

# THE LIFE AND WORK OF FRANK LLOYD WRIGHT



Ages 48(1915) to 62 (1929) In Japan and California



JT Wunderlich PhD

website: <a href="http://users.etown.edu/w/wunderjt/">http://users.etown.edu/w/wunderjt/</a> Architecture Portfolio



#### PART 1: Frank Lloyd Wright Age 0-19 (1867-1886) PDF PPTX-w/audio MP4 YouTube

Context: Post Civil War recession. Industrial Revolution. Farm life. Preacher/Musician-Father, Teacher-Mother. Mother's large influential Unitarian family of Welsh farmers. Nature. Parent's divorce.

Architecture: Froebel schooling (e.g., blocks). Barns/farm-houses (PDF PPTX-w/audio MP4 YouTube). Organic Architecture roots.

#### PART 2: Frank Lloyd Wright Age 20-33 (1887-1900) PDF PPTX-w/audio MP4 YouTube.

Context: Rebuilding Chicago after the Great Fire. Wife Catherine and first five children.

Architecture: Architects Joseph Silsbee and Louis Sullivan. Oak Park. Home & Studio. "Organic Architecture" begins.

#### PART 3: Frank Lloyd Wright Age 34-41 (1901-1908) PDF PPTX-w/audio MP4 YouTube.

Context: First Japan trip (PDF PPTX-w/audio MP4 YouTube). Arts & Crafts movements. Six children. Architecture: Prairie Style. Oak Park & River Forest, Unity Temple, Robie House, Larkin Building.

#### PART 4: Frank Lloyd Wright Age 42-47 (1909-1914) PDF PPTX-w/audio MP4 YouTube

Context: Runs off with Mistress. Lives in Italy (Page MP4 YouTube). Builds Taliesin on family farmland. Mistress murdered. Architecture: Wasmuth Portfolio published(Germany). Taliesin. Many operable windows for health & passive cooling. Sculptures.

#### PART 5: Frank Lloyd Wright Age 48-62 (1915-1929) PDF PPTX-w/audio MP4 YouTube THIS LECTURE

Context: WWI, Roaring 20's. Short 2<sup>nd</sup> marriage. Lives 3 yrs in Japan, then California and Wisconsin. 3<sup>rd</sup> marriage (Olga). Architecture: Tokyo Imperial Hotel. Textile Houses in California (with Mayan influences).

#### PART 6: Frank Lloyd Wright Age 63-78 (1930-1945) PDF PPTX-w/audio MP4 YouTube

Context: 1930's Great Depression. WWII. Taliesin Fellowship/school. Utopian-Ideals(communal-living) Winters in AZ. Architecture: Broadacre City, Fallingwater, Johnson Wax Building, Taliesin-West, Hanna-Honecomb House, Usonian Homes.

#### PART 7: Frank Lloyd Wright Age 79-91 (1946-1958++) PDF MP4 PPTX-w/audio YouTube

Context: Post-WWII boom. Cold War. Communal living at Taliesin. FLW dies in1959. Fellowship/school continued at Taliesin & Taliesin-West by Olga for 27 years -- and still exists today with some very recent changes (2020)

Architecture: Price Tower, Churches/Synagogue/Auditoriums. The Guggenheim. AZ homes, Modern materials.



Allan, Edward and Iana, Joseph, Fundamentals of Building Construction: Materials and Methods. Wiley; 7thedition (October 15, 2019).

American Institute of Architects. AIA Guide to Chicago. 2014.

Burns, Ken, and Novick, Lynn. Frank Lloyd Wright: A Film by Ken Burns and Lynn Novick DVD. PBS Home Video, August 28, 2001.

Bacon, Edmond. Design of Cities. Thames & Hudson Ltd, 1978.

Ching, Francis D.K. Architecture: Form, Space, and Order. 4 ed., Wiley, 2014.

Curtis, Stanley James. Friedrich Froebel; German educator. Encyclopedia Britannica, 2018. https://www.britannica.com/biography/Friedrich-Froebel

Fazio, M., Moffett, M., and Wodehouse, L. Buildings Across Time: An introduction to world architecture. 4th edition, McGraw-Hill, 2012.

Fici, Filipo. Frank Lloyd Wright in Florence and Fiosole. Frank Lloyd Wright Quarterly, Vol. 22 no.4, 2011.

Find a grave; William Carey Wright, 2018. https://www.findagrave.com/memorial/55462361/william-carey-wright

Frank Lloyd Wright Trust. 1905: Japan through the Lens of Frank Lloyd Wright, 2017. https://www.wrightsjapan1905.org/

Frank Lloyd Wright Trust. Unity Temple, 2018. https://flwright.org/researchexplore/unitytemple

Froebel; Brief History of the Kindergarten. Froebel Gifts, 2013. http://www.froebelgifts.com/history.htm

Ho-o-Den, An Illustrated Description of the Buildings Erected by the Japanese Government at the World's Columbian Exposition. K. Ogawa publisher, Tokyo, 2018.

Hoffman, Anna. Gustav Stickley: the American Arts & Crafts Movement. Sept 16, 2010.

Huxtable, Ada Louise. Frank Lloyd Wright. New York Times, Oct. 31, 2004. https://www.nytimes.com/2004/10/31/books/chapters/frank-lloyd-wright.html

Kaufman, Clare. The History of Higher Education in the United States. WoroldWideLearn. 2018. https://www.worldwidelearn.com/education-advisor/indepth/history-higher-education.php

Kitagawa, Joseph Mitsuo. On Understanding Japanese Religion. Princeton University Press, 1987.

Lechner, Norbert. *Heating, cooling, lighting*. Wiley, 4<sup>th</sup> edition, October 13, 2014.

LEED (Leadership in Energy and Environmental Design), The United States Green Building Council, 2018. https://new.usgbc.org/leed

Life of Olgivanna Lloyd Wright Reviewed by Architects and Artisans. ORO Editions. Sep 12, 2017. https://www.oroeditions.com/2017/09/12/the-life-of-olgivanna-lloyd-wright-reviewed-by-architects-and-artisans/

Lynch, Kevin. The Image of The City. MIT Press, 1960.

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PENN Rare Book and Manuscript: Frank Lloyd Wright's Paternal Family. Penn Library. University of Pennsylvania, Feb. 20, 2014. http://www.library.upenn.edu/rbm/featured/mscoll822.html

Pearson, David. The Breaking Wave: New Organic Architecture. Stroud: Gaia, 2001.

