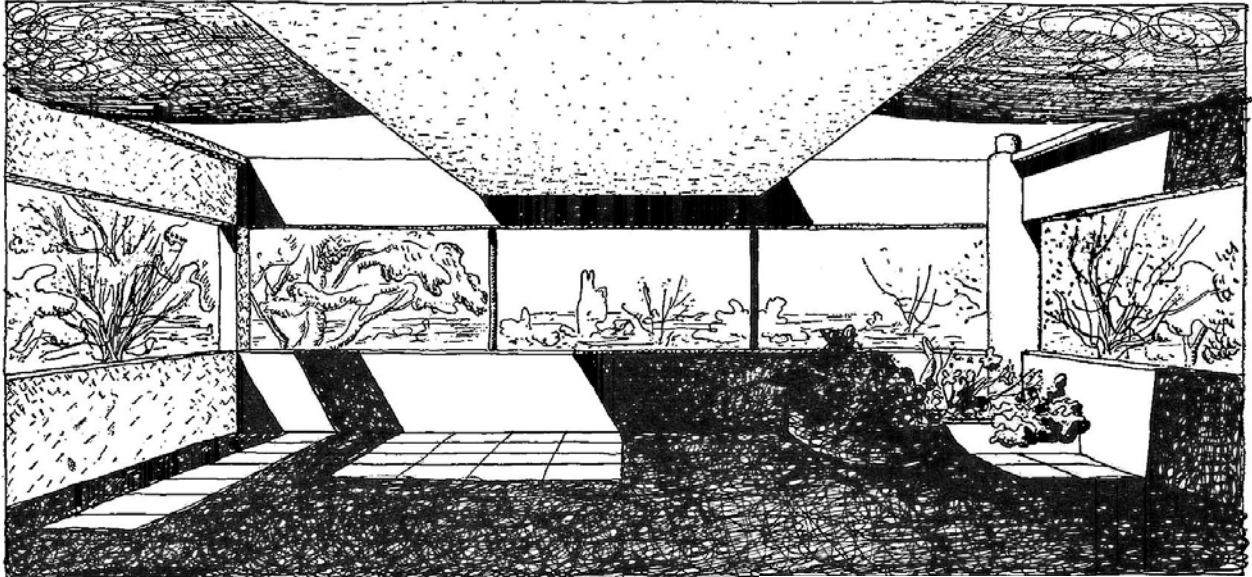


WLADIMIRO ACOSTA AND THE HELIOS SYSTEM



*f. Walter Gropius
with sincere appreciation*

Wladimiro Acosta
Tomas 331, Bs. Aires

CONTENTS

A. Abstract

B. First Influences

Russia 1900-1918 - Revolution and Escape

Italy 1918-1922 - Architectural Education

Germany 1922-1928 - Early Career

C. Latin America and the Modern Movement

Hybrid/Mixed Culture

Argentinian Local Context

D. The Architecture of Wladimiro Acosta

Climate, Culture and Technology as an Inspiration for a Vernacular Architecture

The Helios System as a Modern Vernacular

E. Conclusion

F. Bibliography

A. ABSTRACT

Wladimiro Acosta [Jun 23, 1900, Odesa, Russia (Ukraine now) - July 11, 1967, Buenos Aires, Argentina] was an Argentinean architect who focused his career in the relationship between climate and architecture.

After running away from Russia in 1917 (escaping from the revolution), he studied architecture in Rome and started his early career in Germany. Finally, he emigrated to Buenos Aires in 1928 where developed his work influenced by the Modern Movement.

Since 1932, Acosta was interested in the development of a new architectural system in order to produce 'natural climate control'. He was captivated by argentine local conditions like climate, culture and technology and his chosen path was rational, motivated by his Modern Movement affiliation and his rejection of the International Style. He called his research and experimentation "Helios", a strategy based in the use of terraces, wingers and *brise-soleils*.

