



“**Technology** is rooted in the past.

It dominates the present and tends into the future.

It is **a real historical movement** -

One of the great movements which shape and represent their epoch.

It can be compared only with the Classic discovery of man as a person,

The Roman will to power, and the religious movement of the Middle Ages.

Technology is far **more than a method**, it is a world in itself.

As a method it is superior in almost every respect.

But only where it is left to itself as in the construction of machinery,  
or as in gigantic structures of engineering, there technology reveals its true nature.

There it is evident that it is **not only a useful means, that it is something**,  
something in itself, something that has a meaning and powerful form -  
so powerful in fact, that it is not easy to name it.

Is that **still technology or is it architecture?**

And that may be the reason why some people are convinced that architecture  
will be outmoded and replaced by technology.

Such a conviction is not based on clear thinking. The opposite happens.

**Wherever technology reaches its real fulfillment, it transcends into architecture.**

It is true that architecture depends on the facts, but its real field of activity is the  
**realm of the significance.**

I hope you will understand that architecture has nothing to do with the inventions of  
forms.

It is not a playground for children, young or old.

**Architecture is the battleground of the spirit.**

Architecture wrote the history of the epochs and gave them their names.

Architecture depends on its time.

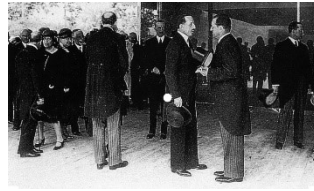
It is **the crystallization of its inner structure**, the **slow unfolding of its form.**

That is the reason why technology and architecture are so closely related.

Our real hope is that **they grow together**, that someday the one be the expression of  
the other.

Only then will we have an architecture worthy of its name:

Architecture as a true symbol of our time.”



This quote is from a talk Mies gave in 1950 on Architecture and Technology. When the **German National Pavilion opened on May 26, 1929**, it was the showpiece for the German entries into the **Barcelona International Exposition**. When Mies van der Rohe was given the commission, he asked ‘what will be exhibited in the pavilion?’ He was told, ‘nothing.’ The **pavilion itself would be the exhibit**, an expression of architecture as art. (Mies with King Alfonso XIII at opening)

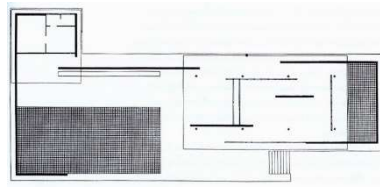
Mies was “never interested in formalistic ideas. (He) was interested in construction, not play with forms.” He was a **structuralist**: “didn’t think about form, (He) thought about the right way to use the materials, then accept the result.” He was striving for an objective way, not an individualistic approach. Developing a common language, not particularly individual ideas.

So, for the Barcelona Pavilion, above all, the design needed to reflect the art of building, what was referred to as **Baukunst** (‘**building art**’). For Mies, he referred to his work as this, not **Architektur**, which was thought of as **forming something from the outside**.

The same way the Japanese temples developed out of their structure, in the pavilion we see the same low overhanging roof, supported atop columns.



All of **Semper’s Four Elements of Architecture** are here, the elevated low base **mound**, the **wickerwork** woven mat enclosure, the overhanging **roof**, and inside we will find the **hearth** at the center.



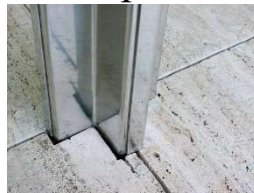
In plan we see the **Japanese Pavilion**, a central space flanked by two spaces, however it has **shifted along the horizontal axis**, creating an **asymmetry of spaces** beyond the roofline. The **roof as the central hall**, the **pools are the flanking wings**, one along horizontal axis, the other across it.

Up the stairs, then turning to the entry, we **enter the central space on the diagonal** with a **continuous, uninterrupted view** through the building **to the outside garden**, as we saw in Wright's Prairie houses.



10:15

As we saw last week with Corbusier's curtain wall, taken from the Japanese temple post and beam structure allowing the **walls to be free of the structure**, and now if the Barcelona Pavilion, those walls begin to **slide back and forth along the horizontal axis**, **just as the shoji screens** did in the Japanese temples.



This was Mies' first use of the column in any of his buildings. Nickel plated steel columns, in a cross pattern are a departure from Corbusier's round pilotis. With a **cross shape**, the orthogonal geometry of the plan is emphasized more so, than even the square columns at the intersections of the tatami mats of the Japanese temples.



