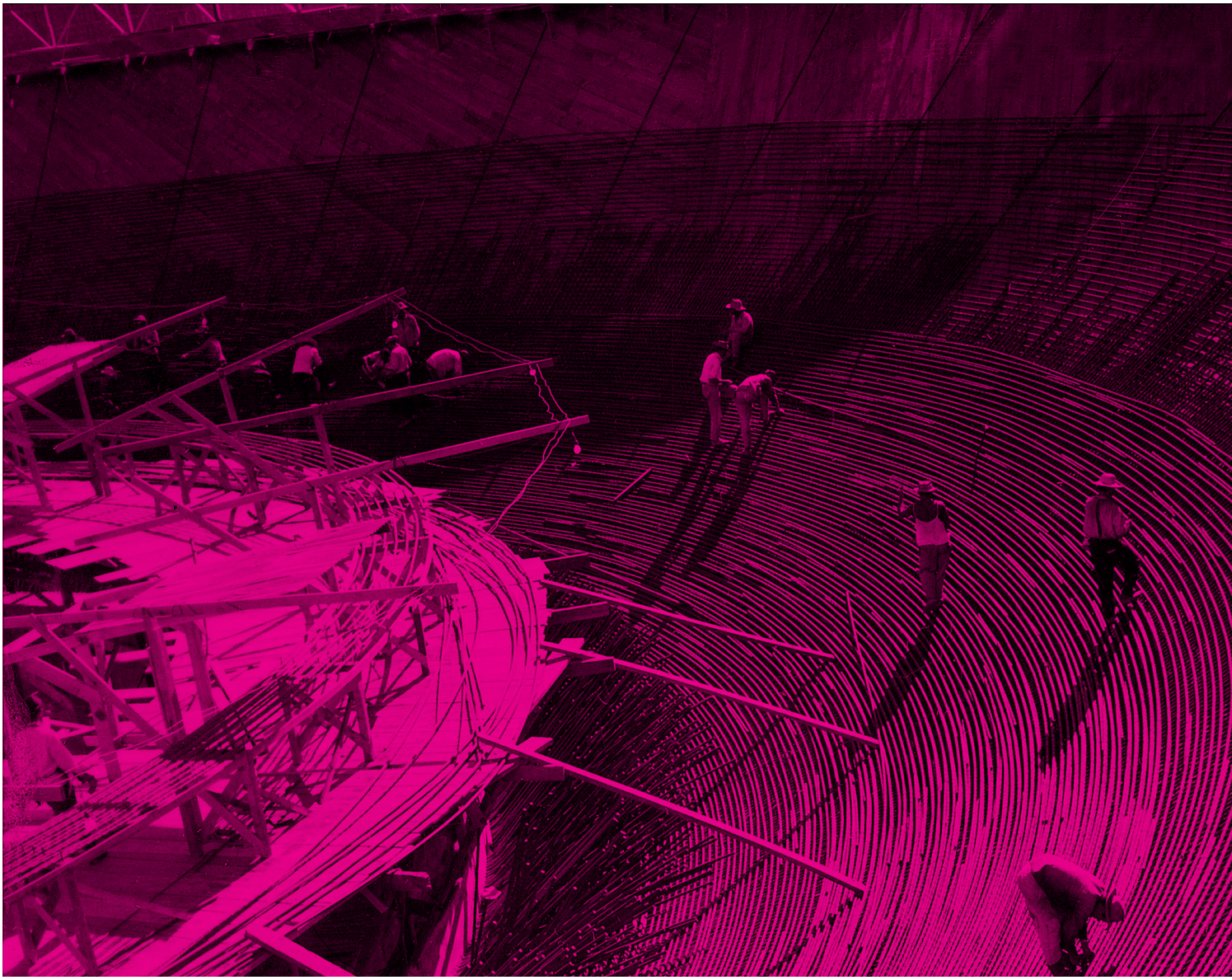

HPA

Histories of Postwar Architecture

n.**0** 20**17**
vol.**I**

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EDITORIAL

Histories of Postwar Architecture

Histories of Postwar Architecture is a biannual open-access peer-reviewed Journal that publishes innovative and original papers on postwar architecture, with no geographical, methodological, historiographical or disciplinary restrictions. The Journal is published by the Department of Architecture of the University of Bologna, in association with the Department of Visual, Performing and Media Arts and the Department for Life Quality Studies of the same university. The Articles section of our Journal hosts original contributions and is organized in three sub-sections: *Focus, Invited papers* and *Miscellanea*. *Focus* includes articles that, submitted in response to our call for abstracts, have successfully passed a double-blind peer-review process. *Invited papers* hosts articles of authors whose work is considered relevant for the current topic both by the Scientific Committee and the Editorial Team. Finally, *Miscellanea* hosts peer-reviewed papers dealing with the history of architecture of the second half of the 20th century, not necessarily linked to the main topic of the current issue. For any further information, please visit our website: hpa.unibo.it

Histories of Postwar Architecture welcomes articles focusing specifically on postwar historiography, aiming to establish itself as a point of reference for scholars interested in contemporary architecture, its problems and peculiarities. The first issue of *Histories of Postwar Architecture* hosts position papers written by members of the Scientific Committee. Daniel Naegele (Iowa State University, Ames) demonstrates how, thanks to Henry Luce's endorsement, Frank Lloyd Wright became the most popular

American architect in history, a position he retains to this day. Pepa Cassinello (Technical University, Madrid) writes about Eduardo Torroja, the director of the institute that now bears his name, who organized an unprecedented international competition around industrialized housing. André Tavares (ETH, Zurich) examines the poetry of Joaquim Cardozo, the structural engineer for Oscar Niemeyer, which reveals the ambiguous relation between "misunderstood" European models and regionalist convictions. Nicholas Adams (Vassar College, New York) presents a study of the autobiography of the American architect Nathaniel A. Owings, founder of the architectural firm SOM. Dominique Rouillard (ENSA, Paris-Malaquais) focuses on 1950s and on the age-old debate between "organic" and "functional," analyzing in particular the trajectory of Eero Saarinen. Mary McLeod (Columbia University, New York) examines how the notion of modern architecture changed during the 20th century from a living movement committed to specific values and aspirations to a codified style and cultural period of the past. Giovanni Leoni (University of Bologna) demonstrates that the Anonymous represents a theme of discontinuity in the culture of Italian architecture between the first and second halves of the 20th Century. Christophe Van Gerrewey (EPFL, Lausanne) examines three different positions - and three ways of dealing with history at the end of the 20th century - presented in the 1981 issue of "AMC": that of philosopher Hubert Damisch, of historian Manfredo Tafuri, and of OMA/Rem Koolhaas. Maristella Casciato (Getty Research Institute, Los Angeles) offers an insight of her own experience in exhibiting architecture based on research projects.

Today, it seems, we stand at a chronological distance that enables scholars to develop a historical - and not merely critical - discourse regarding postwar architecture. In fact, considering the papers published in our first issue we can affirm that the second half of the 20th century represents a specific historiographical unit, rich in original topics and innovative research tracks. *Histories of Postwar Architecture* will dedicate its second issue, to be published in July 2017, to histories of those futures that - imagined in the prewar period - survived in the postwar era, either conceptually or physically. Some of the questions we would like to ask include: What was the physical and cultural destiny of prewar futures in the postwar scenario? What influence did they have on places, cities or environments? What traces of them remain in our present? The third issue, to be published in January 2018, will be on 1968, "Annus mirabilis," a symbolic year in the history of the 20th century. The outbreak of social causes - also within architecture - situations of action and reaction, developing topics of the former decade as well as opening to new and contemporary subjects. In this case, *Histories of postwar Architecture* seeks original submissions, which could highlight several perspectives of the historical complexity that pivots around this crucial date.

Waiting for the Site to Show Up. Henry Luce Makes Frank Lloyd Wright America's Greatest Architect[1]

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Daniel Naegele, PhD, is an architect and associate professor of architecture at Iowa State University. A graduate of Yale and of the Architectural Association in London, he completed his dissertation, *Le Corbusier's Seeing Things: Ambiguity and Illusion in the Representation of Modern Architecture*, under the supervision of Joseph Rykwert and Mary McLeod at the University of Pennsylvania in 1996. He writes about Le Corbusier, Frank Lloyd Wright, Louis Kahn, Marcel Duchamp, Pablo Picasso, Colin Rowe, and about architectural photography. Currently, he is completing *A Guide to the Only Good Architecture in Iowa*.

ABSTRACT

Henry Luce, owner of "Life", "Time", "Fortune" and "Architectural Forum", recognized Frank Lloyd Wright's immense charisma and talent and featured both the architect and his work in all four of his renowned popular press journals in January 1938 – though clearly he did so for his own ends. Luce believed fervently in America. In 1937, the German architects Mies van der Rohe and Walter Gropius migrated to the USA to assume leadership of two of its finest schools of architecture. Luce countered this promotion of European architecture by featuring Wright in his four journals. Despite Wright's immense unpopularity at the time, Luce put him on the cover of "Time" and prominently presented him and his work in "Life", "Fortune", and "Architectural Forum". That Luce's ideals were not the same as those of Wright mattered little. With Luce's endorsement, Wright became the most popular American architect in history, a position he retains to this day. But how very odd that decidedly artificial mediation could so effectively disseminate and popularize an architecture whose essence was authenticity.

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KEYWORDS

Frank Lloyd Wright, Henry Luce, architecture and photography, Fallingwater, architecture and publicity.

«"Ocatilla" was published in German magazines two months after it was finished. Thank the machine, at least, for this ubiquity of publicity. Prevalence of the idea in some graphic thought-form — certainly one of the best things the machine has done for us in this age».

Frank Lloyd Wright (1932)[2]

«All media exist to invest our lives with artificial perception and arbitrary values».

Marshall McLuhan (1964)[3]

On January 17, 1938, despite Frank Lloyd Wright's immense *unpopularity*, Henry Luce put him on the cover of "Time" magazine. On exactly the same day, the inside-cover of Luce's "Life" magazine carried a large photograph of a wondrous house Wright had recently built.[4] Luce's January issue of "Fortune" pictured Wright at his drafting board, a dozen young men looking over the shoulder of the venerated master.[5] And the entire issue of his January 1938 "Architectural Forum" was composed by Wright and dedicated to the best of his past and current work.[6]

For twenty-eight years, Wright had been demonized by the popular press in America, excluded from participation in its World Fair, dismissed by its museum connoisseurs as less than modern. Yet in 1916, the Japanese had commissioned him to build a large and important hotel in its most prominent city. And in the Teens and Twenties, Europeans had shown great interest in his Prairie School work. In the USA, however, from 1922 to 1935, he built no large buildings and only a handful of houses. But in 1938, in the depth of the Great Depression, he was resurrected by Henry Luce, America's extraordinary media mogul. Why?

Fallingwater photographed: the idea in some graphic thought-form

In November 1937, a 25-year-old Chicago architectural photographer, Bill Hedrich, on assignment from "Architectural Forum", traveled to a remote site in Western Pennsylvania to make pictures of a not-yet-completed vacation house built for a wealthy Pittsburgh retailer. **[Fig. 1]**

In the best known of Hedrich's photographs, a modern, utterly unique house appears to float above moving water, detached from the world,

FIG. 1 Frank Lloyd Wright, Kaufmann Residence (a.k.a., Fallingwater), Mill Run Pennsylvania, 1936-1939 (Photo by Bill Hedrich, in "Life", "Time" and "Architectural Forum", January 1938).

1. This is an elaboration of *Frank Lloyd Wright: Waiting for the Site to Show Up* published in October 2014 digitally onhttp://www.historyphotography.org/doc/Daniel_Naegele.pdf and in print in the "Journal of the International Association for the Study of Traditional Environments", vol. CCLIV, Fall 2014, pp. 89-97.

2. F. Lloyd Wright, *An Autobiography*, New York, Longmans, Green and Company, 1932, p. 306.

3. M. McLuhan, *Understanding Media: The Extensions of Man*, New York, McGraw-Hill, 1964, p. 199.

4. "Time. The Weekly Newsmagazine", vol. XXXI, January 1938, No. 3, cover.

5. "Fortune Magazine", vol. XVII, January 1938, No. 1, p. 138.

6. "Architectural Forum", vol. LXVIII, January 1938, No. 1.

mystically defying gravity. The view is not from the approach to the house or from within, but from the outside, downstream, a vantage point that renders the conceptual idea of the house in its entirety: an exclusive retreat alone in acres of wooded paradise; a house both of the earth and above the earth; the magic of immense heaviness levitating; the Biblical metaphor of water from rock.

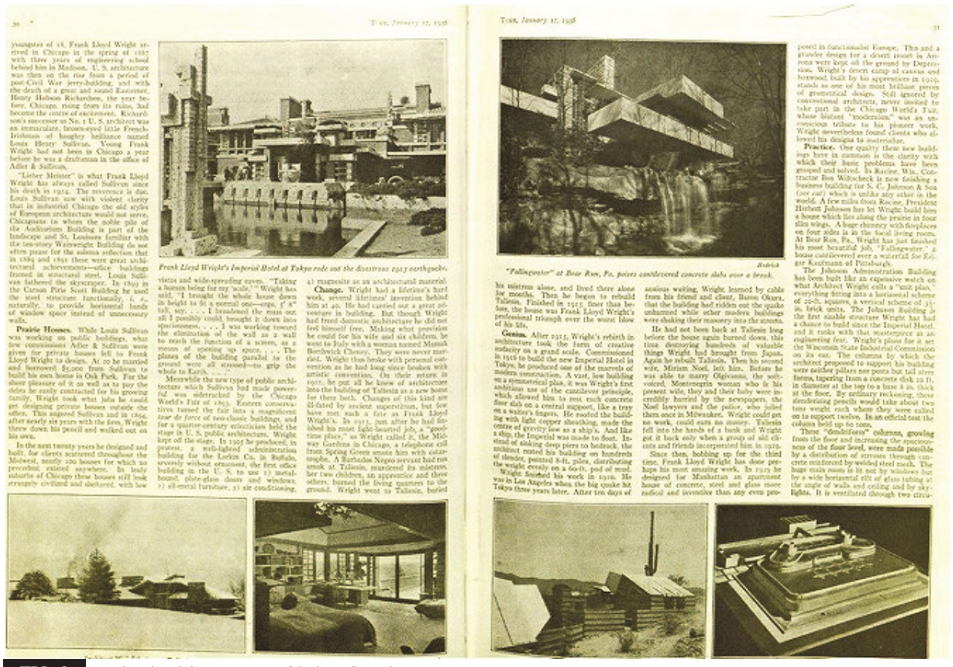

FIG. 2 The inside pages of "Time", vol. XXXI, 17 January 1938, No. 6, pp. 30-31.

Carefully composed, the photograph is divided horizontally into two equal realms. In the upper half, the angelically white house hovers. In the lower half, a natural rock ledge in gray is underscored by a deep black crevice stretching from one side of the image to the other. The waterfall is in the center of the photograph. Blurred liquid light, it is cloudlike and delicate. It pours forth from the house, emptying lightness into the darkness of the river below. Shadows of leafless November trees animate the levitating white rectangles of the house, enlarging the wooded surrounds and discreetly balancing the photograph's insistent horizontality. The shadow's verticality, its delicate overlay, is continued in the strands of the waterfall. All is resolved in the black pool of water at the bottom of the photograph.

Photography has portrayed the house as a phenomenon, a mirage-like apparition. Water, rock, house, trees, sky. Does the water come from the house? Or does the house rise from the water? In its brilliant and subtle ambiguity, Hedrich's photograph presents us with a legend. And like Aladdin and his lamp, Jesus on his cloud, Venus over the sea, the legend is cast in visual dialects.[7]

Advertising Wright: the ubiquity of publicity

On January 17, 1938, millions saw the photograph of the vacation house when it was featured in two of America's most popular weekly magazines, "Time" and "Life". In "Time", it was shown as one of many small photographs illustrating an article on its architect, Frank Lloyd Wright. Wright's portrait was on the cover of the issue, behind it a color rendering of the house that by then was dubbed, Fallingwater. **[Figg. 2,3]**

7. Franklin Toker's brilliant *Fallingwater Rising: Frank Lloyd Wright, E.J. Kaufmann, and America's Most Extraordinary House*, New York, Alfred A. Knopf, 2003, especially pp. 287-88, offers the most insightful discussion of Hedrich's photograph, linking its great success to both its "Americanism" and to its imagery of "healing the damage from America's profligacy with water" incurred during the mid-1930s when unprecedented flooding overwhelmed the nation. Toker notes that Wright was not at first particularly enamored with Hedrich's downstream image exposing the underside of the magnificent house. This notion underscores what Pedro Guerrero, Wright's staff photographer, recalled Wright having once told him: «As you can see from my drawings and my architecture - and this is the way I want you to photograph it - I sit down at a desk and draw. I don't want bird's eyes views or worm's eye views. I want what I'm seeing on a paper or from a sitting position». Author's interview with Pedro Guerrero (unpublished), Spring Green, Wisconsin, 17 June 2011.

In "Life", it was featured prominently on the inside page of the magazine's dark cover, a cover that showed glowing metal industrial tanks on barren land beneath a near-black sky. **[Figs. 4-5]**

But Hedrich's photograph of Fallingwater dominated the page. Above it 'FRANK LLOYD WRIGHT' was stretched in thin, modern, red letters. Below it was printed, «The editors believe that this issue is the most important architectural document ever published in America […] the first and only record in print of what we have come to call the Modern Movement […]».[8] The lower half of the page was completed with three, boldly captioned,

8. Advertisement, in "Life", 17 February 1938, unpaginated (inside cover).

FIG. 3 The cover of "Time", vol. XXXI, 17 January 1938, No. 3.

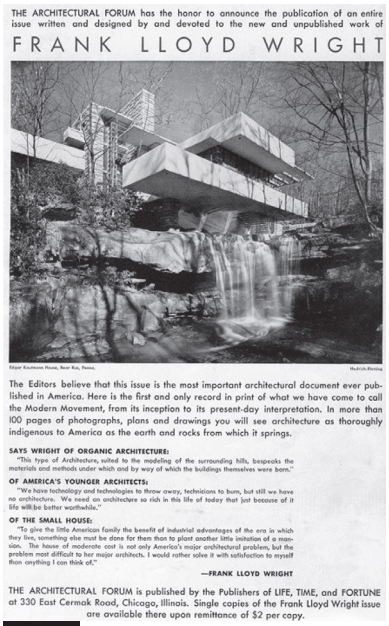

FIG. 4 The inside cover of "Life", vol. IV, 17 January 1938, No. 3.

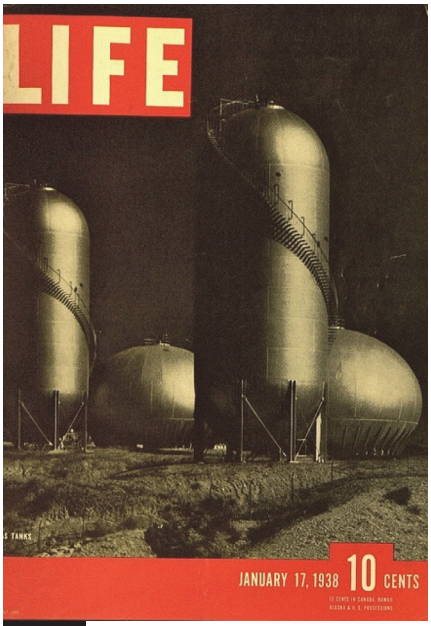

FIG. 5 The cover of "Life", vol. IV, 17 January 1938, No. 3.

'SAYS WRIGHT' statements: «Says Wright of Organic Architecture»; «Says Wright of America's Younger Architects»; «Says Wright of the Small House». After each, in a brief sentence or two, Wright articulates his position on these issues. He establishes himself as a «father of architecture» figure; describes his architecture as organic, indigenous, opposed to unnecessary technologies and technologists. And he expresses his concern, «in these depressed times», for the needs of the «little American family», recognizing their desire to build for themselves a new way of living. «The house of moderate means», one quote reads, «is not only America's major problem, but the problem most difficult to her major architects. I would rather solve it with satisfaction to myself than anything other I can think of». Though at first the page appears to be an exposé on Wright, in fact it is subtly construed advertisement. At the very top of the page, above the wondrous photograph, is printed: «The ARCHITECTURAL FORUM has the honor to announce the publication of an entire issue written and designed by and devoted to the unpublished work of FRANK LLOYD WRIGHT». And in smaller print, a note closes the page: «The ARCHITECTURAL FORUM is published by the Publishers of LIFE, TIME, and FORTUNE».[9]

9. *Ibid.*

Apparently a womanizer. And who needs that?

"Architectural Forum", "Life", "Time" and "Fortune", four of America's most prominent periodicals in the late 1930s, were owned and published by Henry Luce. In January 1938, all four of these journals featured articles or advertisements about Frank Lloyd Wright. Wright would have been well known to the American public then – more for his social indiscretions, though, than for his internationally acclaimed architecture. He was seventy years old at the time and ever since the age of forty-two had been mercilessly scorned and ridiculed by the popular press.

Twenty-nine years earlier, in 1909, Wright left his wife and six children in Oak Park to travel to Europe with his lover, Mamah Cheney, the wife of a client. He went first to Berlin to meet with publisher Ernst Wasmuth and then to Tuscany to prepare a monograph of his twenty years of exceptional work: domestic buildings on suburban sites, houses he called 'organic'. Architecture, he was fond of saying, should grace, not disgrace, its site. But the houses Wright had designed from 1893-1909, the horizontal, 'natural' houses he would show in the Wasmuth portfolio, were at odds with both their vertical Victorian neighbors and the non-natural parcel of prepared land on which they were built. The inside of a Wright house opened out, but the suburbia that was outside could not be allowed in. Novel and aesthetically compelling, Wright's houses nevertheless did not grace their site but rather seemed to – ungracefully – indict their suburban neighbors and by extension the suburban way of life they represented. So for Ernst Wasmuth Wright drew images of his houses – not exactly as they *were*, but exactly as he *wanted them to be* – showing them framed in vegetal growth and removed from the company of neighboring Victorian houses. [Fig. 6]

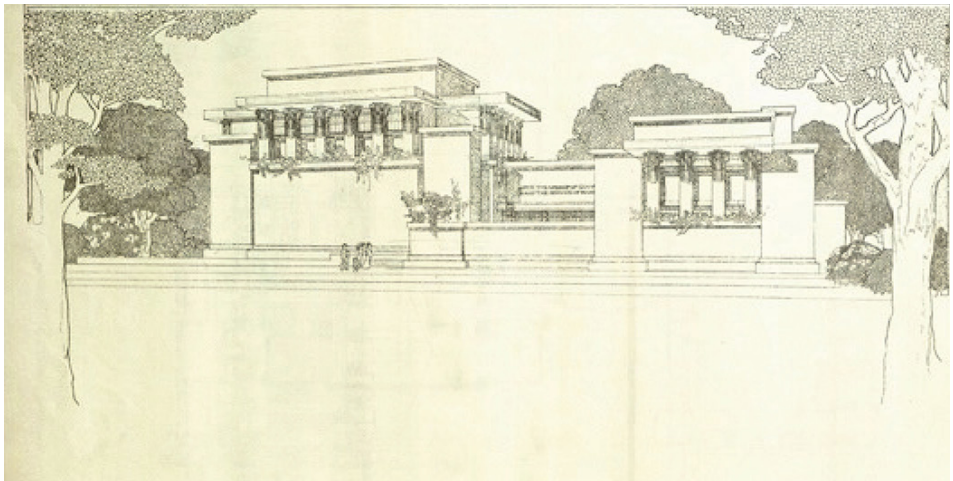

FIG. 6 Frank Lloyd Wright, Unity Temple, Oak Park, Illinois, 1905-1908. Drawing (Frank Lloyd Wright, *Ausgeführte Bauten und Entwürfe von Frank Lloyd Wright*, Berlin, Ernst Wasmuth A.-G., 1910, p. 63).

Published in 1910, the resulting 2-volume folio, luxurious and exclusive, was well received in Europe and was followed in 1911 by an inexpensive "small Wasmuth" comprised not of fictive drawings but of photographs of the work. [Fig. 7] Though the camera easily edited out neighboring Victorian houses, it could not put non-existent vegetation into the image. At that time, "the camera never lied" and works that in the drawn portfolio were cloaked in vegetation, in photographs, even when camouflaged in dappled light, appear bare and remote. Not only did photography not render

FIG. 7 Frank Lloyd Wright, Unity Temple, Oak Park, Illinois, 1905-1908. Photograph (Frank Lloyd Wright, *Ausgeführte Bauten*, Berlin, Ernst Wasmuth, 1911, p. 14).

"natural" Wright's suburban work, often it underscored the pathos of the natural house on a non-natural suburban site.

When Wright and Mamah Cheney returned to Chicago in the autumn of 1910, immediately they were ostracized by its polite society, the same society from which Wright's principal clients had come. Unwanted in the city, they removed themselves to the rolling hills of rural Wisconsin. There – away from suburbia and Chicago – Wright built a house and studio for himself and Mamah: his first "natural" house which he called, Taliesin. When a servant burned down Taliesin in 1914, killing Mamah and five others, the popular press reported on the story daily in great detail, one article suggesting that the mass killings were divine retribution for a life lived in sin.[10]

Wright left Taliesin for Tokyo two years later, returning to the USA only in 1922 – and then not to Wisconsin but to Los Angeles. There he built a handful of houses of a unique, experimental material, a textile block of concrete made from the earth on which the house was placed. In Southern California, he did not escape bad publicity. The press reported on him and his turbulent love life wherever he went. And when eventually he returned to Taliesin in Wisconsin in the mid-1920s, journalists there, one imagines, were delighted. By then, he was divorced from his first wife, estranged from a second, and intimately involved with the woman who would be his third wife, Olgivanna Lazovich, a twenty-six year old Montenegrin Theosophist and dancer, married and with a young daughter.

10. See, for instance, *Awful Crime in Wisconsin Cottage: Mrs. Cheney and Five Others Slain In Frank Lloyd Wright Bungalow*, in "Chicago Sunday Tribune", 16 August 1914, p. 1. Headlines below this main headline read: «Negro Helper Kills Family With A Hatchet / Architect in Chicago Hears of Crime and Goes to Scene / Slayer Captured». See also, *Wright Buries Mamah of Hills in Night Grave / Rituals Ignored as Nephews and Son Help Architect Carry Open Coffin / Art in Bungalow a Ruin and "This Ends All", Says E. H. Cheney / Divorced Husband of Mamah Borthwick Brings Slain Children / Will Be No Funeral*, in "Chicago Daily Tribune", 17 August 1914, p. 7. For a full account of the murders, see: A. Alofsin, *Frank Lloyd Wright The Lost Years, 1910-1922: A Study of Influences*, Chicago, University of Chicago Press, 1993, pp. 96-100.

Wright's infamy continued into the 1930s, even as the Great Depression left him near destitute on the now crumbling Taliesin estate. With no commissions, he lectured throughout the country – most famously at Princeton University – about his belief in an American, organic architecture. In 1932, at the suggestion of Olgivanna, the now 65-year-old Wright wrote *An Autobiography* and began the Taliesin Fellowship, a school of architecture comprised not of students but of apprentices who came from around the world to study with the master in Wisconsin. It was the father of one of these apprentices, Edgar Kaufmann, Jr., who commissioned Wright to design Fallingwater, his first major work since having left Los Angeles, the house that would prove – with the help of Hedrich's photograph and "Life" magazine – to be the pivotal work of his long life in architecture. But who was Henry Luce? And why would he have wanted to remove the infamous Frank Lloyd Wright from his unpopularity and place him on the cover of "Time" magazine?

FIG. 8 Edward Steichen, Portrait of Henry Luce, 1937.

FIG. 9 Photographer unknown, portrait of Frank Lloyd Wright, 1936.

Lucky Henry Luce

Henry Luce, like Frank Lloyd Wright, was a self-made man. [Fig. 8] He, too, was a divorcée who in 1935 had married the renowned American socialite, Clare Booth. Born in 1898 – the same year as Olgivanna Wright – at the age of twenty-three and only two years out of Yale, Luce quit his job and with his Yale colleague Briton Hatton began a weekly news magazine, a journal they called "Time". Hatton died prematurely in 1929 and the following year Luce launched a business magazine he called "Fortune". Later he acquired "Architectural Forum", and in 1936 he created America's most successful pictorial magazine, "Life".

Luce had been born in China and educated until the age of fifteen in English boarding schools. After graduating from Yale, he had studied for a year in England at Oxford University. In the mid-1930's, in the midst of the Great Depression, he began to exhibit tremendous enthusiasm for the USA, patriotism articulated most eloquently in his now-famous 1941, "Life" magazine article, "The American Century", in which he predicted that American values would dominate the 20th century.[11]

11. H. Luce, *The American Century*, in "Life", 17 February 1941, pp. 61-65.

Frank Lloyd Wright must have appealed greatly to Henry Luce despite – or maybe because of – his well-publicized reputation with women. [Fig. 9] As an architect, he symbolized creative engagement with the world, the builder of modernity and a better way of life. His accomplishments were staggering, extending back nearly half a century. His current work in small-town America, of a size and kind that Luce's reader would understand and appreciate, was as great as any built anywhere at anytime. His confidence and youthful demeanor were indomitable even at seventy years of age when his sexual prowess – always a favorite target for journalists – was no longer of great concern.

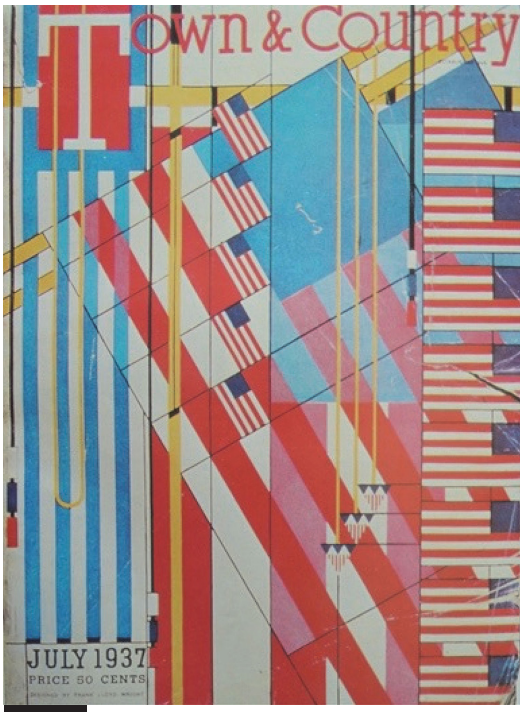

FIG. 10 Frank Lloyd Wright, Cover of "Town and Country", July 1937.

Perhaps more important to Luce than any of these qualifications: Wright believed in America and persistently presented its culture to the world. In the Teens and early 1920s, he had built the Imperial Hotel in Tokyo, a threshold between West and East. Before and after Tokyo, architects came to Wisconsin from Europe, Japan and China to learn from Wright – to learn *architecture* from him, certainly, but also to learn of America from him. «Young people had come from all over the world attracted by Taliesin's fame abroad as "American", to share its spirit […]», Wright wrote in his 1932 autobiography, «for Taliesin was at work quietly Americanizing Europe while American architects Europeanized America».[12] That same year, as noted above, he initiated a school of architecture at Taliesin. The school farmed the land, grew its own food, and with unbridled vigor imagined a new America for the centuries to come. In 1936, he set about solving «America's major problem» designing «the house of moderate means» for the «little American family», a project that "Life" would take up the following year[13]. And in 1937, he designed a cover for the July issue of "Town & Country" showing a series of flattened red, white and blue American flags laid out in his signature 30/60 composition. [Fig. 10]

Wright's belief in himself as an American, the importance he placed on being of America, was reflected in the rhetorical questions raised by Walt Whitman in a poem that accompanied images of Wright's work in the January 1938 "Architectural Forum" that Luce had commissioned. «Who are you, indeed, who would talk or sing to America?» the poem began unflinchingly. «Have you studied out the land, its idioms, and men? Have you learned the physiology, phrenology, politics, geography, pride, freedom, friendship of the land? Its sub-stratums and objects? Do you see those who would leave all feudal process and poems behind them – and assume the poems and process of democracy? Are you really very strong? Are you really of the whole people?».[14]

Underscoring Wright's "Americanism", his belief in the ground, the government, the fabric of people and place, Whitman's interrogative

12. F. Lloyd Wright, *An Autobiography*, cit., p. 258.

13. These quotes, cited on the inside cover of 17 January 1938 "Life", also appear in "Architectural Forum", vol. LXVIII, January 1938, No. 1. In 1939, "Life" featured designs for small, affordable houses by a variety of architects, Wright being one of them.

14. W. Whitman, as published in "Architectural Forum", vol. LXVIII, January 1938, No. 1, p. 13.

indicts the outsider. Less than a year before this special issue of "Forum" was published, the German architects Walter Gropius and Mies van der Rohe, both former heads of the renowned Bauhaus, moved to America to escape the oppressive Hitler regime that had overtaken their homeland. Gropius was appointed chair of the Graduate School of Design at Harvard, America's most prestigious school. Mies was appointed chair of the Department of Architecture at the Armour Institute of Technology in Chicago, Luce's hometown. Both Gropius and Mies were labeled "International Style" architects by the Museum of Modern Art in their famous exhibition of architecture staged in 1932 and curated by Henry-Russell Hitchcock and Philip Johnson. Wright was all but excluded from that exhibition, Johnson famously dismissing him as 19th century. In contrast to the German architects internationalism, Wright represented an organic architecture, grown in America and not easily transported to other lands. By the mid-1930s, worldwide economic depression had made land, place, and country important again.

«In an era blighted by Depression, prejudice, social turmoil, and the shadow of war», Luce's biographer wrote seventy-five years later, «"Life" offered the comforting image of a nation united behind a shared, if contrived, vision of the American Dream».[15] Luce chose Wright to be the architect of that dream, and promoted him accordingly in his exceedingly popular journals.

15. A. Brinkley, *The Publisher: Henry Luce and His American Century*, New York, Alfred A. Knopf, 2010, p. 239.

"Life" is not really Wright

One might simply let it go at that. The Chicagoan Henry Luce, who believed adamantly in his country and its destiny and whose tremendously influential journals sought to please and gently direct the sensibilities of a broad and varied America, put forth Wright as "America's Architect", one supposes to counter the adulation of the Eastern academic establishment for European architects newly arrived from a country that would soon be declared America's enemy. One imagines that the American public was persuaded. Bill Hedrich's photograph of Fallingwater was the visual summation of a philosophy that Wright had sought for thirty years, but Wright's philosophy was at odds with "Life"'s.

At the height of the Great Depression, in the mid-1930s, tremendous flooding followed years of drought and famine across America and it was at this time that Luce inaugurated "Life". As general policy, in the 1930s, "Life" presented news to America as hope. On the front cover of its very first issue, in November 1936, "Life" featured a photograph by Margaret Bourke-White of an immense dam at Ft. Peck, in northeast Montana. [Fig. 11]

Government-built by the Public Works Administration, the dam

controlled the waters of the Missouri, preventing the disastrous flooding that so often had plagued the area. The dam was a physical symbol, an immense manifestation of highly advanced technology capable not only of controlling an often-destructive force but also of providing electricity to thousands of inhabitants in the rural area that surrounded it. What once was feared, the American government had -harnessed and put to good use. Undeniable good came from the control of nature. Immediately "Life" presented the metaphor visually. Beside photographs of the great, government-built dams, it placed photographs of the catastrophic destruction caused by flooding, by uncontrolled 'nature'. **[Fig. 12]**

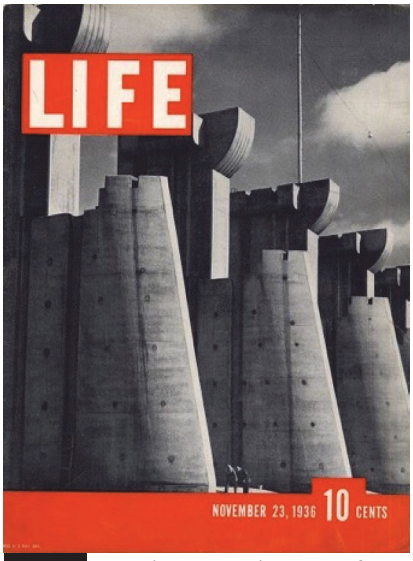

FIG. 11 Norris Dam on the cover of "Life", vol. I, 23 November 1936, No. 1 (photographed by Margaret Bourke-White).

Yet "Life"'s promotion of Frank Lloyd Wright's Fallingwater was at odds with the control of nature. To Wright, nature and life were synonymous. To harness nature was to harness life. Man should not dominate nature, but respect and live in harmony with it – a belief he had manifested in his buildings for many years. In his residences, rainwater was encouraged to envelope the building, creating sheets of liquid light that veil the habitat, transforming it while making evident the workings of nature. In 1925, he enlarged this phenomenon, damming a branch of the Wisconsin River to build a "hydroelectric house" at Taliesin. **[Fig. 13]** The dam made manifest the presence of nature in the form of a sublime, utterly beautiful cascade. It visually objectified nature, but in a manner that Wright would amend in 1937.

At Fallingwater, nature is similarly made present, though without being geometricized. Clearly Wright had considered modifying the look of the waterfall, but ultimately decided against it, leaving it alone and magically suspending the house above it instead.[16] **[Fig. 14]** In the built work, waterfall and building, separated though visually aligned, give presence to one another. Hedrich's photograph captures this condition exactly, presenting us with Wright's way of relating to Nature: man should not dominate but live in harmony with it.


The occupant of this house, Henry Vaske, took to a boat, drowned when the boat capsized

FIG. 12 A house washed down the Ohio River, in "Life", vol. II, 8 February 1937, No. 6, p. 20.

In "Life"'s portrayal of the Norris dam, water is a commodity. Its potentially harmful power is harnessed, converted to another medium, and directed to an assumed common good. In Hedrich's photograph of Wright's Fallingwater, water is a sensuous and life-giving force, natural, original, and replete with symbolic potential. It exists unaltered, enhancing man's life with its beauty and the freedom of its liveliness.

A different Wright rises

The illustrated press of the Depression era popularized Frank Lloyd Wright. In resurrecting him, it created him in its own image – an image that Wright assumed with ease and grace. Honest; hard-working; deliberate; determined. *Of* the people, *for* the people. A sage, a wit, an individualist, self-made. Indomitable, enthusiastic, strong, hopeful. A savior in troubled

16. This is not entirely true. The exact course and velocity of the water were modified by the placement of the foundations of the house in the stream. The house does not literally hover above the water, but rather the water flows *around* it and then falls in front of it. In Hedrich's photograph of Fallingwater, the two diagonal piers that hold the house out of the stream are bathed in light and thus "camouflaged away". The house appears to be floating and the stream appears to flow *from* it, or under it, not around it.

times. The American come-back king. The characteristics bestowed on Wright by the press were characteristics that he wore well. His spirit was inspirational. He embodied American ideals.

FIG. 13 Frank Lloyd Wright, Taliesin II Hydro House, Spring Green, Wisconsin,1920, destroyed 1946 (*Frank Lloyd Wright: 1917 – 1942, The Complete Works*, Köln, Taschen, 2010, p. 73).

In 1938, at the height of the Great Depression and on the eve of the Second World War, at a time when many had little more than hope, Henry Luce chose the image of Frank Lloyd Wright, "American Architect", to convey an unbridled enthusiasm for America's future, for the building of a better tomorrow. Bill Hedrich's photograph of Fallingwater – which Luce featured in three of the four publications in which he promoted Wright – gave image to a natural architecture. Buildings would be angelic and glow. Pure, untroubled water would flow free and calm. Nature and the man-made world would be one and in agreement.

Wright's architecture, so different than that portrayed the following year in General Motor's *City of the Future* at New York's World's Fair, was valued by the American masses needed during this time of near hopelessness. A vision *of* and *for* the land in which they lived, implicitly it questioned the good sense of an academic establishment that, only a year earlier, had imported its architecture leadership from a Europe that was about to explode in world war. Luce's campaign to undermine this academic preference brought Wright the recognition he deserved. And Hedrich's photograph gave documentary evidence of Wright's poetic convictions.

The "prevalence of the idea in some graphic thought-form", Hedrich's image of Fallingwater seen by millions in a single day, was the visual manifestation of an ideal for which Wright had been striving for over forty years. For over forty years, Wright had waited for the site to show up. The *popular press*, not the ground on which he built, was that site. And though at first Wright seemed not to realize this, not to understand that finally a photograph had visually captured the idea of his natural house, he understood well the effect of mass and immediate publication.

Through Luce's publication of both his architecture and of Wright himself, Wright became America's most popular architect, a status he retained for the remaining twenty years of his 91-year life and a status he maintains to this day. That Wright believed in the American ideal but seldom in its reality, and that the American public did not, *could* not, know

FIG. 14 Frank Lloyd Wright, Kaufmann Residence (a.k.a., Fallingwater), Mill Run Pennsylvania, 1936-1939 (*Frank Lloyd Wright: 1917 – 1942, The Complete Works*, Köln, Taschen, 2010, p. 249).

this, seemed to matter little either to him or to them. In their eyes, he became what he had believed himself to be since the beginning of this, the "American Century": an unsurpassed Master Builder; the creator of a natural architecture; a renegade sage, prophet, and visionary.

It was artificial mediation, the illustrated journal, that disseminated and popularized an architecture whose essence was authenticity. Mediation – investing «lives with artificial perception and arbitrary values» - had allowed America to see what it would not have seen otherwise. But in doing so, it promoted artificially an architecture that eschewed the artificial. Wright, the one-time renegade who so often had kneed the groin of polite America, now was heralded as its great hero.[17]

17. In the 1943 edition of *Space, Time and Architecture*, Sigfried Giedion – never mentioning Fallingwater – initially views Wright in terms of European architecture and then concludes, «Wright's real influence, his great and educative influence, cannot be shown in a few poor photographs: his real influence is that of his methods and ideas, as they are reflected in his work». Two lines later, Giedion ends Part V of his now famous book with a footnote that reads, «Curiously enough, Le Corbusier was also directed to Wright through an article which appeared in the Schweitzerische Bauzeitung in 1912, and which was an extensive résumé by Berlage himself of a lecture he had given in Zurich». See: S. Giedion, *Space, Time and Architecture. The Growth of a New Tradition*, Cambridge (MA), Harvard University Press, 1943 (1941), p. 348.

Eduardo Torroja. 1949 Strategy to Industrialise Housing in Post-World War II[1]

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ABSTRACT

The huge housing demand existing in Spain in 1949 could not be met by traditional construction systems. The severe social problem thus generated was not exclusive to Spain: the countries that had participated in World War II were facing the same challenge, i.e., the need to build large numbers of housing units in record time. Industrialised systems consequently underwent intense development, generating a wide range of alternatives specific to the material and industrial resources and policies in place in each country.

In that year, Eduardo Torroja, director of the institute that now bears his name, organised an unprecedented international competition around industrialised housing. A total of 89 designs were submitted by authors from 17 countries. The aim was to establish industrialised housing systems specifically intended for Spain. That competition, today a nearly forgotten chapter in the history of housing industrialisation, is one of the three most significant milestones in Eduardo Torroja's strategy to drive progress in housing construction. The absence of a single awardee did not detract from the effectiveness of this international competition. Torroja acquired a wealth of relevant information on the most advanced construction systems and patents in use in other countries to build low-cost housing. He also obtained the results of international reflection on how to solve this problem in Spain. This final factor strengthened and broadened the role played by Torroja's institute as scientific ambassador.

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KEYWORDS
housing, industrialisation, construction, competition, strategy

> «The architect of the future – if he wants to rise to the top again will be forced by the trend of events to draw closer once more to the building production», Walter Gropius, 1956

The huge housing demand existing in Spain in 1949 could not be met by traditional construction systems. The severe social problem thus generated was not exclusive to Spain: the countries that had participated in World War II were facing the same challenge, i.e., the need to build large numbers of housing units in record time. Industrialised systems consequently underwent intense development, generating a wide range of alternatives specific to the material and industrial resources and policies in place in each country.

In that year, Eduardo Torroja, director of the institute that now bears his name, organised an unprecedented international competition around industrialised housing. A total of 89 designs were submitted by authors from 17 countries. The aim was to establish industrialised housing systems specifically intended for Spain. That competition, today a nearly forgotten chapter in the history of housing industrialisation, is one of the three most significant milestones in Eduardo Torroja's strategy to drive progress in housing construction.

Spain 1949: Eduardo Torroja and the Housing Problem

The Spanish National Assembly of Architects held in May 1949 addressed the severe social problem generated by the inability of traditional construction systems to meet the country's enormous demand for inexpensive housing. New, more suitable construction methods were needed that would be able to improve the quality and speed of housing construction while lowering costs. Spanish society, however, including most of its architects, did not look to industrialisation for the answer, nor was it sure what weight tradition should carry in any modern approach to the predicament.

Eduardo Torroja was one of the chief advocates of industrialisation as the solution to this severe problem, adopting a premise set out by Le Corbusier many years earlier in his controversial book *Toward an Architecture* (more commonly known as *Towards a New Architecture*).[2] In it, the Swiss architect complained that the architecture of his times was insensitive to the needs of a new society, not only because of its inadequate design of habitable space, but also of the manual construction systems used. Such old fashioned systems had to be eliminated and the path toward industrialisation charted to produce structural members and construction elements industrially. That democratic path would manufacture more elements more quickly, more economically and to higher quality, capitalising on all the advances afforded by science and

1. Essay appeared in P. Cassinello (ed.), *Eduardo Torroja 1949. Strategy to Industrialise Housing in post-World War II*, Madrid, Fundación Eduardo Torroja, Fundación Juanelo Turriano, 2013, pp. 17-40. This book was awarded in 2016 for the category of Divulgación / Libros de la Convocatoria de Investigación, XIII Bienal Española de Arquitectura y Urbanismo.

2. Le Corbusier, *Vers une architecture*, Paris, G. Crès et Cie, 1923 (Eng. trans. Le Corbusier, *Toward an Architecture*, Los Angeles, Getty Research Institute, 2007).

technology in the new industries that would have to be created. The course toward such necessary industrialisation had to be charted to build what Le Corbusier called a «kit of parts». Unfortunately, as Le Corbusier himself predicted, the journey would be long and arduous, because neither society nor its architects were prepared to chart a clear and straight course toward the industrialisation called for to produce such «new architecture». Both would first have to be persuaded of its necessity.[3]

But even more unfortunate was the fact that 26 years after Le Corbusier published his ideas, in Spain, for many and varied reasons, the «kit of parts» was nearly empty. Moreover, a large fraction of society, along with the Government and architects themselves, were still dubious about the need to embark on this route. "Industrialisation" was often equated to "prefabrication" and all that purportedly would mean in terms of restraining architectural "freedom" and leaving many workers jobless. Such prejudice was completely contrary to the premises defended by the grand masters of the most forward-looking modernity, wherever they happened to be.[4]

Fortunately, after the end of the Spanish Civil War in 1939, Eduardo Torroja resumed his activities at the Institute for Construction Engineering. In the nineteen forties he not only headed Spanish construction research, but was one of the most outstanding and internationally admired leaders in progressive civil construction and architecture, and in fact presided the highly reputed Réunion Internationale des Laboratoires d'Essais de Matériaux, RILEM.

In 1939 Eduardo Torroja undertook a strategy that would lead, years later, to progress in the Spanish construction industry. In the early post-war years, elements had to be standardised and traditional construction system rationalised and adapted to the paucity of materials, seeking construction solutions that did not require large amounts of iron, which could not be obtained in Spain. Inexpensive, domestically available materials, such as clay-based brick and block, were the building blocks of choice. Masons, carpenters and others had to be retrained from new perspectives to optimise materials and working times while improving workmanship. Like Bauhaus, the institute headed by Eduardo Torroja became a school for *neues bauen* (new construction). The institute trained workers, labourers, carpenters and laboratory technicians and delivered specialised construction courses for architects and engineers. In addition, Eduardo Torroja used "Informes de la Construcción" to announce national and international competitions. Such competitions pursued different ends: the National Workers' Competition in 1949 sought to empower and reward the work performed by Spanish masons; the first National Competition, likewise in 1949, to distinguish unpublished research on the «determination of concrete docility and compactness»; and the curious and innovative «Standing Ideas Competition» fathered by Eduardo Torroja, to encourage the development of new patents that would help fill Spain's «kit of parts».[5]

3. L. Costa, *Razones de una Nueva Arquitectura*, in "Informes de la Construcción", June-July 1949, No. 12, n.p.

4. W. Gropius, *Scope of Total Architecture*, London, Allen & Unwin, 1956.

5. P. Cassinello, *La revista Informes de la Construcción crisol científico de Arquitectura 1948-1960*, in C. Jordá (ed.), *La vigencia de un legado Eduardo Torroja*, Valencia, Vicerrectorado de Cultura, 2001, pp. 271-301.

Eduardo Torroja was also aware that Spain's pressing problem was shared by the countries involved in World War II: the need to build a large number of housing units in record time. For that reason, industrialised systems underwent speedy development in many countries, where a wide range of material, technical, industrial and political resources was available. Internationally, the «kit of parts» had been filled with patents for new industrialised construction elements and structural members, with the concomitant implementation of new construction systems that contributed to optimising construction times, costs and quality.

At the same time, an international consensus was forged around the need for progressive production and construction systems in architecture. It was around this time that all the major international associations for research were founded, with Eduardo Torroja as one of the most significant players and outstanding leaders of that process. In this scenario, he decided to organise an International Industrialised Housing Competition, a milestone in his strategy to obtain information on the solutions to the housing problem in place in other countries.

First Milestone. International Industrialised Housing Competition

The next step in Eduardo Torroja's strategy to industrialise housing construction consisted of examining the international scenario to determine which solutions might be applicable to Spain. That would serve to map the route and steer Spanish industry in a specific direction. Torroja felt he needed to define "which" elements were the most suitable for industrialisation and "how" they should be manufactured to launch the modernisation of Spanish construction. Spain needed to create its own «kit of parts».

The reasons for organising the competition were stated very clearly in the rules: «This country is facing an economic and social problem of unprecedented dimensions. The shortage and high cost of housing force families to live in makeshift dwellings while traditional construction methods are proving to be unable to provide a solution. As in other areas of industry, inefficient traditional working systems must be set aside and new types of organization must be adopted – rationalised mass production to improve production and lower costs [...] This may call for a complete overhaul of national economies affected by the new procedures».[6]

6. "Informes de la Construcción", 1949, No. 12, n.p.

The International Industrialised Housing Competition was announced in "Informes de la Construcción", the Institute for Construction and Cement Engineering's journal. «International Competition 1949: with a 100 000 peseta prize for the best design for industrialising residential construction to house 50 000 Spanish families yearly». With this announcement, Eduardo Torroja revealed the institute's primary concern: «to attain economic and social progress in Spain and gear its construction industry

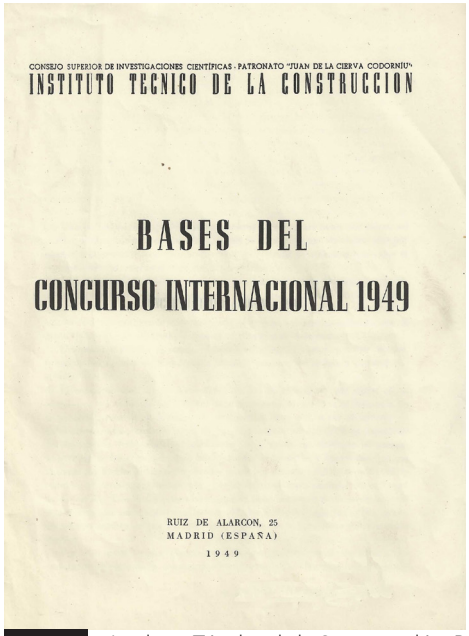


FIG. 1 Instituto Técnico de la Construcción, *Bases del concurso internacional 1949*, 1949. Rules and Information on the 1949 International Industrialised Housing Competition (Instituto de Ciencias de la Construcción Eduardo Torroja, IETcc)

to that goal». Torroja made it very clear in the competition rules that the proposals submitted were to address the specific conditions prevailing on the Spanish market. To that end, in addition to the general rules, he prepared a detailed brochure in Spanish, English and French containing all the information that participants would need on the Spanish market and industry, namely, the short number of elements in the country's «kit of parts» and national workers' skills, expertise, specialities and wages, Spanish construction costs, and, naturally, the lay of Spanish land and other physical determinants (Instituto de Ciencias de la Construcción Eduardo Torroja, IETcc, 1949). **[Fig. 1]** The brochure was intended to provide foreign participants with insight into the situation prevailing in Spain in 1949, to enable them to put forward the most suitable alternatives to meet the need for 50 000 housing units yearly.

Due to the enormous international impact of the competition, the Institute for Construction and Cement Engineering, headed by Eduardo Torroja, was obliged to push the deadline for proposals back by nearly a full year, whereby the jury's decision was not forthcoming until 1952. A total of 89 papers were submitted, including 27 by Germany; 18 by Spain; 7 by France; 6 by Switzerland; 5 by Italy; 4 by Belgium; 4 by United States, 3 by Austria; 3 by Netherlands; 3 by Japan; and one each by Ireland, Argentina, Sweden, India, Finland, Morocco and what was then the Belgian Congo (Instituto Técnico de la Construcción y del Cemento, ITCC, 1949). This wide range of international proposals included a diversity of approaches, which not only mirrored the status of housing industrialisation outside Spain, but also the specific standardised elements in place in the industry, as well as the ancillary resources and modern machinery available in the most highly evolved international markets. Eduardo Torroja's challenge did not go unanswered. He had called upon the world to reflect on Spain's

specific housing problem. Most of the proposed solutions, put forward by construction companies and international organisations. Some were attempts to adapt their patents and systems to Spain, others entailed new designs, and yet others were industrialised construction systems that had been successfully implemented elsewhere.