Siry, Joseph M. The Architecture of Earthquake Resistance. Journal of the Society of Architectural Historians, Vol 67 (1): pp78–105, 2008.

Storrer, William Allin. The Architecture of Frank Lloyd Wright, a Complete Catalog, 4th edition. Chicago, University of Chicago Press, 2017.

Stevens, John L. *Incidence of travel in Yucatán*. Sastrugi Press, 2019.

Stevens, John L. Incidence of travel in Central America, Chiapas, and Yucatán. Dover Publications, 1969.

Unity Chapel, Unity Chapel Inc. 2018. http://www.unitychapel.org/familyhistory/

Vargas, A.P. and Schierle, G.G., The textile block system: seismic analysis and upgrading, WIT Transactions on State of the Art in Science and Engineering, Vol 62 WIT Press 2013.

Kim, Daeshick, and Back, Alan. The Way to go: philosophy in martial arts practice. Nanam Publishing House, 2000.

Wright, Frank Lloyd. The Art and Craft of the Machine, Vol. 8, No. 2 pp. 77-81, 83-85, 87-90, May, 1901. tps://www.jstor.org/stable/pdf/25505640.pdf

Wright, Frank Lloyd. In the Cause of Architecture. Architectural Record, vol. XXIII, March 1908.

Wright, Frank Lloyd. (1911 Wasmuth Portfolio) in Drawings and Plans of Frank Lloyd Wright: The Early Period (1893-1909). Dover Architecture 1983.

Wright, Frank Lloyd. The Japanese Print, an Interpretation. The Ralph Fletcher Seymour co., Chicago, 1912.

Wright, Frank Lloyd. In the Cause of Architecture; Second Paper. Architectural Record, May 1914.

Wright, Frank Lloyd. The Natural House. New York, Penguin Books, 1954.

Wright, Frank Lloyd. *Testament*. New York, Bramhall House, 1957.

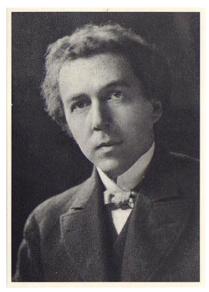
Zerbey, Nancy. New England Architecture | Guide to House Styles in New England. New England Today Living, May 9, 2018. https://newengland.com/today/living/homes/new-england-architecture/

# • First, a quick review of:

- PART 1 Ages 0 to 19
- PART 2 Ages 20 to 33
- PART 3 Ages 34 to 41
- PART 4 Ages 42 to 47











## FRANK LLOYD WRIGHT'S EARLIEST INFLUENCES

[FROEBEL 2013, PENN RARE BOOK 2014, HUXTABLE 2004, STORRER 2017, WRIGHT 1957, BURNS 2001]



- FROEBEL influenced by Taoism and Buddhism
  - Japanese Shinto rooted in Chinese Taoism
    - Shinto Gods in everything, especially nature

• FLW would later love Japanese Art, Design, and Culture



Friedrich Froebel 1782-1852 Germany



Maria **Montessori** 1913 in Italy

Mother's family were all UNITARIANS

Inspiration from all religions, love nature, God in everything



**FATHER** 



Others in history homeschooled: Leonardo da Vinci, Monet, Mozart, Bach, Newton, Ben Franklin, Edison, Jefferson, Washington, Einstein, Teddy and Franklin-Delano Roosevelt, Churchill, John Muir, and the Wright brothers

#### **MOTHER**

Homeschool Teacher using Froebel System

Preacher, Lawyer, School Superintendent, Teacher, Musician B.A., M.A. Colgate University

"Artist, photographer, and designer of furniture, graphics, books, and buildings, his patronage of Chinese and Japanese art, his obsession with every aspect of his surroundings, his dedicated collecting of beautiful things, owed much to his father" [Huxtable 2004]



Most of childhood in rural WISCONSIN

Like Pennsylvania farmland



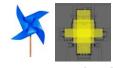
Frank Lloyd Wright 1867-1959



Future Designers

# ORGANIC ARCHITECTURE DESIGN PRINCIPLES

CONFORM TO SITE, sun, topography, environment PINWHEELED PLANES -- CRUCIFORM



- PRAIRIE-SCHOOL, BROAD CENTRAL CHIMNEY, LONG CANTILEVERS (overhangs & balconies)

SIMPLE GEOMETRIES

**HUMAN SCALE** 

**OPEN FLOOR PLAN** 

**FROEBEL** BLOCKS

FOLDED PLANE like origami ...continuity...walls, ceilings, and floors become one







Japanese Buddhism & Shintoism,

with some roots in Chinese Philosophy

- o DESTROY BOX, no Victorian box-type rooms, FLOW between rooms, and inside/outside
- Walls become screens, BANDS of WINDOWS, FRAME VIEWS like ENGAWA
- Use MATERIALS IN NATURAL STATE -- same on exterior and interior

FORM and FUNCTON are one! Harmony, not one following other, secondarily

A UNIFIED WHOLE - inside and out - ORCHESTRATE SUN

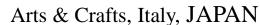
BRING NATURE OUT OF MATERIALS, but Innovate (Textile Blocks, Modular "Ken" Design, etc.)

STRUCTURAL ART like in Nature (e.g., the veins in Leaves) - Interior space made exterior as architecture

SOFT WARM OPTIMISTIC COLOR TONES of earth, and autumn leaves

ASSIMILATE FIXTURES into structure, BUILT-IN FURNITURE ..... many plants & planters

ARCHITECTURE = MUSIC







ARCHITECT **MENTOR** Louis Sullivan











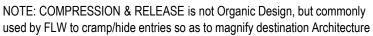
JT Wunderlich PhD

Frank

Lloyd

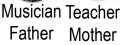
Wright





# Recall: up to Age 47 (1914)



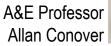




and her influential Rural Wisconsin Unitarian family



Wife Catherine & 6 children





Architect Joseph Silsbee



Architect Louis Sullivan





His mistress murdered, and Taliesin burned to the ground in 1914

- Industrial Revolution, Rebuilding Chicago after 1871 fire, 1893 Chicago Worlds Fair with Japanese Building, Visits pre-WWI Japan in 1906 and 1913, and lives in Italy 1909,10
- Hundreds of built designs
- A celebrity who in now infamous because of the scandal with his mistress



....... 1911 published in Germany an influential book of designs "*Wasmuth Portfolio*"