In the central space, we find the **single freestanding column** from the Petite Maison, the **tatami mat rug** defining the space, and in place of the shrine/hearth, a freestanding wall made of onyx. The two **veneer slabs are the module** used to determine the height of the ceiling. And last, we see the **Shinto clean** aesthetic, an austere minimal room.



The cross pattern is repeated throughout at multiple scales, creating a **gesamtkunstwerk** (gez-umt-kunz-verk) 'total work of art'. From the columns to the furniture, in the **chairs, stools, and tables**. But most importantly, the cross motif is found in the **freestanding walls**, sliding along the horizontal and cross axis.

Departure from Corbusier's cube, what is the inspiration for these shifting planes?



(Horizontal Tree, 1911)

In 1921, Mies came into contact with the Swiss Dadaist **Hans Richter**, and through him **Theo Van Doesburg** in Berlin and **El Lissitzky**. In 1923, they started magazine titled G, that outlined a new aesthetic. (for neue Gestaltung 'new shaping' the German translation of Nieuwe Beelding 'new image', art group by Piet Mondrian).



(Blooming Apple Tree, 1912)

They believed "Art was the means through which we can **know the universal** and **contemplate it in plastic form**." Instead of representations of natural forms, they explored **relationships between line and color to emulate the forces that structured nature and reality**.



(Trees, 1912)

They advocated for the use of **austere geometry and color** to create **asymmetrical but balanced compositions** that conveyed the **harmony underlying reality**.



(Composition Trees II, 1912)

Referred to as **Neo-Plasticism**, their form of painting **abolished the figure-ground dichotomy** by using an irregular grid structure that **resisted arranging the pictorial elements into a hierarchy**. This all-over composition created a unity that underscored the disharmony of the surrounding environment.



(Tableau I, 1913)

They believed "All relations are dominated by a **single primordial relation**, which is defined by the opposition of two fundamental and absolute extremes that shape our planet: On the one hand the **line of the horizontal** force, namely the trajectory of the Earth around the Sun, and on the other **vertical**, essentially spatial movement of the rays that issue from the center of the Sun." (Schoenmaeker, 1909)



(Tableau III, 1914)

Their compositions juxtaposed these forces as **horizontal and vertical lines** along with the **primary colors** of red, yellow, and blue against the **non-colors** of black, white, and grey to produce timeless balance.



(Drawing, 1915)

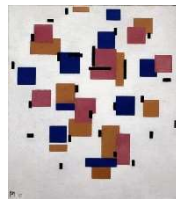
The aim of their spatial composition was the **spiritual**.



(Composition in Line, 1915)

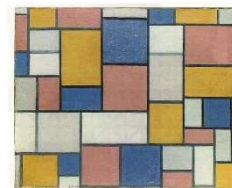
"Creating harmony through two extremes: the **universal** and the **individual**.

Art gives visible expression to the evolution of life: the evolution of **spirit** and - in the reverse direction - that of **matter**."



(Composition Color B, 1917)

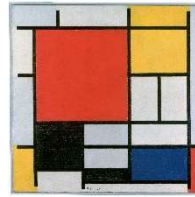
"Neo-plasticism was **pure painting**; the means of expression was form and color, though these are completely interiorized; the **straight line** and **flat color** remain purely pictorial means of expression..."



(Composition Color Areas and Gray Lines I, 1918)

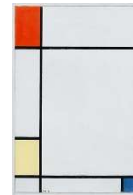
They believed that the **merging of painting, architecture, and design** would hasten the coming of **an ordered and harmonious society**. They intended that this utopic vision, coming from the "**dynamic equilibrium**" sought out in Neo-Plastic paintings, would spread to the interior of the studio, to the home, the street, and the city, and eventually to all of the world. "Plastic vision implies action... set up a new society... **composed of balanced relationships**."





(Composition with a Large Red Surface, 1921)

"In the future, the realization of **pure plastic expression in palpable reality will replace the work of art**. But in order to achieve this, orientation toward a universal conception and **detachment from the oppression of nature** is necessary. Then we will no longer have the need of pictures and sculpture, for we will live in realized art." (Piet Mondrian)



(Composition 3 with Red, Yellow and Blue, 1927)

In the Neoplasticist city, the house will **no longer be closed, circumscribed, separate**, nor will the street. Despite their different functions, these two elements must **form a unity**. We must no longer look upon the house as a 'box'. The idea of a 'home' (home, sweet home) must disappear, as must the conventional idea of 'street'.