The jury for the International Industrial Housing Competition comprised a total of nine members, seven of whom were Spanish: President/ Federico Turell, Members: José Fonseca Llamedo (appointed by the Director of the National Housing Institute), Rafael Cereceda Delgado (appointed by the Director General of Industry), Juan del Corro (Senior Standards Section Officer, appointed by the Director General of Architecture), Alejandro Suárez, Director General of Industry, Federico Mayo, Director of the National Housing Institute, M. Marini, Director of the French Centre Scientific du Bâtiment and Robert Fitzmaurice, Deputy Chief Scientific Adviser with the British Ministry of Works. Secretary: Jaime Nadal Aixalá. Indisputably, a jury with one English and one French public official reputed to be experienced in the construction of industrialised housing could more comprehensively address the suitability of the proposals for industrialisation as set out in the competition rules. The intention was to introduce foreign experience in the jury's deliberations and encourage debate from different perspectives and different areas of expertise. Although England submitted no proposals to the international competition organised by Eduardo Torroja, it made a very valuable contribution with the participation on the jury of the Ministry of Works' Deputy Chief Scientific Adviser. The specific and essential details on England's post-World War II experience in industrialised housing construction furnished by Robert Fitzmaurice were published by the Institute for Construction Engineering in 1950.[7]

Only a small number of proposals were submitted by individual architects or groups of architects due to the heavy emphasis on industrialisation laid down in the rules, which called for solutions involving a many-faceted and interdisciplinary perspective: architecture, housing and industrialisation, in which the third factor was decisive and indispensable. The aim was to provide new architecture with a suitable «kit of parts», without which it would be unable to provide a rational solution to the severe social problem that had arisen. Architecture needed to be industrialised and housing construction became the most important component of that machinery.

7. R. Fitzmaurice, *La Construcción en la Gran Bretaña*, No. 93, Madrid, Instituto Técnico de la Construcción y del Cemento, 1950.

Proposals Submitted to the International Industrialised Housing Competition

A total of 89 submissions were received from 17 countries. With 27 proposals, Germany was the country with the highest number of submissions, followed by Spain with 18.

GERMANY	27
SPAIN	18
FRANCE	7
SWITZERLAND	6
ITALY	5
BELGIUM	4
UNITED STATES	4
AUSTRIA	3
NETHERLANDS	3
JAPAN	3
MOROCCO	2
SWEDEN	2
BELGIAN CONGO	1
ARGENTINA	1
IRELAND	1
INDIA	1
FINLAND	1

Germany

That Germany was the country to submit the largest number of proposals to the International Industrial Housing Competition was not surprising. Indeed, in addition to its scientific-technical working relations with the institute headed by Eduardo Torroja in Spain, it was the cradle, the birthplace of the new modernity which, largely championed by the Bauhaus, advocated the industrialisation of architecture. This new approach to design and construction was called neues bauen (new construction) to stress that what made it emphatically and radically new was the architectural production process itself: an approach involving a clean break with tradition and style; architecture intended from the outset to be industrialised, in which the standardisation and mass production of its elements were taken for granted. Of the many actors involved in this radical change, Walter Gropius was perhaps the most outspoken in his defence of the pressing need for architecture to participate in industrial progress. Architects should, then, design for these new production systems. «The architect of the future – if he wants to rise to the top again – will be forced by the trend of events to draw closer once more to the building production» (Walter Gropius).

From the time they sought exile in the United States in late 1941, Walter Gropius and Konrad Wachsmann sought to culminate their previous experience in the construction of prefabricated modular dwellings.[8] The indelible mark left on Germany by that generation of architects, in combination with its Government's World War II experience, hastened the development of its industry and the mass production of whole hosts of

8. G. Herbert, *The Dream of the Factory-Made House. Walter Gropius and Konrad Wachsmann*, Cambridge, Massachusetts, MIT Press, 1984.

elements used to build housing for troops during the war and emergency housing in the post-war period. Industrialisation, the need for new materials and the production of structural members and construction elements were deeply entrenched in German cultural discourse during those years. German became the language of science and engineering *par excellence*.

All the proposals revealed the intense industrialisation that prevailed in Germany in 1949. Many proposed the use of structural members and construction elements manufactured with lightweight concrete patents (wall panels, deck slabs, façades, partitions), in the understanding that Spain could benefit from such industrialised products. On the one hand, their lightweight was an advantage for shipping and on-site assembly, and on the other they afforded good thermal and acoustic insulation, as well as mechanical strength. They deemed that small factories established to produce these industrialised products based on their patents could lower the cost of housing in Spain by up to 30 % and hasten construction, in keeping with the requirements set out in the competition rules. Two of the most outstanding German proposals based on such lightweight concrete elements were submitted by Bremer Wirtschaft Wiederaufbau M.B.H. and Arbeitsgemeinschaft Hebel, companies which, more than half a century after Eduardo Torroja organised the competition, continue to lead the international market for industrialised lightweight concrete elements.

The Bremer Wirtschaft Wiederaufbau M.B.H. proposal took the 10 000 peseta 3rd prize in the International Industrialised Housing Competition organised by Eduardo Torroja in 1949. The proposal was authored by engineers Víctor H. Härtl and Rudolf Opelt and architect Ernst August Steinbrink. Their team also included Christiani & Nielsen, the company that owned a Danish patent for the aerated lightweight concrete that was to be used to precast the modular DPa panels, the basic component in the industrialised construction of the homes. Their construction system was based on an orthogonal lattice of high-strength, reinforced aerated concrete bearing walls and deck slabs. The patent used was under licence to Christiani & Nielsen. Partitions were made of twin plasterboard panels and all the construction elements, including windows, doors and parapets, were modular and prefabricated for the alternative designs envisaged. The likewise modular and standardised bathrooms and kitchens were designed to occupy adjacent positions to optimise pipe and drain distribution. Two types of roofs were designed: pitched and flat, in response to roofing solutions

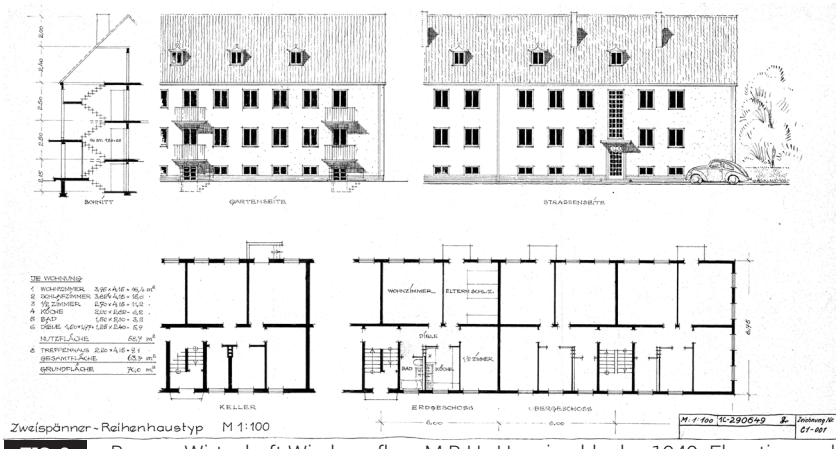


FIG. 2 Bremer Wirtschaft Wiederaufbau M.B.H., Housing blocks, 1949. Elevation and plan views (Eduardo Torroja's archive).

conventionally used in the various regions of Spain, depending on tradition and climate. The pitched roofs were to have traditional roof tiles resting on timber frames. The proposal included a full description of how to build and equip a 25 000 m^2 plant for manufacturing lightweight aerated panels whose output would suffice to build the 50 000 dwellings per year specified in the competition rules.

Two types of dwellings were proposed: [Fig. 2]

a) detached, semi-detached or attached one-story, single family units, with a small floor area (60.80 m^2), and a number of alternative designs for units with more storeys for large families

b) multi-dwelling apartment blocks with up to four storeys.

The housing blocks were arranged linearly with two-unit modules with a front/back orientation, divided by a stairway. This spatial arrangement and floor plan were very similar in most of the German proposals. [Fig. 3]

The total cost of the 50 000 dwellings was 6 600 000 German marks, including the 2 000 000 marks needed to build the precast panel factory. The authors presented a detailed construction time-cost analysis for the various types of dwellings. The estimated time needed to build a one-storey single-family dwelling was just 4 days, and the cost, 6400 marks.

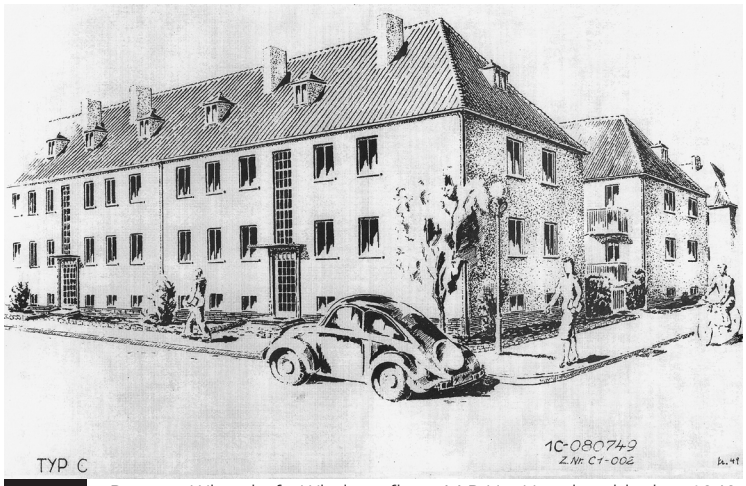


FIG. 3 Bremer Wirtschaft Wiederaufbau M.B.H., Housing blocks, 1949. Perspective drawing (Eduardo Torroja's archive).

The Arbeitsgemeinschaft Hebel proposal submitted by architect Ernst Julios was signed by a team of six, including Josef Hebel (owner and founder of his namesake company) and five architects: Erik Braun, Ernst Julios, Feistle Fuchs, Werner Wirsing and Jacob Semler. Their proposal was also based on the use of porous lightweight panels, in this case manufactured by Hebel. In the six years lapsing between 1943, when this company initiated its industrial activity in Munich, and the date of Eduardo Torroja's competition, it had become one of the major manufacturers of this type of industrialised elements, used worldwide to build not only housing but all manner of buildings. Unfortunately, none of the graphic documentation for this proposal has been conserved in the Eduardo Torroja Institute's archives. In 2001, XELLA, a multinational, purchased the two companies of highest prestige and longest experience in the manufacture of air-entrained concrete industrialised elements: Sweden's YTONG and Germany's HEBEL. These patents, like many others submitted with the proposals for the 1949 competition, were introduced in the Spanish market by Eduardo Torroja, who had the foresight to predict their future utility, borne out in the interim by their successful development for over half a century.

The proposal submitted by engineers E.A. Steinbrink and J. Krause was also based on the use of large, high-strength, precast reinforced lightweight concrete panels for walls, deck slabs and roofs. [Fig. 4] These 2.50 m high and variable length (up to 10.00 m) panels would be manufactured using an ingenious system based on special machinery able to lay three consecutive lifts of concrete, while simultaneously embedding the reinforcement.

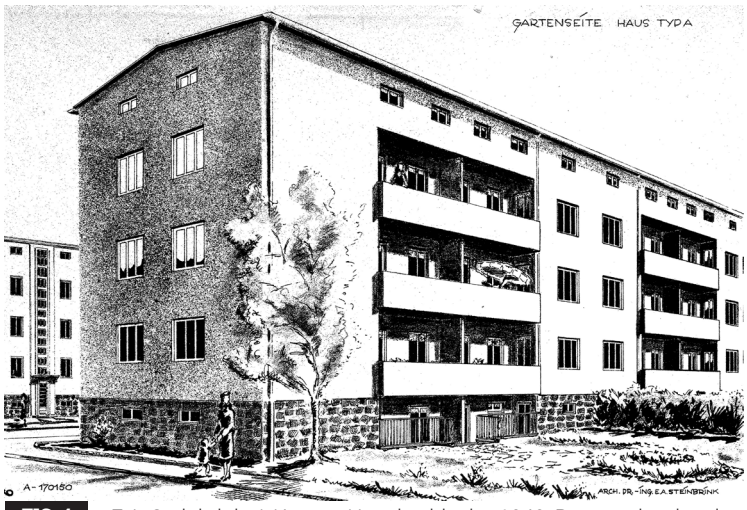


FIG. 4 E.A. Steinbrink, J. Krause, Housing blocks, 1949. Perspective drawing (Eduardo Torroja's archive).

Five factories would be needed for the industrialised production of these panels, with an output sufficient for 10 000 dwellings each. The materials required for 10 000 units were: 92 500 t of coarse sand; 61 100 t of fine sand; 38 500 t of cement, 8500 t of steel and 375 t of coal. The housing blocks were very similar to the Bremer Wirtschaft Wiederaufbau M.B.H. buildings, except that they had large longitudinal balconies, accommodated by setting back part of one of the façades. The use of a second span length raised construction costs due to the need for a larger number of different sized industrialised members.

Ernst Blecker's proposal was eliminated by the jury in the first round because it called for thick bearing walls which were not only expensive, but particularly difficult to build. The walls were erected using industrialised

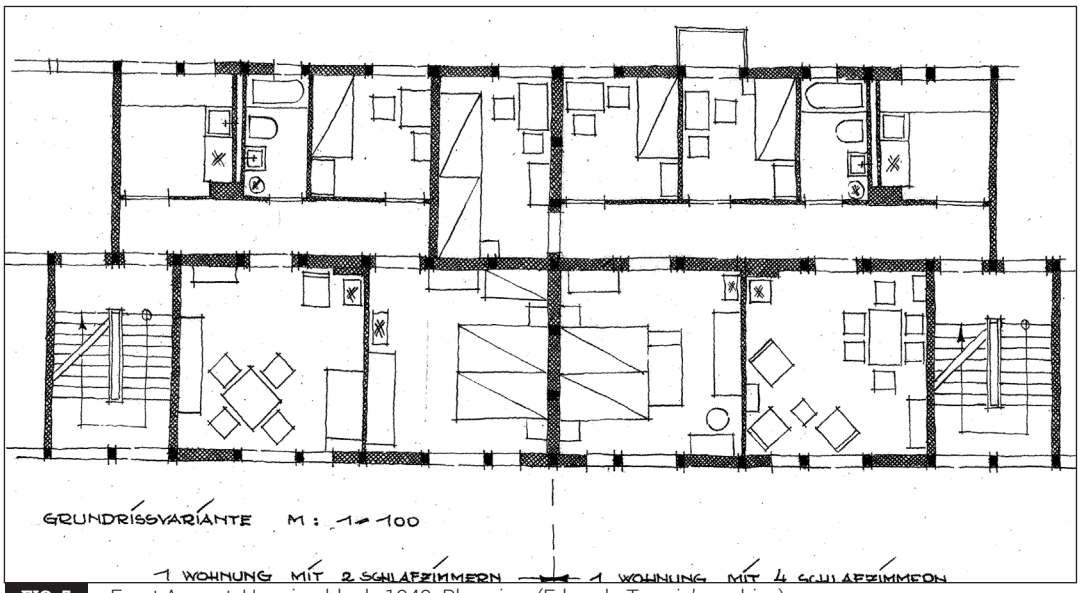


FIG. 5 Ernst Agonat, Housing block, 1949. Plan view (Eduardo Torroja's archive).

concrete elements that also served as permanent formwork. Once in place, these elements were filled in with on-site concrete, leaving ductways to house building services. While this construction system would have certainly afforded excellent insulation due to the thickness of the walls and characteristics of the materials, it was neither optimally industrialised

nor rationalised.

Ernst Agonat's proposal, based on the use of precast reinforced concrete elements, was also eliminated in the first round, for it entailed the use of large numbers of heavy elements with high steel ratios whose handling and shipping would raise costs. [Figs. 5-6] Reinforced concrete portal frames with a 4 m span formed three longitudinal bays, the bearing structure for the housing blocks: two running along the façades and the third along the centreline. Like most of the proposals submitted to the competition, in this housing block, the unit volumes and layout provided for front/back orientations and a compact floor plan in which the wet rooms were grouped to optimise building service pipe lengths. The size of the stairwell and its position between the façade and the central bay satisfactorily eliminated the need for header beams, although the proposal used too many columns (with spans of approximately 1 m), generating an inordinate number of abutments.

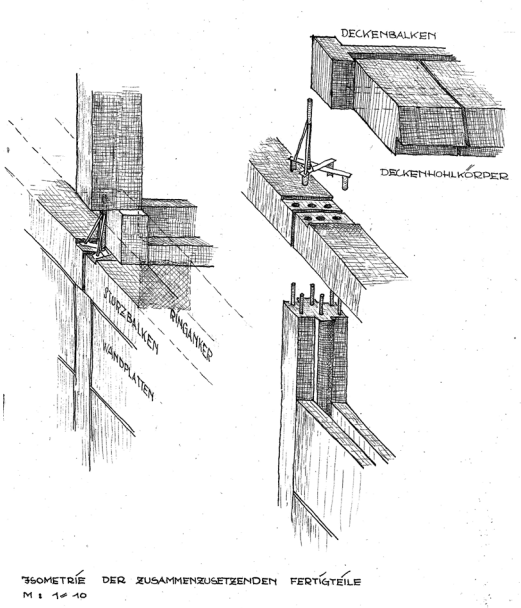


FIG. 6 Ernst Agonat, Housing block, 1949. Construction details (Eduardo Torroja's archive).

The proposal by Ehrenfried Lorenz, also based on industrialised reinforced concrete elements, shared many of these characteristics. In this proposal, the author clearly attempted to organise the housing blocks spatially in a way that would avoid linear monotony, with alternating openings and enclosures that formed individual and communal yards.

One very original German proposal for block types was submitted by Franz Fischer. [Fig. 7] His analysis was based on the pre-definition and modular coordination of habitable space in buildings, where the modules were subsequently interconnected in different ways, leading to a wide range of block type geometries. The coordinate dimension was a very important aspect to industrialise. We have to remember that Le Corbusier tried to do it with his *Modulor*. It was in 1943, in response to the French National Organisation for Standardisation's (AFNOR) requirement for standardising all the objects involved in the construction process.[9]

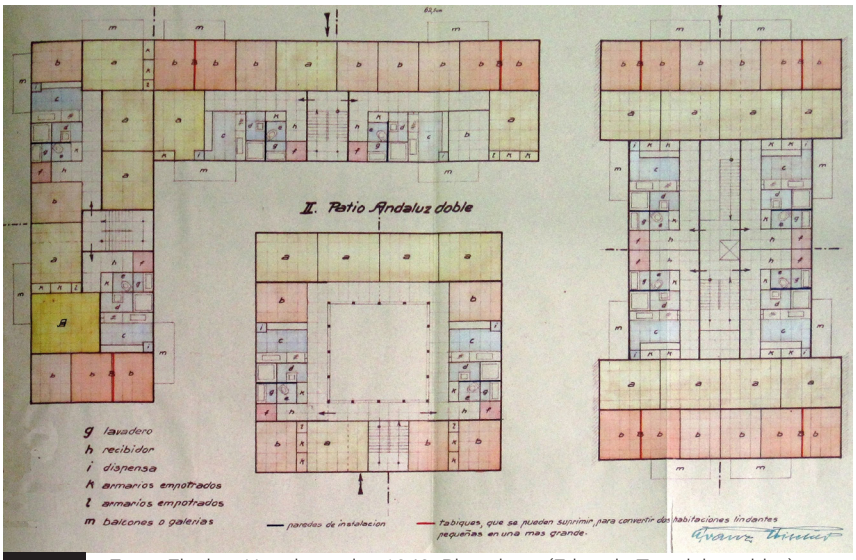


FIG. 7 Franz Fischer, Housing units, 1949. Plan views (Eduardo Torroja's archive).

The basic unit used by Franz Fischer was a 62.50 cm module. According to the author, that measurement was the result of optimising the dimensions and geometry of the habitable space, including the position and size of the furnishings. He used that module to establish the dimensions of the formwork panels for the basement walls, the scaffolding, and all manner of

9. Le Corbusier developed the *Modulor* as a system based on human measurements, the double unit, the Fibonacci numbers, and the golden ratio. Le Corbusier asked an apprentice to consider a scale based upon a man with his arm raised to 2.20 m in height. Le Corbusier published *Le Modulor* in 1948. He used it to design his famous *Unité d'Habitation* (Marseille, France).

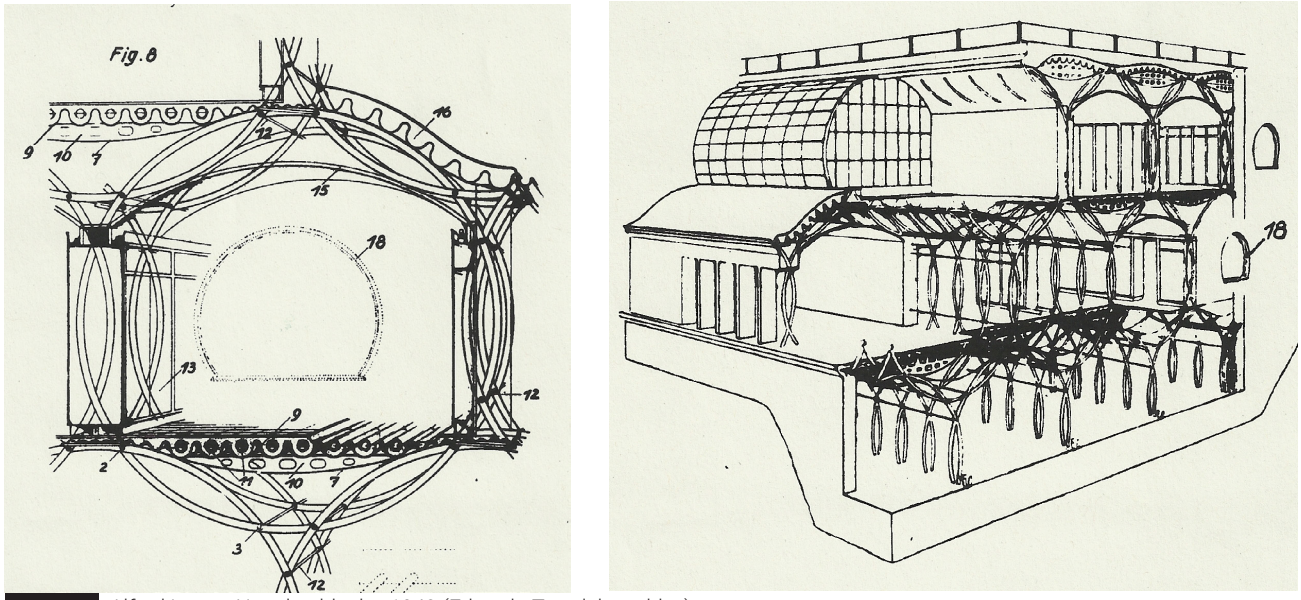


FIG. 8 Alfred Lucas, Housing blocks, 1949 (Eduardo Torroja's archive).

construction elements. He submitted four types of blocks in all, which he labelled: a) oppositional (back/front orientation); b) Andalusian courtyard; c) four flats per storey; d) interconnected. Only Franz Fischer proposed a housing block with courtyard. It was a very traditional Spanish solution which some Modern architects used, as José Luís Sert.[10]

Industrialisation would consist of the on-site manufacture of blocks from reusable moulds, whose characteristics would differ depending on the function of the component. Most of the masonry blocks used were made of lightweight concrete and measured 50 x 25 x 20 cm. He proposed one-way (joist and pan form) deck slabs with 62.50 cm spacing and a number of industrialised alternatives for beams: steel, reinforced concrete or even aluminium. The pan forms would also be made on site with lightweight concrete.

The most original of all the German proposals, although it won no prize, was submitted by Berlin architect Alfred Lucas, author of several books on the «harmony» and biological aspects of construction materials and their effect on people.[11] [Fig. 8] He contended that the erection of large numbers of housing units was not just an engineering-construction issue, but also impacted the health of their future occupants, a notion that was in all likelihood accepted internationally. In the memorandum for his design Lucas stated that: «Intuitive reactions cannot be misled by questions such as the thermal conductivity coefficient or other apparently solved technical questions, and concrete structures are intuitively rejected for housing». That statement prompted the institute to explore the scope of the research on which the architect based such an amazing assertion.[12]

His proposal obviously did not use concrete elements, but one of the steel structure patents owned by Dyckerhoff and Widmann (Zeiss-Dywidag). A major player in many of the architectural and engineering innovations that characterised early Modernity, that German firm was closely associated with the birth and development of the huge reinforced

10. K. Bastlund, *Jose Luis Sert: Architecture, City Planning, Urban Design*, Basel, Birkhauser Verlag AG, 1967.

11. Some of Alfred Lucas's foremost publications included *Der hören Mensch, Vom Klang der Welt, Harmonikale Studien* (1943) and *Lehrbuch der Harmonik*.

12. On 2 February 1951 Alfred Lucas received a letter from the ITCC requesting more information on both his steel structure patent and concrete research. In his reply dated 26 February 1951, he noted: «In my experience, the reasons for this rejection of concrete housing lie in the domain of the compensation of energy between man and matter. The influence (or effect) of materials should be determined with ultrasensitive instruments. I've been working in this area for some time and hope to publish the results in a few months, but I must say that the aim is not to exclude concrete, but to overcome the adverse effect of concrete on human beings, using suitable measures to compensate the energies involved» (Eduardo Torroja Archives).

concrete roofs internationally known and admired as «thin concrete shells».[13] Alfred Lucas's proposal was based on the design of a structural model able to generate many types of housing block compounds. His intention was to optimise the amount of material needed to build each unit, based on a ring-shaped bee-hive structure. The ring would constitute the bearing structure, freeing the enclosures of any such function. According to the author's memorandum, he would have liked to build the ring with six 3 mm thick circular prefabricated sheet steel segments, but since such thin sheets would be industrially difficult to manufacture, instead he proposed using the Dyckerhoff and Widman circular beam patent to build his spatial membrane. Nonetheless, on 8 July 1949 he patented his idea as designed in the hope that the industrial complex would find a solution for his initial proposal.

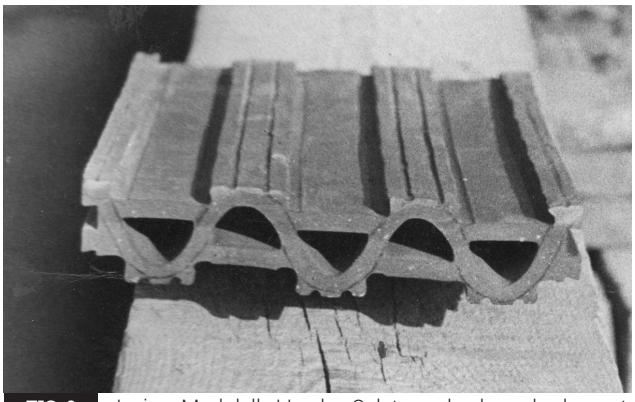


FIG. 9 Javier Modolell LLuch, Celetyp clay-based element, Madrid, 1948 (Eduardo Torroja's archive).

13. See P. Cassinello, M. Schlaich, J.A. Torroja, *De las láminas de hormigón a las nuevas estructuras ligeras*, in P. Cassinello, A. Bögle, P. Cachola Schmal, Schlaich Bergermann und Partner (eds.), *Estructuras Ligeras: Schlaich Bergermann und Partner*, Madrid, Mairea Libros, 2011, pp. 9-20.

Spain

As might be expected, the Spanish proposals all followed essentially the same pattern. Given the abundance and low cost of clay, most of the submissions revolved around the industrialisation of clay-based products. The Spanish participants were well aware that in the nineteen forties and fifties, the country's construction was characterised by abundant and inexpensive labour, readily available clay and a dire shortage of steel, whose use in structural and constructional solutions had to be optimised to the utmost. That would explain why most of the country's patents in those years were based on clay, a circumstance that, in addition, furthered its economic self-sufficiency.[14]

14. Report on the industrialisation conference held at the Eduardo Torroja Institute in 1961.

The Spanish proposals submitted to Eduardo Torroja's 1949 competition were authored by: Luís Maria Albín Sola (Celetyp), Justo Calcedo, Antonio Cámara, Jesús Carrasco Muñoz, Homs, Bartolomé LLongueras Gali, R. Lucini, Vicente Pascual Ocheda, A. Pastor, Isaac Peral Censio, P. Ramblas Pagués, J. Sabes Vita, F. Sagarzazu, Tournalayer, Termo Stabil, Stent, Baron de Abella, Semelas and Baselga, Estructuras Ligeras. Engineer Norman Barraclough Valls, while not competing for the prize, submitted a proposal for a promising post-tensioned structural system. One of the more outstanding of these submissions described a comprehensive system for industrialising housing, presented by Luís Mª Albín Solá, under Mariano Giner Gallego's and Javier Modolell LLuch's Celetyp patent. In this proposal the homes were to be built with a single model of hollow (lightweight) and very long clay-based elements, into which bars were inserted for reinforcement as needed depending on whether they were to be used in deck slabs, beams, columns, façades or partitions. This appealing scheme optimised the industrial process, for it called for a

single hollow, lightweight element that could be used for building structure and enclosure both. Hence it was the element itself that modulated and enclosed all the inhabitable space, while guaranteeing absolute dimensional coordination among the components. It proved, however, to be more costly than desirable at the time, because although it had been used to build some housing units in Spain, construction processes were not as fully developed as required.

FIG. 10 Javier Modolell LLuch, Construction process: On-site assembly, Madrid, 1948 (Eduardo Torroja's archive).

Celetyp submitted proposals for both single family units and apartment buildings. Unfortunately, none of the floor plans has been conserved in the IETcc archives. With its patents for clay-based materials, most prominently for deck slabs, Celetyp was among the domestic companies that contributed to the development of Spain's depressed nineteen forties construction industry. [Figs. 9-10] One such product, a hollow brick consisting of two interconnected components, was used by José Antonio Coderch to erect housing in a seaside quarter in the city of Barcelona. Celetyp later participated in the 1956 Experimental Housing Competition.[15]

Spanish architect Jesús Carrasco-Muñoz (1869-1957), although not a member of GATEPAC (Grupo de Artistas y Técnicos Españoles para el Progreso de la Arquitectura, group of Spanish artists and engineers for architectural progress), adapted his designs to the principles of modern architecture defended and represented in Spain by that group. His proposal for the Industrialised Housing Competition organised by Eduardo Torroja in 1949 was awarded one of the two most highly valued honourable mentions. [Fig. 11] It drew from new patents for inexpensive industrialised elements and defined a rational construction process that optimised time and costs by using new ancillary equipment, such as a bridge crane adapted by the architect himself. His building experience since the end of the Spanish Civil War in 1939[16] included the construction of housing with «Schoa» or cement mortar blocks. One of his many patents for industrialised elements was a minimally reinforced concrete window frame that also served as a lintel, greatly rationalising construction. Eduardo Torroja used a very similar solution in the headquarters he designed for the institute that now bears his name.[17]

Vicente Pascual Ocheda submitted yet another proposal focusing on industrialised clay-based elements. In this case, contrary to the Celetyp proposal, the units were to be built with a wide variety of patented elements: walls, deck slabs, portal frames and window frames. While such a variety of elements raised housing construction and manufacturing costs, it

15. VV. AA., *La Vivienda experimental. 1956 experimental housing competition*, Madrid, Fundación COAM, 1997, Annex, p. 179-Celetyp.

16. Jesús Carrasco-Muñoz's proposal, like some of his prior industrialisation experiences, was published in four articles carried by the "Revista Nacional de Arquitectura". All four focus on industrialisation and patents and none refers to the housing design submitted to the 1949 international competition. See J. Carrasco-Muñoz, *Mecanización en la edificación de viviendas*, in "Revista Nacional de Arquitectura", 1954, No. 148, p. 40; *ibid*., No. 149, p. 39; *ibid*., No. 150, p. 34; *ibid*., No. 154, p. 45.

17. In 1953, on the occasion of the Institute for Construction and Cement Engineering's relocation to its new Castillares headquarters, "Informes de la Construcción" published seven articles on the design and construction of the new compound. They were grouped in a series entitled *Meet the institute...* One of the issues was devoted specifically to prefabrication.

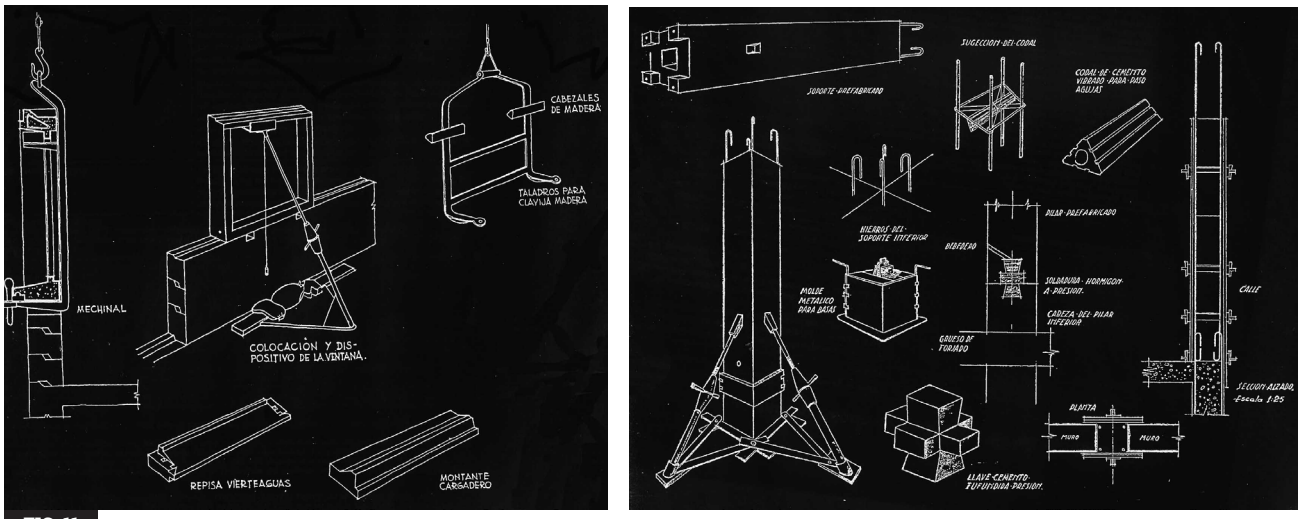


FIG. 11 Jesús Carrasco-Muñoz, Industrialised elements, 1949 (Eduardo Torroja's archive).

stood as proof of the indisputable effort made by Pascual Ocheda. These and many others of his useful patents contributed to the development of Spanish construction at the time. His very detailed analyses were especially commendable, for he sought not only to optimise the industrialisation of the elements in question, but also their dimensional consistency. That rendered his patents particularly usable for a variety of spaces and floor plans. His 1949 proposal included patents for reinforced clay-based elements for walls and one- and two-way deck slabs. Of all his patents, the most original was his «prestressed clay-based window frame». **[Fig. 12]** This hollow clay element also had holes for housing post-tensioned reinforcement. Its author designed all the elements needed to interconnect the openings at different positions on the façade. In the post-World War II years, prestressed concrete revolutionised construction engineering. Prestressing optimised the structural performance of civil construction and building members and enhanced the synergies between technology and design. Pascual Ocheda took that revolution one step further and post-tensioned clay materials.

Spanish proposals based on the use of foreign patents were also submitted. One, Stent, consisted of using an English patent for precast reinforced concrete panels, while Bartolomé LLongueras Gali proposed a system highly developed in France, known by the name of its manufacturer. Mopin was in fact one of the pioneers in the instantaneous removal of concrete moulds.

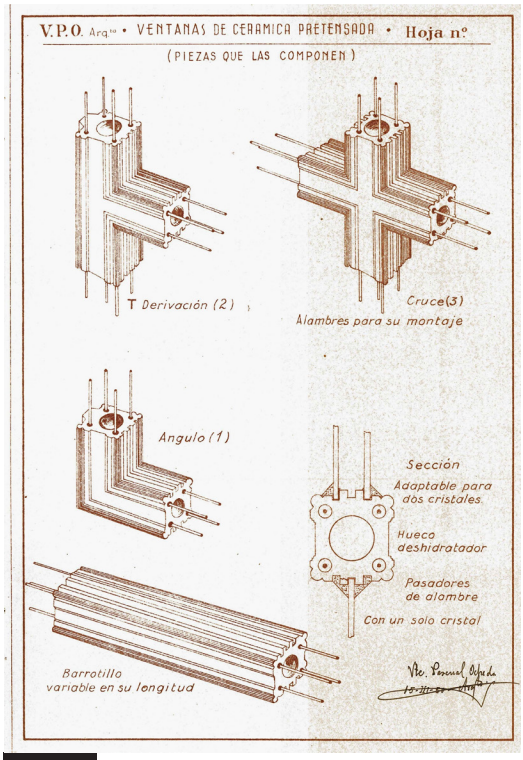


FIG. 12 Vicente Pascual Ocheda, Prestressed clay window frames, 1949 (Eduardo Torroja's archive).

France

The authors of the French proposals for the international competition organised by Eduardo Torroja in 1949 were: Procédés J. Cauvet, Société française de Constructions & Travaux publics, M. Betinas, A-V Humbert, Julien V. Schreiner and Eduard T. Bowser. The first two were each awarded one of the five competition

prizes. Unfortunately, no copy of the Procédés J. Cauvet proposal could be found in the IETcc files. The Société française de Constructions & Travaux publics submission was awarded a 10 000 peseta prize. That company had been building low-cost housing in France since the end of World War II, using Freyssinet's famous patents (reinforced and prestressed concrete) and others authored by Jean Prouvé. Its proposal for the competition consisted of a patented system of hollow lightweight concrete blocks designed to house iron reinforcement. They resembled Frank Lloyd Wright's famous textile block system, although without the wealth of textured finishes and structural variables used in the American architect's emblematic Ennis home (1923-1924).[18]

In 1947, two years prior to Torroja's competition, the French Ministry of Reconstruction and Urban Planning organised a competition on research in industrialised housing to palliate the damage caused during World War II. Société française de Constructions & Travaux publics won first prize in that competition and was awarded the experimental construction of five large apartment buildings at Calais.[19] It submitted those same industrialised systems to the 1949 competition, along with its experience in constructing the experimental buildings. [Figs. 13-15]

18. B. Brook, *Frank Lloyd Wright: Selected Houses*, Tokyo, A.D.A. Tokyo Co. Ltd., 1991.

19. According to the Société française de Construction & Travaux publics memorandum, 560 proposals were submitted to the competition organised by the French Ministry of Reconstruction and Urban Planning in 1947.

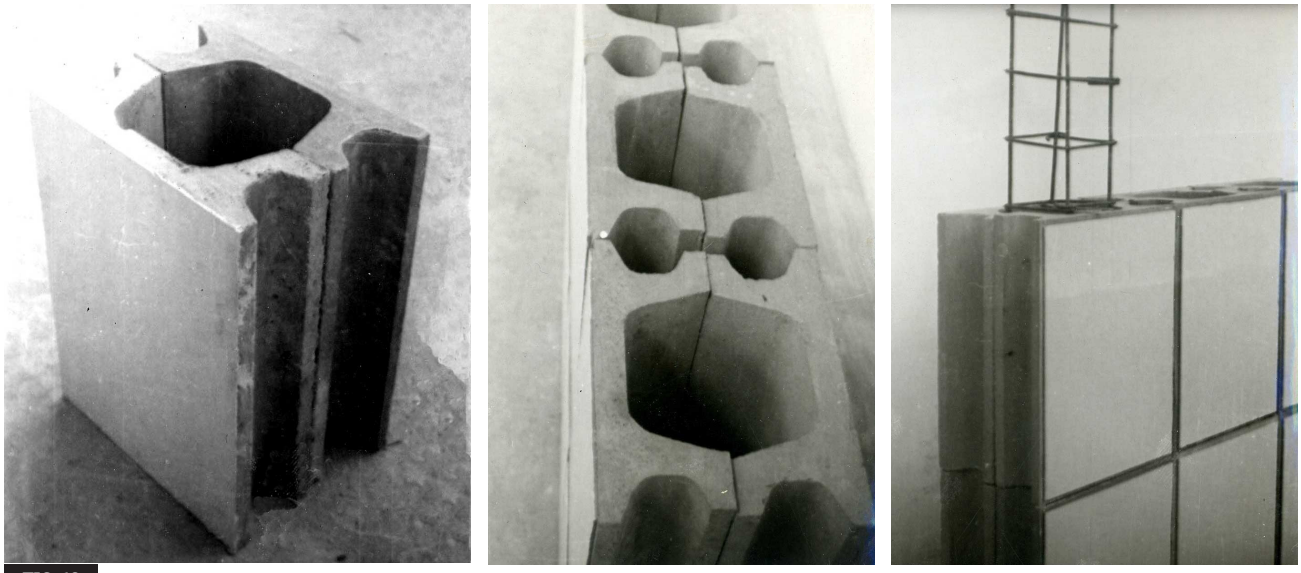


FIG. 13 Société française de Constructions & Travaux publics, Industrialised concrete blocks. Erection of walls with embedded columns, 1948 (Eduardo Torroja's archive).

One of the major advantages of the proposal submitted to the 1949 competition was that it based housing construction essentially on the industrialisation of a type of block that could be inexpensively manufactured in Spain. The main materials were Portland cement, sand, ceramic waste and a highly optimised ratio of iron. The structural skeleton and façades were built with these blocks, whose outer and inner sides could be surfaced with pigment or white cement. Moreover, neither specialised labour nor any special ancillary equipment was required.

A promisingly simple variety of apartment buildings was submitted

to the 1949 competition. These buildings could be adapted to house units of different sizes, depending on the number of children, without altering the basic modular approach. They consisted of three lines of longitudinally loaded walls or portal frames, and all the units had openings on opposing façades. Each stairwell provided access to two units per storey, regardless of the size of the dwellings. With that system, different building arrangements could be envisaged, either as detached or linearly interconnected blocks. Community services were to be housed in the mezzanine over the basement: laundry, clothes lines, trash, lumber room for bicycles and baby carriages. BA roofed walkway was provided for the buildings that had a community lawn area.

FIG. 14 Société française de Constructions & Travaux publics, Housing block under construction, September 1947 (Eduardo Torroja's archive).

The façades were to have two types of openings: balconies off living rooms and windows in the other rooms, all dimensioned to the basic modules around which the units were built.[20] Light for the stairway was to be provided by a lattice opening in the façade. [Fig. 15] The proposal included two options: the use of the ground storey for commercial purposes, depending on where the buildings were sited, and a large balcony cantilevered off the roof and enclosed by a lattice with mobile slats. Single family units were to be built with the same system, with one or two storeys depending on the size of the family.

Other French proposals drew from patents already in use, although they failed to include a detailed study of how they could be industrialised in Spain's specific circumstances or the planning required to build the 50 000 units per year set out in the competition rules. Such was the case of the proposal submitted by M. Betinas, based on the «Mont» patent for building walls and roofs using concrete blocks with a vertical T-section; and of the solution authored by A-V Humbert Laxou-Nancy, which deployed SGDG's patents and procedures for reinforced concrete.

20. Oddly, despite the lightweight concrete block modulation of windows and balconies, the photograph of the façade shows that some of the blocks had to be sawn, for what would appear to be a mismatch between the indoor clearances and the module.

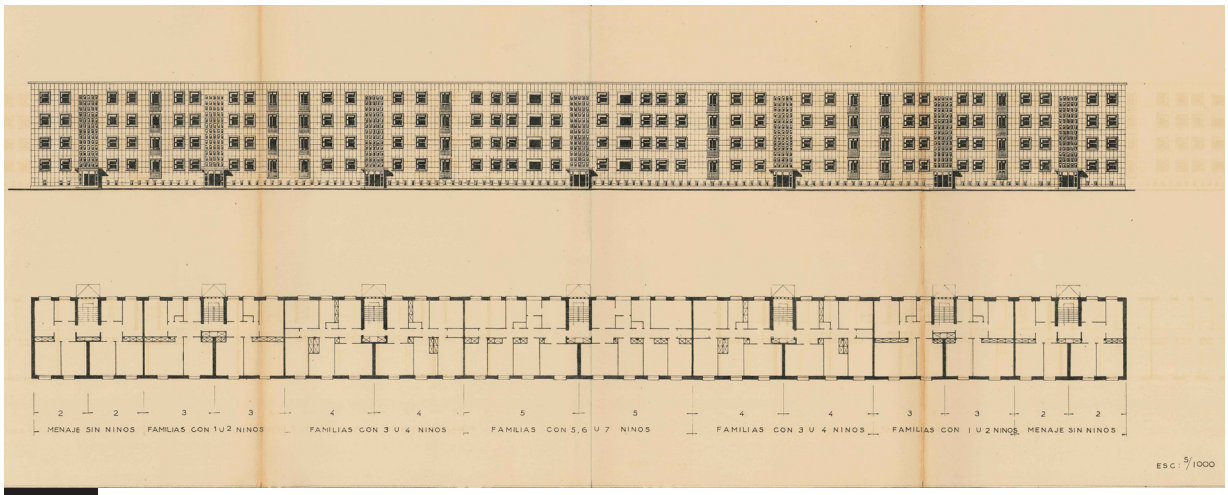


FIG. 15 Société française de Constructions & Travaux publics, Linearly interconnected standard apartment buildings, 1949 (Eduardo Torroja's archive).

Italy

The authors of the Italian proposals for the international competition organised by Eduardo Torroja in 1949 were: Saverio Farruzzi (Ravenna), Agostino Gurrieri (Ragusa, Sicily), Marcello Cini, Casimiro Dolza and Marco Gamna (Turin), Frido Cruciani (Rome) and Luigi Re (Cagliari).

A proposal submitted by Marcello Cini, Casimiro Dolza and Marco Gamna was particularly striking for its constructional originality, despite its high cost in Spain. It consisted of filling steel plate formwork, which enveloped the entire inhabitable space, with cast-in-place reinforced concrete made with lightweight porous aggregate for better thermal and acoustic insulation. Saverio Farruzzi proposed an innovation with respect to the type of unit. This single family dwelling, which he called the unifamiliare minima crescente, was able to "grow" with the family. Farruzzi designed six solutions for horizontal or vertical enlargements. The standard single-storey unit could be enlarged upward thanks to its over-engineered structural members. This proposal lacked any system for industrialising the building elements and its "growability" entailed extra costs that made little sense for mass application in the construction of low-cost housing.

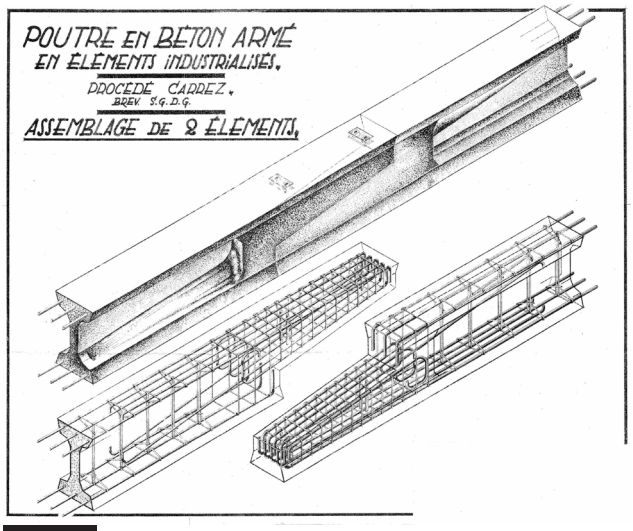


FIG. 16 A. Carrez, Detail of beam assembly, 1949 (Eduardo Torroja's archive).

Belgium

The authors of the Belgian proposals for the international competition organised by Eduardo Torroja in 1949 were: A. Tasin (Bruges), A. Druart (Woluwe St Albert), Marcel Lerminiaux (Loverbal), and Arthur Carrez (Brussels). Most of the proposals were based on the use of reinforced concrete. According to the competition jury's minutes, the most promising was submitted by A. Carrez.

It was based on the use of a wide variety of industrialised reinforced concrete elements. [Fig. 16] What the jury found to be of particular promise was the construction process: a continuous, rational "element manufacture-housing construction" sequence. The problem was that it called for the manufacture of many different elements and large amounts of iron, a construction method that could not be economically deployed in Spain at the time.

United States

In the post-World War II period, the United States was the world leader in industrialisation. Not only did its large corporations prevail on the international construction market, but a substantial share of the

masters of modern architecture had taken up residence there. Like Walter Gropius and Richard Neutra, many of these professionals were European immigrants who engaged enthusiastically in housing industrialisation.[21]

The authors of the U.S. proposals for the international competition organised by Eduardo Torroja in 1949 were: Arthur Gales Company (Racine, Wisconsin), Stone and Webster (Boston), Realp W. Verney (Honolulu, Hawaii), J.E. York (Boston, Massachusetts) and Wallace Neff (Los Angeles, California). All these proposals were overly developed and their cost far too high for affordable housing in Spain at the time. Nonetheless, the wealth of industrialised alternatives developed in the United States contributed to Torroja's subsequent decision to involve institute engineers and architects in Spain's so-called «Industrial Productivity Commission». During the nineteen fifties, the commission visited a significant proportion of American manufacturing plants, worksites and architectural studios in pursuit of practical data to chart the necessary course toward industrialisation in Spain.[22]

Realp W. Verney submitted a single family unit built with an innovative system in which a small crane assembled industrialised reinforced

21. For their involvement in industrialised and experimental housing, Walter Gropius and Richard Neutra stood out among the masters of modern architecture who emigrated to the United States. Torroja's institute published articles on many of their housing projects in its "Informes de la Construcción".

22. P. Cassinello, *Eduardo Torroja y la Industrialización de la "machine à habiter". 1949-1961*, in "Informes de la Construcción", vol. 60, 2008, No. 512, pp. 5-18.

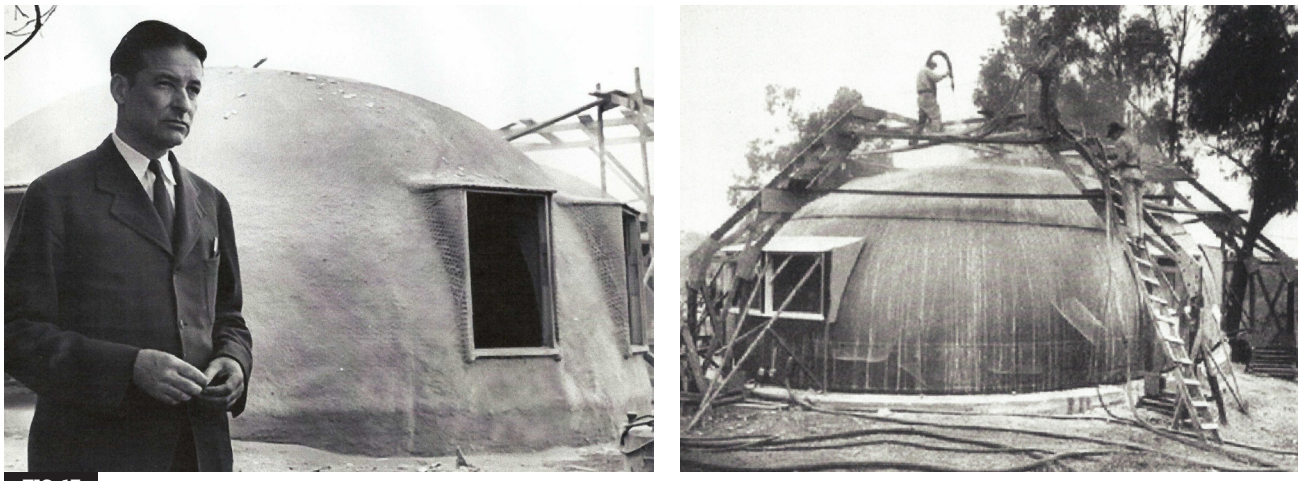


FIG. 17 Wallace Neff, Airform bubble houses, Litchfield Park, Arizona, 1942 (Eduardo Torroja's archive).

concrete walls and deck slabs. Construction times and labour were rationalised but the system was too costly for Spain, where ancillary equipment, in particular latest generation machinery, was in short supply. Under the slogan «anyone can build a house», the Arthur Gales Company submitted an industrialised construction system it was using on a large scale in the United States. It consisted of a Jones and Laughlin Steel Corporation patent in which a series of industrially manufactured steel columns and beams that could be put together on site like a Meccano.

Stone and Webster, both a pioneer and a major player in industrialised civil and architectural construction in the United States, as well as in most other areas of the country's heavy industry (space, atomic energy, aeronautics), also participated in Torroja's competition. With its

economic buoyancy and the company's world leadership in innovation and technological progress was the fruit of its economic buoyancy and the expertise of its staff of distinguished engineers, architects and scientists, many of whom were European and Asian immigrants. I.M. Pei, a renowned architect of Chinese origin, worked at Stone and Webster from 1942 to 1946, where he produced patents for low-cost prefabricated housing units made of wood panels, and designed reinforced concrete elements. In 1944 the proposal for prefabricated housing designed by I.M. Pei and E.H. Duhart took second prized in the Design for post-War Living competition organised by the journal "Arts and Architecture".[23] The IETcc archives unfortunately contain none of the documents that accompanied the Stone and Webster submission to the 1949 competition.

The proposal by architect Wallace Neff was based on the use of his own patent for monolithic reinforced concrete domes built over inflatable balloons (airform bubble houses) that served as reusable forms. In the nineteen forties, Neff used these balloons made by the Goodyear Tire and Rubber Company to build thousands of homes in over 17 countries. [Fig. 17] More bubble houses were built in the United States, primarily in California, than anywhere else, however.[24] In 1944 the journal "Architectural Record" carried an article eulogising this modern innovation for housing that combined inhabitable space with new technologies. In 1945 Neff expanded his company, which he renamed Airform International Construction Company (AICC). While very speedy, this construction system was not genuinely industrialised. It consisted of casting a reinforced concrete foundation ring in place to anchor the inflatable formwork. The reinforcement was then set into position around the inflated balloon and gunnited. After the concrete shell hardened the balloon was deflated and removed. The speed of this construction system optimised labour which, along with the small amounts of materials required, lowered costs, making it apt for building affordable housing. Neff developed and perfected his system over the years, conducting experimental strength trials on bubble houses with different geometries, sizes and slenderness ratios. He also researched the outer gunnite finish. Depending on climate, these bubble houses could be coated with waterproofing and insulation, in turn covered over by a second layer of gunnite, to enhance the quality of the dwellings. Nonetheless, as in the case of other innovative proposals submitted to the 1949 competition, this system could not be economically deployed in Spain at the time.