# IN HIS LATE 40'S AND 50'S (1915 - 1927)

- RECOVERING FROM SHOCK & TRAUMA of Mistress's murder
- Midlife Crisis



FRANK LLOYD WRIGHT

#### REINVENTING HIMSELF IN THE WEST

- First visit to **California** in 1915
  - He called it "That Far Corner of the U.S."
- LIVES in JAPAN for THREE FULL YEARS between 1917 and 1922
- MOVES to CALIFORNIA in 1923
  - Creates Mayan Pre-Columbian type Architecture in California
    - TEXTILE HOUSES
      - Somewhat tomblike and reminiscent of Mayan burial rituals
        - He's arguably still feeling the trauma of the murder of his mistress
    - Short "Rebound Marriage" that went very badly



# Also, **World War I** (Jul 28, 1914 – Nov 11, 1918)

- Had begun just before his Mistress murdered
- Called "The Great War" and "The War to End all Wars"
- Mostly fought in Europe
  - where FLW had recently published an Architecture book in Germany, and lived in Italy with Mistress



Frank Lloyd Wright



# Also, **World War I** (Jul 28, 1914 – Nov 11, 1918)

- JAPAN and ITALY were allies of the U.S. (unlike in World War II 25 years later)
- U.S. was not officially involved until 1917



Frank Lloyd Wright

#### Location Europe, Africa, the Middle East, the Pacific Islands, China, Indian Ocean, North and South Atlantic Ocean Allied victory Result Central Powers victory on the Eastern Front nullified by defeat on the Western Front Fall of all continental empires in Europe (including Germany, Russia, Ottoman Turkey and Austria-Hungary) Russian Revolution and Russian Civil War, with the collapse of the Russian Empire and the subsequent formation of the Soviet Union Widespread unrest and revolutions throughout Europe and Asia Creation of the League of Nations (more ...) Territorial · Formation of new countries in changes Europe and the Middle East

· Transfer of German colonies and

territories to other countries

territories, Partitioning the former Ottoman Empire, Austria-Hungary and the Russian Empire, transfer of From Wikipedia



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Frank Lloyd Wright

From Wikipedia



# **World War I** (Jul 28, 1914 – Nov 11, 1918)

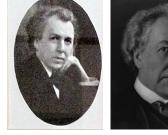
EUROPE Before and After



Frank Lloyd Wright



# IN HIS LATE 40'S AND 50'S (1915 - 1927)



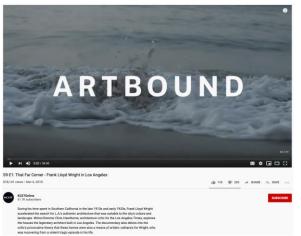


FRANK LLOYD WRIGHT

Recovering from shock & **Trauma** of Mistress's 1914 murder

WATCH ALL OF

"S9 E1: That Far Corner - Frank Lloyd Wright in Los Angeles"



https://www.youtube.com/watch?v=3juSckHif90

During his time spent in Southern California in the late 1910s and early 1920s, Frank Lloyd Wright accelerated the search for L.A.'s authentic architecture that was suitable to the city's culture and landscape. Writer/Director Chris Hawthorne, architecture critic for the Los Angeles Times, explores the houses the legendary architect built in Los Angeles. The documentary also delves into the critic's provocative theory that these homes were also a means of artistic catharsis for Wright, who was recovering from a violent tragic episode in his life.



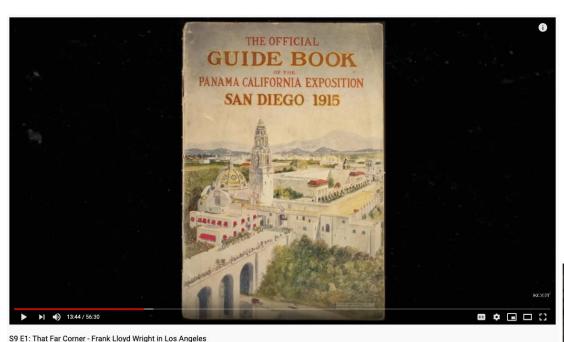
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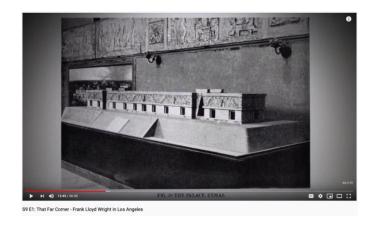
- Recovering from shock & Trauma of Mistress's 1914 murder
  - First visit to California in 1915





FRANK LLOYD WRIGHT







818,141 views • Mar 6, 2018

KCETOnline



S9 E1: That Far Corner - Frank Lloyd Wright in Los Angeles



# Also, FLW's mother had likely given him books on **Central American architecture** when he was young:

 "Incidence of travel in Yucatán" and "Incidence of travel in central America, Chiapas, and Yucatan"





FRANK LLOYD WRIGHT







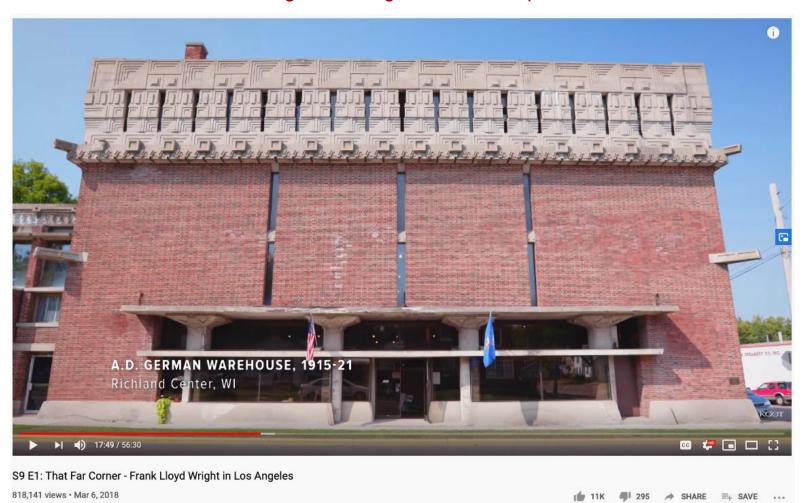




# AGE 48 (1915)

 Recovering from Shock & Trauma of Mistress's 1914 murder And this is the one of first buildings he designs after his trip to California: Frank Lloyd Wright