In the Helios system, the openings are orientated at North or Northeast (Southern Hemisphere best orientation), while the most sun affected areas are protected by pergolas or canopies, creating a fresh air breeze and avoiding heat accumulation on the walls. The idea was not only to protect the house from the sun in the summer but also to allow its pass, seeking for light and heat during winter, when the sun trajectory is lower.

Within this technique, Wladimiro's milestone was to control the climate for housing without giving up the relationship between the inhabitants and the surrounding landscape.

B. FIRST INFLUENCES

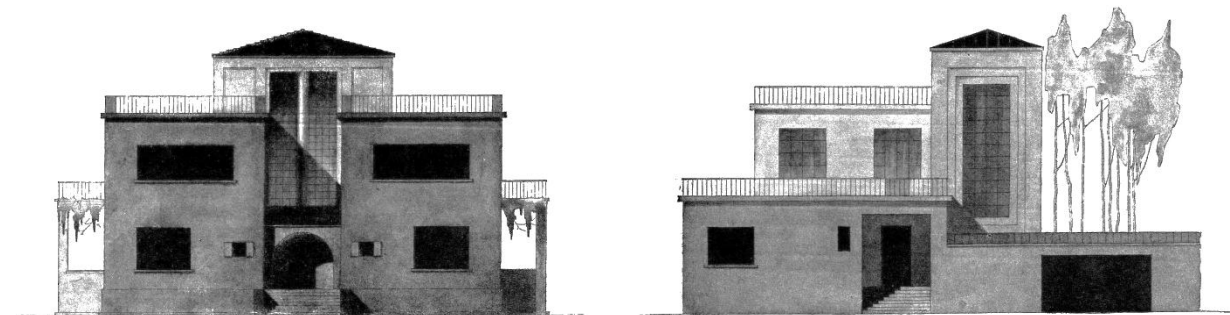
Russia 1900-1918 - Revolution and Escape

Wladimiro Acosta was born in Odesa, Russia (Ukraine now) in 1900, under the name of *Vladimir Konstantinowski*. His father and grandfather were engineers, and he grew up in a culturally rich environment. In 1914, Acosta started studying architecture, following a classical Italian education. After the Russian Revolution of 1917 and contrarily to what most the Russian architects thought at that time, he decided that that such turbulent context was not appropriate for an architect to develop his career. Nonetheless, he always admired the communist ideals and the potential of his thoughts would remain in his memory as a seed waiting for flourishing. Certainly, we can root the origin of his continuous concerns about social housing problems in the social agenda of modernism, rather than in its avant-garde aesthetic.

Italy 1918-1922 - Architectural Education

After escaping Russia in 1918, Acosta decided to continue with his studies in Italy, in a context dominated by the fascism regime. Certainly, this was not his best choice to develop his potential. In an European background where the Modern Movement was being gestated, architectural education in Italy was ruled by the study and reproduction of models of classical architecture, therefore Wladimiro's future concerns related with climate and technique were not considered important.

After four years of study his fate was, once again, affected by political reasons. Being conscious of the violent environment, Acosta decided to leave the country in 1922, when Mussolini took over the government. This time his choice was focused on being in contact with the new architectural movements. Therefore Germany, where the conceptual sources of the movement were located, was the chosen destiny.



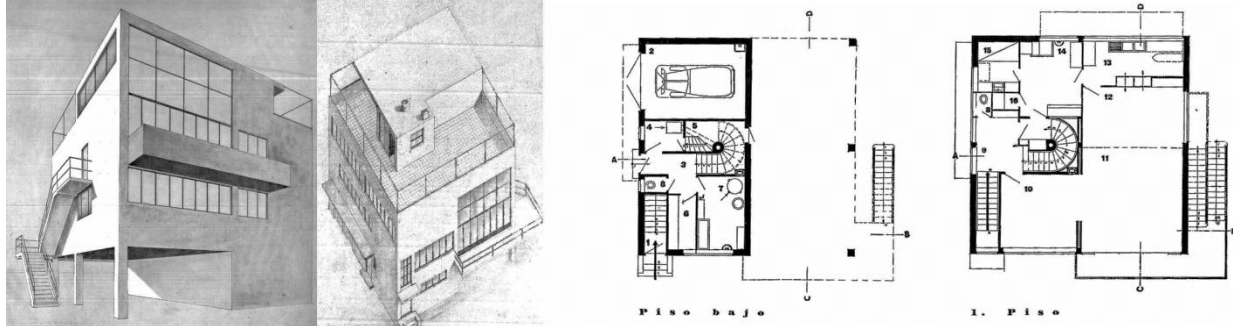
1 Tien-Tsin House, Rome, 1920; from "*Housing and City*", Acosta, Wladimiro - 1936.

