

Welcome to **The End of Architecture: Amorphous, Entropic, Plasticity**

I am Matthew Schlueb, **registered architect**, practicing **residential for 2+ decades**.  
**3rd year** teaching within Osher at CMU.

**Thankyou** for taking this course, a **pleasure for me to present** this material to you.  
I **welcome your feedback** to improve the class, as this is primarily **for your benefit**.

Received the **syllabus handout?**

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### **Why is Architecture ending?**

Several reasons, which we will get into, but first, define **What is Architecture?**  
For me, **Architecture at its root, its essence, is something that defines space**,  
**creates a sense of place, differentiates, something other than everything else.**

One of the first forms to do this was the wall. **What is a Wall?**

**A wall defines space by dividing space**, organizing space into smaller parts.

First walls likely built for **physical separation**, ...**keep sheep in**, ...**or wolves out**.

When the wall is **circular**, it creates an **enclosure**,  
**separating a space inside from the space outside**. This gets to the essence of a wall,  
and by extension, **the essence of Architecture, to create a sense of enclosure**.

**Architecture is not just the physical aspect**, the wall, but also the metaphysical part,  
a feeling of enclosure walls create within each occupant that enters inside the walls,  
The **'insideness' of space that is created by walls that enclose**,  
...**defining a particular place**, ...**with a specific feel**, ...**of being inside something**.

This gets to **the essential in Architecture, the metaphysical feelings created by the physical structures**, like walls. **It is the sense of space that is significant, more than the space itself**. We are **emotive beings**, we **build Architecture to emote**,  
**express feelings, experience feelings, motivate behaviors because of feelings**.

Architecture is made with many things besides walls, such as a **roof**.  
The essence of a roof is **to shelter**, ...from the rain, ...the sunlight.

1:05

A third element is the **floor**, ...the **ground plane**, ...**foundation**, ...**frame**.

Another element of Architecture is the **door**, a **passage through a wall**,  
defining a **threshold** between the two spaces on either side of the wall.

And a **window**, the **most significant architectural element in 20th century**,  
subject of today's lecture, to set the context leading up to the end of architecture.

**These 5 architectural elements: wall, roof, floor, door and window, define nearly all of architectural space in the history of architecture.** Understand these 5 elements and you can understand **how sense of space is created** in practically any building.



For example, when **a child draws a picture of a house**, they **abstract their idea of a house into these 5 elements of architecture** (as well as a few other elements).

For a child, it is not the visual features (walls, roof, wdws, ...) that define a house, it is the **emotional gestures the house expresses (happy, sad, funny, ...)**.

**Sun** (happiness, often with a smile) and **Flowers** (friendly, garden).



**Personification** (face, body)  
Anthropomorphic



a mouth on the face, a door **receives to enter**, to **greet**, to **welcome**.  
wdw. as eyes, making **contact btwn. inside / outside**, in-sight.



arrangement on the wall, speaks to **arrangement of inside space**.  
arrangement of wall itself, speaks to the **changes of space over time**.



Articulation tells a **story of how use of the space has evolved.**

I use **drawings as a tool** to **identify what elements of a building have significance**,  
The **things drawn resonated** with the viewer / occupant, were **remembered, drawn**.  
Things **missing / forgotten**, less important, still **unresolved in design articulation**.



A **child's drawing** can also be used to identify the **most essential element** for a particular type of architecture, through **elimination**, removing each element until the **sense (feel) of a house is lost**.



cabin **without windows, isolates from the outside**, still a house.