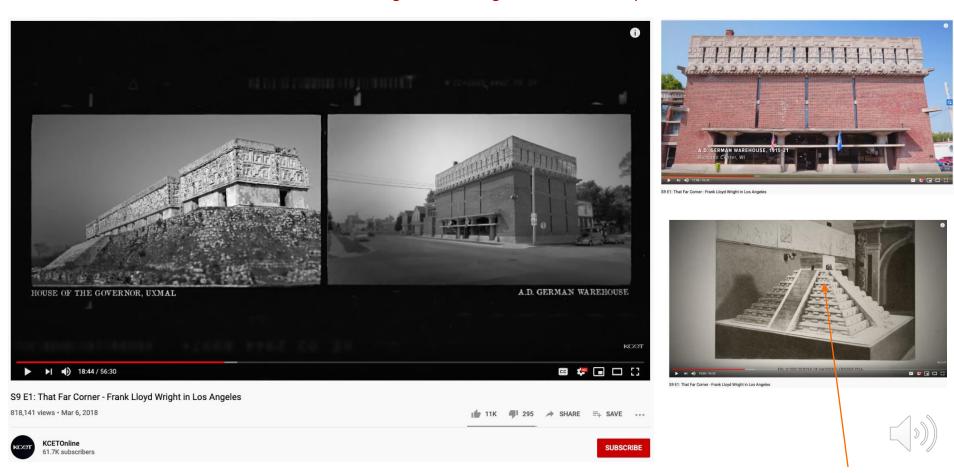




# AGE 48 (1915)



Recovering from Shock & Trauma of Mistress's 1914 murder
 And this is the one of first buildings he designs after his trip to California:



Tomblike and reminiscent of Mayan burial rituals (and human sacrifice)

## 50 YEARS OLD (1917)

"Mostly Mayan/Pre-Columbian Temple-like Architecture with some Japanese and Viennese-Modern influences"





S9 E1: That Far Corner - Frank Lloyd Wright in Los Angeles

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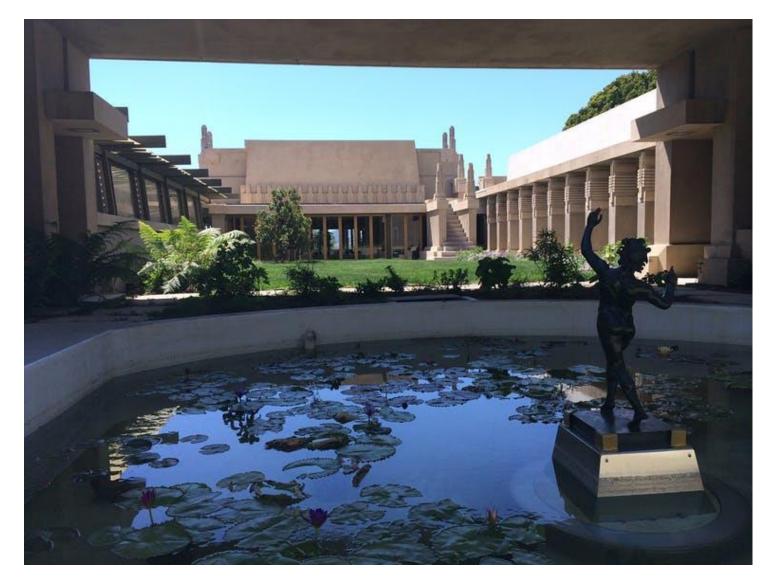


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HOLLYHOCK HOUSE Los Angeles, 1917

# 50 YEARS OLD (1917)

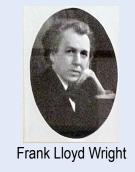


HOLLYHOCK HOUSE IN LOS ANGELES, 1917





Recall from "PART 2 Ages 20 to 33" that he first visited **Japan** in 1905



Goes to Japan again in 1913, and then from 1917 to 1922, lives three full years in Japan





IMPERIAL HOTEL, TOKYO JAPAN DESIGNED AND BUILT FROM 1915 TO 1923



Imperial Hotel, Tokyo Japan Designed and built from 1915 to 1923





IMPERIAL HOTEL, TOKYO JAPAN DESIGNED AND BUILT FROM 1915 TO 1923



Frank Lloyd Wright



S9 E1: That Far Corner - Frank Lloyd Wright in Los Angeles

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#### Watch this:

https://www.voutube.com/watch?v=Izwnc5eBeho&list=PL8bRGfw7rdaFovZPDgEZuEvLtmrSl7Ibf

Japan was the gateway to that great East of which I had been dreaming since I had seen my first Japanese prints.

—Frank Lloyd Wright

西洋が学ぶべき偉大な東洋を 私は、ずっと夢見ていた。 そして、日本がその入り口になると 浮世絵が教えてくれた。

ーフランク・ロイド・ライト



3,164 views • Aug 20, 2010

0:02 / 2:20













Frank Lloyd Wright





HOME > OUR FAITH > BELIEFS & PRINCIPLES > MANY BELIEFS WELCOME > BUDDHISM





< MANY BELIEFS WELCOME

Buddhism

Faith of a UU Buddhist

Atheist / Agnostic

Christianity

Hinduism

Humanis

000000

Islam

Paganism

Unitarian Universalist (UU) experience with Buddhism is rich and varied. We find inspiration in stories from Buddhist traditions, Buddhist meditation practices, and contemporary teachers like Sharon Salzberg and Thich Nhat Hanh. Many congregations have Buddhist meditation groups; we have over 100 local UU sanghas.

Buddhism and Unitarian Universalism both honor the beliefs people hold based on their own experiences and understandings. In neither tradition will anyone tell you what you *ought* to believe. Lama Surya Das writes about our shared values in Buddhist Voices in Unitarian Universalism:

Buddhism and Unitarian Universalism value many of the same things, including experiential practice, study and self-inquiry, mindful awareness cultivation, insightful wisdom development, and loving-kindness, combined with active compassion in the world. This is the heart of sacred activism—empowering, educating, edifying, elevating, transforming, and liberating.

