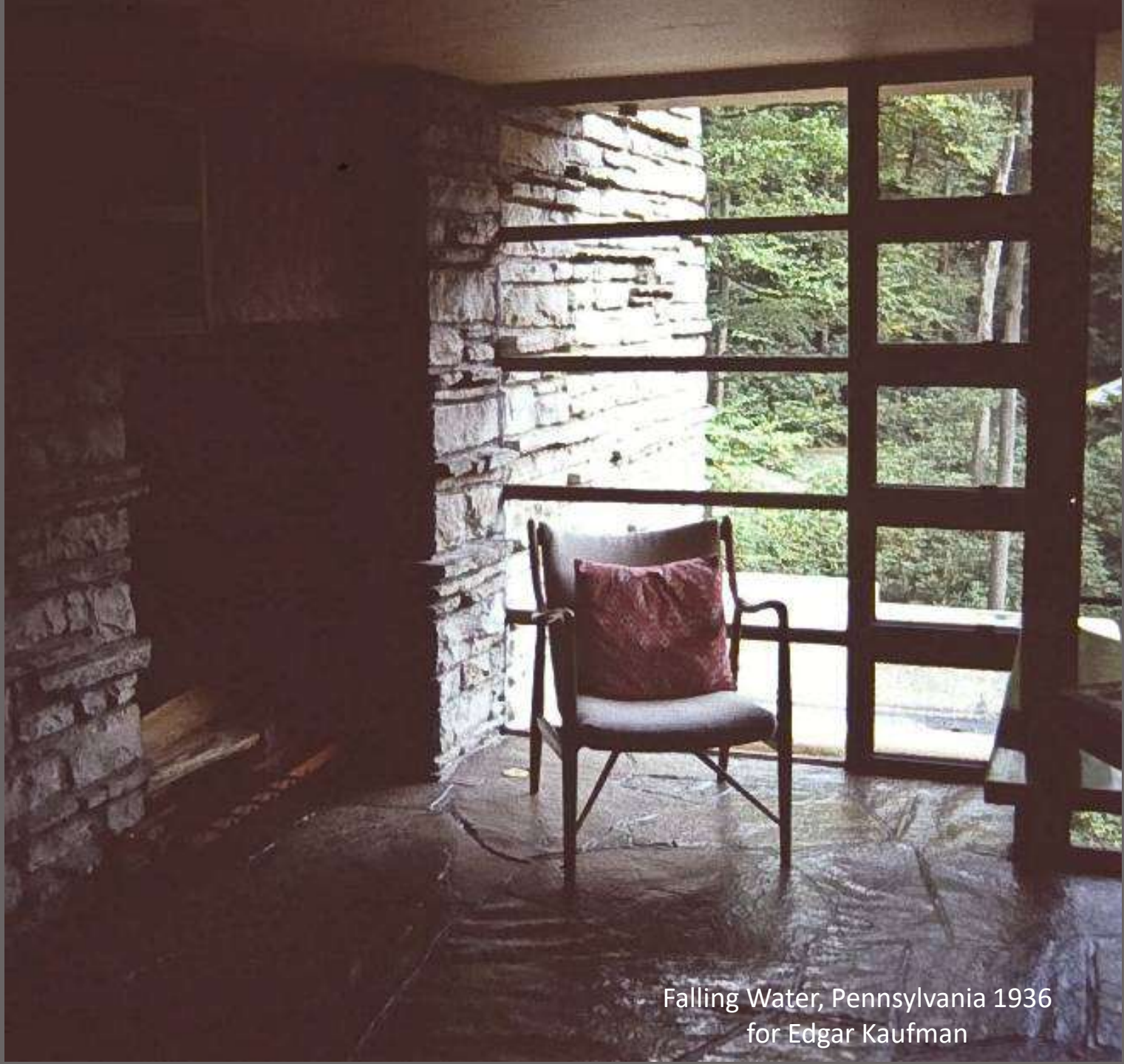
Falling Water, Pennsylvania 1936
for Edgar Kaufman