Germany 1922-1928 - Early Career

Once in Germany, Acosta decided to study engineering and urban planning as a complement of his previous studies because he considered that his technical knowledge was insufficient. He pursued the intention of establishing a clear dialogue with engineers in order to maintain the fidelity of his ideas in the final construction. He also accompanied his architectural studies with a deep acquaintance of crafts used in construction processes (carpentry, masonry and smithy).

In this period we can observe a profound change in his architectural philosophy. The influences he received by working in some of the most important studios in Berlin and Frankfurt, even meeting Mendelshon and Gropius, and being part of the Bauhaus, changed his mind forever. Acosta started expressing his appreciation for the European avant-gardes in his works, with an interesting balance between technical and artistic focuses. Indeed, his works from that period can be understood as a way of experimenting with architecture, conceived as a device that regulates the climatic effects of sunlight.

In his projects, during this period, we can perceive the application of Le Corbusier's Five Points for a New Architecture: the *pilotis*, the *open floor plan*, the *free facade*, the *ribbon window* and the *roof garden*. We can also observe the reflection of the interior functions in the facades and the plastic composition when manipulating the forms. After being in contact with the European Avant-garde, and having metabolized its principles, Wladimiro became rational.



2 Painter House, Frankfurt, 1925; from "*Housing and City*", Acosta, Wladimiro - 1936.

C. LATIN AMERICA AND THE MODERN MOVEMENT

Hybrid/Mixed Culture

In Latin America the Modern Movement was imported mostly from Europe. The significant technical advances that introduced new possibilities for a creation of a new architecture and the cultural avant-garde were not present in this continent yet. At the beginning, the word *Modern* was more related with updating rather than inventing something new.

The first contact with Modernity was promoted by artists and writers that came back from Europe after a couple of years of experience there. A new cultural formation was emerging as the key in the organization of local systems of cultural production.

Moreover, Latin America was receiving European immigration, Argentina being the most desired destiny. Once Acosta was attracted by this land, he became part of the effervescent intellectual movement that affected different areas of local culture with a renovated vision. These new perspectives, blended with existing local conditions, settled the basis for a modern vernacular architecture.

Two definitions from contemporary Argentinean authors, the expresses this process:

In spite of trying to give a modern profile to the cultural elite by confining the indigenous and the colonial to popular sectors; the interchange of classes generated hybrid formations in all levels of society.

"Hybrid Cultures. Strategies to come in and out from modernity". García Canclini, Néstor - 1989.

The Argentinean culture is a mixed culture, in which defensive and residual elements coexist with renewed programs, cultural features of the 'creole' formation and an irrational process of importation of goods, voices and symbolic practices.

"Technique imagination. Modern dreams of Argentinean culture". Sarlo, Beatriz - 1992.

Argentinian Local Context

When Wladimiro arrived to Argentina in 1928, the country was having the world's fourth highest gross domestic product per capita. The Radical Civic Union party was in charge of the government and there were times of social prosperity. However, the Wall Street Crash of 1929 generated instability, leading to a *coup d'état* that overthrown President Yrigoyen in 1930, replaced by a military government. This shift to authoritarian governments was in fact a trans-national phenomenon that manifested itself in different countries during the decade afterwards.

During that time, the intellectual movements began with a series of publications, mostly magazines, to communicate their modern thoughts, being well received by society. The aperture on people's mind generated by these ideas acted as a fuel to open, renovate, and democratize Argentinean culture. A culture that was blind regarding the origins of the Modern Movement, where it would be correct to affirm that the Bauhaus did not cause an impact in Argentinean architecture in the 20s.