In 1925, Frederick Kiesler's **City of Space** (Raumstadt) debuted at the Exposition des Arts Decoratifs in Paris, admired by Theo van Doesburg because of its **decentralized parts in a system of tension, hovering freely in space**. In place of decoration, smooth walls; in place of art, architecture. I demand living building, the space city.

Building adequate to **the elasticity of the functions of life**. Whether you put up domes or cubes over men, either way they suffocate. The new city will make possible diversity in private life and freedom of the masses.



The year before in 1924, Dutch architect Gerrit Rietveld designed the Schroder house in Utrecht, commissioned to create **a house without walls**. A new openness through architectural design, **free from association**, questioning distinction between the inside and outside. Sliding panels create dynamic, changeable interior spaces.



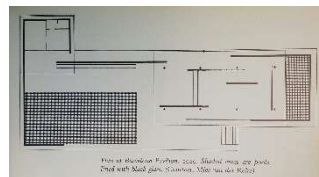
(Doesburg) "Constructive, purely functional architecture leads ultimately towards an anatomical constructive sterility. Functionalist architecture deals with only the practical side of life or the mechanistic function of life: living and working. However, something exists **beyond the demand for the useful, and that is the spiritual**. As soon as the architect or the engineer wishes to visualize relationship - for example, the **relationship between a wall and space** - his intentions are no longer solely constructive but plastic as well."



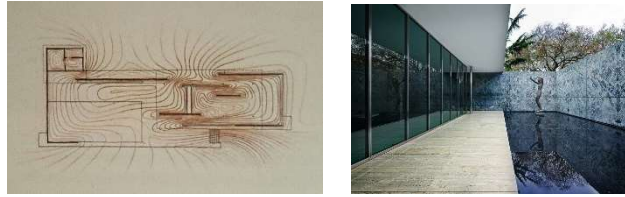
For Mies, the **box does not exist**, Wright has already destroyed it, therefore it is useless to persist in taking it apart. He departs from a **continuous space**, without interruptions between interior and exterior, never trapped between four walls, and directs its **flow by means of planes** which, extending beyond the floor and roof slabs, create a continuous dialog between the open building and the surrounding environment.



The very lack of interruption between interior and exterior space was Mies' greatest contribution. **Material finishes on the interior walls are the same finishes, with the same detailing, on the exterior surfaces**. Blurring the lines, thresholds and perimeters pourous, a **sense of shelter** – architecture's primary function – is absent, **space flows undifferentiated**, continuous, between the walls, around the walls, uninterrupted.



The Barcelona Pavilion **breaks open the Corbusian box**, stretched **along Wright's horizontal axis**. The box that once enclosed the living spaces, becomes the **Japanese walled lot** to include the **garden and water feature**. The box fragments shift and slide redefining spaces, as **movable shoji screens** opening up the pavilion, space still extends outward, but no longer endlessly, **defined but not confined**.



Wright's **compression of space** in his Prairie houses, is carried through in Mies' Pavilion, in **both plan and section**. **Constricted at entry points, space is released in the water gardens**, out from under the cantilevering low roof. The variations in spatial density creates a **directionality and cross grain**, a **materiality to space**, in contrast to the uniformity and homogeneous space of Corbusier's cube.



Reinforcing the spatial materiality are the material finishes of the physical structure. Stone walls are **travertine** (long garden), **green marble from the alps** (cross garden), **antique green marble of Tinos Wall** (entries), and **onyx** (shrine/hearth). Dispensing with the plaster walls and hangings of the traditional home, the pavilion **walls become the artwork**. Interior & exterior was blurred, building & garden, now **architecture & décor is blurred**, building & ornament are undifferentiated as one. (Berlage) "Before all else, the wall must be shown naked in all its sleek beauty."

### [ 10 MINUTE BREAK ]



(Ai Wei Wei) "Mies van der Rohe's Barcelona Pavilion stood in sight beyond all doubt. It's concrete **materials weightless**, barely held down to the ground. Stone and glass are nothing new to architecture, but now they are **lenses and mirrors to see an enlightened age**. The pools, blank, along with other highly polished surfaces, a timeless gaze reflecting everything else around, the building, the sky and the trees. This is a place only gods dwell."