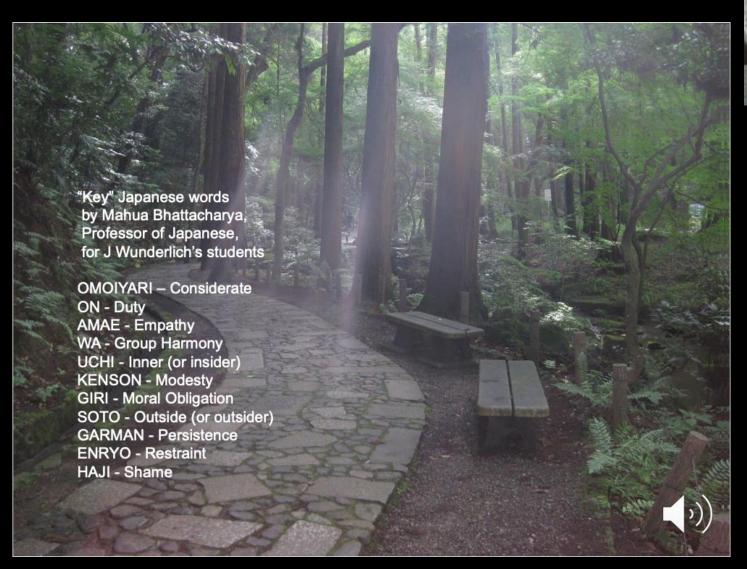


Frank Lloyd Wright

Perhaps the
Unitarian beliefs
that he grew up with
were enhanced by
Buddhist philosophy
(and Shinto beliefs)

https://www.uua.org/beliefs/whatwe-believe/beliefs/buddhism







Frank Lloyd Wright

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Frank Lloyd Wright

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Frank Lloyd Wright

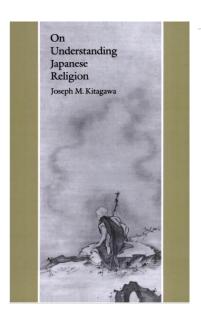




Although the **YIN YANG SYMBOL** is Chinese in origin, it is related to Buddhism and the philosophical **"WAY"** of life in both CHINA and JAPAN



Frank Lloyd Wright



With the penetration of Chinese civilization and Buddhism, the simplistic, unitary meaning structure of the early Japanese was greatly enriched. For example, Buddhism introduced the belief in the various realms of existence, whereas the Yin-Yang school offered cosmological theories based on the concepts of two principles (yin and yang), the five elements (metal, wood, water, fire, and earth), and the orderly rotation of these principles and elements in the formation of nature, defined as "ordering the state and deliberating on the (Confucian) Way" and also as "harmonizing Yin and Yang." In short, what developed during the seventh and eighth centuries in Japan were the two related ideologies of sacred kingship and immanental theocratic government, both of which were authenticated and supported by a "multivalue system"—an intricate homology of Shinto, Confucian, Buddhist and Yin-Yang traditions.

"Form follows
function - that has
been
misunderstood.
Form and function
should be one,
joined in a spiritual
union."

Source: "Yin Yang in Japan" Also, see <u>Wunderlich Judo</u>



#### FRANK LLOYD WRIGHT'S EARLIEST INFLUENCES

[FROEBEL 2013, PENN RARE BOOK 2014, HUXTABLE 2004, STORRER 2017, WRIGHT 1957, BURNS 2001]

#### FROEBEL influenced by Taoism and Buddhism

- Japanese Shinto rooted in Chinese Taoism
  - Shinto Gods in everything, especially nature
  - 1782-1852 Germany FLW would later love Japanese Art, Design, and Culture
- Mother's family were all UNITARIANS
  - Inspiration from all religions, love nature, God in everything

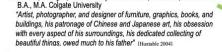




Others in history homeschooled: Leonardo da Vinci, Monet, Mozart, Bach, Newton, Ben Franklin, Edison, Jefferson, Washington, Einstein, Teddy and Franklin-Delano Roosevelt, Churchill, John Muir, and the Wright brothers

**MOTHER** 

Homeschool Teacher using Froebel System







CONFORM TO SITE, sun, topography, environment PINWHEELED PLANES -- CRUCIFORM



- PRAIRIE-SCHOOL, BROAD CENTRAL CHIMNEY, LONG CANTILEVERS (overhangs & balconies)

FOLDED PLANE like origami ...continuity...walls, ceilings, and floors become one

SIMPLE GEOMETRIES

HUMAN SCALE OPEN FLOOR PLAN



UNITARIAN MOTHER

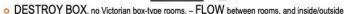
Japanese Buddhism & Shintoism, with some roots in Chinese Philosophy

Frank Lloyd Wright

Frank

Lloyd

Wright



- Walls become screens, BANDS of WINDOWS, FRAME VIEWS like ENGAWA
- Use MATERIALS IN NATURAL STATE -- same on exterior and interior.

FORM and FUNCTON are one! Harmony, not one following other, secondarily

BRING NATURE OUT OF MATERIALS, but Innovate (Textile Blocks, Modular "Ken" Design, etc.)

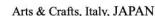
STRUCTURAL ART like in Nature (e.g., the veins in Leaves) - Interior space made exterior as architecture

SOFT WARM OPTIMISTIC COLOR TONES of earth, and autumn leaves

A UNIFIED WHOLE - inside and out - ORCHESTRATE SUN

ASSIMILATE FIXTURES into structure, BUILT-IN FURNITURE ..... many plants & planters

ARCHITECTURE = MUSIC







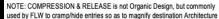










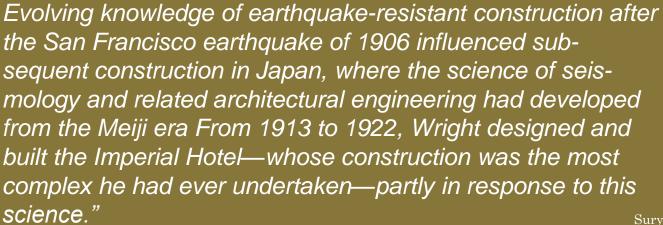


It survived the 1923 Earthquake!!
-when many surrounding buildings did not... And it was used to help many people during the aftermath.



## It survived the 1923 Earthquake!!

"Frank Lloyd Wright considered the Imperial Hotel in Tokyo, designed and built from 1913 to 1923, to be among his most important works. It was his largest project built to that time, and after its survival in the great Kanto earthquake of 1923, it garnered international fame until its demolition in 1968 to make way for a much taller hotel structure on the site ....





Frank Lloyd Wright

Sury, Joseph M., The Architecture of Earthquake Resistance; Julius Kahn's Truscon Company and Frank Lloyd Wright's Imperial Hotel, *The architecture of* Earthquake Resistance; - Journal of the Society of Architectural Historians, 2008

### It survived the 1923 Earthquake!!

#### ARCHITECTS SPECIFICATIONS.

ENGINEERING PRINCIPLES TO BE APPLIED IN CONSTRUCTION OF

#### IMPERIAL HOTEL, TOKIO, JAPAN.

CONDITIONS: Soft ground: Earthquake tremors: High winds: Great humidity;

Downpours: No frost.

No fabricated Steel: Reinforced Concrete: Commercial round rods MATERIALS:

only; Structure faced with Masonry material throughout;

Foundation - Cushion: Soil reinforced to depth sufficient to take loads safely by casting into it's texture small needles of Concrete - 2'-0" on centers - to the required number or to

the economic limit.