The word *modern* was then associated with the rejection of the past, assimilated by society as a trend, as something original. Modernity represented the ambition of a society thirsty for progress and newness.

Contemporary design magazines, such as "Sur" (edited by Victoria Ocampo -a prominent figure in Argentinean aristocracy-) started refusing dogmatic movements influenced by the *École des Beaux Arts* that were dominating the architectural scenery. They were claiming for 'fresh air' as a replacement for historicism; looking for buildings according to his modern posture. The demands were focused upon the end of ornaments in pursuit of new formal expressions, the research of a functional distribution, the industrialization of production and the rational use of resources in construction systems.

These young elite even seduced Le Corbusier, who perceived the opportunity of realizing his dreams in Argentina, arriving in 1929 to give a series of lectures and to start working in an urban plan for Buenos Aires.

Argentinean Modern Architecture during that decade shared some common characteristics with Europe avant-garde. It was solid, presenting a correct articulation of cubic volumes, with no decoration. Big walls dominated the scene as if they were eternal and with a materiality sometimes sloppy, trying to be as abstract as possible. Nevertheless, Wladimiro Acosta believed that the foundations for a Modern Architecture in Argentina cannot be only developed looking at Europe; they should also have strong local roots. The '*Architecture of Resistance*' as Kenneth Frampton defines it in his famous *Critical Regionalism* article was ready to begin.

He disregarded the architectural forms that were originally designed as response for other climates, using other technologies; he was seeking for an architecture that was truly *modern* and truly *vernacular* at the same time, beyond the oxymoron that the expression itself suggests. In his statements, Wladimiro is expressing his Modern Movement affiliation and his rejection of International Style.

Modern Architecture is, above all, a new substantial link between the architect and the objective conditions of the topic, generated by the incorporation of a series of scientific disciplines to his work. It is not a system of invariable forms, an aesthetic recipe, that one can apply everywhere without respect for particular geographic and climatic conditions. On the contrary, Modern Architecture is a new method of approaching problems that leads to architectural solutions with contemplation of local landscapes, climates, way of life and activities. Every place, every topic and every technical resource should generate a new form.

"*Housing and Climate*". Acosta, Wladimiro - 1976.

D. THE ARCHITECTURE OF WLADIMIRO ACOSTA

Climate, Culture and Technology as an Inspiration for a Vernacular Architecture

When Acosta arrived in Argentina, in 1928, he found himself in a completely different context for architectural production. The problems in South America required an approach dissimilar than in Europe and that is the reason why he had to abandon his *Corbusian* vocabulary to dig into an uncomfortable ground. Climate, culture and technology were the new challenges. His major concern was how to control the high temperatures produced by the intense sun insolation.

At that time, in Argentina, the architectural tendencies oscillated between colonial and classical. Wladimiro observed that colonial architecture, with his thick walls made of adobe and his exterior galleries to control sun light, produced a comfortable solution for controlling the climate. On the other hand, their plan distributions were not functionally efficient. He wanted to avoid following the path of other architects that came back from Europe and reproduced the modern architecture as a trend, without understanding the very essence of the movement: being rational while using and improving local conditions. In addition, he underlined the importance of living in a place and being embedded in its culture before building there. This was for him the only way of being able to produce modern vernacular architecture.

Under these circumstances, Acosta decided to start from zero, studying physical and human geography and analyzing vernacular solutions as a technique for generating architecture with local roots.

According to him, the new architecture is a *social phenomenon*, which takes advantage of science progress in order to improve contemporary life and to spread men's rational transformation over the world by the reform of the built environment.