"Perhaps this view misinterprets Mies' work, it left out the modern dream of equality, as well as architecture of living, the need of every ordinary person. Speaking about design Mies frequently used expressions such as '**general solution**' and '**common language**'."





“I approach Mies Van der Rohe's Barcelona Pavilion as **a ready-made**, the activities it experienced and the way it's been seen. The building is in fact **not still**, my intervention taps into the metabolism of a living machine. Liquid is being replaced because it is a part of the building that has always been replaced. Content in the **two pools has in fact been replaced all the time, invisible to visitors**. A pump recirculates water in the large outdoor pool, while the smaller pool is drained every two weeks, the bottom dark glass cleaned and the pool refilled.”

“Regular work is done so **the monument appears unchanged**, stood against time; not to mention the entire building in existence is a perfect reconstruction. In the *With milk, find something everybody can use* intervention, the under layer of this monument surfaces and persists in consciousness; it refuses to be flushed away. **Upkeeping the condition of milk and coffee is the same as to preserve a body**, a demanding effort against light, air, warmth... Anything encourages growth and change. What is vigor of geometry, clarity of assembly and enlightened optimism combined with ordinary everyday life? Modernism, in correcting mistakes of the past, it might have made new mistakes. **Today's cultural attitude is not minding mistakes**, it is to go out and unafraid of making another one.”



After the Barcelona Exposition in 1929, the pavilion was disassembled and sold off for scrap. In 1986, it was re-built, in the same spot, with the same materials, and same construction details, **a reproduction in a limited edition of one**.



In 2009, Ai Wei Wei was invited to create an installation piece for the new Barcelona Pavilion (*With milk, find something everybody can use*). He filled the large pool with **65 tons of milk**, the smaller pool with **15 tons of coffee**.



In Ai Wei Wei's words, "Milk and coffee are daily needs, that everyone depends on, the necessities." In contrast to the **perfectly preserved space** of the Pavilion, timeless, pristine. Kept as if frozen in time. A very different preservation from the Japanese temples preserved by being re-built every twenty years.



The pool of milk, exposed to the elements, was allowed to spoil, eventually drying out. Unlike the pool water, that is **changed frequently, always clean, never noticed.**



Its surface reflective just as the glass panels and stone walls, yet its **fluid nature, not fixed, prevents it from consideration as part of the architecture.** Temporal.



This month (Nov.16), artists Anna & Eugeni Bach will be transforming the Pavilion by **cladding the entire surface with white vinyl**, for an installation work titled *Mies Missing Materiality*. The piece questions the role of materials in the experience of space and offers a rare opportunity to fully appreciate the **significance of the rich materials in the design of the Pavilion**, by their absence.

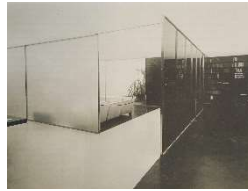


(L'Esprit Nouveau) "**Whitewash is a moral act**, sincerity, equilibrium, truthfulness, harmony, happiness, erasure to begin anew."



(Corbusier) “Once you have put **Ripolin** (whitewash) on your walls, you will be master of yourself, you will want to be **precise**, to be **accurate**, to think **clearly**.”

11:25



Two years before the design of the Barcelona Pavilion, in 1927, at the Weissenhof Estate Exhibition in Stuttgart (Industry and Craft Exhibition), Mies and **Lilly Reich** designed the **Glassraum** (‘Glass Room’) commissioned by the Plate Glass Industry. The room featured the latest advancements in glass: **transparent, etched translucent, tinted greens, gray shades, and the reflective opaque black glass**.



The mass-produced, high quality glass was the ultimate modern building material. Mies perceived the material as **a substance of a phenomenological nature**.

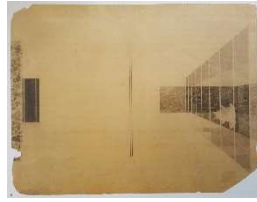
"I discovered by working with actual glass models that the important thing is the **play of reflections** and not the effect of light and shadows as in ordinary buildings."



In the Pavilion, for the first time, **glass was treated as a freestanding wall**. No longer Corbusier’s ribbon window, the glass panels spanned from floor to ceiling. Lens inserted into the architecture, to **layer spaces**, not divide. The realisation of the Cubist’ **simultaneous perception of interior and exterior space**.