SUPPORTS: Intermediate. - exaggerated ; horizontal bond; Concrete faced

with other material; hollow wherever practicable.

WALLS: Exeggerated (less than piers); battered and cast solid, layer

upon layer, within thin shells of facing material, with horizontal bond - facing thus becoming part of wall; Walls to be divided vertically into sections not over 40 feet: No piers or walls to

be"puddled".

LATERALS: Slabs wherever possible continuous from side to side of building-

with continuous reinfercement; All slabs and beams homogeneous as far as possible; Steel reinforcement sub-divided into smallest units possible; No single red permitted to stend where two or more could take it's place; The more numerous the strands, the more homogeneous the mass of steel and concrete; No slabs to be "puddled"; Where continuous homogeneous construction is used, the factor of safety in the materials and formulae is sufficient to care for exigencies of live load: In floors assume a low live lead; In figuring beams - one half the amount; In footings one tenth: Wherever possible construction is to be balanced over beams, reducing clear spans, employing the continuous beam

and cantilever principle. Always the structural form shall give the ground-work for the finished surfaces unless otherwise required for ducts or for

acoustics. Continuous flat slabs to be given preference to beam and slab construction wherever economically reasonable.

Two way reinforcing to be used whenever conditions do not

render it Indeconomic absurdity.

Horizontal slabs and beams are to continue through the walls they encounter and to the brok of the facing.



Frank Lloyd Wright

## IMPERIAL HOTEL IN JAPAN

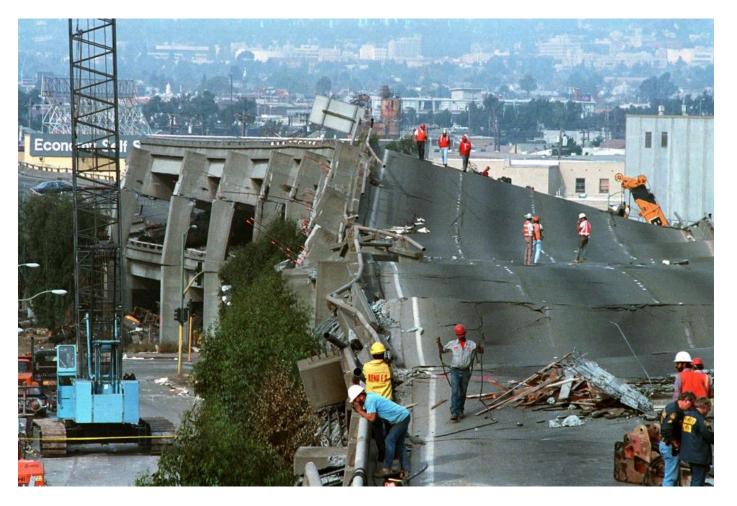
#### From:

Siry, Joseph M., The Architecture of Earthquake Resistance; Julius Kahn's Truscon Company and Frank Lloyd Wright's Imperial Hotel,. Journal of the Society of Architectural Historians, Vol 67 (1): pp78-105, 2008

# Structural Failure Analysis

### REINFORCED CONCRETE

- 1989 San Francisco Bay Area Earthquake
  - "Loma Prieta Earthquake," Magnitude 6.9



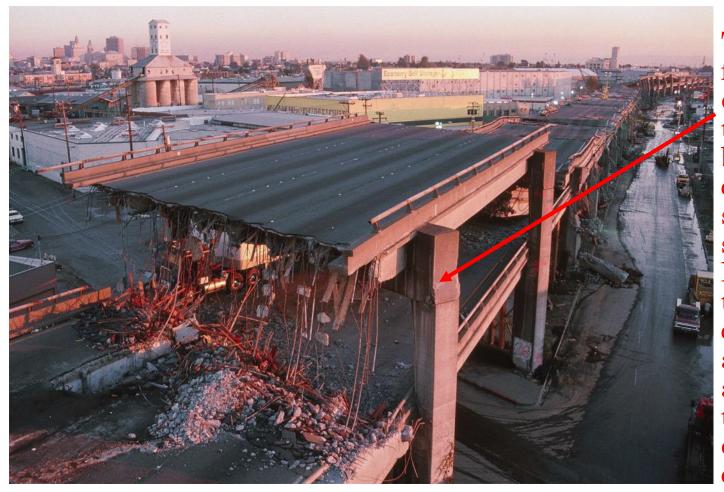


NOTE: J Wunderlich worked for PSI Inc. as a Structural and Environmental Engineer up until one year before this earthquake, and would **often drive on Nimitz freeway to meetings** in Oakland

# Structural Failure Analysis

### REINFORCED CONCRETE

- 1989 San Francisco Bay Area Earthquake
  - "Loma Prieta Earthquake," Magnitude 6.9



The critical failure in this design was that this connection being reinforced concrete, when subjected to seismic oscilating loads, resulted in the concrete crumbling away and leaving only a bundle of rebar to hold up the enormous weight of the upper deck

NOTE: J Wunderlich worked for PSI inc. as a Structural and Environmental Engineer up until one year before this earthquake, and would often drive on this Nimitz freeway to meetings in Oakland

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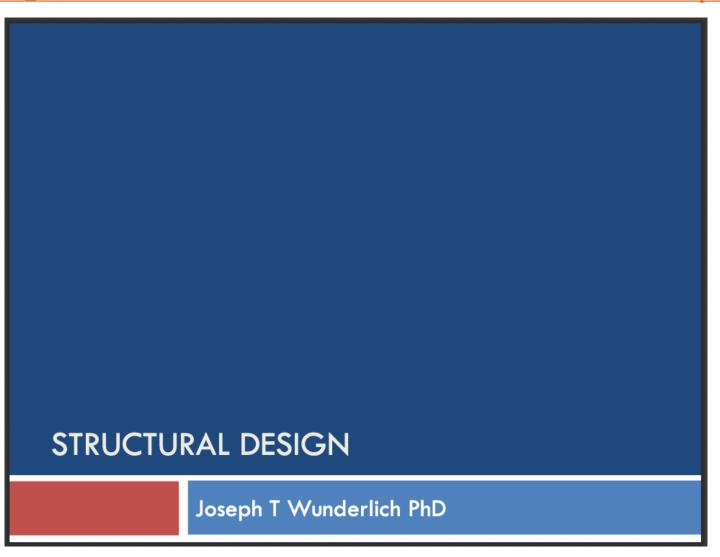
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## Structural Failure Analysis