23. In January 1944 "Arts and Architecture" published the results of its Design for post-war Living competition. The jury comprised Richard Neutra, Gregory Ain and Charles Eames. First prize went to Eero Saarinen and Oliver Lundquist, second to I.M. Pei and E.H. Duhart, students at Harvard University supervised by Walter Gropius, and third to Raphael Soriano.

24. F. Szokoloczi and A. Danielis to Eduardo Torroja, 3 November 1949, IETcc Archives, AHT/C/A/002/005.

Netherlands

The authors of the Dutch proposals for the international competition organised by Eduardo Torroja in 1949 were: Jac Koolhaas (Groningen), H. Groefsema (Groningen), and Austermuhle, Grossimling Haus N.V Baenen (Maastricht).

The title of the Jac Koolhaas and M. Lovwerenburg submission, the «Mobile Prismatic City», describes in a nutshell the key characteristic of the homes and the system for industrialising their construction. [Fig. 18] The proposal envisaged the industrialised erection of three-dimensional, reinforced concrete modules with a rectangular base that could be readily stacked during storage. These modules, which comprised the outer structural envelope, were to be built on site. When grouped, the housing modules could be arranged to form a wide range of different types of multi-dwelling units. In some cases the landscaped roof would be reserved for community use, as in Le Corbusier's famous *Unité d'Habitation* at Marseille. As in that legendary building, the Koolhaas and Lovwerenburg design provided for alternative duplex dwellings, which in this case were built inside shells with a hexagonal cross-section built with two precast reinforced concrete modules. The living room, kitchen and master bedroom with its bathroom were located on the ground storey, while the children's bedrooms and a large bath were on the upper storey.

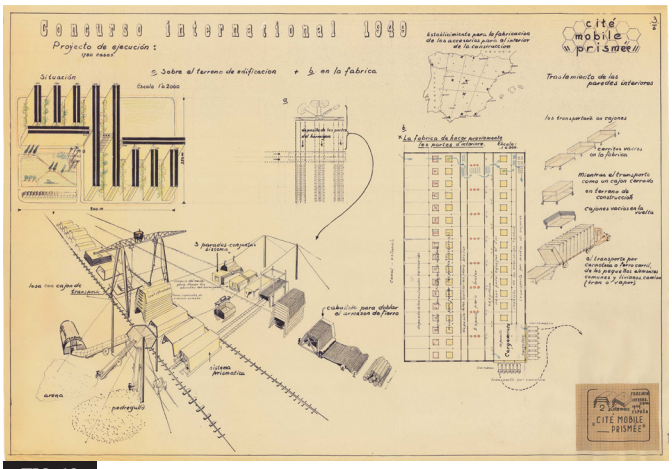


FIG. 18 Jac Koolhaas, H. Groefsema, Reinforced concrete module manufacture and shipping, 1949 (Eduardo Torroja's archive).

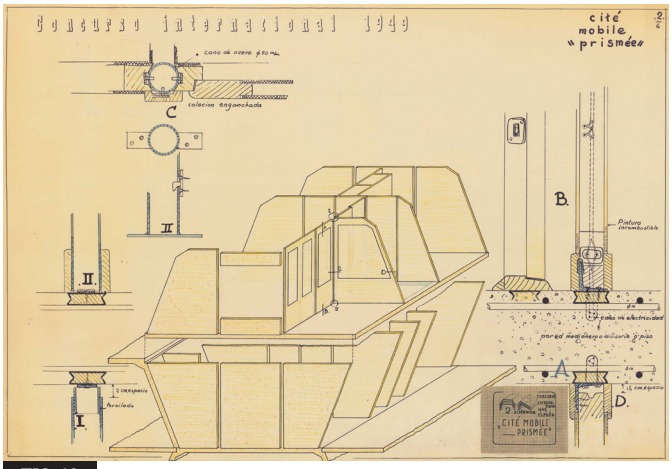


FIG. 19 Jac Koolhaas, H. Groefsema, Module manufacture and assembly, 1949 (Eduardo Torroja's archive).

The advantages of dividing the hexagonal shell into two modules to delimit the living space instead of a single whole element were, on the one hand, readier industrialisation and on the other lighter weight, which facilitated shipping and on-site handling. The joints between modules and deck slabs were very cleverly designed: the upper angles of the modules were mortised to receive the piece and reinforced on the inner corner with a small gusset. [Fig. 19]

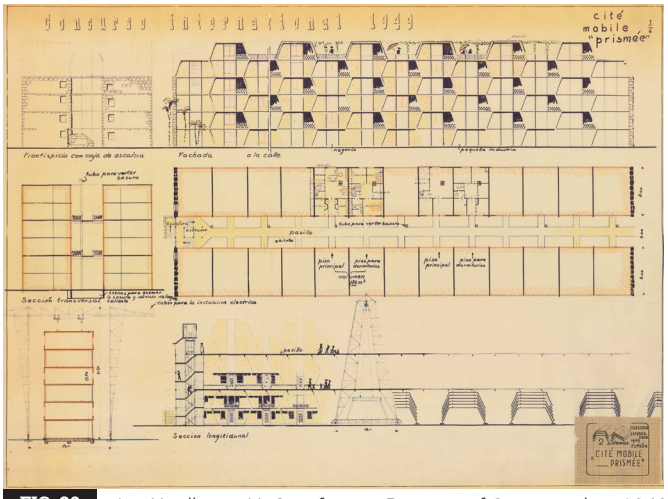


FIG. 20 Jac Koolhaas, H. Groefsema, Process of Construction, 1949 (Eduardo Torroja's archive).

Although the similar use of the housing block roof, the construction system used by Jac Koolhaas and H. Groefsema it was very different to the Le Corbusier (*Unité d'Habitation*). [Fig. 20, Figs. 22-23] Le Corbusier used a mixed construction system: an in place reinforced concrete bearing structure in conjunction with prefabricated elements for façades and modular housing units.[25] [Fig. 21]

25. These modular housing units were not used to build it (*Le Corbusier 1938-46*, Zürich, Girsberger, 1950, pp. 178-93).

Japan

In 1949 Japan was undergoing intense industrial development despite the post-World War II changes in its land area, politics and economy.[26]

26. T. Nakamura, *The Post-war Japanese Economy. Its Development and Structure*, Tokyo, University of Tokyo Press, 1981, pp. 49-54.

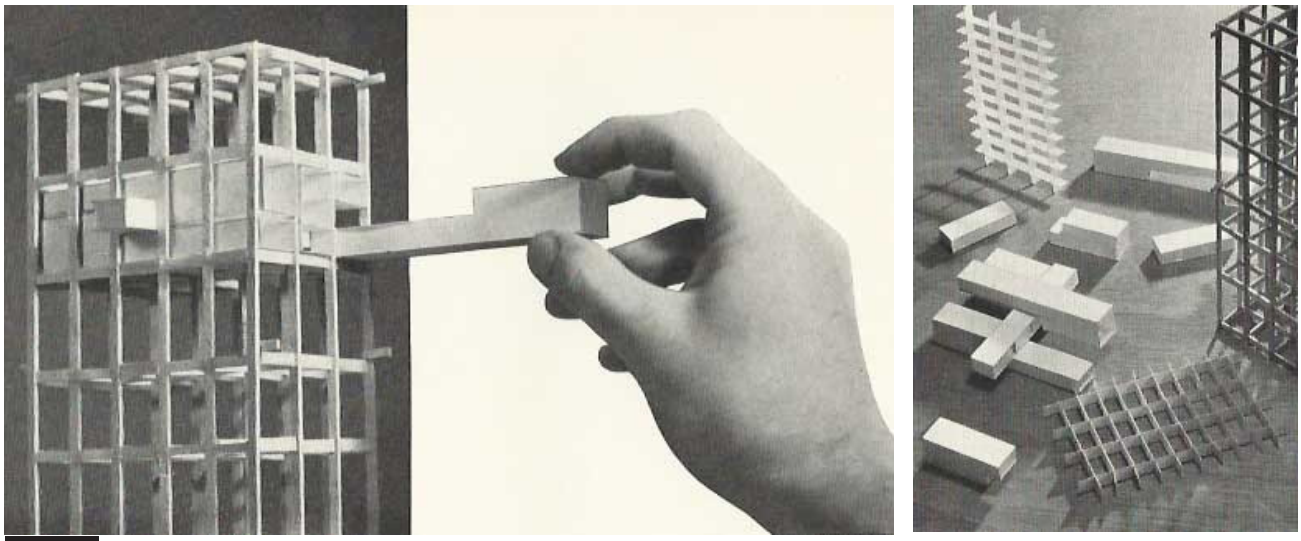


FIG. 21 Le Corbusier, Prefabricated elements for façades and modular housing units, 1947 (Eduardo Torroja's archive).

One of the factors that indisputably favoured industrialisation in Japan was the country's traditional modulated and coordinated approach to housing, which affected not only the dwelling per se, but also its furnishings, decoration and even domestic utensils. An article entitled *My house* by Japanese painter Sabro Hasegawa, carried in the same issue of "Art and Artist" as a paper by Eduardo Torroja, is particularly revealing in this regard. Hasegawa explained how Japanese homes are generated around a *tatami* or module with which a lattice of rectangular meshes is formed to build the floor. This lattice defines the proportions of all the rooms, which are sized to a certain whole number of *tatamis*.

The authors of the Japanese proposals for the international competition organised by Eduardo Torroja in 1949 were: Yoshiteru Tackechi (Tokyo), S. Seisaku Yoshikawa (Tokyo) and Gonkuro M. Kume (Tokyo). Architect S. Yoshikawa's proposal called for building continuous linear housing blocks across long lengths of Spanish soil, and using the roofs as roads. The proposal was reminiscent of an idea put forward by Le Corbusier in 1929 in Brazil.[27] Whereas the Swiss architect envisaged adapting the structures to Brazil's uneven terrain, however, the Yoshikawa proposal would have constituted an architectural blight on the landscape, as shown in the drawings of the units intended for construction in Spanish coastal cities. **[Fig. 24]** These continuous masses of housing blocks crowned by a road would have abruptly interrupted harmonious land – sea interaction and established a formidable physical barrier, depriving residents of both the view of the sea and the sound of its waves. This was indisputably a mistaken approach.

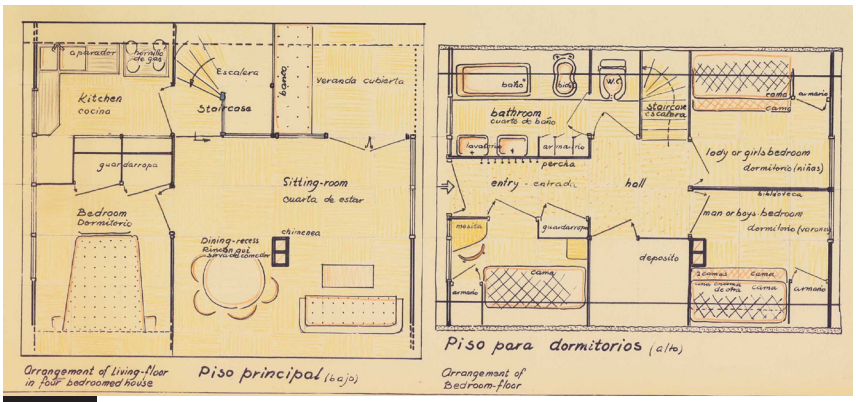


FIG. 22 Jac Koolhaas, H. Groefsema, Distribution of duplexes, 1949 (Eduardo Torroja's archive).

27. J. Guiton (ed.), *The Ideas of Le Corbusier on Architecture and Urban Planning*, New York, George Braziller Incorporated, 1981.

The justification for building a road over the flat roofs of the apartment buildings was the tolls that hypothetically could have been charged for its use. [Fig. 25]

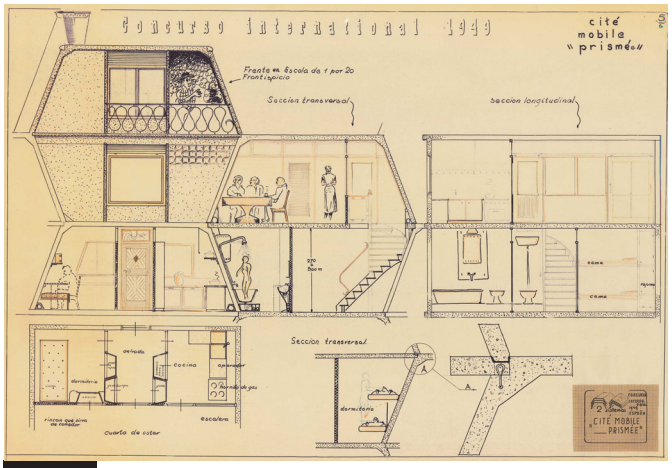


FIG. 23 Jac Koolhaas, H. Groefsema, Duplex cross-section, 1949 (Eduardo Torroja's archive).

The proposal included several types of duplex units, depending on the size of the family (two to seven members). The area of the smallest, for a two-member household, was 28.125 m^2 (single storey), while the largest, for families of seven, measured 75.00 m^2. All the units had a balcony along the entire façade, accessed from the living-dining room and master bedroom. The dwellings designed for two-, four- and five-member families also had a large roofed balcony on the opposite façade. The units for families with six or seven members did not however, for this was the space used to add extra bedrooms in the larger units.

All the units could be enclosed in the same envelope built with the same bearing structure, i.e., the same number and arrangement of reinforced concrete portal frames. Under this attractive and efficient idea, the apartment buildings would be generated by stacking identical virtual boxes, which would either be empty or occupied depending on the number of family members. [Fig. 26]

The linearly interconnected housing blocks featured a number of community service areas spaced at 3 km intervals: churches, nursery and elementary schools, clubs and markets. The result would be miniature road cities where the inhabitants could find all the necessary facilities for everyday life. The construction system proposed was based on the use of a number of precast reinforced concrete elements, which could be optimally industrialised because most were identical components for the virtual boxes that defined the inhabitable space in each unit. The only elements that did not fit that pattern were the ones needed for the community service buildings. One of the many details that made the construction and structural design particularly promising was the thoroughly modern approach to the reinforced concrete parapet on the roof. Like other masters before him such as Frank Lloyd Wright or Le Corbusier, Yoshikawa used this element to ensure water-tightness at the abutment with the deck slab. In other words, the parapet and roof constituted the self-same construction unit. Construction was optimised by stacking the reinforced concrete wall, slab and portal frame modules from scaffolding positioned on the two parallel façades and raised section by section. In addition, the road on the roof of the finished sections could be used to move industrialised elements.

Moreover, although the typological organisation of different sized dwellings was impeccable and the industrialised reinforced concrete

FIG. 24 Seisaku Yoshikawa, Continuous mass of housing blocks crowned by a road, 1949 (Eduardo Torroja's archive).

members proposed would have optimised both the use of materials and the construction process, the economic viability of the proposal for mid-twentieth century Spain was questionable at best, irrespective of the suitability or otherwise of the road-city concept.

The proposal submitted by Japanese architect Yoshiteru Takechi included the design for only two types of single-family homes, and provided no data on their structural or construction systems, services, or the industrialisation of possible alternatives that would have been economically feasible in Spain at the time. [Figs. 27-28] Architectural space in these dwellings expressed the sentiment that had arisen after the establishment of New China in 1949, in which architecture echoed modernity's foreign influence while nonetheless conserving its traditional features. Although the design of these single-family dwellings was of excellent quality, the absence of specifications on industrialised construction, in conjunction with the failure of the units to comply with the standards in place for low-cost housing, led to the disqualification of the proposal by the judges for the international competition organised by Eduardo Torroja in 1949.

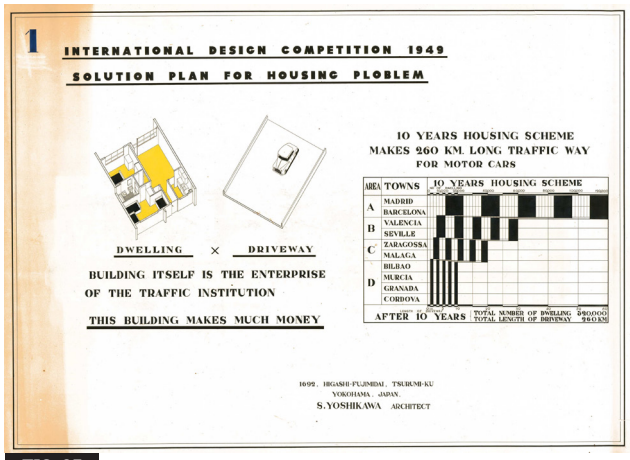
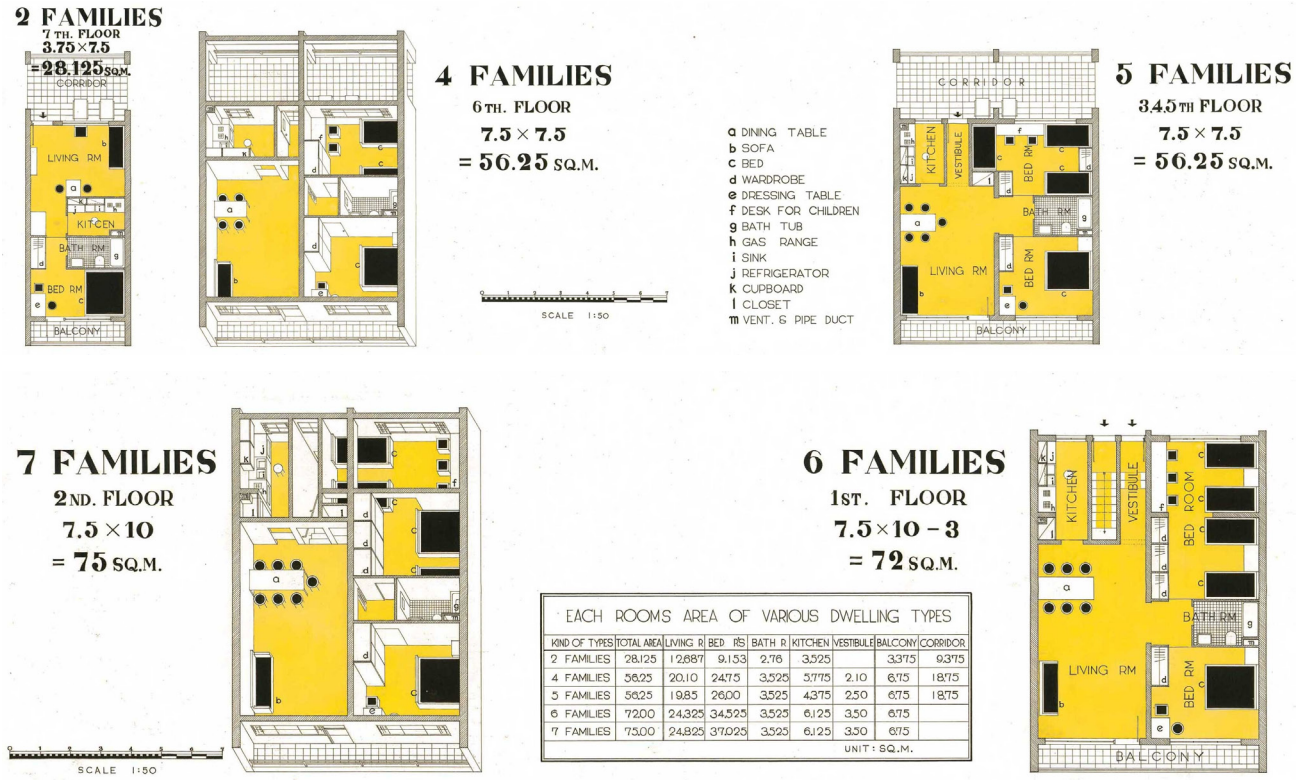


FIG. 25 Seisaku Yoshikawa, Road integrated in housing block, 1949 (Eduardo Torroja's archive).

The schedule of uses and net floor areas in both units were in fact designed to standards much higher than applicable to low-cost housing.



EACH ROOMS AREA OF VARIOUS DWELLING TYPES

KIND OF TYPES	TOTAL AREA	LIVING R	BED RS	BATH R	KITCHEN	VESTIBULE	BALCONY	CORRIDOR
2 FAMILIES	28.125	12.687	9.153	2.76	3.525		3.375	9.375
4 FAMILIES	56.25	20.10	24.75	3.525	5.775	2.10	6.75	18.75
5 FAMILIES	56.25	19.85	26.00	3.525	4.375	2.50	6.75	18.75
6 FAMILIES	72.00	24.325	34.525	3.525	6.125	3.50	6.75	
7 FAMILIES	75.00	24.825	37.025	3.525	6.125	3.50	6.75	

UNIT: SQ.M.

FIG. 26 Seisaku Yoshikawa, Types of units and floor areas, 1949 (Eduardo Torroja's archive).

These units would even today be regarded as luxury homes. Type A, a two-storey dwelling, featured a roof formed by two slanted planes of different sizes and heights pitched very steeply inward. [Fig. 27] The ground storey housed the vestibule, living room, dining room, kitchen, two children's bedrooms, the guest bedroom, a bathroom, a game room and a glazed gallery. The master suite, comprising a sun room, bedroom, dressing room and bathroom, occupied the upper storey. The home also had an indoor/outdoor garden in keeping with the Japanese tradition of integrating the garden into the home. Its organic form was frequently used by modernists such as Alvar Aalto for small gardens with geometric ponds and pools.[28]

28. J. Jetsonen, M. Lahti, *Alvar Aalto Houses*, Helsinki, Rakennustieto Oy., 2005.

While type B was smaller than type A, it was also designed to luxury dimensions. [Fig. 28] This flat roofed, linear, rectangular, one-storey home had a living-dining-kitchen area, two children's bedrooms, a master bedroom and a bathroom. A separate building connected to the house by a roofed pathway contained the garage and a lumber room. In the north wall, which delimited the hallway flanking the bedrooms, built-in closets alternated with "flower windows". This dwelling also had an indoor/outdoor garden, although here the geometry was trapezoid. The sun porch had a small pool. The volumes in this home were particularly attractive and characteristically modern. The main elongated box-shaped unit was perforated by a roofed porch along the south façade that projected outward at a right angle on one side to separate the home per se from the garage and lumber room.

The proposal submitted by Japanese architect Gonkuro M. Kume

was based on the construction of different types of dwellings with the masonry wall frames traditionally used in Spain. **[Fig. 29]** The novelty was that the bricks were made from coal ash. The quality of the dwelling layouts and their architectural design stood out among all the proposals submitted to Eduardo Torroja's 1949 international competition, but the floor areas were much larger than found at the time in low-cost Spanish housing. The result was that Kume's project had a higher cost than any of the proposals finally selected.

Gonkuro M. Kume had won the housing competition organised by the Japanese Ministry of Construction that same year and had been honoured with a distinction for his contribution to housing design in Japan.

The single family home proposed by Kume consisted of two storeys with two parallel façades and two party walls for attachment to other units. He

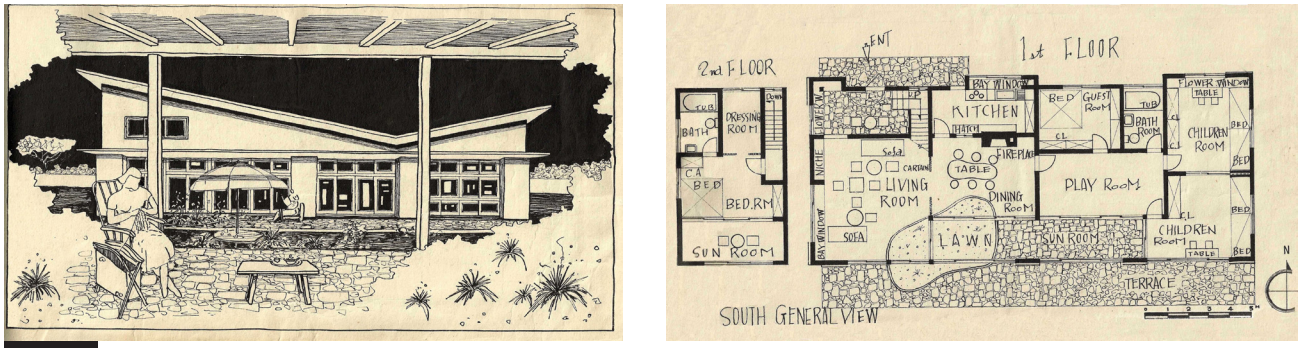


FIG. 27 Yoshiteru Takechi, Type A unit, 1949 (Eduardo Torroja's archive).

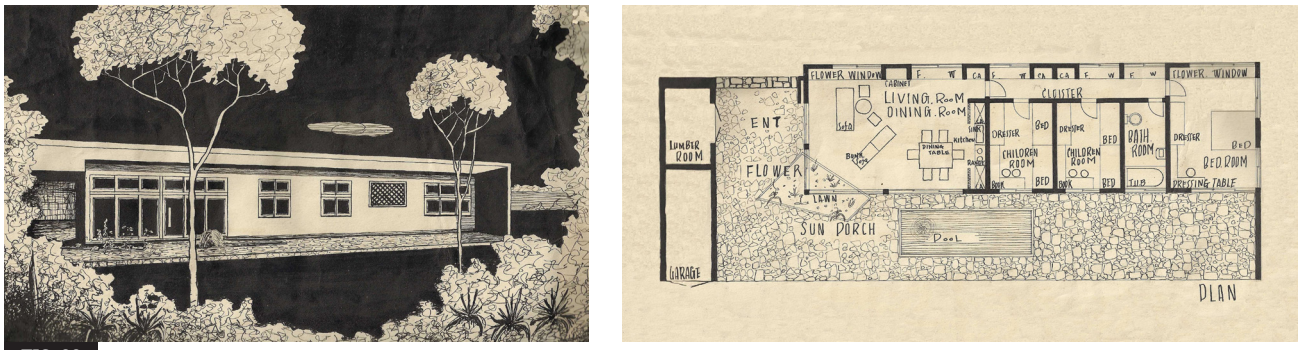


FIG. 28 Yoshiteru Takechi, Type B home, 1949 (Eduardo Torroja's archive).

proposed arranging the homes stepwise to break the linear monotony, a solution that would not only create moving shadows on the façades, but also guarantee each family greater privacy. The ground storey was to house the living room, dining room, kitchen, laundry room and porch, and the upper storey, two bedrooms, a bathroom, a small store room and a balcony along the master bedroom. The basic module measured 7 x 8 m in the plan view, with a void under the stairway positioned on the outer wall facing the private yard. The orthogonal bearing wall structure ensured suitable bracing for the building as a whole. The existence of four lengths with different span clearances raised costs, however, for the system would have called for industrialising joists and reinforcement bars of different lengths.

The rectangular four-storey apartment building, measuring 47.80 x 10.00 m, was to house twelve 10 x 6.80 m (68 m^2) duplexes (in groups of six units). The dwellings were accessed from a roofed walkway that ran along the façade from the stairways positioned at the two ends of the building. The flat roof housed community services under an undulated lightweight awning. As in the case of the apartment blocks authored by Jac Koolhaas and M. Lovwerenburg, this arrangement for community services for building inhabitants was inspired by Le Corbusier's emblematic and innovative *Unité d'Habitation at Marseille* (1947-1952), where that revolutionary idea was put into practice for the first time.[29] The duplexes had living room, dining room, kitchen and balcony on the lower storey, and three bedrooms, a bathroom and tiny lumber room on the upper storey. The wet rooms were positioned to optimise pipe lengths, not only by placing kitchens and bathrooms back-to-back, but also by vertically aligning the lower storey kitchens with the upper storey bathrooms, for the lower storey was set back to make room for the aforementioned outdoor walkway.

While none of the Japanese proposals was awarded a prize, they all contributed to the modernity and rationality of the architecture present in the 1949 competition.

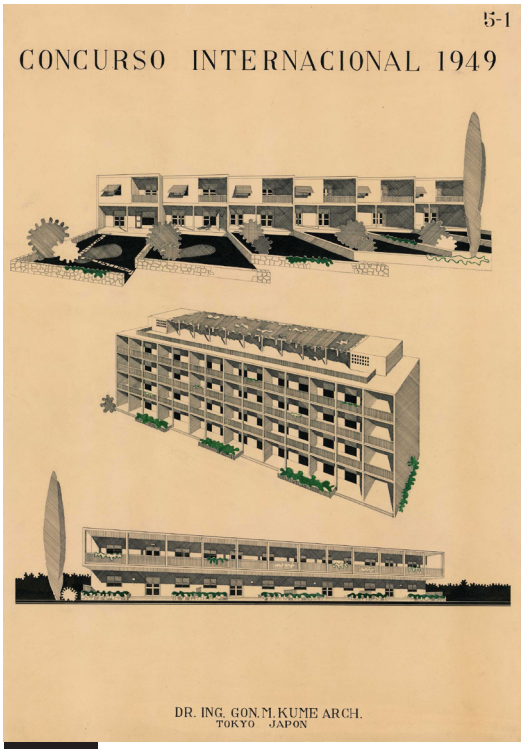


FIG. 29 Gonkuro M. Kume, Proposal for single-family and multi-dwelling units, 1949 (Eduardo Torroja's archive).

United Kingdom

Although no British proposals were submitted to the 1949 competition, the U.K. made a significant contribution to the objectives pursued. The primary aim was to obtain information on industrialisation endeavours in other countries geared to solving the same problem that Spain had been facing since the end of its Civil War: an enormous housing shortage. The information gathered would be used to chart a straight course toward housing industrialisation in Spain.

As noted earlier, Eduardo Torroja designated Robert Fitzmaurice, at the time Deputy Chief Scientific Adviser to the British Ministry of Works, as a member of the jury. Fitzmaurice had engaged actively in solving London's post-World War II housing problem. Moreover, in addition to his specific expertise and direct involvement in housing construction, Robert Fitzmaurice was a scientist who shared with Torroja the conviction that production could not be researched in the laboratory, for the data had to be collected in factories and on worksites. He believed that the promise of the greatest success in production research lay in direct cooperation between research centres and the industry and identified the need for multi-disciplinary research teams able to address all the technical, industrial and scientific questions involved.[30] Fitzmaurice also shared Torroja's modern vision of construction, and applauded his untiring endeavour to turn housing into Le Corbusier's much craved machine à habiter.[31] The

29. The *Unité d'Habitation* at Marseille was without a doubt Le Corbusier's most significant and influential contribution to multi-dwelling housing. It consists of an enormous block characterised by innovative architecture and engineering, in which the Swiss architect established the guidelines for a new community lifestyle in which apartment buildings constitute miniature urban cells with all manner of shared facilities (nursery school, gym, infirmary, social club...).

30. R. Fitzmaurice, *op. cit.*

31. R. Fitzmaurice, *Principles of Modern Building*, vol. 1, London, H.M. Stationery Office, 1949.

British expert provided Torroja with a detailed report of the his country's post-World War II mass housing experience. That report was published in 1950 by the Institute for Construction and Cement Engineering on Torroja's instructions, to provide the Spanish industry with information not only on the industrialised systems in place in the UK, but also on the specific reasons why certain alternatives were chosen over others. The report also described the research conducted in conjunction with builders and manufacturers with the intention of paving the way to the country's industrial future, a goal shared by Torroja for Spain. Robert Fitzmaurice brought invaluable experience to the competition jury's deliberations on the suitability of the proposals submitted.

1949 Competition/ Jury's Decision

As a result of the international interest roused by the competition organised by Eduardo Torroja, the deadline for submissions had to be pushed back and the jury's decision was not forthcoming until December 1952.

As expected, in light of the extremely demanding requirements established, none of the 89 proposals submitted to the International Housing Competition on industrial design singly furnished an industrialisation scheme that could be implemented economically in Spain, given the material, economic, industrial and human resources available in the country at the time. For that reason, the jury decided not to award the 100 000 peseta first prize, which, according to the rules, was to be granted to the «best project for industrialising housing construction and building 50 000 units yearly».

Nonetheless, in recognition of the quality of many of the submissions, the obvious significance of the reflections taken as a whole and the effort deployed by the 17 participating countries to respond to Torroja's request for international support, the jury also decided to divide the 100 000 peseta prize among five projects: two, for 35 000 pesetas each, were awarded to Jules Cauvet (France) and Jesús Carrasco-Muñoz (Spain), and the other three, worth 10 000 pesetas each, to Arbeitsgemeinschaft Hebel (Germany), Bremen Wirtschaft Wiedraufbau-gesellschaft M.B.H. (Germany) and Société française de Constructions et Travaux (France) (Jury Report, signed on 29 December 1952). As the jury's report explained, these five submissions proposed the industrialised systems best suited to the conditions prevailing in Spain.

The objective of the competition was to collect proposals for industrialisation in building to solve social housing demands. Nonetheless, in light of the dates when those proposals were authored, anyone looking back on them today nearly inevitably seeks signs of modernity in their architectural designs. Indeed, at the time, one of the most important

changes in society was being driven by architecture itself at the hands of the many masters of modernity who focused on solutions to the housing problem that arose after World War II. Architects such as Walter Gropius, Frank Lloyd Wright, Richard Neutra, Le Corbusier, Jean Prouvé, Fuller, Kahn, etc. were directly involved in finding solutions to this problem, building emblematic homes that became milestones in this exciting part of the history of architecture. Another factor meriting retrospective analysis is the suitability of the approaches to the schedule of uses and distribution of inhabitable space in the low-cost housing adopted in each of the 89 proposals. The competition rules left key issues such as housing types, areas and volumes to the discretion of the participants. The message was that the architecture and types of units proposed would be the result of "freedom of design", irrespective of the requisite to put forward industrialised construction schemes.

Leaving the choice of types of home and spatial distribution to the authors was an indisputably wise decision. As Walter Gropius and Frank Lloyd Wright contended, industrialisation in building did not need to curb freedom of design, although the type of housing and the lifestyle of its inhabitants had to be pre-defined to be able to establish the industrialised elements actually required for a given project. Unfortunately, none of these master architects took part in the 1949 competition, although some of the proposals submitted stood out for their architecture and housing programme. The three proposals submitted by Japan constitute prominent examples in this regard. Architect S. Yosikawa's design, irrespective of his ill-considered proposal to turn the flat roof over apartment buildings into a road, envisaged excellent ideas for housing types, as discussed above. While the housing proposed by architect Yoshiteru Takechi involved no industrialisation scheme and was designed to luxury rather than low-cost standards, its spatial approach, straddling modernity and ancient Japanese tradition (with a small-scale indoor/outdoor garden) was inherently attractive. Gonkuro M. Kume, who had been distinguished with honours by the Japanese Ministry of Construction for his contribution to housing, submitted a proposal for apartment buildings that unquestionably sought their inspiration in Le Corbusier's emblematic *Unité d'Habitation* at Marseille, built to the revolutionary premise that multi-dwelling buildings should be fitted with a generous variety of community facilities to foster inter-relationships.

In another very promising proposal submitted by German architect Franz Fischer, all the units were generated from a single module. While its suitability might be questioned, it afforded the advantage of providing for all the construction elements and structural members needed for the inhabitable space and alternating inter-block interconnection areas. He put forward the attractive and necessary idea of standardising architecture to a single module at around the same time that Le Corbusier put forward his famous *Modulor* concept for the *Unité d'Habitation* at

Marseille. Furthermore, Fischer, in an attempt to avoid the monotonous abuse of linearity that characterised apartment buildings, proposed blocks with large inner courtyards, in keeping with the Mediterranean tradition advocated by José Luís Sert.[32]

32. E. Munford, H. Sarkis, N. Turan (eds.), *José Luís Sert. The Architect of Urban Design, 1953-1969*, Cambridge, Massachusetts-New Haven, Harvard University Graduate School of Design, Yale University Press, 2008.

Effectiveness of the 1949 Competition

The absence of a single awardee did not detract from the effectiveness of this international competition. Torroja acquired a wealth of relevant information on the most advanced construction systems and patents in use in other countries to build low-cost housing. He also obtained the results of "international reflection" on how to solve this problem in Spain, as well as a considerable number of helpful new international connections with engineers, researchers, manufacturers and government bodies in the 17 countries that submitted proposals. This final factor strengthened and broadened the role played by Torroja's institute as scientific ambassador at a time when Spain was contained within air-tight borders and in dire need of doors and windows onto scientific and technological progress.

The 89 proposals submitted contained descriptions of a total of over 200 patents (IETcc, 1949). That valuable information was to serve Torroja to chart the course toward Spanish industrialisation, based on decisions on what and how to manufacture in Spain, which international patents were to be preferably given access to the national construction market, and which were to be acquired for domestic production. He was able to make those decisions on research and scientific and technical priorities drawing from the authority of his position as Director of the institute and the Central Laboratory, and from the financial support he garnered outside Spain.[33]

33. P. Cassinello, *Razón científica de la modernidad española en la década de los años 50, in Los Años 50: La Arquitectura Española y su compromiso con la Historia*, Pamplona, T6 Ediciones, 2000, pp. 21-38 (conference proceedings, Pamplona, Escuela Técnica Superior de Arquitectura de la Universidad de Navarra, 16-17 March 2000).

Clear documentary proof of the effectiveness of the competition can be found in the greatly enhanced internationalisation of "Informes de la Construcción", the institute's voice in print, after 1952. Many of the patents submitted to the competition found their way into its pages. Others began to appear on the Spanish market under the guidance of the institute headed by Eduardo Torroja, along with yet others that arose on the international marketplace in the prosperous nineteen fifties and sixties, as countries everywhere slowly recovered from World War II. The journal acted as a scientific and technical crucible, publishing information on the most innovative prefabrication systems used in countries such as the United States, Germany, France and Sweden. In keeping with Torroja's emphasis on the transfer to the industry of research results, the articles describing advances always explained their specific utility for the materialisation of modern architectural design. The journal consequently carried a mosaic of articles dealing with different but inseparable information: reflections on design, patents, construction systems, prefabrication, innovative housing and the research underway. The vast

number of articles published is neither possible nor necessary to list here. Nonetheless, some of the more prominent included: the evolution of the lightweight precast concrete panels used by Walter Gropius; the use of the Ytong patent to build mass housing in Sweden,[34] which had been submitted to the international competition a few years earlier and which is still evolving today; the homes built by Chermayeff and Cutting in Massachusetts with lightweight industrialised steel elements, with a simple post-tensioned structure based on thin wires concealed behind the façades; the new ICO forms devised by British Engineering; the new home built by Frank Lloyd Wright (who gave Torroja an original watercolour of his famous Falling Water), subsequently featured on the cover of "Informes de la Construcción"; Zerfuss's experimental buildings at Pont de Sèvres-Paris; a bubble home in Florida, U.S.A; the new Dutch folding form system; the Venezuelan National Building Plan; prefabrication in France; German construction equipment; the use of Shockbéton in precasting; the HB-timber prefabrication system; the U.S. organisation and hiring method followed on European worksites; Goff's Bavinger House; SOM's (Skidmore, Owings, Merrill) Lever house; the Italian housing problem; a modular building in Pretoria; Lewicky's prefabricated housing with large-scale elements; an enlargeable single family home; housing in Sweden; the household arts exhibition in Paris; apartment buildings in Zurich; the Baur-Leonhardt prestressing system; Marcel Loods's housing design for the Strasbourg Congress; a housing block in Lausanne; construction of 168 low-cost units in Seville; and the Interbau, International Construction Fair at Berlin. Soon after the 1949 ground breaking, Le Corbusier's *Unité d'Habitation* at Marseille was the subject of several journal articles on a variety of design and construction matters.[35]

In parallel, the journal carried articles on the most prominent housing projects underway in Spain, authored by architects such as Gabriel Ruiz Cabrero, Luís Moya, Francisco Javier Saenz de Oiza, Miguel Fisac, José Antonio Coderch, Antonio Fernández Alba, Antonio Lamela and Rafael de la Hoz, to name a few, and on domestic patents that were developed with the technical and scientific support of Eduardo Torroja's institute. Likewise in a 1952 issue of the journal, in the wake of the 1949 competition, the institute announced the creation of a special publication service for domestic and international construction patents and systems. That the announcement was published in Spanish, English, French, German and Italian stands as further evidence of the journal's international affinities.[36] [Fig. 30]

Second Milestone/ Industrial Productivity Commission

After the 1949 competition, the second milestone in the strategy implemented by Torroja to chart a suitable course toward Spanish industrialisation was the establishment of the Industrial Productivity

34. G.A. Rychner, *El hormigón ligero en Suecia*, in "Informes de la Construcción", 1953, No. 56, n.p.; W. Schmidt, *Sistemas de prefabricación en Suecia*, in "Informes de la Construcción", 1954, No. 79, n.p.; and *Empleo de elementos constructivos YTONG en la construcción de viviendas prefabricadas en Suecia*, in "Informes de la Construcción", 1956, No. 79, n.p.

35. P. Cassinello (ed.), *Eduardo Torroja 1949. Strategy to Industrialise Housing in post-World War II*, Madrid, Fundación Eduardo Torroja, Fundación Juanelo Turriano, 2013.

36. P. Cassinello, *El Espíritu impreso de una idea/ The spirit of an idea in Print*, Madrid, Instituto de Ciencias de la Construcción Eduardo Torroja, Consejo Superior de Investigaciones Científicas, 2008. Full book freely available on-line on www.csic.es (Spanish National Research Council website).

Commission by the institute he headed, in conjunction with the Spanish Government. The Commission's remit was to analyse industrialisation in housing on the U.S. market, where the wealth of material and economic resources, together with the immigration of reputed master architects, afforded a unique opportunity to obtain information that would be highly relevant to the ongoing task of industrialising Spain. Institute engineers and architects travelled to the United States, where they visited manufacturing plants, works underway and many of the leading modern architects involved in housing construction, including Richard Neutra, Frank Lloyd Wright, Mies van der Rohe, SOM and others.

The team members were the institute employees who sat on the Low-cost Housing Sub-commission: Eugenio Aguinaga, Salustiano Albiñana, Ignacio Briones, Cayetano Cabañes, Fernando Cassinello, Vicente Figuerola, Juan María Martínez Barberito, Julio P. Frade and Carlos de Miguel. The mission was to ascertain WHAT was manufactured, HOW the products were used on site and WHAT type of architecture drew from these industrialised elements. That was, in essence, the full cycle of the *raison d'être* of industrialisation in civil engineering and architecture. The data gathered by the commission added to the list of known foreign patents and experiences, in this case with all sights trained on the progress made in the United States. Moreover, as Eduardo Torroja and Robert Fitzmaurice noted on the occasion of the 1949 competition, the scientific understanding acquired through the in situ visits to cutting-edge American manufacturers and the worksites using their products could never have been obtained from the mere review of the respective designs.[37]

FIG. 30 Announcements in "Informes de la Construcción". Domestic and foreign patent and corporate publication service, 1952 (Eduardo Torroja's archive).

Although the construction industry varies from one country to another due to differences in financial and social systems, economic development and governmental organisation, the common denominator in all countries is the difference between the building and manufacturing industries. Architecture cannot be "industrialised" unless the same organisational and rationalisation principles are applied to design, material and element manufacture, dimensional coordination and on-site assembly. From that perspective, the analysis of experiences in other more industrialised countries was to be of utmost utility in Spain, which was saved the chore of embarking on costly experimental ventures to verify the viability of the enormous variety of alternatives on offer, and testing their technical suitability with scientific methods and specific systems. Torroja well knew that such experimentation and testing are requisite to the implementation of even the simplest untried assembly line method.

37. See *Announcement of the International Housing Competition on industrial design*, in "Informes de la Construcción", No. 12, n.p.

Why the United States? Because its vast economic resources and much criticised "wasted imagination" had already led to the development and subsequent rejection of a wide range of prefabricated element production systems, and each new failure had contributed to mapping the road to follow. By 1957 most of the compact precast reinforced concrete or prefabricated timber systems had given way in the United States to the prefabrication of industrialised elements. The enormous variety of standardised products available aimed to expedite and simplify construction tasks, lower production costs and enhance quality while at the same time protecting the "freedom of design" that ensured the personalisation of architecture at any place or time. In this regard, despite the differences in their training, personalities and specific approaches to architecture, the master architects who had emigrated from Europe to the United States, including Walter Gropius, Richard Neutra, Mies van der Rohe and Saarinen, shared one conviction: «architecture is the offspring of freedom and as such should not be constrained by the industrialisation of its production process».

The members of the Industrial Productivity Commission visited the major U.S. prefabrication factories and plants, a number of worksites involving very different types of housing, highly reputed general contractors and a host of official bodies and institutions engaging in standardisation, dimensional coordination and industrialisation. In addition, they interviewed all the masters of modern architecture in their respective studios, visited their worksites and gathered their opinions on the future of industrialised architecture. The commission also benefited from the cooperation furnished by the International Cooperation Administration in Washington, the Public Housing Agency (PHA) and the Federal Housing Administration (FHA), as well as the National Association of Homebuilders (NAHB), a trade association that accounted for a significant share of the American market. They were also assisted by prominent architects such as Frank Lloyd Wright [Fig. 31], Satterle, Smith and Goormann in Washington, Goleman and Rolfe in Houston, Pereira and Luckman in Los Angeles, Shaw, Metz and Dilo in Chicago, Skidmore, Owings and Merril (SOM) and Webb and Knapp's New York office, in addition to the aforementioned Walter Gropius, Richard Neutra, Mies van der Rohe, Saarinen, Spanish architect José Luís Sert and the professors and deans of Columbia University and the University of Urbana.

FIG. 31 Industrial Productivity Commission interview with Frank Lloyd Wright at Taliesin West, Arizona, 1953 (Eduardo Torroja's archive).

Despite the unanimous position in favour of the industrialisation of architecture adopted by these masters of modern architecture, as narrated in the Industrial Productivity Commission reports, their ideas and concerns revealed different perspectives. Frank Lloyd Wright believed

that while industry was still far from being able to define the scientific, technical and artistic premises from which to evolve, he did not rule out the possibility. At the same time he staunchly defended freedom of design, which he felt might be enhanced if industrialisation proved to be "suggestive" for architects. Mies van der Rohe, by contrast, stressed the advances made to date by the industry, which had enabled him to build his extraordinary steel and glass skyscrapers with industrialised elements that could be rationally and readily assembled on site. He also insisted that, given the decisive impact of the "structural skeleton" on the possibilities and limitations that go into architectural personality, it is a necessary and prominent lodestar in the sort of industrial evolution without which his "glass boxes" could never have existed. Spanish born architect José Luís Sert, in turn, at the time Dean at Harvard University, shared Walter Gropius's and Richard Neutra's opinion on industrialisation and, like them, used the interview as a sounding box to complain about architects' lack of involvement in architectural production, particularly in the case of housing, which he deemed would remain an endlessly unresolved issue, for architecture would need to continually adapt to scientific and technical progress and changing social demands. He also identified the need to revisit the industrial market and reconsider the existing "architectural housing types", which had been distorted, despite having been analysed by both the Federal Housing Administration (FHA), created by an act of Congress in 1934, and the National Association of Home Builders, which at the time had 277 member associations and 40 000 members across the country, primarily contractors and manufacturers.[38]

Walter Gropius and Richard Neutra were unquestionably the commission's two beacons. These masters of modern architecture had led industrialised housing for many years and repeatedly called upon architects to become directly involved in the industrialisation of their craft. Both were engaging at the time in the difficult venture of defining unit types for industrialised low-cost housing and designing patents adapted to the contemporary American market. More or less oblivious to the criticism levelled at them from many angles for their failure to find the "philosopher's stone", they encouraged architects not to forsake the industrial production of low-cost housing. In that respect as well as in others, they contributed to the development of promising albeit short-lived proposals, for even in the nineteen fifties their adopted country was characterised by a dizzying pace of change. Walter Gropius, in an attempt to recover the ground lost by architects in the United States, mostly to home builders, had founded his General Corporation with Konrad Wachsmann to prefabricate patented timber elements for housing, in keeping with American construction industry tradition. For their famous packaged houses, they developed a four-way metal connector to allow architects greater freedom of interconnection in their designs.[39] Moreover, this system reduced the number of different elements that had

38. The National Association of Home Builders (NAHB) is one of the largest trade associations in the United States. Headquartered in Washington, D.C., NAHB's mission is "to enhance the climate for housing and the building industry". Founded in 1942, NAHB is a federation of more than 800 state and local associations. About one-third of NAHB's more than 140 000 members are home builders or remodellers. The remaining members are associates working in closely related fields within the housing industry such as mortgage finance and building products and services.

39. B. Bergdoll, P. Christensen (eds.), *Home Delivery: Fabricating the Modern Dwelling, New York*, The Museum of Modern Art, Birkhäuser Architecture, 2008.

to be manufactured, simplifying and lowering the costs of manufacturing and on-site assembly. Richard Neutra, in turn, who called his own home a «research» house, developed patents for affordable housing with very different materials and layouts. One of his projects, the Diatom House, was designed to be built with steam-hardened earth, portable steel foundations adapted to the terrain, wooden structural panels (Los Angeles 1936 World's Fair) and standardised steel shapes, all under the umbrella of a concern for the attainment of social integration through decent housing.

Standardise, industrialise, prefabricate.... but what and for what? These were the questions that the members of the Industrial Productivity Commission constantly posed. Walter Gropius contended that housing could never be mass produced in the same way as compact and impersonal products such as refrigerators, car, airplanes or fans. Construction elements and structural members, whether linear, superficial or three-dimensional, needed to be industrialised to guarantee many connection and interconnection alternatives with which to personalise not only inhabitable space, but the architecture itself, while securing the advantages of mass production: quality, low cost and convenient assembly. This opinion, shared by a growing group of professionals, was nonetheless countered by widespread prejudice against prefabrication, based on the erroneous belief that it would necessarily father monotony and constrain freedom... as if manual construction systems were a paradigm of creativity.

Although Eduardo Torroja's institute also analysed the models for industrialisation in building in Europe, its analysis of the, at the time, economically prevalent American market[40] was decisive in many respects. In the nineteen fifties labour was already expensive and in short supply in the United States, accounting for 60 to 70 % of total building costs, with the remaining 30 to 40 % spent on materials. Despite their relatively low cost, the latter were high quality industrial products. Spain's problem was just the opposite: materials were overpriced and of poor quality, often amounting to 70 % of the total cost of the works. The need to lower labour costs had already been addressed in the U.S., not only in the implementation of industrialised elements, but in the rationalisation of building itself. The use of small crews and advanced ancillary equipment rationalised construction of the end product – architecture. Most low-cost single family homes were prefabricated, 80 % with timber patents and elements, while multi-dwelling blocks were built with different types of industrialised materials: 60 % reinforced or prestressed concrete, 30 % steel and 10 % lightweight cement blocks. The types varied with the region of the country.

After analysing the data collected, the Industrial Productivity Commission raised its recommendations for the adaptations that would

40. Although Spain was excluded from the Marshall Plan, the U.S. accepted the request for scientific-technical assistance posed by Eduardo Torroja through Spain's Industrial Productivity Commission. The Marshall Plan (officially the European Recovery Program, ERP) was the American programme to aid Europe, in which the United States gave economic support to help rebuild European economies after the end of World War II. The plan was in operation for four years beginning in April 1948.

be needed for implementation in Spain of the systems, patents, materials and processes reviewed. In this long list of reflections, analyses and proposals for the future of Spanish industry, all the sub-commissions concurred in identifying a pressing need for "standardised types". They further called for scientific support to be able to rationalise production processes, for manufactured elements as well as for architecture itself, beginning with the design stage.

While a full account of the commission's survey is not relevant here, it was an indisputably overwhelming, useful and fascinating experience. Like the industrialised housing competition organised by Eduardo Torroja in 1949, it constituted a significant and emblematic encounter with the state of the art that would help Torroja to pave the way toward Spanish industrialisation while reinforcing his international connections and with them the institute's "ambassador" role. This experience was also echoed in "Informes de la Construcción", which soon after began to expand its list of chosen authors and reinforce its international affiliations, just as it had after the 1949 International Housing Competition on industrial design. In this new phase, Eduardo Torroja's institute established close working relations with the famous Sidmore, Owings and Merril, or SOM architectural partnership, many of whose designs and works received write-ups in the journal. Richard Neutra, in turn, who had been writing in "Informes de la Construcción" since 1949, also intensified his relations with the institute, to which he bequeathed a considerable portion of his writings and drawings. This legacy was the subject of journal articles for over 11 years and finally published in a book edited by Fernando Cassinello.[41]

41. Architect Fernando Cassinello was designated by Richard Neutra as the executor of the legacy bequeathed to the Institute for Construction and Cement Engineering. At the time, Cassinello was editor-in-chief of "Informes de la Construcción". He also served on the Spanish Industrial Productivity Commission that visited the United States. In 1969, eight years after Torroja's death, he was appointed director of the Eduardo Torroja Institute.

Third Milestone: Meet the Institute...

The third milestone in Torroja's strategy to industrialise Spain was the construction of the institute's new headquarters, which he turned into a "field laboratory" for the on-site prefabrication of many of the structural members and construction elements called for in the design.[42]

42. *El Instituto es Asi: Prefabricación*, in "Informes de la Construcción", 1954, No. 58, n.p.

Conclusions/ Effectiveness of the Strategy

Eduardo Torroja's industrialisation strategy was in fact effective, as regards not only housing, but Spanish architecture and civil engineering in general. His success was mirrored in the research conducted and the activities undertaken around the three aforementioned milestones:

- 1949 International Housing Competition on industrial design

- Spanish Industrial Productivity Commission in the United States

- The construction of the new ITCC (Instituto Técnico de la Construcción y del Cemento) headquarters/ *Meet the institute*…

These milestones, in conjunction with Torroja's untiring research and support for the industrial development of new patents in Spain contributed to the modernisation and internationalisation of the domestic market, enabling the country's architecture to follow the road to modernity. Pier Luigi Nervi placed particular emphasis on the institute's role in that regard in the conference he delivered at the new headquarters in 1959 on the occasion of its 25th anniversary.[43]

In addition to developing its own patents, the institute provided technical and scientific support for the development of innovations put forward by professionals, builders and manufacturers. As a result of that endeavour, many new products and systems were patented in Spain in the years of greatest need, when a wide variety of elements, including joists, bolts, window joinery, insulation, pan forms, bricks, prefabricated products and prestressing systems, flowed onto the domestic market. Each and every one was the outcome of dedication and effort at a time when development was especially challenging. Some, such as the Barredo prestressing system (1952), even competed with international patents (Freyssinet, Mangel, BBR, VSI, CCL and others) and came to be known as the Spanish prestressing system. Torroja used that patent in many of his works, not only because of its technological suitability and the lack of foreign prestressing systems, but also to further the development of Spanish industry.[44] Engineers and architects such as Ildefonso Sánchez del Río and Miguel Fisac engaged directly in the commercialisation of new patents, some of which, including the former's famous bricks or «bones» (hollow prestressed concrete blocks) were developed and tested at the institute. Spanish professionals contributed individually with their own private efforts to fill the «kit of parts» proposed by Le Corbusier, the intentional leit motif of this paper. That very popular simile was echoed in the design and promotional activities conducted by the Bauhaus, which even put together an educational kit of parts for children, a toy that enhanced their creativity with a series of miniature "industrialised" parts for building all manner of objects: homes, ships, airplanes, bridges and many others. Other patents developed with the institute's support were directly associated with the low-cost housing competitions organised in the nineteen forties and fifties in Spain and with the national home building plans. The institute also blueprinted national competitions for industrialised elements sponsored by the National Housing Institute, such as a steel tie bars competition held in 1956, with a view to the practical application of the proposals in the construction of low income housing. Its creation of quality seals, in

43. Pier Luigi Nervi, *La Arquitectura Moderna*, in *Sesión Académica conmemorativa del 25 aniversario de la fundación del i.t.c.c. (bodas de plata 1934-1959)*, Madrid, ITCC, 1959.