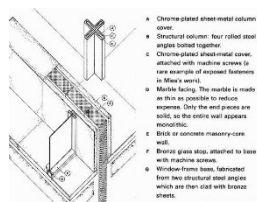
The frames were detailed to **attach on the surface of the floor and ceiling**, not tucked into the material as in traditional window jambs. This accentuated the differentiation of the glass panels, as if the **frames floated**, unfixed.



However, the glass and stone walls of the new 1986 reconstructed Pavilion reveals the secret of Mies' success. In one of the study drawings for the Pavilion interior, the **careful delineation of the stone wall veining reflected in the glass wall panels**, in contrast to the balance of the drawing rendered austere and blank, speaks to importance of **reflectivity in the sense of space**.



With columns exposed and separated out from walls that a roof so clearly spans and cantilevers, the Barcelona Pavilion would appear to have an **honest expression of its structure**, a crowning example of Meisian Structuralism. Yet, it turns out to be all smoke and mirrors – literally.

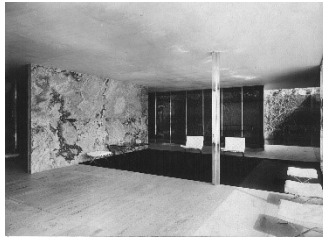


As it turns out, none of the structure is exposed, all of it is concealed. The steel **columns are clad in nickel coverings**. To exaggerate their slenderness, some of their **loading is relieved by load bearing concrete walls, which are also clad in stone veneers**. The **steel frame roof is covered with smooth plaster skin**, hiding all the nuts and bolts holding everything together. And, the **concrete and brick foundation slab and walls are covered with a thin travertine skin**.



Does this make Mies a dishonest structuralist? No, it simply **demonstrates his skill for detailing and craft as a builder**, and most importantly, his desire to take such complex measures to achieve his primary goal: the **expression of the subtle nuances reflected on such polished and rich materials**.

Yet, here is where the Barcelona Pavilion has its final reveal, a **reflection of Meis' earnest vigor for the details and our society's loss for such precisions**.



Where are such **reflections and nuance of spirit** found in the 1986 Pavilion? Here we have the most widely published interior photograph of the original 1929 Pavilion, the **tinted glass darkened to reflect the illuminate etched translucent glass** on the opposite flank of this central space, while **overlaying the Kolbe figure** (*Morning*, originally intended Lehmbruck) **and marble veining in garden beyond**.



In the 1986 Pavilion, such care is taken with the bookmatched vein patterns in the onyx wall, but **attention to Mies' reflections in the glass has been lost**. A preference for the **materiality of the finishes creating a vacant empty space** has been substituted for the **liveliness of space that Mies took great care and effort to create in the overlays and reflections in the glass planes**.

The **Japanese attention for shadow and light** in their long history of architecture, **modernized by Mies through the reflectivity of this new glass material**, has been lost on the spaces we inhabit today, **flooded with a uniform, homogenous light**.



After 1929, the modern movement ended with the Barcelona Pavilion its last and greatest achievement. The beginning of a change in which the **language of the heroic is used solely for decorative ends**. The economic collapse and subsequent depression, followed by a Second World War, undermined any belief in revolution or the heroic individual. The replacement of the individual and the particular by the universal and the general. Entropy was setting in.

(Heroic period: 1914-1929, revolutionary movements in art - cubism, futurism, expressionism, constructivism, De Stijl.)





Some of the **best curation I have ever seen at the Carnegie Museum**, can be seen now in the **reflections and ghost figures (Thad) at the current International**.

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A man of eternal understatement, modest enough to attempt anonymous architecture of an epoch serving all humanity, the special achievement of our age - technology, and in the hands of Mies, reduced to the essence: "I remember the first time I ever went to Italy. The sun and the blue skies were so bright, I thought I'd go crazy. I couldn't wait to go back to the north, where everything was gray and subtle." Preoccupied with the extraction of the finest nuance from the simplest object, the brightness of the Mediterranean was nothing but sheer bombast. In commissioning photography of his American buildings, he tried hard to get the same sort of gray, slightly grim, very contrastless pictures of his buildings, which he used to get back in Germany of the 1920s.

Beinahe nichts (almost nothing)