Unabomer, FC

(**Ted Kaczynski's** remote **Montana cabin**, now in FBI storage)

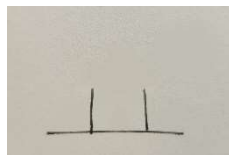
5/22/1942 - 6/10/2023    1971-1996    27 yrs. jail for 3 deaths



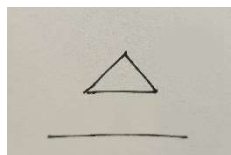
Alternatively, **eliminating the door... maintains connection through windows**



Eliminating door/wdws., **still holds the sense / feel of a house.**



Eliminating the roof, leaving **only the walls**, has the **sense of enclosure**, but the **sense of a house has been lost.**



Conversely, **keeping the roof, eliminating the walls, sense of house remains.**

So, the **most essential aspect of a house is to shelter**, the primary function of a roof.

More significantly, **a house is able to shelter without walls, just a roof.** 1:15  
We'll see how **Frank Lloyd Wright** came to realize this in his **Prairie house.**

This point is the **development of architecture in the 20th and into 21st century,** and, precisely the **subject of this course on the end of architecture.**

**Over next 5 weeks,** we will see how the **wall has been eliminated by the window,** an **entropic desire** to **dissolve away sense of enclosure,** while **still feeling sheltered.** A **Modern plasticity** in **new materials and construction methods,** to create a **continuous space,** perimeter **envelope and thresholds amorphous, ambiguous,** to **merge our existence with our surroundings as one.**

However, as the **historically humanist centered architecture draws to an end,** we find ourselves **disconnected, isolated, foreign to the natural environment,** by an **industrial past that we exploited, extracted, domesticated** selfishly.

Inside a **new hybrid, artificial environment,** precisely at the moment when our **technologies are overtaking the next evolutionary leap,** our **bodies still biologic** are left **longing for organic, meaningful experiences, relationships, symbiosis.**



**Frank Lloyd Wright** speaks to this in a **1930 Princeton lecture** (on The Future of Architecture, p.77-78): “**American homes... of slanderous liars and poetry-crushers,** the suburban house parade. Any popular avenue or suburb will show the polyglot encampment displaying, on the neatly kept little plots, a theatrical desire on the part of fairly respectable people to live in **chateaux, manor houses, Venetian palaces, feudal castles,** and **Queen Anne cottages.** Look within all this typical monotony-in-variety and see there the **machine-made copies of handicraft originals.**”

“...imitation patterns and imitation textures, stamped or **printed by the machine;** imitations under foot, imitations overhead and imitations all around you. To you, proud proprietors – **do these things thus degraded, mean anything aside from vogue and price?** Aside from your sense of quantitative ownership, **do you perceive in them some fine fitness in form, line and color** to the purposes which they serve? Are the chairs to sit in, the tables to use, the couch comfortable, and **are all harmoniously related to each other and to your own life?**”

“A cheap substitute for ancient art and craft which has no vital meaning in your own life or our time. You line the box you live in as a magpie lines its nest. This is what has become of it. Of all conditions, this one at home is most deplorable, for to the homes of this country we must look for any beginning of the awakening of an artistic conscience which will change this parasitic condition to independent growth.”



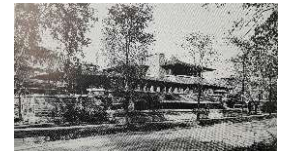
Answered his critique with...

In **Feb. 1901**, **Wright** took out a full page ad in **Lady's Home Journal**, with a floor plan and renderings for a design called **A House in a Prairie Town**, featuring **fireplace at the heart** of the house, **broad overhanging roofline**, **screen of windows** with **patchwork of stain glass**, and **elevated low base** with **continuous horizontal** extending into the **open landscape** of the American prairie.