44. P. Cassinello, *La relevante labor del Instituto Técnico de la Construcción y del Cemento en el desarrollo del hormigón pretensado: Material, Técnica y Arquitectura*, in E. Gonzalez (ed.), *Fisac. Huesos varios*

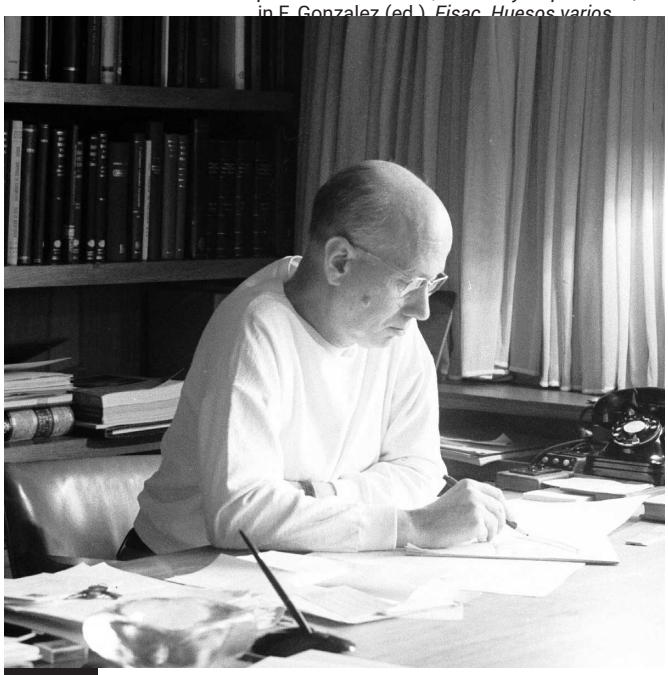


FIG. 32 Eduardo Torroja, 1955 (Eduardo Torroja's archive).

turn, led the way to the control of manufactured elements, and it engaged actively in drafting standards and publishing the Spanish translation of the books of greatest interest authored in other countries. This extensive and multi-directional task took the *raison d'être* of research full circle.

By 1961, the year of Eduardo Torroja's death, the Spanish kit of parts was nearly full. **[Fig. 32]** And its industry continued to move forward toward architectural progress. The course had been charted.

«To those of you who worked with me: [...] others will be able to judge the work that was done better than I. But more important than that is its potential. My only contribution was successfully selecting the people and creating an atmosphere of teamwork and cooperation; the rest of the merits are all yours. And much more than the technical results themselves, I value the human, social and professional dimensions of the experience», Eduardo Torroja, 1961 (Excerpt from his last letter)

Fearless Forms: The Fluid Creations of Joaquim Cardozo

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ABSTRACT

Joaquim Cardozo – the structural engineer for Oscar Niemeyer's most audacious concrete buildings – is better known for his contribution to Brazilian literature than for his works as an engineer. His poetry reveals the ambiguous relation between "misunderstood" European models and regionalist convictions. In fact, if we look closer at his constructive solutions for the technical problems presented by Niemeyer's designs, we will see instead of "reason," a large measure of improvisation, cunning tricks and intuitive solutions. While engineers were learning how to mix steel and cement to build reinforced concrete, in the world of literature, Franco-Swiss poet and writer Blaise Cendrars turned out to be fundamental to Brazilian modernist poets and showed them how to become tourists in their own country. For them, through this new foreigner condition, it was possible to rediscover Brazil and be delighted with the «genuine» and virile expressions of nature and popular culture. Meanwhile Ricardo Severo developed a strategy to adopt neo-colonial architectural forms which inspired different modern reinventions of popular culture, drawing from Lucio Costa's revision of Modern Architecture and Monteiro Lobato's *Sacy Pêrêre*. These debates were finally orchestrated in a peculiar architectural synthesis in 1943's *Brazil Builds* exhibition. Joaquim Cardozo approach to concrete technology engages the cultural debates of the period, ensuring coherence between cultural ideas and building forms. In his early works, technical solutions were the guidelines to create architectural forms that later he considered "too much European". Cardozo tried to place himself in a complex set of social practices that defined a new Brazil. To do so, and following his literary interests, he progressively abandoned the strictness of technical knowledge adopting more intuitive building solutions. Arguing that technological advances could explain his creations, Cardozo used its peculiar way to conceive structures less due to technical solutions than to cultural ambitions. By looking at incoherencies in building practices, I reveal how architectural strategies are related to the social and the cultural debate in which they are immersed.

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concrete, reason, improvisation, literature, technique

Concrete, as a material, has no form of its own. The form it is given is substantially dependent on the cultural field in which engineers and architects work. And that is not at all a technical field. It depends on personal convictions and on the belief in certain intuitions rather than on mathematical rules or technical achievements. Based on this hypothesis, this paper aims to challenge the usual argument that conceives Brazilian modern architecture as a perfect synthesis between poetry and reason. To do so, it points out several misunderstandings and erroneous appropriations of various arguments by architects and engineers. Joaquim Cardozo (1897-1978), structural engineer for Oscar Niemeyer (1907-2012) most audacious buildings, is a symptomatic figure of these dynamics.

In São Paulo, in the late 1920s, skyscrapers were achieving Olympian performances, and concrete was becoming an increasingly well-mastered technology.[1] As a system that is very easy to build and does not need high-tech labor skills, concrete was increasingly being studied and engineers such as Emílio Baumgart (1889-1943) and major institutions such as São Paulo's Polytechnic School, brought a high level of knowledge in structural design and dimensioning from European companies such as the German company Weiss & Freitag (using the Monnier system) and the Danish company Christiani & Nielsen (using the Hennebique system).

The gap between the knowledge of concrete among professional elites and the rough conditions on the building site was huge. The high-tech concrete argument corresponded to a low-tech concrete practice. For example, to build a dam in concrete, in Minas Gerais, steel and cement had to be transported by cows.[2] It was precisely this concrete technology that Lucio Costa (1902-1998) advocated as the element, along with the reinvention of colonial heritage, on which the new modern culture should be based.

There was great ambiguity in the cultural debate, developed in a social context where nationalism, emancipation from the colonial past and eugenic conceptions became fused with tradition (through ethnology), progress (through technology), and social control (through hygiene and urbanism). That already ambiguous social field (in which everyday language arose) became fused with the major ideas of art and literature whose arguments attempted to address the contemporary cultural debate. Architects, trying to find the right place to present their theoretical responses (concerning what the built forms of a growing country should be based on), needed to choose one possible way from within a system of contradictions that was far too complicated.

The originality of Brazil's modern architecture has been established in architectural history as the development of a specific language, within a particular culture, as the result of the evolution of concrete technology.[3]

1. A.C. Vasconcelos, *O concreto no Brasil, Recordes-Realizações-História*, São Paulo, Pini, 1992, (1985).

2. H. Broe, *Construction of two power plants in Brazil*, in Christiani & Nielsen, *Twenty-five years of civil engineering: 1904-1929*, Copenhagen, Krohns bogtrykkeri, 1929.

3. Y. Bruand, *Arquitetura Contemporânea no Brasil*, São Paulo, Perspectiva, 2003, originally published as *L'architecture contemporaine au Brésil*, Lille, Srtul, 1973.

This argument was put forward principally by Lucio Costa, who proposed a useful synthesis of the Brazilian architectural debate during the 1930s. His text *Razões da nova arquitetura*, not only focused on the fundamental link between architectural space and the plastic strength of concrete construction, but also created a genetic tie between Le Corbusier's presence in Brazil and the Portuguese colonial heritage of the late 18th century.[4]

Lucio Costa attempted to demonstrate this genetic link between colonial tradition and modern architecture in a sketch, closer to a caricature, where the evolution of the Brazilian façades couldn't be more explicit. The *fenêtre en longueur* is presented as being the result of a progressive adaptation of the house major constructive elements to the technical conditions of construction.[5] [Fig. 1]

His so-called progressive way of dealing with concrete construction techniques and architectural culture set up an intense conflict with other arguments, mostly Eclectic and conservative, that soon became opponents. It was a similar quarrel to that of European Modernism versus Regionalism.[6] Perhaps understanding the unfounded basis (mainly a symbolic disagreement) of this quarrel, Costa suggests an original «true Brazilian» synthesis, being neither neo-colonial nor absolutely modern, but gathering architectural tradition, popular spatial structures, concrete building techniques and modernist plastic grammar. If we took away the grammar, we wouldn't be far from neocolonial arguments, but that detail made all the difference.

Costa's major argument was a pledging for reason and rationality. Something it is hard to find in Oscar Niemeyer's buildings, considered worldwide as the major achievement of the Brazilian modern architecture. But knowing that Niemeyer would be much more useful as an ally, Costa subsequently enlarged his notion of reason. After all, Niemeyer's curves could evoke colonial Baroque architecture, the natural topography of Rio de Janeiro or seductive tropical vegetation. Who would care?

Costa considered Oscar Niemeyer as a kind of miracle, hard to explain or sustain, but whose personal freedom together with the audacious forms of his buildings allowed his work to be looked on favourably within theoretical discourse. This flowing vision of a distinctive Brazilian architectural originality has prevailed and is still very present today.[7] This paper aims to present an alternative hypothesis to that argument, considering that a lot of what was said – from the cultural roots to the building techniques – was due to rhetorical strategies rather than architectural practices. Even though the use of ideological arguments inspired by technical solutions had conditioned the emergence both of new theoretical approaches and new building forms, we suggest that it was neither the technological development of reinforced concrete structures nor the autonomy of the structural system in regard to the

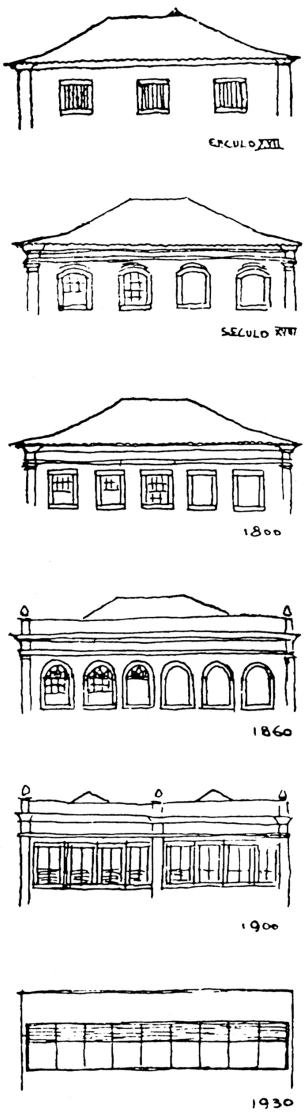


FIG. 1 Lucio Costa, the evolution of the Brazilian house, 1937.

4. L. Costa, *Razões da nova arquitetura*, in A. Xavier (ed.), *Depoimento de uma geração, arquitetura moderna brasileira*, São Paulo, Cosac & Naify, 2003, pp. 39-52 (1936).

5. L. Costa, *Documentação Necessária*, in *Sobre arquitetura*, Porto Alegre, Centro dos Estudantes Universitários de Arquitetura, 1962 (1937).

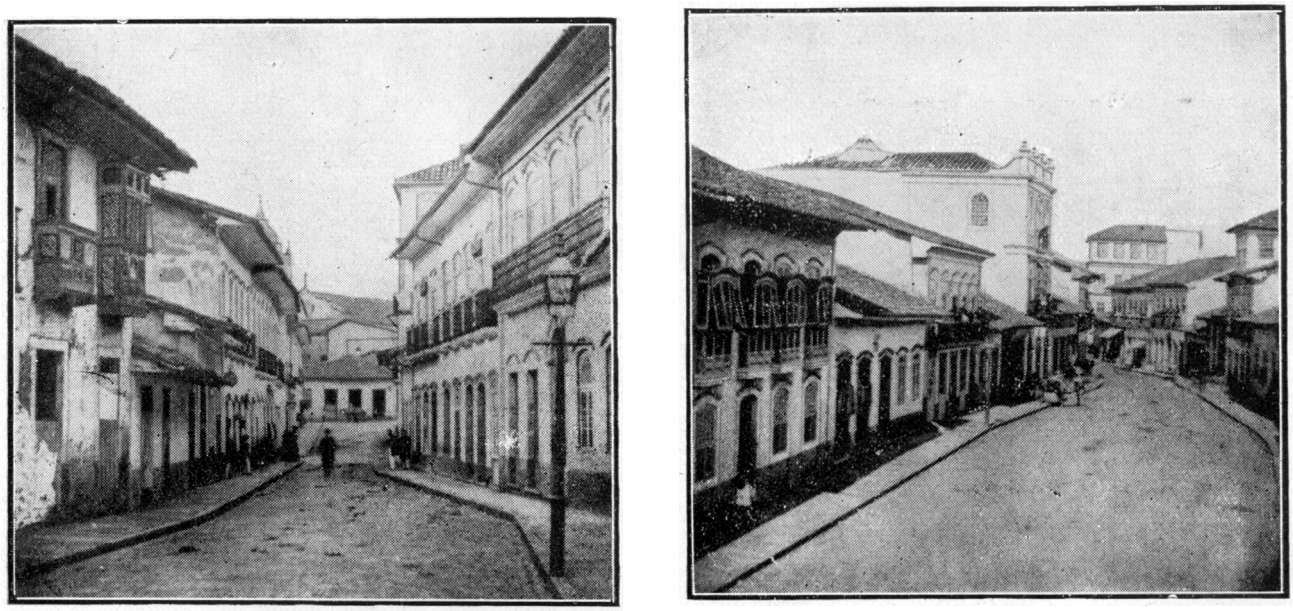
6. J.-C. Vigato, *L'architecture régionaliste*, France 1890-1945, Paris, Norma-Institut Français d'Architecture, 1994. A. Amaral (ed.), *Arquitectura Neocolonial,* São Paulo, Memorial-Fondo de Cultura Económica, 1994. E. Andreoli, A. Forty (eds.), *Brazil's Modern Architecture*, London, Phaidon, 2004.

symbolic apparatus of the constructions (ideas put forward by Lucio Costa and other historians), that led to new architectural practices.

FIG. 2 Luiz Nunes, Joaquim Cardozo, Olinda Water-tower, 1937.

Joaquim Cardozo activity was precisely at this point of tension, between arguments and practices. Being engaged with modern literary movements he dealt both technically and culturally with architectural forms and he understood too well the major quarrel where Brazilian architecture was being discussed in the public sphere. To approach this subject we will need to follow diverging paths, constantly shifting the terms of reference. Although the argument might seem difficult to follow, it his precisely whitin the ambiguitys arising from these shifts that some architecture took place.

Everyday language, the way people talk casually about things in the routines of everyday life, plays a big role in legitimating



FIGS. 3-4 Santos, 1860, photography used by Severo to illustrate his conference in 1915.

the presence of this kind of reasoning. Architects need to find arguments to anchor their buildings in people's minds. For Brazil's modern architecture the perfect relation between architectural forms and the mathematics which were supposed to generate them was the key to guide that transfer between architectural theory and popular reasoning. As everyday language plays a role in legitimating certain narratives of historical discourse, if we try to demystify some canonical historical arguments of Brazil's architecture, we need to be cautious and play double attention to the way language covers some tricks of architectural practice. Aside from the architectural debate, if we pick up again the evolutionary sequence

proposed by Lucio Costa connecting Le Corbusier and colonial heritage, we can trace several slippages showing us how fragile the connection between Brazilian tradition and modern architecture was.

FIG. 5 Ricardo Severo, Casa Lusa, São Paulo, 1920-1924.

We can trace the hidden sources of Lucio Costa outline back to a very famous lecture in 1914.[8] Ricardo Severo (1868-1940), a Portuguese engineer well established among São Paulo's elite, presented and published a genealogical sequence of the roots of Brazilian architecture in a bid to demonstrate that Portuguese blood would be the best to breed a great Brazil.[9] He called this lecture and argument, almost a crusade, *Traditional art*. Looking at the pictures he presented, we find exactly the same sequence of façades presented in Lucio Costa's outline. But Severo's few architectural achievements were precisely the neo-colonial examples that Costa despised. [Figs. 2-4]

A member of the audience at Severo's lecture was Monteiro Lobato. He was a prolific and eccentric journalist, farmer, editor, writer, diplomat and Henry Ford fan.[10] Excited by the idea of a *traditional art*, instead of retracing the white Portuguese origins of Brazil, he promoted the invention of Sacy Pêrêrê, a tiny devil from folk tradition. With black skin, only one leg (some said he had 3 legs), and wearing a red hat and red shorts and smelling unpleasantly of sulphur, this character was wont to laugh loudly and go about making stupid and careless mischief.[11] [Fig. 5]

In the opposite direction to Lucio Costa's appropriation of Severo's arguments, and in a even more opposite direction to Severo himself, Lobato shows us how the same theoretical argument (the "true" origin of tradition) can be used in several contradictory directions. This possibility not only undermines the argument for a genuine and pure Brazilian national identity, but also demonstrates the blurred boundaries where the use of language interacts with architectural ideas. Both the argument of "true tradition" and the idea of "rational freedom" were simplified and drowned in the powerful strengths of everyday language, and that strength allowed the buildings defined by these terms to perform a powerful symbolic task. It is precisely this kind of simplifications that allowed the coherence of the canonical promotion of Brazilian architecture as a new synthesis between plastic forms and concrete technical reason. Cardozo major achievement was an acute way to address this issue. [Fig. 6]

FIG. 6 Sacy-pêrêrê, drawing by Monteiro Lobato.

Making an X-ray through the white surfaces of Niemeyer

8. R. Severo, *A arte tradicional no Brasil, a Casa e o Templo*, Separata das conferências 1914-1915 da Sociedade de Cultura Artística de São Paulo, São Paulo, Tipographia Levi, 1916.

9. J. Mello, *Ricardo Severo, da Lusitânia ao Piratininga*, Porto, Dafne, 2008.

10. C.L. de Azevedo, M. Camargos, V. Sacchetta, *Monteiro Lobato, Furacão na Botocúndia*, São Paulo, Senac, 1997.

11. He was not very hard to catch but if caught he would cry so plaintively that people took pity on him and let him go. [M. Lobato], *O Saci-Pererê: resultado de um inquérito*, Rio de Janeiro, Gráfica jb, 1998 (1917).

buildings, trough Cardozo's structural conceptions, we can discover some structural conceptions that create the potential for drawing out a different historical narrative.

FIG. 7 Minas Gerais, cows pulling construction materials to build a dam in concrete, 1923.

Joaquim Cardozo was born in 1897 in a modest neighborhood of Recife, in north-eastern Brazil, he spent his life simultaneously working and studying. As a topographer, he spent long periods of his youth reading and working in distant natural areas, allowing him to experience an intense relationship with nature. He was greatly interested in mathematics and astrophysics, and also had a broad knowledge of languages, including Portuguese, German and Chinese. This knowledge allowed him to make a significant contribution to Brazilian modernist poetry, bringing together regionalist and popular themes with a modernist freedom in formal compositions and, for the most part, an extreme metric and phonetic discipline in his creations. Later, he will use these literary skills in metric rigor to conceive his engineering solutions.[12]

Although he is today better known for his contribution to Brazilian literature than for his virtues as an engineer, he earned his living as an engineer, not as a poet. In Recife, he first worked with Luiz Nunes (1909-1937), a promising young Brazilian architect who died too early. Together, in 1937, they created the Olinda Water-tower, which produced one of the strongest images in *Brazil Builds* (the exhibition that in 1943 brought Brazilian architecture a worldwide reputation).[13] Later in is life, Cardozo referred to this work as reproducing "much too" European models learned through the *Handbuch* of Fritz von Emperger (1862-1942).[14] Why where they "much too" European? Perhaps because they were conceived rationally, and their forms followed the technical prescriptions of the European manuals. Commenting on is own youthful "European" sins, he felt that works such as this one already represented, «in their power, a possibility of a Brazilian language, a slightly coarse, national expression of architectural practices of European origin, transferred to local technical and industrial possibilities».[15] Strength and power of rationality were the pathway to supersede the colonial architectural past. [Fig. 7]

Due to political problems, in 1939 Cardozo left Recife for Rio de Janeiro where, through his modernist poet friends, he met Lucio Costa. Costa found him a job with the team that was designing the Ministério da Educação e Saúde (for which Le Corbusier had made an initial sketch)[16] where he met Oscar Niemeyer and began a fruitful collaboration.

When Cardozo, after a long career, was asked to explain his own work, he did not hesitate to use the same arguments used by Lucio Costa to

12. M. da Paz Ribeiro Dantas, *Joaquim Cardozo, ensaio biográfico*, Recife. Fundação de Cultura da Cidade do Recife, 1985.

13. P. Goodwin, *Brazil Builds. Architecture New and Old, 1652-1942*, New York, Museum of Modern Art, 1943.

14. J. Cardozo, *Uma homenagem simples e sincera dos arquitetos de Brasília*, in "Cadernos de Arquitetura", 1973, No. 6, pp. 28-34. Cardozo is probalbly quoting the 12 volumes from F. von Emperger, Handbuch für Eisenbetonbau, Berlin, W. Ernst & Sohn, 1911.

15. J. Cardozo, *Dois episódios da história da arquitetura moderna brasileira*, in "Módulo", vol. II, March 1956, No. 4, pp. 32-35.

16. M. Lissovsky, P.S. Moraes de Sá, *Colunas da Educação, a construção do Ministério da Educação e Saúde 1935-1945*, Rio de Janeiro, minc/iphan-Fundação Getúlio Vargas-cpdoc, 1996.

demonstrate how poetic and creative the forms they conceived were. The general idea he presented was the capacity to conceal an abstract consciousness under a poetic form. Geometry was the science that could help architectural composition and, through a sophisticated algebraic conception it was possible to abandon the old formal limitations, always keeping a linear relation between form and constructive reason. As he put it, to «get back to the intuition of a natural geometry, useful for its own inherent qualities and not for conceptions built upon them».[17] In physics, he was very interested in the science of viscous and formless materials, and he believed in the possibility of a "true" and vigorous balance between human poetic creations and the physical properties of materials. On the building site, he saw reinforced concrete as the technology that allowed those forms to be built, leading the way for people to think that it was possible that intuition and science, together, could create spontaneous and liberated forms, expressions of a new era and also of a new Brazil.

17. J. Cardozo, *Algumas idéias novas sôbre arquitetura*, in "Módulo", vol. VIII, June 1963, No. 33, p. 2. «Speech given […] at the formal degree ceremony for those completing their studies at the Faculdade de Arquitetura at the Universidade do Recife, a ceremony held in the open air in the churchyard of the former Jesuit College in Olinda, on 20 December 1962».

He himself was not lucky. By the end of his life, in 1971, one of his buildings, designed by Oscar Niemeyer, had collapsed during construction. It was a tragedy in which 54 people died. He was charged with negligence and then acquitted.[18] The Gameleira Pavilion disaster was clearly due to careless construction. Miscalculated after a bad soil sample, several columns began to sink. The concrete was neither well poured nor vibrated and compacted, so it did not adhere to the steel at several points. The formwork was removed too early and suddenly, and crudely. It is easy to understand that the construction collapsed due to the contractor's negligence. But the engineer was put on trial because his calculations were way outside the norm. He paid no heed to the legal restrictions or to several safety standards. It was therefore easy to charge him with responsibility for the collapse.

18. A file containing copies of the court procedures is available on the Biblioteca Joaquim Cardozo, Universidade Federal do Recife (BJC-UFR).

During his defense Cardozo clearly explained his design strategies. He quoted several engineers, arguing that a structure, if well-conceived, never falls down due to dimensioning errors, but always due to the combination of a number of different errors. Cardozo's opening defense statement starts with an explicit epigraph:

> A structure does not fall because of a calculation error, because the calculation is just an approximation of reality; generally buildings fall as a result of the imperfect understanding between those working on their construction.[19]

19. *Ibid.* Cardozo was quoting professor Rudolf Saliger, from Wien.

One of the apparent reasons for the sudden tragedy was the way the formwork was removed from the slab which, along with the contractor not leaving props in place, was not carried out slowly using wedges or jacks and was carried out «using saws and axes», which subjected the

structure to blows and violent jolts (one of the reports even noted that, «a tractor was used to remove the formwork».[20] Another reason was the beams poor concreting which failed to encase all the reinforcement bars with concrete. «The steels appeared clean inside showing that they had had no contact with the concrete, no fragment of concrete had adhered to them».[21] As if these two errors were not enough, sinking was visible in several pillars, which totaled 10 cm at one pillar caused by soil shifts and by the foundations defective behavior (this is why the pillars fell when the beams collapsed).

20. BJC-UFRE, *Laudo desempatador*, 4.

21. *Ibid.*

The precision and rigor which was lacking in the concreting work was as necessary, or even more, because of the substantially higher density of the steel in the beams. One of the issues not dealt with in the defense, but mentioned in several expert reports, was that the beam section did not meet the national standard. The beam, which collapsed due to a lack of resistance to the compression forces it was subjected to because of the sinking pillars, had a 59x50 cm rectangular section that included 100 CA-50 ø 1⅛ steel bars. Thus, around 60 percent of the area of the beam's section was filled with steel reinforcements, which required a more liquid mix and additional vibration of the concrete. One of the reports is unhesitating noting that, «as a result, the free space between two neighboring bars was around 17 mm, which was much less than the diameter of those bars (29 mm) which makes transferring loads from the concrete to the reinforcements precarious».[22]

22. BJC-UFRE, Aluizio Klein Dutra, *Laudo Pericial 905/74*.

The sink of the foundations (which subjected the structure to unforeseen stresses), the deficient concrete pouring (which made the beams incapable of withstanding compression stresses) and the aggressive removal of formwork led to the system's breakdown and the structure to collapse. As the defense stated:

> the structure obeys an easy calculation. The difficult part of it is precisely construction, whose defects are mainly increased in the concreting of the steels which would ensure absorption, by adhering to the steel, of the reaction on the supports.[23]

23. *Ibid.*

It was the fact that the calculation did not meet the standard that allowed the court to effortlessly blame the engineer. The poor execution of the foundations, the deficient concrete work on the beams, the savage removal of the formwork did not stray from the standards and only the calculation, despite being safe, did not comply with the law, and thus the engineer was convicted. We are not interested in working through the tragedy and its reasons, but rather to keep hold of the non-standard aspect of the work of Joaquim Cardozo. At a later date Cardozo himself said:

> That is why my work, more than once, led to conflict with those that think that architecture should obey balance structures that have been previously tested by use and unanimously accepted by engineers, with those who confuse the norm with the law and certainly suppose that the physics of solids, on which the structural engineer's science is based, is a normative science.[24]

24. Joaquim Cardoso quoted by M. da Paz Ribeiro Dantas, *Joaquim Cardozo...*, cit., pp. 58-59.

An analysis of some reinforced concrete structures in the buildings in Brasilia carried out by Augusto Vasconcelos makes apparent not only the experimental and innovative logic of some of Cardozo's designs, but also the importance of the moment of construction itself and the empirical nature of calculations. Searching how the inverse dome of the National Congress Hall was built, Vasconcelos has collected a curious testimony by an engineer responsible for its execution:

> at the last moment before the concrete work was carried out, Cardozo decided to increase the reinforcement of the dome's uppermost ring. As there had been no time to introduce this modification into the blueprints, it was authorized via a note in the construction site log.[25]

25. A.C. Vasconcelos, *O concreto no Brasil...*, cit., p. 99.

Also known as "fear coefficient", boosting the size of reinforcements beyond the calculations is a common strategy. In fact, looking at some photographs of the work, which show the incredible density of steels in the dome, allows us to imagine that this over-sizing had been foreseen. The most striking information is that the change was made on site, without design. In fact, Vasconcelos bemoans, particularly for Cardozo's work, that, «all the reinforced concrete designs […] mysteriously disappeared… […] And there's no fixing this, as we don't know what is inside those pieces of concrete!».[26]

FIG. 8 Gameleira pavilion, Belo-Horizonte, construction collapse February 4, 1971.

26. *Ibid.*, p. 86.

Another singular example of the works of Brasilia is the *Planalto* and Supreme Federal Court palaces, at *Três Poderes* Plaza, in which a formal/structural solution is repeated in two buildings. It consists in the two

pillars that actually do not support the construction but lend form to the building. The slabs used for the covering have spans of 37,5 meters and are just 30 cm thick, and are made as ribbed slabs, designed with the ribs in balance to avoid having beams between the sculpturally-shaped pillars and the constructed volume. However, the pillars still absorb some of the reaction stresses of the covering slab, but substantially fewer than the internal pillars. In relation to the external pillars Vasconcelos explains that «only the steel withstands the applied load».[27] It was already the strategy later used at Gameleira, the sections where so reduced that «the concrete has the exclusive function of protecting the reinforcement and keeping it in place».[28] [Fig. 8]

27. *Ibid.*, p. 92.

28. *Ibid.*

Under the eyes of the Brazilian norm these pillars cannot be considered "reinforced concrete" as they greatly exceed the limit of 6 percent of reinforcements, a percentage required to ensure cohesion of the concrete and steel. Skirting around the normative instruction, Cardozo enveloped each main bar with a helicoidal wire to ensure that the concrete continued to be reinforced. The expedient worked but did not prevent fissuring when the formwork was removed. «The load applied to the steel caused transverse expansion […] with a propensity to expel the concrete. It did not split apart, as the concrete work was well executed […] and the thin helical wire provided greater adherence».[29] The improvised solution to prevent the rapid degradation of the structure consisted in removing the coating of the structure up to a height of 1,0 meters and entirely wrap it with wire which, under tension, soldered itself to the structure's external bars. The result was the execution of a 'tube of steel' binding the pillar up, which was later covered with 2 cm of mortar, such that the pillar, which bears a reduced load, lightly touches the floor and is just 20 cm wide.

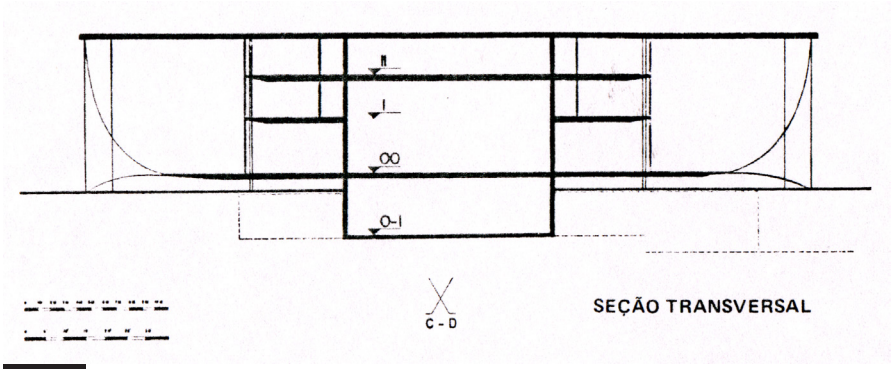


FIG. 9 Palácio do Planalto, Brasília, cross section.

29. *Ibid.*

At the Alvorada Palace, the façade pillars of which have a great formal freedom and very elegant measurements, the principle of shifting loads to the interior structure of the building was also adopted. As can been seen in the transverse section of the building, the curved slab, which is not a continuation of the covering slab, is supported in balance on a large longitudinal beam upon a line of pillars along the internal façade. That slab is 40 cm thick in the embedding zone and 20 cm in the line to support the external pillars. In its turn the support point, which is of almost no size, supports a sub-structure which was buried by the embankment, therefore looking like a floating pillar. Despite the artifices, the execution of the reinforcements required overlaps and significant amounts of steel,

which complicated the execution of the work. An engineer recalls he was surprised to see on the designs a note to, «as much as possible, place the steels in such and such positions…».[30] The note on the vanished drawing is indicative of the awareness of the fallibility of the design in relation to the construction work and the prioritization of execution rather than rigorously complying with the abstract concept. [Fig. 9]

30. *Ibid.*, p. 89.

In epic tone, Cardozo voluntarily ignores the shortcuts to mathematical perfection of his work and sang out visible geometric harmony:

> Now resounds the vast canticle of surfaces that accompany the supporting points, and in it is highlighted tall and clear and dominant, the voice of the surfaces of Liouville, in the splendor of fundamental tonality appropriate to its intrinsic metrics:
>
> $ds^2 = [o(\mu)+t(v)] \bullet (d\mu^2 + dv^2)$ [31]

31. *Ibid.*, p. 97.

A major question lay without answer: what connection can we find in the use of mathematics on his poetry and on his engineering? In his arguments he makes no distinction between different forms of rationality. Reality has his on laws, independent from standard norms and other conventions, the seconds being useful to those ignoring reality. When Cardozo states «calculation is just an approximation of reality» he is stressing exactly this distance, praising the human effort for knowledge when it his obvious this knowledge can not be accurate.

Looking to these few descriptions of Cardozo's building strategies some hints on his practice become evident:

- Hybridization of solutions, which became autonomous from the concrete structural principles using empirical logic of construction reasoning, a strategy only possible due to the independence from the normative standards;

- Focus on the execution and the construction site, both in the in loco supervision and the possibility, through improvisation, of solving problems resulting from the unexpected reactions of the structure;

- Possibility of 'hiding' the logic of the construction under a few centimeters of covering mortar, valuing geometry and form of the object over its structural peculiarities or methods of construction.

We focus on these three points to shift subject again and regain the useful contribution of Cardozo to the Brazilian debate on modern architecture. As a columnist noted at the time of Cardozo's acquittal of Gameleira disaster:

> We are far from the Portuguese master builder, who calculated his own work, and also knew how to show his apprentices the way bricks should be laid in a wall.[32]

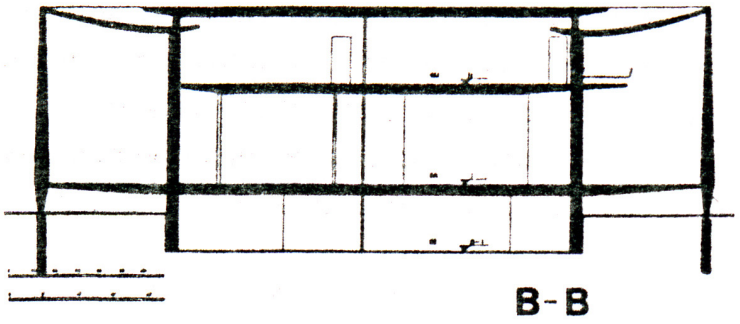


FIG. 10 Palácio da Alvorada, Brasília, cross section.

This sentence, wrote in the 1970s, still echoes the 1930s debate on the evolution of Brazils modern architecture, from which we quoted the Severo's shift to Lobato's arguments. It reminds us that Cardozo's structural conceptions still addressed this conflict between the colonial past and the future of the country, precisely the one Lucio Costa tried to solve with concrete reason and then was solved with Niemeyer's freedom. So, as the natural physic laws where more relevant than norms and standards to keep the buildings up, Cardozo also understood that, to create social meaning, the way we speak was more relevant than the way we build.

32. Barbosa Lima Sobrinho, *Uma situação de desafogo*, in "Jornal do Brasil", 18 May 1975.

Cardozo and Niemeyer's major structural achievement was the inverse dome of the National Congress Hall. Cardozo made a famous phone call to Niemeyer in which he said joyfully: «I just found the perfect tangent curve that will allow the form to float in the air».[33] In their euphoria, they thought they were able to appeal, simultaneously, to the poetry of plastic intentions and the utilitarian aesthetics of the engineer which, in a spiritual unity, would produce the only true expression of the beauty inherent in contemporary life. That legendary phone call summed up the virility of modern Brazilian architecture. Looking at the pictures of the building site, there is an amazing quantity of steel. Apparently, a kind of last-minute "fear coefficient" was added to the structure in order to ensure the safety of construction. The fearless forms advocated as rational and the result of the union between poetry and reason seem, rather than the result of a simple and linear progression of a genuine national culture, to be the result of a peculiar set of circumstances and an incredibly tense practice. [Fig. 10]

33. M. da Paz Ribeiro Dantas, *Joaquim Cardozo...*, cit., p. 77. A.C. Vasconcelos, *O concreto no Brasil...*, cit., p. 97.

We might consider Cardozo way of dealing with adversities as closely connected with his literary convictions, since they are hard to understand as rational engineering strategies. Far from his first "much too" European structural conceptions, he felt free to conceive the structures as he wanted to, knowing that they would not fall down. A huge tension is visible, from the unconventional and even reckless approach to engineering (confirming the conventional view of Brazil's Modern Architecture as audacious, virile and fearless) to the paradoxically overly cautious and fearful experimental practice. [Figs. 11-12]

FIG. 11 Palácio do Planalto, Brasília, construction site, 1958. Photo Marcel Gautherot.

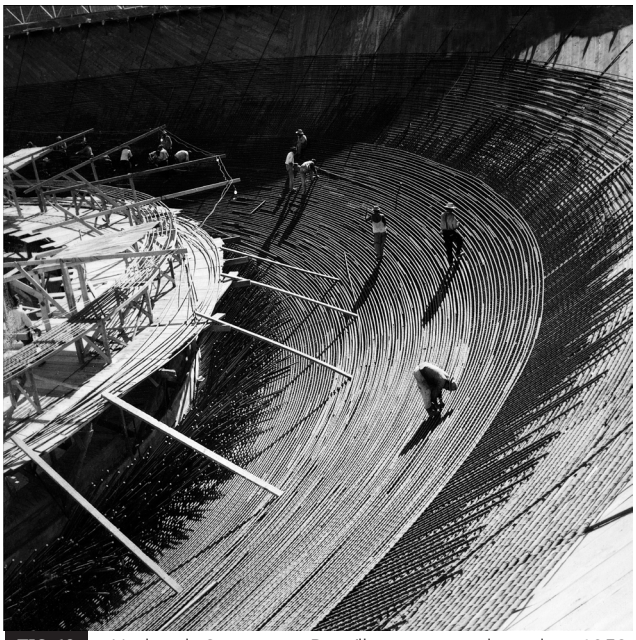


FIG. 12 National Congress, Brasília, construction site, 1958. Photo Marcel Gautherot.

For the sake of its own success, architectural history tends to underline coherencies and organized systems of thought, as is evident in the way Brazilian modern architecture has been celebrated. Joaquim Cardozo's structures, simultaneously engaged with literary and architectural debates, contributed to establishing a coherent discourse about so-called "true Brazilian architecture". But the coherence of the discourse does not match the incoherence of practice. Looking at those incoherencies we find not only the tricks that allow the coherence to remain, but also some clues to an incredibly rich, and ambiguous, everyday life.

Belonging as a Corporate Ideal: Nathaniel A. Owings of Skidmore, Owings & Merrill writes The Spaces in Between (1973)[1]

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ABSTRACT

A study of the autobiography of the American architect Nathaniel A. Owings (1903–1984), founder of the architectural firm Skidmore Owings & Merrill (SOM). In The Spaces in Between: An Architect's Journey (Boston, Houghton Mifflin, 1973) Owings recounts his life from his youth in Indianapolis, Indiana to the foundation of the firm that bears his name in 1936, to the development and expansion of that firm and its role in the construction of large and important post-war buildings (Lever House, New York, 1952; John Hancock Center, Chicago, 1967) and many others. Using a manuscript copy of the text in the Library of Congress, Washington, the article shows Owings' tortuous experience writing the book. A comparison between manuscript and printed version of the book reveals significant differences that probably result from the intervention of SOM's lawyer, Gross Sampsell. The story Owings wanted to tell was racier and would have been more interesting to readers; the book he published was a compromise, designed to avoid law suits and maintain good relations with colleagues at SOM. Keeping his relation with his colleagues was, in the end, more important to Owings than a spicy narrative.

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KEYWORDS

Nathaniel A. Owings, Louis Skidmore, Skidmore Owings & Merrill (SOM), Gordon Bunshaft; architect's autobiography, corporate life and culture, american corporation, Library of Congress

It is altogether remarkable that the architect Nathaniel A. Owings (1903-1984), one of the founders of the architectural firm of Skidmore, Owings & Merrill (SOM) wrote any books at all. He was not a natural author. He was rarely still for any length of time, never learned to spell, and when he did write, ideas poured forth in a jumble without respect for chronology or subject matter.[2] Still, Owings believed in the lasting power of books and so, after completing *The American Aesthetic*[3] his description of America's architectural values, he set to work almost immediately on another.[4] *The Spaces in Between: An Architect's Journey* [Fig. 1] was a juggling act, part autobiography, part company history, and part prophecy: it was not well received.[5] *Publishers Weekly* succinctly caught the major objections to the book: «Essentially it is a salesman's story, replete with promotional style descriptions and many anecdotes, some perhaps apocryphal but heavy with name-dropping».[6] Nevertheless, though the book was not a popular success and is of uncertain value as a work of history, it is a work that reveals an enormous amount about the evolving role of the American architect as an entrepreneurial businessman in the middle decades of the twentieth century. These revelations come in part from the printed book, but they are pushed to greater relief by a series of typescript drafts deposited by Owings in the Library of Congress, Washington, DC.[7] So thoroughly entailed to the organization he founded and that was the source of his fame, Owings was unable to see into print a narrative account of its creation expressed in his own spontaneous words. Lawyers, editors, and the magnetic pull of SOM, all played a role in dimming his natural expression. Comparison between typescript and printed text offers an extraordinarily vivid picture of the Owings' quandary when it came to telling his own story.

In a draft for the book Owings perfectly described the forces that had propelled him and Louis Skidmore to create the firm in 1936. Owings compares himself to a volcano. «Inside, I felt like that: violent, compulsive, driving to put on our own show, to get at the business of building. Jobs, jobs, jobs!».[8] Thirty-three years later and almost seventy years old, Owings now had other things on his mind. He had new interests in urban planning, ecology, and preservation, and he was deeply troubled by some of the architecture his firm was building. So he wanted to tell about the creation of SOM, but he also wanted to explain his new beliefs, demonstrating to his colleagues how the firm that bore his name could now become a critical agent for change.

Making the story more complicated was the fact that Owings' account could not be a tale of architectural design. Despite the subtitle of the book, *An Architect's Journey*, his position as one of the original founders of the firm, and its nominal leader since Skidmore's death in 1960, he had designed none of SOM's great buildings.

> I as an individual cannot point to any major building for which I am

1. For a full list of Owings' publications, see N. Adams, *Skidmore, Owings & Merrill: The Experiment since 1936*, Milano, Electa, 2006, p. 300.

2. In answering a publicity questionnaire from Houghton Mifflin, Owings described his avocations and hobbies as «eating, sleeping, and talking», Questionnaire, 25 August 1972, p. 5. Container 50, Folder: Speeches and Writings File: *Spaces in Between*, Correspondence 1972-1974. Division of Manuscripts and Archives, Nathaniel Alexander Owings Papers, Library of Congress, Washington D.C. Hereafter Owings Papers. Note that I have preserved all Owings' original spellings and those used by his secretary Peg Ireland in the typescript drafts to give a flavor of his unvarnished style.

3. N. A. Owings, W. Garnett, S. Dillon Ripley, *The American Aesthetic*, New York, Harper & Row, 1969.

4. Owings' faith in the book comes through at many points. The book would be his lasting legacy. «As my younger partners created their own legends about SOM, coming up with startling statements as to why Skidmore and I did thus and so, it became clear to me that there would be legends, so I might as well have a hand in their creation», N.A. Owings, *Spaces in Between…*, cit., p. VII. The second paragraph of his introduction also reflects genuine respect for writing. «Believing that the printed word is the most lasting form of human effort…» it starts, *ibid*. Or, as he puts matters in answer to Houghton Mifflin's questionnaire of 25 August 1972, p. 3: «The power of the written word is without question superior to any other form of propaganda…», Owings Papers. His two elderly spinster cousins, Grace and Georgia Alexander, were both writers of a sort. Ironically Georgia had written a noted spelling book for grade school students, called colloquially the Alexander Speller. G. Alexander, *A Spelling Book*, Indianapolis, Bobbs Merrill, 1910 (1906); Grace Alexander was an editor for Bobbs-Merrill and wrote *Judith: a story of the candle-lit fifties*, Indianapolis, The Bobbs-Merrill Company, 1906, and *Prince Cinderella*, Indianapolis, The Bobbs-Merrill Company, 1921. Georgia brought him Edmund Gibbon's *Decline and Fall of the Roman Empire* when, stricken with Bright's Disease following his freshman year at the University of Illinois, he thought he would die. The book had thaumaturgic powers, creating a world in which he could take refuge from what seemed the terrible truth of his illness. N.A. Owings, *op. cit.*, p. 24.

5. Owings began work on *The Spaces in Between* in the fall of 1969 and Houghton Mifflin published the book in May 1973.

6. "Publishers Weekly", 30 April 1973, p. 113.

7. Owings Papers, Containers 49, 50, and 51. Most are in Owings Papers, Container 50, Folder: Speeches and Writings File: Books *Spaces in Between*. It is difficult to evaluate the relationship of all these drafts to the completed book: many are short two or three page narratives, others are full chapters. The main drafts are dated 20 April, 27 November 1970; 168 March, 5 April, 15 May, 1971. Miscellaneous sections are also in Container 51, Folder: Speeches and Writings File: Books *Spaces in Between*, Drafts Miscellany. Missing from the containers is an entire final draft, proof, and galley pages. No typescript shows the handwritten corrections of Owings or others.

> solely responsible. But I can point to individual, brilliant architects like Gordon Bunshaft, Charles Bassett and Walter Netsch who are products of this entity.[9]

So the story he had to tell was an arcane one about architectural practice, about how he and Louis Skidmore had created the environment to nurture great architects and how the institution they had created came to have so great an impact on the American city. Owings recalled a period before World War II when

> the architect was called in at the end of the decision-making process and told what to build, was treated as an artist too dumb to know the facts of the profit-making system . . . Even the location of the project on the ground, or the use to which it would be put, was almost always decided before the architect got into the act. These predecisions cut off most of the areas of creativity. SOM had to earn a place as equal with these decision-makers. To gain the respect of the client, SOM had to be powerful, had to have national coverage.[10]

And now the architectural world had started misusing SOM's creations, as he wrote in a draft:

> In 1955 we were being heralded as knights in shiny armour astride our white chargers, our lances carrying the banners of enlightened urban planning. We enjoyed this a lot. But by 1960 we found that we were leading a parade of taudry giantism.[11]

And marching along in step! In private moments he called SOM an «octopus», a «monster», and a «Frankenstein».[12] His anger at the firm's architectural direction could even emerge when least appropriate. In a public lecture, he had denounced the insensitivity of the Bank of America building in San Francisco (completed 1969) where SOM were the associate architects: «What the hell has that shiney monster got to do with a human being?» he said out loud and the quotation was picked up by the newspapers.[13] So he had created this astonishing powerhouse of an architectural firm, for which he wanted to claim credit, but he now felt deeply ambivalent about what it was doing. Even in the printed book, we can sense Owings' discomfort from the outset. Chapter one begins with an account of a Fourth of July nightmare. In his dream a pinwheel spun out the shapes of the buildings built by SOM in fireworks:

> Park Avenue's twenty-one story Lever House . . . Number One Chase Plaza…the United States Air Force Academy…the green glass shaft of the Crown Zellerbach Building…all these and more the designs of Skidmore, Owings and Merrill, architects, planners and engineers; all of these tumbling from the charring pinwheel spokes in a rush of terrifying violence.

And then he awoke, dazed with

8. Owings Papers, Container 50, Folder: Speeches and Writings File: Books *Spaces in Between*, typescript, 15 May 1971, p. 167. This statement is softened to: «I had felt like that too: violent, explosive, driven to get back to the participation in the business of planning some of the basic needs for the family of man on a permanent basis», see N.A. Owings, *op. cit.*, p. 100.

9. *Ibid.*, p. VIII.

10. *Ibid.*, p. IX.

11. Owings Papers, Container 50, Folder: Speeches and Writings File: *Spaces in Between*, typescript 19 March 1971, p. 5

12. In a lecture at Cornell University in October 1976 Owings described SOM as «the KING KONG of Architectural Dynasties» and as a firm built on the "Illusion of the infallibility of the U.S. Industrial Hierarcky"». Owings Papers, Box 56: Folder: Lectures. Writing to his sister Eloise in 1979 he complimented the partners for creating an effective business: «But when it comes to human scale or warmth of human kindness – or simple lovely things – no one can do that in SOM– or if they can arnt allowed to» Letter from Owings to Eloise Owings, 26 August 1979, Louis Skidmore Jr. Collection, Houston, Tx., letter files.

13. Owings Papers, Container 50, Folder: Speeches and Writings File: *Spaces in Between*, Typescript 19 March 1971, p. 6. He received a call the next morning from Rudy Peterson, chairman of the board of Bank of America saying: «Nat, according to the headlines this morning, we read what is either the world's greatest misquote or you were drunk!»

> this miscellany of twentieth-century architecture still falling around me. Was this evidence of forty years of designing constructs simply detritus? What parts were relevant? What was their place? For me these designs were intended to be "form givers," for purposes deeper than mere shelter––but had they turned out that way? Were they any better than what had gone before? If the images I had seen in my nightmare dream reflected in any way a social implication, then I had to ask: where were we headed?[14]

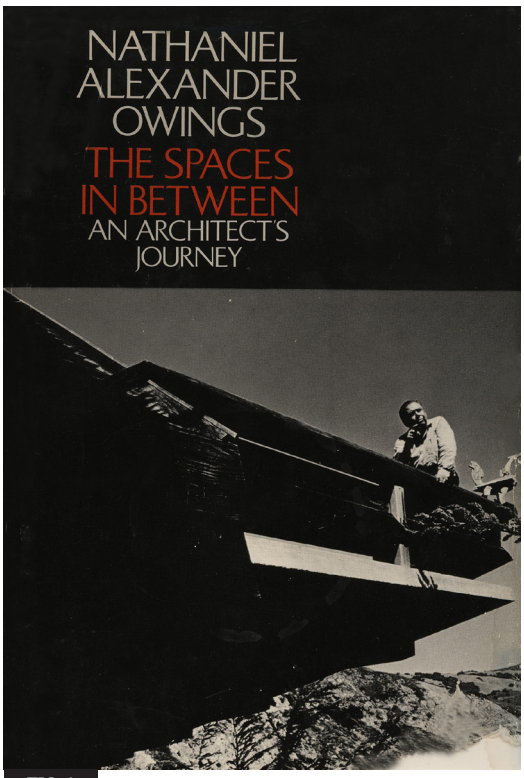

FIG. 1 N. A. Owings, *The Spaces in Between: An Architect's Journey*, Houghton Mifflin, 1973.

Any writer, even a good one, would have a hard time telling this story coherently.

None of these misgivings emerged in Owings' book proposal to Paul Brooks, senior editor of the trade division at Houghton Mifflin in Boston. His idea, he said, was to «write a narrative history on the history of SOM» in the context of the history of American architecture. Using «humor and seriousness» he offered to illuminate «a period of growth and development that would be of interest to many people». But he also suggested that there would be a visionary aspect to the book. He might also project «into the future up to the year 2000» to show what sort of «complete change-over will be necessary in order to match planning with the actual evolving cyclonic development in this country». He proposed to tell the story informally and promised delivery within two years.[15] Brooks' reply was welcoming with only one word of caution: Owings should not try to write a «company history», but should, instead, write about SOM and American architecture «as it appeared to you from your unique vantage point as the founder and head of the firm».[16] Owings embraced the caution and promised to address issues from his personal point of view. In his enthusiasm, he asked: «Is there anything else you will need before a go-ahead signal can be given since this is of enormous interest and fascination to me?»[17] Publisher and author agreed that an outline might be a good thing.

In an early outline draft dated 12 September 1969 he struggled to give the book shape.[18] Typed by Owings himself, the draft outline is marked by his eccentric spellings and erratic typing, preserved here in the transcription. The larger metaphor for the book was biological.

Book 1: The compost from which SOM aparing.; 1900-1929

a. Ruchville Indiana laurance ville Indiana

Indiana Black dirt and Ohio River water

Fine woods and the Alexander speller

an Eagle Scout… th. Ist jamboree the Cathedrals of Eaurope..

14. N.A. Owings, *op. cit.*, pp. 3-4.

15. Nathaniel Owings to Paul Brooks, 18 June 1989, Owings Papers, Container 49, Folder: Correspondence and Contract Spaces in Between. Owings also approached John Macrae III at Dutton about possible interest there. McCrae recommended Reinhold and Winston, Praeger, MIT Press, and Viking. Correspondence in the Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

16. Paul Brooks to Owings, 21 July 1969, Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

17. Owings to Brooks, 25 July 1969, Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

18. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

A R.R. brakeman and a restless mind.

c. Bradley Teck .. world war I. Oxford .. MIT Roce foreign Schollarship.

d. Eloise Owings.. the polination occurs.. Nepotism in flower.

Book 2; Root trunck and branch .. 36---45

S&O. SOM and 5 partners .. Master builders ..Wrigles chewing gum

Book ~~3~~. [possibly replaced by] 4. Myrical Fruit –By your ~~fruit~~ [replacement illegible] shall ye be known

S.O.M. Builds.

a. Oak Ridge Tennessee. Cloak and dagger

b. A crap game at the Xhicago Club..Leverhouse is born.

d. Chase Manhatten Plaza (A [followed by word above the line] sparks

Wallstreets 1oo Billion Dollar Renweal)

[ellipsis]

Book 4 [replaced by] 3 The Modern Medeci.