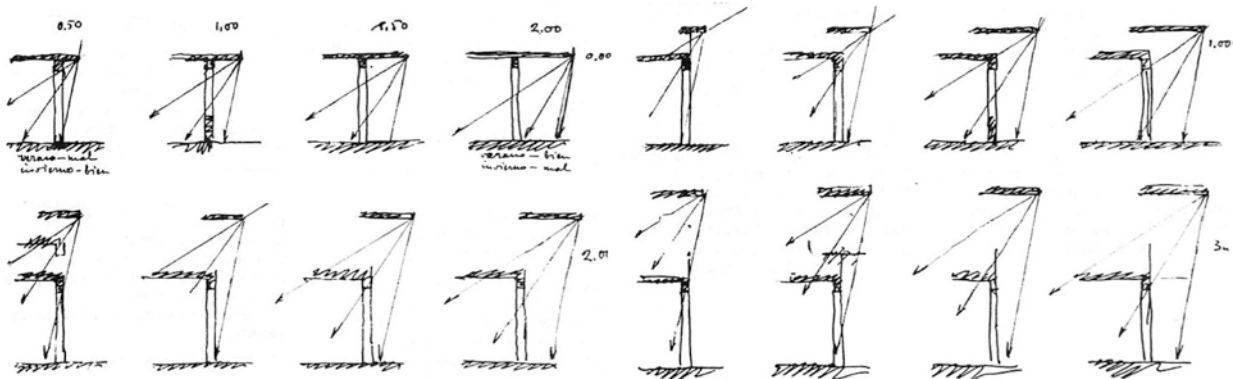
Regarding housing specifically, he defined it as a *biological phenomenon*, understanding its intimate relationship with technical and economic factors for its construction.

Materials must last correspondingly with the useful life cycle of the building. Trying to make them eternal carries an excessive investment which is counterproductive.

"Housing and Climate". Acosta, Wladimiro - 1976.

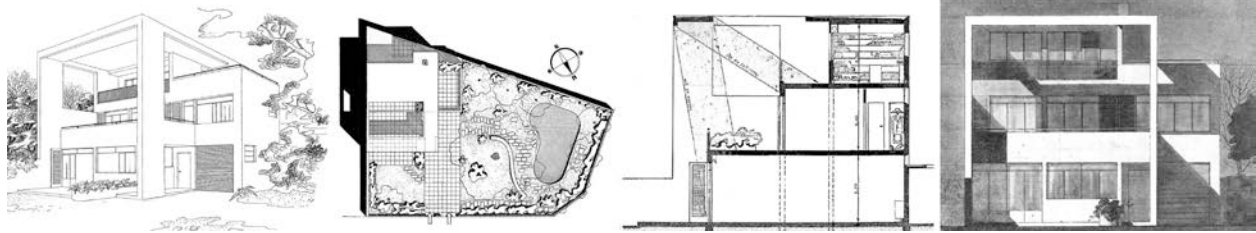
In his books, Wladimiro defined basic housing functions. The house should be sunny, painted with clear colors to not interfere with human nervous system functions, and it needed a maximum sanitary level capable of creating an appropriate environment for a healthy human life. He also pointed that furniture ought to be designed according to human anatomy. These principles are cemented in his interdisciplinary approach to solve architectural problems.

Since 1932, the quest of an architectural design that provided thermal comfort had been the architect's main concern. He explored the creation of a system that used the available technical resources to optimize the housing sun exposure, controlling the interior climate without giving up the relationship between the inhabitants and the surrounding landscape. This system was called "*Helios Architecture*".