Reaction to the **small congested lots of the industrial city**, the **Prairie house** was out in the **country, to take advantage of the open undeveloped American plane.**

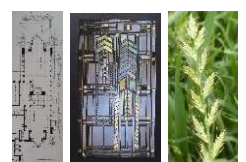
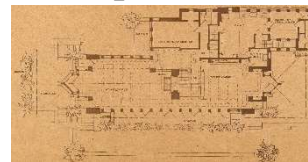


**Three central rooms** (Living, Dining, Library) **connected in open, continuous plan**, turned perpendicular from entry, for **view across open landscape.**

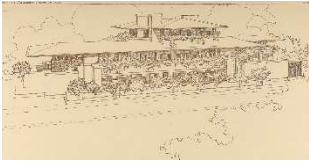


Wright's most successful execution of this prairie concept, was the **Robie house** (Chicago, **1909-1910**)

Plate XXXVII: **City dwelling of Fred C. Robie**, Woodlawn Ave. and 57th St., Chicago, **1909.**



“A city dwelling with a south front, built of **slender brown bricks**, with stone trimmings. Roof tiled, with copper cornices. A **single room type**, similar to Tomek, Coonley and Thomas houses, well **open to the south**, with **balcony** and **enclosed garden**. **Sleeping rooms added in belvedere**. [summerhouse, open-sided gallery, rooftop, commanding fine view] **Garage connected to house**, with servants rooms over. **No excavation** except for heater and coal. **A highly developed working out of organic relation between exterior and interior – clean, sweeping lines** [continuous] **and low proportions** [ ground plane, horizon ] **preserving openness and airiness** [ open plan ] **of feature and arrangement throughout.**”

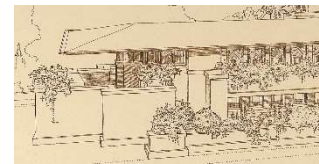


Wall replaced by **continuous line of doors, open to exterior.**

**Prairie style house:** natural relationship between exterior and interior space; continuous simple lines; on (prairie) horizon ground plane; open floor plan.

In 1909 (42 yrs old) he abandoned his family and practice, as his father had done, and left for Europe with his mistress, a former client (Mrs. Cheney). He met with Berlin's greatest art publisher **Ernst Wasmuth, to publish a portfolio of his work** to date. Rented a villa in Florence to re-draft his Prairie houses over the next two years, preparing for publication in 1911. **500 prints were sold** by the publisher in Europe, making him **the most widely discussed architect in Europe.**

Wright returned home to Wisconsin with a second set of 500 prints. However, a **1914 fire destroyed all but a few dozen**, which showed burn marks and water damage. Realizing his mistake keeping them all in one location, he distributed the **remaining sets to the apprentices** working in his office at the time. One of those plates of the house for a Prairie town, I brought in for you to see during the break. (25"x16" lithograph on woven paper, from estate of Blaine & Hulda Drake)



**“All architecture worthy the name is a growth in accord with natural feeling and industrial means to serve actual needs. [ organic feel vs. functional form ]**

It cannot be put on from without. Any attempt to use **forms borrowed from other times and conditions must end** as the Renaissance ends – with **total loss of inherent relation to the soul life of the people.** But until the people have the joy again in **architecture as a living art** that sees recorded in buildings of all the truly great periods, so long will **architecture remain a dead thing.** [ The End of Architecture ]  
It will not live again until we **break away entirely from adherence to the false ideals of the Renaissance.”**

**“In America** we are more betrayed by this condition than the people of older countries, for **we have no traditional forms** except the accumulated ones of all

peoples that do not without sacrifice **fit new conditions**, and there is in consequence **no true reverence for tradition**. [ **Modern values** ] As some sort of architecture is a necessity, **American architects take their pick from the world's stock of "ready-made" architecture**, and are most successful when transplanting form for form, line for line, enlarging details by means of lantern slides from photographs of the originals."

"This works well. **The people are architecturally clothed and sheltered. But is this architecture?** In this polyglot **tangle of borrowed forms**, is there a great spirit that will bring order out of chaos? vitality, unity and greatness out of emptiness and discord?"