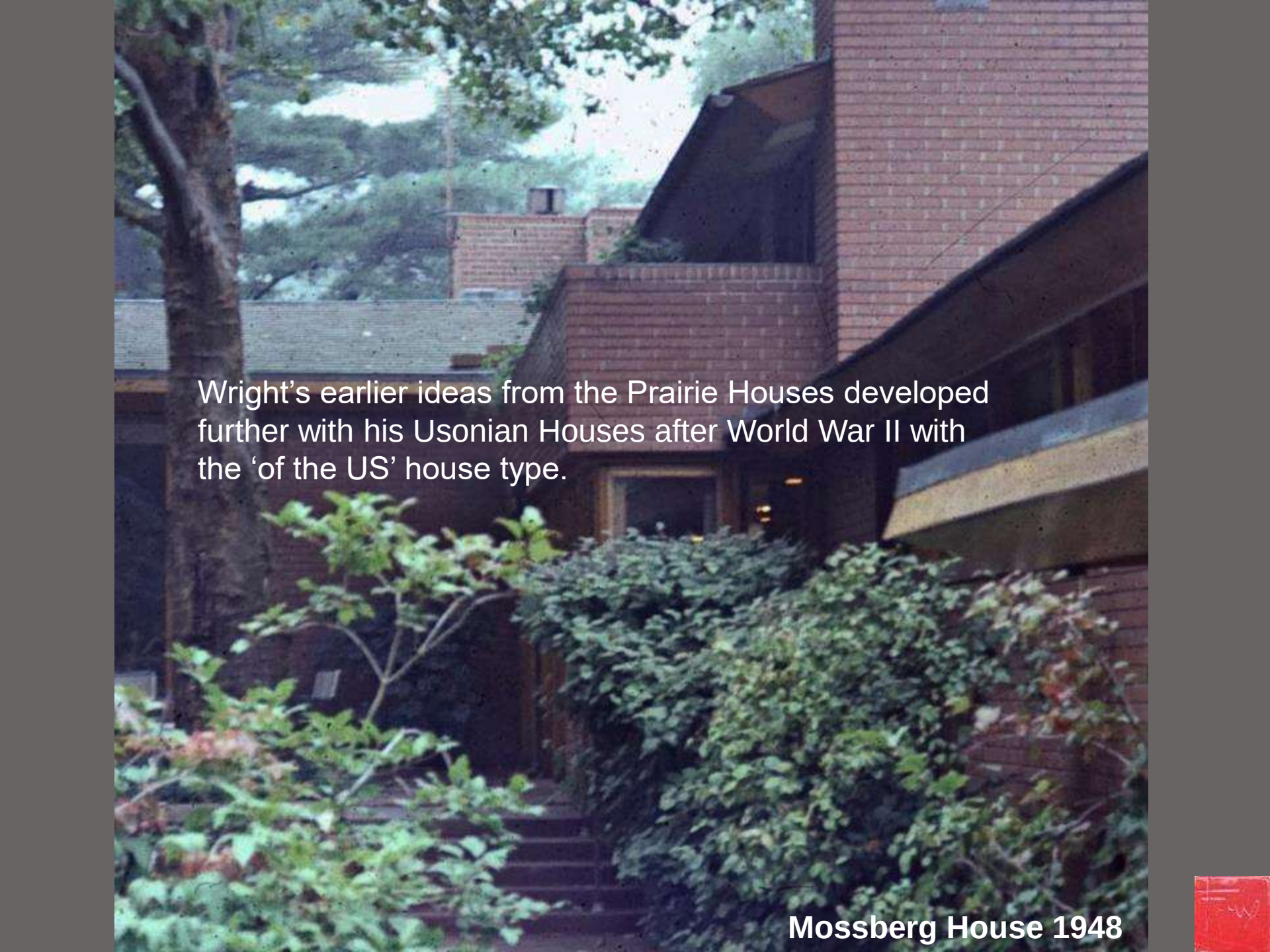
Falling Water, Pennsylvania 1936
for Edgar Kaufman





Falling Water, Pennsylvania 1936
for Edgar Kaufman



A photograph of the Mossberg House, a modernist residence designed by Frank Lloyd Wright in 1948. The house is constructed from red brick and features a series of cantilevered balconies and terraces. A large, mature tree stands to the left of the house, and a dense, green vine-covered trellis archway leads to a set of stone steps that ascend towards the entrance. The background shows a lush, green hillside under a bright sky.