3 Shadow Studies - Helios System; from "*Housing and Climate*", Acosta, Wladimiro - 1976.

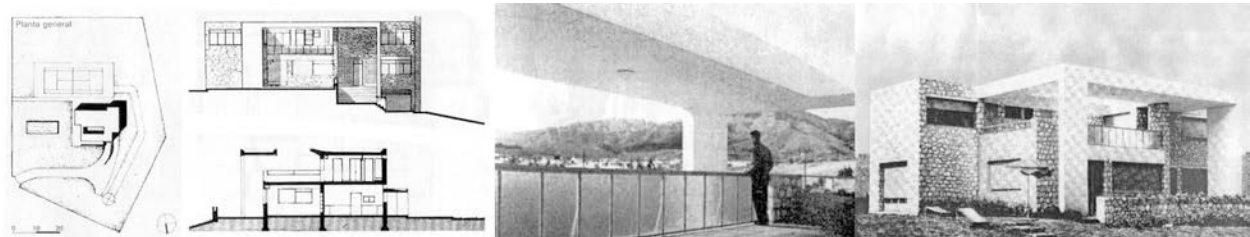
One of the key points to design using this system is to have a complete knowledge about sun trajectory in order to decide the best orientation of the openings. Also by knowing which areas were most affected by the sun, it would be possible to protect them by the use of pergolas or canopies, creating a fresh air breeze and avoiding heat accumulation on the walls. The idea was not only to protect the house from the sun in the summer but also to allow light and heat to enter the building during winter, when the sun trajectory is lower.



4 San Isidro House, Buenos Aires 1934; from "*Housing and City*", Acosta, Wladimiro - 1936.

The Helios-system strategy was based in the use of wingers and *brise-soleils* as a sun protection, with openings almost as large as glass curtain walls, oriented at North or Northeast (Southern Hemisphere best orientation). Within this background, Acosta decided that the best solution to deal with sun blocking in the summer and its pass in the winter was the winger-slab of 2 meters width, located between 4.5 and 6 meters above the ground. The terrace is another important element of the system: he conferred it the function of avoiding the entrance of hot air through the windows, produced by the direct exposure to the sun of the superficial layers of the facade.

The Helios-system is not an addition to a building; it was an integral part of his architectural expression. Luminosity, lightness, purity and transparency were the main concepts. As Acosta recognized, the system has a strong formal presence that influences the final result. Nevertheless, it has flexible conditions that can be adapted to every landscape, location and orientation as well as to different constructive techniques. For example, in La Falda house, Wladimiro chose local stones as materiality, creating that way a blend between the image of the house and its natural background; while the orientation of the terrace created an amazing scenario for viewing the lake.

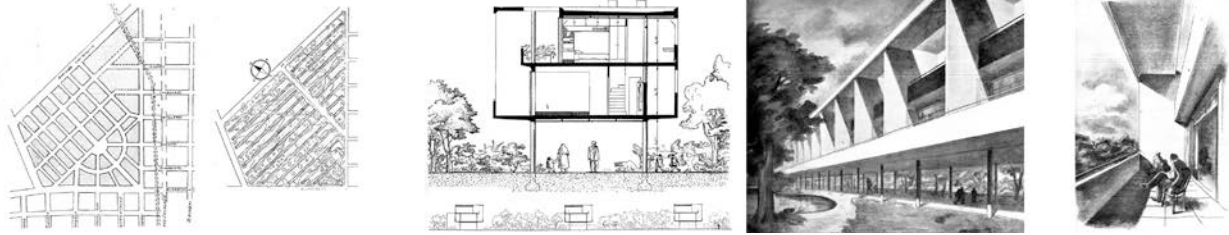


5 La Falda House, Córdoba 1940; from "*Wladimiro Acosta 1900-1967*", Navarra University, Spain - 2008.

Wladimiro also explored other areas that were undiscovered in Argentina for housing production. He proposed the use of industrialized pre-fabricated components as a response for massive housing problems. Usually, rationalization and standardization of resources are linked with architectural formal limitations; however, Acosta conceived the possibility of developing a modular system with a great number of combinations, adaptable to each family situation, constituting an intelligent solution for housing creation and further growth.

As many other architects at that time, Wladimiro proposed an urbanization model for Buenos Aires, but his case seems to be completely different from the rest. First, after analyzing the problems from scientific perspectives he detected that congestion was the main problem of the city and proposed deurbanization as the only possible answer. His innovation, after that, was to design a bottom-up strategy as a solution, using the Helios Architecture as a module, re-organizing them according to multiple combinatory options.

In the urban scale, the proposal avoided the fragmentation of the plot (image 6-1) by trying to keep its integrity, orientating all the units with the best direction (North). The strategy was to use the same *Helios module* repetitively, creating continues rows by grouping it side by side against the next. In the ground floor, while the structure was mounted over *pilotis*, the yard was replaced by public space. The houses were surrounded by a natural environment.