"A conception of what constitutes **an organic architecture will lead to better things once it is planted in the hearts and minds of men whose resource and skill**, whose real power, are unquestioned, and who are not **obsessed by expedients and forms, the nature and origin of which they have not studied in relation to the spirit that produced them**. [ **easily copied vs. studying natural spirit** ] The nature of these forms is not taught in any vital sense in any of the schools in which architects are trained." [ **call for Taliesin school 1937-1959 & Bauhaus 1919-1933** ]

[ **Studies and Executed Buildings by Frank Lloyd Wright, Wasmuth Portfolio, 1910, p.6** ]

1:30

Wasmuth portfolio release, **Peter Behrens obtained a copy in his Berlin studio, work stopped for the day to review it designs**. Three apprentices in his studio at the time, were **Le Corbusier, Mies van der Rohe, and Walter Gropius**.

**Le Corbusier** later acquired his own copy, which he would share with students. Austrian architects, **Rudolf Schindler** and **Richard Neutra** moved to United States in hopes of working for Wright. The Dutch De Stijl movement's major contributors credit Wright's work as an influence, and **in exchange**, Wright's designs after returning from Europe, have traces of from the Vienna Secession.

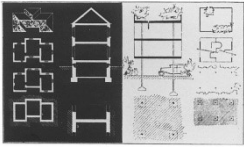


First, **Le Corbusier's Villa Savoye**, Poissy, France (**1928-1931**).

The **most significant window in 20th century** architecture, replacing the wall. (**sightline out, but restricting physical access**)

The **Five Points of Architecture** (published in **L'Esprit Nouveau** in early 1920s)

**Pilotis**: grid of slim reinforced concrete pylons, **raise the building off the ground**.



**Free design of the ground plan**: by the pilotis, **absence of load bearing walls**.

Here Corbusier has taken **the first step to eliminate the wall**, **beginning of the end**.



Flexibility of design, freedom of movement.



Extended this principle to the vertical elevation, **Free design of the façade**:

**Exterior walls no longer bearing**, **curtain walls** hung from the pilotis structure, flexibility and freedom of the design on the façade.

**Horizontal ribbon window**: along **length of wall**, **lighting rooms equally**, **framing view of the horizon**, **masking out the ground and the sky**.

**The most important window in history**. **Dissolving the wall**, ...the end...



Last, **roof garden**: **flat roof** affording a terrace, **doubling of the ground plane**.



Raise off ground, **Cubist perception of the third dimension**, **depth**, in a single view.

Obscured (**elimination**) the door, avoid **relation to ground**, **function**, **idealized**, art, **abstract cube**, **conceptual over practical**.

**Democratic space**, complete **mobility**, **unrestricted space**, **no longer confined**, **without division**, **without Architecture as separation**, **collective over individual**.

1:40

[ 10 MINUTE BREAK ]

1:50



**Concept:**  
**house w/o walls**



**FLW projecting roof** 1:50  
**Corb open ground**

Ludwig Mies van der Rohe's **Farnsworth House**, Plano, Illinois (1945-1951).  
Raised off ground, but lowered, closer to ground.



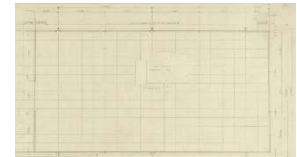
Ribbon window enlarged from floor to ceiling, **complete elimination of the wall.**



Yet, white structure maintains abstraction from natural world,  
Perpendicular approach at a right angle, further **abstraction from nature.**



Without walls, third dimension perceived through the space, not under the floor.  
Without walls, absence of the corner, **space becomes endless**, between two planes.



**Floor plans** rendered without walls, without interior division, **void of anything.**



Interior FLW's **continuous open space** **flowing w/o division of use**



**Curtain corner**

**Roof and Floor planes without walls, sheltered without sense of enclosure.**



Exposed steel (modern material) structure  
Roof / Floor planes floating past, **continuous, uninterrupted**

In **1961**, **Philip Johnson** wrote:

2pm

“**The entire modern movement** – looked at as an intellectual movement dating from **Ruskin** and **Viollet-le-Duc**, going through the **Werkbund**, **Bauhaus**, **Le Corbusier** to **World War II** – may be **winding up its days**.”