Wright's earlier ideas from the Prairie Houses developed further with his Usonian Houses after World War II with the 'of the US' house type.

Mossberg House 1948



Mossberg House 1948





Mossberg House 1948



Public and Corporate Buildings



Organic Architecture

- The idea of organic architecture was not confined to the relationship of a building to its surroundings but was also key to its programme.
- The Johnson Wax building in Racine, Wisconsin extended the company's approach of treating the organisation and staff like an extended family. Its rich spaces could sustain conversation and collaboration, in practice and in spirit, while retaining a clear expression of corporate identity.





Johnson Wax Administration Centre, Racine, Wisconsin 1936-39 (Tower 1944-50)





Johnson Wax Administration Centre, Racine, Wisconsin 1936-39





Johnson Wax Administration Centre, Racine, Wisconsin 1936-39





Johnson Wax Administration Centre, Racine, Wisconsin 1936-39





Guggenheim Museum, New York 1959





Guggenheim Museum, New York 1959





Guggenheim Museum, New York 1959



Inspiration and Influence of Frank Lloyd Wright

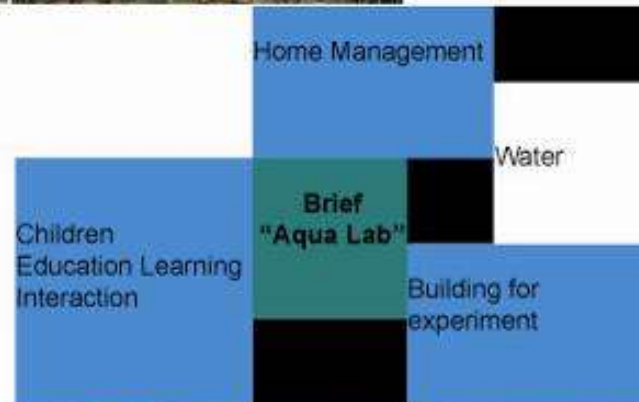




The Site



The clients wish was for a series of structures that would encourage and educate visitors (mainly children) in the local environment. Our approach was to architect a structure that would be an education in sustainability, and mediate with the surrounding landscape.

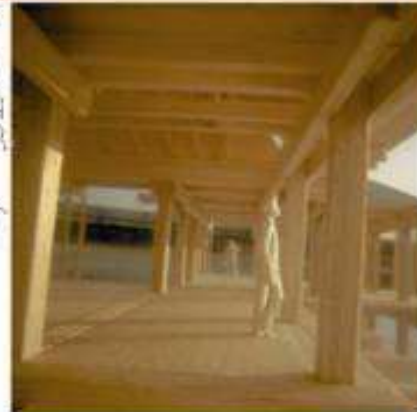
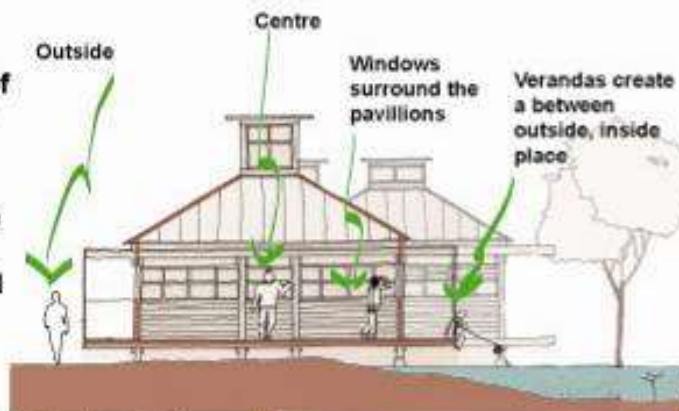