Rufus Dawes..Chcago Century of Progress.

Jack Heinze ..a founding father..from a kitchen to a world response

Jd Zelerback .. San Franciscos founderbuider. 1950 raineasance. CZ.Bldg.

~~David Rockefeller. Chase~~

~~Lawrence Rockefellr.~~ open space… muana Kea.

The outline concludes with a couple of paragraphs, drawn from a recent lecture, setting out his current beliefs.

> Commerce and industry are running out of new field to conquor. Dollar inflation turns their eye to raw land as a stable hedge. Ignorant of the first principlesof land conservation ecology; trained to demand his yield quick returns; the trend is far more dangerous than any heretofore since the Virgin forests were cut down.
>
> Alternative to disater. Establish the Environment as a first class Citezen. One way would be to the follow the examples of theEssenes and go underground 2with our master plans for utopia.

In his next draft (undated) he gave his work a provisional title "Confessions of a bad Architect" and he now identified three parts to the book:[19]

Book1. ROOT TRUNK AND BRANCH = S.O.M. 1900-1940

Book 2. The Fruit OF THE TREE -1940-1970

Book3; The TREE AGAINST THE Whirlewind – 70 to the year

19. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

2000

On the same sheet he also played with another title: "Autobiography of a labourer in the Garden" as a way of strengthening the biological motif allowing him to shift naturally into the theme of ecology and environmentalism at the end of the book.

The final draft lacked a title but was carefully typed (not by Owings), correctly spelled, and consisted of a mixture of numbered points and short two-hundred word narrative tales designed to give the flavor that the story would have when completed.[20] In the last section of the book, entitled "Come the Whirlwind", Owings briefly raised his anxiety about SOM. A final section, chapter four, had the dark title "A Dim View of the Future".[21]

On 2 October 1969 Brooks, cheerfully signaled his approval. «I have never read a more enticing prospectus. It all seems so alive and immediate that I can scarcely believe the book does not already exist. No doubt it does ––in your head».[22] Owings received the contract 15 October 1969, signed it shortly thereafter, and set to work in earnest.[23] But how to write it?

Owings' first instinct was to adapt the techniques of the large-scale architectural firm to the task. Starting in September 1969 and over the next year he wrote to a wide range of friends and associates, explaining his book project and asking for their impressions of him and of SOM. He wrote to old friends from Indiana as well as to his surviving relatives, former clients involved in the construction of Oak Ridge, Tennessee (Major Edward Block, Colonel T.T. Crenshaw, Captain J.T. Ware) and early clients (Frank Armour of the Armour Meat Packing Company and Jack Heinz II of Heinz Foods). He wrote to former employees (Ambrose Richardson, Tallie Maule, and Karl Anderson), as well as William S. Brown, a former partner, asking for accounts of the early days.[24] He wrote to former secretaries (Ruth Allen, Eloise Connelly Little) and to old acquaintances from the Century of Progress Exposition of 1933. He even wrote to the developer George Fry whose gambling debts he had absolved and who, in exchange for Owings' generosity, had steered SOM to Charles Luckman and the commission that ultimately produced Lever House in New York. The results of these inquiries varied. Some recipients begged off or asked for clarification. Others replied. He especially sought help from Mildred Steelhammer, the long-serving (and long-suffering) administrative secretary in Chicago asking her to go to the warehouses and pull out material covering the years 1936-1946 and then to type up the «special events you can think of that have stuck in your mind».[25]

Houghton Mifflin received a draft chapter early in February 1970. Brooks assigned editors Richard McAdoo and Ruth Hapgood to work directly with Owings. Hapgood quickly identified the major problem with his text.[26] He had, she thought, little sense of his audience. She wrote a memo to Brooks that was forwarded to Owings: «He might find it useful not to have

20. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

21. He labeled the chapters "1. The crossroads. 2) SOM – Octupus or crusader? Creator or mass producer? An architectural General Motors or a monastic order? 3) The calm – my new marriage develops the theory of the Matriarchy. 4) I become a conservationist first, an architect second; open space takes the lead; I relate tentative encounters". Owings Papers, Container 49, Folder: Correspondence and Contrac*t Spaces in Between*.

22. Brooks to Owings, 2 October 1969, Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

23. The contract is dated 15 October 1969. Owings consulted with Gross Sampsell, the lawyer at SOM, before signing the contract. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

24. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

25. All copies of letters are in Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*. The letters are dated mid-September 1969 through early January 1970. The letter to Mildred Steelhammer is dated 6 November 1969.

26. I am grateful to Ruth Hapgood, Lincoln, Massachusetts, for her recollections of working with Nathaniel Owings, telephone interview 25 July 2006 .

in the back of his mind some a faceless 'gentle reader' but some specific one person––someone sympatico [sic: spelling] but totally ignorant of his whole story». And, she wondered aloud, «if he can get used to a medium that unrolls in time rather than standing in space? They [readers] must follow him from sentence to sentence along a logical track, one idea after another; expectation raised, expectation satisfied. He is so full of his story, bits of it bud out where they shouldn't. Telling so a stranger can follow will help here too».[27] Owings worked throughout the spring of 1970 and in May sent off a revised version of chapter one but his editors were still not satisfied. The chapter was too long and too choppy. McAdoo wrote: «I'm afraid I find the introduction of Big John [John Hancock Center, Chicago] in the beginning pages of the manuscript somewhat confusing».[28] In August Owings sent off a revised version of chapter one, revised but still not satisfactory. The process of writing had turned out to be more difficult than he had thought and Owings, now thoroughly engaged in the process, described McAdoo and Hapgood as «the most extraordinary psychologists. I wish my mother had known how to handle me as well as you two do. Your tacit approval of my foregoing efforts makes my own dissatisfaction more poignant». He was desperately searching for a way to construct the story. As he wrote to McAdoo at the end of August 1970: «I am pushing ahead on all fronts like a blind squid, thrashing up the past and the near present to a fury of inconsequential information».[29]

By October 1970 Owings had sent in enough material (albeit much of it unsatisfactory) so that Hapgood and McAdoo could make a number of highly specific recommendations. Hapgood wrote Owings in October 1970 reminding him to just tell the story. «Not some slick jazzy slam-bang book that is all I-I-I, but not a straight philosophical expository work with no first person in it either. You are telling the story of a firm and your part in it, of the growth of some architectural ideas and your part in them, of the genesis of some saving ideas for the modern world and your part Marshin them. And the operative word as far as technique goes is story. This doesn't mean that you can't stop along the way and ponder the meaning of the happening–– in fact, to be able to share your ideas about these subjects is part of the special value of your doing this book. But it does give you a chronology, and an approach, and a pace and suspense».[30] Hapgood returned chapter two with the caution that too much was happening in it. «To my mind», she added, «Oak Ridge is a perfect little unit by itself».[31] And McAdoo wrote to Owings in May 1971 describing the chapters as a «series of magazine essays» with the account of the construction of Oak Ridge as the model.[32]

Finally, in October 1971 Owings delivered a manuscript about which Hapgood and McAdoo «were enthusiastic at the sight of the whole shape at last». She enjoyed the fireworks opening («a real 'feu de joie.'») and found «the book very exciting, and exciting in the way I hoped it would go in the beginning, being of a journey of an artist at work, rather

27. Hapgood to Brooks, 20 February 1969. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

28. McAdoo to Owings, 29 June 1970. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*. The material on the John Hancock Tower (Big John) appears in Chapter 4 in *The Spaces in Between*, somewhat confusingly placed as an introduction to a discussion of the Century of Progress Exposition, 1933.

29. Owings to McAdoo, 28 August 1970. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

30. Hapgood to Owings, 30 October 1970. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

31. Hapgood to Owings, 3 November 1970. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

32. McAdoo to Owings, 15 May 1971. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

than being reminiscences of a famous man or a history of a firm. It is on the other hand the most difficult and soul-searching and elusive and demanding book to write».[33] Hapgood and McAdoo had brought the book to completion, more or less.

33. Hapgood to Owings, 15 October 1971. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*.

How had Owings actually constructed the book that they now had in front of them? How did the man whose spelling and paragraph structure bear more relation to an early draft of James Joyce's Finegans Wake than to a conventional magazine article turn out a text that met the editors' standards? The key figure seems to have been Owings' secretary, Peg Ireland, working out of San Francisco. Owings followed a standard process during the winter of 1970. He typed up his thoughts single-spaced on sheets of paper and then read them into a tape recorder, editing as he went. This process might be repeated before the tape then went off to Peg Ireland, who transcribed Owings' tapes producing double-spaced two or three page "vignettes". Owings then corrected these versions.[34] Ireland turned Owings' grammar into Standard English, linking ideas in typescript that Owings was only able to get down in disconnected form. While a comparison between the typescripts in the Library of Congress and the published version reveals how much linguistic adjustment his editors had to undertake (and Ireland's own spelling was not perfect), perhaps the most interesting changes have to do with the opinions Owings dropped from preliminary typescripts to final printed version. A thorough account of these changes would be tedious, but the broader picture is illuminating. Where the book is by and large balanced and even tempered, the typescript can be quite scabrous; where the book seems always to be skating around issues, the typescript comes to the point quickly and directly; where the book often sounds like a public relations blurb, in the typescript one hears the timbre of Owings' own voice and expression.

34. Owings described her as indispensable. She has, he wrote, «the patience of a saint and the precise ability to transmit my ideas, even though they are not in writing. A kind of God-given computer, she has no weaknesses». Houghton Mifflin questionnaire, 25 August 1972, p. 4. Owings Papers, Container 50, Folder: Speeches and Writings File: *Spaces in Between*, Correspondence 1972-1974.

For example, a typescript account[35] of the formation of Skidmore and Owings at Paddington Station in 1935 dated 18 March 1971 contains a number of phrases not found in the printed version.[36] For example, the typescript gives a vivid picture of some of the differences between the Owings and the Skidmores.

35. Owings Papers, Container 50, typescript, 18 March 1971, p. 1.

36. N.A. Owings, *op. cit.*, pp. 65-67

> There was Emily [Owings' wife] and I: threadbare, broke, quite ready for home after nearly a year away, overlapping a month with Eloise [Skidmore's wife and Owings' sister] and Skid following the route marked by the Tudor homes of rural England of Skid's book. They sat there, their American prosperity still glistening, their wallets fat, their tipping gross. Whenever I could I subtracted a substantial portion of those tips from under the plate, partly to maintain our prestige in the eyes of the waiters and partly to bolster my waning funds.

Owings sense that it was somehow foreordained that he and Skidmore would enter into architectural practice together contains the following

interjection, eliminated from the printed text.

> I always claimed, half in jest, that anyone who said they knew what Skid was thinking was either lying or drunk.

And the vision of the modernized medieval guild of builders within which they would practice is described in quite different terms in the typescript. Particularly noteworthy is the stress on novelty.

> Skid and I would form a protective blanket, a medieval concept of the master builders within which we would take as our nucleus, our goal, the designing and building of structures that had never been built. We would attempt to build a perfect solution within the golden circle of improbability and we would tackle all the areas where man had specialized himself into complex requirements in his ever more involved search for habitat and the ancillary purposes of worship, trade and festival. We would find brilliant young designers and give these fresh, urgent, passionate youngsters a chance to design their own ideas into a hospital or a school or a church before they had been smacked down by the plan factor, by those who said you could not build a hospital until you had done one. Nonsense, we said. Our nucleus would be a small, compact satellite with a backup of research, programming, management of finances and the client. We would try to isolate out and introduce in the concrete structure pure design, undiluted by pragmatism. We could have a series of satellite teams.

Each sentence could have been eliminated for any number of reasons––a developing clarity of expression, an episode that reflected poorly on the author, or its irrelevance to the subject at hand.

Owings' personal animus was carefully eliminated from the book. His account of the opening of the SOM office in San Francisco[37] contains one reference to the architect Gardner A. Dailey[38] an associate in the renovation of the Hotel Del Monte at Pebble Beach, California. In one draft (3 May 1971), Owings spilled his anger at the aristocratic and well-connected Dailey whom, he accused of blocking Owings' access to high society in San Francisco. As Owings wrote: «Any male San Franciscan who isn't a member of the Pacific Union Club standing in ornate elegance on the top of Nob Hill, or who wasn't a member of a Camp at the Bohemian Club, was a virtual social outcast – or a Jew».[39] Elsewhere Owings' colorful opinions are blanched. John Merrill, the third of the original founder-partners appears only as a shadowy presence in the printed book. Merrill's brother Edward and son John also worked for SOM and together the three Merrills, Owings writes in the book, «furnished a powerful additive, contributing continuity, integrity and hardest of all to define, a kind of homely but unspectacular dependability, unspectacular but irreplaceable».[40] The draft of 15 May 1971 adds a significant detail. «As the saying goes, John Merrill couldn't have given away red flannel underwear to freezing Eskimos,

37. *Ibid*, pp. 138-41.

38. *Ibid*, p. 140.

39. *Owings Papers*, Container 50, typescript, 4 May 1971, p. 1.

40. N.A. Owings, *op. cit.*, p. 67.

but put in charge of a job with a specific program, he was invaluable as Partner in Charge».[41]

Absent too from the book is Owings' own anxious sense of inferiority. In organizing the outline in the fall of 1969 he included what he called "Vinyettes" (vignettes). One reads as follows:

> I have often thought If I had had the talen of genius..and it does take genius..the education and the patience to have been a great Architectural designer..such as ~~Gordon Bunshaft~~ [corrected in pencil, possibly with the name of "Walter Netsch"] that SOM never would have been formed. The creative compulsion that is in men could only be consumed by a mass affort a Master builder technique.. and so this might as well be called the confessions of a bad architect. Without sufficient education with time running out as to need for income and with no patience to wait for results I turned to improvise.[42]

In one typescript account of the formation of Skidmore and Owings at Paddington Station he puzzles about what he will contribute to the partnership?[43]

> Skid was the decanted essence, bold in contents, all architecture. My mind was on something else. . . . I was concerned about what I was salesman, huckster, manure spreader? I had ideas, yes – boiling over with them. My mind turned ideas into three, often four, sometimes five dimensions. I had a built in converter of ideas into action somewhere making what I thought buildable. The problem with me was the detail. Excited impatient, there never was enough time. . . . So what did I have to bring Skid or Eloise? The idea of group practice. Well, it just could be that it was the other way around. Perhaps I was bringing Skid to group practice. Perhaps the triangle would need all three legs on which to stand. Perhaps we could find a way to create great design, distill the essence like the Athenian Erechtheion and market it on a volume basis, a Roman Forum or aqueduct. That it could not be done never entered my head.

Nothing of the kind finds its way into the printed version.

One significant omission from *The Spaces in Between* is any real sense of how relations were managed between the partners in the SOM offices and how work developed within them. In the printed book, each colleague has his qualities of genius brought to life, «like kernels of wheat in the Egyptian tombs, seeds of genius needing only soil and water and a benign climate to bring them to fruition».[44] The organization was a «modern 'Gothic Builders' Guild'" and an "august brotherhood».[45] Only very occasionally in the printed book do the real tensions that we now know ran like hot lava through the offices emerge.[46] Owings reports an exchange between Gordon Bunshaft and Chuck Bassett that concludes

41. *Owings Papers*, Container 50, typescript, 15 May 1971, p. 145.

42. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*

43. Owings Papers, Container 50, typescript, 18 March 1971, p. 4.

44. N.A. Owings, *op. cit.*, p. 269

45. *Ibid*, p. 66, p. 267.

46. On life in the Chicago office, see N. Adams, *op. cit.*, pp. 34-36.

with Bunshaft telling Bassett that he has "no future in the firm". But the episode is concluded happily. «It was only a year later … that Bunshaft proposed Bassett for partnership».[47] And elsewhere Owings wonders out loud whether SOM is strong enough to resist the «abrasive power drive» of Bruce Graham.[48] And at another point Owings admits that he could irritate his colleagues, as happened with his cover story in *Time* magazine, «sufficiently to cut out normal communications for months».[49] What they said about this breach is left to silence alone. The typescripts provide a breath of reality.

In one draft Owings explained his ideas for the development of the Chicago office of SOM. They mesh entirely with the picture he has already provided of a man uncertain of his abilities.

> I evolved my own cycle and my own series of satellite individuals revolving with me around the areas of influence in the Chicago office. With the perspective of distance I could see the disadvantages of a dominant design leader like Gordon Bunshaft and chose to develop a "stable" of designers: Ambrose Richardson, Walter Netsch, Harry Weese. I suppose there was something in the idea with one strong designer to deal with, he became the dictator. With two, I could divide.[50]

Owings relations with Bunshaft, in fact, were never good. Bunshaft was, in essence, Skidmore's man and later in life he often expressed openly his disdain for Owings.[51] In the printed book Owings' description of Bunshaft is evenhanded. He is «fiercely intolerant and at times arrogant», but he is «always sincere in his commitment to his personal design ethic». He is, Owings says, «hot to handle» and quotes Bunshaft: «The partners work as one big team. The others take care of all the headaches and I am in charge of design», a quotation already in the public realm.[52] Still, as Owings notes evenhandedly, «he can be as gentle as a dove when he chooses».[53] In end Owings acknowledges rather blandly that Bunshaft has many sides to his character. But Owings actually had a more acute view of Bunshaft expressed in typescript, one that revealed his difficult combination of brute strength and willfulness.[54]

> Basic, primitive, Bunshaft soon established territory within which no competitive designer dared to enter. Possessive, egocentric, he consistently claimed credit for brilliant performances attributable to all four [Bunshaft, Brown, Severinghaus, Cutler, the four New York partners in addition to Skidmore]. He was in favor of group practice as long as he, as an individual, was the creative master architect and any other role was not for him. Though he was strangely dependent upon the other three and whenever he was faced with a choice of going on his own and becoming independently famous, or staying with us and exercising a certain degree of anonymity, he always chose group practice for its benefits and comforts – and

47. N.A. Owings, *op. cit.*, p. 267.

48. *Ibid*, p. 266.

49. *Ibid*, p. 270.

50. *Owings Papers*, Container 50, typescript, 31 March 1971, Chapter 7, p. 3.

51. For example, he described Owings as a «mere salesman»: *Oral History of Gordon Bunshaft*, interviewed by Betty J. Blum, Chicago: The Art Institute of Chicago, 2000, p. 49.

52. *The Architects from 'Skid's Row'*, in "Fortune", January 1958, No. 57, pp. 137-40; 210, 212, 215. The quotation reads: «The partners work as one big team––the other take care of job getting, supervision, and all those headaches, and I am in charge of design». See *ibid.*, p. 212.

53. N.A. Owings, *op. cit.*, pp. 74-75.

54. *Owings Papers*, Container 50, typescript, 12 April 1971, p. 2

tried to break the anonymity.

In another typescript draft (3 May 1971) entitled *Workers in the Garden – Invisible Partners*, Owings took up the relations between Bunshaft and Netsch. Bunshaft he called the «Great Classicist». In the New York office there is «no second, no Number Two. There are no second Bunshafts». Owings writes that he calls Netsch «the Professor» and his libraries at the University of Chicago, Northwestern University, the University of Iowa are, in Owings' opinion, «simply brilliant».[55]

> Labeled by Gordon Bunshaft as atrocious architecture, I responded in Netsch's defense with the comment that without Netsch's architecture, SOM would be dead and buried if we had to depend on Bunshaft's baroque, obsolete Classicism. I still had a way of keeping myself popular in the firm with comments like that.

In a split second we learn more about Owings' role in the offices than we ever learn in the well-tailored printed text of *The Spaces in Between*.[56] We are suddenly witness to a conversation between the architects: thrust and counterthrust. Whatever its value as historical source material, this exchange is far more compelling as a narrative than the balanced distribution of favors in the pages of *The Spaces in Between*.[57] Owings' frustrations with Gardiner Dailey, passed over in the book and spoken in the typescript, tell us more about Owings' humble Midwestern Unitarian background than all his descriptions of his Mother's pious reading habits.

When proof went out to magazine editors for possible serialization there was interest from the local newspapers where Owings had lived (Chicago, San Francisco) but national publications were not interested. C. Michael Curtis, just beginning his career at *The Atlantic* was particularly scathing. «We see this as a good opportunity gone awry. Just when we ought to hear something specific and eye-opening about architecture, we're flooded with trivia about social life among the rich and famous».[58] And when the reviews came out they reflected a similar disappointment with the book. Old friends like Douglas Haskell, formerly the editor of "Architectural Forum", and Wolf von Eckhart were supportive, but generally there was silence.[59] Roger Jellinek in the "New York Times Book Review" lamented that Owings' own role was «quite out of focus» in the book, «which collapses into a nostalgic scrapbook (the title is apt) about his colleagues, his second marriage . . . his semi-retirement to Big Sur». Owings' «unrelenting good humor and slight company anecdotes are no substitute for what the reader wants to known: the details of how this giant enterprise works, why S.O.M. outperformed its rivals and what happens in the drafting room».[60] Mary Holtz Kay in *The Nation* lamented Owings' closed-mouth style: «Those who know, don't say; those who say, don't know. Nathaniel Alexander Owings, prime candidate for category one, knows, but isn't saying. It's disappointing to have so few disclosures from the Owings of Skidmore, Owings and Merrill, the architectural

55. *Owings Papers*, Container 50, typescript, 3 May 1971, pp. 1-2.

56. Owings somewhat resented Bunshaft's success at Lever House («weighted down with medals») and the fact that no one seemed interested in his role in its creation which he told, at least partially, in N.A. Owings, *op. cit.*, pp. 104-10. In one poignant moment in the typescript he writes. «There was a movie taken day by day by Lever of the progress of the construction which was put together so that one could see the building rise in a fifteen minute film. I found it more interesting to run the film backwards. I liked the idea of taking the building down before one's eyes». Owings Papers, Container 50, Folder: Speeches and Writings File: Books *Spaces in Between*, typescript, 19 March 1971, p. 11.

57. Relations with clients are also carefully edited. The history of the Rockefeller resort at Mauna Kea is one of many examples. Relations between Bassett and Rockefeller so deteriorated that Bassett never visited the completed building, an element of the story overlooked in Owings' account of construction, N.A. Owings, *op. cit.*, pp. 169-73. Bassett notes: «It's a gorgeous building. I've never gone back since it was finished, for reasons I am not about to go into here. I had a very bad taste in my mouth about the job». See E.C. Basset, B.J. Blum, *Oral History of Edward Charles Bassett*, Chicago, The Art Institute of Chicago, 2006, p. 98.

58. Owings Papers, Container 50, Folder: Speeches and Writings File: Books *Spaces in Between*, Correspondence 1972-1974, 10 November 1972.

59. For Haskell's review, see "Architecture Plus", November 1973, No. 1, p. 14. There were generous reviews in "Chicago Sun Times", 20 May 1973; "The Arizona Republican", 27 May 1973; "The San Francisco Chronicle", 28 May 1973; "Albuquerque Journal", 27 May 1973; "Park Forest Star", 7 June 1973; "Indianapolis Star", 8 July 1973; "Lincoln Nebraska Sunday Journal", 8 July 1973; "Fort Wayne News Sentinel", 28 July 1973; "The New Mexican", 29 July 1973; "Lafayette Journal and Courier", 24 August 1973; "The Savannah News Press", 5 November 1973 among others. See Owings Papers, Container 51, Folder: Speeches and Writings File: Books *Spaces in Between*, Reviews.

60. R. Jellinek, *American Architect as Ephemeralist, Witness, Memoirist*, in "New York Times Book Review", August 1973, No. 26, pp. 444-45.

handmaidens of big business». The book, she concluded, «intrigues more for what it omits than for what it says».[61]

Why did Owings' book up end up being so tame? Owings' message about ecology and the protection of the environment might have resonated well with audiences in the early 1970s as these subjects gained national attention under the impact of writers like Jane Jacobs, Rachel Carson, Wallace Stegner, and others. But the ecological message came wrapped tightly in a self-serving history of SOM, a firm that was increasingly under attack for its anti-environmental architecture.[62] Owings might have compensated with a lively tale of its early struggles or might have offered some revelations along the way, but in creating an organization that prized anonymity, Owings was already stepping over the line by writing a book about SOM that highlighted his achievement. Whoever sucked the life out of the typescript and replaced it with banal promotional prose had the social fabric of the partnership at heart, at least, if not its financial security: a lost client was in no one's interest; a lawsuit over a stray remark would be costly. The culprit may have been Owings himself, who, given a chance to reflect on the typescript, have thought better of it. More probably, SOM's lawyer, Marshall Grosscup Sampsell, read the entire manuscript (there is direct evidence that he read sections) and suggested or mandated changes. Owings, like all the founding partners, greatly admired Sampsell whose nickname was "Gross" («Gross is orderly where I am not, calm where I am not, cautious where I am not») and the few changes ordered by Sampsell recorded in the Owings Papers in the Library of Congress suggest that given a chance he could wield a heavy hand. He was, indeed, eager to see the manuscript and check it over.[63] But whoever played the role of editor is only of tangential concern: Owings had been trimmed. There is no record of any regret (or any gratitude) for the changes. All that exists in the Library of Congress are his draft typescripts. Versions marked up or corrected by others are not there.

In the end, it is the entire file of Owings' texts, both the typescripts and the printed book, that together tell us about the role and face, if not the myth, of the twentieth century architect. Surrounded by collaborators (who did the hard day-to-day work), prudent advisers (to help avoid lawsuits and ensure future financial stability), and wealthy clients (with their own egos and their connections to future commissions), the modern architect in the corporate world lives in a world of contingency. What right did Owings have to express himself freely, putting fellow partners at risk? Once he had created the idea of SOM as a guild and subscribed to the myth of the Gothic brotherhood, no value exceeded "belonging". John Ruskin's sentimental ideals about the middle ages blended with the values of William Whyte's «organization man».[64] For guildsman and organization man "belonging" was more important than «personal expression».[65] Autonomy existed only in the typescripts he carefully deposited for later historians in the Library

61. J. Holtz Kay, *Books on Architecture*, in "The Nation", 12 January 1974, No. 218, pp. 57-58. Kay also wrote the review for the "Christian Science Monitor", 20 June 1973, in which she wrote «Owings is unable or unwilling to reveal the private self behind the public architect. He opens no corporate closets either, giving too slight an accounting of what pushed Skidmore, Owings, and Merrill to the top».

62. See, for example, A. L. Huxtable, *Anti-Street, Anti-People*, in "The New York Times", 10 June 1973.

63. N.A. Owings, *op. cit.*, p. 70. See Sampsell's letter to Owings, 22 June 1970. To Owings line «At best Oklahoma is a desolate, arid waste of red gumbo», Sampsell corrected him: «Large areas of Oklahoma are desolate, arid wastes of red gumbo». He went on to point out that Oklahoma also contains areas with lakes and rivers. Owings Papers, Container 49, Folder: Correspondence and Contract *Spaces in Between*. See his comments 13 March 1972 that end with: «I am looking forward to a further look at your manuscript when you think the time is right». Owings Papers, Container 50, Folder: *Spaces in Between*, Correspondence 1972-1974. Sampsell was not the only lawyer who might have looked over the manuscript. Ruth Hapgood, in a telephone interview (25 July 2006), reminded me that in addition to changes introduced at the editorial level the manuscript would be shown to sales and advertising as well as passing through copyediting and that galleys would be shown to Houghton Mifflin's lawyers as well. Since the Owings Papers do not contain any galley proofs we cannot know exactly when changes were made. It seems like that the Owings Papers contain the text as written by Owings before others requested changes.

64. See, W. H. Whyte, *The Organization Man*, New York, Simon & Schuster, 1956, pp. 36-51. Whyte describes the work of Elton Mayo, a professor of industrial research at the Harvard Business School. Mayo's conclusion, highlighted by Whyte, was that «the feeling of security and certainty derives always from assured membership of a group». *Ibid.*, p. 39. In place of the clear social hierarchy of the Middle Ages, the modern corporation offered «belongingness», a quality SOM offered in abundance. In that respect SOM was a kind of utopian community. To realize its benefits (comradeship, efficient practice, wealth) one would have to make sacrifices. Owings' printed book was one such sacrificial offering.

65. Compare, for example, the wholly unchained autobiography of M. Lapidus, *Too Much is Never Enough*, New York, Rizzoli, 1996. Published when he was past 90 years old, it is charmingly frank, at times exposing his own foolishness, even some of the less savory tricks of his trade. Why not? Most of his former clients were dead and he and his son had divided their architectural partnership in 1975.

of Congress where one may find out more about Owings and SOM than he could print. The tension between book and typescript are the "spaces in between", and form Owings true face and the complicated legacy of the business of architecture in twentieth century America.

Postscript (January 2017): In October 2016, through the kindness of former SOM partner John Winkler, I had the pleasure of meeting Philip Purcell, who succeeded Sampsell as the lawyer for SOM. I discussed with Purcell the disparity between manuscript and printed text. As a young lawyer, Purcell had first alerted Sampsell to problems in the text as they related to a description of Bruce Graham. In an electronic communication (18 October 2016) Purcell wrote: «I know that Gross read all the draft chapters…and made comments to Nat who looked to Gross for guidance in many things….Gross could be very persuasive, but he was not an assertive personality like Graham or Bunshaft in any way. He was a respected, old world patrician Nat looked up to. Gross most likely asked Nat if he really wanted to say what he said and let Nat ruminate about the suggestion. How many times that might have happened I have no idea».

Organic or functional?[1]

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ABSTRACT

In 1952 the MoMa organized the exhibition *Built in the USA. Post-war Architecture*: a strong affirmation that the battle for the modern architecture had been won. In 1960, less than ten years later, Philip Johnson declared it "terribly boring", welcoming the "juicy caos" that he observed in the contemporary American architecture. The paper focuses on what was happened during the fifties, looking through the time-old debate between "organic" and "functional", analyzing in particular the trajectory of Eero Saarinen. Against the myth of the *recherche patiente* and the extreme coherence of the Mies buildings, the "style for the job" proposed by Saarinen posed a new question to the critics, along the outbreaking buildings of the 'new' Louis I. Kahn, or the *folies* of Morris Lapidus along the east coast.

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The 50s are believed to have placidly got under way with the third architecture exhibition at MoMA – *Built in USA. Post-War Architecture* – for which Arthur Dexler summoned again Philip Johnson and Henry-Russell Hitchcock for an updated remake of their famous 1932 event – *The International Style* – which had also been held at MoMA. Johnson, however, kept his distance and just wrote the catalogue preface, leaving to Hitchcock the choice of the forty-three buildings.

The exhibition featured modern architecture which had «come of age» (Philip Johnson), i.e., architecture that, having nursed on a rigorous education, was then grown-up, free to do anything it wanted. Frank Lloyd Wright **[Figs. 1-2]** became rehabilitated, in other words, recognized as «modern» in his own right, while «four interpretations of the curtain wall» were identified, including that of the Harrison and Abramovitz' Alcoa Building (1952), with its stamped aluminum facade that appears to have been superimposed over «several thousand television sets» (Drexler).

The battle cries were: openness, difference, plurality, the integration of disparate trends. Even Soleri and Mills were present, if only for the laughs: «the amusing glass and aluminum dome». Western practices were also showcased: the Bay Area Style represented by Mario Corbett; the Wrightian trend: H. H. Harris, Lloyd Wright **[Fig. 3]**; the Miesian one: Gregory Ain, Charles Eames **[Fig. 4]**, Rafael Soriano; and Richard Neutra for the Tremaine House.

FIG. 1 Frank Llyod Wright, Laboratory for Johnson Wax Company, Racine, 1949. Détail of the brick wall ©Ph. D. Rouillard

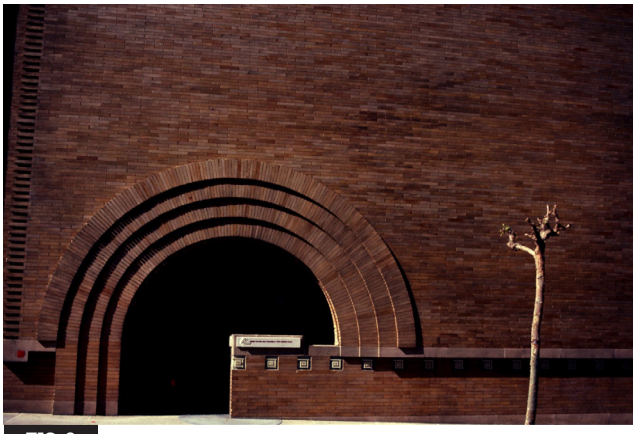

FIG. 2 Frank Llyod Wright, Morris Store, San Francisco, 1949. Détail of the entrance ©Ph. D. Rouillard

That openness was rooted in the belief that «the battle of modern architecture» had been won. Irrefutable evidence of it could be found in the post-war government buildings that America had finally started raising in the «modern style»: «Whether consciously or not, the government has now made US architecture a vehicle of our cultural leadership».[2]

Architectural Design, which reported the survey carried out by the American magazine, interpreted the belated adoption, which also applied to England, as a suspension of mistrust: «Until now, no doubt, we seemed to consider that modern architecture was not serious enough for the gravity of an embassy or a consulate». Half-way through the century that had witnessed the birth of modern architecture, MoMA was thus celebrating its victory in the United States, lauding its benefits and its inalienable heritage: «Every building in this book would look different if it had not been for the International Style».[3] Plurality was in fact being considered only against the background of the great opposition – even if this one was deemed simplistic (by Hitchcock) – between the «organic»

1. First published in *Les Années 50*, Paris, éd. Centre G. Pompidou, 1988, pp. 494-501. English translation : Marina Gaillard.

2. "Architectural Forum", March 1953.

3. H. Russell Hitchcock, A. Drexler, *Built in USA: Post-war Architecture*, New York, Museum of Modern Art, 1952.

Wrigthtian party, and the «functionalist» party of Mies and Le Corbusier. Exhibitors had no idea of what awaited them.

Saarinen

The celebrity at the origin of the scandal – but also the hero who built a monument to America shortly before his death – was Eero Saarinen. First acclaimed by the modernists who saw him as one of the leaders of the Mies-follower generation (with the Centre for General Motors in Detroit), he was then hailed by the specialized press because of his sustained formal research (MIT buildings, skating rink **[Fig. 5]**, airports), and, by the end of a decade, by America as a whole when the monumental Gateway Arch spurted over Saint-Louis in the early 60s. His production was compared with that of the world's largest architecture studio, Skidmore, Owings and Merill.[4] Like most stars, Saarinen was being solicited and his projects were announced several years in advance; he made the front page of "Time Magazine" as well as "Architectural Forum", expectation around his latest works matched that of the premier of a successful film, and he was, of course, unpredictable, surprising and confusing (something that only architects found annoying), as no one could foresee what his next feat would be. «Saarinen does a different building every time he puts pen to paper».[5] Unlike the masters (Mies van der Rohe, F. Lloyd Wright), he built a lot and received huge and prestigious orders. He was recognized by the specialized press, while Wright's «bad pupils» who had strayed to the west or into the deserts (John Lautner, Bruce Goff **[Fig. 6]**, Paolo Soleri), or who were too busy satisfying the aspirations of the middle class (Morris Lapidus), remained marginal. His work would not be suspected of commercialism like SOM's (the Lever Building in New York in 1952 owed its success to its meticulous Miesian interpretation which went almost too far for a building designed to house a detergent company, whose completely smooth glass walls became an advertising icon).

FIG. 3 Llyod Wright, Wayfarers' Chapel, Palos Verdes, 1951. Interior ©Ph. D. Rouillard

4. L. Mumford, *Frozen-Faced Embassy*, in L. Mumford, *The Highway and the City*, New York, Hartcourt, 1963.

5. P. Johnson, *Informal Talks*, 1960.

Widely published, Saarinen took part in the doctrinal debate, without being blacklisted because of his excessively outrageous remarks (like Johnson's at Yale from 1949 onwards). He distinguished himself also from Buckminster Fuller who, like Johnson, but with totally different slogans and diametrically opposed attendance rates, was jumping from campus to campus, showing the road to salvation to mesmerized students who would listen for hours on end to proposals that could not be generalized to all types of programs (the geodesic dome was, despite its designer's ambitions, always presented as a partial solution).

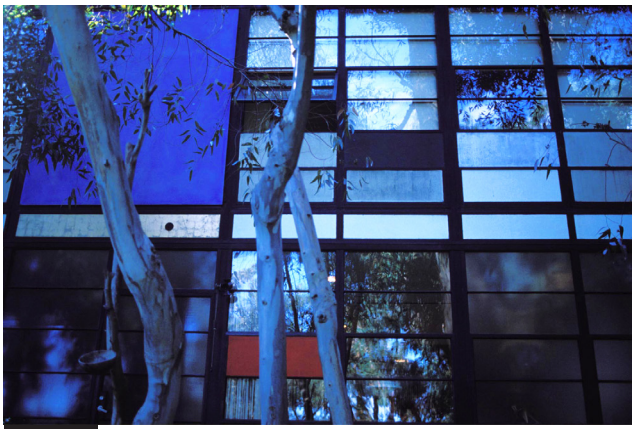

FIG. 4 Charles and Ray Eames, Case Study House, Santa Monica, 1949. Détail of the facade ©Ph. D. Rouillard

The consumption of architecture

What critics immediately perceived as «American» in Saarinen – «his work is American always; his father's to the last remained somewhat Finnish»[6] – or even what

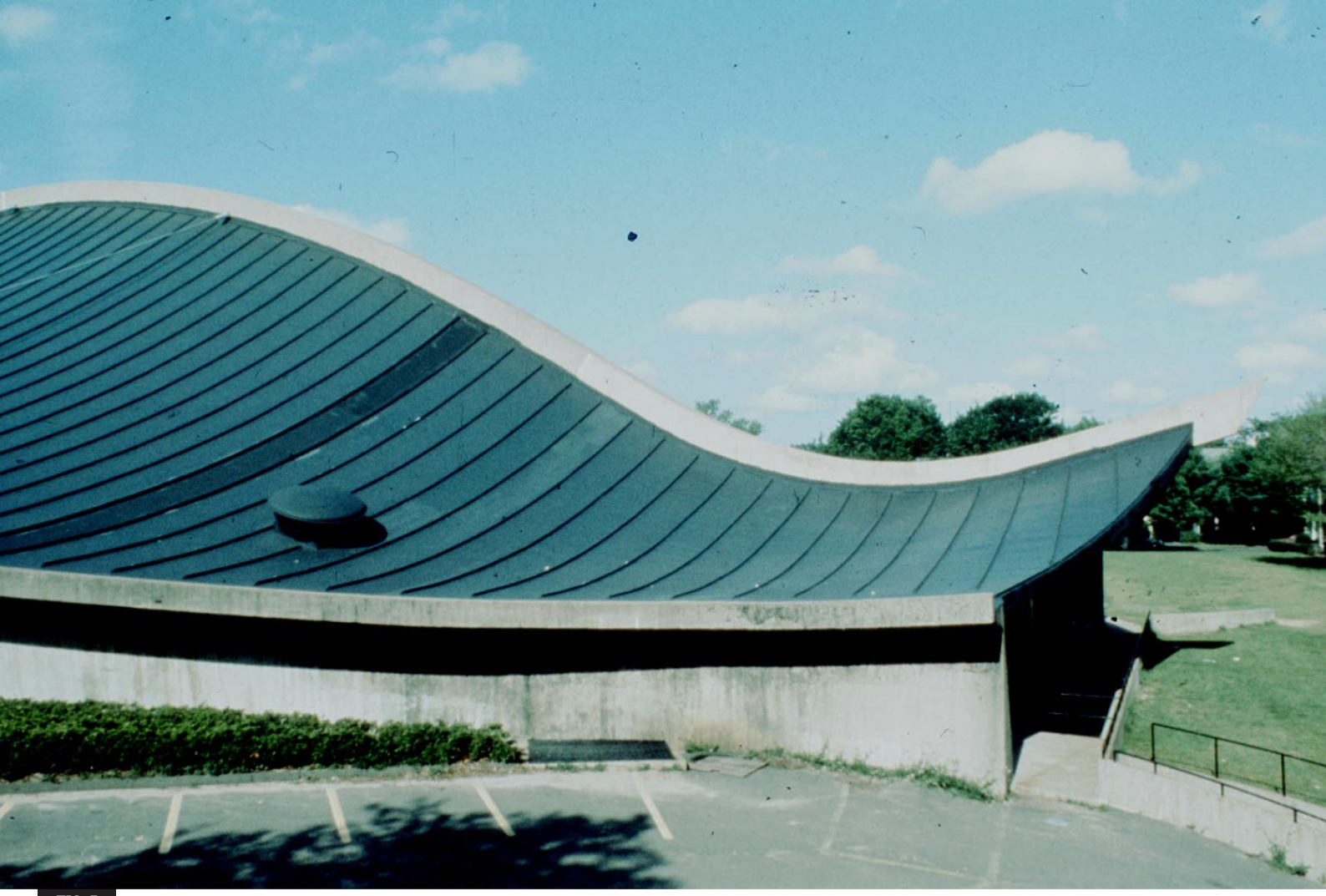

FIG. 5 Eero Saarinen, Skating rink, New Haven, 1958, Detail of the "tail". ©Ph. D. Rouillard

one could call his «americanicity», owed in part to the rare notoriety, both public and professional, that he amassed in his time (unlike Edward Durell Stone, whose playing field remained restricted to the media scene). His popularity was comparable to that of Alvar Aalto in Finland, but Saarinen had more advertising presence and was more demonstrative, provocative without excess, humor or cynicism.

Saarinen approached his projects as deliverables for consumption, which were expected to work (to function, to please), and he perfectly achieved his goal. «Few architects have been so popular with their customers», notes Vincent Scully.[7] Same as Lapidus, yet not entirely relinquishing the discipline of architecture, Saarinen's mind worked like that of a professional in the image and communication fields. Both accomplished commercial success, and that's precisely what was reproached of Lapidus, as well as of Saarinen from the 60s onwards: he would then be accused of «styling»,[8] while until then he had been at worst considered a «form giver».[9]

But Saarinen did not indulge in cinematographic imagery and stage gimmicks to better sell his product, like Lapidus so lavishly did in order to imbue an out-of-this-world atmosphere to his gigantic Florida hotels. Lapidus enriched his entertainment program in the manner of Walt Disney, whose fabulous estate was inaugurated in Los Angeles in 1955, by the use of artifice and the staging of the fake – an attitude which, much to his chagrin, met with no recognition from the architects.

7. V. Scully, *American Architecture and Urbanism*, New York, Praeger, 1969.

8. "Progressive Architecture", March 1961.

9. "Architectural Forum", July 1953.

Saarinen's projects, increasingly turbulent, peculiar and expressionistic, embodied what the architectural doctrine of the 50s was disposed to embrace and accept as architectural work. Neither Minoru Yamasaki nor Durell Stone, and much less Lapidus or Johnson, all of whom, each in his own way, were doing too much, ever managed to cross that threshold into the «publishable».

FIG. 6 Bruce Goff , House, Aurora, 1947, Détail of the entrance ©Ph. D. Rouillard

Lapidus recognized his own approach in Saarinen's work, where space is organized along emotional sequences, especially in the TWA airport terminal (New York, 1956-1962) **[Fig. 7]**, while Scully believed, from the General Motors building onwards, that «Saarinen was already showing his remarkable instinct for appealing to American taste»; «General Motors stretches out across the landscape and glitters and snaps like something designed for the moon».

FIG. 7 Eero Saarinen, TWA airport Terminal, NY, 1956. Detail of a « leg » and Interior ©Ph. D. Rouillard

This first work done away from the paternal studio was far from being a faithful Miesian rendition. First, Saarinen seized on the model of the IIT buildings, made the mullions thinner, stretched the curtain wall, lightened what had already been lightened, composed in a more symmetrical manner; then, he substituted the original colors of the bricks for «tones of burnt orange and blue, very bright, and not unlike Persian faience ware».[10] **[Fig. 8]** All of Drexler's descriptive vocabulary suggests a bright, shimmering, eye-catching building, with greenish blue membranes and sparkling brick panels over the evenly flat site, and those amazing dark blue aeration columns, emerging from the ground without connection to the building dynamos that they aerate, symmetrically aligned on both sides, such as column shafts rising from the ruins of a forum. For Saarinen, «if a large building today must be impersonal, let it at least have an exciting impersonality».[11] Saarinen carried out austere or official programs without betraying himself, nor abandoning the use of materials and techniques in vogue, that is to say «modern» (steel, glass, reinforced concrete, brick). He flaunted a constructive structuralism made of great spans, cantilevers and technical prowess, while entertaining a dialogue with the bosses – Mies and the engineers Nervi and Candela, who enjoyed a wide audience in the United States.

10. H. Russell Hitchcock, A. Drexler, *Built in USA...*, cit.

11. "Architectural Forum", November 1951.

The lack of repetition in his projects was almost a guarantee of success (departure from it would turn into failure: the American Embassy in London, «a copy» of the Oslo one, according to Mumford). This constant change, always highlighted, can be easily interpreted as a reaction to Mies's commitment to deliver an envelope capable of accommodating any activity. Whereas Mies claimed time and again that «it is not necessary or possible to invent a new kind of architecture every Monday morning», Saarinen advocated a form that expresses the function, brings it alive and makes it felt («the style for the job»). Mumford interpreted that drive to imprint a different «trademark» to each project, as a strictly commercial attitude typical of many buildings of the time, some of which could have been put on the market supported by slogans such as: «And now: a new taste!» or «You, too, can be years ahead with the latest model».[12]

Outrage broke out following the publication of Saarinen's two projects for the MIT Campus **[Fig. 9]** in 1955 (the circular brick chapel surrounded by water and the auditorium covered by a dome fastened by three stakes) and some threw up their hands in horror. For Eugenio Montuori: «The mess is complete»; for Nervi «extravagance» (a dome resting on the ground!); for Bruno Zevi: «the figurative dead-end», «perhaps even the moral crisis of today». Yet, Zevi recognized Saarinen as «one of the most remarkable architects of his generation»: «the flaws of a great architect are always significant».[13]

Saarinen dominated and disrupted the decade, which was the last one when America still basked in the certitude of its immense power: «Saarinen's buildings are the most popular packages of their time and a revealing image of it. Through them runs the insistent American instinct for simplistic and, in this case, spectacular solutions» (Scully).

FIG. 8 Eero Saarinen , General Motors, technical Center, Detroit, 1951, Detail of the « persian faience » wall ©Ph. D. Rouillard

13. "Architectural Forum", October 1955.

12. L. Mumford, *The case against "Modern Architecture"*, in "Architectural Record", April 1962.

The Roadtowns

Recognizing Saarinen as a major figure in American architecture is not in step with the history of architecture, which is far keener to track the beginnings of Louis Kahn (Art Gallery of Yale University, 1952, although the magazines rather focused on the tetrahedral sections of the ceilings) and the premises of postmodernism with Philip Johnson, who nevertheless remained unknown to American publications throughout the decade. Magazines did not only show the monthly degree of affection towards individual architects. They also revealed the extent to which the buildings that had started to cluster along the freeways and the

FIG. 9 Eero Saarinen, Auditorium and Chapel MIT Campus, 1955. Interior of the Auditorium and detail of the brick wall of the Chapel ©Ph. D. Rouillard

main street, forming roadtowns, were becoming a very pressing issue, not ignored by architects in the way that Lapidus' production, for one, could have been. Admittedly, it was the English magazine "Architectural Review" who twice (in 1949 and in 1955) cried its «outrage» at the shameful proliferation that America's characteristic «hands-off» approach was engendering. Magazines first tried to understand the phenomenon («a country with fifty million cars lives and must live along the roads») and acknowledged the vitality, good sense and smartness of building alongside heavily travelled routes, a practice soon imitated by banking companies who started moving their headquarters to such areas.[14] When Robert Venturi took his Yale students on a study tour of the Las Vegas strip in 1968, he operated a reversal in value of an already identified urban event. He pushed further the «understanding» of that American production – already engaged 15 years earlier – to the point of making it into an aesthetic object, at a time when everyone else just wished to put an end to it or to replace it by IM Pei's or Victor Gruen's shopping malls.[15]

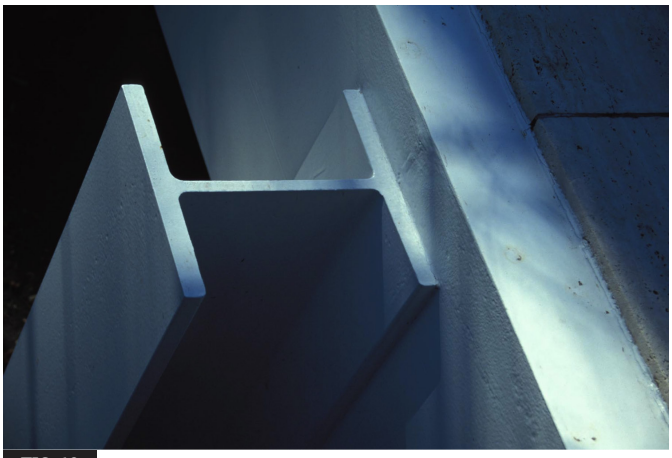

FIG. 10 Mies van der Rohe, Farnsworth House, Plano, 1950. Detail of the structure ©Ph. D. Rouillard

14. *Ibid.*

15. W. Gropius, *Unity in Diversity*, in VV. AA., *Four Great Makers of Modern Architecture*, New York, Columbia University, 1961.

The magazines switched from a history of vanguards and changes to a history in which change itself was continuous, permanent, and worked as the ongoing drive of both the press and architecture itself, Saarinen being their true turbo engine. The plight of Wright or Mies was being heard – too often wrongly – and architecture magazines were finding in Saarinen the architect in whom the time-old debate between «organic» and «functional» had found new life in the absence of a serious alternative.

This does not mean that Wright – who saw orders pouring in until his death in 1959, when the construction of the Guggenheim Museum in New York started – and Mies van der Rohe were absent from the architectural scene and not influential on mass production. Mies's prototype works, in particular, were all being immediately published (the Farnsworth House [Fig. 10] and the Crown Hall at IIT with their structure thrown out to the outside or the twin towers of the Lake Shore Drive Apartments) and widely emulated. Those impoverished versions («glass boxes») standardized the urban landscape ad nauseam; few were as successful as some in California, especially after the Case Studio House program

FIG. 11 Craig Ellwood, Case Study House, CSH 16, LA, 1960 ©Ph. D. Rouillard

launched in 1949 by John Entenza. Mies's followers in California were creating from standardized components and applying to any terrain the theme of industrialization and its corollaries (low cost and speed of construction), even if such projects remained at the prototype stage. Twenty houses would be built, including some by Charles Eames (who also worked with Saarinen in the development of a CSH for Entenza in 1949), Craig Ellwood, who developed metal **[Fig. 11]** and then wooden versions **[Fig. 12]**, and Pierre Koenig, whose 1959 CSH overlooking the illuminated grid of Los Angeles would make the cover of magazines.

FIG. 12 Craig Ellwood, Kubly House, Pasadena, 1965 ©Ph. D. Rouillard

Reversals

Saarinen disappointed the modernists when he switched from the Miesian stance – «architecture has nothing to do with the creation of forms» (1950) – to the «search for form», even when it was just functional. Durell Stone joining the ranks also came as a shock, especially with regard to official buildings: the US Embassy in Delhi in 1957, profusely ornamental, while Le Corbusier was building Chandigarh, or the United States pavilion for the Brussels World Fair in 1958, a kind of lit up flying saucer posed on a pond. Johnson's doctrinal reversal was, in turn, strictly unmentionable, even unthinkable, and it would not be released nationwide until the early 60s. While Saarinen kept navigating the decade with unprecedented media coverage, Johnson roamed through it in an underground but nevertheless destabilizing way: «the only principle that I can conceive of believing in, is the Principle of Uncertainty. It is a brave architect who can possess convictions and beliefs».[16] In 1969, Mies's most famous students – Skidmore, Owings and Merrill – would also catch the bug, signaling the return of the «decorative» with the Hancock Building, today certainly the most eloquent building in Chicago, which exposes the diagonal bracing over its truncated cone shape. They would hit back in San Francisco the same year with the Crown Zellerbach Building, and from then on never stopped copying Johnson...

16. "Progressive Architecture", March 1961.

A juicy chaos

In 1950, Johnson enumerated the references and the aesthetic reasons that led him to the realization of his Glass House (1949) **[Fig. 13]**. Cultivated eclecticism sets the tone: on one side, the «modern» influences - Le Corbusier for the curved tracks, Mies for the building's setting, the bricks and the glass (the Farnsworth house was finished at the same moment), De Stijl for asymmetry, Malevitch for yet something else, and Johnson does not know to whom he owes the kitchen; on the other side, ancient sources, whether neo-classical or romantic: the Greeks

through Choisy, the Schinkel casino, and Ledoux's pavilions. Treating the history of architecture as a reservoir from which to draw, and borrowing from others, were, at the time, new attitudes. «Creation» was no longer inscribed in the being of the architect from scratch. In Johnson, the voice of the devil himself could be heard (V. Scully). In 1954, in Harvard – Gropius's adopted homeland –, he delivered a speech which was published the following year by Yale students, under the ironic title of *The Seven Crutches of Modern Architecture*, clearly plagiarizing John Ruskin's seven lamps. The seven crutches advocated the abandonment of the rules of functionalism that he had significantly contributed to implement in the United States. In 1960, when he was barely being listened to, he declared modern architecture «terribly boring». The fate of modern architecture would be sealed and its defeat recognized as such by Johnson:

FIG. 13 Philip Johnson, Philip Johnson's house («Glass House»), New Canaan, 1949, Interior and Guest Pavilion ©Ph. D. Rouillard

> It is becoming increasingly difficult to talk about architecture. Twenty or thirty years ago [...] it was relatively simple. We had a battle to fight [...] Modern architecture is going to pot [...].
>
> [...] Today I am ashamed of the terribly scattered work that I do. I have no faith whatever in anything [...] Briefly, functional eclecticism amounts to being able to choose from history whatever form, shape or direction you want to, using them as you please [...]. I have no really expressible attitude on architecture, and if we are going to have chaos, I feel that we might as well have a nice, juicy chaos.[17]

17. P. Johnson, *Informal...*, cit.

In March 1961, the movement spread; the magazine *Progressive Architecture* took stock of the state of architecture: it was confusion, «chaotism». Ten years after the MoMA exhibit, there was no longer any hope to see the ideals of modern architecture lead future works. The same words, coming from the mouths of the fifty interviewed architects, conveyed as much regret as pleasure: variation, diversity, freedom, rebellion, revolution. Condemned pell-mell were the «Curtain Wall Style», the hotdog-stands, the constructions of Saarinen (the fallen angel), Miami's beaches, the exhaustion of modes, the excessive variety in the choice of materials and techniques and the disappearance of all

typologies (hyperbolic structures had been placed on all buildings, from churches to supermarkets). Identifying the culprits sufficed. A regressive trend seeking to stop the bleeding came together, along the lines of Mies and Khan, who knew «which way to go». If Louis Kahn was not yet fully recognized, his imminent success would owe in part to his ability to return to stable forms based on a logic of materials and the quest of order in the face of chaos. But most architects still felt that architecture was entering a new era, where everything remained to be done within the modern framework established by Wright, Mies and Le Corbusier. Much like Siegfried Giedion who, at the time, finally found in Jorn Utzon the true successor of the pioneers, few were grasping the nature of change, which was still being viewed as some sort of liberation, a rehabilitation of expression as independent from the structure or the insertion in a context. Architecture – the real one – was still alive; styling was only a rough spot on the way.