There is **only one absolute today and that is change**. There are no rules, surely no certainties in any of the arts. There is only the feeling of a wonderful freedom, of endless past years of historically great buildings to enjoy.

I cannot worry about **a new eclecticism**. Even **Richardson** who considered himself an eclectic was not one. **A good architect will always do original work**. A bad one would do bad ‘modern’ work as well as bad work, that is imitative with historical forms.

I am old enough to have enjoyed the **International Style** immensely and worked in it with the greatest pleasure. I still believe **Le Corbusier** and **Mies** to be the greatest living architects. But now the **age is changing so fast**. Old values are swept away by new with dizzying but thrilling speed. Long live Change!

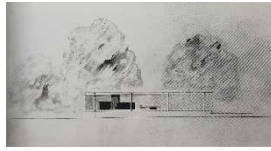
The danger you see of a sterile academic eclecticism is no danger. The danger is the opposite, the **sterility of your Academy of the Modern Movement.**”

[ Letter written by **Philip Johnson** on **Dec. 6, 1961** to **Dr. Joedicke**, a historian and critic of contemporary architecture ]



After two years of travel and documentation, Johnson and Hitchcock mounted the inaugural show at the newly formed MoMA museum, titled **Modern Architecture: International Exhibition** (**Feb. 10, 1932**), featuring works of the new modern architects, which included **Villa Savoye** by **Le Corbusier**, the **Tugendhat house** by **Mies**, the **House on the Mesa** by **Wright** and **Pinehurst** by **Oud**.

The show included a companion book titled, **The International Style: Architecture since 1922**, which was the **textbook on modern architecture**, when **Johnson** returned to Harvard in **1940** at the age of 34, to get his degree and license in Architecture.



**Johnson** began work on the design of a house for himself in the **mid-1940s**, ultimately working through **79 schemes and 27 variations** on design parti. However, it was a trip to **Chicago** in **1946**, visiting **Mies** to organize a solo show of his work at the museum (Sept. 1947), that **Johnson came across a sketch and model for a house made of glass**. A **one room glass house**, rendered in watercolor over a simple pencil sketch, a **transparent box seemingly suspended over the horizon line**. The white steel structure held off the ground, atop piers. When Johnson saw this he realized instantly, an **all-glass belvedere** (beautiful scene) could be built. By **midsummer 1947**, he produced an **eighth scale model** of his own.

He **decided to build his glass house in New Canaan, Connecticut**, because a group of his classmates, known as the **Harvard Five**, already had houses there. The group was made up of **Johnson, John Johansen, Eliot Noyes, Landis Gores** and their teacher **Marcel Breuer**.



unlike **Mies orthogonal approach**  
**oblique approach**, informal, natural.

**Philip Johnson's Glass House**, New Canaan, Connecticut (**1948-1949**)



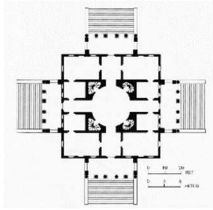
**Fully landed on the ground**, architecture's original place grounded, **as authority**.



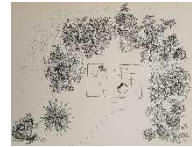
**Brick cylinder, mass grounding in weight, penetrating the floor and roof planes**,  
...**marking place, significance, authority**, of the **individual not the collective**,



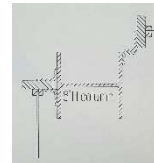
...return to **classical form not the modern void of history**, subjective, meaningful.  
**Chair rail**, base trim along floor. **Brick floor** (herringbone pattern).



Referencing Palladio's classical **Villa Rontonda (1592)**, identically symmetrical on all four sides, with a door on each elevation, for physical access in each cardinal direction (unlike Corb's windows or Mies' elevated floor).



Both featured a **circular feature inside**, although **Johnson** has a **modern asymmetry**.