#### REINFORCED CONCRETE

Read more in Wunderlich Structural Engineering Lecture:

http://users.etown.edu/w/wunderjt/Architecture%20Lectures/371%20Materials&Methods/ART371\_Materials&Methods%20Lecture%202%20STRUCTURAL%20Concepts.pdf





It survived a huge earthquake and all of the bombing of World War II, but was demolished in 1967 to make room for high-rises;

However this part of it (Lobby)was saved and moved to Nagoya:

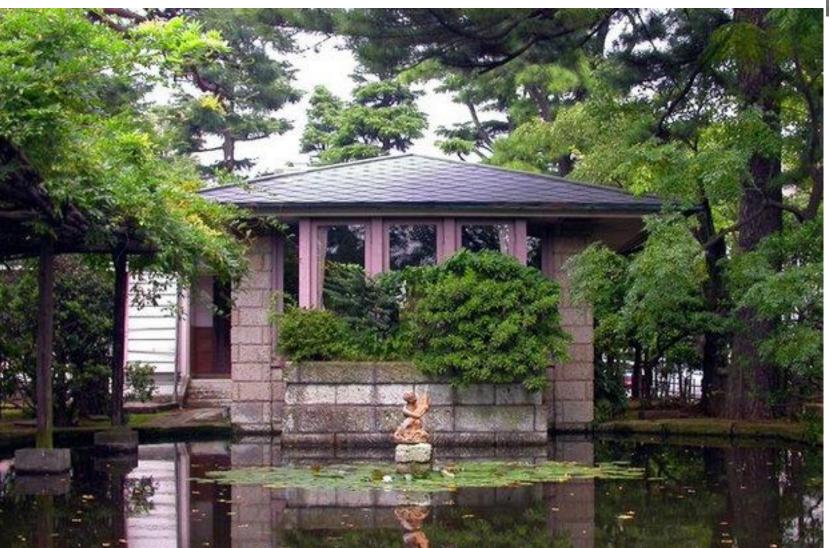








# 50 YEARS OLD (1917)



Aisaku Hayashi House IN TOKYO JAPAN, 1917



Frank Lloyd Wright



# 51 YEARS OLD (1918)



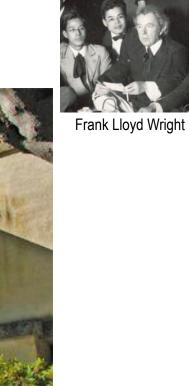
Arinobu Fukuhara House IN KANAGAWA PREFECTURE JAPAN, 1917

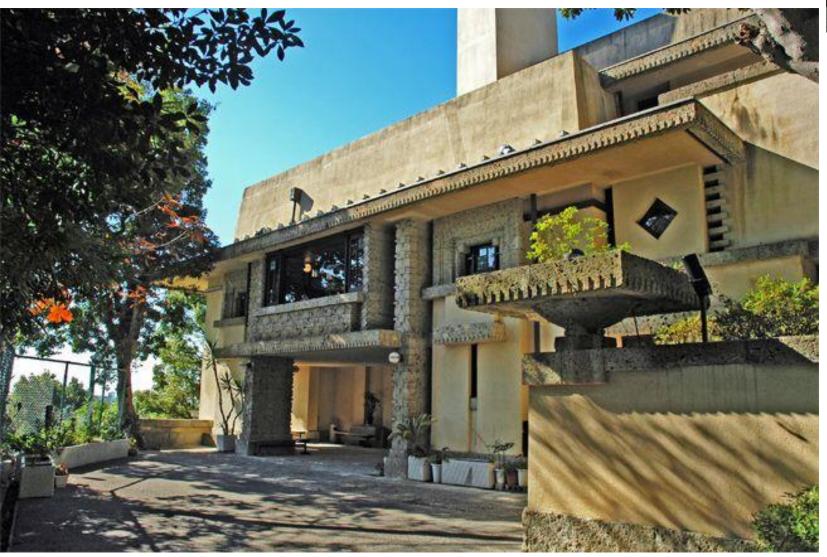


Frank Lloyd Wright



## 51 YEARS OLD (1918)





Tazaemon Yamamura House (Yodokō Guest House) IN HYOGO PREFECTURE JAPAN, 1918







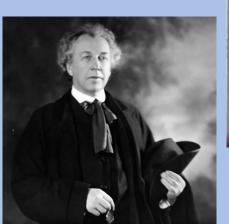
Jiyu Gakuen Girls' School IN TOKYO JAPAN, 1921



# He decides to live in LA, with his Architect son (Lloyd) who's already moved there

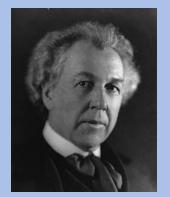
#### Noted Architect Locates Here

Frank Lloyd Wright, noted Chicago architect, whose genius has founded a new school of architecture in America and has made his impress upon the building art of the entire middle west, has opened a studio in Hollywood at 1284 Harper avenue and plans to practice his profession in the development of the foothill properties between Hollywood and the sea. His son Lloyd Wright, a landscape architect, is associated with him.







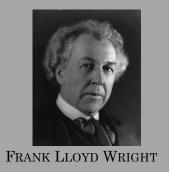


FRANK LLOYD WRIGHT



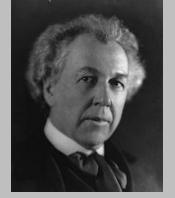
His LA Studio, with his son Lloyd, also an Architect, who had also joined FLW in Italy when he lived there, and helped with projects

#### AGE 56 (1923)



- STILL Recovering from shock & Trauma of Mistress's 1914 murder?!
- Creates more Mayan Pre-Columbian type Architecture in California
  - TEXTILE HOUSES
    - Tomblike and reminiscent of Mayan burial rituals (and human sacrifice)
      - He's arguably still feeling the trauma of the murder of his mistress

- Tomblike and reminiscent of Mayan burial rituals (and human sacrifice)
- He's arguably still feeling the trauma of the murder of his mistress ??



FRANK LLOYD WRIGHT





MILLIARD HOUSE IN LOS ANGELES, 1923

- Tomblike and reminiscent of Mayan burial rituals (and human sacrifice)
- He's arguably still feeling the trauma of the murder of his mistress ??

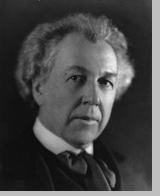


FRANK LLOYD WRIGHT



JOHN STORRER HOUSE IN LOS ANGELES, 1923

- Tomblike and reminiscent of Mayan burial rituals (and human sacrifice)
- He's arguably still feeling the trauma of the murder of his mistress ??