It seems unnecessary to say that what followed – up to our own day in France – proved Johnson right: «We are going to a foggy chaos. Let us enjoy the multiplicity of it all. Let the students have a different hero every year. Maybe it is good for them».

Modernism[1]

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NEW VERSION

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ABSTRACT

Although the word "modernism" is commonly used today to refer to twentieth-century modern architecture, its occurrence was rare in the first half of that century. Instead, a variety of terms were used, including *Neues Bauen, Nieuwe Bouwen, Architettura Razionale*, "Modern Architecture", and "Modern Movement", reflecting the values and emphases of its various proponents. This essay gives a brief history of the evolution of the vocabulary employed to describe modern architecture during the 1920s and 1930s, and then proposes several reasons for the shift in vocabulary that began to occur after the rise of postmodern architecture.

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modernism, *Neues Bauen*, *Nieuwe Bouwen*, Modern Movement, postmodernism

Today we use the word "modernism" when we refer to modern architecture or the Modern Movement, or to what German and Dutch practitioners used to call *Neues Bauen* or *Nieuwe Bouwen*.[1] Now, we even say "early modernism" (pre-World War I) and "late modernism" (post-World War II), and even occasionally "high" and "classic" modernism (a seeming oxymoron), echoing the terms that art historians often use to characterize certain styles, such as early and late Renaissance. The question is why. Although this shift in vocabulary seems to have occurred almost unconsciously, it might be seen as indicating how the notion of modern architecture itself changed during the twentieth century: from a living movement committed to specific values and aspirations to a codified style and cultural period of the past, usually the two decades between the world wars.

The word "modern" has a long genealogy and for many years it meant simply "contemporary", "of the present", as opposed to signifying qualities of the past. As the dictionary tells us, its usage dates back to the late Latin *modernus*; Vasari, for example, when referring to the art of his own time — mannerist or high Renaissance works — described it as the *buona maniera moderna*. Its current application in cultural discourse is usually traced back to late sixteenth-century France: namely, the famous battle between the Ancients and the Moderns, waged in French literary circles, in which Charles Perrault, author of many of the most famous French fairy tales and brother of Claude Perrault, decisively took the side of the "Moderns". In that period, the word referred to a variety of styles and positions, most of which can be lumped together as "not antique": Gothic, for example, was "modern" for André Félibien (as it was earlier for Filarete, and later for Abbé Laugier); likewise, Claude Perrault's doubling of Corinthian columns on the Louvre's east façade was modern. A half century later, Rococo would be called the *style moderne* or *goût moderne*. Further complicating any easy division between past and present are the complex and intertwined histories of classicism and modernism; as Jürgen Habermas has pointed out, this has involved both opposition and alliance, with the simplicity and timelessness of classicism sometimes seen as anticipating or leading to modernism.[2] It is no surprise that many modern architecture history survey classes and texts begin with the last half of the eighteenth century.

During the late nineteenth century, the word "modern" began to appear in titles of English and French architecture books, such as Paul Sédille's *L'Architecture moderne en angleterre* (1890), which opens with a plate of Somerset House as an illustration of modern architecture, and James Fergusson's *Modern Styles of Architecture*, the last volume of the second edition of his *History of Architecture* (1873–76). In Germany, the word shows up as early as 1883 in Rudolf Redtenbacher's primer *Die Architektonik der modernen Baukunst*. Clearly, in these cases "modern" meant simply "new", and, as the plural in Fergusson's title indicates, "modern" had no particular

1. A shorter version of this essay was written in honor of Adrian Forty and published in I. Borden, M. Fraser, B. Penner (eds.), *Forty Ways to Think About Architecture: Architectural History and Theory Today*, London, Wiley, 2014.

2. J. Habermas, *Modernity - An Incomplete Project*, in H. Foster (ed.), *The Anti-Aesthetic: Essays on Postmodern Culture*, Port Townsend (WA), Bay Press, 1983, pp. 3–4.

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stylistic association or programmatic agenda. This was still the case when Banister Fletcher published his diagram of architecture's evolution, *The Tree of Architecture* (1896).

It was not until the emergence of Art Nouveau in the 1890s that the word "modern" again designated a new stylistic tendency, one that stood for a radical break with past historical styles. While nearly every country gave Art Nouveau its own name — *Stile floreale, Jugendstil, Sezessionstil* — all claimed this new movement as "modern". In fact, in Catalonia, the style was called *modernisme*, a label that sometimes extended to Art Nouveau in general.

Even this important break, which is often seen as marking both the end of nineteenth-century historicism and the beginning of the Modern Movement, is not as important to subsequent usage of the word "modern" in architecture as Otto Wagner's seminal book *Moderne Architektur* of 1896.[3] This book had a similar impact on architects as that of Danish critic Georg Brandes's series of critical essays *Det moderne Gjennembruds Mænd* and as Eugen Wolff's declaration of *die Moderne* had a decade earlier on central and northern European literary circles. Like the German literary magazines of the early 1890s, Wagner's text was filled with phrases such as "modern life", "modern man", "the modern eye", "modern social conditions"; and by the second edition of his book, the words *Moderne* and *modernen* appear with insistent repetition (nine times in the two-page preface).[4] Without question, it is Wagner's book that led to the association of functionalism, rationalism, and the elimination of "useless" decoration with the words "modern architecture" (even if his own buildings were still a far cry from the stripped-down forms we associate with the International Style). In other words, Wagner gave the phrase "modern architecture" specific ideological content. Just a few years later, other architects such as Hermann Muthesius, Henry van de Velde, Hendrik P. Berlage, Adolf Loos, and Walter Gropius followed his lead.[5] In *Stilarchitektur und Baukunst*[6] of 1902, Muthesius not only repeats Wagner's *die Moderne* but also refers to "modern style", "modern sensitivity", and "modern dress".

In central Europe, Wagner's vocabulary persisted for the next two decades but, as Rosemarie Haag Bletter has documented, by the mid-1920s German and Dutch architects began to prefer the adjective *neues* or "new" to "modern". Bletter stated that this choice might have been influenced not only by the phrase *neue Sachlichkeit* and titles of newspapers such as "Die neue Zeit" but also — because "new" implied change — by a desire to suggest an emerging process rather than a fixed style.[7] In fact, there seemed to be for some architects a certain discomfort with the word "modern" as an exhausted and decayed style. This may have been sparked in part by the reaction against the term that had already arisen in German literary circles before the war; in 1909, Samuel Lublinski had announced *Der Ausgang der Moderne*,[8] and some literary Expressionists proudly declared how "unmodern" they were.[9] Although this extreme

3. Note for example, that Alan Colquhoun begins his survey with Art Nouveau, whereas Barry Bergdoll ends his nineteenth-century survey with its emergence. See A. Colquhoun, *Modern Architecture*, Oxford-New York, Oxford University Press, 2002; B. Bergdoll, *European Architecture 1750–1890*, Oxford-New York, Oxford University Press, 2002.

4. O. Wagner, *Moderne Architektur*, Vienna, Anton Schroll, 1898, pp. 7-9.

5. See, for example, H. van de Velde's essay *Die Rolle der Ingenieure in der Modernen Architektur*, in van de Velde, *Die Renaissance im modernen Kunstgewerbe*, Berlin, Bruno und Paul Cassirer, 1901, pp. 109-23; H. P. Berlage, *Gedanken über Stil*, Leipzig, Zeitler, 1905; K. Scheffler, *Moderne Baukunst*, Berlin, Julius Bard, 1907; and W. Gropius's essay *Die Entwicklung moderner Industriebaukunst*, in *Jahrbuch des Deutschen Werkbundes*, Jena, Diederichs, 1913.

6. H. Muthesius, *Stilarchitektur und Baukunst: Wandlungen der Architektur im XIX. Jahrhundert und ihr heutiger Standpunkt*, Mülheim-Ruhr, Schimmelpfeng, 1902; trans., *Style-Architecture and Building-Art: Transformations of Architecture in the Nineteenth Century and Its Present Condition*, S. Anderson (ed.), Santa Monica (CA) - Chicago, Getty Center-University of Chicago Press, 1994.

7. R. H. Bletter, *Introduction*, in A. Behne, *The Modern Functional Building*, Santa Monica (CA), Getty Research Institute, 1996, pp. 2–3.

8. See S. Lublinski, *Der Ausgang der Moderne: ein Buch der Opposition*, reprint, Tübingen, N. Niemeyer, 1976 (1909).

9. M. Bradbury, J. McFarland, *The Name and Nature of Modernism*, in *Modernism*, M. Bradbury, J. McFarland (eds.), Harmondsworth, Middlesex, Pelican, 1974, pp. 39–40.

aversion to the word was rare in architecture circles before World War I, and for the most part hesitations about the word did not emerge until later, the literary revolt may have had something to do with why Muthesius urged Otto Wagner to change the title of his book *Moderne Architektur* — that is, to eliminate the word *moderne* because of its association with the German noun *Mode*, and to eliminate *Architektur* because of its link to historical styles. Wagner willingly complied, and the title of the book's fourth edition in 1914 was *Die Baukunst unserer Zeit*.[10] Adolf Behne's book *Der moderne Zweckbau*,[11] written in 1923, might be seen as representative of the early period, in contrast, for example, to Ludwig Hilberseimer's *Internationale neue Baukunst*,[12] Walter Curt Behrendt's *Der Sieg des neuen Baustils*,[13] or Gustav Adolf Platz's *Die Baukunst der neuesten Zeit*,[14] all from 1927, reflecting the mindset of the later period.[15] Each author created his own emphasis through his choice of vocabulary — Gropius and Hilberseimer stressing the international nature of the movement (with its resonances, for some, of the Communist International), others advocating building as opposed to architecture, challenging the profession's traditional focus on aesthetic attributes. All of these early studies are much more diverse and varied in their architecture examples than the later codified lineage that Sigfried Giedion presents in his influential book *Space, Time and Architecture* (1941).[16] Behne, for instance, includes "organic" and geometric works; in *Internationale Architektur* (1925),[17] Gropius shows Soviet and American buildings alongside his own designs. In leftist circles in Germany, eastern Europe, and the Soviet Union, while the term "modern architecture" occasionally appeared, another vocabulary emphasizing the strictly objective or "scientific" dimensions of buildings emerged, featuring words such as "constructivism", "productivism", "functionalism", and "minimum dwelling".

In France, where the word "modern" had long been used, Le Corbusier and André Lurçat shied away from using it at all, preferring to say simply "architecture", as in *Vers une architecture*[18] (1923) and *Architecture* (1929),[19] or else "new", as in Le Corbusier and Pierre Jeanneret's "Five Points of a New Architecture" (1926). Like Wagner and Loos before them, they sought to make the modern both new and timeless; in this respect, their image of modernity is exactly the opposite of Baudelaire's in his essay *The Painter of Modern Life*,[20] which extols fashion and emphasizes the changing, fleeting nature of modernity. Once again, architects seem to have resisted associations of "modern" with "mode" or fashion. In fact, even Rob Mallet-Stevens, who used the word "modern" and who was the darling of the progressive chic crowd, felt the need to distinguish sharply between modern design and fashion, declaring that the pre-war British taxi was more modern than current "stream-lined" vehicles, whose designers saw modernity as an issue of image and surface and not of function.[21]

The term "modern architecture" gained the most currency in England and the United States — in fact, just at the moment when the word "modern"

10. See H. F. Mallgrave, *Introduction*, in O. Wagner, *Modern Architecture*, Santa Monica (CA), Getty Center, 1988, p. 45.

11. A. Behne, *Der moderne Zweckbau*, Berlin, Ullstein, 1964 (1926). See also *The Modern Functional Building*. Although the book was published in 1926, Behne had written the text three years earlier.

12. L. Hilberseimer, *Internationale neue Baukunst*, Stuttgart, J. Hoffmann, 1927.

13. W. C. Behrendt, *Der Sieg des neuen Baustils*, Stuttgart, Fr. Wedekind, 1927; trans. *The Victory of the New Building Style*, D. Mertins (ed.), Los Angeles, Getty Research Institute, 2000.

14. G.A. Platz, *Die Baukunst der neuesten Zeit*, Berlin, Propylaea, 1927.

15. Bletter, *Introduction*, pp. 2–3.

16. S. Giedion, *Space, Time and Architecture*, Cambridge (MA), Harvard University Press, 1941.

17. W. Gropius, *Internationale Architektur*, Munich, A. Langen, 1925.

18. Le Corbusier, *Vers une architecture*, Paris, G. Crès, 1923.

19. A. Lurçat, *Architecture*, Paris, Sans pareil, 1929.

20. C. Baudelaire, *The Painter of Modern Life*, in C. Baudelaire, *The Painter and Modern Life and Other Essays*, J. Mayne (trans. and ed.), London, Phaidon, 1964.

21. R. Mallet-Stevens, *La Mode et la moderne*, in *Rob Mallet-Stevens Architecte*, D. Deshoulières et al. (ed.), Brussels, Archives d'Architecture Moderne, 1980, p. 372.

was loosening its hold in Germany and Austria. Examples that immediately come to mind are: Henry-Russell Hitchcock's *Modern Architecture: Romanticism and Reintegration* of 1929;[22] the so-called *International Style* exhibition of 1932, which was actually called *Modern Architecture: International Exhibition* in its original manifestation; the numerous articles of P. Morton Shand, introducing the new style to the readers of "The Architectural Review"; and the English primers of the 1930s and '40s, such as Howard Robertson's *Modern Architectural Design* (1932),[23] F. R. S. Yorke's *Modern House* (1934),[24] and J. M. Richards's *Introduction to Modern Architecture* (1940).[25] Along these lines, one might also note that Bruno Taut's *Die neue Baukunst in Europa und Amerika* (1929)[26] was called *Modern Architecture* (1929) in the simultaneous English edition.[27] In the 1930s, Herbert Read's anthology *The Modern Movement in English Architecture, Painting, and Sculpture* (1934)[28] and, more important, Nikolaus Pevsner's early history *Pioneers of the Modern Movement: From William Morris to Walter Gropius* (1936)[29] brought Otto Wagner's word *Moderne* to England, and it is undoubtedly due to Pevsner's influential book that the term "Modern Movement" joined the more general term "modern architecture" as the standard designations in Britain for progressive architecture until about 1970. It seems hardly coincidental that when Pevsner's book was published in 1949 by the Museum of Modern Art, its title was changed to the less charged *Pioneers of Modern Design* (1949).[30] More often than not, modern architecture in the U.S. was seen as a style, not a movement, as Hitchcock and Johnson's post-exhibition publication *The International Style* (1932)[31] had already made clear.

Despite the plurality of terms for modern architecture in the 1920s and 1930s and the diversity of examples in the early surveys, the word "modernism" was rare in architecture circles during this period. American author and critic Sheldon Cheney used it as a general descriptive term in his book *The New World Architecture* (1930),[32] a book that was widely read in the States, though almost completely unknown in Europe.[33] In Britain, "modernism" seems to have been primarily a literary term, employed to describe the work of T. S. Eliot, James Joyce, and Virginia Woolf.[34] When the word was occasionally applied to architecture in Europe before World War II (and even afterward), its meaning was usually derogatory, and this was true both for advocates of modern architecture and for its detractors. As already mentioned, it carried connotations either of superficial fashion or of puerile rebellion. In 1929, W. R. Lethaby, who had in 1915 written the essay *Modern German Architecture and what we can learn from it*, declared «Modernism [is] another sort of design humbug to pass off with a shrug–ye olde Modernist Style».[35] From the traditionalists, one of the most vehement attacks came from Reginald Blomfield. Originally an Arts and Crafts practitioner and employee of Norman Shaw, Blomfield advocated a kind of stripped-down "neo-Georgian" architecture. In his polemic *Modernismus* (1934),[36] he railed against modern architecture's

22. H.-R. Hitchcock, *Modern Architecture: Romanticism and Reintegration*, New York, Payson & Clarke, 1929.

23. H. Robertson, *Modern Architectural Design*, London, Architectural Press, 1932.

24. F. R. S. Yorke, *Modern House*, London, Architectural Press, 1957 (1934).

25. J. M. Richards, *Introduction to Modern Architecture*, Baltimore, Penguin Books, 1940.

26. B. Taut, *Die neue Baukunst in Europa und Amerika*, Stuttgart, J. Hoffmann, 1929.

27. Bletter, *Introduction*, p. 3.

28. H. Read, *The Modern Movement in English Architecture, Painting, and Sculpture*, London, Cassell, 1934.

29. N. Pevsner, *Pioneers of the Modern Movement: From William Morris to Walter Gropius*, London, Faber & Faber, 1936.

30. N. Pevsner, *Pioneers of Modern Design*, New York, Museum of Modern Art, 1949.

31. H.-R. Hitchcock, P. Johnson, *The International Style: Architecture since 1922*, New York, W.W. Norton, 1932.

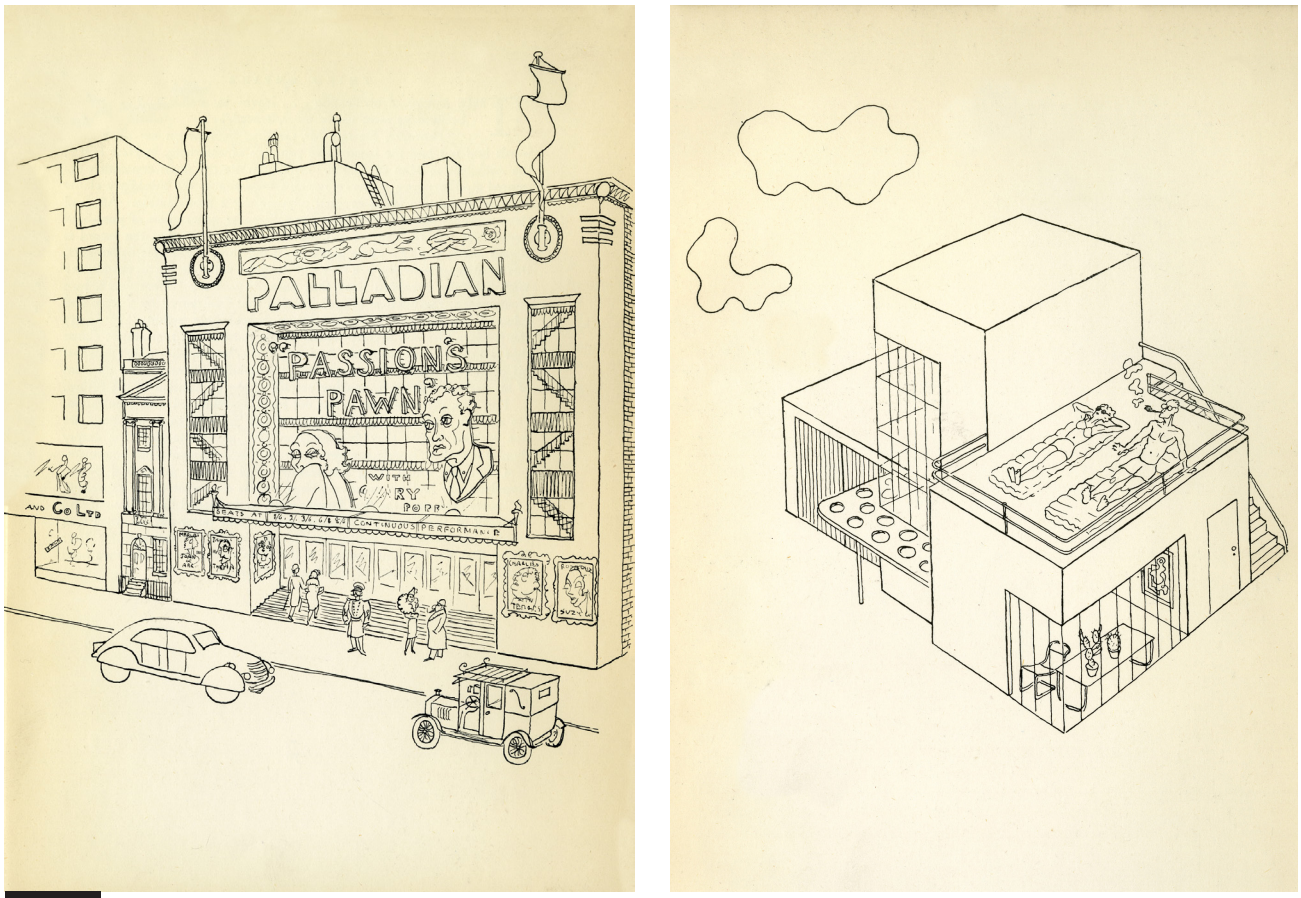
32. S. Cheney, *The New World Architecture*, New York, Tudor, 1930. I am grateful to Joan Ockman for this reference.

33. Alan Colquhoun confirmed this point in a conversation with the author, September 2006. Cheney uses the term "modernism" several times in his introduction, but rarely in the text as a whole.

34. But even in English and American literary circles, the word "modernism" is rare before the 1970s. See A. Eysteinsson, *The Concept of Modernism*, Ithaca (NY)-London, Cornell University Press, 1990, pp. 1–5. The word "modernism" does appear in American periodicals occasionally in the 1930s and 1940s, including in the title of Philip Johnson's negative review of Cheney's book *Modernism in Architecture*, appearing in "The New Republic" (vol. LXVI, 18 March 1931, No. 850, p.134). See also an interesting article by Brinkerhoff Jackson, *Modernism in Architecture: Rockefeller Center* appearing in "The Sewanee Review" (vol. XLIV, April–June 1930, No. 2, pp. 179–87), in which Jackson calls "Modernism" in architecture a bourgeois style and distinguishes it from German and Soviet socialist developments in architecture. Hugh Morrison also uses the term "Modernism" in his essay *After the International Style — What? (*"Architectural Forum", May 1940, pp. 345–47) but now as a general term, which has historical phases, ranging from the early International Style to more recent regional and ornamental variations.

35. W. R. Lethaby, *Letter to Harry Peach*, March 1929, quoted in J. Holder, *"Design in Everyday Things": Promoting Modernism in Britain, 1912–1944*, in *Modernism in Design*, P. Greenhalgh (ed.), London, Reaktion Books, 1990, p. 123.

36. R. Blomfield, *Modernismus*, London, Macmillan, 1934.



FIGS. 1, 2 Osbert Lancaster, "Modernistic" (left) and "Functional" (right) architecture, *Pillar to Post: English Architecture without Tears*, 1939. Lancaster captured in these cartoons the differences between fashionable "Modernistic" architecture" and "Twentieth-Century Functional" architecture. He called the former «revolting», whereas he described the latter as having an effect an «excellent and revivfying» effect, although it too was subject to ridicule (to wit, a Le Corbusier-like figure sunbathing in the often «impossible» English climate.)

complete rejection of tradition and custom **[Figs. 1, 2]**. His use of the German word *Modernismus* was hardly accidental, linking the new cultural developments to cosmopolitanism — i.e., to the Communist tendencies of some of the hard-core German practitioners. However, one should note that the book was a general indictment of modernism, including modern literature, music, and architecture. When Blomfield referred to architecture specifically, the term he employed was "new architecture", just as Cheney did.

At this early date, one of the few instances of modernism being used in Britain in an architecture context either neutrally or positively was in an article published in "The Architecture Review" in 1930 on new architectural sculpture. But given the wide range of examples in that text (American Art Deco, late national romanticism, Viennese social housing), it is evident that the word hardly carried the connotations that it has today: it had not yet become either an ideological movement or a codified style.[37] Such diversity, also present in the architecture histories of the 1920s, was largely absent from the teleological and operative trajectories of two of the most influential books of the 1930s or 1940s, Pevsner's *Pioneers of the Modern Movement* and Giedion's *Space, Time and Architecture*. As Pevsner candidly admitted in 1966, «To me what had been achieved in 1914 was *the* style of the century. It never occurred to me to look beyond».[38]

37. S. Casson, Modernism, "The Architectural Review", September 1930, No. 68, pp. 121–26. Christopher Wilk cites this source in his very useful introduction to the exhibition catalogue, *Modernism: Designing a New World, 1914–1939*, London, Victoria and Albert Museum, 2006, p. 415, n. 300. The word "modernism" was also used positively in 1930 by Howard Robertson and Frank Yerbury in their article on two early women designers Adrienne Gorska and Sara Lipska, but again their designs, while modernist, would hardly meet Hitchcock and Johnson's stylistic criteria; it is interesting to note that Robertson and Yerbury also refer to the "Modern Movement" in their discussion of women and modern design. See H. Robertson, F. Yerbury, *"The Woman Modernist": Some Striking French Interiors*, in "The Architect and Building News", 4 April 1930, No. 123, pp. 449–52. Just three years earlier, "modernism" was used as a derogatory term in the annual address that Gilbert Jenkins, the president of the Architectural Association, gave. Jenkins claimed that Le Corbusier's two houses at *Weissenhof Siedlung* in Stuttgart were only fit for a "vegetarian bacteriologist". G. Jenkins, *Modernism in Architecture*, in "Arena: The Architectural Association Journal", vol. XLIII, November 1927, No. 489, p. 160.

38. N. Pevsner, *The Anti-Pioneers*, 3 December 1966, in N. Pevsner, *Pevsner: The Complete Broadcast Talks: Architecture and Art on Radio and Television, 1945–1977*, G. Games (ed.), London-New York, Routledge, 2016, p. 295.

So when did our vocabulary change and why? How did the word "modernism" suddenly become so ubiquitous in architecture? What does this change mean? In hindsight, it appears the present-day usage can be traced to three phenomena: first, the gradual realization that modern architecture itself could no longer be seen as a collective ongoing project, sharing common goals and a unified aesthetic; second, the widespread influence of other fields on architecture writing and criticism from the 1970s to the present; and third, the increasingly international dissemination of architecture theory — more specifically, the increasing hegemony of American and British architecture history and theory in shaping historical narratives and ideas — and by extension our language in architecture.

Many architecture historians would trace the first of these generating tendencies, what might be called "modern architecture's self-critique", back to the 1930s and early 1940s, with its new attention to regionalism and monumentality. But for the profession at large, the dissatisfaction with the dogma of the heroic first generation emerged full-scale in the 1950s, after the tragedies of World War II, when architects became increasingly aware of the Modern Movement's failure both to generate social reform and to create a formal language with broad popular appeal. A whole new set of "isms" and styles (the New Empiricism, the New Humanism, Brutalism, Regionalism, Neo-Liberty, etc.) came to the fore, along with a new critical examination of the limits of functionalism by younger CIAM members, such as the Smithsons and Aldo van Eyck, who would go on to form Team 10. During the 1950s, the word "modernism" was rarely used. Clearly, though, modernist dogma (its functionalism, structural rationalism, and visions of social regeneration) and the increasingly formulaic language of the "International Style" (namely, its flat roofs, simple geometric forms, and austere white walls) no longer comprised the only, or even the dominant mode, of making architecture. This reaction against the universalist doctrine and reductive aesthetic of modern architecture intensified in the 1960s with the publication of Robert Venturi's *Complexity and Contradiction in Architecture*[39] and Aldo Rossi's *L'architettura della città*,[40] both 1966, gaining further momentum from an even earlier public critique, launched in part by Jane Jacobs's *The Death and Life of Great American Cities* (1961).[41] It culminated in the arrival of "postmodern" architecture, which soon became seen as part of a more general cultural transformation dubbed "postmodernism".

The increasing currency of the term "modernism" correlates directly to this sense that the Modern Movement was no longer a vital, ongoing development, but instead something past. Modernism by now connoted a historical movement and style. The term was most prevalent in the United States, not surprising given both its early usage there and Hitchcock and Johnson's early introduction of the notion of an international style. Already in the late 1950s and 1960s, "modernism" was heard in revisionist contexts,

39. R. Venturi, *Complexity and Contradiction in Architecture*, V. Scully (intro.), New York, Museum of Modern Art; distributed by Garden City (NY), Doubleday, 1966.

40. A. Rossi, *L'architettura della città*, Venice, Marsilio, 1966.

41. J. Jacobs, *The Death and Life of Great American Cities*, New York, Random House, 1961.

such as the second *Modern Architecture Symposium*, held at Columbia University, in May 1964. The young Robert A. M. Stern was one of the speakers who employed it with most ease (though still within quotation marks in his written text). Several other participants employed the word as well, including Avery librarian Adolf Placzek and architecture historian William Jordy, who would be one of the first scholars to use "modernism" in the title of a survey book, *American Buildings and Their Architects: The Impact of European Modernism in the Mid-Twentieth Century* (1972).[42] However, Henry-Russell Hitchcock, one of the conveners of the conference, still referred to "modern architecture", finding it, as he explained in his 1958 survey, less tendentious than his earlier term "international style".[43] Nor was this event at Columbia University unique. Kenneth Frampton recalled that when he arrived at Princeton University from England in 1965, he kept wondering «where all this "modernism" was coming from». For him, it was still the "Modern Movement" or "Modern Architecture".[44] But for the young designers at Princeton's School of Architecture, namely Michael Graves and Peter Eisenman, modern architecture was already a historical style, one that they could readily cannibalize in their own early work. If this use of "modernism" permeated the rarefied halls of Ivy League academia, it was not until after the official arrival of "postmodern architecture" in the late 1970s, proclaimed by Charles Jencks's *Language of Post-Modern Architecture*[45] in 1977, that the word gained wider public currency. While Jencks still primarily used the capitalized adjectives "Modern" and "Postmodern", especially in his titles and subtitles, the nouns "modernism" and "postmodernism" slipped occasionally into the text. It was not long before they were standard terms. Indeed, it is interesting to compare the two editions of Jencks's own *Modern Movements in Architecture*. In the first edition, of 1973,[46] the word "modernism" is not used at all (at least from what I could tell in skimming the book quickly); by the second, 1985,[47] in the preface and in the added last chapter (*Late Modernism and Post-Modernism*) it is everywhere. Jencks succinctly summed up the shift in vocabulary: «Since this book was written ten years ago, . . . the Modern Movements of the title have dropped their main ideology of Modernism, or modified it in radical ways».[48] In other words, there was no longer a modern movement that sustained the belief that architecture was an agent of technological progress and social reform.

A second source of the word "modernism" in architecture writing is art criticism and cultural theory. The writings of art critics such as Clement Greenberg, of literary figures such as Irving Howe, Renato Poggioli, Matei Calinescu, Peter Bürger, and Andreas Huyssen, and of philosophers such as Theodor Adorno and Jürgen Habermas all influenced architecture critics and historians, and soon, in turn, architects. The meanings of the word "modernism" of course varied widely from individual to individual. Greenberg, who had used the term "avant-garde" in his pre-war essay *Avant-Garde and Kitsch* (1939)[49] to refer to progressive art currents (that is, those works that retained their artistic integrity in the face of

42. W. H. Jordy, *American Buildings and Their Architects: The Impact of European Modernism in the Mid-Twentieth Century*, New York, Oxford University Press, 1972.

43. The proceedings of the *Third Modern Architecture Symposium*, held in March 1964 at Columbia University, are published in a special issue of the "Journal of the Society of Architectural Historians", vol. XXIV, March 1964, No. 1. For the use of the word "modernism", see especially the contributions by R. A. M. Stern, W. H. Jordy, A. Placzek, and E. Kaufman, Jr. in that issue. Kaufman's essay, *Frank Lloyd Wright's Years of Modernism, 1925–1935*, indicates clearly that the word in the U.S. already designated a historical period. See also H.-R. Hitchcock, *Architecture: Nineteenth and Twentieth Centuries*, Harmondsworth, Middlesex, Penguin, 1969 (3rd. ed.), p. 618, n. 487.

44. Kenneth Frampton, in conversation with the author, especially in September 2006.

45. C. Jencks, *Language of Post-Modern Architecture*, New York, Rizzoli, 1977.

46. C. Jencks, *Modern Movements in Architecture*, Garden City (NY), Anchor Press, 1973.

47. C. Jencks, *Modern Movements in Architecture*, Harmondsworth, Middlesex, Penguin, 1985.

48. Ibid., p. 371.

49. See C. Greenberg, *Art and Culture: Critical Essays*, Boston, Beacon Press, 1961.

political forces), preferred after World War II the less politically charged word "modernism", which he defined as essentially artistic self-critique, art that focused on the aesthetic properties of its medium to criticize itself.[50] Michael Fried, Bürger, and Huyssen followed, in part, his usage, although for Huyssen and Bürger, concerned with broader political issues, modernism was distinguished from another cultural tendency: for Bürger, this was the avant-garde, which he defined as artistic currents that sought to destroy the institutions of art, such as Dada and Surrealism; in the case of Huyssen, it was art forms that embraced mass culture. Adorno's notion of autonomy, while more complex, associated modernism with a similar disengagement from daily life. In other words, whether modernism was embraced (as Greenberg and Adorno did) or criticized for its political and social withdrawal (as Bürger and Huyssen did), both positions linked modernism to formalism and the autonomous pursuit of a discipline. But for others, such as philosophers Henri Lefebvre and Jürgen Habermas and sociologist Marshall Berman, modernism was a more encompassing term: it was the cultural expression of modernity (the experience of modern life), which in turn was a product of modernization, arising from the forces of rationalization in capital and technology. Although a few architecture critics attempted to apply Bürger's bipartite model to modern architecture, these efforts were problematic and seemingly contradictory: architecture by its very nature resisted autonomy; nor did formal exploration in modern architecture preclude social engagement and a preoccupation with everyday life — note Le Corbusier's airplanes and automobiles or, later, the Smithsons' household gadgets and advertising. In architecture writing, theoretical constructs of "modernism" soon began to blur with notions of the word as a historical or stylistic designation, making its meaning vague and ambiguous. In fact, the very ambiguity of the term may have led to its popularity and broad usage, giving it an applicability beyond the terms "Modern Movement" or *Neues Bauen,* which were typically associated with a specific programmatic agenda.

Thus, by the 1980s, when postmodernism and cultural theory began to coalesce in writings about architecture, the word "modernism" began to be employed regularly by a younger generation of historians and critics, especially in Britain and the United States, supplanting "modern architecture" or "Modern Movement". Once again, however, there was a lag between its usage in academic journals and conferences and the general press; the one exception was design history, where its traditional links to style and fashion seemed to have had immediate appeal. By the early 1990s, at the height of the theory wave in American academic circles (coinciding in the United States with the dot-com bust and a recession in the building industry), the word "modernism" began to appear in titles of architecture books, and within a few years with some regularity — for example, in Michael Hays's *Modernism and the Posthumanist Subject* (1992),[51] Robert Bruegmann's *Modernism at Mid-Century* (1994),[52] and Sarah Goldhagen's *Louis Kahn's Situated Modernism* (2001).[53] The diversity

50. Clement Greenberg gives this definition in his oft-quoted essay, *Modernist Painting*, originally delivered as part of *Voice of America's Forum Lectures* in 1960 and then published the following year in "Arts Yearbook", 1961, No. 4. A revised version was published in "Art and Literature", Spring 1964, No. 4, pp. 194–201.

51. K. M. Hays, *Modernism and the Posthumanist Subject: The Architecture of Hannes Meyer and Ludwig Hilberseimer*, Cambridge (MA), MIT Press, 1992.

53. S. Goldhagen, *Louis Kahn's Situated Modernism*, New Haven (CT), Yale University Press, 2001.

52. R. Bruegmann, *Modernism at Mid-Century*, Chicago, University of Chicago Press, 1994.

of these three books reveals the very malleability of the term: from a theoretical construct indebted to neo-Marxist periodization (Hays), to a straightforward monographic account (Bruegmann), to a revisionist reading of a major postwar architect, who is seen as perpetuating the legacy of modern architecture while transforming it (Goldhagen). If the meaning of the word remains nebulous today, its usage is now ubiquitous, with the highly regarded exhibition *Modernism* at the Victoria and Albert Museum in 2006 demonstrating its widespread acceptance. Any qualms that the original proponents of the Modern Movement may have had about "isms", which they associated with the plurality and fickleness of artistic tendencies, were long gone.

Related to but not quite synonymous with the rise in usage of the word "modernism" was an increasing understanding of modern architecture as a diverse and varied phenomenon. While early historians of modern architecture often spoke of distinct tendencies or strains — sometimes setting up dualities (see, for example, Hitchcock, Behne, and Behrendt) and acknowledged national differences (Theo van Doesburg and Shand) — the canonical histories such as Giedion's and Pevsner's stressed modern architecture's shared and unifying characteristics (notably functionalism, structural rationalism, and simplicity) rather than its geographical or cultural differences. Indeed, these seemingly common attributes were asserted as universal truths, ones that swept into the dustbin the historicism and stylistic eclecticism of an earlier era. The Weissenhofsiedlung at Stuttgart and the CIAM meetings were two of the most overt manifestations of this desire to create a single movement with a single set of common objectives. Again, it was in the postwar period that this unified vision began to fracture, owing to an increasing recognition of, and value placed on, local traditions and customs, on the one hand, and personal expression, on the other. With the advent of postmodernism and poststructuralist theory, critics began to celebrate this plurality and variety, although they debated at times whether these qualities were characteristics of modernism (Berman and the early Charles Jencks) or of postmodernism (Jencks after 1975). By the 1970s, it was increasingly difficult to speak of modern architecture in singular absolutes. Always attentive to changing currents, Jencks was one of the first in architecture to proclaim this diversity. His doctoral thesis (1971), written under Reyner Banham, and given the polemical title *Modern Movements in Architecture* when it was published in 1973,[54] was not only a pointed critique of his mentor's seminal book *Theory and Design of the First Machine Age* (1960)[55] and a challenge to the synthetic unity proposed in Giedion's *Space, Time and Architecture*, but it was also an attack, as the title made clear, on Banham's own adviser, Pevsner, and on his groundbreaking history *Pioneers of the Modern Movement*. The awareness of architectural pluralism coalesces with the somewhat awkward use of "modernisms" in the titles of books, such as Sarah Goldhagen and Rejean Legault's *Anxious Modernisms: Experimentation in Postwar Architectural Culture* (2000),[56] and in the 2006

54. Jencks, *Modern Movements in Architecture*, 1973.

55. R. Banham, *Theory and Design of the First Machine Age*, London, Architectural Press, 1960.

56. S. Goldhagen, R. Legault (eds.), *Anxious Modernisms: Experimentation in Postwar Architectural Culture*, Montréal-Cambridge, (MA), Canadian Centre for Architecture-MIT Press, 2000.

Docomomo conference, titled *Other Modernisms*.[57]

The use of the plural raises questions about the word "modernism" itself. As this brief chronology shows, the adoption of "modernism" to characterize the Modern Movement and modern architecture largely emerged in the English-speaking world. The ascendance of English in publications, teaching, and conferences, the proliferation of American doctoral programs in architecture, and the growing numbers of foreign students in British and American schools, have all led to a form of globalization — an English-dominated globalization — not only of architecture culture but also of architecture history itself. One issue to consider is whether the rapid and widespread dissemination of the word "modernism", despite its new plural form, might not risk being another form of homogenization wiping out the linguistic diversity that characterized the original names given to the Modern Movement itself, and with them some of the movement's distinctive national and regional aspects those names signified. Has the term given modern architecture a universalism that it never initially had despite its self-proclaimed objectives or subsequent claims? Or, more positively, does the very generality of the term "modernism" and its many different connotations encourage us to consider a much broader range of modernist architecture work, alerting us to the richness and variety as well as to the wide geographical influence of the Modern Movement's forms and ideas?

57. In literary criticism, the word "modernisms" already appeared in book titles with some frequency by the 1990s.

Anonymous as a Theme of Discontinuity in the Culture of Italian Architecture between the First and Second Halves of the 20th Century[1]

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The research about Anonymous in Italian Post-War Architecture (*Cosmopolitismo vs internazionalismo: la questione dello "stile" agli esordi di Gabetti e Isola,* conference proceedings, *Roberto Gabetti*, Politecnico di Torino, 25-27 November 2015; *L'Anonimo come tema di discontinuità nella cultura architettonica italiana tra Primo e Secondo Novecento*, in C. Togliani (ed.), *Un palazzo in forma di parole. Scritti in onore di Paolo Carpeggiani*, Milano, Franco Angeli, 2016; *In memoria dell'altra resistenza: il Museo-Monumento dei BBPR a Carpi*, in VV. AA., *Il Museo-Monumento dei BBPR a Carpi*, Bologna, BUP, 2016) is related to other ongoing studies and specifically: the different figures of architectural creativity in John Ruskin's writings (*The Commandment Written within Things. John Ruskin and the Issue of Restoration*, in J. Ruskin, *St. Mark's Rest*, M. Pretelli (ed.), S. Arcangelo di Romagna, Politecnico di Milano, Maggioli Editore, Collana Politecnica, 2010); Anonymous in Post-War Portuguese Architecture (*Cosmopolitism vs Internationalism in Contemporary Portuguese Architecture: Távora, Siza and Souto Moura*, in F. Bethencourt (ed.), *Cosmopolitanism in the Portuguese-Speaking Countries*, Leiden, Brill, 2017).

ABSTRACT

The physical destruction of the architectural heritage as a result of the war and the experience of political and racial discrimination, then deportation, deeply marked the culture of Italian architecture during the transition between the first and second halves of the 20th century, changing its cultural sensitivity and paradigms. Among the themes that characterise the change there is the reflection on the Anonymous not as an appeal to popular architectural cultures instead of designer-based, but rather as a change in the structure of the creative personality of the designer in the relationship between individual conception of architectural form and the multipersonal dimension of architectural work.

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The physical destruction of the architectural heritage as a result of the war and the experience of political and racial discrimination, then deportation, deeply marked the culture of Italian architecture during the transition between the first and second halves of the 20th century, changing its cultural sensitivity and paradigms. A study of discontinuity in Italian architectural culture in the late 20th century should start with a summary of the hypothesis of continuity. This would imply an extensive bibliographical essay and analysis of historiography – which we will undertake at another time – because the hypothesis of continuity between the first and second halves of the 20th century was, without a doubt, the prevailing one. The reasons are specific to the Italian architectural culture, but are part of a broader research into continuity between Modernism of the early 1900s and a second half of the century focused on the idea of a revision – or of a series of crises – of the Modern Movement rather than on the idea of an irreparable rift between the hypotheses that supported that project and the changed cultural conditions created by second World War. In particular, still today the theme of continuity stands on the repeated revisions of two key concepts of early 20th century architectural culture: internationalism and the designer's personality.

By internationalism I mean the hypothesis – that somehow supplants the search for "national styles" in the second half of the 1800s – that there are hegemonic centres that process cultural paradigms of international value, which thus define a periphery adhering more or less critically to this dominant culture, or refuses it or is refused, isolating themselves. It is impossible to summarise here, even briefly, the development of the internationalist perspective that infused the European architectural culture of the 1900s, from the cosmopolitan atmosphere of the artistic avant-garde of the early 20th century, which is its matrix, to the formulation of International Style refined by Henry-Russell Hitchcock and Philip Johnson in 1932,[2] from the regionalist revisions of the Modern Movement immediately after World War II to relaunching the issue in a Postmodernist key and in response to Critical Regionalism. Even today there remains an "international" aspect of cultured architecture, supported both by trade and general media, which journalists have coined «starchitect» or «archistar» but that is based on a very precise organisation of the educational, cultural and professional world in the field of architecture and that still awaits an accurate historical analysis, especially today when its crisis seems to be definitive and to portend the transition to other cultural and economic models, even in Europe.

By architect personalities I mean the different weight that two different models of architectural creativity had during the 1800s and 1900s. On the one hand, the model of architect-artist driven by a strong individual personality of an intuitive nature, oriented towards the processing of prevailing, recognisable forms linked to him, with respect to the system of constraints (social, economic, constructive) that architecture faces

1. The text presented here gives an overview of one of the themes that make up a larger ongoing research dedicated to the years immediately following World War II in Italy. The first part of the text that follows has already been published in Italian: G. Leoni, *L'Anonimo come tema di discontinuità nella cultura architettonica italiana tra Primo e Secondo Novecento*, in C. Togliani (ed.), *Un palazzo in forma di parole. Scritti in onore di Polo Carpeggiani*, Milano, Franco Angeli, 2016, pp. 463-72. The second part was presented at the conference on Roberto Gabetti held at the Polytechnic of Turin on 25-27 November 2015, and is to be published under the title *Cosmopolitismo vs internazionalismo: la questione dello "stile" agli esordi di Gabetti & Isola*.

2. H.R. Hitchcock, P. Johnson, *The International Style: Architecture Since 1922*, New York, W.W. Norton and Company, 1932.

in the process of becoming real. On the other hand, the model of an architect at the service of his project, whose job is to shape the process of realising the designed structure, subjecting conception to the constraints of geography, collective nature and material existence. In spite of a 20th century architectural historiography largely dominated by the cult of personality, a history of the models of creativity of 20th century architects paradoxically remains still to be written and, moreover, the subject is extraordinarily subtle inevitably implying for any architectural work the coexistence of personality and anonymity.

Focusing on the Italian situation, of particular interest are the years of the war and the immediate postwar period, a time of deep crisis followed by recovery in the transition between the fifties and sixties, where hypotheses of continuity marked both historiographical production regarding Italian architecture and its cultural identity.[3]

Among the themes that characterise the change there is the reflection on the Anonymous not as an appeal to popular architectural cultures instead of designer-based, but rather as a change in the structure of the creative personality of the designer in the relationship between individual conception of architectural form and the multipersonal dimension of architectural work.

Below we present three instances from a larger ongoing research on the topic of the Anonymous in Italian culture between World War II and the beginning of the sixties.

3. Regarding the historiography, consider that the first edition of the *History of Modern Architecture* by Leonardo Benevolo (Bari, Laterza) was published in 1960, while in 1964 Manfredo Tafuri once again took up Quaroni's considerations on the postwar destiny of «modern» Italian architecture (L. Quaroni, *La situazione dell'architettura moderna in Italia*, in "Metron", 1948, No. 25, pp. 5-8; M. Tafuri, *Ludovico Quaroni e lo sviluppo dell'architettura moderna in Italia*, in "Comunità", 1964, pp. 76-77), establishing a hypothesis of continuity that has dominated the subsequent historiography following the fortunes of the set of texts on Italian architecture (M. Tafuri, *Architettura italiana 1944-1981*, in F. Zeri (ed.), *Storia dell'arte italiana, II Novecento*, Torino, Einaudi, 1982, pp. 425-550, also included in the volume published by Einaudi PBE in various editions to date, most recently in 2002).

Ernesto Nathan Rogers: *Confessions of a 20th Century Anonymous*

Between the beginning of the forties and the mid-sixties, two positions, among others, followed from a single formulation: 20th Century Anonymous. This is how Ernesto Nathan Rogers defined himself in his «confessions» published in "Domus" between 1940 and 1941, and in 1965 it is the title that Leonardo Ricci gave to the Italian edition of his book summarising the theoretical positions resulting from experimental designs started in 1949 with the project for Monterinaldi, and completed together with the book in the Monte degli Ulivi village in Riesi.[4]

Rogers, outlining the characteristics of the Anonymous, even in the pain of a growing discriminatory climate, does not describe a defeat but rather portends a new cognitive and creative structure to be placed at architecture's foundation. [Figs. 1-9] The Anonymous is a designer who abandons the development of an individual artistic «personality» to become a means for conveying the expressions of others. However, it is not the disappearance of the personality that Rogers foresees, and in his pages lingers the figure of genius-architect, now with a dilated and «boundless» personality to the point of being suprapersonal. It is a mutation that entrusts to the Anonymous the new task of giving voice to

4. The writings of Rogers on the Anonymous were published between 1940 and 1941 in the following issues of the magazine: 158 (p. 45); 159 (p. 67); 160 (p. 59); 161 (p. 69); 162 (p. 69); 164 (p. 31); 167 (p. 17); 170 (p. 94); 176 (p. 333). Ricci's text dedicated to the Anonymous was published in New York in 1962 under the title *Anonymous (20th Century)* by Braziller, translated into English by Elisabeth Mann Borgese, and three years later in the *La cultura series* of *Il Saggiatore* (Milan 1965) with the title *Anonimo del XX Secolo*.

«humanity» and that results from assuming as a field of action not the territories of a spirituality that is inaccessible to the common man, but the strange «place» in which Rogers declares to want to give «congress» to the reader, a place that lies «between mum» – the childhood memory of a caring gesture – «the cashier» – an erotic impulse that anyone can indulge – and «God» – taking design responsibility for common action, the only divine dimension remaining for architecture. A place where the simple act of common man encounters and blends into the simple act of the Anonymous designer, devoid of individual and subjective representation, intent on managing and bringing to form the common act as an act of design. It is the radical inversion of the functionalist principle and every associated legend, the abandonment of the task of interpreting classifiable human needs and offering them an architectural form that is viable for a community. There are only individual men, because: «In space, some higher, some lower, to the left or to the right of the large cross, we left an empty tomb with underneath written 'place for Giovanni' or 'for Maria' or 'for Pietro' or 'for Ernesto' or 'for Natalina' or mine for Anonymous».[5] The Anonymous therefore still finds himself in a special place, and the crowd – the destroying force of the 19th century intellectual thrust into the city, the term of comparison upon which the vanguard built its poetics and a new prophet figure – still scares him, «pressing on every side; tearing clothes into tatters and risking the removal of limbs of life». But – and this is a tragic new development – the Anonymous finds a second solitude, even when thrust into the community and lost therein.[6] Alone in the crowd, in the community, uncomfortable whenever «a function chains us to someone else performing or that has performed the same function», the Anonymous experiences a "dramatic conflict": «I am myself, but I am also one of you».[7] Condemned to perceiving his unique personality not as exceptional but as similar to the common being, the Anonymous comes to terms with the «holy terror of one's corporeal existence». «Every breath has a different cadence, yet you seek yours in others' breathless efforts; why not draw close to his for the suffering or joy he is interested in?».[8] The role model, the guiding role of the artistic personality, is transformed into an effort to become part of the ordinary, requiring new extraordinary skills.

«We recognise that you shape a bit of my life, but I also do a bit of the same for yours. You change me, with your presence in my destiny, but I influence yours by giving back to you, in the arcane treasure trove of my works, your experiences that I have relived. Your solitude, my solitude that inhabit each other, because anonymous love, loving your neighbour means populating one's loneliness with that of others».[9]

It is still a dual figure, that cannot give up the modern condemnation of personalities but that understands the irrelevance of his personal, individual being. The Anonymous's design task is not to outline what still is not, but rather to change the existing, letting himself be changed by it. There is no salvation, Rogers writes, «neither in the ivory tower of egotism

5. E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 2° Le coordinate dell'Anonimo*, in "Domus", March 1941, No. 159, p. 67.

6. E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 3° L'Anonimo e la folla*, in "Domus", April 1941, No. 160, p. 59.

7. *Ibid.*

8. *Ibid.*

9. *Ibid.*

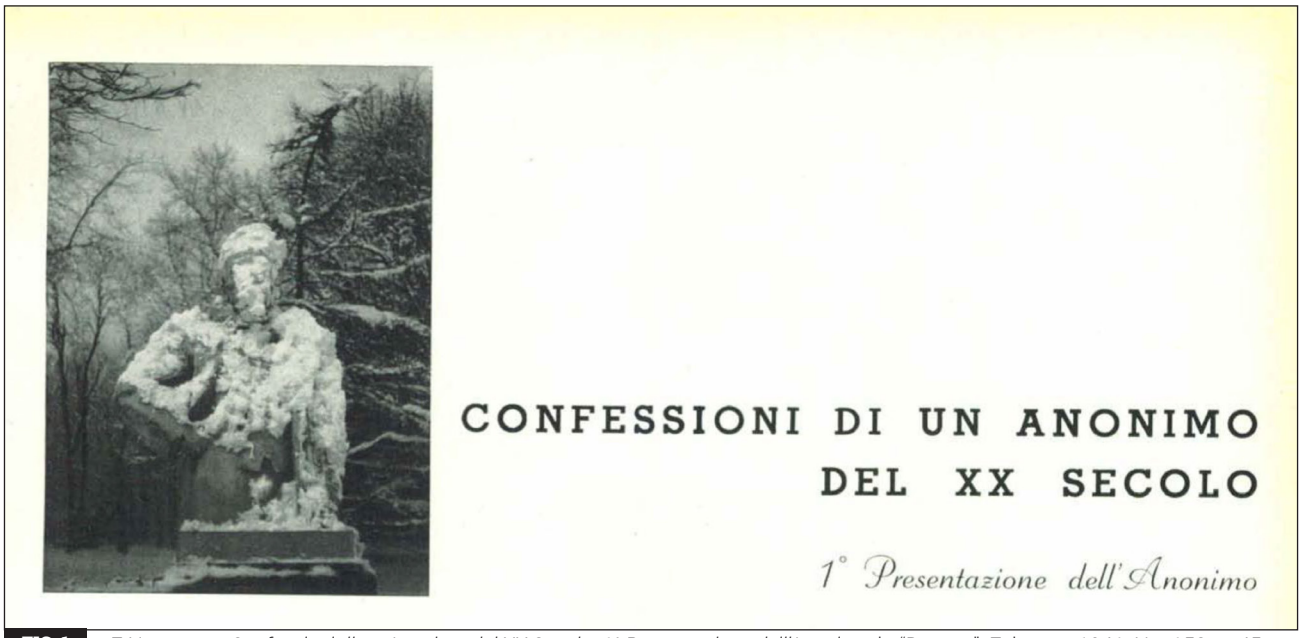

FIG. 1 E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 1° Presentazione dell'Anonimo*, in "Domus", February 1941, No. 158, p. 45.