Ground was broken on **March 20, 1948** and construction began. Full-sized drawings of the **steel details for mullions, cornice, corner posts, and door jambs**, with specifications for **18 ft. sheets of glass** were sent to New York for fabrication.

Eight months later, it was finished on **New Year's Eve of 1949**, at a cost of \$60K, four times that of an average home.



In the absence of walls, **art work used as vertical plane dividing space**.

[Nicolas Poussin's **The Burial of Phocion, 1648-49**]



The painting depicted an **idealized Roman landscape**, with temples and rolling hills, capturing the way **Johnson** saw the landscape of the glass house. Here is clear evidence of his taste, despite any doings in glass and steel, a **classist at heart**.



...positioned in height to **align the horizons in the painting with the outdoors**.

Rug a **floating raft, defining space** of **Meis'** intimate seating (Barcelona pavilion)



Obliquely opposite painting was a sculpture, **Two Circus Women** (Elie Nadelman), a paper-mâché figural piece of two embracing woman, the generous **curves and textured surfaces of their bodies** "the foil" which the **hard lines and machine smoothness** of the house needed. **Wright** repositioned it during a visit, saying "**Philip**, leave perfect symmetry to God!"

Unlike **Wright's** houses where every furnishing, patterned window, light fixture, and door knob was designed to be made by hand, **Johnson's** glass house was **furnished almost entirely of factory-made materials**, of another designer (**Mies**).



Corners closed, **space confined** (without walls).

Highly reflective glass, not clear invisibility of **Farnsworth glass**, absent as walls. Johnson's **glass reflects the trees**, the **natural surroundings** part of the architecture.



Reflectivity not just in the glass, but in **reflection necessary to live in a glass house**. "It is the thinking time that's important time in architecture."

From **Wright's Robie house** (1909-10), **Le Corbusier's Villa Savoye** (1928-31), **Meis' Farnsworth house** (1945-1951), to **Johnson's Glass House** (1948-1949), the **wall has been eliminated by the window**, yet **Johnson's window maintains a sense of enclosure** by the steel corner columns and reflective glass. Space is **continuous** physically with doors on all sides, yet **ambiguous** by reflecting trees.

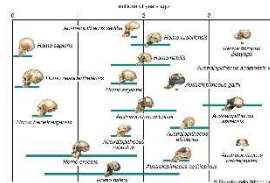
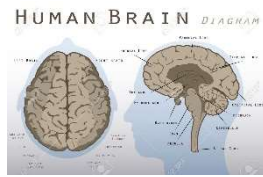
Johnson is clinging to an **historic humanist centered architecture**, fighting against society drifting otherwise, toward a **disconnected isolation from the natural environment**. His **Glass House** models a way to extend **the end of architecture**, understanding **our nature as biologic beings and the need for symbiotic connection**.

**Optional Homework:****What is the source of creativity?**

(where did Wright, Corb, Johnson derive ideas on continuous space / enclosure?)

“Language networks emerged as a specialization of temporoparietal-prefrontal networks involved in cognitive processes that require sustained activity, like working memory, attention, and movement imitation.”

[ The Origin of Broca’s Area and its Connections from an Ancestral Working Memory Network, Francisco Aboitiz, et al, May 2006 ]



<b>Body</b>	Spinal Chord	“emerging on land” “grounding”	animals (500 MYA)
Processing	Brain Stem	“social species/trees” “symbiosis”	squirrels (65 MYA)
<b>Intuit</b>	Cerebellum	“brachiation” “feeling”	chimpanzee (6 MYA)
Images	Visual Cortex	“bi-pedal”	australopithecus (4 MYA)
<b>Symbol</b>	Temporal Lobe	“handedness” “body/mind”	homo habilis (2.4 MYA)
<b>Idea</b>	Frontal Cortex	“language/conscious” “reflection/prediction”	homo sapiens (300 KYA)

We are **biologic beings**, evolved from a **feeling body**, only recently thinking.  
Architecture must reflect this dynamic, **maintain proxemic relationship**.