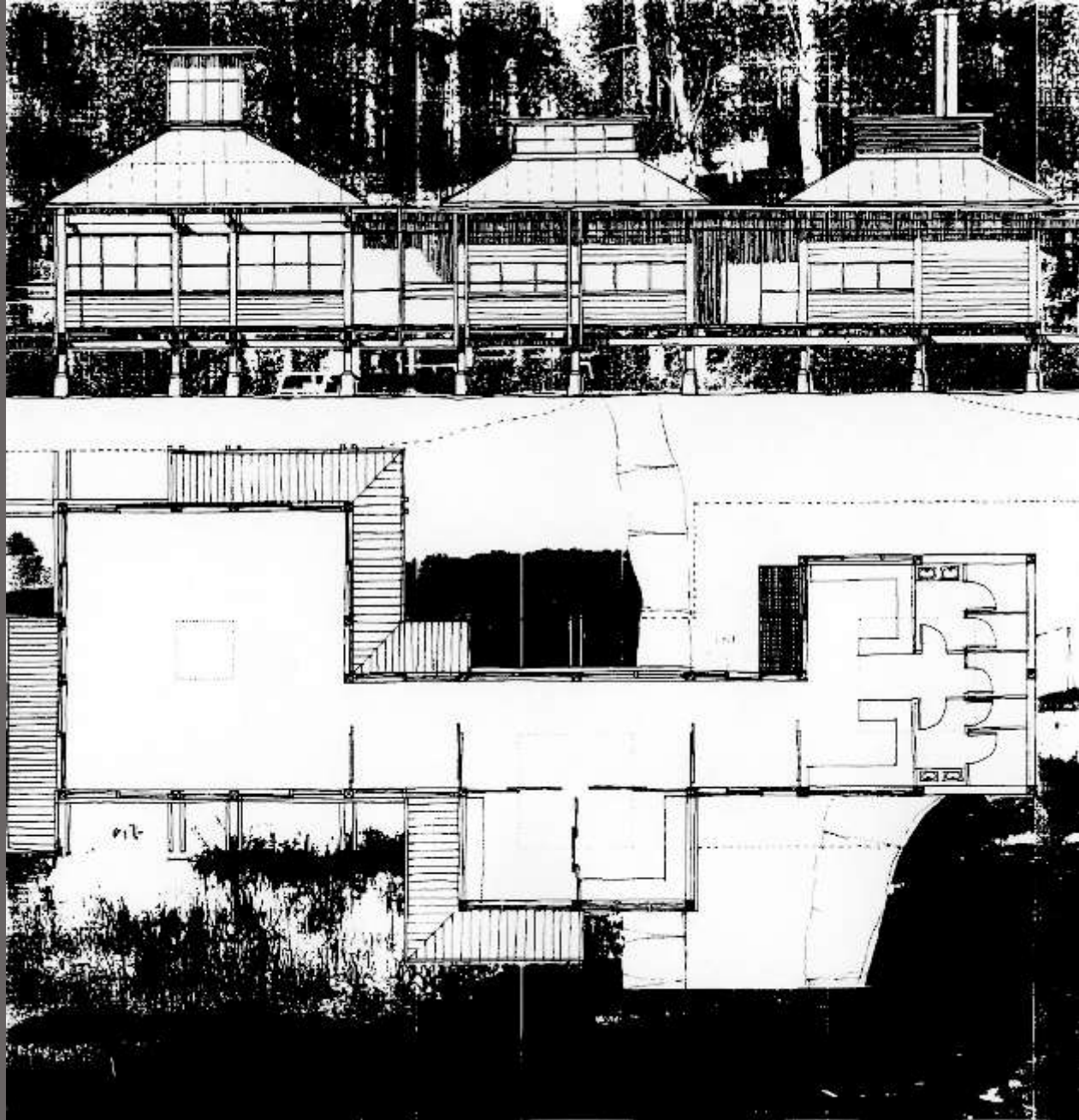


Design Strategy

The final design was a series of pavillions that 'dissolved' into nature.

The simple organisation allowed ease of extension. The spaces were seperated using sliding partitions so they could work as one large space or a series of spaces.