FIG. 2 E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 2° Le coordinate dell'Anonimo*, in "Domus", March 1941, No. 159, p. 67.

FIG. 3 E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 3° L'Anonimo e la folla*, in "Domus", April 1941, No. 160, p. 59.

FIG. 4 E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 4° I confini dell-Anonimo*, in "Domus", May 1941, No. 161, p. 69.

FIG. 5 E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 5° L'Anonimo nel tempo*, in "Domus", June 1941, No. 162, p. 69.

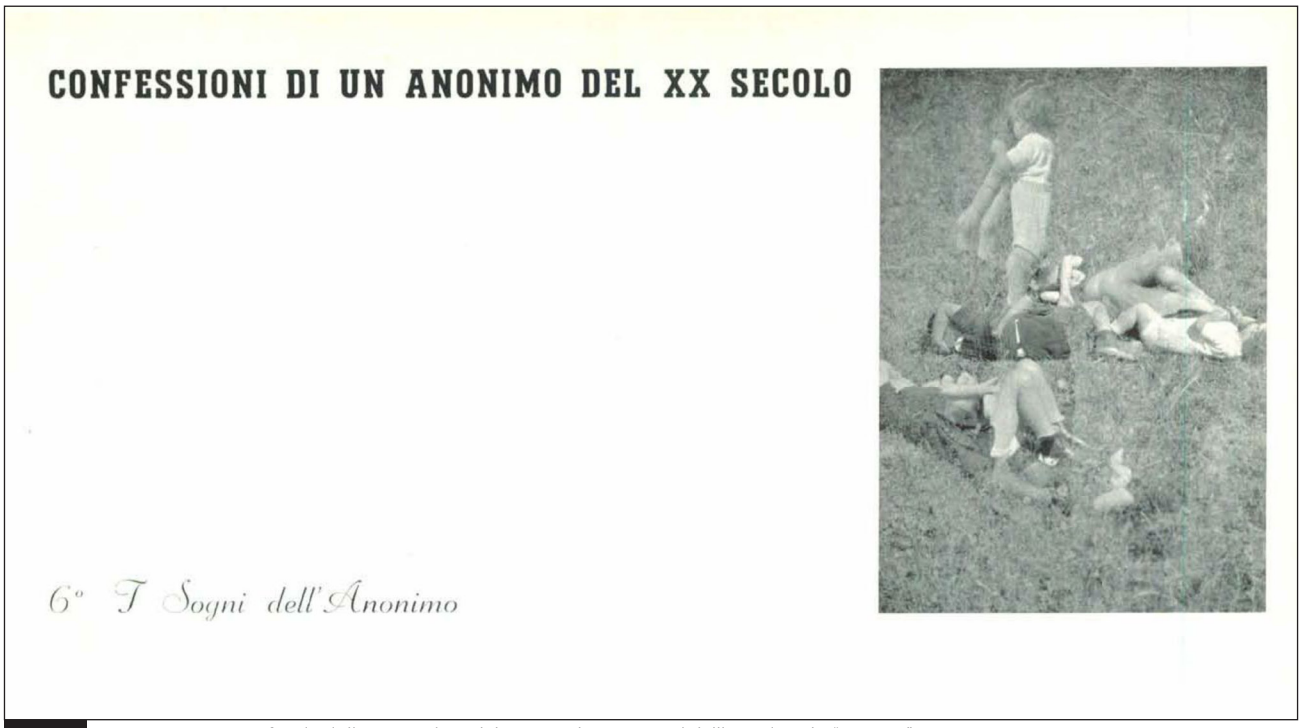

FIG. 6 E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 6° I sogni dell'Anonimo*, in "Domus", August 1941, No. 164, p. 31.

FIG. 7 E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 7° Responsabilità dell'Anonimo*, in "Domus", November 1941, No. 167, p. 17.

FIG. 8 E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 8° La personalità dell'Anonimo*, in "Domus", February 1942, No. 170, p. 94.

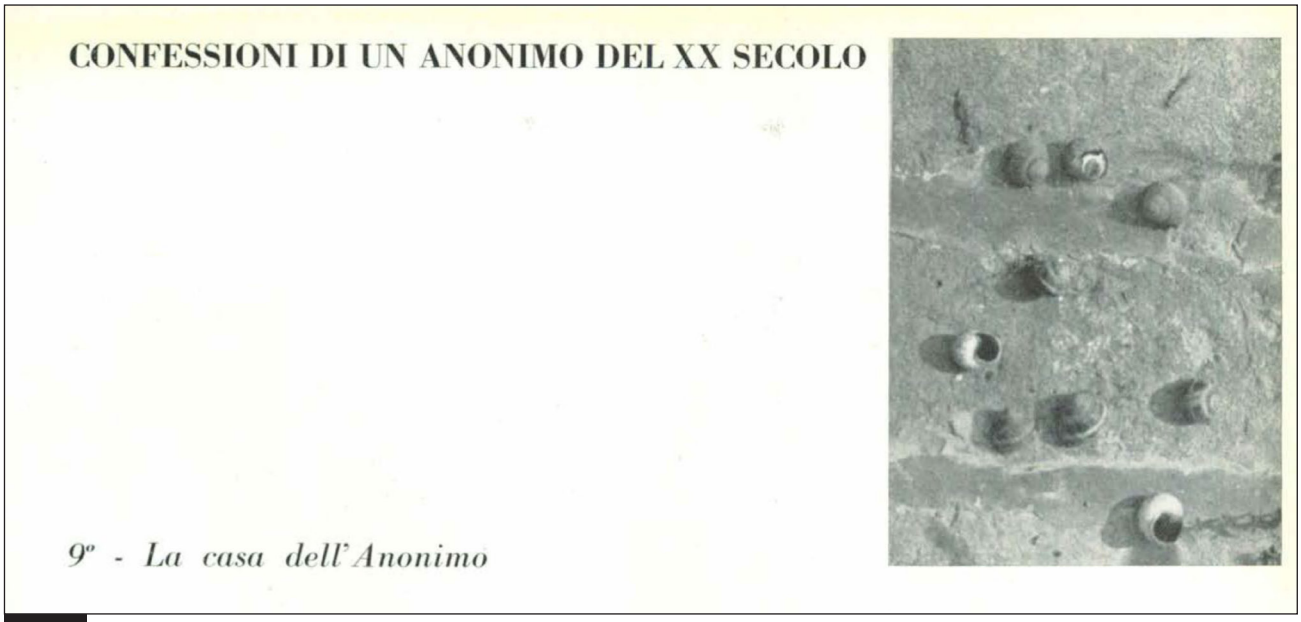

FIG. 9 E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 9° La casa dell'Anonimo*, in "Domus", August 1942, No. 176, p. 333.

nor in the dissolution of oneself in a common liquid mixture», only in the «acceptance of the battle» between personality and its disappearance.[10] The time of the Anonymous, in consequence of his destiny as a representative of the ordinary solitude of each, and the similarity with all, is a time that has nothing to do with the linear development from past to future that characterises the modern project. The Anonymous resists becoming part of a non-measurable time, one in which all «vision past and future» is dissolved, an instantaneous time, a constant present, the time of now, of the act, of living in the happening, «because I am my time and my time takes the appearance of my face».[11]

It is interesting to note how Rogers still uses the term "style" in his pages about the Anonymous, though placed in quotation marks and defined as «a result of our lives» because «we are making a 'style' every day, as the river running over pebbles; it is a result of our lives, my office colleague, my fellow bus rider, my lady on the mezzanine!».[12] The «style of the period» is therefore a result of the constant transcription in terms of the action of each person in his or her ordinary existence. The task, the «responsibility» of the Anonymous, far more onerous than the responsibility of recognising his isolated singularity outside of the crowd and outside of the community, is to give form to the simple act. «Your toothache disturbs me, and yes – it depends on you – it could become a beautiful chair. Why don't we help each other to live? Who knows what huge buildings with so much pain».[13]

Rogers defines his query of the Anonymous as an «open and cruel» confession because, without pretence, without taking refuge in specialised languages, using prose that is outrageously unscientific, he clearly anticipates the act of renouncing the structure of the architectural project based on artistic personality but also the abandonment of the idea of the project as work of a specialised nature intended to be studied

10. *Ibid.*

11. E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 5° L'Anonimo nel tempo*, in "Domus", June 1941, No. 162, p. 69.

12. E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 1° Presentazione dell'Anonimo*, in "Domus", February 1941, No. 158, p. 45.

13. *Ibid.*

in the laboratory, which would then produce an architecture in ordinary life. An argument against the specialism that had wide circulation in the Anonymous culture of the late 20th century, not only in Italy. The Anonymous does not deal with a special space, aesthetically founded and controlled, but rather «a point in human space: you are just over there. You yourselves are well-defined points in this universal humanity. Just a moment of distraction and we will lose each other».[14] For the Anonymous, pushing oneself to the limit of possibly losing every principle of personality corresponds to the identification of a new field of action for the project, which means probing the design theme in the moment and in the dimension in which it is still owned by all people, it is still a problem of life shared with those who have no responsibility to subject it to design hypotheses. In other words, it means tackling the project from the paradoxical prospect of an absence of decision, of fully listening, of a balance between Name and Anonymous made even more onerous by comparison with absolute singularity, of the non-traceability of the individual choice, of the individual act with general parameters.

«The first law is to find the humanity in ourselves and ourselves in humanity. Even for Anonymous me, this is the first law. And so I can write it down like this: I have to be so deeply Anonymous that I arrive at a name, and if I had a name I would want it to be so vast that it became confused with the anonymous. Names and Anonymous derive from a common origin, like the axes of a Cartesian system forming a huge cross within whose infinite spaces are located all our points».[15]

But the identity of the Anonymous, which is formed upon the renunciation of the Name and not of its affirmation, finds substance in the Work. «Names drift through history, they are in the books, among the dates, on the streets signs, even far away from their works; the Anonymous, no, they cannot leave, and only when you get close to the remains of his work is life breathed into him on this side of dreams. Consider the importance of these facts, respect them: they are aspects of eternity».[16]

14. E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 2° Le coordinate dell'Anonimo*, cit.

15. *Ibid.*

16. E.N. Rogers, *Confessioni di un Anonimo del XX Secolo. 1° Presentazione dell'Anonimo*, cit.

Leonardo Ricci: Anonymous 20th Century

In the early formulations of the Anonymous that accompany the presentation of Monterinaldi on the pages of "Domus" in 1957, Leonardo Ricci seems to have already surpassed the heroic vision and commitment to the Work – and to the city, but the subject would open issues that we cannot address here – of the balance between Name and Anonymous discussed by Rogers in the journal more than 15 years earlier.[17] [Fig. 10] However, there remain many similarities. Ricci also disputes the figure of an architectural designer with an extraordinary personality – anticipating the overcoming of the «loved and admired» masters in the 1962 volume[18] – in favour of a new figure of a designer focused on sharing, according to Ricci a prelude to the definitive disappearance of architecture as specialised

17. Monterinaldi is presented in "Domus" No. 337 (December 1957, pp. 86-99) accompanied by the text by Ricci to which we refer.

18. L. Ricci, *Anonimo del XX Secolo*, Milano, Il Saggiatore, 1965, pp. 76-95.

activity, as an activity separate from the ordinary and from everyone's everyday life. The second point of close contact with Rogers is the overcoming of functionalism to leave space for the figure of an entirely unique «client» having «infinite desires». As for Rogers, also for Ricci at this date, the issue is not to passively surrender to the difference and diversity of the subjects, but rather retain the educational role of the designer who, for Rogers had to expand his personality by offering a common voice, the Work, to the many names, while for Ricci he should instead interact with the client and teach him to distinguish between desires that are «fundamental» and «discretionary and even vain». That's why, as Ricci writes in "Domus" that one must not be «existentialist» but rather «existential», or recognise as «fundamental» only «acts that arise from existential truths of man and not from futile reasons of taste». The aesthetic criterion as a guide to the architectural project disappears, returning the focus of reflection on the theme of a «language of existence» also discussed by Rogers. And, as for Rogers in his pages on the Anonymous, the idea of «modernity» formulated by Ricci is not a progression of the new projected into the future but rather an «eternal present», a permanent modernity based on suprahistorical constants and that sets aside the evolutionary idea of architectural languages processed on a formal basis. For Ricci, architectural forms are not «a priori inventions of architecture» but rather the a posteriori result of «life analysis» that generates «consequent spaces». In those same years Ricci performs experiments, designing and building works like Casa Mann Borgese, Casa Balmain and Casa Cardon – essentially contemporaneous – the practical results of the positions expressed in "Domus".[19] [Figs. 11-13] An identical constructive grammar unites the three buildings: the stone for the substructural work that roots the building to the ground, the plasticity of concrete to shape the spatial fluidity that translates the vital movement. But no formal personality is recognisable as a point of continuity in the three works, and the internationalist hypothesis is perfectly overturned in a heteronymy that demonstrates, and not only theorises, the disappearance of the early 1900s architect-artist's identity. The overturning returns in the full theoretical formulation of the work on the Anonymous in which Ricci describes a form-act that builds a non-mythical world, not absurd but «logical», «not in a rational way, but in the sense of logos». Architecture, «those stupid and still wrong things that are called houses», as Ricci describes them, must be the result of a query and transcription of «naked existence», and Ricci is fully aware that in this condition

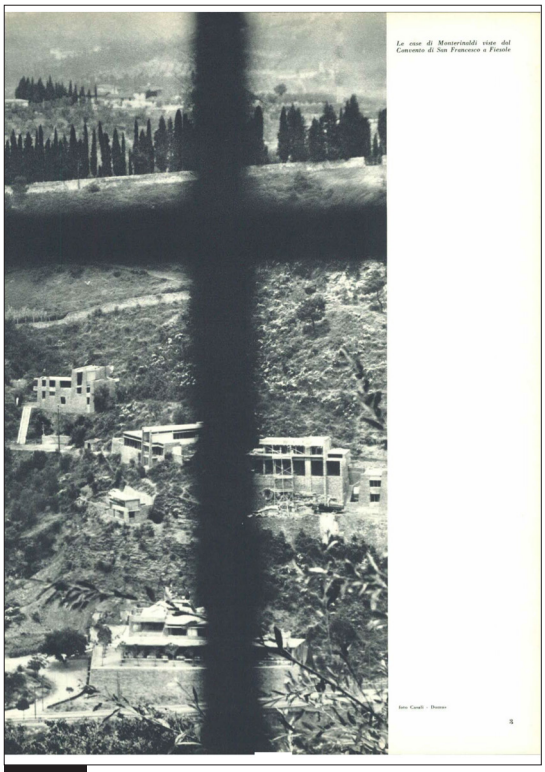

FIG. 10 L. Ricci, *A Monterinaldi, presso Firenze, un centro di quindici case,* in "Domus", December 1957, No. 337, pp. 86-99.

19. Cfr. A. Greco, M.C. Ghia, *Leonardo Ricci. Monterinaldi / Balmain / Mann Borgese*, Roma, Palombi Ed., 2012.

FIG. 11 L. Ricci, Casa Mann Borgese, Forte dei Marmi, 1957.

FIG. 12 L. Ricci, Casa Balmain, Marciana, 1958.

FIG. 13 L. Ricci, Casa Cardon, Castiglioncello, 1961.

architecture is confined by the experience of the Holocaust – to which various explicit references are made in his book on the Anonymous – an experience that has cancelled every possible expectation of happiness bound to the community because «the unhappiness of others affects our happiness and cancels it» at the moment in which suffering is given in such a form devoid of any possible sense and perspective of redemption. Even «happiness» offered by architecture, the «world of form» as a promise or action of redemption, as a guide-world for the transformation of the real, is but a «drug», a fascinating but dangerous illusion. Ricci's interest in the subject of community is therefore not surprising,[20] but his text on the Anonymous does not indulge in any illusion of a newfound original condition in which the relationship with material is released from representation. The task Ricci sets for himself is not to draw on naked existence but rather to free architecture's content of existence from the constraints of form, transforming architecture from a representation of existence to a place where it freely occurs. The focus thus shifts to hosted life rather than represented life, in a radical surpassing of the prefiguration: «There are no parameters in the logical world, because nothing is fixed and immutable. And the parameter is inherent in the act you engage in, not evident in such a way that it can be measured».[21] The «logical construction of architecture» is derived from the maintenance of the decision and of the gesture in a constant current condition and a interpretive attitude consisting of «two instances: receiving and returning». The instance of receiving is the non-specialised dimension of architecture of which it was previously noted: «it is the phase in which the architect is just a man, not yet a specific operator. The more this man will be full of humanity, the more the architect will be complete and will not overlook anything of life. It is the phase during which the architect must not take the pencil in hand, nor clarify anything. It is the stage of conception».[22] A conception that does not represent the world but arises from a dispersion of individual personality among the things and the single individualities of the «clients», to establish a planning action based

20. On the theme of community in Ricci see: M. Costanzo, *Leonardo Ricci e l'idea di spazio comunitario*, Macerata, Quodlibet, 2010.

21. L. Ricci, *op. cit.*, p. 28.

22. *Ibid.*, p. 214.

on query and not statement, an unattainable condition in the era of personality, but also a chance to «work in error» and attempt a «new world», the world of the Anonymous. Evidently it is a project that leads to the disappearance of the discipline or, if you prefer, its radical overhaul, a change not in linguistic codices but rather in cognitive and productive structure. In the same years in which Ricci published his book on Anonymous, first in New York and then in Italy, projects such as "Living space for two people" or works such as the Monte degli Ulivi village bear witness of the design and plastic strength of the "new maîtrise" of the 20th Century Anonymous. [Fig. 14]

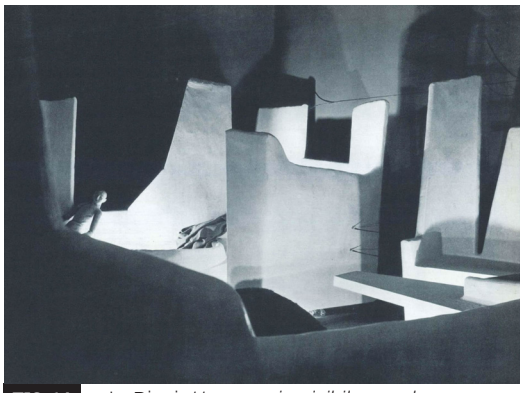

FIG. 14 L. Ricci, *Uno spazio vivibile per due persone*, in "Domus", May 1965, No. 426, pp. 130-31.

Cosmopolitanism vs. Internationalism: the Question of «Style», at the Debut of Gabetti & Isola

The following text aims to analyse the media debut of Gabetti & Isola in the pages of "Casabella-Continuità" in the spring of 1957,[23] not with regard to the Neo-Liberty debate that would follow,[24] but in the perspective of a changed Italian sensitivity towards the discipline of the architectural project determined by the experience of World War II. [Figs. 15-18] The famous issue 215 with its editorial by Rogers devoted to a reflection on *Continuity and crisis* could in fact be situated in a series of events that, with the passage of the decade, closed a phase of experimentation dictated by disorientation and urgency, resolidifying disciplinary structures and cultural positions. Remaining on the subject of the relationship between history and project it would be sufficient to cite conferences such as Gubbio, Santiago de Compostela, Geneva or Varenna, all held within a decade, or the historiographical construction of the Modern Movement by Leonardo Benevolo, published for the first time in 1960.[25] Different hypotheses of «continuity» thus closed an objective – and vital – period of «crisis» for an architectural culture that had found itself facing unusual themes – the reconstruction and the urgency of the house, the reconstruction of the destroyed heritage, working in memory of the deaths caused by the war – having available only the tools developed before the war, which were found to be totally inadequate. The architecture intellectuals, like any other Italian, had fought, been deported or exiled, and once the conflict ended the survivors had returned to architecture with eyes focused on a changed reality and on an image of architecture, monumental and not, that was physically broken.

Among the "myths" that support the architecture of the early 20th century and that do not survive the passage into the second half, certainly the figure of the architect-artist and genius solver on the one hand, and, on the other hand, internationalism, the trust in a shared language, in a "grammar" of the modern, a new unitary architectural language able to move from reputable processing centres to be applied in each specific

23. "Casabella-Continuità", April-May 1957, No. 215, pp. 62-75.

24. The bibliography regarding the discussion on Neo-Liberty is extensive. For a complete study of the historical context and bibliographical wealth, see the essay by Manuela Morresi: *Storia e architettura: neoliberty, revival, moderno (1954-68)*, in A. Guerra, M. Morresi, *Gabetti e Isola. Opere di architettura*, intr. F. Dal Co, Milano, Electa, 1996, pp. 283-314.

25. L. Benevolo, *op cit*. The conferences referred to and that lead somehow to the fruition of a reflection on the relationship between design and history centred on the "occasions of architectural composition" in historical environments and the result of post-war experimentation are: the MSA conference in Varenna in the spring of 1960; the convention on the *Protection and Restoration of Historic Centres* held in Gubbio in September 1960 (at which was drafted the Charter of Gubbio); the conference of the Fédération Internationale pour l'Habitation, l'Urbanisme et l'Aménagément des Térritoires in Santiago de Compostela, held exactly one year later; the seminar on urban renewal organised in Geneva in June 1961 by the Comité de l'Habitat of the European Economic Commission. In 1964 the Charter of Venice was drafted.

global context. The *Guida al codice anticlassico* by Zevi[26] would make the model clear – that is, the classical codex – while at the same time denouncing its impossibility because, as he writes, summing up his positions drawn from the years that interest us here, the "masters" of early 20th century architecture did not leave any "grammars". This did not prevent a part of the architectural culture of the late 20th century from focusing on the reworking of the «anti-classical codex», more or less critically, and to continue to cultivate the internationalist idea of a language, though not unique, traceable to a small number leading figures who were able to influence a cultural elitist global landscape thanks to a bloated media presence in the discipline.

Remaining in Italy at the passage of the mid-century, radically different hypotheses loomed that would certainly not emerge victorious from the disciplinary consolidation between the fifties and sixties, and even less so during the "policy" turning point between the sixties and seventies. It is to this "losing" line – today, with the fading of other hypotheses, it has returned to the forefront – that we would like to include the disconcerting appearance of the works of Gabetti & Isola in the pages of "Casabella", attempting to associate them with a revision of the relationship between history and project within the tradition of the early 1900s – which is, according to the magazine, also a moment of generational change – and their rather obvious irrelevance to this debate, which even Roberto Gabetti participated in as an intellectual protagonist.

The reversal of relevance between individual identity of the architect artist and specificity of the individual work, outlined by Rogers in his aforementioned writings on the Anonymous, could have been meeting ground with the «young people of Turin» at the time of their appearance in "Casabella-Continuità", but this did not happen and the difference in vision on the topic is more relevant than the unconvincing explicit dissociation of Director in the editorial and continuation in issue 228 in the response to the attacks of Banham, «guardian of the frigidaire».[27] In the editorial on the subject *Continuity or crisis* the question of «style» is picked up by Rogers in terms of the Anonymous because a «big misunderstanding arises when one continues to consider the 'style' of the Modern Movement from its visual appearances and not according to the expressions of a method that has attempted to establish new and

26. B. Zevi, *Il linguaggio moderno dell'architettura. Guida al codice anticlassico*, Torino, Einaudi, 1973 (Eng. trans. B. Zevi, *The Modern Language of Architecture*, Washington, University of Washington Press, 1978).

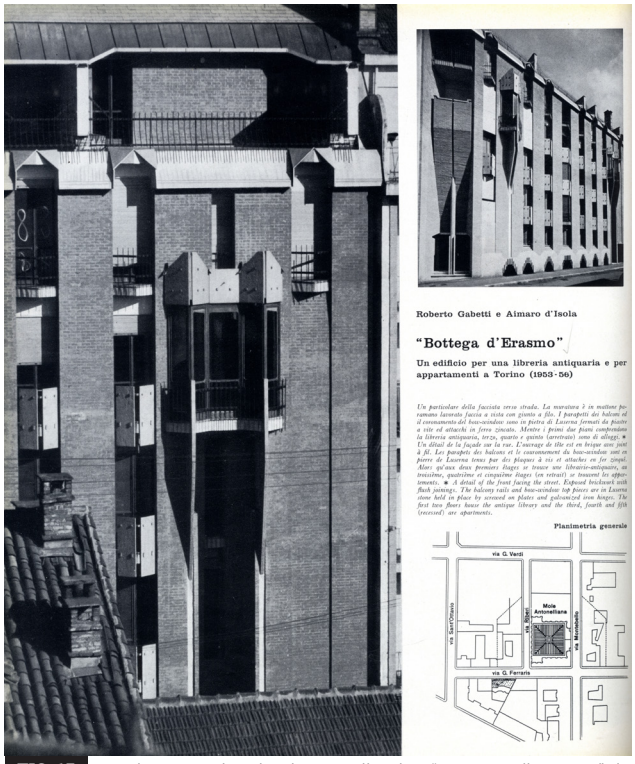

FIG. 15 Roberto Gabetti, Aimaro d'Isola, *"Bottega d'Erasmo"*, in "Casabella-Continuità", April-May 1957, No. 215, p. 62.

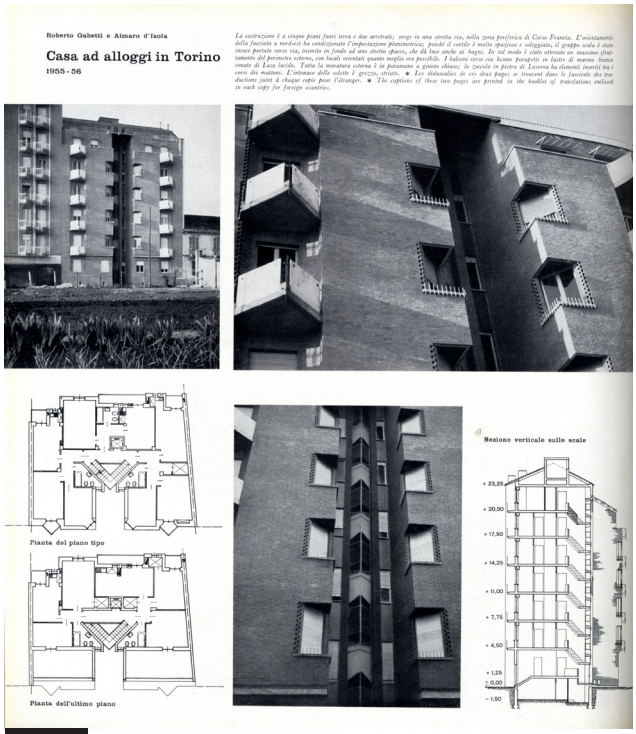

FIG. 16 Roberto Gabetti, Aimaro d'Isola, *Casa ad alloggi in Torino*, in "Casabella-Continuità", April-May 1957, No. 215, p. 70.

27. E.N. Rogers, *L'evoluzione dell'architettura. Risposta al custode dei frigidaires*, in "Casabella-Continuità", June 1959, No. 228, pp. 2-4.

clear relationships between content and form». The intellectual meeting with the two young architects from Turin – whose collective professional structure could arouse some sympathy if not in the Director then in the BBPR partner – didn't happen because the surpassing of the artistic personality proposed by Rogers favours a broader and suprapersonal personality as mentioned above, while overcoming the expressive personalities proposed by Gabetti & Isola takes place in the direction of heteronymy and is completely devoid of the heroic dimension that we still find in the Rogerian Anonymous. In the perspective of the young architects from Turin, the subject raised by the issue of the magazine hosting them appears absent in favour of a contiguity rather than a continuity, with the history free of any distinction of ages and without any concession to the "modern" early 1900s as an unavoidable touchstone. Each language is acceptable, not as the choice of the designer for a "style" – he has his own predilections – but for the benefits it offers to the single work, and, above all, its constructability. Their cosmopolitan[28] and cynically alien language to find a home in a period, in a single reference, is considered «formalism» by Rogers because it does not care «to understand the forms in terms that were justified at the time in which they were made» and does not take into account «that our age, moved by other content, naturally inspires other figurative motifs».

But Gabetti & Isola, in the letter to Gregotti in those same pages, clearly express their distance from the desire to compose new forms, and with regard to the Turin mould they objected: «You spoke of Turin (remembering Persico) as a point of European convergence: we would like to say that it is more a centre of reception than a driving force, ready to sense, to foresee, distant influences». The task that they are taking upon themselves is not to proclaim a new «gospel», they say, but the practice of a project in which «every act» is «concluded in itself» and in which the architect is no longer the dominant personality – individual or suprapersonal, with name or anonymous – in the process, but one actor among the many actors of a «comedy of art» that includes owners and builders, suppliers and workers, all working on the «material» as much as on the «idea», all free to intervene «as main actors» on the designer. With regard to language, to the "style" – if we remain with the definition «Neo-Liberty» which will then catalyse the discussion – the attitude of Gabetti & Isola is radically innovative compared to any discussion on the return to history or its rejection and offers no guarantees of either continuity or innovation. The language does not determine the body of the architecture, but enters into the process of its construction, becoming a component like any other: money, client requirements, conception and construction. The architect's goal is not to lead the confluence or conflict of the different components to formal synthesis but rather to bring the work to constructed reality. Gregotti seeks to transform the receptive and productive attitude of the young people of Turin into militancy, noting that in his opinion they would

28. P. Levi, *The drowned and the saved*, London, Abacus, 1989; G. Agamben, *Homo sacer*, Torino, Einaudi, 1995 (Eng. trans. G. Agamben, *Homo sacer*, Stanford, Sovreign Power and Bare Life, Stanford Univ. Press, 1998). The passage from internationalism, understood as the processing of a single language that conforms and unites, to a new cosmopolitanism, understood as knowledge and inclusion of the other focused not on the homogenisation but rather based on the principle of receiving and maintaining the differences is at the root of the cultural rift caused by the war. In the chapter *Comunicare of I sommersi e i salvati* (Torino, Einaudi, 1986), Primo Levi reflects on the consequences of the concentration camp experience with regard to the impossibility of finding a common language, a prelude, you might say, of the "impossibility of the narrative" after the liberation, of which the book is a tragic and final witness. Levi describes the camp as a cosmopolitan environment using a jargon influenced by the many languages spoken by the prisoners, in which German is the language of the jailers, for many "the difference between life and death", and where the rubber whip was called *der Dolmetscher*, the interpreter understood by all. The true meaning, or meaninglessness, of the concentration camp experience is in the deed, not in the word, the «bare life», as Agamben defined it (Cfr. G. Agamben, *Homo sacer*, Torino, Einaudi, 1995, founding text of a wider reflection on the theme developed by the philosopher). That basis of the non-speakable has innervated philosophical, literary and artistic reflection in the late 1900s, in architecture remaining confined to the broader theme of memorial architecture dedicated to deportation, without going to the heart of the disciplinary discussion. Moreover, Ricci's aforementioned reflections on the Anonymous are explicitly linked to the subject of the Holocaust in several parts of the volume written in 1962, and, for present purposes, describe a condition in which «the unhappiness of others affects our happiness and cancels it», erasing any possible saving component of the architecture. Architecture can only be an act of constant and repeated interpretation of circumstances and language – the languages – or a heteronymic game to eliminate them, or the result of interpretative action, a language of the existence and the constructive fact that is at the centre of Ricci's research. The subject will be repeatedly touched on by the BBPR studio and is also central to the definition of discontinuity between the first and second halves of the Italian 20th century, therefore fully relevant to the research presented herein (cfr. G. Leoni, *In memoria dell'altra Resistenza: il Museo Monumento dei BBPR a Carpi*, in VV. AA., *Il Museo-Monumento dei BBPR a Carpi*, Bologna, BUP, 2016, pp. 25-48).

have «fought some battles» and «looked to history, and in history … chosen». But looking at the works published in Casabella it would be difficult to point out what the choice was, this would be borne out over time by the infinite and always unresolved historical-critical game based on the "references" of the Gabetti & Isola studio. A capacity to deceive historiography and criticism that perhaps points out, in both, different tasks.

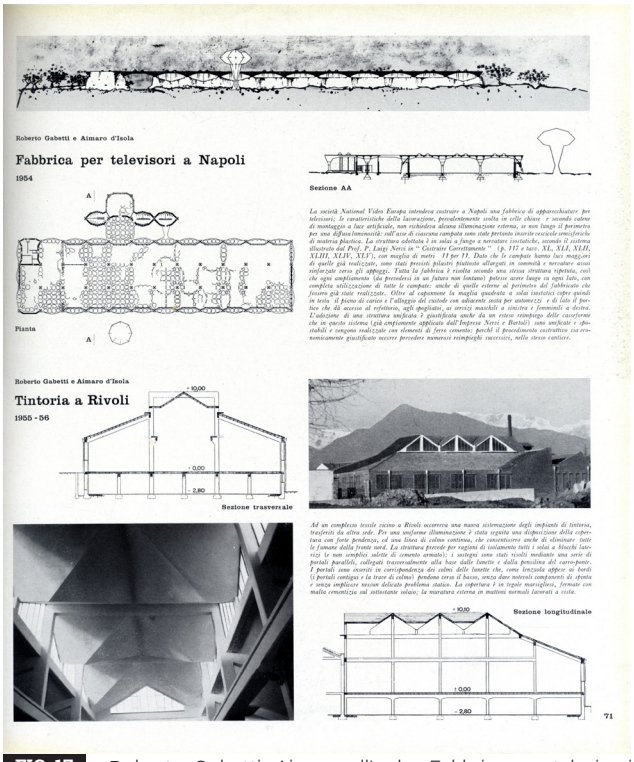

FIG. 17 Roberto Gabetti, Aimaro d'Isola, *Fabbrica per televisori a Napoli*, in "Casabella-Continuità", April-May 1957, No. 215, p. 71.

Historiographically, Paolo Portoghesi's attempt a year later to bring «Neo-Liberty» back into the scope of a frail but – in his view – well identified Italian "modernist" tradition was more refined.[29] However, Portoghesi's criticism of «Neo-Liberty», clearly referring if not explicitly to Gabetti & Isola given the proximity of the controversy regarding the Bottega of Erasmus, is that «it is obviously not enough that a building be liked by an enlightened client or by a restricted group of educated persons, which can be exchanged for Italian society». Neorealism – another historical outcome outlined in the article – invented a client, admits Portoghesi, and faked isolation from the now inescapable metropolitan condition while maintaining a community dimension established by artisanal construction skill. Portoghesi refers mainly to Ridolfi, still an "anonymous" architect plunging into artisanal construction uses, who does not seek to invent new forms (if anything working on type), yet interpreter of a «community» and a «city» as a place in which the community takes shape and shows itself. The Construction site, in the prose of Portoghesi still fully immersed in the myths of the early 1900s, thus provides a «sense of community» and «objective reasons of craft that determine the architect's desire for form beyond any intellectualist trends». We are far from the understanding of the new structure of the project as the guide of circumstantiality and the different link between formal expression and construction of the work that springs from it, outlined by Gabetti & Isola.

To understand this new structure, moreover, it was necessary to depart from any process of legitimation of the "modern" early 1900s – taken alone or in post-war revisions – as the sole refounding moment of architectural languages. The road is clearly indicated by different aspects of the path of of Roberto Gabetti as a architecture intellectual and historian and, in particular, by his interest in eclecticism. In a text published again in "Casabella" exactly 10 years after the 215 issue,[30] discussing «revivals and historicism in contemporary Italian architecture», Gabetti offers a "militant" version: «history as the only system suited to investigating recent or ancient phenomena» – the distinction seems unimportant, the "ancient" is as valuable as the "modern" and vice versa – in order to «find a strong

29. P. Portoghesi, *Dal neorealismo al neoliberty*, in "Comunità", December 1958, pp. 69-79.

30. The work, published in "Casabella" No. 318 in October 1967 was republished in the double issue of "Controspazio" dedicated to the Turin studio (October-November 1977, pp. 88-89).

support to our work», a «critical» and «disillusioned» inquiry open to «free and meaningful combinations», against the «positivist [method] of direct derivation, demonstrated in a series of cause and effect», away from «direct connections» and engaged in a game of «decomposition and recomposition of memories» – in the plural – «thick, intense and brutal». Under the entry for «Eclecticism» prepared contemporaneously for the *Dizionario Enciclopedico di Architettura*, edited by Portoghesi,[31] Gabetti had occasion to articulate militant positions now recalled in a historiographical essay that is exemplary but no less oriented. At the centre of his understanding of Eclecticism, specifying that the term does not define a «category» but rather a specific historical event dating between 1815 and 1890, Gabetti places the process of «disassembly and reassembly» to «achieve a freer and wider availability of language» and to allow the «first application of the experimental method to architecture». A form, then, that does not determine in advance the design process but rather accompanies it to uncertain outcomes. A historical form that, incorporated in the project, does not lose its «archaeological» nature entering a «theoretical» dimension, which does not lead to derivative forms but is preserved as such and associated with other components of the project. But above all a form that is known «in some scientific way» – the appeal to archaeology – and used in a low-key fashion, does not come into conflict with the rationality and scientific nature of the building. «It certainly would have benefited architecture to draw its own principles more directly from the scientific world and not to behave as an independent field in the enlightened system of the arts, of the sciences of techniques», wrote Gabetti in his text on Eclecticism, inviting the reader to follow the tradition of rationalism of the 1700s and 1800s. Thus appeared the other term of reference in Gabetti & Isola's research, already quite evident in the works of the media debut in "Casabella" but that on that occasion did not trigger a passionate debate too focused on "stylistic" matters: rationality and science of construction techniques, another principle of architectural depersonalization, of distancing the figure of the architect artist that had been brought back to the centre of the discipline by the culture of the early 20th century.

FIG. 18 Roberto Gabetti, Aimaro d'Isola, *Palazzo della Borsa Valori in Torino*, in "Casabella-Continuità", April-May 1957, No. 215, p. 72.

31. R. Gabetti, *Eclettismo*, in P. Portoghesi (ed.), *Dizionario enciclopedico di architettura e urbanistica*, Roma, Istituto Editoriale Romano, 1968-69.

The difficult position and critical historiography that afflicted (or saved) the work of Gabetti & Isola stems from its estrangement from an interpretation that sees the late 20th century only as a revision of the early 20th century – continuity or crisis of the "modernist" canons – where there is also a critical action, developed especially through built architecture and not theoretically, that archives the structure of the early

20th century project and its fascinations restarting from the results of 1800s eclecticism and the decomposition (and inevitable, constant recomposition) of the dual nature of architecture, on the one hand a work of art that is not exempt from the changes and the circumstantiality derived from its being inhabited, and on the other hand technique amenable to science answering to the imprecise and variable metric of the human body and its actions.

Questions That History Cannot Answer. Three Positions from 1981

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ABSTRACT

The relationship between history and architectural practice is complicated, specifically in the post-war period. By "reviewing" an issue of 1981 of the French magazine "AMC", in this article some of the questions that history cannot answer are addressed. Three different positions (and three ways of dealing with history at the end of the 20th century), present in this issue of "AMC", are examined: that of philosopher Hubert Damisch, of historian Manfredo Tafuri, and of OMA/Rem Koolhaas.

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KEYWORDS

historiography, postwar architecture, criticism, theory of history, OMA/Rem Koolhaas

1.

In the summer of 1981, an issue was published of the French magazine "Architecture Mouvement Continuité (AMC)" – a themed double issue, numbers 54-55, under the editorial direction of Jacques Lucan and Patrice Noviant, entitled *Histoire et modernité. Quelqu'uns que j'aime… parmi les modernes.* [Fig. 1] On the cover, a colour drawing was reproduced of the project by OMA/Rem Koolhaas (with Stefano de Martino and Kees Christiaanse) for Boompjes in Rotterdam (1979-81), consisting of two structures, a tower and a housing block. Other projects featured in the issue were by, among others, Christian de Portzamparc, Paul Chemetov and Frank Gehry. About twenty French architects (such as Jean Nouvel, Alain Sarfati and Yves Lion) were asked – as "citizens of the future" – to express "their ambition for the 1980s". In a theoretical postscript to the issue, six authors (such as Hubert Damisch, Georges Teyssot and Pierre Sady) reflected on the nature of historical and critical writing. The issue of "AMC" concluded with the essay *Le "projet" historique* by Manfredo Tafuri – the first half of the introduction to his book *La sfera e il labirinto. Avanguardie e architettura da Piranesi agli anni '70*, published in Italian in 1980.[1]

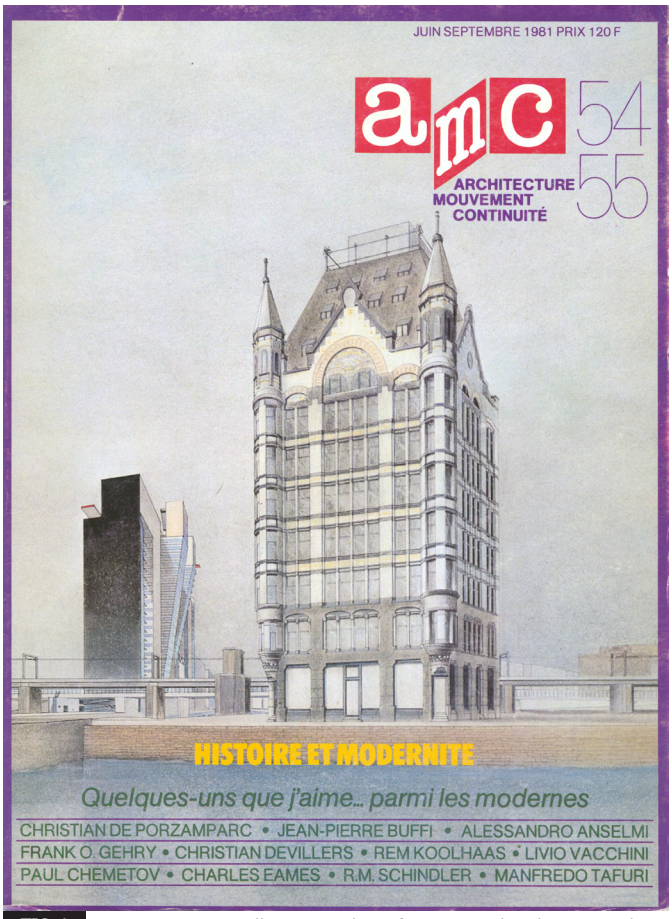

FIG. 1 OMA/Rem Koolhaas, Project for Boompjes in Rotterdam, 1979-1981, with the 'White House' from 1898 in front, on the cover of: "Architecture Mouvement Continuité (AMC)", Nos. 54-55, 1981 (scan by the author, 2015).

A closer examination of this issue of "AMC" – a critical review more than 35 years after the fact – is revealing for the state of not only architectural writing but also of architectural culture and production. As exemplified in these pages of the Parisian magazine, and specifically by the positions of philosopher Hubert Damisch, historian Manfredo Tafuri and architect Rem Koolhaas, the nature of intellectual work in the field of architectural history has changed during the '80s, the '90s and the first decade of this century. At the same time, one versatile solicitude has remained: how to mediate between history and modernity, between the past and the future, after the Second World War? What is the relationship, in architecture, between the work of historians and architects? And how conclusive and comprehensive is the study of history as a scientific or cultural activity?

1. A French translation of the second half of the introduction to *La sfera e il labirinto* was published four years earlier: M. Tafuri, *Architecture et historiographie*, in "La nouvelle critique", 1977, No. 103, pp. 107-12.

2.

The contribution to "AMC" by Damisch was entitled: *Pourquoi le XXe siècle?* His answer was straightforward.

> Parce que je ne vois d'abord possible de l'architecture et de ses

> oeuvres, au moins dans un premier temps, que dans l'optique et selon les voies qui sont celles de notre temps. Et cela si même nous sommes tentés de chausser d'autres lunettes, de découvrir ou d'inventer d'autres chemins.[2]

2. H. Damisch, *Pourquoi le XX^e siècle?*, in "AMC", 1981, Nos. 54-55, p. 134.

Damisch' interest in architecture – in its histories and theories – is thus rooted both in the present and in the future. The architectural theory he practises is above all "cultural" in nature: for Damisch, architecture is a human practice that can help to interpret and to understand the world and the society we live in, both by constructing histories and by envisioning possible futures. In this sense, architecture does not (or should not) differ significantly from art or literature. In his contribution to "AMC" in 1981, Damisch makes a bold and almost apocalyptic statement in this direction.

> Au point où nous en sommes de ce siècle, les choses ont le mérite d'être claires: ou l'architecture deviendra partie intégrante de la culture, ou l'on pourra faire une croix sur l'une et sur l'autre.[3]

3. *Ibid.*

Either architecture becomes a real, full-blooded and culturally embedded activity, or both architecture and intellectual culture will perish… It is hard to maintain that today, after the progressive professionalization and academisation of the architectural sciences, architectural theory, criticism and history has become a full part of what we in 2016 still regard as globalised "culture". Since this culture has almost completely turned into a gear wheal of the machines of the culture industry, rather than developing into an accessible but intellectual sphere of knowledge, this is not necessarily a bad thing. But in Damisch' justified wish to "culturalise" architecture, lies without a doubt an echo of his post-war education and experience. In an interview from 1998, he talked with Yve-Alain Bois, Denis Hollier and Rosalind Krauss about his preceptors at the Sorbonne: Maurice Merleau-Ponty and Pierre Francastel.[4] Both encouraged him to study on the one hand history, but also to ascertain, on the other hand, that history itself – the study of the past – is not enough for the construction of assertion and meaning: "there are questions that emerge from the historical field that can be posed in historical terms but that history itself cannot answer".[5] Damisch continues:

4. See also my review of Damisch' most recent book: C. Van Gerrewey, *Noah's Ark. Esssays on Architecture, Hubert Damisch*, in "sITA – studies in History and Theory of Architecture", 2016, No. 4 (forthcoming).

5. Y.-A. Bois, D. Hollier, R. Krauss, *A Conversation with Hubert Damisch*, in "October", 1998, No. 85 (pp. 3-17), p. 3.

> You have to remember that we were just emerging from the war. It was extremely important to me, the idea that I had perceived history. During the war as a child and adolescent this was something I *saw*. I remember hearing the first news about the war announced on the radio; but I didn't really believe it until I saw the facts actually written on the posters. In the same way, I was profoundly marked by one of the first examples of what I experienced as graphic design as such: the eagle and the swastika on the deportation notices.[6]

6. *Ibid.*

What becomes clear from this statement from 1998, and what is already present in his contribution to "AMC" in 1981, is that Damisch regards contemporary designers, artists and architects as "mediators"

between what is happening or what has happened in the world (in particular during the terrible years of World War II), and between the sense and significance we can subtract from these events. Art and architecture are creative activities that instigate the hermeneutic processes that are characteristic and decisive for human life. This also means that for Damisch historiography itself – as a scientific, strictly limited activity – is not enough. Again: "there are questions that history cannot answer". What is needed to answer these questions is their projection into the future, with a little help form architecture and art. As the 20th century drew to a close, Damisch experienced how exactly these links between history and future, and thus also the attempts to make art and architecture truly cultural, became more and more scarce and even impossible. Again from the interview from 1998:

> I am interested on the one hand in the archaic and in a future about which we have no means to think. This is important because today we are in a situation in which history only thinks retrospectively, in the past tense. All utopian, all projective dimension within it is thus aborted from the outset.[7]

7. *Ibid.*, p. 5.

3.

The abortion, from the outset, of utopian and projective dimensions, can be regarded as the main goal of Manfredo Tafuri's activities as a critical historian. Tafuri was obsessed with the fact that every form of understanding always and necessarily entails a form of pursuing, of continuing, of pushing on, against all odds. Truly "understanding" and "interpreting" the past always involves a form of "abuse" of history, or at least an activation of history for the future, and a reduction of the complex realities of the past. This critical conviction becomes clear in many sentences from his text in "AMC" from 1981, and thus from the introduction to *The Sphere and the Labyrinth*.

> It must be made clear that history cannot be reduced to a hermeneutics, that history's objective is not to rend the "veil of Maya" covering the truth, but rather to shatter the barriers that it itself sets up, in order to proceed and to go beyond itself.[8]

8. I quote from the English translation from 1987: M. Tafuri, *The Sphere and the Labyrinth. Avant-Gardes and Architecture from Piranesi to the 1970s*, Cambridge, MIT Press, 1987, p. 5.

The great precursor of this deconstructive practice is Nietzsche, and Tafuri quotes deservedly from Foucault's essay on the German philosopher's influence on language and "counter-memory": «Knowledge is not made for understanding; it is made for cutting».[9] The cutting that Tafuri undertook was directed against (Italian) post-war architects and more specifically against historians (or so-called historians) that used the past of architecture to legitimize future practices. He addressed this so-called "operative" or "normative criticism" earlier – for example in the fourth chapter, bearing exactly that title, from *Teorie e storia dell'architettura* from 1968.

9. *Ibid.*, p. 4. The sentence comes from: M. Foucault, *Nietzsche, Genealogy, History*, in D. Bouchard (ed.), *Language, Counter-Memory, Practice*, Ithaca, Cornell University Press, 1977, p. 140.

The post-war intellectual tradition Tafuri's position springs from, is almost diametrically opposed to that of Damisch, although the starting point is the same. For Tafuri, the horrors of the Second World War, of fascism, Nazism but also of optimistic post-war capitalism, have enlarged the crisis of intellectual and political work to an almost unbearable degree. Architects and historians cannot "mediate" this situation or make it understandable and thus in a sense "bearable", as Damisch believed. All they can do is try to sabotage every attempt, no matter how well meant, of consumption, recuperation, mendacious generalization or profitable mythologisation. Hence the last sentences of his article in "AMC" from 1981.

> We harbour no illusions regarding the power of historical analysis to demystify per se; its attempts to change the rules of the game enjoy no autonomy. But inasmuch as it is social practice – a socializing practice – it is today obliged to enter into a struggle that puts into question its own characteristic features. Within this struggle, history must be ready to risk: to risk, ultimately, a temporary "inactuality".[10]

10. M. Tafuri, *The Sphere and the Labyrinth...*, cit., p. 13.

The paradox of this "inactuality" of history – and of Tafuri's project as a whole – is in itself historical. That is to say: Tafuri's use of knowledge for "cutting" rather than for understanding, and his theoretical choice for deconstruction rather than for hermeneutics, had at the end of his life and the end of the 20th century, lost much of the large critical aura it could claim in post-war Europe. Critical history (to use the famous distinctions by Nietzsche) has turned into antiquarian art history. To reiterate the words by Damisch from the interview from 1998: all utopian, all projective dimension is in our society automatically aborted from the outset. Therefore, the decision to no longer interpret, to no longer attract meaning or direction from the past or from cultural production, is no longer polemical or unruly.

Tafuri himself – an extremely lucid observer of the culture he was part of – was aware of this, and experienced at the end of his life how the professionalization of scientific historiography in architecture had indeed given rise to an autonomous discipline, but also to a discipline threatened by its own disciplinary isolation. In one of the last interviews he gave, he talked about architectural historiography at the end of the 20th century.

> There is a sick academic ambition, and one often privileges chronological periods where sources are easily accessible (for example, the eighteenth and nineteenth centuries), and one reiterates discourses already made which can be retold in a more complex jargon. In the end one produces a monograph of four hundred pages without polemics and dissent. No polemics, no dissent, no history. This is a visible trend, especially inside the universities; effectively, it is a new scholasticism, of which it is difficult to get rid, because when the student is very intelligent and

> very serious he grips to the documentary evidence as it were the last anchor to survive.[11]

11. P. Corsi, *For a historical history. Interview with Manfredo Tafuri*, in "Casabella", 1995, Nos. 619-620 (pp. 145-51), p. 150.

Nevertheless, exactly this tendency of architectural historians, reproached by Tafuri, to focus on the facts and leave speculation, interpretation or projection aside – a tendency that has only spread during the beginning of the 21th century – is also an almost logical consequence of his post-war condemnation of dealing with all too human hermeneutic desires by means of architecture.

4.

And what about architecture? On the cover of the double issue 54-55 of "AMC" from 1981 figured an unbuilt project by OMA/Rem Koolhaas – a project that originated in many ways in the Second World War. Koolhaas wrote the accompanying text, as a reconstruction of the architectural but also historical context of the Boompjes project and of the city of Rotterdam.

> The centre of Rotterdam was bombed in 1940: overnight, it was turned into a 3 km wide crater. […] Immediately, Rotterdam architects started to plan the eventual "reconstruction" project which began during the war and which is still incomplete. During the '50s the new Rotterdam became a paradigm: a CIAM city of slabs that were tied together by a Team X-like "connective tissue" by Bakema, the Lijnbaan. In the '60s and '70s, that emblematic architecture was discredited: on the periphery of the centre, on the other side of the railway track, a second, revisionist reconstruction was started – an assembly by Piet Blom (a small forest of his tree houses), Bakema and others. The new reconstruction was the absolute opposite of the '50s effort: where they were sober, ordered and logical, the new city was chaotic and obsessively humanist. The two cities are separated by a "fault", formed by a railway line and a highway that both cross the river at this point. The separation is further reinforced by a new suspension bridge across the Maas whose approach makes its way into the city through two inexplicable twists.[12]

12. R. Koolhaas, *Deux structures pour Rotterdam*, in "AMC", 1981, Nos. 54-55 (pp. 51-53), p. 51. I quote from the English original text, published (among others) in: Robert Maxwell (ed.), *OMA. Projects 1978-1981*, London, Architectural Association, 1981, p. 39.

For Koolhaas, and specifically for the city of Rotterdam, where the offices of OMA were (and still are) located, the Second World War was above all an opportunity: for a development (in an optimistic political climate) of post-war reconstruction architecture, but also for the reactivation of modern architectural principles developed in reaction to another conflict: the First World War. Much more than the postmodernism that developed during the 1980s, Koolhaas professed a kind of architecture that was explicitly historical and contextual, in the sense that it reacted against both past and current developments. At the same time, the work of OMA also followed the belief that there are always questions that history cannot answer, and

that ask for an architectural projection, rather than a Tafurian negation. The project for Boompjes – consisting of four connected apartment towers with commercial and communal facilities, and the erection (as a fifth tower) of a section of a nearby old bridge as a viewing tower – is in the OMA oeuvre probably the clearest expression of this belief: architecture is always historical, but it also reacts to and even "against" history. In a text from 1985 on the four plus one towers for Boompjes, Umberto Barbieri has indicated this.