6 Helios Housing, Urbanization Proposal 1934; from "*Housing and City*", Acosta, Wladimiro - 1936.

The Helios System as a Modern Vernacular

There are some characteristics about *the Argentinean Pampas* that may be seen in Wladimiro Acosta's designs. The life there is quieter and simpler, with a direct relation between the peasants and nature. That was the essence that he tried to capture with his proposals, houses and cities, returning to the sources: de-urbanization to get back to nature. The aspect of his buildings reproduces this image too, pure and simple volumes, built with local materials. His architectural philosophy was signed by a patience quest without end, which is another feature of the pampas inhabitants, and not by mere intuition or creative explosions. A retrospective view of his work produces a strong dichotomy between the delight of all his achievements and the nostalgia of what remains incomplete.

In his designs for urban houses in Buenos Aires we can also observe serious considerations about the typical *casas chorizo* (long and thin like a sausage -*chorizo*-, these houses, originated at the end of the 19th century, have the rooms in a straight line along an open gallery that connects them with a skinny patio).



7 Casas Chorizo. Source: Google Images.

Juan Molina y Vedia, an Argentinian contemporary architect, describes the process of re-elaboration of a vernacular Buenos Aires house in his article for the book *Wladimiro Acosta 1900-1967*, by making a comparison of several topics that were reinterpreted by Wladimiro: the little porch, the canopy on the backyard, the terrace for breathing fresh air provided with solarium and a plastic removable pool, the kitchen-dining room, the small backyard to do the laundry, the external stairway, the gallery and the small bathroom over the garage.

E. CONCLUSION

Wladimiro Acosta is considered one of the first exponents of Modern Architecture in Argentina. He was a pioneer in many different aspects: he did not see the architect's profession as an isolated island and always tried to establish bonds with other science areas, understanding that a collective and interdisciplinary approach to problems can lead to better solutions. Acosta also studied fields that were unexplored in Argentina for housing production. The use of industrial assembly for prefabrication of parts, and the construction of flexible housing prototypes according to different needs (using standard modules) were the most important ones. His architecture was designed to mutate in concordance with di-

verse places, climates, traditions and technical means. The re-interpretation of vernacular conditions was the path the he chose to be modern.

During the last stage of his life Wladimiro dedicated mostly to teach in the University of Buenos Aires, and to give lectures around the world, including Universities as prestigious as Cornell and Harvard. In spite of all his achievements, he is not a widely known architect outside Argentina.

One of the main reasons for this is the (involuntary) contradiction in which he lived. In the introduction of *Housing and Climate* he claimed that architects should not write, because architects' language is represented by their buildings. Nevertheless, Acosta could not build much: he was able to develop all his ideas in books but only a few could be materialized.

There is also a notable observation that *Francisco Liernur*, an Argentinian contemporary historian, expresses in his article for the book *Wladimiro Acosta 1900-1967*. He seems to have lost some creative force after the beginning of his career; after a vigorous commencement in his first five years in Argentina, he produced twenty projects, but in the next thirty years he generated about the same volume of designs. This decrease was probably activated by the lack of any type of political support to realize his ideas. Although it is generally accepted that periods of uncertainty and instability are most conducive to creative thinking, Acosta's case represents the opposite. Probably, he suffered from an emotional distress because Argentinean society was not ready to his advanced thoughts.

A strong political support is an imperative condition to transcend. Architect Oscar Niemeyer and his strong bonds with the former-president of Brazil, Juscelino Kubitschek, is the best example. Apart from him, Le Corbusier understood this perfectly, and in his obsession to succeed he looked for support among diverse political sides. On the contrary, Wladimiro was not willing to resign his socialist convictions or to give any concessions to politicians.

Another important issue related with Wladimiro's career is the fact that he dedicated almost exclusively to housing. This, perhaps, was motivated by the way he interpreted the Modern Movement:

Modern Architecture is, specifically, the architecture of housing. This is the substantial difference with all the architectures from the past.