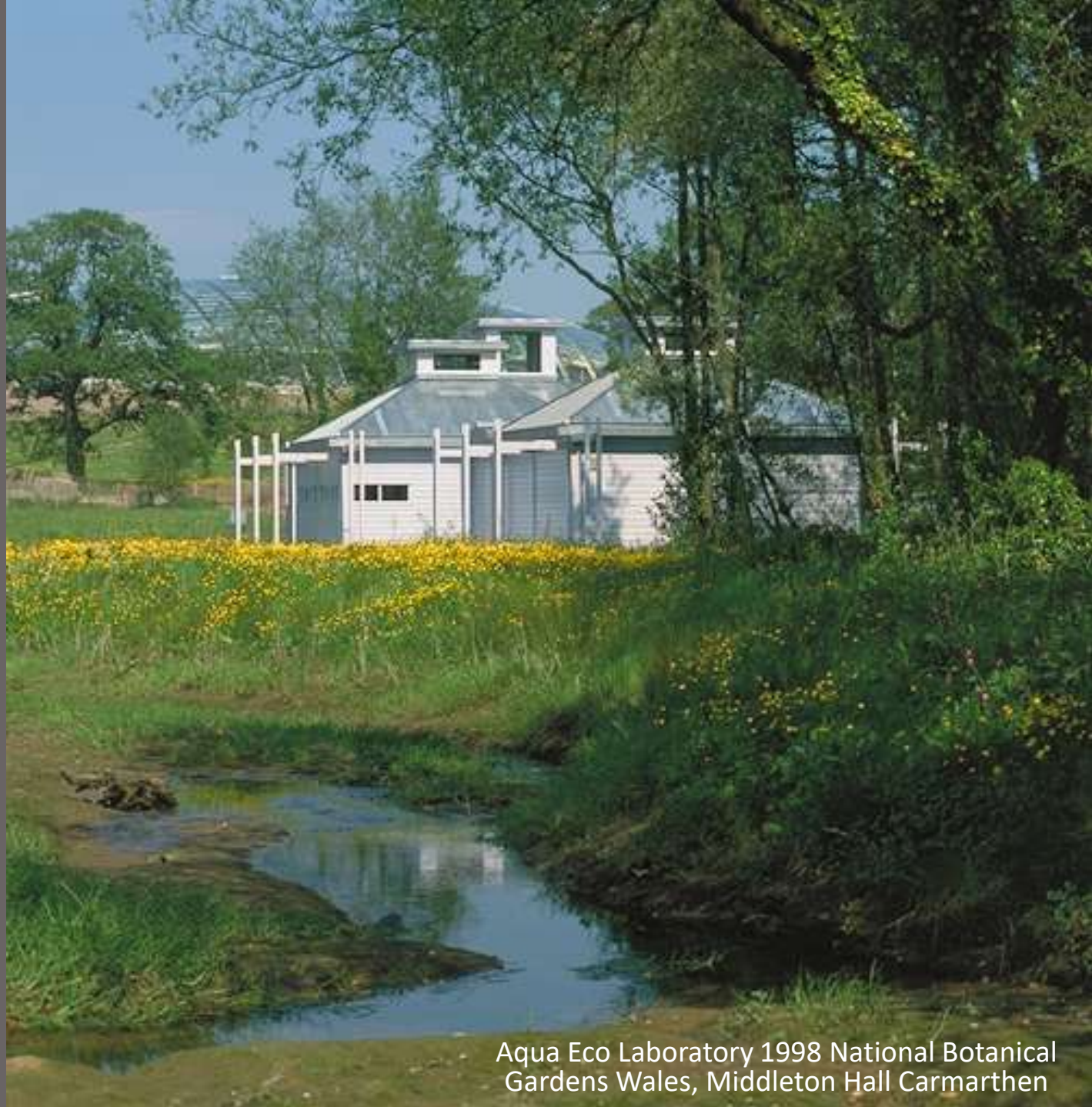




Aqua Eco Laboratory 1998 National Botanical
Gardens Wales, Middleton Hall Carmarthen