FRANK LLOYD WRIGHT

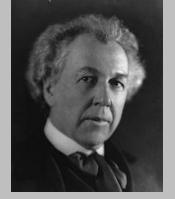




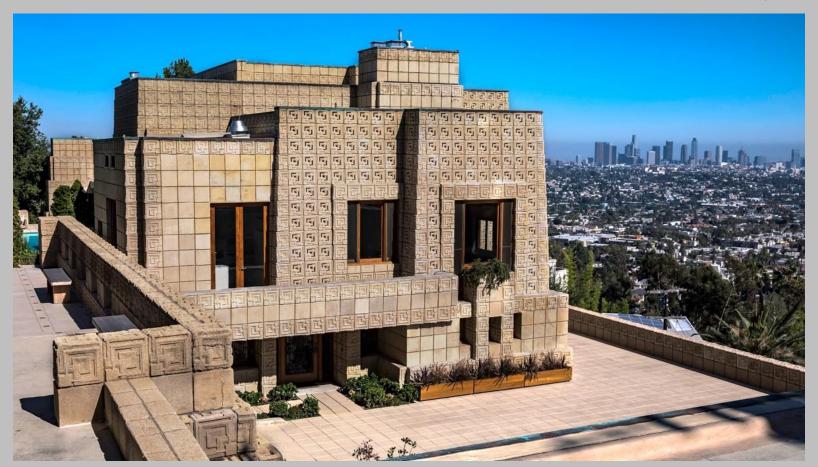


SAMUEL FREEMAN HOUSE IN LOS ANGELES, 1923

- Tomblike and reminiscent of Mayan burial rituals (and human sacrifice)
- He's arguably still feeling the trauma of the murder of his mistress ??



FRANK LLOYD WRIGHT





Ennis House in Los Angeles, 1923

# MODULARITY "Structured ART"

#### His "Textiles" in his Textile houses



Figure 1: Millard House/block detail, Pasadena, CA. Freeman House/block detail, Hollywood, CA. Photos Angela Paola Vargas, 2004.

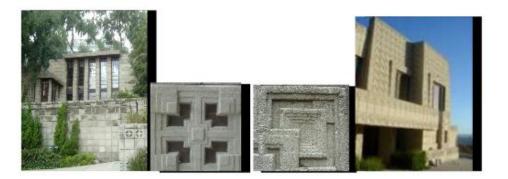
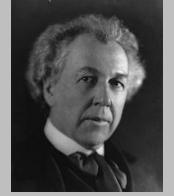


Figure 2: Storer House/block detail, Hollywood, CA. Ennis-Brown House/block detail, Hollywood, CA. Photos Angela Paola Vargas, 2004.



FRANK LLOYD WRIGHT

Cast concrete shapes, in **unit sizes**, with Mayan patterns, and woven together with steel reinforcing bars (Rebar)



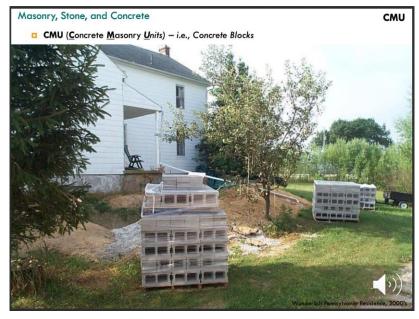
#### From

The textile block system: seismic analysis and upgrading,

A. P. Vargas & G. G. Schierle, USC School of Architecture, Los Angeles, CA, USA, WIT Transactions on State of the Art in Science and Engineering, Vol 62,2013 WIT Press.

# MODULARITY "Structured ART"

His **TEXTILE BLOCKS** are like present day Concrete Masonry Units (**CMU**) referred to in layman's terms as concrete blocks





From Wunderlich Lecture on CMU in Materials & Methods course

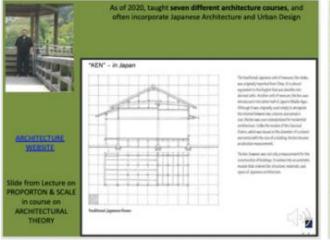
(PDF) (PPTX-w/audio)

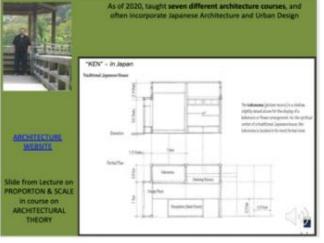


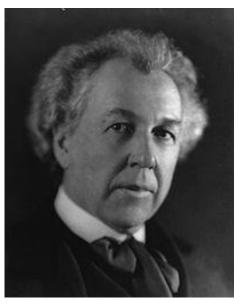


# MODULARITY "Structured ART"

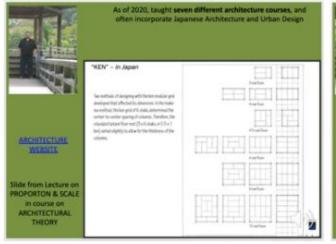
• And recall the MODULARITY of Japanese "KEN" Architectural Design techniques

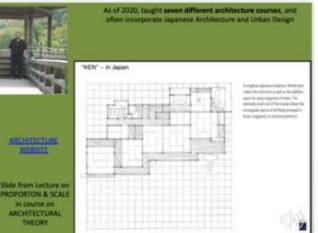






FRANK LLOYD WRIGHT





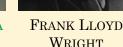
From
Wunderlich
Lecture on
Japanese
Architecture and
Urban Design



[Life of Olgivanna Lloyd Wright Reviewed, 2017]

## RECOVERS FROM TRAUMA; MARRIES Olga IN 1928 IN RANCHO SANTA FE, CA





- LGIVANNA WRIGHT
- Olga Ivanovna Milijanov Lazovich, born in Montenegro (Europe)
- Aristocratic with Military General mother, and Supreme Court Justice father
- Father went blind, so she read for him; newspapers, legal documents, poetry and philosophy books
- Went to elementary school in Russia.
- At age 20, married a Russian architect.
- In Russia, followed Greco-Armenian mystic/philosopher Georgi Gurdjieff
- Fled Russia with Gurdjieff during 1917 Russian Revolution, who establish the Institute for the Harmonious Development of Man in France in 1922, to develop the "complete person"— MIND, HEART, and BODY
  - His curriculum was holistic and strict, incorporating dance, exercise, personal hardship, physical labor, and psychological discipline.
  - Olgivanna emerged as a DANCER, MUSICIAN, EDUCATOR, and PHILOSOPHER