> This is a project that forms part of the development of an idea of the city characterized by the use of archaeological relics. The use to which they are put is not just historical but also architectural, projecting them into the future. So Koolhaas's challenge to the functionalist bias of Rotterdam's planners and architects is based on an architectural project in which history is not seen as "conservative restoration" but as reference and stimulus for new images. The idea of preserving one span of the old Willemsbrug is in part founded on a conception of image and memory not as static moments but as dynamic ones, in that they stimulate new technical reflection and the construction of a new urban reality. A reality in which nineteenth-century engineering is transformed into constructivist architecture, being "translated" into a "modern" language.[13]

13. U. Barbieri, *From the bridge to the tower. A project by Rem Koolhaas, OMA*, in "Lotus", 1985, No. 47, p. 126.

One axonometric drawing by OMA summarizes these positions: in the north, on the quay side, the apartment building; at the foot of the old bridge, the erected tower; on the other side of the train tracks, the "White House" (an *Art Nouveau* construction from 1898, one of the few buildings in Rotterdam still standing after World War II), and the projects from the '70s by Blom and Bakema; opposite these: typical, rather generic post-war reconstruction architecture. [Fig. 2] It is a drawing that represents the architectural history of Rotterdam of the past 100 years. It also shows how a new architectural project (by OMA) can reveal aspects of this history, and of that of the modern architecture that is being re-activated, that would otherwise have remained hidden. But most importantly, it is an architectural project that defines future possibilities and scenario's, not simply extracted from history or as a next step in a simple linear progression, but nevertheless based on an understanding of the past and of the present. In 1935, French writer Paul Valéry gave a lecture entitled *Le Bilan de l'intelligence.* According to Valéry, he was living in a chaotic era, defined by a constant stream of data, innovations, updates and new sensations. In this kind of culture, intellectual and cultural work no longer offered a traditional fundament for action.

> Le travail accumulé des hommes amorce sans doute un certain avenir, mais un avenir qu'il nous est absolument impossible d'imaginer; et c'est là, entre les autres nouveautés, l'une des plus

> grandes. Nous ne pouvons plus déduire de ce que nous savons quelques figures du futur auxquelles nous puissons attacher la moindre créance.[14]

14. P. Valéry, *Le Bilan de l'intelligence*, Paris, Editions Allia, 2015 (1936), p. 8.

Written and spoken in the years preceding the Second World War, this analysis is not only applicable to our current situation in 2016, but it also sheds a different light on the post-war era, its architectures, and their theories and history. The period from 1950 to 2000 has been a flowering period for architectural culture, not in the least because of the constant interactions, no matter how polemical or critical, between history, historiography, architectural practice, criticism and theory. It would be naive to think that all theses ideas and projects can be simply reactivated in our current era that is more devoid than ever of clear visions, interpretations and battle plans. The questions that continue to emerge from the historical field of post-war architecture will not be answered by history itself. I think therefore historians (or "architectural writers") must be ready to risk, ultimately – and contradicting or rather historizing Tafuri – a temporary "actuality", if only by showing what used to be possible in the period since 1945, what is no longer possible today, and why. To paraphrase a famous sentence by Koolhaas: more than ever, the 20th century is all we have.

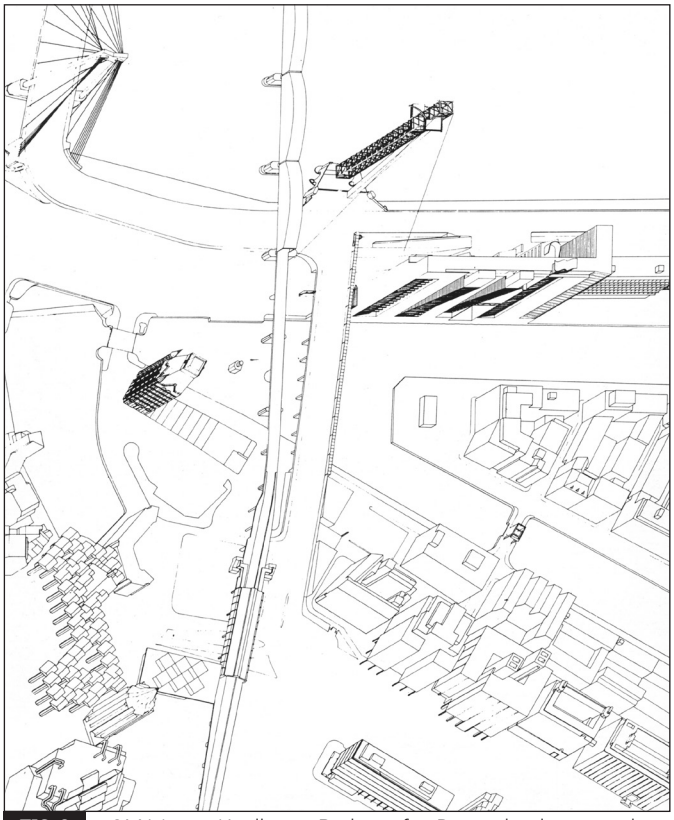

FIG. 2 OMA/Rem Koolhaas, Project for Boompjes in Rotterdam, 1979-81 (© OMA/Rem Koolhaas).

(Re)Search Towards Exhibiting Architecture

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Maristella Casciato is the Senior Curator of Architectural Collections at the Getty Research Institute, Los Angeles. She was previously associate director of research at the Canadian Centre for Architecture (CCA). Maristella Casciato was a tenured associate professor of History of Architecture at the University of Bologna, School of Architecture from 2002-2012. Prior to that she taught History of Architecture at the University of Rome Tor Vergata. She has lectured widely in European and North American universities and has organized and chaired several international symposia. Casciato served as chairwoman of the international non-profit organization Do.Co.Mo.Mo.(Documentation and Conservation of the architecture of the Modern Movement) under the aegis of the French Ministry of Culture and Communication from 2002 to 2010. During her tenure Do.Co.Mo.Mo. has grown from a European group of activists to a global organization. Casciato's scholarly studies focus on the history of the twentieth-century European architecture and the theory of the conservation of our recent past. She has published and co-edited books and essays translated in several languages and has contributed many essays to international peer review journals. She has been awarded the Fulbright Fellowship (1992), a research grant at the INHA in Paris (2004), and the Mellon Senior Fellowship at the Canadian Centre for Architecture in Montreal (2010).

ABSTRACT

The aim of this text is to provide a reflection on my experience in exhibiting architecture based on research projects, considering my particular vintage point as scholar/curator, who has spent the past years as senior staff in major research institutes. It is indeed a unique circumstance, having been the Director Research at the Canadian Centre for Architecture (CCA) in Montreal, prior to move to become Senior Curator, Head of Architectural Collections at the Getty Research Institute (GRI) in Los Angeles.

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architectural exhibitions, Getty Research Institute, Canadian Centre for Architecture, archive, research institutes

At the CCA I was involved in curating an exhibition, which initially originated from the acquisition of Pierre Jeanneret's archive. I shall focus on some aspects of this exhibition, which may prove to define a very fruitful research trajectory in the process of exhibiting architecture.

Another specificity to my experience comes from the fact that both the CCA and the GRI have exhibition spaces, which are specifically devoted to exhibitions on architecture and art related topics though they do not have a permanent collection on display. As a matter of fact, the venue conditions are those of a space whose characteristics are intended to exclusively host drawings, models, and objects to be exhibited temporarily.

What seems more relevant is to underline an epochal transformation that took place at the CCA as well as at the GRI (and this may be very much the case in other research institutes too) in the course of the last decade. The motivations have changed from curating the collections to curating knowledge, transferring the brief from the solely scholarly research to new approaches, which implies the need to make the archival holdings more visible and eventually search for alternatives for reaching the public.

The central issues, as summarized at the conference *Research on Display* (TUDelft & NHI Rotterdam, 2015) are:

- Which formats and typologies of display establish a profound relationship between exhibition and research?

- What is the relationship between archives and knowledge production?

- How can exhibitions combine the accumulation of historical experience and analysis with looking for further expansion?

- How scholars will work in the future considering that the collaborative model is modifying research behavior and the whole concept of authorship?

I am not fully positive that it is possible to create good architecture exhibitions, which are not pure mise-en-scène, or facsimile of the building.

I certainly tried to achieve results of excellence, though my point of departure has never been the architectural object, rather its history, context, materiality, reception. I would say that the research always preceded the subject matter.

What I have experienced is more the exercise of putting on stage a research project allowing the public to engage with the contents it enhanced and the way it was displayed. The educational purpose of such an attempt has seemed to me among the priorities. By the end the exhibition came into being at the convergence of multiple objectives, which embodied its raison d'être far beyond the pure visual result.

When exhibiting contemporary architecture the problem for the

curator(s) is quite complex. The most complete manner in which architecture appears is in its built form. This is already a major challenge: Architecture exhibits/performs outside the museum. The building is just not there when the exhibition is on place. The very expensive and complex way of creating architecture inside a museum space remains a challenge and removes architecture from its everyday life and context.

In the most obvious way architecture exhibitions do recourse to derived materials. These include drawings, photographs, scale models, video/moving images, and digital media. The objective is to document how a project/a concept/a plan developed. This gives some hope not only for exhibiting architecture, but also for understanding it. Yet, architecture inheres in building, but it is not the same as building. If one can distill what is architecture from building, then one can also say that an exhibition is in itself architecture, as it is about building.

The different modes of presenting architecture have developed over the last centuries and their conceptual nature has changed from expositions to exhibitions. Currently architectural exhibitions have turned into documentations of contemporary practices and built forms; they present tendencies. They have become reviews, monographic or thematic evaluations and critical in the manner of art exhibitions. In the curatorial practices of today exhibition is an expository tool that, in showing its content, creates an alternative coherence to offer a new, critical or laudatory, psychological or scientific, perspective.

This is a methodological approach true both in terms of historic exhibitions, as in explorations of contemporary topics in architecture, which more and more frequently foster the influences of new, digital technologies. In the later case the curator can use technical descriptions to give enough information to viewers to get a decent sense of what the building might be. The exhibition might itself be part of the distillation of architecture from building. Finally, architecture is a form of art, and a tool for prying open what we think, we know, and we experience.

I have participated in the production and presentation of several exhibitions since the late 1970s.

Funzione e Senso. Architettura casa città in Olanda 1870-1940 was presented at the Palazzo delle Esposizioni in Rome in 1979. It represented my first venture in displaying original documents outside the archive. Hundreds of original drawings together with textual documents, book and journals, and vintage photos were selected from the collections of the Dutch Documentation Center in Amsterdam and critically assembled to narrate the epic of the construction of working class housing and the Dutch modern city. The attention to this modality of displaying architectural history, design and planning received wide attention in Italy and beyond, and resonated in many exhibitions in the following decade.

I wish to examine more closely two exhibition projects, both deeply grounded in an in-depth research conducted in the archival holdings of the research institutes I have been affiliated in the past five years.

How Architects, Experts, Politicians, International Agencies, and Citizens Negotiate Modern Planning: Casablanca Chandigarh was presented at the CCA in Montreal in the Fall 2013. The exhibition has been the result of a research project elaborated in collaboration with Tom Avermaete, architectural historian and professor at TUDelft. We also co-curated the exhibition and co-authored the book *Casablanca Chandigarh. Reports on Modernization*.[1]

1. T. Avermaete, M. Casciato, *Casablanca Chandigarh: A Report on Modernization*, Zürich, Park Book, 2014.

The following quotation: «Modernity entails several different, competing master narratives, different social forces and conflicts between modernity and anti-modernity, and different cultural contextualization of the past-future contrast. But these different varieties do not simply coexist and challenge each other they are entangled with each other in various ways»[2] is explanatory of the aims of the exhibition:

2. Göran Therborn, 1995

1. By mapping a new geography of modern urbanism as developed in Chandigarh and Casablanca through the role of internal and external actors, we want to nuance and extend our historical knowledge on the modern city.

2. By focusing on the entangled character of modern urbanism we intend to introduce fresh themes into the contemporary debate, most notably on the position of the designer and the character of the urban project.

The exhibition aimed to foster fresh discussions on modern urbanism as rooted in multiple locations out of western geo-political and cultural boundaries and to develop visions of modernism that engage local particularity without getting stamped with epithets such as “derivative” or “mimicry” – a syndrome that Dipesh Chakrabarty calls «being relegated to the waiting room of history».

The exhibition aimed to decenter this dominant optic, catalyzing an approach that takes seriously the distinctiveness of modern urbanism and urbanity across the Global South. We intended to contribute to a new geography of the modern city attentive to the entangled multiplicities of modern urbanism that is to say to the mutual appraisal and interaction across borders.

Against this background the exhibition focused on two different, but complementary urban realities that each in their own way have played a paramount role in the imagination, the definition and redefinition of the twentieth century modern city. On the one hand there is Chandigarh – planned by a team consisting of Le Corbusier, Jeanneret, Frey, Drew and local architects and planners – which contributed to build the myth of the modern city designed by modern architects. The new capital was based

on a design approach of "particularity" that relied on the design of very specific and contextual urban morphologies and housing typologies. On the other hand we find Casablanca – conceived by Michel Ecochard and a team of young French and Moroccan architects – which would redefine what the generating conditions of development were in a modern city, introducing concepts such as that of "tissue generateur", eventually moving into the humanized urbanism of Team 10. The planning of Casablanca was largely based on the universalist principle of the grid. Ecochard believed that he could develop a general system of investigation and design that was adaptable to a variety of sites and conditions.

In the course of the development of the planning process the architectural projects that were shown in the exhibition revealed that these were the collective work of professionals from diverse fields as design, engineering, business and politics.

In other words, Chandigarh and Casablanca were not inadequate copies or adoptions, mere translations or distortions, but they had their own logics and might be considered as unique and creative definitions of the modern: they are alternative modernisms (Michael Hanchard) with a strong indigenous basis (Jyoti Hosgrahar).

Chandigarh and Casablanca represented two new and innovative architectural perspectives vis-à-vis modernity that still have some relevance for our contemporary thinking and practice. Both Chandigarh and Casablanca have performed for several decades and both have been appropriated, transformed and redefined by their inhabitants, according to changing conditions, dwelling needs and aspirations.

In the rooms of the CCA the Japanese Atelier Bow-Wow have challenged the relationship between object and meaning, introducing the idea of thematic clusters. We have exhibited drawings and models; we have used projections, films and other evocations to create a palimpsest of what planning new modern cities meant in a postcolonial context and during the cold war years. We asked two contemporary photographers, namely Yto Barrada and Takashi Homma, to illustrate how Casablanca and Chandigarh have allowed for several decades now for change, adaptation and transformation.

Currently, at the GRI I am curating with Idurre Alonso (associate curator of Latin American Art) the exhibition entitled *The Metropolis in Latin America, 1830-1930*. The show is scheduled to be on view August 29, 2017 – January 8, 2018 in the GRI Galleries.

The exhibition examines the unprecedented growth of cities in Latin America from 1830 to 1930, observing how socio-political changes and upheavals activated major modifications in urban scale and architectural landscape, creating the conditions for the emergence of the metropolis.

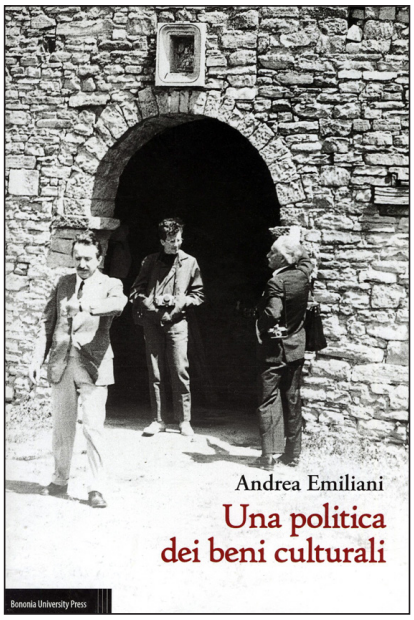
The research focuses on six major cities: Mexico City, Havana, Rio de Janeiro, Buenos Aires, Santiago de Chile, and Lima and points to the Spanish colonial city as the imposed model and the republican city as the negotiated transfer by examining how imported models were interpreted and accommodated.

The Metropolis in Latin America proposes a rich visual survey through the presentations of maps, prints, period photographs, paintings, sketches, books and travelogues, and film clips, with the ultimate aim of providing an understanding of how this transformative period of exchanges and transfers provided the ground for the emergence of the modernist culture in Latin America, and the affirmation of the modern architectural language in the emergent metropolis.

The dominant materials in display are photographs, featuring representations of the Latin American urban conditions in very diverse situations. The photographs are primarily conformed by early vintage prints of city views by some of the most prominent photographers of the time period including Francois Auber, Abel Briquet, Desire Charnay, the Courret Brothers, Marc Ferrez, Augusto Malta, Benito Panunzi, and Charles Betts Waite. The narrative of the exhibition is structured according to a double articulation, with a series of themes organized along a diachronic thread, and a cluster of key words.

The profusion of city views generated mainly during the second half of the nineteenth century highlights the significant interest of the production of this specific type of photography by government entities, commercial companies and local and foreign collectors, and provides us with noteworthy documentation of the transformations and growth of the cities. Next to the photographic documentation, the printed materials will be an eloquent part of the exhibition and will include series of maps, original drawings, and posters, as well as books, travelogues, and professional press. Moving images and sound will also be part of the exhibition through the presentation of excerpts of documentary and fictional movies showing cityscapes. These clips will also include examples of the presence of neocolonial architecture in American films as an element that gained a mass audience in Latin America and generated a process of assimilation of both architectural features and life style.

In conclusion, what I have learned by curating these exhibitions has transformed my research approach. I am aware of the many purposes of an exhibition, which go far beyond being propaganda and marketing. By collecting and spreading knowledge I have been able to achieve critical results and to question the field. Exhibitions create new meanings and generate attention (if not enjoyment) for architecture engaging the audience in overcoming the boundaries between representation and reality.



Tra architettura, paesaggio e grandi capolavori: la "via" bolognese per un metodo interdisciplinare

RECENSIONE A

Andrea Emiliani, *Una politica dei beni culturali*, Bologna, Bononia University Press 2014

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Anna Lisa Carpi è nata a Ravenna e si è laureata a Bologna in Giurisprudenza, con una tesi in Diritto Civile sui limiti dell'autonomia privata nei contratti atipici. Dopo l'abilitazione alla professione di avvocato e una lunga collaborazione con un'azienda privata nel settore bancario-assicurativo, ha conseguito una laurea in Beni Culturali, approfondendo il tema degli attori che compongono il "sistema" dell'arte contemporanea. Con la tesi di Laurea Magistrale in Arti Visive si è, invece, dedicata alla figura di Andrea Emiliani, ritenuto, a partire dall'attività posta in essere con le cosiddette "Campagne di Rilevamento", uno dei pionieri in Italia di una metodologia della critica artistica di carattere antropologico.

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patrimonio, beni culturali, paesaggio, tutela, interdisciplinarietà

FIG. 1 Copertina della prima edizione *Una politica dei beni culturali*, Torino, Einaudi, 1974.

La pubblicazione, nel 1974 [Fig. 1], del testo di Andrea Emiliani Una politica dei beni culturali[1], trova un adeguato contrappunto nella felice proposta di una nuova edizione, a distanza di quarant'anni, nel 2014. L'iniziativa invita al ricordo di uno tra i più fecondi momenti che la tutela del nostro patrimonio culturale abbia vissuto. Al contempo, sensibilizza al divario metodologico generato dalle più recenti scelte politiche e legislative, nei confronti della salvaguardia del patrimonio artistico, urbano e paesaggistico.

Il volume edito nel 2014 raccoglie gli esiti di un'esperienza maturata all'interno delle Istituzioni cittadine e resa possibile grazie alla fortunata convergenza di elementi endogeni - rappresentati, in particolare, da un composito gruppo di studiosi refrattari all'ambiente strettamente accademico - ed elementi esogeni, espressione del fervente clima culturale di Bologna a cavallo del decennio 1960-1970.

Il contesto cittadino del secondo dopoguerra fu caratterizzato, infatti, dal recupero di fermenti originati dalle più antiche tradizioni locali: in special modo un positivismo radicato negli ambienti dello Studio Universitario sin dalle sue origini e fecondo di attitudini sperimentali e induttive, capaci di articolare interventi concreti e generatori di un vero e proprio modello culturale.

Crogiolo intellettuale di queste iniziative fu, a metà degli anni '50, la casa editrice Il Mulino[2], in grado di dare vita, in un Paese ancora saldamente legato a dottrine idealistiche di matrice crociana, ad una delle prime esperienze di carattere interdisciplinare. Il Mulino seppe, infatti, sollecitare il dibattito intorno alle grandi ideologie che infervoravano il mondo, dal marxismo al fascismo, dal conservatorismo all'anarchismo, rielaborandole attraverso un pragmatismo critico che diverrà la cifra caratterizzante il modello culturale della città.

Queste radici giunsero ad una piena consapevolezza critica a distanza di circa un decennio quando, all'interno delle istituzioni politiche, amministrative e culturali del territorio, ebbero modo di incontrarsi uomini provenienti da esperienze formative diverse, ma convergenti nella direzione di una nuova visione di cultura. Complice l'ondata di rinnovamento proveniente da Oltralpe e una facilità nei collegamenti con la Francia, furono in molti, e tra questi Andrea Emiliani[3] a frequentare con assiduità l'ambiente parigino e da questo mutuare una linea di pensiero che fondava le proprie radici nello studio delle cose, degli oggetti, dai fatti quotidiani[4].

1. A. Emiliani, *Una politica per i beni culturali*, con scritti di Pierluigi Cervellati, Lucio Gambi e Giuseppe Guglielmi, Torino, Einaudi, 1974.

2. La casa editrice Il Mulino venne fondata a Bologna nel 1954, sulle ceneri di un quindicinale nato nel 1951 ad opera di un gruppo di amici ed ex colleghi di liceo, poi divenuti professori universitari, tra i quali: Luigi Pedrazzi, Nicola Matteucci, Ezio Raimondi, ecc.. L'ambito di riferimento per le pubblicazioni fu, soprattutto agli inizi, principalmente quello delle scienze sociali di matrice anglosassone: sociologia, antropologia, linguistica, con una naturale propensione verso forme di cosiddetto "neoilluminismo", debitore al pragmatismo razionale della cultura d'oltreoceano. Cf.: P. Govoni, *Il Mulino, la storia della scienza e la Cultural Cold War*, in A. Angelini, M. Beretta, G. Olmi, (a cura di), *Una scienza bolognese? Figure e percorsi nella storiografia della scienza*, Bologna, Bononia University Press, 2015, pp. 347-64.

3. Andrea Emiliani è cresciuto ad Urbino e giunto a Bologna nel 1950 in ragione dei propri studi, portati a completamento dopo alcuni anni sotto la guida di Roberto Longhi. La città gli riservò da subito l'occasione di fecondi incontri: Cesare Gnudi e Francesco Arcangeli furono le personalità che segnarono profondamente i suoi primi anni di attività. Grazie a loro imparò a confrontarsi in via diretta con il patrimonio storico artistico presente sul territorio e ad impegnarsi in iniziative dedicate al suo recupero. Fu l'inizio di una storia dell'arte sperimentata fuori dalle aule delle Università e dagli uffici delle Soprintendenze e pronta a misurarsi con i problemi legati alla catalogazione e alla conservazione, nucleo iniziale di una concezione estesa di bene culturale, molto lontana da logiche selettive ed estetico-formali.

4. Furono principalmente due i riferimenti culturali francesi cui Andrea Emiliani attinse. Da un lato il gruppo di intellettuali raccolti intorno alla rivista Annales, fondata nel 1929 da Marc Bloch e Lucien Febvre e dedita ad uno studio che poneva la quotidianità dei fatti umani e le loro trame al centro delle analisi storiche, politiche, sociali ed economiche. Dall'altro, il pensiero di Henri Focillon, tra i primi intellettuali ad affrontare il tema del rapporto tra la concretezza della materia e la spinta ideale dell'atto creativo. Cf.: L. Febvre, *Problemi di metodo storico*, Torino, Einaudi, 1976; cf.: H. Focillon, *Vita delle forme*, Milano, A. Minunziano, 1945.

La riedizione nel 2014 di Una politica dei beni culturali costituisce l'esemplificazione di questa visione, di cui sintetizza i concetti fondamentali: la necessità di conoscere in via diretta il patrimonio storico artistico e una concezione estesa dello stesso, in grado di comporre insieme i fatti artistici e artigianali con quelli naturali. È, inoltre, espressione di una metodologia di lavoro che unisce la storia degli stili con l'indagine sul territorio.

Innanzitutto lo studio, ormai storico, di Andrea Emiliani forniva e fornisce una indicazione concisa ma completa dei problemi da affrontare per una azione di tutela del patrimonio storico artistico da considerarsi come funzione di pubblico servizio[5], così come si preoccupava e si preoccupa di definirne il perimetro di riferimento.

Per l'autore l'idea della creazione deve essere intesa come fenomeno estetico globale e fatta coincidere con il paesaggio totale[6], composto da ogni trama, anche non intenzionalmente artistica, e meritevole di una valorizzazione che tenga conto sia degli elementi estetici che di quelli economici e sociali. Questa è, verosimilmente, la prima e più importante innovazione metodologica: il patrimonio storico artistico, vero e proprio palinsesto che necessita di essere compreso nella sua integrità, si apre ad una interpretazione vicina al concetto stesso di cultura, scevro ormai da limitazioni collegate a selezioni arbitrarie.

La conoscenza del patrimonio culturale, considerata essenziale a qualsiasi atto di tutela, emerge quale elemento la cui connotazione corre come un *fil-rouge* lungo tutto il libro. Le attività di censimento sul campo, effettuate durante gli anni dal 1968 al 1971, le cosiddette "Campagne di Rilevamento", erano nate proprio con questo obiettivo. È stata elaborata esattamente in questo momento anche la fondamentale nozione di comprensorio, intesa come ambito culturale composito e costituito da elementi di carattere paesaggistico, urbanistico e artistico, analizzati grazie all'intervento di una molteplicità di studiosi – geografi, architetti, sociologi, filologi, etnologi, storici dell'arte – e documentati da un ampio e sapiente uso della fotografia[7].

Le Campagne definirono, nella loro natura sperimentale, i capisaldi di un metodo che, ancora oggi, verte sulla conoscenza, si completa nell'interdisciplinarietà e articola il proprio percorso attraverso una puntuale politica di pianificazione. L'Istituto per i Beni Artistici, Culturali e Naturali[8] fu ideato nel 1974 proprio come organismo strumentale al metodo sopra descritto. La sua natura del tutto innovativa non trovò, purtroppo, una via per divenire paradigma istituzionale di iniziative analoghe data, forse, la peculiarità della sua genesi; tuttavia l'IBC resta un modello ideale di raccordo possibile e praticabile tra funzione politica e organi amministrativi.

Il testo tratta, inoltre, in modo ampio e articolato, dei legami tra i settori culturale, politico e legislativo. La via legislativa rappresenta,

5. Cf.: A. Emiliani, *La conservazione come pubblico servizio*, Bologna, Edizioni Alfa, 1971.

6. Emiliani si pone sulla scia del suo maestro Roberto Longhi che, nel primo numero della rivista Paragone, espresse l'idea che l'arte debba essere intesa come patrimonio diffuso e sedimento di identità. Cf.: R. Longhi, *Proposte per una critica d'arte*, in *Paragone Arte*, Firenze, Sansoni, 1950, I, pp. 5-19.

7. Le fotografie di Paolo Monti sono elemento costitutivo e non solamente documentativo di questa attività. Così come per il censimento fotografico del centro storico di Bologna, confluito nella mostra *Bologna Centro Storico*, organizzata nei locali di Palazzo D'Accursio da Pier Luigi Cervellati nell'estate del 1970, anche il censimento delle campagne durante il *field-work* degli anni 1968-71, individuò un vero e proprio atto critico, necessario per una comprensione esauriente della complessità di questi "organismi culturali". Cf.: P. L. Cervellati, *Una città antica per un società nuova*, in P.L. Cervellati, A. Emiliani, R. Renzi, S. Scannavini (a cura di), *Bologna/Centro Storico*, Bologna, Edizioni Alfa, 1970, catalogo della mostra, Palazzo d'Accursio, maggio-luglio 1970; cf.: P. Monti, *Scritti e appunti sulla fotografia*, Napoli, ACM, 2008.

8. L'IBC venne istituito con la Legge Regionale n. 46 del 26 agosto 1974, come strumento di programmazione regionale nel settore dei beni artistici, culturali e naturali e con funzioni prevalentemente di carattere conoscitivo, consultivo e informativo.

infatti, il modo, imprescindibile, per regolamentare le funzioni politica e culturale, soprattutto in un paese ove il dibattito su questi temi non gode di particolare vivacità. Andrea Emiliani propose già nell'edizione del 1974 un excursus storico sulla legislazione inerente alla tutela del nostro patrimonio storico artistico[9], con interessanti digressioni critiche relative alle ragioni politiche alla base della scelta di dissezionare la globalità del concetto di bene culturale a favore di una molteplicità di distinzioni di natura estetica ed astratta.

Non fu, in realtà, solamente la tutela del patrimonio artistico a fornirgli occasione di approfondimento: molto interessanti si rivelano, infatti, le pagine dedicate alle vicende del nostro territorio, dei centri urbani, delle periferie e delle campagne. La speculazione edilizia dilagante, soprattutto a partire dal secondo dopoguerra, e la prevalenza accordata agli interessi privati[10], vengono indicate da Emiliani come le principali ragioni di una inarrestabile frattura fra i cittadini e i "luoghi", intesi nel globale significato di radice della propria cultura. È solamente attraverso il recupero dei dati relativi alle strutturate sedimentazioni artistiche, sociali ed economiche che risulta possibile conoscere le "unità culturali" di cui i nostri territori sono composti e, attraverso la conoscenza, organizzare una adeguata azione di pianificazione e tutela. Non a caso Emiliani fu tra i primi a introdurre il concetto di equilibrio ecologico come ritrovata consapevolezza dei rapporti tra l'uomo e l'ambiente[11] e la rinnovata esperienza sull'Appennino, nata per celebrare l'anniversario delle Campagne[12], serve proprio a sottolineare tutto ciò.

La riedizione di Una politica dei beni culturali si è imposta per l'assoluta attualità di questi temi, come uno strumento di riflessione arricchito, nella sua nuova veste editoriale, da una ulteriore prefazione dell'autore, che restituisce uno sguardo lucido e vivo alle ragioni etiche e culturali che avevano sotteso alla redazione del testo e poi alla sua riedizione.

I temi della tutela e valorizzazione della articolata struttura culturale che caratterizza ogni zona del Paese non sembrano trovare, nelle più recenti scelte legislative, una sensibilità idonea. Importanti ragioni di ottimizzazione dei processi - come ben si comprende consultando il sito on line del Ministero dei beni e delle attività culturali e del turismo (Mibact) - hanno condotto alla semplificazione dei rapporti, alla distribuzione degli uffici per numero di abitanti o dimensioni del territorio, ad accorpamenti e fusioni delle Soprintendenze che dal 1907 vigilano a presidio del patrimonio culturale[13]. Forse, tuttavia, è rimasta sottotraccia l'attenzione per la complessità delle trame di cui questa realtà è composta.[14]

L'attualità della riedizione del volume risiede nella sua forte impronta etica e civile: nato come testo specialistico per gli addetti ai beni culturali, Una politica dei beni culturali ha dimostrato negli anni una pervasiva capacità di portare il lettore a riflettere su temi che riguardano il rapporto tra la quotidianità e la storia, le nostre radici e il nostro futuro.

9. Sono gli anni in cui Emiliani si occupò più volte di analizzare la storia del patrimonio storico artistico dal punto di vista delle scelte legislative in materia. A tale proposito cf.: A. Emiliani, *I materiali e le Istituzioni*, in G. Previtali (a cura di), *Materiali e problemi, Questioni e metodi, Storia dell'Arte Italiana*, parte prima, vol. 1, Torino, Einaudi, 1979.

10. Cf.: S. Settis, Italia S.P.A., *L' assalto al patrimonio culturale*, Torino, Einaudi, 2002.

11. Su questi temi si veda anche A. Cederna, *I vandali in casa*, Bari, Laterza, 1956; A. Cederna, *La distruzione della natura in Italia*, Torino, Einaudi, 1965.

12. Cf.: P. Orlandi, A. Zanelli (a cura di), *Ritornando sull'Appennino*, Bologna, Compositori, 2010.

13. A tale proposito si veda il DM n. 44 del 23/01/2016.

14. Si può citare, solo a titolo di esempio, la scelta di isolare dal contesto territoriale alcuni istituti museali di particolare rilievo, che appaiono come isole flottanti, chiusi nella propria autoreferenzialità.

L'arte rende omaggio all'eroico Brutalismo

La mostra *Beton* alla Kunsthalle di Vienna, a cura di Vanessa Joan Müller e Nicolaus Schafhausen, 25 giugno - 6 novembre 2016

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Chi ritiene che il calcestruzzo non sia più, o non sia ancora, un materiale decisivo per l'arte contemporanea, dovrebbe ricredersi. La produzione scultorea dei primi anni del Duemila dimostra quanto ormai quel materiale, e tutti i suoi componenti, siano entrati nel mirino delle riflessioni dei giovani artisti internazionali sul futuro della loro arte, al punto che si sarebbe tentati di rispolverare l'espressione usata da Adolf Loos quando aveva scritto di "malattia del calcestruzzo" a proposito dell'architettura. Alcuni fatti stanno a dimostrare il successo di questo materiale nella scultura, e prima tra tutti una serie di esposizioni ad esso dedicate sin dagli anni Sessanta, quando il suo ingresso in arte stava già imponendosi, per arrivare sino ad oggi.

Dopo la mostra *Konst i Betong*, organizzata al Moderna Museet di Stoccolma, curata da Pontus Hultén nel lontano 1964; dopo *Betonskulptur*, tenutasi dal 9 settembre al 29 ottobre 1995 al Kunstmuseum di Düsseldorf a cura di Brigitte Schlüter; dopo *Betong* alla Konsthall di Malmö, tenutasi dal 9 novembre 1996 al 26 gennaio 1997, a cura del suo direttore Sune Greger Nordgren; e dopo la mostra *Concrete: a solid state, a construction material, something which is known or true*, curata da Geraldine Kirrihi Barlow e tenutasi dal 3 maggio al 5 luglio 2014 presso il Monash University Museum of Art, Caulfield Campus, a Melbourne, il pubblico e la critica hanno potuto prendere atto del successo del calcestruzzo nell'arte contemporanea con una nuova esposizione: quella tenutasi alla Kunsthalle di Vienna, dal 25 giugno al 6 novembre 2016, intitolata Beton e curata da Vanessa Joan Müller e Nicolaus Schafhausen[1]. Sin dalla scelta del titolo, riportato nei documenti per la diffusione in lingua inglese dell'evento, gli organizzatori dimostrano la volontà di porre quesiti sul significato culturale assunto dal quel materiale, poiché scelgono la parola francese *béton* ad indicare come la questione del Brutalismo, che sottende lo svolgimento della mostra fosse derivata dal "béton brut".

1. Tengo a ringraziare Vanessa Joan Müller per la disponibilità, e Juliane Bischoff (Curatorial Assistant della Kunsthalle) e Eleanor Taylor (Dramaturgy Assistant della Kunsthalle) per la visita guidata alla mostra.

L'impiego diffuso del calcestruzzo in arte, e anche della sua armatura metallica, va in parte considerato come una conseguenza delle ricerche sperimentali che erano state intraprese con sistematicità tra gli anni Sessanta e Settanta. Al tempo stesso il calcestruzzo è diventato il materiale iconico di molti edifici, e quindi serve agli artisti quale *medium* per entrare in dialogo con l'architettura. I curatori della mostra *Beton* pongono una terza ipotesi che emerge attraverso alcune delle principali opere presentate alla Kunsthalle: l'attuale diffusione del calcestruzzo in arte sarebbe dovuta all'interesse per le architetture del Brutalismo scaturito anche a seguito dei dibattiti sulla demolizione o sulla conservazione di alcuni capolavori degli anni Cinquanta e Sessanta. La mostra intende promuovere un impulso sociale nell'arte di edificare di oggi attraverso l'indagine, condotta dagli artisti, su quelli che sarebbero stati una "Concrete Utopia" e un "Human Modernism" subissati nell'era del Post-Modern. Per questo, la mostra di

FIG. 1 Mostra *Beton*, Kunsthalle, Vienna, 2016. Veduta della sala espositiva (fotografia dell'autore).

artisti a Vienna vuole essere, in realtà, rispetto alle precedenti esposizioni sul calcestruzzo nella scultura contemporanea, una sorta di bilancio critico sul destino dell'architettura che riscatta le opere in calcestruzzo dalla loro rovina, quella fisica o quella dell'oblio.

Nell'introduzione all'opuscolo della mostra si fa riferimento alle caratteristiche e alle possibilità del calcestruzzo di creare strutture innovative fino a diventare, nelle mani degli architetti, strumento per la revisione dei fondamenti dell'International Style, facendosi ora "béton brut", ora Brutalismo, in forme e tecniche variamente declinate, dall'Europa agli Stati Uniti d'America[2].

2. http://kunsthallewien.at/application/files/2914/6667/6680/Beton_BOOKLET_EN.pdf

Diversamente dalle manifestazioni di Stoccolma, Düsseldorf, Malmö e Melbourne, più incentrate sulle qualità della materia della scultura, i curatori della mostra di Vienna selezionano opere o richiedono agli artisti di creare delle apposite installazioni tese a sondare la natura del calcestruzzo quale materiale per la realizzazione di architetture sociali.

Il quadro degli artisti convocati alla Kunsthalle comprende scultori internazionalmente riconosciuti quali protagonisti di un uso del calcestruzzo in arte, scelti perché da sempre impegnati a riflettere sulle questioni dell'architettura e della città, come Isa Genzken (1948) o Huber Kiecol (1950), ed artisti quarantenni impegnati ad indagare ora l'arte del costruire colta nei cantieri e su cui rifondare la scultura, come fa Karsten Födinger (1978), ora invece a sondare, mediante installazioni

puntuali, le qualità di luoghi urbani edificati in calcestruzzo, come fa David Maljković (1973). [Fig. 1] La presenza di *Luke*, eseguita nel 1986 e conservata presso il Museum Moderner Kunst Stiftung Ludwig Wien di Vienna, sta a riassumere la produzione artistica della Genzken dedita, come quell'opera, a cogliere l'essenza stessa dell'architettura nel suo chiudere e proteggere uno spazio, nel suo proporsi quale ritratto dell'artefice (il foro in forma di occhio allude a questo), e nel suo essere atto del costruire che avviene per fasi visibili nella stratificazione della materia, con fasce informi che proiettano il "béton brut" nella dimensione sperimentale ed artistica che si riscontra nelle architetture di Jean Nouvel, di Annette Gigon & Mike Guyer o di Peter Zumthor. [Fig. 2]

FIG. 2 Isa Genzken, *Luke*, 1986 (fotografia dell'autore).

Case e strade di *Zeile* del 1981 e *Drei Straßen* del 1989 sono gli elementi della città a misura umana, fatta di casette tradizionali di calcestruzzo che Kiecol mette in scena con le opere presentate alla mostra - una visione, la sua, che comunque contraddice la "Concrete Utopia" del Brutalismo in nome di un decantato Post-Modern, alla Aldo Rossi -, mentre la panchina a trilite e le assi di legno appoggiate alla parete creano un paesaggio ambiguo, *Im Wald* del 2009, che rappresenta un'altra opera problematica nel quadro del progetto culturale di *Beton*.

Una importante dimostrazione del valore delle architetture del secondo dopoguerra quali esempi significativi del tema della mostra, il "Beton", avviene attraverso le fotografie oltre che i video. L'architettura italiana dei decenni che vanno dagli anni Quaranta agli anni Settanta viene diffusamente documentata dalla rassegna fotografica curata dall'artista austriaco Werner Feiersinger (1966), che sin dal 2009 assieme al fratello architetto Martin aveva intrapreso una ricerca volta a creare una catalogazione di edifici costruiti tra il 1946 e il 1976, poi confluita in due volumi riccamente illustrati[3]. Per la mostra, Feiersinger seleziona otto fotografie tra cui figurano anche, per la loro componente scultorea, il ponte sul Basento di Sergio Musmeci, i piloni del viadotto a Genova di Riccardo Morandi, la casa di Alberto Perugini a Fregene, oltre ad una delle più celebri sculture in calcestruzzo, il *Cretto* di Alberto Burri a Gibellina. Ma i pannelli fotografici costruiti con la volontà di creare un murale artistico a tema sono quelli di Turr Burr (1963) in cui vengono montate, secondo le indicazioni dell'autore, una serie di stampe fotografiche, talvolta con sovrapposizioni di immagini, per creare una narrazione intorno al clima culturale politico artistico di New Haven. [Fig. 3] La scelta della città nel Connecticut, che è anche luogo nativo dell'artista, è decisiva nello svolgimento della mostra, se si pensa che tra gli anni Cinquanta e Settanta

3. M. & W. Feiersinger, *Italomodern, Architektur in Oberitalien 1946-1976*, Wien, New York, Springer, 2012; Id., *Italomodern 2 Architektur in Oberitalien 1946–1976*, Zürich, Park Books, 2015.

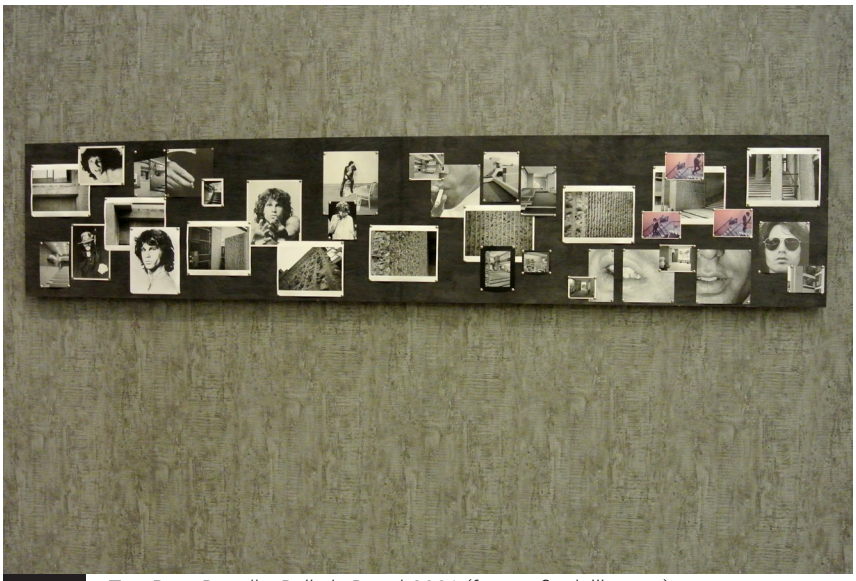

FIG. 3 Turr Burr, *Brutalist Bulletin Board*, 2001 (fotografia dell'autore).

vennero costruiti alcuni dei massimi capolavori dell'architettura del "Beton" internazionale, una serie aperta dalla Yale Art Gallery di Louis I. Kahn e chiusa dal Paul Mellon Center for British Art and British Studies, sempre di Kahn. Eppure proprio queste opere non figurano nei pannelli di Burr che invece prende di mira l'Art and Architecture Building di Paul Rudolph perché quell'opera, con il suo violento "corduroy concrete", aveva scatenato una reazione critica da parte degli studenti che nel giugno 1969 sfociò nel disastroso incendio che compromise l'opera. Proprio per questa ragione, Burr monta insieme alle fotografie delle architetture di Rudolph quelle di Jim Morrison che venne arrestato il 9 dicembre 1967, durante un concerto dei The Doors nella Arena a New Haven. Nell'altro pannello fotografico, sempre di Burr, le fotografie di Morrison sono montate insieme a quelle del Knights of Columbus e dell'annesso Veterans Memorial Coliseum di Kevin Roche & John Dinkeloo, forse perché, dal 1972, quest'ultimo aveva ospitato l'Arena demolita pochi anni dopo l'arresto di Morrison.

Nei suoi pannelli Burr da spazio anche a fotografie di dettaglio del calcestruzzo di Rudolph, con le tipiche costole scheggiate a colpi di martello dopo il disarmo. Proprio per questo sorprende che le sculture presentate nella mostra dall'artista Kasper Akhøj (1976) siano un vero e proprio fraintendimento in materia di declinazioni formali del Brutalismo internazionale. L'opera, intitolata *999*, è formata da blocchi identici di calcestruzzo grigio, lavorati con le stesse costole scheggiate del "corduroy concrete" di Rudolph, benché Akhøj ottenga l'effetto direttamente dallo stampo e non intervenendo con il martello dopo la sformatura (la fabbricazione è affidata ad una impresa specializzata nella esecuzione di sculture per artisti). Il fraintendimento consiste nel voler essere, quella scultura, un richiamo all'architettura paulista, e a quella di João Vilanova Artigas in particolare, che Akhøj si propone di fare dopo il suo soggiorno a São Paulo nel 2010. Ma è noto che Artigas seguiva il principio lecorbusieriano della intoccabilità del calcestruzzo dopo il suo disarmo, oltre a nutrire una radicale indifferenza per ogni sofisticata lavorazione della materia, come per esempio il "corduroy concrete" di Rudolph.

Non poche sono le opere che riproducono immagini o pezzi di edifici andati distrutti, e che concorrono a creare la particolare misura politica e sociale di *Beton*, come le finte colonne calcate da Jumana Manna su quelle in "naturbetong" dell'edificio governativo del Regjeringskvartalet

a Oslo di Erling Viksjø (compromesso nella sua struttura dopo l'attentato del 2011); le fotografie di Annette Kelm che mostrano il disfacimento dei blocchi in calcestruzzo della Ennis House di Frank Lloyd Wright; il video girato da Ingrid Martens nell'ascensore dell'infernale vuoto della torre in calcestruzzo armato a vista del Ponte City Apartments, a Johannesburg, edificata per i funzionari bianchi ed ora diventata centro di vita di immigrati africani (in origine potevano alloggiare solo sul tetto della torre, nascosti dall'alto muro cieco); il video di Tobias Zielony montato con scatti fotografici delle famigerate Vele di Scampia a Napoli; i video dell'artista Heba Amin che mostrano le colossali carcasse in calcestruzzo armato lasciate incompiute a Il Cairo; oppure, ancora le istallazioni di Maljković sulle trasformazioni sociali, economiche e culturali della ex Jugoslavia, basate su un'indagine delle architetture degli anni Sessanta e Settanta rianimate dal colore proiettato sulle loro superfici[4].

FIG. 4 Karsten Födinger, *Unterachmann II*, 2016 (fotografia dell'autore).

Unico significativo *site-specific work*, che viene appositamente realizzato per la mostra, è quello di Födinger che fa costruire, nel cortile del MuseumsQuartier, accanto alla Kunsthalle, e poi trasportare con il montacarichi nella sala, per appoggiarlo contro il muro di calcestruzzo armato della scala, un colossale e pesante cuneo rovescio, con una faccia e i fianchi di calcestruzzo e sul retro, che in realtà è presentato come fronte, il telaio di legno che ne forma lo scheletro portante. [Fig. 4] Quel cuneo era già apparso nella produzione di Födinger in varie situazioni, sempre alla ricerca di un equilibrio di volta in volta trovato nelle varie strutture dei luoghi dove era stato costruito e poi smantellato. La sua riapparizione anche a Vienna lascia intendere che quella scultura sia qualcosa di più di un semplice cuneo alla ricerca di un suo equilibrio e che intenda porre questioni cruciali alla scultura contemporanea, isolandosi con coraggio da ogni partecipazione emotiva che promana dalle altre opere – un vero e solido "Beton", il suo, in grado di misurarsi a distanza con l'opera della Genzken e di procedere oltre alla ricerca di una sua propria "radical sculpture".

4. Alla mostra sono presentate anche opere di: Monica Bonvicini, Mark Boyle, Andreas Bunte, Thomas Demand, Cyprien Gaillard, Liam Gillick, Jakob Koding, Miki Kratsman, Susanne Kriemann, Isa Melsheimer, Olaf Metzel, Maximilian Pramatarov, Heidi Specker, Ron Terada, Tercerunquinto, Sofie Thorsen, Klaus Weber.

REVIEW OF

The SAAL Process. Architecture and Partecipation 1974-1976, Serralves, Porto, 2015.

(Exhibition catalogue, Montreal, Centre Canadian d'Architecture, 12 may - 11 october 2015)

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The exhibition, curated by Delfim Sardo held in Montreal in 2015, and organized by Fundação de Serralves – Contemporary Art Museum di Porto, with the Canadian Centre for Architecture (CCA) documents a major chapter in Portugal's recent cultural and architectural history.

Launched in the aftermath of the regime's fall, at a time when the country's democratic arrangement was still struggling to take shape, the SAAL (Serviço de Apoio Ambulatorio Local) program was a plan of public residential intervention to provide a response to the strong pressures originating from the housing rights movements that had already arisen before the Carnation Revolution.

It was thus not a matter of dealing with phenomena of immigration from the colonies, or with the urbanization of the working classes towards major city centres affected by weak industrialization; it directly involved a population that, in many cases, already resided in highly degraded rural or urban areas, or that had been left without housing due to the speculative processes of urban growth that multiplied in the post-Salazar transition period.

Coming on top of demands for housing was the strong rootedness to a specific place, giving the construction the value of a foundation act.

But this is not the only aspect that set this operation apart from the numerous public housing construction programs that spread in America and in the rest of Europe.

The involvement of the movements themselves in the development process is one of the greatest aspects of novelty – when not of innovation – for the regulation of planning as well.

In fact, a transfer took place, towards the inhabitants, of a significant part of the competences held by state institutions in the matter of public residential building. Citizens groups chose the areas, constructed the path and the building phases from design to work site, monitored economic aspects and in part financed the works on their own, followed the assignment of housing, and intervened in the choice of designers, at times even refusing their support as if in a normal customer/designer dialectic.

From the decision establishing it on 06 August 1974 (slightly more than three months after the regime was deposed) to its dissolution in 1976 (after the coup of 25 November 1975), the SAAL program received 271 intervention requests, 174 of which found a response in a project, thus marking an important moment of critical reflection upon and verification of housing models and planning practises, carried by some of the major players in this affair since the 1950s, and well identified in the projects chosen by the exhibition.

The Lisbon/Porto dualism emerges – broadly highlighted by the literature on the architecture of Portugal – in addition to the extension

to such "peripheral" locations as: Setubal, Algarve, and Alentejo. Also, it is effectively represented how the SAAL program was a training ground for the designers, whether they were the leading players of the time, leading the technical brigades in support of the inhabitants (Fernando Tavora, Pedro Ramalho, Nuno Teótonio Pereira, and Nuno Portas, to name but a few), youths who were soon to become points of reference, like Alvaro Siza and Gonçalo Byrne, or students, like Eduardo Souto de Moura or Adalberto Dias.

Starting from the title, then, the show specifies how the architectural results do not have a weight greater than the determination of a process, in which «planning, design, and construction are the synthesis of a multidisciplinary activity of technicians and inhabitants».[1] It is in certain cases an empirical method, a "pragmatic utopia" (see the curator's contribution to the catalogue) marked by a strong realism, but not an anarchic phenomenon, as has been emphasized by some of the operation's opponents. The very possibility of conflict is contemplated, and is in fact manifested in certain cases, as it is brought within the process itself.

1. A. Alves Costa, *L'esperienza di Porto*, in "Lotus International", No. 18, 1978, p. 66.

These considerations are fundamental for giving proper meaning to the term "participation", which underlies any political and cultural setting in this moment in history.

It is not mere mutual listening between the parties, but an overturning of the established design process, as presented by Giancarlo De Carlo in the fundamental text republished in the catalogue, conducted also through the contribution of other disciplines, such as pedagogy and sociology.

It is also through this collective work that the common methodological foundations are laid, which to the contrary produce "home by home, neighbourhood by neighbourhood" solutions.

In addition to what was produced, an idea of "project" has been consolidated, and has persisted, while renewing itself, in many subsequent practises, becoming the foundation for a manner of conceiving architecture that makes it possible to attribute to the SAAL process a role of fundamental passage for Portuguese architecture, as *Inquerito sobre a arquitectura popular portuguesa* (1955-57) had years earlier.

Many of the personalities cited above are involved in both experiences and belong to the two generations of architects that were able to lead Portugal out of isolation, bringing it within the international context with an original proposal of reviewing modernity.

In the SAAL experience, as in the results of *Inquerito*, we read some distinctive traits of this vision of design and architecture: attention to the features of the vernacular as an occasion to renew language, the antiformalist thrust, the passage from functional schemes to forms of use of space, typological study and the concession to revolutionary spontaneity, the (non-regionalist) interpretation of context, to be dealt with

in the same spirit if conducted on rural areas, and the degraded peripheral areas of the city or historic centres, in Lisbon as in the *Ilhas* of Porto.

These traits breach the traditional disciplinary distinctions between planning, urban restoration and new construction, bringing everything within a single question of "architecture".

There are certainly factors of criticality in *a posteriori* analysis, highlighted for example by N. Portas himself[2], then minister of housing policies, such as the low innovation of the residential models that were developed, in the face of innovation of decision-making/institutional process, or the difficulty, manifested in certain projects, of decoupling the architect from his or her demiurgical role.

However, the scope of the SAAL process has not gone unnoticed abroad, particularly for its inclusion of both political and social factors. The most significant works have attracted attention in many countries. For example, the interest in Portugal shown by French or Italian architectural culture (as shown by the presence of Vittorio Gregotti's contribution to the volume accompanying the show) begins here – a critical fortune that, today, rightly appears as well-established as ever.

2. N. Portas, M. Mendes (eds.), *Portogallo*, Milano, Electa, 1991, p. 26.