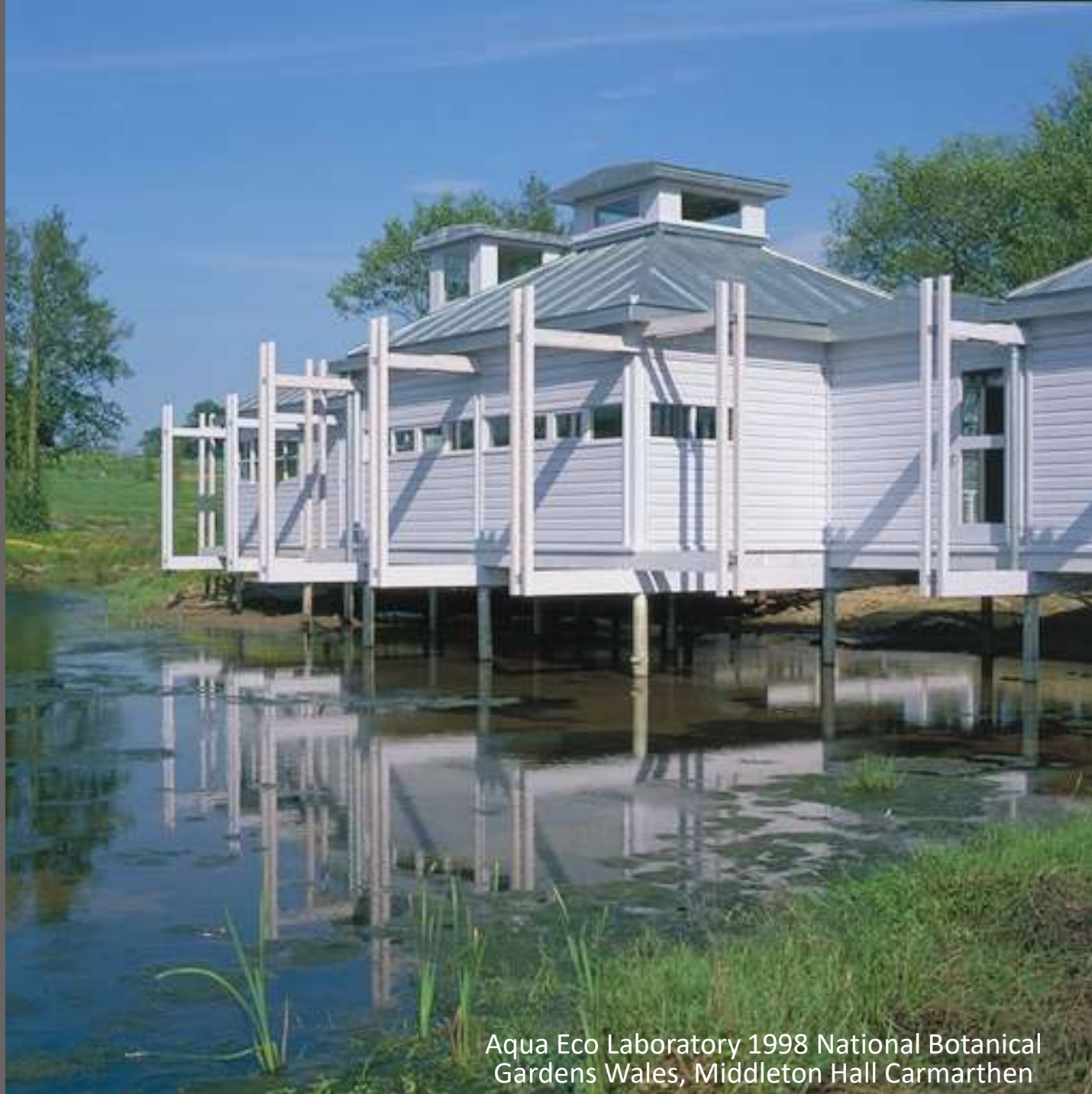
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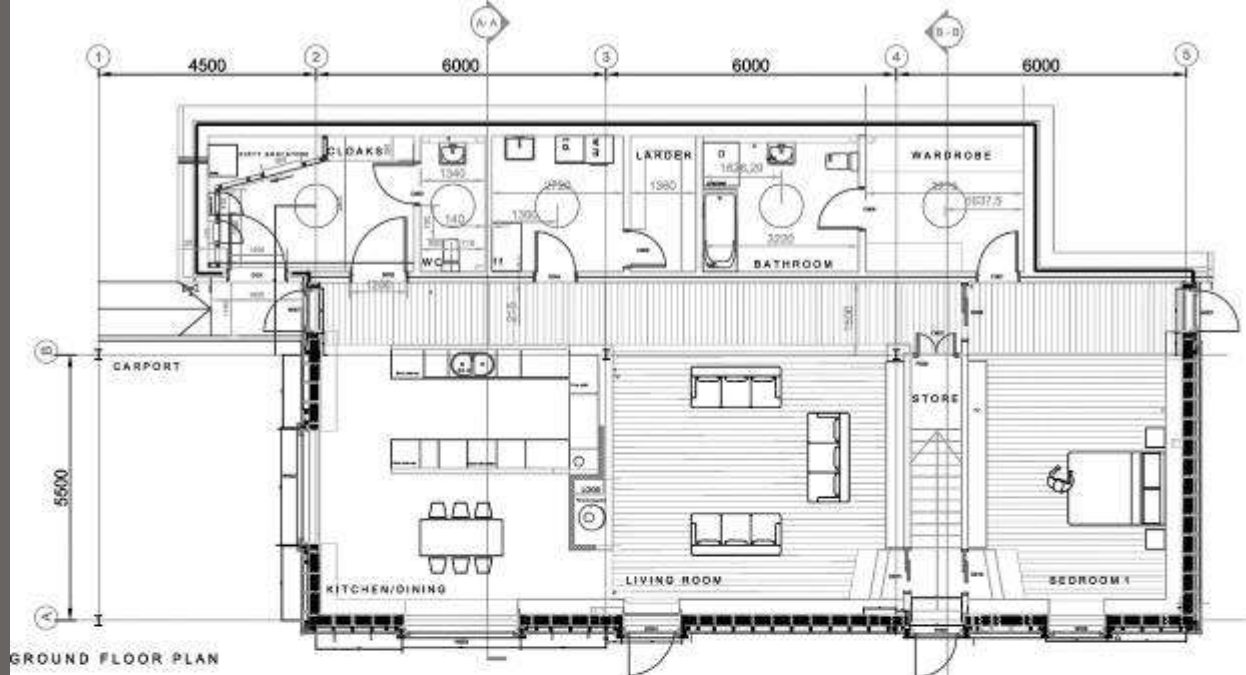