"*Housing and City*". Acosta, Wladimiro - 1936.

Only with minor exceptions, he studied, designed and built houses. Even his more ambitious projects for urbanization of greater areas were focused in the housing problem. This weakened his chances of excelling in the collective architectural memory reducing remarkably the visibility and the public recognition that big institutional and more symbolic project would have allowed him to achieve.

There is no doubt that Wladimiro Acosta was a visionary for his period. Despite the fact that he was not completely understood at his time; he contributed significantly to the growth of a Modern Vernacular Architecture in Argentina. Even though they were never completely pushed forward, his ideas remain totally valid, 80 years after their conception. A disciple was needed to continue developing and applying his system, but possibly this collective enterprise was not pursued because of his individualistic and personal approach to the discipline.

In spite of his positive progress and his conquests, the new architecture cannot be considered as something definitive but as a path to follow that needs to be revealed.

"*Housing and City*". Acosta, Wladimiro - 1936.

Many authors describe Acosta's ideas as utopian. Even himself, in *Housing and City*, explains how to provide houses to everyone, but immediately after he claims that given the circumstances such idea is an utopia itself. I have to agree with that explanation but I would like to leave the door open for a further development of his concepts.

Because, after all, utopias are conceived to someday become real.

F. BIBLIOGRAPHY

BOOKS:

- B.Huppau and M.Umbach**, *Vernacular Modernism: Heimat, Globalization and the Built Environment*. Palo Alto, United States: Stanford University Press, 2005
- Beatriz Sarlo**, *La imaginación técnica. Sueños modernos de la cultura argentina (Technique imagination. Modern dreams of Argentinean culture)*. Buenos Aires, Argentina. Nueva Visión: 1992.
- Francisco Liernur**, *Arquitectura del Siglo XX en la Argentina. La construcción de la modernidad (Argentine Architecture in the 20th Century. The construction of modernity)* Buenos Aires, Argentina. Fondo Nacional de las Artes: 2001.
- Josep María Montaner**, - "*Después del Movimiento Moderno. Arquitectura de la segunda mitad del siglo XX*" (*After the Modern Movement. Architecture in the second half of the 20th Century*). Barcelona, Spain. Editorial G. Gili: 1999.
- Néstor García Canclini**, *Culturas Híbridas. Estrategias para entrar y salir de la modernidad (Hybrid Cultures. Strategies to come in and out from modernity)* México D.F.: Editorial Grijalbo, 1989.
- Rafael Serra**, *Arquitectura y Climas (Architecture and Climates)*. Barcelona, Spain. Editorial G. Gili: 1999.
- Various Authors**, *Wladimiro Acosta 1900-1967*. Pamplona, Spain. T6 Ediciones: 2008.
- Wladimiro Acosta**, *Vivienda y ciudad; problemas de arquitectura contemporanea. (Housing and city, problems of contemporary architecture)* Buenos Aires, Argentina: I. Aresti, 1936.
- Wladimiro Acosta**, *Vivienda y clima. (Housing and climate)* Buenos Aires, Argentina: Nueva Visión, 1976.

ARTICLES:

- Frampton, Kenneth**, "*Towards a Critical Regionalism: Six Points for an Architecture of Resistance*" in Hal Foster "*The Anti-Aesthetic: Essays on Postmodern Culture*". San Francisco, United States. Bay Press: 1983.
- Gorelik, Adrián**, "*¿Cien años de soledad? Identidad y modernidad en la cultura arquitectónica latinoamericana*" (*One hundred years of solitude? Identity and modernity in Latin American architectural culture*) in ARQ N15, Santiago, Chile. Escuela de Arquitectura de la Pontificia Universidad de Chile: 1990.

HOLLIS IMAGE CATALOG:

- Wladimiro Acosta**, *Helios system house design*
- Wladimiro Acosta**, *Apartment Building*, Buenos Aires, Argentina, 1930-1940
- Wladimiro Acosta**, *House in Villa Urquiza*, Buenos Aires, Argentina, 1934-1945