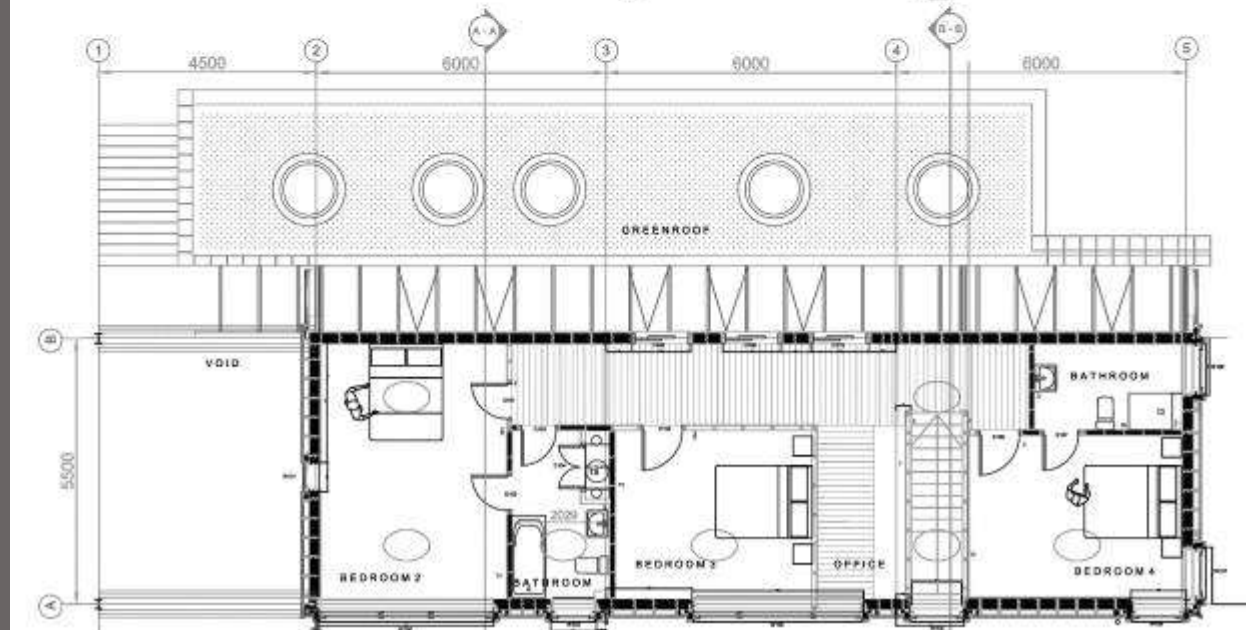
Llethr, Newbridge on Wye, Wales 2004
Mr and Mrs Elster



Llethr, Newbridge on Wye, Wales 2004
Mr and Mrs Elster



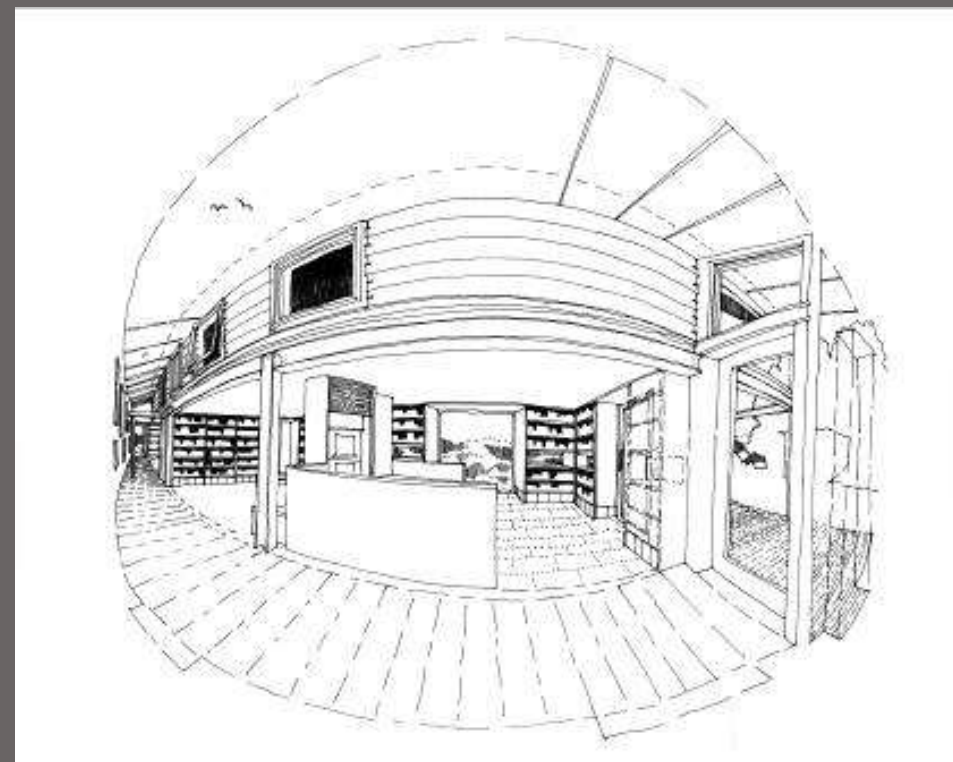
GROUND FLOOR PLAN



FIRST FLOOR PLAN

Llethr, Newbridge on Wye, Wales 2004

Mr and Mrs Elster



Llethr, Newbridge on Wye, Wales 2004
Mr and Mrs Elster



Llethr, Newbridge on Wye, Wales 2004
Mr and Mrs Elster



Llethr, Newbridge on Wye, Wales 2004
Mr and Mrs Elster







Canton Uniting Church, Cardiff 2000



Canton Uniting Church, Cardiff 2000



Canton Uniting Church, Cardiff 2000



Selected books on Frank Lloyd Wright

- **Frank Lloyd Wright** *A Biography* by Meryle Secrest
- **In the Nature of Materials The Buildings of Frank Lloyd Wright 1887-1941** by Henry Russell Hitchcock
- **Frank Lloyd Wright's Usonian Houses: Designs for Moderate Cost One-Family Homes** by John Sergeant

